Annual Scientific Meeting 2012
Delivering a High Quality Learning Experience in Changing Times
Abstracts and conference papers
**Chest Drain & Needle Decompression Trainer**

Part No: 60230

This brand new Limbs & Things simulator has been designed to meet the specific requirements of healthcare professionals training in needle or open/cutdown thoracostomy and thoracentesis. This product, complete with interchangeable modules, allows for a variety of chest drain insertion techniques to be performed including ultrasound-guided techniques.

**Skills**
- Needle decompression of tension pneumothorax
- Ultrasound-guided chest drain insertion (Seldinger-type)
- Open, or cut-down chest drain insertion
- Suture of tube to chest wall

For more information visit our website: www.limbsandthings.com

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**Limbs & Things learning online™**

Following the success over the past 10 years of the Medical Skills range of self-directed learning products, Limbs & Things is pleased to announce the launch in 2012 of our learning online™ website.

The website will feature the content from the Medical Skills products completely revised and updated with new material in line with current best practise based on the Royal College of Surgeons of England Basic Surgical Skills course. New courses and support material will be added in the future.

The first product available in 2012 will be SutureTutorPlus™.

For more information visit our website: www.limbsandthings.com
2012 Annual Scientific Meeting
Delivering a High Quality Learning Experience in Changing Times
18-20 July 2012
The Brighton Centre, Kings Road, Brighton, UK

Contents

General Information 2
The Brighton Centre Floor Plans 4
ASM Programme 7
Main Speaker Biosketches 12
The President’s Medal 2012 14
Parallel Session Timetable 15
Members’ Abstracts – Presentations 21
Members’ Abstracts – Posters 201
What’s Hot in Learning and Teaching Innovations in Medical Education 377
ERG Research Stream Presentations 413
Map of Brighton 418
General Information

Welcome to Brighton & the 2012 ASM.

Registration Desk
Conference registration will take place alphabetically in the Brighton Centre foyer. The registration area will be manned at all times during the conference.

Name badges
These will be included within your conference pack. Please return them to the registration area after the conference. Students attending the ASM will have yellow inserts instead of white.

Posters
Posters will be displayed in Auditorium 1 for the duration of the ASM. The Poster Session is scheduled for Thursday 18th July between 1.35pm – 2.40pm. Poster authors will be on hand to answer questions about their work during this session. An index of posters along with the full abstracts are presented on this memory stick.

Parallel session presenters
A speakers preview room has been set up in ‘Office 2' on the first floor. If you are presenting within the parallel sessions please go to Office 2 the morning you are presenting with your USB stick and upload your presentation. It will then be filtered to the correct room by AV technicians. Please name your presentation: day/time/room/surname.

Workshops
Please attend the workshops or concurrent sessions that you selected to attend at registration stage.

Exhibitors
A variety of exhibitors will be available in Auditorium 1. The exhibition will remain open for the duration of the conference.

Refreshment Breaks
Refreshments will be provided throughout the ASM in Auditorium 1. There will also be a coffee/tea machine and water coolers positioned in the foyer. There is a café called Feed in the foyer of the Brighton Centre where you can buy a variety of drinks and snacks.

Message/Notice Board
A message/notice board will be positioned in the foyer.

Catering
Lunch will be served each day in Auditorium 1.
Wi-fi access
Wi-fi access is available throughout the Brighton Centre. There is no access code. We do ask that you turn your mobile off when in plenaries and sessions to avoid continuous downloading of emails etc.

Evaluation
Delegates will be emailed a direct link to an online conference evaluation form after the event. We value your comments and feedback and by participating in the evaluation you will be entered into a draw for 2 free conferences places for the 2013 ASM in Edinburgh (Napier University, Sighthill campus).

Taxis
Local taxi companies: 01273 20 40 60 & 01273 41 41 41

Social Events
Welcome Reception
Join us at the Welcome Reception on Wednesday 18th July from 7pm – 9pm. The event will be held at The Brighton Museum at The Royal Pavilion. Canapés and drinks will be served.

Annual Dinner
The Annual Dinner will be held at Palm Court restaurant on Brighton Pier on Thursday 19th July. Pre-dinner drinks will be served from 7.30pm at Horatios Bar with dinner at 8pm. There is no seating plan at the Annual Dinner (apart from the top table) so if you have booked a ticket, please feel free to sit where you wish.

Dietary Requirements (for the Annual Dinner only)
If you have booked to attend the Annual Dinner and have notified us of a specific dietary requirement, please let your table waiter know once seated.

Quiet/prayer room
Meeting room 7 on the 3rd floor.

Programme changes
Any room changes or withdrawn presentations will be noted on the notice board in the foyer area.

Emergencies
In the event of an emergency please contact a member of ASME staff.

ASME Mobile Number
From Tuesday 17th July to Friday 20th July ASME can be contacted on 07504 035 421
The Brighton Centre Floor Plans

**Ground Floor**
Foyer (Registration)
Meeting room 1 (cloaks/luggage)

**1st Floor**
Auditorium 1 (Exhibitors/posters/lunch & refreshments)
Auditorium 2 (main plenary room)
Office 2 (Speakers preview room)

**2nd Floor**
Meeting room 3 (north lifts/stairs)
Meeting room 5 (north lifts/stairs)
Meeting room 14 (north lifts/stairs)

**3rd Floor**
Meeting room 6 (north lifts/stairs)
Meeting room 7 (quiet/prayer room)
Meeting room 8 (north lifts/stairs)
Meeting room 9 (north lifts/stairs)
Meeting room 10 (north lifts/stairs)
Meeting room 11 (north lifts/stairs)
Restaurant (south lifts only/stairs)

**4th Floor**
Meeting room 15 (north lifts only)

**Syndicate Block**
Syndicate rooms 1&2 – back entrance (external, Russell Road)
Syndicate rooms 3&4 – back entrance (external, Russell Road)

South lifts = front of building (sea front)
North lifts = back of building (Russell Road)
# 2012 Annual Scientific Meeting
Delivering a High Quality Learning Experience in Changing Times
18 – 20 July 2012, The Brighton Centre, Kings Road, Brighton, UK

## Wednesday 18 July

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>9.00</td>
<td>Registration</td>
<td>Auditorium 1</td>
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<tr>
<td></td>
<td>Setting up of Posters and Exhibts</td>
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<tr>
<td></td>
<td>Arrival refreshments</td>
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<tr>
<td>9.30 – 12pm</td>
<td>Educator Development Group</td>
<td>Auditorium 2</td>
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<tr>
<td></td>
<td>What’s Hot in Learning and Teaching Innovations in Medical Education?</td>
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<td></td>
<td>Session Chair: Dr Gill Doody, Educator Development Group Lead</td>
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<tr>
<td>9.30 – 11.30</td>
<td>Workshops</td>
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<tr>
<td></td>
<td>1. Developing globally competent health care workers</td>
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<td>2. NLP for medical teachers</td>
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<td>3. Effecting effective feedback</td>
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<td></td>
<td>5. Teaching non-technical skills in the undergraduate curriculum</td>
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<td>6. Mind works 4 working minds: performance test anxiety</td>
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<td>7. TASME: getting involved and staying involved in medical education as a specialty trainee</td>
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<td>8. Develop a successful and sustainable inter-professional learning programme</td>
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<td>9. Using social media in learning emergency and acute medicine</td>
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<td>10. Optional, desirable or essential? The inclusion of global health in the core curriculum</td>
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<td>11. Evidence Informed Health Professional Education: Value, Utility &amp; Participation</td>
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<td>12. Presenting skills for new presenters</td>
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<td>13. JASME: ‘So how can I get involved with medical education as a student?’</td>
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<tr>
<td>11.00 – 12.00</td>
<td>Extended Education Research Group Meeting (open to all)</td>
<td>Restaurant</td>
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<tr>
<td>11.35 – 12.00</td>
<td>JASME Orientation - a guide on how to get the most out of the ASM for Junior/student Doctors</td>
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<tr>
<td>11.45 – 12.45</td>
<td>‘Writing for Publication’ Journal Clinic (by appointment)</td>
<td>Syndicate 3</td>
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<tr>
<td>12.00 – 12.45</td>
<td>Lunch, viewing of posters and exhibits</td>
<td>Auditorium 1</td>
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<tr>
<td>12.50 – 12.55</td>
<td>Welcome: Sir Graeme Catto, ASME President</td>
<td>Auditorium 2</td>
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<tr>
<td>1.00 – 1.35</td>
<td>The Lord Cohen Lecture</td>
<td>Auditorium 2</td>
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<td></td>
<td>Dr Shiphra Ginsburg, FRCPC, Med, Associate Professor,</td>
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*ASME* Association for the Study of Medical Education
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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>1.40 – 2.10</td>
<td>Refreshments and viewing of posters and exhibits</td>
<td>Auditorium 1</td>
</tr>
<tr>
<td>2.15 – 4.45</td>
<td>Members’ Papers in parallel sessions</td>
<td>See parallel session timetable</td>
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<tr>
<td>4.50 -5.30</td>
<td>ASME Council Meeting</td>
<td>Auditorium 2</td>
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<tr>
<td>7.00 – 9.00</td>
<td>Welcome Reception&lt;br&gt;Refreshments and canapés&lt;br&gt;Supported by Wiley-Blackwell</td>
<td>The Brighton Museum @ The Royal Pavilion Brighton</td>
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**Thursday 19 July**

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<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>8.30 – 9.00</td>
<td>Registration &amp; arrival refreshments</td>
<td>Foyer &amp; Auditorium 1</td>
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<tr>
<td>9.00 – 9.25</td>
<td>New Researcher Award 2012&lt;br&gt;Dr Vicky Tallentire, Centre for Medical Education, University of Edinburgh&lt;br&gt;As easy as ABC?: Exploring and understanding the specific challenges faced by newly qualified doctors in acute care contexts&lt;br&gt;Question &amp; Answer session&lt;br&gt;Session Chair: Professor Jennifer Cleland, Chair, ASME’s Education Research Group</td>
<td>Auditorium 2</td>
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<tr>
<td>9.30 – 9.55</td>
<td>The Silver Quill &amp; Impact awards &amp; The Journal Travelling Fellowships 2012 award winners announced&lt;br&gt;Session chairs: Kevin Eva, Editor, <em>Medical Education</em> &amp; Steve Trumble, Editor, <em>The Clinical Teacher</em></td>
<td>Auditorium 2</td>
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<tr>
<td>9.55 – 10.15</td>
<td>Refreshments, viewing of posters and exhibits</td>
<td>Auditorium 1</td>
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<tr>
<td>10.20 – 12.45</td>
<td>Members’ papers in parallel sessions&lt;br&gt;See parallel session timetable</td>
<td>See parallel session timetable</td>
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<tr>
<td>10.20 – 11.20</td>
<td>Institutional Members Forum</td>
<td>Auditorium 2</td>
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<tr>
<td>12.45 – 1.30</td>
<td>Lunch, viewing of posters and exhibits</td>
<td>Auditorium 1</td>
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<tr>
<td>12.45 – 1.30</td>
<td>HEA/MEDEV invited lunch</td>
<td>Restaurant</td>
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<tr>
<td>1.30 – 4.45</td>
<td>The Academy of Medical Educators (AoME) at ASME</td>
<td>Auditorium 2</td>
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<tr>
<td>1.35 -2.40</td>
<td>Chaired Poster Session</td>
<td>Auditorium 1</td>
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<tr>
<td>2.45 – 4.45</td>
<td><strong>Concurrent sessions:</strong>&lt;br&gt;Workshops&lt;br&gt;1. Underperformance in students: towards more effective approaches to identification and remediation&lt;br&gt;2. Using personal construct psychology methods to identify &amp; measure the skills, competencies &amp; values needed by Medical Educators&lt;br&gt;3. Professional delivery of problem based learning</td>
<td>Auditorium 1</td>
</tr>
</tbody>
</table>
4. Teaching and assessing value based practice
5. Leadership and management: visioning for the future, preparing student doctors
6. Motivating medical students with Keele Basic Bites
7. Defining purposes of teaching evaluation to foster improvement of teaching & satisfy your quality management needs
8. Enhancing OSCE examiner performance and harmonizing inter-rater scores by interactive video training
9. ‘Deconstructing Mabel’ – A time to reflect
10. Medical Student early clinical experience: fit for purpose?
11. Teaching sustainable healthcare? A holistic approach to the medical curriculum
12. FAIRness and improving teaching on the clinical attachment
13. JASME: Setting up a research project in medical education

2.45 – 4.45 Educator Development Group
Extended meeting and World Café session

5.00 – 5.30 ASME AGM - open to ASME members & others who wish to attend

8.00 – 11.00 Annual Dinner
Pre-dinner drinks at 7.30pm (Horatios bar at the end of the Pier)

Friday 20 July
8.30 – 8.50 Registration & arrival refreshments
Foyer & Auditorium 1

8.50 - 9.00 Announcement of Poster Prize Winner(s)
Session Chair: Dr Gill Doody, Group Lead, The Educator Development Group, ASME

9.00 – 9.30 Presentation of The ASME Gold Medal 2012
Dr Ara Tekian, Associate Professor of Medical Education & Associate Dean of International Affairs, University of Illinois at Chicago, USA
Question and Answer session
Session Chair: Professor Trudie Roberts, ASME Chair

9.35 – 10.35 Members’ Papers in parallel sessions
See parallel session timetable

9.35 – 11.00 Special Interest Group: Technology Enhanced Learning (TEL) open to all interested in attending
Restaurant

10.35 – 11.10 Refreshment break

11.15 – 1.15 Concurrent sessions:

Workshops
1. Applying learning theory to medical education practice
2. ‘Placing an old head on young shoulders’ – Educating medical students about mentorship
3. TASME: Teaching fellow posts – how to get one and how to make the most of it once you have
4. ‘The surgical ward round’ Preparing students for the clinical environment using high fidelity, low cost simulation
5. Learning to prescribe by experience in the workplace (pre-prescribing)
6. The ‘meta’ clinical educator: professional and specialised?
7. Taking simulation out of the simulation centre: advantages &
challenges of establishing a point of care simulation programme
8. Improving feedback dialogue in an online medical education programme
9. CANCELLED
10. Making medical podcasts for the millennial generation
11. Teaching clinical communication skills to non UK medical graduates in hospital based specialties
12. Medical student assistantships
13. Teaching students to “speak up” - Patient safety in the undergraduate curriculum
14. JASME: Teaching toolkit for medical students

11.15 – 1.15   **ERG Research Stream**
Teaching and learning essential skills for patient care

1.20 – 1.45   **Sir John Ellis Student Prize Winner Presentation**
Jennifer Macallan, Kings College London
Medical Student Perspectives of what makes a High Quality Teaching Practice

1.45 -2.15   **Closing Plenary**
Professor Mary Dixon-Woods, Professor of Medical Sociology, University of Leicester, UK
What do doctors learn about quality and safety, and how do they learn it?

2.15   **Lunch and Close of conference**

2.30 – 4.30   **TASME meeting – (Trainees at ASME)**
open to all interested in attending

2.30 - 4.30   **Special Interest Group: Psychometric (Closed meeting)**

3.00 – 7.00   **Journal Board of Management and Strategy Meeting**
Closed meeting

**Official conference sponsor:**

The information in this document is correct at time of going to print. Changes may be made to scheduling, etc. Any such changes will be announced at the meeting and where possible advertised on notice boards at the venue.
Main Speaker Biosketches
Mary Dixon-Woods  
**Professor of Medical Sociology, Department of Health Sciences, School of Medicine, University of Leicester, Adrian Building, Leicester LE1 7RH, UK.**

Biography: Mary Dixon-Woods BA DipStat MSc DPhil is Professor of Medical Sociology at the Department of Health Sciences, School of Medicine, University of Leicester, UK, where she leads the Social Science Applied to Healthcare Improvement Research Group. Her research focuses on application of social science method and theory to important problems in healthcare. She has special interests in patient safety and healthcare improvement, healthcare ethics, and methods for synthesising diverse forms of evidence.

Mary's research programme is funded by the Economic and Social Research Council, the Medical Research Council, the Department of Health, the Health Foundation, Wellcome Trust, and others. She has published over 95 peer-reviewed articles, one book and five book chapters. Three of her papers have been short-listed for the Boots/Royal College of General Practitioners Paper of the Year award. One paper was selected for inclusion in Vintage Papers from the Lancet, a book of the most significant papers in The Lancet since 1823. A recent paper on quality improvement was selected as Milbank Quarterly's "featured article" for their June 2011 issue.

Mary is an associate editor of BMJ Quality and Safety, associate editor of BMC Medical Research Methodology, co-editor of Chronic Illness, and a member of the editorial boards for three further journals. She serves on the Wellcome Trust’s Expert Review Panel for Ethics and Society and the NIHR Health Services Research panel. She is a former member of the Medical Research Council's Methodology Research Programme, the NIHR Research for Patient Benefit Programme for the East Midlands the NIHR Programme for Applied Research, and the Hope Foundation.

Mary won the University of Leicester's Frank May prize 2005 in recognition of research excellence. Queen Mary, University of London, awarded her a Distinguished Visiting Fellowship in 2007 to pursue research on public trust in medical research - the only UK fellow in that year. She held a fellowship under the ESRC's Public Services Programme (2008-2009) to study regulation of doctors. She has been a member of the Health Foundation's Improvement Science Network since 2010. Mary was elected as an Academician of the Academy of Social Science in 2011.

Shiphra Ginsburg  
**Faculty of Medicine, University of Toronto**

Shiphra Ginsburg received her MDCM degree from McGill University in 1990 before completing postgraduate training at the University Toronto (Internal Medicine, 1994) and McMaster University (Respirology and Critical Care Medicine, 1995-96). She completed a Master’s degree in Higher Education (specialization in the Health Professions) at OISE/UT in 1999. Dr. Ginsburg is currently an Associate Professor (Medicine) at the University of Toronto and is on staff at Mount Sinai Hospital. She is cross-appointed as a Scientist at the Wilson Centre for Research in Education.

Her primary research program is focused on understanding and evaluating professionalism in medical education using qualitative methods (grounded theory) and mixed methods research. This work is continuing and extending into the practicing clinician domain. A second line of research involves understanding how clinical supervisors conceptualize and evaluate the clinical competence of their learners, again using mixed methods. Other research interests and areas of collaboration include the development of professional development and identity formation and education scholarship. Dr. Ginsburg’s research has been supported by the Medical Council of Canada, the Royal College of
Physicians and Surgeons of Canada and the National Board of Medical Examiners Stemmler Fund, among others.

Dr. Ginsburg has won several awards for her research, including most recently the 2011 G. Malcolm Brown Lectureship (co-awarded by the RCPSC and CIHR), and participates in professionalism initiatives at the local, national and international levels. Since 2009 she has served as Deputy Editor at the journal Medical Education, and is on the editorial board of Academic Medicine. She is also the current Kimball Scholar at the American Board of Internal Medicine. In her roles for the department, Dr. Ginsburg enjoys mentoring other faculty members in the development of their own research and scholarship.

Ara Tekian, PhD, MHPE
Associate Dean, University of Illinois at Chicago

Dr. Tekian is Associate Professor and the Director of International Affairs at the Department of Medical Education (DME), and the Associate Dean for the International Affairs at the College of Medicine, the University of Illinois at Chicago (UIC). He joined DME in 1992, and is involved in both teaching courses offered in the Master’s of Health Professions Education (MHPE) program and advising graduate students. He also teaches one of the major courses in the Masters in Patient Safety Leadership program. Prior to joining DME, he was the founding Director of the Medical Education Department at King Saud University, College of Medicine in Riyadh, Saudi Arabia (1983 – 1990). He served during the 80s and 90s as a consultant to the World Health Organization (WHO) Eastern Mediterranean Regional Office (EMRO) for projects in the Division of Development of Human Resources for Health. He also served as consultant to the Ministries of Health and Education in most of the Eastern Mediterranean countries. Dr. Tekian established a number of medical education departments/units in the Eastern Mediterranean countries.

Dr. Tekian is an internationally recognized scholar and leader in health professions education. He has organized and conducted over 150 workshops in more than 40 countries and 55 cities. His consultations and workshops have focused on curriculum development, assessment, program evaluation, and patient safety. He has received numerous honors and awards. In 1996, he was awarded an honorary doctorate by the Tashkent University in Uzbekistan. Dr. Tekian was the recipient of the 1997 Teaching Recognition Program Award from the University of Illinois (UIC) Council for Excellence in Teaching and Learning. He is the current President of the Division of Education in the Professions of the American Educational Research Association (AERA), which is a major venue for presentation of scholarship in health professions education. AERA is the leading international professional association for the field of education. His scholarship in health professions education is reflection in publications in the premiere medical education journals. He is the senior author of the book “Innovative Simulations for Assessing Professional Competence: From Paper-and-Pencil to Virtual Reality” published in 1999. His current research interests include curriculum planning and evaluation for medical schools, student assessment and innovative testing methodologies, instructional technology, medical simulations, patient safety, and international health professions education. Dr. Tekian has taught/consulted in the following countries: Canada, Switzerland, Austria, Germany, France, The Netherlands, Sweden, Armenia, Lithuania, Poland, Uzbekistan, Lebanon, Syria, Jordan, Saudi Arabia, Bahrain, United Arab Emirates, Qatar, Oman, Yemen, Sudan, Egypt, Tunis, Libya, Morocco, Nigeria, South Africa, Australia, Israel, Turkey, Pakistan, India, Iran, Thailand, Vietnam, Indonesia, Korea, Chile, Mexico, Argentina, and Brazil.
President’s Medal 2012
Dr Vincent Cooper

Vince Cooper was nominated for the 2012 President’s Award; the nomination was unanimously ratified at the Executive Committee meeting in December 2011.

Vince graduated in 1973 from Bristol University and has been involved in medical education since 1989. He gained a Masters in Medical Education in 2001 and was made a Fellow of the RCGP in 2006 and Fellow of the Higher Education Academy in 2007.

Previous Appointments
2006-2009 External Examiner to Warwick University School of Medicine
2002-2006 External Examiner to Leicester/Warwick Medical School
2000-2007 Senior Lecturer in Medical Education, Keele University
1988-2000 Course Organiser, North Staffs GP VTS
1981-2008 Principal in General Practice, Waterhouses Medical Practice, Staffordshire
1978-1981 Principal in General Practice, Beeston, Nottingham
1973-1978 Training posts in rotation, including 12 months in Canada

Teaching, supervision, course development and management
Vince was a medical teacher between 1988 and 2009, initially as a Course Organiser for GP vocational training, then in an academic post at Keele. He led the development of an academic pathway for GP training through the MMedSci (prototype for the Walport GP fellowships) and developed and led the Masters in Medical Education programme at Keele.

Vince is an advocate of professionalism within medical education, through scholarship and exchange of ideas and has always seen ASME as a key organisation in this endeavour.

Vince has been an active member of ASME for more than two decades, and as member of Executive since 2004, has contributed immensely to the developments the Association has made, particularly in recent years.

Most significantly, Vince has provided vital support for JASME over the last 4 years - giving this Special Interest Group the benefit of his experience, knowledge and expertise. This has allowed JASME to flourish and develop into the extremely active, highly functioning and highly effective group we see today.

Vince is also an active member of the Educator Development Group.

Vince was the local organiser for the very successful 2007 Golden Jubilee Annual Scientific Meeting at Keele and has co-ordinated a number of successful one day conferences for ASME over the past decade, including Students in Difficulty (London) and Student Clinical Placements (York).

The President’s Medal 2012 is awarded to Dr Vince Cooper. Presentation of the medal will take place at the Annual Dinner on 19th July 2012.
# Parallel Session Timetable

**Wednesday 18th July 2012, 2.15pm - 3.25pm**

<table>
<thead>
<tr>
<th>Chairperson, Theme &amp; Room</th>
<th>2.15-2.25pm</th>
<th>2.35-2.45pm</th>
<th>2.55-3.05pm</th>
<th>3.15-3.25pm</th>
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<tbody>
<tr>
<td><strong>ASME Awards:</strong> International Travelling Fellowship 2011 &amp; 2012; New Researcher Awards 2011</td>
<td><strong>International Travelling Fellowship 2011:</strong> Looking for the evidence base for clinical skills ‘over there’</td>
<td><strong>International Travelling Fellowship 2011:</strong> Does recent experience of good or poor performance influence assessors’ Mini-CEX score choices?</td>
<td><strong>International Travelling Fellowship 2012:</strong> The International Travelling Fellowship Experience</td>
<td><strong>New Researcher Award 2012 – Runner Up:</strong> The meaning of reflection for teaching skills: what does reflection mean to medical students who are learning to teach, and what is the effect of using different methods?</td>
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<tr>
<td>Auditorium 2</td>
<td>John Fraser</td>
<td>Peter Yeates</td>
<td>Allen Barnett</td>
<td>Jane Curry</td>
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<tr>
<td><strong>Assessment</strong></td>
<td><strong>Jean McKendree</strong></td>
<td><strong>Assessment</strong></td>
<td><strong>Susan Jones</strong></td>
<td><strong>Assessment</strong></td>
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<tr>
<td>2.15-2.25pm</td>
<td>“I don’t want them working alongside me”: assessing underperformance of physiotherapy students on clinical placement</td>
<td>Designing virtual patients to teach clinical reasoning: a randomised controlled multi-centre factorial study</td>
<td>Workplace based assessments: used or abused?</td>
<td>The use of cumulative sum charts as a self-regulation tool</td>
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<tr>
<td><strong>Teaching &amp; Learning</strong></td>
<td><strong>Syndicate 1</strong></td>
<td><strong>Teaching &amp; Learning</strong></td>
<td><strong>Syndicate 2</strong></td>
<td><strong>Teaching &amp; Learning</strong></td>
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<tr>
<td>2.35-2.45pm</td>
<td>Educational Interventions to Change Behaviour of Prescribers in Hospital Settings: a Systematic Review</td>
<td>Students’ Perspectives of Clerking Portfolios as a Means of Learning During Their Clinical Attachments</td>
<td>What are clinical medical students’ experiences of early clinical experience? A retrospective qualitative study</td>
<td>Training by trainees? Evaluation and assessment of a peer-to-peer led surgical teaching programme for medical students</td>
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<td>2.55-3.05pm</td>
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<td>3.15-3.25pm</td>
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<td><strong>Syndicate 3</strong></td>
<td><strong>Galen Nochman</strong></td>
<td><strong>Teaching &amp; Learning</strong></td>
<td><strong>Syndicate 4</strong></td>
<td><strong>Teaching &amp; Learning</strong></td>
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<td>2.15-2.25pm</td>
<td>Preparing to be a Professional-Incorporating Professionalism into a New Medical Curriculum</td>
<td>How well prepared are F1 doctors to manage diabetic patients in hospital settings and can this be improved through an educational intervention?</td>
<td>Taking a ‘six hats’ approach to course evaluation</td>
<td>Beyond the de facto curriculum – making post exams learning fun</td>
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<td>How can we enhance undergraduate medical training in the operating theatre? A survey of student attitudes and opinions</td>
<td>Medical students’ narratives of their learning experiences in a community setting</td>
<td>High realism simulation: students enjoy a stressful learning environment and their confidence remains intact!</td>
<td>A Novel Approach of Teaching Empathy to Pharmacy Students</td>
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<td>2.15-2.25pm</td>
<td>Are students closing the book on learning?</td>
<td>Pastoral care in tutorials – Do students get it?</td>
<td>Beyond the de facto curriculum – making post exams learning fun</td>
<td>Educational interventions on non-technical skills for health professionals to enhance patient safety: A systematic review</td>
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<td><strong>Management &amp; Administration; Professionalism</strong></td>
<td><strong>Sarah Yardley &amp; Emily Tate</strong></td>
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<td>Saving For A Rainy Day: In the current climate of NHS ecomomisation, how much do healthcare professionals really know about healthcare costs?</td>
<td>Developing leadership capacity and resilience in foundation trainees through an academic training programme</td>
<td>Do Financial Concerns in Medical Students Lead to Perceived Challenges in Learning?</td>
<td>FY1 Tutor Bedside Teaching Programme - an innovative method to enhance access to bedside clinical teaching to Year 3 medical students</td>
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<td>Auditorium 2</td>
<td>New Researcher Award 2012 – Winner: As easy as ABC?: Exploring and understanding the challenges faced by newly qualified doctors in acute care contexts</td>
<td>Vicky Tallentire</td>
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<td>ASME Awards: Small Grant Award 2011: The communication skills of medical students: video analysis, OSCE scores and Emotional Intelligence</td>
<td>Gemma Cherry</td>
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<td>ASME Awards: Small Grant Award 2011: Learning Together In The Clinical Setting - Peer Teaching at the Bedside</td>
<td>Denaith Bennett</td>
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<td>Assessment of Clinical Teaching: a qualitative evaluation of a Web-based instrument to improve trainee feedback</td>
<td>Josephine Wright</td>
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<td>Teaching skills workshop for junior doctors: easing the transition from student to medical educator.</td>
<td>Priyanka Sinha &amp; Sally Corbett; Simon Tso &amp; Eleanor Wood</td>
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<td>Introduction of undergraduate medical student 'surgical on-call portfolios'</td>
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<td>Teaching &amp; Learning: The Top 10 Diagnostic Errors in Paediatrics: new focus for training?</td>
<td>Hannah Jacob</td>
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<td>End-of-Week Reflective Meetings Support Clinical Assistantships and Acute and Critical Care Training</td>
<td>Zoe Cousland</td>
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<td>Clinical Examination Videos: with or without commentary? Why not both</td>
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<td>Teaching &amp; Learning: 'I have a life, not just an illness’. Encouraging patient-centred approaches to clinical clerking</td>
<td>Kerry Boardman</td>
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<td>A systematic literature review investigating undergraduate exposure to underserved, difficult and deprived areas</td>
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<td>The development of a course on teaching for core surgical and core medical trainees</td>
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<td>Teaching &amp; Learning: A novel electronic learning tool to facilitate preparation for the Prescribing Skills Assessment</td>
<td>Sangeetha Rajoo</td>
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<td>Intercalated degrees - What do we really know about them?</td>
<td>Sahib Ahmad</td>
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<td>Rheumatology Simulated Ward Round: Patients, students and doctors; the value of working together in simulated ward rounds</td>
<td>Lisa Dunkley</td>
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<td>Continuing Education: Reading anatomy before an imaging tutorial – is there evidence that it aids interpretation of chest radiographs?</td>
<td>Hannah Bland</td>
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<td>Does patient gender affect student learning in the clinical setting?</td>
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<td>Information resource use by doctors, trainees and medical students, and the rationales for their choices</td>
<td>Sarah Edwards</td>
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<td>Management &amp; Administration; Professionalism: 'I chose to say nothing': Medical students’ explanations of their behaviour in the face of professionalism dilemmas around patient care</td>
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### Thursday 19th July 2012, 10.20am - 12.45pm

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<td>ASME Awards; Small Grant award 2010, Sir John Ellis 2012 runners up, Clinical Skills; Staff/Faculty Development</td>
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<td>Sarah Ross</td>
<td>Jonathan Squibbs</td>
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<td>Exploring perceptions of workplace based assessment in UK postgraduate training</td>
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<td>Vicky Talent</td>
<td>Judy McKinnon</td>
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<td>Lesley Puglisey</td>
<td>A tale of two cohorts: Foundation doctors information-seeking practice in the workplace</td>
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<td>Lynn Monrouxe &amp; Dev Rajani</td>
<td>Exploring Foundation Doctors' Clinical Reasoning Skills within Workplace-based Learning: a National Multi-Centre Study</td>
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<td>Simon Gay</td>
<td>Julie Smith</td>
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<td>Phil Cotton &amp; Rebecca Cromptone</td>
<td>Analysis of an undergraduate clinical reasoning programme using a diagnostic inventory</td>
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<td>Isram Haji &amp; Ashley Newton</td>
<td>Preventive Cardiology: A Unique Medical Curriculum Development</td>
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<td>Patricia McGettigan</td>
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<td>Optimising student experience: an innovative and integrated tutor support</td>
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<td>EXCEL Scheme - Early exposure to clinical exam-based learning: Experiences</td>
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<td>Paul Lyon &amp; Daniel Bould</td>
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<td>Changing Perceptions in the Care of People with Learning Disabilities:</td>
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<td>The Impact of a Student Selected Component on Medical Students'</td>
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<td>Female Genital Mutilation - enabling students to explore the international</td>
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<td>Teaching and learning professionalism – are teachers and learners in</td>
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<td>Hannah Bland</td>
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<td>Northwest London Hospitals Trust - The 'Inter-specialty' Undergraduate</td>
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<td>Josephine Wright</td>
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<td>The relationship between personality traits, self-report conscientiousness</td>
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<td>and academic performance in undergraduate medical students</td>
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<td>Gabrielle Fin</td>
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<td>Non-linear Presentation - beyond bullet points</td>
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<td>Improving student experience of the Operating Theatre by use of a 'real</td>
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<td>The students' story: a medical student view of professionalism in practice</td>
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<td>Multiprofessional Education</td>
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<td>Students self ratings as teachers improve with attendance at a compulsory</td>
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<td>teaching skills course; use of a simple visual analogue scale evaluation</td>
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<td>Amardeep Riyad</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
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<tr>
<td>12.20-12.30pm</td>
<td>ASME Awards; Clinical Skills; Staff/Faculty Development</td>
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<tr>
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<td>Sir John Ellis runner up 2012: Learning pelvic examination with and</td>
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<td></td>
<td>without clinical teaching associates</td>
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<tr>
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<td>Sam Matthew Lynn</td>
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<td>12.20-12.30pm</td>
<td>Assessment</td>
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<td>Is conscientious behaviour in medical students modified by teaching and</td>
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<td>clinical exposure?</td>
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<td>Andrew Chacon</td>
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<td>12.20-12.30pm</td>
<td>Teaching &amp; Learning</td>
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<td>Short and long term retention of teaching skills of medical practitioners</td>
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<td>Teaching &amp; Learning</td>
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<td>Smartphones and medical education: the MoMEd initiative</td>
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<td>Anna Jones</td>
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<td>12.20-12.30pm</td>
<td>New Technologies</td>
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<td>Prevalence and persistence of depression among men and women during</td>
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<tr>
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<td>undergraduate medical training: a longitudinal study in one medical school</td>
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<td>12.20-12.30pm</td>
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<td>the Endoscopy Unit focusing on patient safety and patient centredness</td>
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</tr>
<tr>
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</tbody>
</table>
### Friday 20th July 2012, 9.35 - 10.35pm (11.05am in meeting room 6)

<table>
<thead>
<tr>
<th>Theme &amp; Room</th>
<th>9.35-9.45am</th>
<th>9.55-10.05am</th>
<th>10.15-10.25am</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chairperson, Theme &amp; Room</strong></td>
<td>Mark Lillicrap</td>
<td>Lesley Pygell</td>
<td>Jean McKendree</td>
</tr>
<tr>
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<td>Mark Lillicrap</td>
<td>Lesley Pygell</td>
<td>Jean McKendree</td>
</tr>
<tr>
<td><strong>Meeting Room 3</strong></td>
<td>Alastair Matheson</td>
<td>Simon Atkinson</td>
<td>Charlotte Rees</td>
</tr>
<tr>
<td><strong>Meeting Room 5</strong></td>
<td>Mark Carroll</td>
<td>Wesley Scott-Smith</td>
<td>Rama Jayaraman</td>
</tr>
<tr>
<td><strong>Meeting Room 6</strong></td>
<td>Maureen Kelly</td>
<td>Caroline Elton</td>
<td>Jean Ker</td>
</tr>
</tbody>
</table>

#### Syndicate 1
- **Theme:** Mentoring; Patient Voice; Leadership & Mentoring
- **Chair:** Charlotte Thomson
- **Speakers:** Sean Stauge, Harpreet Sood
- **9.35-9.45am:** Is a near-peer e-mentoring scheme a feasible solution to the problem of providing mentoring to female surgeons?
- **9.55-10.05am:** Virtual Patients with Rare Diseases: facilitating learning for students, health professionals and patients
- **10.15-10.25am:** Clinical Leadership – Developing a non-clinical based internship network for medical students

#### Syndicate 2
- **Theme:** Assessment
- **Chair:** Lesley Pygell
- **Speakers:** Jonathan Carladge, Kate Iypontio & Michael Page
- **9.35-9.45am:** A peer-based assessment tool to support earlier identification of the trainee in difficulty
- **9.55-10.05am:** The portfolio viva circuit (PVC) – a novel approach to portfolio assessment
- **10.15-10.25am:** Learning from patients: does patient assessment add value in OSCEs?

#### Syndicate 3
- **Theme:** Teaching & Learning
- **Chair:** Lesley Pygell
- **Speakers:** Jean McKendree
- **9.35-9.45am:** Medical Students and Spirituality
- **9.55-10.05am:** The association of familiarity and error: Investigating the prescribing accuracy of Foundation doctors on a variety of Scottish drug charts
- **10.15-10.25am:** Smoking cessation assessment: student engagement with an online approach

#### Syndicate 4
- **Theme:** International Medical Education
- **Chair:** Lesley Pygell
- **Speakers:** Ann Wyle
- **9.35-9.45am:** CANCELLED
- **9.55-10.05am:** Wikipedia as a Medical Resource: Questionnaire assessment of Medical Student Use and Views
- **10.15-10.25am:** BSc intercalation. Time for a re-think

#### Syndicate 5
- **Theme:** Syndicate 5
- **Chair:** Lesley Pygell
- **Speakers:** Jonathan Carladge, Kate Iypontio & Michael Page
- **9.35-9.45am:** Medical Students and Spirituality
- **9.55-10.05am:** The association of familiarity and error: Investigating the prescribing accuracy of Foundation doctors on a variety of Scottish drug charts
- **10.15-10.25am:** Smoking cessation assessment: student engagement with an online approach

#### Syndicate 6
- **Theme:** ASME Awards; EDG Travelling Fellowships 2011
- **Chair:** Maureen Kelly
- **Speakers:** Caroline Elton
- **9.35-9.45am:** Medical Student Selection
- **9.55-10.05am:** Two heads are better than one: theory meets practice in the field of medical career development
- **10.15-10.25am:** A professional and personal journey on an ASME Travelling fellowship - in pursuit of quality

#### Meeting Room 3
- **Theme:** Selection; Student Abuse within the Workplace
- **Chair:** Alastair Matheson
- **Speakers:** Simon Atkinson
- **9.35-9.45am:** Does the UKCAT predict Year four examination results at medical school?
- **9.55-10.05am:** An Access to Medicine Summer School: Did it Work and What Next?*
- **10.15-10.25am:** “Oh that student’s starting to get on my nerves”: a multi-school qualitative study of healthcare student abuse

#### Meeting Room 5
- **Theme:** Diagnostic Reasoning in Undergraduates; Workplace-based Assessment
- **Chair:** Mark Carroll
- **Speakers:** Wesley Scott-Smith
- **9.35-9.45am:** Students’ proficiency in languages other than English: a survey
- **9.55-10.05am:** Diagnostic reasoning in medical students using a simulated environment
- **10.15-10.25am:** The Role of Case-based Discussion in Teaching and Learning in Oncology

#### Meeting Room 6
- **Theme:** Medical Student Selection
- **Chair:** Maureen Kelly
- **Speakers:** Caroline Elton
- **9.35-9.45am:** Medical Student Selection
- **9.55-10.05am:** Two heads are better than one: theory meets practice in the field of medical career development
- **10.15-10.25am:** A professional and personal journey on an ASME Travelling fellowship - in pursuit of quality
Members’ Abstracts: Presented in Parallel Sessions
ASME Awards

Sir John Ellis Student Prize 2012
Intercalated Category
Winner: Medical Student Perspectives of what makes a High Quality Teaching Practice
J Macallan 35

Runner Up: What factors do third year medical students identify as being involved in the transfer of their skills from a simulated to real environment?
J Squibbs 37

SSM Category
Runner Up: Learning pelvic examination with and without Clinical Teaching Associates at the Great Western Hospital, Swindon
S M Lynn 39

International Travelling Fellowship 2011: Looking for the evidence base for clinical skills 'over there'
J Frain 41

International Travelling Fellowship 2011: Does recent experience of good or poor performance influence assessors' Mini-CEX score choices?
P Yeates 42
P O'Neill
K Mann
K Eva

International Travelling Fellowship 2012: The International Travelling Fellowship Experience
A Barrett 43

New Researcher Award 2012 Runner Up: The meaning of reflection for teaching skills: what does reflection mean to medical students who are learning to teach, and what is the effect of using different methods of reflection on its meaning?
J Currie 44

New Researcher Award 2012 Winner: As easy as ABC?: Exploring and understanding the challenges faced by newly qualified doctors in acute care contexts
VR Tallentire 45
S E Smith
J Skinner
H S Cameron

Small Grant 2011: The communication skills of medical students: video analysis, OSCE scores and Emotional Intelligence
G Cherry 46
I Fletcher
H O'Sullivan

Small Grant 2011: Learning Together in The Clinical Setting - Peer Teaching at the Bedside
D Bennett 47
M Kelly
S O'Flynn

Small Grant 2010: Medical students' beliefs about illness: Questionnaire development
S Ross 48
M von Fragstein
J Cleland

EDG Travelling Fellowship 2011: Two heads are better than one: theory meets practice in the field of medical career development
C Elton 49
N Borges

EDG Travelling Fellowship 2011: A professional and personal journey on an ASME Travelling fellowship in pursuit of quality
J Ker 50

EDG Travelling Fellowship 2011: Medical student selection
M Kelly 51

Assessment
“I don't want them working alongside me”: assessing underperformance of physiotherapy students on clinical placement
J Cleland 53
F Roberts

Designing virtual patients to teach clinical reasoning: a randomised controlled multi-centre factorial study
J Bateman 54
M E Allen
D Davies

Learning from patients: does patient assessment add value in OSCEs?
M R Finlay 55
R K MacKenzie
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching skills workshop for junior doctors: easing the transition from student to medical educator.</td>
<td>S Tso, E Wood</td>
<td>57</td>
</tr>
<tr>
<td>Developing a Taxonomy of Professionalism</td>
<td>M Brown, A Byrne, J McKimm</td>
<td>58</td>
</tr>
<tr>
<td>Measuring the quality of written summaries of workplace based assessments: A reliable system</td>
<td>M H Bartlett, R K McKinley, J Crossley</td>
<td>59</td>
</tr>
<tr>
<td>Candidate marking using tablet computers in an Objective Structured Clinical Exam</td>
<td>A Revolta, A Lobban, G Benzie, M Leggate, A Denison, N M Hamilton</td>
<td>60</td>
</tr>
<tr>
<td>Workplace based assessments: used or abused?</td>
<td>CE Thomas, A J Beamish, J A Cornish, W G Lewis, G W B Clark</td>
<td>61</td>
</tr>
<tr>
<td>The use of cumulative sum charts as a self-regulation tool</td>
<td>S E Smith, V R Tallentire, S M Wood, H S Cameron</td>
<td>62</td>
</tr>
<tr>
<td>Workplace-Based Assessment: Student Perception at a London Medical School</td>
<td>A Nesbitt, F Baird, B Canning, A Griffin, A Sturrock</td>
<td>63</td>
</tr>
<tr>
<td>The relationship between personality traits, self-report conscientiousness the Conscientiousness Index and academic performance in undergraduate medical students</td>
<td>G M Finn, M Carter, M Sawdon, N Thompson, P Tiffin</td>
<td>64</td>
</tr>
<tr>
<td>Introduction of undergraduate medical student 'surgical on-call portfolios'</td>
<td>J Wright, S Mallappa, N Patani, K Patel A Jethwa, J Pitkin</td>
<td>65</td>
</tr>
<tr>
<td>Is conscientious behaviour in medical students modified by teaching and clinical exposure?</td>
<td>A T Chaytor, J C McLachlan</td>
<td>66</td>
</tr>
</tbody>
</table>
A peer-based assessment tool to support earlier identification of the trainee in difficulty

J Pringle
H R Scott
M Lough
M McConnell
A Todd
M Russell

The portfolio viva circuit (PVC) – a novel approach to portfolio assessment

M Page
J Cartledge
K Ippolito
D Parry
W Wade
J Horsburgh

Exploring perceptions of workplace based assessment in UK postgraduate training

V R Tallentire
S E Smith
N Dewhurst

Basic Science Education
A new preclinical-year revision course designed and taught by clinical-year students: Analysis of tutees perceived confidence in an innovative teaching model.

M Protty
J Mann
M Mohammed
R Holder
C Wiskin

Do third year undergraduate medical students at Barts and The London School of Medicine and Dentistry find endoscopy screen-based simulation useful in meeting the MET3a (Surgery, Gastroenterology, Anaesthetics and Peri-operative Care) learning objectives?

K Jack
JB Maurice
E Wood

Medical students as educational auteurs: making a short film about sex

S J Atkinson
K Hillyard
B Jones
K Rajnauth
B Smith
J Walmsley
K Walsh

Clinical Skills
Does an 8 week undergraduate attachment in Reproductive Health and Care of the Newborn (RHCN) enable Medical Students to detect a pelvic mass in bimanual pelvic examination?

S Platt
S Edwards
J Crofts
J Mears

Communication Skills
Students’ proficiency in languages other than English: a survey

M Carroll

Continuing Education
Educational interventions on non-technical skills for health professionals to enhance patient safety: A systematic review

M Gordon
D Darbyshire
P Baker

Reading anatomy before an imaging tutorial – is there evidence that it aids interpretation of chest radiographs?

H Bland
N Hannaway
J Carter
P Fletcher
C D Rodd

Does patient gender affect student learning in the clinical setting?

H Bland
N Hannaway
J Carter
P Fletcher
C D Rodd
Are students closing the book on learning? J Carter  
N Hannaway  
H Bland  
P Fletcher  
CD Rodd  

Pastoral care in tutorials – Do students get it? J Carter  
N Hannaway  
H Bland  
P Fletcher  
C D Rodd  

Beyond the de facto curriculum – making post exams learning fun J Carter  
N Hannaway  
H Bland  
P Fletcher  
C D Rodd  

Information resource use by doctors, trainees and medical students, and the rationales for their choices S Edwards  
N Brennan  
K Mattick  
A Miller  
L Harrower  
N Kelly  

Contextualised learning of basic sciences for Foundation Doctors using Virtual Patients S Choi  
A Webb  
S J Slaght  

Survival of the fittest: Using in-hours time to bridge the gap in out of hours experience L McCluskey  
J Chalmers  
B Sienewicz  
A J Portal  

How do Medical Students View their Learning Opportunities? N Hannaway  
J Carter  
H Bland  
P Fletcher  
C D Rodd  

The use of Clinical Teaching Associates to improve students' confidence in performing gynaecological examinations: a comparative study M O'Sullivan  
S Lynn  
A Sinha  
K Jones  

**Curriculum Planning**  
The development of medical students’ and foundation doctors’ tolerance of ambiguity J Hancock  
K Mattick  
L Monrouxe  

Do the experiences of medical students match the General Medical Council (GMC) objectives for Student Selected Components (SSCs) in the medical curriculum? J Ho  
K Ippolito  

**Diagnostic Reasoning in Undergraduates**  
Diagnostic reasoning in medical students using a simulated environment W Scott-Smith  

**International Medical Education**  
Engaging current and potential medical students in clinical research during an elective hospital attachment: a qualitative study A D Sihoe  
H Clin  
LK Shing
Distribution change of physicians on specialist training in Japan
S Koike
H Ide
H Yasunaga
T Kodama
S Matsumoto
T Imamura

Attitudes to medical student selection – analysis of key stakeholders’ attitudes and perceptions of student selection
J Brown
B Griffin

A comparison of preparedness for practice between Irish & English medical graduates in order to better inform curriculum design
M Kelly
D Storan
C Matheson
D Matheson

An innovative method to encouraging learning on the subject of pharmacology in undergraduate medical students
F Hickey
R Knight
A Hastings

BSc intercalation. Time for a re-think
K Sharma
J Williamson
A Parekh

Wikipedia as a Medical Resource: Questionnaire assessment of Medical Student Use and Views
V Patel
D Bargiela
M T Holland-Elliott
R Jurangpathy
J Currie

Leadership and Management in Medical Education
Clinical Leadership – Developing a non-clinical based internship network for medical students
H S Sood
E Stanton
C Lemer

Management/Administration
Saving For A Rainy Day: In the current climate of NHS economisation, how much do healthcare professionals really know about healthcare costs?
L McCluskey
A Fairfield
D Allaway
K Schwodler
H Wright
A Tingay
A Gee
S Wood
A McAdam

Developing leadership capacity and resilience in foundation trainees through an academic training programme
J McKimm
K Forrest
R Wright

Do Financial Concerns in Medical Students Lead to Perceived Challenges in Learning?
N Hannaway
J Carter
H Bland
C D Rodd
P Fletcher

‘FY1 Tutor Bedside Teaching Programme’ – an innovative method to enhance access to bedside clinical teaching to Year 3 medical students
S Mallappa
R Soobrah
J Wright
J Clarke
J Houston
N Patani
A Riyat
A Jethwa
A Mahmoud
J Pitkin
Mentoring
Is a near-peer e-mentoring scheme a feasible solution to the problem of providing mentoring to female surgeons?  
C E Thomas  

Multi-professional Education
Exploring perceptions of professional identity of health and social care professionals through experiences of interprofessional education
V Joynes  

Inter Professional Education (IPE) in practice: how a peer-led ‘teaching how to teach’ course can increase undergraduate knowledge, skills and confidence
F Frame  
R Jay  
A Seager  
A Hastings  

What makes a good FY1 doctor?  Developing a tool to assess multidisciplinary teamworking
P McGettigan  
N Reed  
J McKendree  

Can a pharmacist-taught course in practical prescribing improve final year medical students’ ability to prescribe?
V Tittle  
D Randall  
V Maheswaran  
A J Webb  
S J Quantrill  
C M Roberts  

Teaching and learning professionalism – are teachers and learners in harmony?
H Bland  
H Nageswaran  
N Hannaway  
J Carter  
P Fletcher  
C D Rodd  

Students self ratings as teachers improve with attendance at a compulsory teaching skills course; use of a simple visual analogue scale evaluation tool
A Riyat  
J Currie  
N Salooja  

The use of simulation in promoting multi-disciplinary team working within the Endoscopy Unit focusing on patient safety and patient centredness
E Wood  
V Dimmick  

New Technologies
The iSurgery - a contemporary surgical simulator  
M Tahir  
C R Davis  

Does digital engagement predict academic success?
M Leggate  
A Denison  
I Robotham  
L Aucott  
S Davies  
N Hamilton  

Situation Awareness Feedback in Critical Illness Simulation: The Keele Experience
C L Shelton  
L J Ambrose  
J Bagguley  
R K Kinston  

‘iTreat’: Increasing time to work and streamlining clinical and educational activities for Junior Doctors via the introduction of a Hospital linked iPhone software application
K F B Payne  
J Cooper  
L Weeks  
K Watts  
H J Wharrad
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook versus a University Virtual Learning Environment; Is There ...</td>
<td>M S Nassrally E M Mitchell J D P Bond C H Hariman J Bateman</td>
<td>125</td>
</tr>
<tr>
<td>The students’ story: a medical student view of professionalism in ...</td>
<td>J L Johnston M Corrigan C Thomson K McGlade</td>
<td>126</td>
</tr>
<tr>
<td>Use of technology to determine confidence and knowledge in dealing w ...</td>
<td>J Kirtley R Westacott C Thompson J Trew R Baines S Carr</td>
<td>127</td>
</tr>
<tr>
<td>Patient Voice</td>
<td>S J Slaght A Webb S Choi</td>
<td>129</td>
</tr>
<tr>
<td>Virtual Patients with Rare Diseases: facilitating learning for students, health professionals and patients</td>
<td>J Cleland P W Johnston L Walker G Needham</td>
<td>131</td>
</tr>
<tr>
<td>Postgraduate Education</td>
<td>P W Johnston K Gibson J A Cleland</td>
<td>132</td>
</tr>
<tr>
<td>Attracting healthcare professionals to remote and rural medicine: le ...</td>
<td>M Al-Jawad R Robinson</td>
<td>133</td>
</tr>
<tr>
<td>Are medical career preferences now about life and living rather than ...</td>
<td>A J Beamish C E Thomas A M Jones W G Lewis G W B Clark</td>
<td>134</td>
</tr>
<tr>
<td>Research-based learning: a new approach for a new MSc in Geriatric Medicine</td>
<td>D Dasgupta V Dimmock E Wood</td>
<td>135</td>
</tr>
<tr>
<td>Core Surgical Trainee satisfaction with higher trainee led regional de ...</td>
<td>L V Monrouxe C E Rees D W Joyce S Wells</td>
<td>139</td>
</tr>
<tr>
<td>Simulation based multi-professional training program for Geriatric Med ...</td>
<td>L V Monrouxe C E Rees L A McDonald</td>
<td>140</td>
</tr>
<tr>
<td>Why does a twittering doctor tweet?</td>
<td>A M Cunningham</td>
<td>136</td>
</tr>
<tr>
<td>Professionalism</td>
<td>C E Rees L A McDonald L V Monrouxe</td>
<td>138</td>
</tr>
<tr>
<td>“I chose to say nothing”: Medical students’ explanations of their behaviour in the face of professionalism dilemmas around patient care</td>
<td>L V Monrouxe C E Rees D W Joyce S Wells</td>
<td>139</td>
</tr>
<tr>
<td>Professionalism dilemmas during workplace learning: The impact of frequency of occurrence and gender on students’ moral distress</td>
<td>L V Monrouxe C E Rees L A McDonald</td>
<td>140</td>
</tr>
<tr>
<td>Medical students’ intimate examination dilemmas: frequency, moral distress and students’ explanations of their behaviours</td>
<td>R MacKenzie A Mathieson</td>
<td>142</td>
</tr>
<tr>
<td>Selection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the UKCAT predict Year four examination results at medical school?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
An Access to Medicine Summer School: Did it Work and What Next?  
S J Atkinson  
D J Cahill  

Staff/Faculty Development  
Bristol's Clinical Teaching Fellows – Where Are They Now?  
D Little  

Optimising student experience: an innovative and integrated tutor support and development programme’  
J Henderson  
A Hammond  

Northwest London Hospitals Trust - The ‘Inter-specialty’ Undergraduate Teaching Fellow Experience  
J Wright  
S Mallappa  
N Pattani  
A Raghupathi  
K Patel  
J Millard  
A Riyat  
S Koury  
A Kamran  
M Ross  
A Jethwa  
R Suuba  
J Thompson  
J Pitkin  

Experimenting with reflection: how students respond to a non-structured reflective task on a teaching skills course  
J Currie  
A Riyat  
N Salooja  

Student Abuse Within the Workplace  
“Oh that student’s starting to get on my nerves”: a multi-school qualitative study of healthcare student abuse  
C E Rees  
L V Monrouxe  
E F Ternan  

Student Welfare  
Prevalence and persistence of depression among men and women during undergraduate medical training: a longitudinal study in one medical school  
J Benson  
T Quince  
R Parker  
D Wood  

Teaching About Specific Subjects  
Preventive Cardiology: A Unique Medical Curriculum Development  
M Mustafa  
G Naik  
K Phillips  
K Savage  
S Rollnick  
A Edwards  

“How do I tell a patient they’re fat?” – Exploring the challenges of health promotion and disease prevention through the use of case studies in Primary Care  
A Wylie  
R Sugden  
Y Takeda  
K Leedham-Green  
R Paul  

Psychiatry: Junior doctors’ preparedness for practice and desire to specialise in psychiatry and factors in undergraduate training influencing this  
E F W Peagam  
P Baker  

Case-based reports: Integrating the learning of Medical Ethics and Law into Clinical Practice  
P Vivekananda-Schmidt  
A H Burnett  
B J Holden  

Female Genital Mutilation - enabling students to explore the international and national prevalence, presentation and prevention programmes; Feedback from a student lead Global health workshop  
A Wylie  
P Gahunia
<table>
<thead>
<tr>
<th>Topic</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching and Learning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students’ Perspectives of Clerking Portfolios as a Means of</td>
<td>T Farmer, A Martin</td>
<td>160</td>
</tr>
<tr>
<td>Learning During Their Clinical Attachments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The impact of different virtual patient designs: a qualitative</td>
<td>J Bateman, D Samani, M E Allen, D Davies</td>
<td>161</td>
</tr>
<tr>
<td>grounded theory focus group study</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What are clinical medical students’ experiences of early clinical</td>
<td>H Williamson, R Knox, A Hampshire</td>
<td>162</td>
</tr>
<tr>
<td>experience? A retrospective qualitative study</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training by trainees? Evaluation and assessment of a peer-to-</td>
<td>J Isherwood, T Boam, P Solanki, A Durst, J Yeung</td>
<td>163</td>
</tr>
<tr>
<td>peer led surgical teaching programme for medical students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Top 10 Diagnostic Errors in Paediatrics: a new focus for training?</td>
<td>HC Jacob, JE Raine</td>
<td>164</td>
</tr>
<tr>
<td>How Do They Cope? The transition into Year 1, Case-based Learning</td>
<td>L Raw, A Tonkin, R Peterson, A Jones</td>
<td>165</td>
</tr>
<tr>
<td>(CBL) Medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXCEL Scheme - Early exposure to clinical exam-focused learning:</td>
<td>P C Lyon, D Boctor</td>
<td>166</td>
</tr>
<tr>
<td>Experiences of a focused clinical teaching program for medical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>students in the first clinical year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A tale of two cohorts: Foundation doctors information-seeking</td>
<td>W Hardyman, A Bullock, A Brown, S Carter-Ingram, M Stacey</td>
<td>167</td>
</tr>
<tr>
<td>practice in the workplace</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-linear Presentation – beyond bullet points</td>
<td>B Hole</td>
<td>168</td>
</tr>
<tr>
<td>End-of-Week Reflective Meetings Support Clinical Assistantships and</td>
<td>C L Shelton, Z Cousland, R K Kinston</td>
<td>169</td>
</tr>
<tr>
<td>Acute and Critical Care Training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short and long term retention of teaching skills of medical</td>
<td>C Matheson</td>
<td>170</td>
</tr>
<tr>
<td>practitioners after attending a two day Teaching Improvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Scheme course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparing to be a Professional-Incorporating Professionalism into a</td>
<td>R McNamara, S O’Hanlon, D McGrath, P Finucane, S Walsh, L Crowley, Y Velupillai</td>
<td>171</td>
</tr>
<tr>
<td>New Medical Curriculum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How well prepared are F1 doctors to manage diabetic patients in</td>
<td>K Brandom, K Mattick, D Bristow, R O’Brien, H Lockett, N Kelly, B Kluettgens</td>
<td>172</td>
</tr>
<tr>
<td>hospital settings and can this be improved through an educational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>intervention?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Smoking cessation assessment: student engagement with an online approach

A Wylie
Y Takeda
K Leedham-Green

Taking a ‘six hats’ approach to course evaluation

E Fowler

Year 5 Community Service-Learning Projects—an opportunity for medical students to develop leadership skills or “the sort of thing we did to get into medical school”?

P Coventry
H Derbyshire

“I have a life, not just an illness”. Encouraging patient-centred approaches to clinical clerking

K Boardman
Y Takeda
K Leedham-Green
A Wylie

A systematic literature review investigating undergraduate exposure to underserved, difficult and deprived areas

P Crampton
J McLaChlan
J Illing

The development of a course on teaching for core surgical and core medical trainees

R Robinson
A Josephy
V Brook
E Hawkins

Medical Students and Spirituality

M Finlay
A Revolta
J Cleland
M Moffat

Exploring the effect of contribution to patient care on medical student workplace learning

S E Smith
V R Tallentire
H S Cameron
S M Wood

Analysis of an undergraduate clinical reasoning programme using a diagnostic inventory

S P Gay
M H Bartlett
R K McKinley

Exploring Foundation Doctors’ Clinical Reasoning Skills within Workplace-based Learning: a National Multi-Centre Study

J M Smith
C Rees
JS Ker

Online professionalism: a vital consideration for the Facebook generation

S O’Hanlon

Can medical students transfer skills performance in early rescue of deterioration from the class room to a simulated health care environment? An exploratory study using RADAR

G Hogg
J Ker
D Miller

Changing Perceptions in the Care of People with Learning Disabilities: ‘The Impact of a Student Selected Component on Medical Students’ Attitudes

P Christie
G Keith
R Muirhead
G Hogg
J Ker

Exploring the role of metacognition in prescribing education

L McLellan
M Tully
A B H de Bruin
T Dornan
Smartphones and medical education: the MoMEd initiative
A Jones
T Vincent
J Fairclough
M Packer
B Davies
I Haq
187

How can we enhance undergraduate medical training in the operating theatre? A survey of student attitudes and opinions
S J Chapman
A R Hakeem
G Marangoni
K R Prasad
188

Clinical Examination Videos: with or without commentary? Why not both
K Sharma
J Davies
D Seddon
R Gama
S Nugent
J Patel
V Ahluwalia
189

Medical students’ narratives of their learning experiences in a community setting
R Lindley
L Monrouxe
190

High realism simulation: students enjoy a stressful learning environment and their confidence remains intact!
L Macdougall
R Martin
I McCallum
C Huntley
E Grogan
191

A Novel Approach of Teaching Empathy to Pharmacy Students
A MacAdam
S Williams
192

A novel electronic learning tool to facilitate preparation for the Prescribing Skills Assessment
S G Rajoo
F L Ng
M Lobo
193

Intercalated degrees - What do we really know about them?
S Abbasi
A Timm
194

Rheumatology Simulated Ward Round: Patients, students and doctors; the value of working together in simulated ward rounds
L A Dunkley
M Hague
E Hudson
195

The association of familiarity and error: Investigating the prescribing accuracy of Foundation doctors on a variety of Scottish drug charts
V R Tallentire
R L Hale
S L Brito-Mutunayagam
S R J Maxwell
196

Improving student experience of the Operating Theatre by use of a ‘a real time learning tool’
C Park
S Asif
R Swingler
L Ashelby
S Glew
197

Educational Interventions to Change Behaviour of New Prescribers in Hospital Settings: a Systematic Review
K Mattick
N Brennan
198

Workplace-based Assessments
The Role of Case-based Discussion in Teaching and Learning in Oncology
R Jyothirmayi
200
ASME Awards
Sir John Ellis Student Prize 2012
This essay presents an overview of the above research project, which was conducted as part of an intercalated BSc in Primary Care at the University of Leeds. The project aimed to improve understanding of what medical students value when considering a high quality teaching practice. The project was informed by work conducted by Cotton et al. (2009), who examined factors influencing quality in community based teaching from a variety of medical education stakeholders. This introduction will present information outlining the role of primary care in undergraduate medical education followed by a summary of the research project.

Primary care and undergraduate medical education
Primary care placements form part of undergraduate medical education and can provide students with the opportunity to learn in a ‘person-centred’ approach (Howe, 2001). In addition to being valued by students, teaching in general practice is also supported by both general practitioners (GP) and patients (Gray and Fine, 1997, Coleman and Murray, 2002). Primary care has seen an increasing involvement in medical education over recent years, with the average amount of the medical school curriculum delivered through primary care rising from 9% to 13% between 2001 and 2008 (Pearson and Lucas, 2005, Jones and Stephenson, 2008).

This shift has had several influences. One of these is an increased number of medical students, partly from the opening of new medical schools. The amount of undergraduate teaching taking place in general practice has also responded to guidance from the GMC (2003), who advise that medical students need to experience a range of clinical settings throughout their training (Pearson and Lucas, 2005).

Future medical education will need to adapt to changing financial and health service pressures. Rees and Stephenson (2010) predict that more medical graduates will be required to work in the community and that consistent exposure to general practice throughout medical school may make a career in general practice appealing to students. This could help to meet the future requirements of the health service. Wass (2007) supports this view, arguing that quality GP tutors are not only important for providing successful placements but that “good GP role models” will be valuable for encouraging talented undergraduates into primary care. This will be particularly important in areas with a shortage of GPs (Mathers et al., 2004).

Summary of Research Project
Existing literature from the UK examining medical students perspectives of learning in primary care has previously been conducted at only single institutions, usually that of the researcher (Howe, 2001, Silverstone et al., 2001). This research project was conducted at Leeds, Sheffield and Hull York Medical School. These are the three medical schools for the NHS Strategic Health Authority for Yorkshire and the Humber (NHS, 2011). These three medical schools provide varying experience in primary care through their curricula. This study is novel in its design for the UK as it has been conducted across more than one medical school.
This project used qualitative methodology to explore medical student perspectives of the varying factors that contribute to the quality of a teaching practice, why these are valued and how they contribute to the quality of a teaching practice.

The results showed that student value interested and engaging GP tutors who are aware of their learning needs. Students want to be involved during placements, both with hands-on experience and with the planning of their placements. Students value well-organised placements as this can help to create a successful learning environment. There was also some consideration of the role of the medical school in the delivery of placements at a quality teaching practice. A novel finding was the emphasis that students placed on the value of patient involvement in teaching, both recognising the advantages of gaining informed consent and the vital nature of patient contact.

For the purposes of this essay, the results section will focus on results under the theme of ‘patient involvement in teaching’ as this was the most interesting and novel finding with regards to medical student perspectives of quality teaching practices.

**Supervision**

This project was supervised by Dr David Pearson, head of primary care education at University of Leeds. This supervision involved 6 hours of research supervision meetings. Training in focus group moderation was provided by Dr Beverley Lucas, a researcher at the Academic Unit of Primary Care in Leeds.

**Motivation for conducting this research**

This research topic was chosen because medical education is an area of interest to the researcher. This is supported by relevant learning on the primary care BSc, which includes a module on learning and teaching as well as a clinical placement. Further motivation for exploring medical education in more detail is provided by the GMC (2003), who recommend that students should be “aware of education principles related to medical education”.
Sir John Ellis Student Prize 2012: Runner Up: Intercalated: What factors do third year medical students identify as being involved in the transfer of their skills from a simulated to real environment?

J Squibbs

J Squibbs, University of Leeds

Background
Simulation is widely used within medical education to develop student’s abilities to perform procedures such as venepuncture and cannulation. It is important however that these skills can be used in a clinical setting, i.e. that they can be transferred to the real environment. Research has shown that trainee surgeons who learn how to perform procedures on simulators have improved performance of the procedure in reality, however this research is mainly quantitative and does not look at individual’s views as to how this process occurs. This study aimed to elicit third year medical student’s views as to what factors were involved in this process and how the teaching they received could enhance their ability to transfer their skills.

Methods
This project was a mixed methods study; combining both a questionnaire and semi structured interviews. Questionnaires were made available to students with the purpose of discerning a general view of which factors students believed were involved in the transfer of their skills. Semi structured interviews, each lasting approximately 15 minutes, then looked at these factors in more depth, asking students to explain how they believed they affected the process, drawing on their own experiences.

Results
57% of third year students completed a questionnaire and 10 of these went on to be interviewed. Seven key factors emerged which students identified to be involved in the transfer of their skills. These were having the opportunity to practice the skill; the presence of a facilitator; the time between the learning a skill and performing on a patient; the teaching received; the equipment used in teaching; the amount of pressure the student feels they are under and the student’s approach to the learning.

Discussion
This study shows that 3rd year medical students are able to identify factors which they believe are involved in the transfer of their skills. This is a little researched topic; however the factors identified are similar to those already known to be involved in the acquisition of skills. Due to the recent changes in training programmes and working hours it is important that students and trainees become competent at performing practical procedures on patients quicker. This can be achieved by encouraging the process of skills transfer by being aware of the identified factors and incorporating them into teaching sessions and curriculum designs. One example of how the transfer of skills could be enhanced is by making the simulation session as realistic as possible through having available the same range of equipment as is found on the wards to develop clinical decision making alongside practical skills. The use of scenario based sessions can also add variety to teaching and help students to feel more confident in using their skills in different situations.

Potential Limitations and Further Research
As the study was carried out at a single institution it is possible that these results do not generalise to all students, as the views may have been shaped by the student’s experiences at Leeds Medical School. However from this study there is much potential for further work, particularly looking at specific educational interventions or changes in
teaching methods and design and evaluating the effect this has on student’s ability to transfer their skills.

**Statement of assistance**

This project was carried out as part of the Intercalated Medical Education BSc at the University of Leeds in the period 2010/2011. The project was supervised by Dr Naomi Quinton, (Lecturer in Medical Education, Leeds Institute of Medical Education). Dr Quinton gave advice regarding the design of the questionnaire and interview structure, as well as the overall design of the study and gave help when starting to analyse and code interview data. All data collection and analysis was carried out by the researcher. No other people were involved in the study.
Sir John Ellis Studet Prize 2012: Runner Up: Intercalated: Learning pelvic examination with and without Clinical Teaching Associates at the Great Western Hospital, Swindon

S M Lynn

S M Lynn, Great Western Hospital, Swindon

Introduction
The pelvic examination (PE) is a core clinical skill which all medical students must learn. Practically, the PE incorporates the techniques of bimanual palpation of the pelvic organs, as well as the use of a bivalve (Cusco) speculum to visualise the cervix. In addition, interpersonal and language skills must be developed in order to take informed consent and explain the procedure adequately to the patient, thereby making an inherently invasive and unpleasant examination as tolerable as possible. Both talking about and conducting a PE are potential sources of extreme anxiety and embarrassment for patients and medical students alike. Thus, it is highly important that all elements of the PE are well taught and thoroughly practised.

Clinical teaching associates (CTAs) are sometimes employed to aid in the teaching of the PE. CTAs are lay-women with ‘normal’ pelvic anatomy and an absence of pelvic pathology who are trained to teach all elements of the PE by allowing themselves to be examined. The PE is demonstrated on a CTA by either a clinician or another CTA, and students then have the opportunity to practise. They are then given feedback on both their interpersonal skills and practical technique by the CTA.

The Great Western Hospital (GWH) in Swindon provides an interesting study sample for research into the benefits of CTA teaching. Students from both the Bristol and Oxford medical schools are placed at GWH Swindon for their clinical attachments in obstetrics and gynaecology (O&G). The clinical teaching of these two groups is therefore very similar. However, the teaching that students receive prior to starting their clinical attachments varies; Oxford students attend a small group teaching session with CTAs lasting approximately two hours, whereas Bristol students do not currently receive this teaching. All students are given the opportunity to practise on a mannequin at the beginning of their attachment, and are encouraged to examine as many patients as possible both under anaesthetic and in clinics.

Study aims
a) To assess whether the added input of the CTA teaching leads to increased confidence and self-perceived competence compared with students who do not receive this teaching.

b) To ascertain how many PEs students go on to perform during their O&G attachments. Specifically, whether students taught by CTAs go on to examine more conscious patients.

c) To assess how well consent is obtained by students prior to examination of anaesthetised patients and to see whether students who are CTA trained are as likely to examine patients under anaesthesia, and if so whether they are more likely to take fully informed consent

Method
An electronic survey was designed and distributed to all Oxford and Bristol students to have attended an O&G placement at GWH within the preceding two years. The results of this survey were collated and analysed.
Results
The Oxford students who had received CTA teaching felt significantly ($p<0.01$) more prepared than the Bristol students, were more confident that they would not hurt the patient and felt more able to explain the PE to the patient.

Oxford students performed significantly ($P<0.01$) more bimanual and speculum examinations on conscious patients, whereas Bristol students performed significantly more bimanual ($P<0.05$) and speculum ($P<0.01$) examinations on anaesthetised patients. This might be because having received the CTA teaching, Oxford students feel more confident in approaching conscious patients.

Students were asked to state whether the first PE they ever performed was on a conscious patient, an anaesthetised patient or a CTA. The overwhelming majority of Oxford students reported that their first examination was on a CTA, with none having performed their first examination on an anaesthetised patient. Bristol students were divided between conscious and anaesthetised patients. The use of CTAs is therefore associated with a reduction in the use of conscious patients for a student’s first attempt at PE, although we cannot be certain of a causal relationship.

The 38 students who had performed a PE on a patient under anaesthetic were asked who took consent from the patient. Bristol students were significantly more likely ($P<0.05$) to have taken consent from the patient themselves compared with Oxford students.

Conclusion
CTA teaching produces more confident students who are more likely to go on and examine conscious patients during their attachments rather than patients under anaesthetic.
Looking for the evidence base for clinical skills 'over there'

J Frain

J Frain, Director of Clinical Skills, School of Graduate Entry Medicine and Health of the University of Nottingham

Background and purpose
Students have called for a more rational approach to teaching of the physical examination (1). The history and examination remain important in the vast majority of diagnoses (2-4). Evidence-based medicine should contain the physical examination within its remit (5). Several textbooks of evidence-based physical examination have emerged from the United States (6-9). The scope of these books may be beyond medical students. So are there really evidence based clinical skills and what do they look like? The purpose of this visit was to see how authors apply the evidence in their teaching and clinical work and to ask what difference it makes to the quality of the clinical skills curriculum and the development of future doctors.

Methodology
Three weeks were spent visiting the Universities of Washington at Seattle, Chicago and the Jefferson Medical College, Philadelphia discussing teaching of the clinical examination, the obstacles to applying the evidence to the examination as well as the teaching of principles of evidence-based medicine to medical students. There was opportunity to observe teaching rounds and tutorials and to discuss with students and teachers their experiences and perspectives on the place of evidence-based physical examination in the curriculum.

Results
Valuable insight was gained into the pitfalls and benefits of such an approach to clinical skills teaching. There is scope for developing a curriculum for teaching of the history and examination which is evidence-based and encompasses communication, the history, the examination, reasoning and professionalism. Some of these reflections will be presented. The visit has led to development of literature-based workbooks for the clinical skills teaching on our course. In addition, we have introduced a new piece of coursework “Reflection on the evidence base for a clinical skill” to help students both appreciate the utility of the clinical assessment and at the same time embed an evidence-based approach to clinical questions.

Discussion and Conclusions
The clinical method is a rich seam for interdisciplinary research involving clinicians and educationalists. Diagnostic accuracy studies, systematic review and qualitative research could all contribute to an overhaul of how we teach these important skills. The goal is young doctors more appreciative of the still important utility of the history and examination and potentially better diagnosticians.

References
International Travelling Fellowship 2011
Does recent experience of good or poor performance influence assessors’ Mini-CEX score choices?

P Yeates, P O’Neill, K Mann, K Eva

P Yeates, ATR4, ERC, University Hospital of South Manchester, Manchester

Background
The authors are grateful to the ASME Travelling Fellowship committee for awarding PY a fellowship that supported this work. Rater-based performance assessments contribute usefully to assessing trainees’ clinical competence. Unfortunately assessors’ scores are variable, typically contributing more variance to the scores than trainees themselves1,2 and showing considerable score ranges on common performances.3 Such findings represent a threat to any assessment’s validity4. Novel enquiry seeks to understand assessors’ judgements5-6. Our previous research (in submission) suggested that assessors make competence judgements (in part) by comparing with previously seen trainees. To better understand the extent to which recently seen candidates effect raters’ impressions of new candidates we chose to investigate this findings experimentally.

Research questions
1. Does recent observation of either “good” or “poor” performances influence assessors’ scores on “borderline” Mini-CEX performances?
2. How does the influence of such recent experience compare in magnitude with “hawk” or “dove” differences between assessors?

Methods
Participating consultant physicians were randomised to watch and score videos of three “good” performances or three “poor” performances by foundation year 1 (PGY1) doctors. Those in both groups then watched and scored three identical “borderline” performances. We recruited nationwide (England and Wales) to an internet-based protocol. For RQ1 we compared borderline scores between groups using ANOVA. For RQ2 we developed a “Hawk/Dove” index (HDI) based on participants’ within-group z-scores for the first 3 videos. We then used linear regression to compare the influence of HDI and group assignment.

Results
41 consultants participated. Groups were similar in terms of gender and duration of their consultancy. Those who were primed with “poor” performances scored borderline candidates 0.67 points higher on a 6 point scale relative to those who were primed with “good” performances (F (1,39)=12.0, p<0.01, d=0.63). Regression analyses revealed that HDI and Group explained 50% of the observed score variance (p<0.001). Group assignment explained a greater proportion of score variance (24%) than did raters’ HDI (18%). Neither gender nor duration of consultancy showed significant associations.

Discussion
These findings show that assessors’ recent experiences of other performances influence their judgements to at least as great an extent as the raters’ general degree of stringency. Theoretically, this suggests that competence judgements are based on relative rather than absolute criteria. Practically, this raises questions about the fairness of assessments where trainees are assessed sequentially. Hospitals that attract differing calibres of trainees may develop different standards of competence.

References
International Travelling Fellowship 2012
The International Travelling Fellowship Experience

A Barrett

A Barrett, School of Physiotherapy, Royal College of Surgeons in Ireland, Dublin

Background
As a clinical coordinator for a School of Physiotherapy, leading a team of educators and tutors, I have developed the post to include responsibility for the design and delivery of continuing professional development courses in clinical teaching. I also have responsibility for the assessment processes and procedures in clinical placements, which amount to 25% of the degree award. As part of that remit, we, the practice education team, are currently developing an online assessment skills module for clinical teachers, incorporating a pilot project investigating tutors and educators reasoning in the assessment of undergraduate performance.

The project
Undergraduate clinical performance in physiotherapy is currently assessed by a nationally adopted competency-based Common Assessment Form (CAF). While the reliability of the tool has been established (Coote et al, 2007), the impact of uncontrollable factors such as patient variety and rater expertise have not yet been established in physiotherapy, and there is evidence from post-graduate medical education that such factors may play a key role (Govaerts et al, 2011). Our aim is to investigate the assessment reasoning processes of educators and tutors using a qualitative focus group design and use this information in designing an innovative, online assessment skills module for clinical educators and tutors. As part of the focus groups, participants will view a video of patient-student interaction and also grade the student on four domains of practice: assessment, treatment/management; professionalism and communication. We also aim to investigate the effect of peer discussion on the assessment mark by asking participants to view the same video again following the discussion.

The Fellowship visit
My professional and research area of interest is in faculty (staff) development, particularly quality in clinical teaching and learning, so I am delighted to have received an ASME International Travelling Fellowship to visit Professor Yvonne Steinert and the team at the Centre for Medical Education at McGill University in Montreal in April, 2012. As part of the three-day visit, I will present my team’s research work and will meet with the team to discuss faculty development research in general. I will also attend a faculty development event that is taking place that week, and will also meet with Professor Steinert to discuss my own research interests and professional development in health professions education. I hope to use this visit to create research networks and enhance my own research capabilities to contribute to high quality medical education research.

References
New Researcher Award 2012 – Runner Up

The meaning of reflection for teaching skills: what does reflection mean to medical students who are learning to teach, and what is the effect of using different methods of reflection on its meaning?

J Currie

J Currie, Faculty Education Office, Imperial College School of Medicine, Room 138 Reynold’s Building, Charing Cross Campus, St Dunstan’s Road, London W6 8RP, UK

Introduction

A medical student teaching skills course includes reflection, but student engagement has been poor. I sought to understand what reflection means to students in this context, and how the meaning is affected by a new task, digital storytelling, compared with the existing structured written log. Digital storytelling uses digital photographs as a basis for reflection.

Contextual framework

Reflection can be understood as a process, with iterative or vertical dimensions, and by its content, mostly critical reflection but also emotions and professional contexts. Medical students’ views about the meaning of reflection have not been well described, although contextual factors seem to determine students’ engagement with reflection.

Methodology

I adopted a constructivist epistemology. Ten consenting students were randomly allocated to either structured reflection or digital storytelling. Students completed written questionnaires before and after the study and participated in a focus group; two methods were used for triangulation. A modified constructivist grounded theory approach was used for data analysis.

Findings

Students conceptualised reflection in three ways: 1 an iterative three step process with different depths of critical reflection; 2 according to its content, which was generally critical reflection but also included emotions or professional contexts; and 3 as authentic or not. Four contextual factors determined authenticity: memory triggers and narrative memory; creativity and freedom; ownership and avoidance of conflicting agendas; and positive student attitudes. The meanings did not change depending on the different tasks, but different tasks impacted on authenticity. Digital storytelling was associated with increased authenticity via these contextual factors.

Discussion

Students’ understandings partially map onto the literature. Implicitly encouraging inauthentic reflection through the design of our reflective assignments has ethical implications and may explain students’ difficulties achieving high levels of critical reflection. Understanding factors determining authenticity provides possible solutions.

Conclusions

Future research should explore the concept and implications of authenticity. Meaningful research into how reflection impacts learning should include students’ conceptualisations of reflection.
New Researcher Award 2012 – Winner

As easy as ABC?: Exploring and understanding the challenges faced by newly qualified doctors in acute care contexts

VR Tallentire, SE Smith, J Skinner, HS Cameron

VR Tallentire, Specialty Registrar in Acute and General Medicine, South-East Scotland and Honorary Fellow in Medical Education, University of Edinburgh, UK

Background and purpose

Several studies have shown that newly qualified doctors often feel unprepared to provide acute care, and such feelings are a source of anxiety and stress. 1-4 The main aim of this series of studies was to explore how newly qualified doctors perceive and negotiate the complex challenge of assessing and treating acutely unwell patients. Through focusing on participant perspectives, the aim was to disentangle how socially-constructed realities influence behaviour, error and ultimately patient outcomes.

Methodology

A systematic literature review synthesised work examining perceived preparedness of UK graduates in acute care. Preparedness ratings in each Tomorrow’s Doctors5 outcome were mapped to a novel generic rating scale to allow comparisons between studies. Following ethical approval, six focus groups involving 36 clinicians were conducted and analysed using a constructivist grounded theory approach.6 The developing theory was refined and validated by further interviews with participants. Subsequently, 38 newly qualified doctors participated in high-fidelity simulated acute care scenarios. Each scenario was immediately followed by a debriefing which encouraged articulation of cognitive processing. Errors were identified and coded where possible using Reason’s generic error modelling system (GEMS).7 Remaining errors were coded inductively using a modified framework analysis.8

Results

The search recovered 256 articles, of which 10 satisfied the inclusion criteria. These articles suggested that graduates perceive themselves to be least well prepared in acute care and prescribing. Three broad themes emerged from the focus group data: cognitive challenges, roles and responsibilities and environmental factors. Exploration of the relationships between the themes led to the development of a conceptual framework that encapsulates the complexity of acute care behaviour. 164 of the 243 simulated scenario errors could be classified according to the original version of GEMS. A further 26 errors were coded using two novel categories: compounded error and submission error.

Discussion and Conclusions

This series of studies adds to existing work which emphasises the complex inter-relationships of emotion, affect, decision-making and behaviour.9 The medical education community must ensure that newly qualified doctors are aware of the roles that these factors play in errors and adverse events. Emotional skills training, particularly with reference to dynamic, high-stakes situations, should form an integral part of basic medical training. In the drive to improve patient safety, a key component is to nurture doctors who understand human fallibility and who feel empowered to seek help, safe in the knowledge that they will not be deemed to have failed.

References

Small Grant Award 2011
The communication skills of medical students: video analysis, OSCE scores and Emotional Intelligence

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Introduction
Emotional Intelligence (EI) is a type of social intelligence, which involves monitoring emotions, discriminating between emotions and using this information to guide thinking and actions. Research suggests that EI is related directly to the competency of interpersonal and communication skills. Effective communication translates into health benefits for patients, including greater patient satisfaction and increased adherence to treatment regimens.

The investigation aims to assess longitudinally the relationship between EI and communication skills in medical students, and evaluate the effectiveness of an intervention to improve EI. This study is an extension of previous research, which found that medical students who are considered to have high EI are more sensitive to identifying and responding to expressions of psychosocial distress when communicating with their patients.

Research questions
(1) Does training in EI continue to impact on students’ EI, examiner communication skills scores and coded video communication scores in an Objective Structured Clinical Examination (OSCE) 12 months later?
(2) Is there a relationship between examiner communication skills scores and coded video communication scores in an OSCE?
(3) Do students with high EI score higher than those with low EI on both coded video communication scores and examiner scores in an OSCE?

Methodology
In 2009/2010, a random sample of first year medical students, assigned to receive a 7 month EI training course (n=52), were compared with other first year medical students from the same cohort who did not receive the intervention (n=50). Participating students completed a measure of EI (MSCEIT) at three time points (pre and post intervention before their 2010 first year OSCE), and 12 months later (before their 2011 second year OSCE). Participating students were videoed in a single communication skills station in both OSCEs. The quality of the communication was rated by using the VR-CoDES® which quantifies patient emotional cues/concerns, and the associated students’ response. Students’ OSCE scores from 2010 and 2011 were collated.

Analysis and results
The relationship between coded video communication scores and students’ EI levels will be analysed (using a MANOVA test) to examine the research questions, and compared to the results from 2009/2010.

Outcomes
We aim to assess the impact of an EI intervention on the relationship between EI and communication, and hope to add to the evidence base to inform the future development and teaching of communication skills.
Small Grant Award 2011
Learning Together in The Clinical Setting - Peer Teaching at the Bedside

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Background and Purpose
Peer assisted learning (PAL) in undergraduate medical programs brings well established benefits to student learning ¹. It also aids the development of domain independent skills, such as teamwork, communication, presentation skills, leadership and professional behaviour². PAL usually takes place in artificial settings. This study examined whether PAL could enhance student learning in real-world complex clinical environments. The benefits, feasibility and acceptability of PAL at the bedside were explored.

Methodology
This is an explorative study of reciprocal PAL in the clinical setting in Year 3 medical students (n=115) undertaking full time clinical hospital attachments across four sites. Twenty six small groups of 4-5 students were formed for weekly PAL sessions. Each student attended seven sessions. The “teacher” role was rotated and the teacher chose the topic for the session based on a real case. Both quantitative and qualitative methods were used to elicit student attitudes to and experience of PAL sessions. Feedback forms with Likert scaled statements (scaled 1 to 6) and free text were returned by “teacher” and students after each PAL session. Focus groups were held at the end of the intervention. At one site the PAL sessions were held at the bedside. Patients were asked to complete feedback forms after bedside sessions. Quantitative data was analysed in SPSS. Activity systems analysis was used to analyse qualitative data.

Results
Feedback forms were returned from 80% (n=146) of sessions by the “teacher”. For those in student role 71.7% (n= 447) forms were returned. Quantitatively students and “teachers” rated the PAL sessions positively, with no difference in the rating of the overall value of the session, between bedside and non bedside groups. “Teachers” perception of benefit to students was significantly higher for the bedside sessions (p<0.05). Qualitative analysis revealed that teaching at the bedside lead to a more professional approach from teacher and students and was highly valued for practice of skills in an authentic setting and the presence of clinical signs. However, students found the organisational aspect of bedside teaching challenging. Patients (N=21, 66% response) rated the experience highly. Qualitative findings will be presented using activity systems analysis³.

Discussion and Conclusions
PAL in the clinical setting, though challenging organisationally, did support learning. However, introduction of PAL to the complex clinical learning environment was associated with systemic contradictions and tensions and led to unintended consequences in student activity. Quantitative analysis failed to capture these aspects and gave a false impression of a universally positive outcome.

References
Background and Purpose
Illness is one important cause of “doctors in difficulty”. Despite guidance on appropriate professional behaviour in terms of managing one’s own health and illness from the General Medical Council, there is evidence that doctors do not always act accordingly, potentially compounding difficulties and leading to a range of poor outcomes. Difficulty adopting the sick role, stigma, a “macho” medical culture, concern over a detrimental impact on career, confidentiality, lack of perceived need, lack of insight, personality and practical barriers to accessing care have all been identified as factors which may influence health-related behaviour in doctors.

There has been little progress on changing physician’s illness-related behaviour. However, data on medical students’ behaviour with regard to their health suggest that inappropriate behaviour starts in medical school. We recently completed an indepth qualitative study showing that medical students’ intentions and underlying beliefs are similar to those seen in doctors1. The data indicated that the development of beliefs and behaviour in relation to illness/disability in oneself and ones’ peers occur early, possibly even pre-medical school.

Further research is needed to fully determine how and when these beliefs are formed. Informed by our earlier qualitative study, we have developed a questionnaire (based on the theory of planned behaviour2) which we now wish to test and validate in order to assess its suitability as a tool to investigate medical students’ intended illness cognitions and behaviour.

Methodology
Medical students at the University of Aberdeen and the University of Nottingham will complete the questionnaire on two separate occasions (at a 2-4 week interval). Anonymised questionnaire will be analysed by the research team. This will include: calculation of TPB scales (which will then be investigated using simple descriptive statistics) and assessment of test-retest reliability.

Results
Results from the questionnaire analysis will be presented.

Discussion and Conclusions
This study will test the theoretical robustness and reliability of a questionnaire which aims to identify medical students’ cognitions about their own health, and investigate how and when these are formed. The ultimate objective of this tool is to identify when and how best to intervene early to improve physician responses to illness in themselves and others.

References
EDG Travelling Fellowship 2011
Two heads are better than one: theory meets practice in the field of medical career development

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This brief session will focus on the outcome of an international partnership between two vocational psychologists – one of whom heads up a deanery careers support service in the UK, and the other of whom is a leading researcher into medical career development and medical specialty choice in the USA. This partnership was funded by the 2011 ASME EDG Travelling Fellowship

Whereas much of the research in the highly specialised field of medical career development is based on small samples, is cross-sectional and is divorced from wider developments in contemporary vocational psychology, Dr Nicole Borges’s research consistently displays methodological and theoretical rigour and is also highly relevant to practice. As an example, her 2011 paper in the Journal of Vocational Behavior suggests that asking medical students to reflect on their work values before they have had much exposure to clinical practice, will not help them significantly with the task of specialty choice.

It could be argued that in the past the issue of medical careers support was a somewhat neglected area within the broader field of medical education. But as the Modernising Medical Careers reforms now require junior doctors to make significant career decisions within 18 months of leaving medical school, it is recognised that the provision of effective careers support is an essential component of undergraduate and postgraduate training provision.

During the course of the travelling fellowship medical students were interviewed about their career planning and extensive discussions with faculty took place. Within the US sample the key role of financial factors became apparent, particularly as the particular medical school that was visited was a state university, and students typically did not come from financially advantaged backgrounds. Given changes to university fees within the UK, the prediction is made that the role of financial considerations in specialty decision making may similarly increase in future.

The partnership also resulted in the identification of a possible theoretical model drawn from the vocational psychology literature that could be used in at least three different ways: first, to underpin careers support interventions with students, secondly to enhance faculty development, and finally to guide future research into medical career development. One advantage of the model is that for the first time it addresses the issue of those who do avoid accessing careers support, despite it being on offer.

Practical implications for careers support practice both within the UK and the USA will be described.
EDG Travelling Fellowship 2011
A professional and personal journey on an ASME Travelling fellowship- in pursuit of quality

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Context
The Educator Develop Group of ASME awards travelling fellowships annually to support professional and personal development of its members. This paper shares the experience of one fellow who travelled to the USA “in pursuit of quality.”

A link with the Dartmouth Institute for Health Policy and Clinical Practice (TDI) was established during a UK study tour with the Health Foundation in 2010. The Dartmouth Institute whose logo is “where knowledge informs change” has both a national and international profile in relation to education on quality improvement to transform care at the front line.
The contribution of clinical skills and simulation based education to meet the quality agenda in health care has been recognised through the Scottish Clinical Skills Strategy. This aim of this fellowship was to explore a systems approach to teaching quality improvement using simulation based education.

Innovation
In terms of innovation the development of the agenda for the programme and the method for dissemination were both new in my own learning journey.

Developing the Agenda
Through the CSMEN the national Clinical Skills Managed Education Network meetings, a review of the University undergraduate non technical clinical skills programme and the advice of the Local NHS Centre for Organizational Effectiveness and in consultation with DTI a programme was agreed to meet the following outcomes to:
• Compare different approaches to QI teaching
• Identify collaborative research opportunities for QI using simulation
• Explore development of progression of individual on the QI learning journey

Sharing the Experience
One of the challenges in going to another institution and learning new approaches is how to share and implement these in your own institution on your return. I kept a blog (a personal first) to keep everyone in touch with what I was doing and thinking as I went along - reflection in action for those following, reflection on action for myself. This was an open blog and made available to the ASME, membership and other institutions.

Results
The following action plan was agreed with DTI and is currently being implemented over the next 12 months.

Action plan
1. Develop collaborative project on simulation for cognitive skill development
2. Share national root cause analysis competition from undergraduates
3. Development of collaborative research project on WSE
4. Develop research pilot related to impact of cultural conflict resolution
5. Trial of ASPE standardized patient curriculum through CSMEN

Still continuing to pursue quality!
EDG Travelling Fellowship 2011: Medical Student Selection

M E Kelly¹, J Dowell²

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² Host Institution Sponsor, Director of Undergraduate Studies and Convenor of the Admissions, School of Medicine, Dundee, Scotland

Background and purpose
I was awarded a Travelling Fellowship to visit the Medical School, Dundee to further my work on medical student selection.

Fellowship Objectives
1: To witness the running of the Multiple Mini Interview (MMI)
2: To explore the potential for collaborative research and the sharing of educational resources between both institutions.

Methodology
A visit to Medical School Dundee took place in January 2012. A series of meetings and workshops were facilitated by Jon Dowell, Adrian Husbands, Sean MacAleer and Prof Gary Myres. These included an overview of the underlying philosophy of MMI; a presentation of Dundee research data and metrics on MMI; skills training for MMI station examiners; discussions with MMI examiners, actors and administrative support team; an exploration of the research potential arising from the introduction of the HPAT. Following these I examined at an MMI station for one day. I also attended one full day of the School of Medicine annual Educational Retreat, where I had an overview of the Dundee undergraduate course and attended curricular evaluation and planning sessions.

Outcomes of the visit
1. A collaborative study to explore the feasibility of running an MMI in the Irish setting and comparing student performance on the Health Professions Admission Test (HPAT) with their performance on MMI has been set up.
2. A team from the Medical School Dundee visited NUI Galway, in March, to investigate the utility of using software (Observational Management Information System, OMIS) developed by the Medical School, NUI Galway, for the management of data generated by the MMI.
3. Significant changes were made to my doctoral research work on Medical Student Selection and potential areas for future shared research work have been identified.
4. Similarities between the undergraduate curricula and delivery methods were identified. The Year 4 assessment leads from both institutions are sharing experience with respect to assessment load.

Reflections / Conclusions
The time spent in Dundee had a significant positive influence on my research. It enabled me to develop on going working relationships with key individuals and had a number of concrete outcomes. I wish to express sincere appreciation to the EDG and in particular Jon Dowell, for enabling this Fellowship.
Assessment
“I don’t want them working alongside me”: assessing underperformance of physiotherapy students on clinical placement

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Background and Purpose
Research has found that clinical assessments do not always accurately reflect health and social care student performance. The progress of weak students to independent practice raises clear patient safety concerns. The study aim was to explore if “failure to fail” is an issue for UK physiotherapy educators, and, if so, what are its determinants?

Methodology
This is a qualitative focus group study exploring the views of physiotherapy educators in North East Scotland acute and community services in three different cities. To make sense of potentially many factors associated with reporting student underperformance, we selected the integrative model of behavioural prediction to underpin qualitative data collection and analysis.

Results
Five focus groups were carried out with 43 physiotherapists, all of whom had experience of supervising student placements. Using theory-driven analysis, we identified six main themes relevant to the integrative model of behavioural prediction which are involved in making decisions to fail underperforming students. These are: tutor attitudes towards an individual student, attitudes towards failing a student, normative beliefs and motivation to comply, efficacy beliefs (self-efficacy), skills and knowledge, and environmental support and constraints.

Discussion and conclusion
Many different factors act on physiotherapy educators’ reporting of underperformance in students. However, an overarching focus on “the bigger picture” of patient safety, protecting the public and the reputation of their profession facilitates accurate reporting. These findings will be discussed in relation to previously published data from medical1 and other health and social care professions.

References
1 Cleland et al. “Is it me or is it them?” Factors influencing assessors’ failure to report underperformance in medical students. Medical Education 2008; 42: 800-809.
Designing virtual patients to teach clinical reasoning: a randomised controlled multi-centre factorial study

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Background and Purpose
Virtual patients (VPs) are web-based representations of realistic clinical cases. They are well placed to teach clinical reasoning skills\(^1\) and are widely used in medical education\(^2\). Medbiquitous defined an international technical standard for VPs in 2009\(^3\). This allows inter-operability of VPs, supporting collaboration between educators and institutions. There are numerous VP designs that may influence their utility as an educational tool, alongside the resource implications for authoring and maintenance\(^4\). This research forms the main component of a three-year research project to produce evidence based VPs designs to teach musculoskeletal medicine.

Methodology
We used a randomised 2x2 factorial study design to evaluate VPs in four core clinical cases. We produced four versions \((1a,1b,2a,2b)\) of each of the four cases, in total 16 VPs. The independent variables were case pathways; either linear \((1)\) or branching \((2)\); and use of evidence based structured clinical reasoning approaches; either present \((a)\) or absent \((b)\). Participants were undergraduate students studying musculoskeletal medicine in three UK medical schools (Warwick, Birmingham, Keele). Students were randomised to four groups. The groups completed different versions of the same cases, and each group was exposed to the four VP versions over the four cases. We controlled for other design elements. Evaluations integrated into cases include validated assessments of clinical reasoning skills such as Key Feature Problem\(^5\), multiple choice questions, Bayesian probabilistic reasoning, and diagnostic proficiency. Post-test evaluation included a modified EViP questionnaire, a self-reported evaluation previously used in a European Union funded research project. A cohort completed a pre-post Diagnostic Thinking Inventory\(^6\). We are also collecting student patterns of use during the cases, alongside written and clinical examination performance from Warwick Medical School. The study has institutional ethics approval.

Results
Data collection began in July 2012 and is on-going. We present interim results and statistical analysis from 423 medical undergraduates from three medical schools, up to and including January 2012. We present our primary and secondary outcomes alongside other information describing the study and case design.

Discussion and Conclusions
This research demonstrates an innovative factorial design allowing the simultaneous assessment of two independent design variables to answer important research questions. We use validated assessments, some integrated into VPs for the first time in research. Exclusive use of ‘open access’ materials has promoted collaboration, producing standardised\(^3\), freely available VPs, that will continue to be used, adapted and shared.

References
Learning from patients: does patient assessment add value in OSCEs?

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Introduction and Aim
There is a continual need to improve the reliability and robustness of examinations, including objective structured clinical examinations (OSCEs). It has been shown that volunteer patients used in OSCEs feel it is important for their feedback to be given to students but that they do not want to influence the overall exam results. It has been suggested that patients assess different aspects of student performance to that of examiners. Patient assessment has the potential to provide valuable information to both students and assessors and it may be that including patient assessment of students could increase the reliability of assessments. The aim of the project was to identify whether the information provided by patient marks could provide additional, meaningful information in one medical school. (The term patient refers to volunteer, simulated and ‘real’ patients, i.e. patients with signs.)

Methodology
Volunteer/simulated patient marks from three OSCEs in different year groups (n= 533 students) were analysed. Patients were asked to score students on a 1-4 scale, based on interpersonal skills rather than medical knowledge. These scores were converted into a percentage, with 70% being the acceptable cut off score. The marks of those who scored less that 70% in the patient assessment were compared with their overall OSCE mark. Students who failed the OSCE were also identified and a comparison with patient scores made.

Results
The reliability (correlation coefficient) of the patient scores compared to the total OSCE score was 0.5-0.6. Students with patient scores of less than 70% were identified in each OSCE. Only 54-73% of those with low patient scores passed the OSCE. However, those students who failed the OSCE had a wide variety of patient scores (59-93%). A few students had high OSCE scores but very poor patient scores. Patients reported high satisfaction with this system.

Discussion and Conclusions
Patient marks correlated fairly well with overall OSCE marks. However, patient marks correlated poorly for those students who failed the OSCE. In view of this caution should be exercised in the inclusion of patient marks in summative assessment. However, the use of patient scores allows identification of students with possible problems with patient interaction who may not have been identified otherwise - giving an opportunity for timely remedial action to be taken. The patient perspective therefore provides valuable depth to other modes of assessment for students and patients feel more highly valued as part of the assessment process.

References
Assessment of Clinical Teaching: a qualitative evaluation of a Web-based instrument to improve trainee feedback

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Background and Purpose
Quality Assurance inspection of medical education has revealed considerable variability in clinical teaching with many clinicians receiving no formal teacher training. To improve their teaching, clinical teachers need timely and specific feedback based on observed and modifiable behaviours.

We have developed a 38 item web-based Assessment of Clinical Teaching (ACT) checklist. This cross-informant programme presents items in a randomised order to evaluate teaching activity observed during a single teaching episode. Trainers can request feedback after two weeks. ACT has been trialled in the UK Northern Deanery and University at Buffalo Medical School, USA with 215 trainee evaluations for 65 clinical teachers. This study aimed to explore the utility of ACT.

Methodology
Hospital clinical teachers of all grades in the Northern deanery and clinical teachers in the USA from the departments of Family Medicine, Psychiatry and Orthopaedics were invited to participate by letter and e-mail. After evaluating a teaching session, a purposive sample of clinical teachers chosen from different specialties or grades were invited to an interview to ask about using ACT, the feedback they received and its interpretation, and suggestions for improvements. Interviews were analysed using thematic analysis.

Results
Five themes emerged:
1) The checklist questions were easy to interpret, and the checklist was not too long but covered key aspects of clinical teaching.
2) The feedback profile provided immediate and specific feedback with an explanation of how it should be interpreted. Normative scores based on a theoretical model were useful to compare ratings. Charts clearly showed disparities between self and trainee assessments.
3) Interviewees found the quality of feedback rich, detailed and informative.
4) Uses of feedback included providing evidence for GMC standards and appraisal, a reminder of best teaching practice, and identifying new teaching strategies to try.
5) ACT was easy to use. Problems included getting trainees to complete the assessment or claiming to have observed every item frequently, the zero rating could be interpreted either as not applicable or that the question was applicable but was not observed.

Discussion and Conclusions
ACT provides rich information about a teaching session, informs reflection and helps identify areas for improvement. Following this study the programme has been modified to improve trainee access and a ‘trip’ mechanism asks trainees to review responses where scores are the same, a not applicable response has been added and peers can now use the checklist to review their colleague’s teaching.

References
Teaching skills workshop for junior doctors: easing the transition from student to medical educator

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Background and Purpose
Junior doctors contribute to workplace learning of their peers, medical students and allied healthcare professionals. Their teaching responsibilities are enshrined in the General Medical Council (UK) Tomorrow’s Doctors (2010) document. However, some junior doctors feel underprepared for their teaching role and would like additional support. The teaching skills courses offered by the Royal Colleges and the Deaneries are designed for middle and senior grade doctors. Junior doctors have limited access to these opportunities. We will be piloting a Teaching Skills Workshop to provide one-to-one teaching training to develop our junior doctors into teachers and, where appropriate, faculty members.

Methodology
Setting: Homerton University Hospital NHS Foundation Trust, London.

Developing teachers
Homerton Foundation doctors have been invited to attend a workshop in March 2012. This will be extended to other junior doctors depending on availability. Attendance is free of charge. Each of the 24 workshops will last for 1 hour and is designed to fit in with the doctor’s clinical work schedule. There will be 1 participant per workshop who will have prepared and returned a lesson plan in advance. Participants will receive structured feedback on their lesson plan prior to the workshops. They will deliver a 20 minutes teaching session according to their adapted lesson plan and receive further feedback. Their e-portfolio work-based ‘developing the clinical teacher’ assessment will be completed.

Developing faculty members
Junior doctors and workshop participants who demonstrate teaching potential will be invited to undertake additional training to become faculty members to the Teaching Skills Workshop. This will include: 1) Educational theories: understand the theoretical and practical aspects of teaching by completing a minimum of 3 educational e-learning modules, 2) Supported participation: observe and assist experienced faculty members conducting the workshops, 3) Direct observation of teaching: assessed on their ability to conduct 2 workshops to a satisfactory level.

Results
We will report our project evaluation and participant feedback at the ASME conference.

Discussion and Conclusion
Junior doctors have limited opportunity to be formally trained in teaching skills. We believe the opportunity to attend training in teaching skills should be introduced into their training programme. This will help ease their transition from student to educator and increase the hospital trusts’ teaching capacity through delivering annual workshops and their participation in other teaching activities. If our pilot Teaching Skills Workshop can be successfully implemented and is perceived to be beneficial by participants, we will incorporate it into our junior doctors training programme.

References
2 E-learning modules for clinical teachers (faculty development), London Deanery. URL: http://www.faculty.londondeanery.ac.uk/e-learning Accessed 5 February 2012.
Developing a Taxonomy of Professionalism

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Background and Purpose
The study of professionalism remains relevant (Van Mook et al 2009) and topical as medical colleges are required to review and measure the professional behaviour of their students (GMC (UK) 2009a, GMC (UK) 2009b). The GMC require this to be demonstrated, however colleges remain dependent on the development of validated measurement and assessment tools in order to provide a meaningful response. The current study sought to develop a ‘taxonomy of professional behaviour’ to assess the behaviour of medical students in order to identify those students who require intervention, with the ultimate aim to develop a predictive tool.

Methodology
One to one qualitative interviews with three respondent groups were conducted, data were analysed following the principles of grounded theory (Charmaz 2006). Findings informed the development of a ‘taxonomy of unprofessional behaviour’. The taxonomy was refined to develop a Multi Source Feedback (MSF) survey designed to assess the professional behaviour of medical students. The survey was distributed to medical students, academic staff and support staff in a UK medical college. Staff respondents were supplied with photographs of each student cohort and written instructions described how to assess students behaviour using the taxonomy. Surveys were completed and returned in a sealed envelope provided. The survey was carried out twice capturing one student cohort at time 1 (year 1) and time 2 (year 2).

The criteria for assessing students professional behaviour was on two levels across three aspects of behaviour: attitude, role and personal development). Respondents indicated whether advice or action was recommended for each of the three categories.

Results
Results from the survey found that fifteen (21 percent) of students had a concern raised at time 1 (year 1). At time 2, seventeen (24.2 percent) of students had a concern raised. Of these, 8 (53.3 percent) had been previously identified at time 1. Further results will be presented as will the taxonomy of unprofessional behaviour.

Discussion and Conclusions
The study provided a descriptive view of medical professionalism from the perspective of three different stakeholder groups. These primary outcomes are similar to those resulting from a blueprinting exercise in 2009 (Wilkinson). The findings from the MSF survey validated the taxonomy as a useful assessment tool with practical application in a UK medical college. Future plans include collecting data for a second and third cohort in order to gain a longitudinal view of the data and further test predictive ability of the tool.

References
2. GMC (UK), G. M. C. (2009a) Medical Students: professional values and fitness to practice. London, United Kingdom, General Medical Council (UK).
Measuring the quality of written summaries of workplace based assessments: A reliable system

MH Bartlett, RK McKinley, J Crossley

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Background and purpose
Medical students at Keele medical school spend 113 days learning in general practices during which they undergo serial workplace based assessments. An email summary of their verbal feedback is produced via an electronic platform. A core element of our spiral consultation skills curriculum is that these written summaries are fed forward to subsequent tutors. For this reason their quality is important, but it may also reflect the quality of teaching in the practices. Reliable assessment of their quality could make a critical contribution to the quality assurance of our teaching and to the planning of focussed and effective tutor development. We have previously reported the development of a 7 point scale to measure the quality of these written summaries and the agreement between assessors, which was moderate. We now report on its reliability.

Methodology
The quality of all written feedback summaries of workplace-based assessments prepared for year 4 students from the 2010-11 cohort while on GP placements was assessed independently by 3 assessors. G and D studies were performed.

Results
612 summaries on 122 students placed at 37 practices were available for assessment. A one way ANOVA showed improvement in the quality of the summaries as the year progressed. There was significant variability within each practice accounting for 18% of the variance. The D study showed the reliability of the assessment by a single assessor was 0.36, and 6 assessments by a single assessor was 0.82. Multiple assessors produced little increase in reliability.

Discussion and Conclusions
This system of using the scale to measure the quality of the written summaries of WBAs is reliable if 6 summaries per practice are assessed by a single assessor. The practice variability is large, probably because of multiple tutors in each practice. The major limitation of this study is that the assessors were members of a single team and thus their judgements may be less variable than those of a random selection of clinical educators. Nevertheless, the system has potential for allowing us to focus practice development activity on particular practices and on particular aspects of the feedback contained in the written summaries, and may inform our quality assurance processes. It may have potential for use by others seeking to improve the quality of workplace based assessment. Further work is in progress to test the variability within practices and the validity of the scores.
Candidate marking using tablet computers in an Objective Structured Clinical Exam

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Background
Objective Structured Clinical Examinations (OSCEs) are frequently marked using a proprietary paper-based checklist that is subsequently scanned with an optical reader. There are increasing local concerns over the long-term resilience and reliability of our paper based system, in addition to increasing requirements for staff administrative time. We wished to explore whether a popular tablet device\textsuperscript{1,2} could be used, in place of paper forms, to address these issues. We developed, piloted and report the evaluation of a tablet (iPad) marking system within a live OSCE.

Methods
Over a period of months, an application (“app”) was developed, peer reviewed and pre-piloted to record examiner’s marks for three OSCE questions. Six examiners were recruited and allocated to OSCE stations as “second examiners” i.e. their marks did not count towards the candidates’ score. Half of the examiners had prior experience with touch-screen tablets, and half had none. Brief device specific training was given on the day of the exam. The test area covered 15.4\% of exam candidates. Following the exam we held a focus group with all examiners and used a structured questionnaire to explore feedback.

Results
Complete mark sheet data was collected from all candidates within the test area. There were no technical failures and all devices had over 80\% battery life remaining post exam. All examiners were highly satisfied with the tablet computer system as a method of OSCE marking. Some felt it was quicker and easier than their adjacent paper examiners. Entering comments was the principle challenge but did not put examiners off. They felt only minimal training was needed and it would be readily useable by all staff, including those unfamiliar with these devices.

Discussion and Conclusions
We report a valid and reliable way of marking OSCEs which offers potential teaching and training benefits, such as built-in timers and collating comments by station, and promotes quality assurance by ensuring complete and rapid data returns with accurate student identification. The app will be developed to work with multiple tablet platforms. We plan to purchase more units and run a larger scale trial with senior examiners in the coming year. We will demonstrate the OSCE app.

References
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Workplace based assessments: used or abused?

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Background and Purpose
Workplace based assessments (WBAs) are now in widespread use throughout surgical training and contribute significant weight towards both Annual Review of Competence Progression (ARCP) outcomes and ST3 selection. Guidance from the Intercollegiate Surgical Curriculum Programme (ISCP) Assessment Framework quotes 6 each as the minimum annual requirement for case based discussions (CBD) and clinical evaluation exercise (CEX)\(^1\). Despite this, there is little formal training in how these assessments should be undertaken in clinical practice. This study aimed to assess trainees’ understanding of WBAs and to ascertain whether or not they were being used correctly.

Methodology
We surveyed sixty trainees in surgical posts (11 SpR/ST, 14 CST and 35 F1/F2), all of whom had been expected to use WBAs as part of a formative or summative assessment programme over the past year. We used a short questionnaire, which was conducted face-to-face with the aid of a PowerPoint presentation on a laptop. The questionnaire was in two parts: firstly related to the correct definition and use of CBD and CEX; secondly related to trainees’ use of the above.

Results
CBD and CEX were defined correctly by 93% of trainees, but only 8% stated that they always used these assessments as designed, with 46 (77%) admitting to the absence of direct observation for the purposes of CEX, and 44 (73%) admitting to the absence of face-to-face discussion with their CBD assessor. The reasons given for this included lack of time (67%), inadequate training in WBA use (35%), a perceived lack of educational value of these tools (28%) and trainer apathy (9%).

Discussions and Conclusions
Although the majority of trainees understand the purpose of WBAs, fewer than 10% use them correctly. Given the importance derived from these assessments with regard to ARCP outcomes and career progression, this is a worrying finding which needs to be recognised and urgently addressed by Specialty Training Committees.

References
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The use of cumulative sum charts as a self-regulation tool

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Background and Purpose

Various formative workplace assessment tools are utilised within medical training. One such tool, the cumulative sum chart, has been shown to improve the performance in a procedural skill when used by medical students. Cumulative sum charts plot sequential attempts at a skill on a graph, providing a visual representation of the learning curve. The cumulative sum chart has many of the features of an effective self-regulation tool, as described by the educational psychologist Paul Pintrich. The aim of this study was to explore students’ use of cumulative sum charts, in order to better understand the observed improvement in performance.

Methodology

The study demonstrating a link between use of cumulative sum charts and improved performance was a single-blind randomised controlled trial. Students in the intervention group used an electronic version of the cumulative sum chart for several months, and those in the control group did not receive access to the charts. Following ethical approval, the 41 students in the intervention group of the original study were invited to take part in semi-structured interviews. The students were encouraged to describe their use of the cumulative sum chart, and discuss the ways in which it influenced their learning. Interviews were audio-recorded and transcribed verbatim. The recordings, transcripts and field notes were then analysed using template analysis. Initial codes were provided by Pintrich’s model, but further codes were developed iteratively from the data.

Results

Thirty-eight (93%) of students attended for interview. Students engaged with the tool to varying degrees. Factors which influenced engagement included personality, clinical attachment and ease with which the tool could be accessed. As predicted by Pintrich’s model, the tool was used for setting targets, monitoring and altering behaviour. Students’ use of the tool was significantly affected by their emotional response to viewing their results. For example, students who were excelling when compared with objective standards engaged well with the tool, whereas those who performed poorly tended to disengage.

Discussion and Conclusions

This study has provided further evidence for the use of cumulative sum charts as a self-regulation tool. It also provides some evidence that they are more likely to be used by students who are already performing well, although other factors such as personality contribute to engagement. Medical teachers should be aware of the value of using self-regulation tools such as cumulative sum charts, and encourage their use as formative assessment tools.

References

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Workplace-Based Assessment: Student Perception at a London Medical School

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Background and Purpose

Workplace-based assessment (WPBA) is an integral part of medical education, providing a framework through which the student can be assessed and receive feedback in the clinical setting. Previous research suggests that feedback is an important exercise for the learner\(^1\).

In 2009 WPBA was introduced at UCL medical school to all students in their first clinical year. During the pilot year students raised concerns about the lack of standardisation in grading their performance and as a result white space areas were introduced on form. The idea was that this would permit assessors to expand their feedback, enhancing its developmental potential.

The focus of the project was to answer the following questions:
1. What is the student perception of WPBA at UCLMS?
2. Has re-designing the WPBA forms altered this perception?
3. In practice, is WPBA being implemented in a way that allows its full potential to be reached?

Methodology

A survey was circulated to 361 students in year three of the MBBS course at the end of the 2009-2010 year and repeated to the next cohort of year three students at the end of the 2010-2011 year.

Students were asked to express a level of agreement on a five point scale with a series of 12 statements concerning aspects of WPBA and asked for free-text comments on their experience with WPBA. A t-test was performed on the responses to the 12 statements and the free-text comments were analysed using content analysis and coded using NVivo software to identify themes.

Results

Quantitative results from the survey will be presented, alongside themes highlighted in qualitative analysis, including: subjectivity of the assessment, purpose of assessment, educational value of the assessment and attitude of the assessor.

Discussion and Conclusions

This study shows that students at UCLMS find WPBA a valuable way of highlighting areas for improvement and obtaining personalised feedback on examination and presentation. It also found that following alteration of the grading, students felt that a fairer method of assessment had been achieved even though there were no other significant differences in perception between the cohorts. In practice, however, students sometimes felt that the assessment of competence was too subjective, misinterpreted the formative nature of the assessment, and found the attitude of assessors detrimental to its educational value. Work is ongoing to produce resources for teaching staff and students in order to tackle problems that have been highlighted by this research.

References

The relationship between personality traits, self-report conscientiousness the Conscientiousness Index and academic performance in undergraduate medical students

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Background and Purpose
Personality traits are now accepted as being important factors within the workplace and medical education\(^1,^2\). Both cognitive ability and conscientiousness have been shown as important predictors of work-related performance within organisational research\(^1\). Conscientiousness is an important trait within any career, but in particular within medicine where a lack of diligence can be disastrous and potentially cost lives. Within undergraduate students, objective measurement of conscientiousness is important since conscientious students are more likely to set and achieve goals\(^3\). Durham University utilises the Conscientiousness Index (CI) as an objective scalar measure of conscientiousness\(^4\). The CI has previously been validated against staff and peer views of student professionalism\(^4,^5\). This study aimed to investigate the relationships between the Big Five personality domains (including the 6 sub-facets of conscientiousness), Conscientiousness Index scores and academic performance in medical students in order to determine whether self-report conscientiousness correlates with the Conscientiousness Index and whether a relationship with academic performance exists.

Methodology
First and second year medical students (n=176) completed a NEO IP-R personality inventory. This provided self-report data for each student across the Big 5 personality domains (Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism). Students also completed an inventory for the 6 sub-facets of conscientiousness. Student scores were calculated for each domain and sub-facet; these were correlated with Conscientiousness Index scores and academic performance (exam data). Confirmatory and exploratory factor analysis were utilised to check for cross-loading between factors on the NEO inventory.

Results
There was a highly statistically significant correlation between conscientiousness index scores and self-report conscientiousness using NEO (p=<0.0001). The relationship between agreeableness (NEO) and CI scores was also statistically significant (p=0.03). There was no relationship between CI scores and the traits of extraversion, openness and neuroticism. Five of the six sub-facets of conscientiousness correlated with the CI. Data demonstrating the relationship between academic performance, the CI and personality will also be presented.

Discussion and Conclusions
This study demonstrates that the Conscientiousness Index has concurrent validity against the previously validated NEO IP-R. We provide further evidence on conscientiousness and the use of the CI as an objective scalar measure of professionalism which may help guide selection for future healthservice employers. An understanding of the level of conscientiousness of the medical workforce, present or future, is important because individuals bring their pre-existing personality traits into the workplace\(^3\). We will discuss the relationship in our data between cognitive ability and conscientiousness which have previously been shown as important predictors of work-related performance.

References
Introduction of undergraduate medical student ‘surgical on-call portfolios’

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Introduction
Medical students need to be aware of their responsibility to maintain their clinical skills throughout their careers and complete e-portfolios. Work place based assessments (WPBA) are established postgraduate assessment tools which have more recently been introduced to the undergraduate curriculum. Emergency surgery is an integral part of the undergraduate surgical curriculum. Supervision of undergraduate students in the surgical on-call environment is challenging, but attachments can be organised such that students have positive learning experiences. We aimed to evaluate the introduction of a new ‘on-call portfolio’ to undergraduate medical students during their first surgical attachment.

Methods
32 undergraduate third year students completed a new ‘on-call portfolio’ containing mini-CEX (clinical evaluation exercise) and CBD (case-based discussion) assessments during their first 10-week surgical attachment. Students attended day, night and late on-call shifts. During their on-call shifts, students experienced surgical on-call handover and emergency operating theatre sessions. They attended accident & emergency, surgical-assessment unit and general surgical wards, participating emergency surgical admissions. Feedback was collected through post-assessment questionnaires.

Results
The majority of surgical students enjoyed completing their on-call assessments. Most surgical students found it easy to initiate supervision and identify assessors. For both the mini-CEX and mini-CBD assessments, assessors were mainly specialist registrars. 74% surgical students rated their learning experience enjoyable and also agreed that assessment completion was relevant to their overall training. Nearly all surgical students agreed they were more confident in their presentation skills after assessment completion. During their surgical on-call shift less than half the students attended the emergency operating theatre and very small minority ‘scrubbed-in’.

Conclusion
Reduced length of patient stay and increased minimal access approaches have reduced student exposure to training. Surgical on-calls are busy and pressured, often resulting in a lack of time for direct supervision of students history taking and examination skills by senior surgeons. Introduction of ‘mini-CEX’ and ‘mini-CBD’ assessments enables students to focus their experiential learning in this environment and improve their presentation skills. It encourages students to embrace the concept of WPBA and portfolio maintenance. Multidisciplinary approaches to increase student intra-operative participation during emergency surgery should be considered.
Is conscientious behaviour in medical students modified by teaching and clinical exposure?

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**Background and Purpose**

Negative behaviour in medical students is associated with post-graduate disciplinary action\(^1\). It would therefore be useful to have a model whereby unprofessional behaviour at undergraduate level can be identified which would then permit appropriate intervention. We have previously developed a scalar measure of conscientiousness, the Conscientiousness Index (CI), which positively correlates to estimates of professional behaviour in undergraduate medical students\(^2,3\). By comparing CI points awarded in year 1 and year 2 of study we were able to determine whether teaching and clinical exposure had any effect on students’ conscientious behaviour.

**Methodology**

CI points were collected by administrative staff from 3 successive cohorts of students during years 1 and 2 of study. Points were awarded to students for activities such as submission of immunisation status and criminal record checks, submission of summative assignments by a specified date and attendance at compulsory teaching sessions. CI points were then converted to a percentage of maximal possible scores (CI %) to permit direct comparison between years 1 and 2 of study.

**Results**

CI % scores were generally high with each year of study for each cohort showing negatively skewed normal distributions with peaks > 89%. There was a high degree of correlation of CI % scores between year 1 and year 2 of study for each cohort alone and when cohort data was combined. When the change in CI % from year 1 to year 2 for all students was compared there was no significant difference in conscientiousness observed.

**Discussion and Conclusions**

We have provided evidence that use of a CI model in undergraduate medical students provides a reliable measure of conscientiousness that is easy to implement. Importantly this study shows that conscientiousness in medical students does not change between years 1 and 2 of study suggesting that it is a stable characteristic and not modified by teaching and clinical exposure.

**References**

A peer-based assessment tool to support earlier identification of the trainee in difficulty

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Background
Trainees in the UK complete a number of work based place assessments each year. A report by Medical Education England (MEE) (1) expressed concerns regarding the validity and number of these WPAs. Archer and McAvoy (2) also question the validity of Multi Source Feedback when assessors are nominated by the practitioner themselves, the method currently used by UK trainees. At a time when shift working patterns have reduced trainee-senior staff contact, making it harder for such staff to recognise those who are failing to meet expected standards, trainees nevertheless would be expected to remain aware of those immediate colleagues whose clinical work or professional behaviour gives cause for concern.

Aim
To develop and test a peer assessment tool designed to identify those FY trainees with possible areas of concern with respect to clinical or professional standards.

Method
Following a literature review, a draft peer assessment tool was developed. Face validity, acceptability and comprehensibility were assessed with 3 focus groups, a total 11 of participants. The draft tool was amended and built to be administered on-line. Rather than enabling self-selection of assessors, the new tool asked each trainee working in a unit to complete a brief assessment on every other trainee in that unit. The assessment comprised three categories, patient care, organisation and behaviour. Model descriptors of the categories were supplied. Trainees were asked to rank each category as red (significant concerns), amber (some concerns) or green (no concerns) as well as being encouraged to enter free text comments.

The acceptability and feasibility of the on-line tool were assessed by piloting the tool with a group of 7 FY1 trainees and asking them to complete a short questionnaire. To assess the tool’s reliability and deeper validity, the tool was applied to a cohort of 400 FY1s. The results of the peer assessments were compared to conventional portfolio assessments and to other notifications received by the deanery in respect of trainees with difficulties with progression. Contact and location information about trainees was obtained from the Deanery. The study was approved by the West of Scotland Regional Ethics Committee.

Results
The presentation will describe the key messages from the focus groups about face validity and acceptability of the tool. It will also include evaluation of the results of the questionnaire completed by the pilot group. Provisional results from the peer assessments of the larger cohort of 400 trainees will also be presented along with the comparison of these results to conventional portfolio assessments.

Conclusion
This peer-based assessment of performance has good face validity and is acceptable to trainees. It is quick to complete and used effectively by trainees.

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The portfolio viva circuit (PVC) – a novel approach to portfolio assessment

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Background and purpose
The use of reflective portfolios is attractive to educators but without assessment as a driver some students fail to commit to the process. Traditionally portfolio assessment is hampered by poor reliability. The Royal College of Physicians/University College London Diploma in Medical Education has used a circuit viva, akin to an OSCE, to assess students’ educational portfolios. Evaluation of this method includes feedback from candidates and examiners plus statistical analysis of reliability.

Methods
The diploma student portfolio asks students to gather evidence of reflective practice and use of theory & evidence to support practice across five educational domains: planner, assessor, facilitator, role model and information provider (adapted from Harden & Crosby1). At each viva station students are asked to discuss and provide evidence relating to their learning in each domain being assessed. The questions asked focus on providing evidence of change in practice driven by feedback, reflection, theory or evaluation evidence. In addition, candidates can be asked to illustrate the range of expertise they have gained in a particular domain. At any given station all candidates are asked the same questions and assessed by the same examiner. Each station lasts 10 minutes, but is preceded on the circuit by a preparation station where the candidate has 10 minutes to read the questions they will be asked and collate the relevant examples from their portfolio. The exam duration, including rest stations, is 2 hours for 12 candidates. Candidates and examiners were asked to complete a brief qualitative questionnaire about the process, content and educational impact of this assessment. Statistical analysis of the reliability of the viva circuit was calculated using Cronbach’s alpha.

Results
Both examiners and candidates felt that this assessment was fair, feasible, and was a valid method of assessing the portfolio. Candidates agreed that the viva provided a strong incentive to complete the portfolio, indicating a degree of educational impact. Initial statistical analysis revealed a Cronbach's alpha coefficient of 0.71.

Conclusions
Using an OSCE-style viva circuit provides a valid, feasible and reliable method of assessing students’ educational portfolios and is acceptable to both students and assessors.

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Exploring perceptions of workplace based assessment in UK postgraduate training

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Background and Purpose

Existing literature suggests that negative trainee perceptions of workplace based assessment (WPBA) tools may limit the educational potential of such tools. (1,2) This study aimed to investigate trainees’ views of the utility of WPBA, establish the guidance given to trainees in relation to WPBA and explore the barriers to effective implementation of WPBA. This information was required to assist the formation of the Academy of Medical Royal College’s recent recommendations on the use of WPBA within UK postgraduate training.

Methodology

A list of the 19 WPBA tools currently used within UK postgraduate training was compiled through discussion with the Chair of each Royal College trainee committee. A list of 23 potential barriers to effective implementation of WPBA was devised from a combination of existing literature and a focus group conducted with trainees from a variety of specialties. Following ethical approval, an online survey of 4062 trainees in all specialities (including Foundation training) was undertaken in two UK deaneries: Kent, Surrey and Sussex (KSS) and South East Scotland (SES). (3) Questions relating to utility and guidance covered all 19 types of WPBA, and trainees were asked for their views on the impact of each of the 23 potential barriers.

Results

There were 1268 respondents (896 KSS, 372 SES), an overall response rate of 23.7%. Trainees consider case based discussion and multi-source feedback to be the most educationally useful types of WPBA. The proportion of trainees who had received guidance on the completion of a particular WPBA tool in the context of their own training varied from 53.2% to 84.1%. They were most likely to have received written guidance on WPBA, but would prefer verbal guidance. Assessor time for completion was felt to present the most significant barrier to the effective implementation of WPBA as a method of formative assessment.

Discussion and Conclusions

Trainees valued some types of WPBA more than others. The guidance provided to trainees varies dramatically and most trainees are not receiving such guidance in their preferred format. Trainees are more likely to have received guidance on completion of the more commonly used tools. Increased assessor time is required to provide effective assessment of training in the workplace. Furthermore, this study raises the question of whether it is time to rationalise the number of WPBA used within UK postgraduate training, thereby facilitating increased familiarity and the provision of comprehensive guidance for both trainees and assessors.

References

Basic Science Education
A new preclinical-year revision course designed and taught by clinical-year students: Analysis of tutees perceived confidence in an innovative teaching model

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Background
The General Medical Council (GMC) has emphasized the importance of teaching ability for doctors and recommended that training for these skills is introduced early on in the medical education curriculum. One way to achieve this is in the form of near-peer assisted learning, where junior medical students are taught by senior ones. We here report the development of an extensive near-peer teaching project at the University of Birmingham and its impact on tutees.

Aim
To evaluate the impact this near-peer teaching project has had on the perception of junior medical students about their confidence in their knowledge of the topics covered.

Method
The course was designed and delivered by three medical students in the clinical years and consisted of 76 hours of teaching in total, split equally between Year 1 and Year 2 preclinical topics. Tutees were asked to complete evaluation forms before and after each session, answering a range of questions that included demographic details as well as a self-rating of confidence in the topic taught before and after on a 100mm visual analogue scale (VAS).

Results
The number of forms returned was 2656. The average overall student rating of their perceived self-confidence in the topics before the sessions was 42.18 on a 100mm VAS scale. All sessions individually showed significant increases in confidence ratings after the sessions, with an average rating of 61.24 on a 100mm VAS scale (p<0.01). Attendees felt near-peers were better placed than peers or academic staff to deliver this level of revision.

Conclusions
The near-peer teaching model was widely accepted by the tutees and significantly improved the confidence in the topics taught. Further studies need to be done to determine the value of such models in core medical curricula.
Do third year undergraduate medical students at Barts and The London School of Medicine and Dentistry find endoscopy screen-based simulation useful in meeting the MET3a (Surgery, Gastroenterology, Anaesthetics and Peri-operative Care) learning objectives?

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Background
The Year 3 medical student curriculum is outlined by learning objectives in student handbooks. The clinical teaching of these objectives relies on demonstrative patient encounters. Time constraints and chance encounters may leave students with gaps in their clinical knowledge. Studies have demonstrated the effectiveness of simulation in the teaching of basic science and clinical knowledge. Screen-based simulators have been shown to enhance technical and behavioural skill during undergraduate training, thereby reinforcing the cultivation of safe medical practice. Currently there are no studies investigating the role of endoscopic simulation as an undergraduate teaching tool. Simulation facilities provide an opportunity for an interactive learning experience that could be tailored accordingly to learning outcomes. The aim of this study was to assess whether year 3 medical students find endoscopy simulation useful in meeting their gastroenterology learning objectives.

Methodology
We piloted a one hour tutorial for 6-8 students on upper GI bleeding using 3 cases from the Simbionix endoscopic simulator. The learning objectives for the session were mapped to the MET3a learning objectives provided by the school. The session was facilitated by an experienced doctor on the gastroenterology firm. Students were led in an initial discussion about the clinical scenario and encouraged to find the relevant pathology on the simulator. Management was discussed through writing endoscopy reports. The students were then asked to complete a 5- point feedback form at the end of the session.

Results
16 students attended two sessions on a voluntary basis. 13 feedback forms were completed. Each question was scored from 5 (strongly agree) to 1 (strongly disagree). From a maximum of 45, the range of scores was 39 to 45. 12/13 either ‘agreed’ or ‘strongly agreed’ that their knowledge of the causes of upper GI bleeding had improved. This increased to 13/13 for knowledge of the management of upper GI bleeding. All students ‘agreed’ or ‘strongly agreed’ the session was enjoyable and useful in meeting the MET3a learning objectives. The lowest score was for recommending the session to peers, there 3 students were ‘neutral.’ Free text suggestions included fewer students, moving it to earlier in the term and extending it for longer than one hour.

Discussion
This innovative teaching pilot shows that endoscopy simulation is an enjoyable teaching experience that develops students’ knowledge and management of key topics in the Year 3 curriculum. We will implement this and plan to develop further sessions to cover more of the MET3a learning objectives.

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Medical students as educational auteurs: making a short film about sex

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Background and Purpose
Bristol University offers a Student Selected Component to year two MBChB students in Peer Led Sex Education. One project involves scripting a short play on a sex education theme for an audience of 13-14 year olds. This year we built upon a previous script and created an 8 minute film. The project aimed to develop medical students’ skills and knowledge in:
  • sexual health
  • educational method and patient education
The film will be shown in a Bristol secondary school in July 2012 when we will take part in sexual health teaching with Year 9 pupils.

Methodology
We chose to develop the themes of peer pressure and alcohol misuse, as these are commonly linked to adolescent sexual decision making1,2. We collectively wrote the script interspersing action with soliloquy to highlight the emotional and private thoughts of the protagonists, which they struggled to conceal. This attempts to reveal the discrepancy which often exists between what is said and what is felt3, in a language a young audience could understand. We formulated a storyboard4 to help us develop a certain stylisation of the film as well as to coordinate filming on set. We filmed using a digital single-lens reflex camera and acted in it ourselves. We used a number of locations to add visual interest as well as realism to the video. Our cinematography5 used steady shots in daytime scenes to suggest normality and sobriety. This was contrasted with unsteady shots and muffled sound in the party scenes, which were designed to draw the audience into the sense of fun and freedom of the party, and to highlight to them the impact that alcohol was having on the interactions between the protagonists.

Results, discussion and conclusions
Our intention was to create a film with impact and resonance in its target audience. We wanted to show the vulnerability and doubt in the mind of the male protagonist as well as the anxiety and naivety of the female lead. The focus of the film is intentionally split between the dangers of alcohol and peer pressure, as we felt these two issues are often linked. We avoided demonising6 girls or boys: apparently benign persuasion can be felt as strong pressure by adolescents. Our final scene is intentionally disturbing and breaks the fourth wall7. At ASME 2012 we want to share our film8 with delegates and discuss its reception and use in the classroom.

References
Clinical Skills
Does an 8 week undergraduate attachment in Reproductive Health and Care of the Newborn (RHCN) enable Medical Students to detect a pelvic mass in bimanual pelvic examination?

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Background and Purpose
The intimate nature of gynaecology examination demands experience, sensitivity, and good clinical skills. Recent NICE guidance on heavy menstrual bleeding puts emphasis on tailoring invasive investigations and referral to secondary care only to those patients with abnormal clinical examinations¹. There is evidence that GPs entering practice may not be sufficiently prepared to perform the huge range of clinical skills that is demanded by the job². With many medical students progressing to a General Practice career with only undergraduate experience of Obstetrics and Gynaecology, simulation provides the opportunity to assess whether medical students gain sufficient experience during their O&G training to allow differentiation between normal and abnormal pelvic examinations.

Methodology
Medical students undertaking their clinical attachment at Southmead Hospital during the academic year 2011-2012 (n=48) were asked to perform bimanual and speculum examinations on six different pelvic models at the beginning and end of their clinical attachment, and record their findings in a standardised answer sheet. They were asked to complete an initial questionnaire detailing previous gynaecology experience, followed by a second questionnaire assessing their attachment experience, their opinion on the models, and whether simulation training was beneficial.

Results
Initial results (n=24) suggested an improvement in most elements of the examination of the models following the clinical attachment:

• Diagnosis of a cervical ectropion improved from 66% to 100%
• Cervical os assessment improved from 55% to 69%
• Uterine axis assessment improved from 51% to 81%
• Uterine size assessment improved from 62% to 83% and became more accurate

However, correct diagnosis of a fibroid uterus reduced from 13% to 4%, and a similar reduction in diagnosis was noted for the ovarian cyst model. Questionnaires indicated that students found the models a useful and realistic method to practice examinations, but often more difficult compared with patient examinations. Further results from the remaining students will be presented.

Discussion and Conclusions
Based on initial results, it appears that not all students were able to detect a pelvic mass on bimanual examination at the end of their attachment, but there was definite improvement in pelvic examination skills. Students were unable to accurately identify fibroids and ovarian cysts in these models, suggesting that further training may be required and that additional ultrasound investigation is necessary if clinical suspicion is high. Student feedback suggests that teaching with pelvic models is beneficial, as long as used in conjunction with actual patient examination.

References
Communication Skills
Students’ proficiency in languages other than English: a survey

M Carroll

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Background
The emphasis of the professional bodies (GMC, GDC) on communication skills becomes particularly apposite in an area with an ethnically diverse population base, as in east London. Allied to this is our medical and dental school’s desire to see its students achieve the Graduate Attribute of ‘Recognise the value of operating in more than one language’. However we had no information on our students’ prior linguistic competence. The purpose of this survey was to investigate to what extent our students already speak a language other than English, at what level of proficiency, and what the range of such languages is.

Methodology
All undergraduate students (n=2000+) were prompted by email to respond to an online survey; the response rate was ~30%. After supplying demographic data, students indicated whether they could speak another language; and if so, how many, what they were, at which of 4 levels of proficiency, and whether they had used one in a healthcare setting. The questionnaire responses were analysed by Bristol Online Survey software, either in total or separately for MBBS and BDS students.

Results
80% of respondents could speak a language other than English, with a total of 72 such languages spoken. French was the predominant one, followed closely by Urdu, Spanish, Chinese, Gujarati, Punjabi, German, Arabic and Hindi. Over 60% of multi-lingual students speak their main second language fluently; and ~50% have used it professionally. 33 languages can be spoken fluently in clinical settings. All our students of Bangladeshi and Chinese origin speak >1 language, and more than half our Pakistani and Indian students have two or more other languages. Those students fluent in healthcare settings are most likely to have used their second language professionally; and the more languages a student speaks, the higher the level of fluency. A more detailed breakdown of the outcomes will be presented.

Discussion and Conclusions
Bearing in mind the usual caveats concerning online surveys, we conclude that our undergraduate medical and dental students are a linguistically talented group, in part a reflection of their ethnic diversity. Our student body represents a huge language resource that might, with appropriate academic oversight, be used for peer tutoring: in Student-Selected Components, or in pre-elective training, or for informal support to fellow students. A basic command of some languages spoken by our local patients might enhance students’ communication in the clinical setting.
Continuing Education
Educational interventions on non-technical skills for health professionals to enhance patient safety: A systematic review

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Introduction
Patient safety is increasingly important in healthcare, with several quality improvement education programmes introduced over the last decade. The importance of non-technical skills training is increasing in prominence, but the extent to which educational interventions have been used and the theoretical underpinnings of such interventions remains unclear. This was investigated through a systematic review of the literature.

Methods
Any studies involving educational intervention to improve non-technical skills amongst undergraduate or postgraduate staff in an acute health care environment were considered. A standardised search of online databases was carried out independently by both authors and consensus reached on the inclusion of studies. Data extraction and multimodal quality assessment were also completed independently, followed by a content analysis of interventions with extraction of key themes.

Results
There were 22 studies that met the inclusion criteria. Measured outcomes were variable, as were the strength of conclusions. Theoretical underpinning of interventions was not described in any studies. Content analysis revealed reasonable consistency, with five key themes: Error, Communication, Teamwork and leadership, Systems and Situational awareness. Teaching was often multidisciplinary and methods used included simulation and role-play based exercises and the use of observation.

Conclusions
The quality of published studies is reasonable, although there is poor reporting of specific interventions. Although there is not a recognised model to support the design of patient safety education, a number of theories have been applied to guide educators in future instructional design and these will be presented. Further published work should clearly describe interventions, the theoretical underpinnings and aim to further explore the questions of what specific aspect of interventions are effective and why this is the case.
Reading anatomy before an imaging tutorial – is there evidence that it aids interpretation of chest radiographs?

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Background and Purpose
Accurate interpretation of a chest radiograph is an important clinical skill in both undergraduate medical students and practicing clinicians\(^1\).

Aim
Does prior reading of the anatomy of the mediastinum improve the accuracy of a student’s interpretation of a chest radiograph?

Method
Two groups of third year Bristol University medical students at the Gloucestershire Academy were selected at random. One group was asked to read the anatomy of the mediastinum prior to the chest radiograph teaching whilst the other group received the clinical radiograph teaching only.

All participants then completed a set of questions after their respective teaching sessions testing their knowledge of the major anatomical landmarks seen on a chest radiograph. The participants were also asked to complete a short form to collect demographic information and details of previous direct or indirect experience with the skill, which may have influenced the results.

Results
Results from this study will be presented along with further descriptors looking at the importance of relating anatomical knowledge to clinical practice.

Discussion
In the undergraduate curriculum at the University of Bristol Medical School, anatomy is taught in the first two years. While re-emphasized throughout the curriculum, it is important for students to realise that revising anatomy should be a continuing theme throughout their undergraduate clinical studies. In this study, we have shown the importance of the revision of anatomical knowledge in aiding student’s interpretation of a chest radiograph. This reinforces the continuing need to emphasize integrating anatomy throughout the undergraduate clinical medical curriculum.

References
Does patient gender affect student learning in the clinical setting?

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Background and Purpose
Bedside teaching is an effective method for teaching clinical and communication skills\(^1\). It has been suggested that it is important to include the perspectives of the learner involved in bedside teaching\(^2\).

Aim
To discover whether students find it easier to examine patients of the same or other gender. If students of either gender are shown to have perceived difficulties when examining patients of a particular gender do students avoid these patients? This is important, as it could have a negative impact on their learning.

Method
We established focus groups of third year Bristol University medical students on their junior medicine and surgery clinical attachments at the Gloucestershire Academy to elicit their views on examining male and female patients. We recorded their perceived differences in the quality of their learning depending on the gender of the patient. We invited both male and female students to attend each focus group, to obtain within-group views from both genders.

Results
Some of the male medical students said they found examining female patients difficult, especially if they were of a similar age. They would often avoid exposing these patients properly during the physical examination, as they felt it would be inappropriate. To do so would make them and the patient (they assume) uncomfortable. The female students agreed, that examining patients of the same age and opposite gender was particularly difficult and something they would try to avoid.

Discussion and Conclusions
University of Bristol Medical Students all start their clinical rotations in their third year of study. Students within the Gloucestershire Academy on their medicine and surgery placements will be expected to learn how to examine patients during their placements using bedside teaching. It is an important time for the students to learn the essential basic skills of how to examine patients. It is of concern, but perhaps not surprising that students report issues regarding patient gender. We hope this study will give the relatively inexperienced student an opportunity to air their perceived difficulties when examining patients in a clinical setting, and enable their clinical teachers to give direction and teaching on how to overcome these difficulties.

References
Are students closing the book on learning?

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Background
Self-directed learning (SDL) is an essential part of undergraduate learning. Student learners are expected to take the initiative in using resources available to them to further and better their knowledge and apply it to clinical practice. Knowles\(^1\) described that people who take the initiative for their own learning do better than those who passively learn from their teachers.

Attitudes towards learning often changes throughout the course of the MBChB curriculum as students develop different learning needs at different levels of study. We sought to make comparisons between two different year groups to enable us to understand these changes, if any, amongst students.

Aim
To establish whether or not students undertake additional reading prior to their teaching sessions, what resources they currently use and the quantity of learning materials owned by individuals.

Method
This is an observational study based around different student learning resources. Students from Years 3 and 5 were invited to participate. Students completed a questionnaire based on their own experiences of resources used for learning. The questionnaire investigated time spent pre-reading prior to any teaching sessions and on any additional reading undertaken outside of the learning environment. It also included questions on what current resources they currently use and/or own to aid their learning, and if any external factors influence these decisions.

Results
Our results show that the majority of Year 3 students use the internet as their primary learning resource method. This compares to Year 5 students who use both the internet and textbooks in similar quantities. Other learning resources were used less frequently. For students in Year 3, we found that few were aware of the University reading lists appropriate to Junior Medicine and Surgery hence contributing to the low numbers of textbooks owned. We also noted a difference in additional and pre-reading between Year 3 and 5, with the latter adopting a more self-directed approach to learning. Students who received financial bursaries were more likely to own their own textbooks.

Discussion
With numerous learning resources available to students it is becoming increasingly common for students to use information technology as a source of learning in addition to, or to replace core text. Over time, students demonstrate that understanding and priorities change, maybe as a result of increased knowledge depth, experience or maturity, and this is reflected in the choice of learning resources used.

References
Pastoral care in tutorials – Do students get it?

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Background
Year 3 “Junior Medicine & Surgery” students meet with their Unit Tutor once a week for an hour. The tutorial’s purpose is to “facilitate self-directed student learning and ensure the coherence of their learning experience” and so offers pastoral (and educational) support rather than didactic teaching. Students are encouraged to discuss material from their own personal experiences that have arisen during the clinical attachment. The role of the tutor is to support this.

Aim
To determine whether students understand what the tutorial system is for, why pastoral care forms part of their curriculum and whether this changes during their attachment.

Method
This was an observational study of student perceptions. All students rotating through Junior Medicine and Surgery were invited to complete questionnaires on the tutorial system. It included questions covering prior experience of tutorials, thoughts on the topics covered, frequency of the tutorials and perceptions of the pastoral elements of the tutorials. Questionnaires were completed at the beginning, middle and end of the placement. We observed baseline attitudes amongst the students and whether these changed as the unit progressed. All results were collated and analysed, to look for trends amongst the students.

Results
We found that the majority of students attended the tutorials initially with little expectation and understanding. Instead they attended the tutorial “because they had to”. As the unit progressed, and following different experiences, the students began to appreciate and understand the meaning of pastoral support. Having previously viewed the tutorials as low priority compared with learning in more didactic settings, our students began to welcome the contact with their tutors, who acted to support any issues raised.

Discussion and Conclusions
Pastoral care forms an integral part of the MBChB curriculum at the University of Bristol. During the first ‘clinical’ year of undergraduate training, students often struggle with the transition from the pre-clinical to the clinical course. The tutorial system provides student support and guidance, both academic and non-academic, through regular meetings with tutors. The process can detect the early signs of student underperformance or the student in difficulty. Early recognition of the struggling student is vital and can be key in the prevention and escalation of problems and aid the resolution of issues before there is a risk of failure. We pride ourselves on student support and from the results of this research it is evident that during their placement here, students begin to understand the use and purpose of the tutorial system.

Reference
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Beyond the de facto curriculum – making post exams learning fun

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Background
Junior Medicine and Surgery is an 18 week unit in Year 3 of the Undergraduate MBChB course at the University of Bristol. Examinations take place in weeks 15-17 but the students are required by the University to remain in their clinical academies until completion of week 18. This week poses challenges to teachers as students do not engage, as they want to wind down in the immediate post exam period. They view their attendance as unnecessary.

Aim
To investigate whether students continue to be enthused and learn, while undertaking a series of activities without immediate relevance to Year 3 Junior Medicine/Surgery, despite their unwillingness to attend.

What we did
All students in Year 3 Junior Medicine/Surgery at Gloucestershire Academy participated in timetabled sessions. The 3 sessions were designed to engage the students by appearing casual and fun. However, they were all underpinned by medical learning objectives. The students were also given opportunities to learn more complex practical skills and demonstrate their creativeness, all relative to aspects of medicine and surgery.

Session 1 Laparoscopic simulation and SIMman were used to develop praxis and to demonstrate application of knowledge/communication skills.

Session 2 Students were challenged to design and create board games that were based on old classics but with a medical twist.

Session 3 Was an opportunity to implement the games and indirectly test each other’s knowledge.

By encouraging ‘healthy competition we were able to ensure that they were continuing to learn, whether they realised it or not.

Evaluation
Following completion we evaluated the week as to whether it had met student expectations, contributed to their learning and if the week had been enjoyable. Some student comments are listed below,

“Good opportunity to chat and laugh around medicine.”

“Very engaging & involved.”

“Nice to have a chance to be creative.”

“Good conclusion for 18 weeks.”

By incorporating medical theory into practical application, the students had largely enjoyed the week and more importantly they felt they had continued to learn. With the addition of formative assessment we have been able to confirm that these beliefs are true. We have found that it is possible to continue to engage the students in learning by embedding medical theory in a relaxed atmosphere. We believe that this is a novel way to overcome the challenges faced at the end of this post examination unit.
Information resource use by doctors, trainees and medical students, and the rations for their choices

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Aims
Evidence-based medicine (EBM) and its application to clinical practice is an important skill for medical students to learn\(^1\) and for clinicians to implement\(^2\)\(^-\)\(^3\). There are a plethora of resources available to support evidence-based practice including journals, textbooks, National Health Service (NHS) resources, medical school resources, applications for phones, and even social networking sites. But how do doctors, trainees and medical students decide which resources to utilise? This study aims to explore and compare how doctors, trainees and medical students make decisions about the information resources they utilise.

Methods
A qualitative study using stimulated recall interviews with doctors (n= 18), trainees (n= 14) and medical students (n=15) from the Southwest of England. The doctors and trainees (junior doctors and registrars) were based in primary and secondary care in Devon. The medical students were in years 1-5 and based at various localities within the Peninsula Medical School. Participants kept a self-report diary of the information resources used over a week to use as the stimulus in the interview. The interviews used the diary information as the basis for discussing the rationales underpinning the information resources used. The data were thematically analysed using NVivo.

Results
The findings of the analysis will be presented at the conference. There were several categories of reason underpinning why doctors accessed information, for example to clarify something for a patient within a consultation. An important aspect of choice of resource was ease of access, with usernames and passwords forming a significant barrier to use. Medical students generally used information resources more often and for longer, and possible reasons for this will be explored.

Conclusion
By understanding the information seeking behaviours and underpinning rationales of doctors, trainees and medical students we can work towards reducing barriers to accessing information and incorporating evidence into practice.

References
Contextualised learning of basic sciences for Foundation Doctors using Virtual Patients

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Background and Purpose
At the University of Southampton Faculty of Medicine, we have developed Virtual Patients for undergraduate medical students to facilitate patient-centred learning. A Virtual Patient (VP) with a brachial plexus injury and fractured clavicle was developed for the first year Nervous and Locomotor course, aiming to support revision, application, integration and contextualisation of basic and clinical sciences taught in the course. The four week VP illustrated the patient’s journey in an animated scenario, presenting basic science related tasks and activities in a clinical context, with supportive embedded interactive learning materials (www.som.soton.ac.uk/learn/elearning/projects/year1vp/). Studies were conducted from 2009 to 2011 to evaluate the effectiveness of the VP \(^1,^2\), and the results suggested that this VP may be useful as a learning material for Foundation doctors. Our aim in the current study was to explore the potential for using this VP in Foundation doctor training.

Methodology
Ethical approval was obtained from the institutional ethics committee. Foundation doctors at Southampton General Hospital (SGH), Southampton and Queen Alexandra Hospital (QAH), Portsmouth were offered the opportunity to participate in the study in September 2011. At an introductory session, the VP was introduced, and pre-questionnaire and quiz were conducted. The participants were given three weeks to use the VP, after which they attended a concluding session to complete post-questionnaire and quiz, and participate in focus group interviews.

Results
Nineteen foundation doctors participated in the study (6 from QAH and 13 from SGH). The participants found the VP and embedded interactive learning materials helpful, and the majority demonstrated an improved score between pre- and post-quizzes (mean difference = 12.6%). Their self-rated understanding of the basic sciences covered by the VP increased after using the VP. However, only five of the participants completed the VP, because of time constraints. The majority felt that the VP was helpful for their learning of basic science subjects, and it should become an integrated part of their training programme designed to help fulfil their curriculum objectives.

Discussion and Conclusions
The VP can be an effective tool for facilitating both undergraduate and Foundation doctors’ contextualised learning of basic sciences. To be fully effective VPs need to be integrated into the Foundation programme training scheme.

Reference
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Survival of the fittest: Using in-hours time to bridge the gap in out of hours experience

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Background and Purpose
In recent years extensive resources have been put into bridging the gap between medical students and foundation trainees (FTs). However, whilst our students leap ahead our FTs are falling behind. Due to the introduction of the European Working Time Directive (EWTD) trainees are getting less out of hours (OOH) experience. Studies have shown that trainees feel under prepared and unconfident in the management of acutely ill patients, a requirement outlined in the foundation curriculum 2007.

The purpose of this study was to:

i) Design a questionnaire to identify lack of confidence relating to OOH medical emergencies.

ii) Design a course to build confidence in areas of deficiency.

The specific aims of the course were for it to be:

i) delivered safely and opportunistically,

ii) within normal working hours, and

iii) be easily reproducible by doctors at other trusts

It should equip FTs with the "survival skills" necessary for managing patients in the OOH setting.

Methodology
An initial questionnaire was distributed to FTs, with a 100% return rate. It used a rating scale to assess individual confidence at managing common emergency presentations OOH. This highlighted the areas where trainees lacked confidence. From this needs-analysis a teaching course, entitled “Foundation Survival Skills,” was designed and implemented. Each teaching session covered a separate emergency and encompassed a knowledge review, including difficulties faced OOH, and a discussion of the management of real life OOH cases. The sessions ended with an informal exam, followed by formal feedback.

Results
The initial questionnaire showed trainees felt:

- Most confident at managing; cough, breathlessness and chest pain (70% confident).

- Least confident at managing stroke (20%) and non-invasive ventilation (40%).

- On average only 50% confident at managing an OOH emergency overall

- The majority of those questioned felt their lack of confidence was due to lack of experience.

The outcomes of the course (to date) show:

- 100% of trainees felt more confident in managing emergencies in the OOH setting.

- The average feedback rating was 90% for both course content and presentation.

Conclusion

i) The reduction of junior doctor working hours has lead to a decrease in F1 experience in dealing with emergency presentations OOH.

ii) Decreased experience OOH has lead to decreased confidence.

iii) A regular, focused, in-hours, teaching course can improve confidence in managing OOH emergencies.

iv) A limitation of this study was the lack of a formal knowledge assessment at the outset.

References

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How do Medical Students View their Learning Opportunities?

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Background
Undergraduate medical students have the opportunity to experience multiple teaching methods during their clinical course. With the transition from the classroom to the wards students are exposed to new learning opportunities. The value of individual learning opportunities may differ according to student preference and the student’s stage in the course. Feedback from our students indicated that although timetabled for approximately 5-6 hours of bedside teaching per week with consultants, registrars and clinical teaching fellows the students perceived they only had 1-2 hours per week. Students may also seek further learning opportunities independently if they find certain teaching methods helpful in assisting their understanding of medicine.

Aims
The aims of this study are to discover which teaching methods have value for medical students and which teaching methods these students perceive to be important learning opportunities for current junior doctors. We also looked at how much time students spend using different learning opportunities compared with timetabled sessions to assess how much they utilise independent clinical learning.

Method
Ethics approval for this study was granted by the Faculty of Medicine and Dentistry Committee for Ethics (FCE) at the University of Bristol. Medical students at Gloucestershire Academy completed a questionnaire on teaching methods to discover which teaching methods suit their personality and which methods they perceive to have value for medical learning opportunities. The students ranked ten different teaching methods in order of preference, one being most useful and ten least useful. Students also recorded the time they spend utilising each teaching method during their average week on clinical placement. This was compared to the timetabled amount and methods of teaching delivered over the same time period.

Results
Results from this questionnaire will be presented along with further descriptors looking at how undergraduate medical students utilise learning opportunities during their clinical years and how they think this may change when they are doctors.

Discussion
Undergraduate medical students are exposed to multiple new teaching methods when they enter the clinical teaching environment. Student perceptions of both their own learning opportunities and the learning opportunities for junior doctors have been investigated in this study. Results from this questionnaire demonstrate how the students begin to consider how independent learning using these learning opportunities will enhance their clinical knowledge.
The use of Clinical Teaching Associates to improve students’ confidence in performing gynaecological examinations: a comparative study

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Background
Clinical Teaching Associates (CTAs) are lay women, trained to teach gynaecological examinations to undergraduates.1,2

CTAs are used widely in the US and parts of Europe, but are employed at only a small minority of UK medical schools.2 At the Great Western Hospital (GWH), Swindon, the Obstetrics and Gynaecology department teaches undergraduates from different universities. One university employs CTAs and the other uses plastic models and consented, anaesthetised patients (traditional training). This has allowed a unique opportunity to observe students in the same clinical environment, who have had different initial training.

Objective
To compare the confidence at performing gynaecological examinations in students taught traditionally and those taught using Clinical Teaching Associates.

Methodology
This is a retrospective study of 112 students. Of these 112 students 53 (47.3%) responded to the questionnaire. The questionnaire identified the type of teaching that they had received. Students were asked to rate their preparedness for gynaecological examination, their confidence in their communication skills and their ability to explain the procedure to a patient.

Results
Of the 53 students, 31(58.5%) were taught traditionally and 22 (41.5%) were CTA-taught. Students marked each component of the questionnaire on a Likert scale of 1-10 (1=not at all and 10= very much so). On average, CTA-taught students rated their preparedness for gynaecological examination as 8.14 and traditionally-taught students scored 5.84 (P<0.05). CTA-taught students also rated their confidence in their communications skills higher; students who had received teaching from CTAs felt better able to explain the procedure to patients (8.50) than students taught traditionally (6.77) (P<0.05). Qualitative data demonstrated strong themes; the CTA-taught students felt that their innovative learning experience had been invaluable, and traditionally-taught students often felt that they lacked confidence in performing gynaecological examinations.

Conclusions
Our study shows that students who have undertaken CTA training are more confident than students trained using traditional techniques. In response to this study we have recruited and are training 4 CTAs to teach all of the students who rotate through our department.

References
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Curriculum Planning
The development of medical students’ and foundation doctors’ tolerance of ambiguity

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Background and Purpose
The practice of medicine involves inherent ambiguity and uncertainty. Preparing graduates to work in ambiguous and uncertain situations is therefore an important responsibility of undergraduate medical education. Little is known about how tolerance of ambiguity develops during medical school or how it might be altered through educational interventions. The studies which do exist suggest that a higher tolerance of ambiguity may be associated with choosing particular medical specialties. This highlights the possibility of unintended consequences associated with raising the tolerance of ambiguity of all medical students.

Research progress in this field is hampered by an absence of useful measurement scales. Existing scales have poor internal reliability or assume that tolerance of ambiguity is context independent. This study has developed a theory-driven Tolerance of Ambiguity of Medical Students and Doctors (TAMSAD) questionnaire that promises to be a more effective indicator of tolerance of ambiguity among medical students and junior doctors.

Methodology
A literature review was performed to identify the definitions, theories, empirical research findings and existing scales relevant to tolerance of ambiguity. This informed the development of 51 draft questionnaire items that tapped the full range of aspects of tolerance of ambiguity identified. A team of eight expert medical educators were asked to give their opinion on these items. A number of amendments were made and items that were deemed irrelevant to the construct were removed. The remaining 42 items were piloted with a population of 10 medical students and junior doctors. Participants were asked to provide feedback on item clarity and relevance. Following this one further item was removed from the questionnaire and two reworded. The final 41 item TAMSAD questionnaire has now been circulated to all medical students and foundation doctors within the Peninsula medical school and deanery. Participants will also be asked about their specialty choice, gender and graduate status.

Results
The literature review findings, the resulting scale and the pilot study findings will be presented at the conference.

Discussion and Conclusions
More research into the tolerance of ambiguity of medical students, how it develops over undergraduate medical education and what facilitates and inhibits its development is required. We believe the TAMSAD scale can make an important contribution to this work.

References
Do the experiences of medical students match the General Medical Council (GMC) objectives for Student Selected Components (SSCs) in the medical curriculum?

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Background
The General Medical Council (GMC) recommended that the medical curriculum should be supported by a series of SSCs or electives that would allow students to study in depth areas of particular interest to them.\(^1\) Many medical schools have created different but often innovative courses. This has resulted in a diversity of programmes.\(^2\) It is uncertain if the desired learning outcomes have been achieved by this model of learning.

Aims
1. To compare students’ perceived outcomes of SSCs with the objectives set by the GMC in Tomorrow’s Doctors 2003.
2. To explore the reasons, from tutors’ and students’ perspectives, why the intended learning outcomes may not be achieved.
3. To identify the barriers perceived by students and tutors.

Methods
40 medical students, 37 FY1 doctors and 12 SSC tutors were recruited to complete a questionnaire. Qualitative and quantitative data collected using the questionnaires was partially analysed to identify results, patterns and emerging themes. The questionnaires for tutors and students were similar so that the results could be compared with each other. Those with contrasting experiences and opinions were invited to a focus group discussion (students and FY1 doctors) or one-to-one interview (tutors) to explore their experiences and perspectives. The focus group discussions and interviews were recorded, transcribed and examined using a thematic analysis approach.\(^3\)

Results
The students’ experiences matched all of the GMC objectives of SSCs, except for the objective that SSCs help students to develop and learn research skills. 89% of the students felt their objectives were achieved in their last SSCs. The factors that may prevent students from achieving the objectives could be related to the organisation, the delivery and the assessment of SSCs. Areas of disagreement between the students and tutors regarding SSCs were explored.

Discussion and Conclusions
It is well-recognised that differences exist between the ‘planned’, ‘taught’ and ‘learned’ curriculum.\(^4\) This is especially relevant to SSCs, which vary substantially in their educational content. This study explores how closely a current SSC programme aligns with the GMC objectives. Based on the experiences of SSC students and tutors, the factors that may prevent students from achieving the objectives and the barriers for tutors in delivering SSC modules were explored. The results of this study will not only add knowledge to the current understanding of SSCs, but also offer organisers and tutors practical tips to resolve common problems in the organisation, delivery and assessment of SSC programmes.

References
Diagnostic Reasoning in Undergraduates
Diagnostic reasoning in medical students using a simulated environment

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Background
Diagnostic reasoning retains a pre-eminent position in the skills of a doctor in modern society. This complex skill is underpinned by a number of cognitive strategies which include decision making, information processing, and metacognition. The apprenticeship model assumes that students assimilate such skills by observing and copying others alongside progressive case based exposure, which has been augmented by more explicit teaching of diagnostic reasoning skills in some modern courses.

Purpose
The key problem is how can a medical educator with considerable clinical experience engage successfully in this process with novice students and bridge the theory-practice gap? In order to bridge the gap we need to know what is the perception held by students of their role in making diagnoses and how can this view influence the teaching of diagnostic reasoning within the medical curriculum?

Methodology
This study used Dimensional Analysis (a form of 2nd generation grounded theory) to develop theoretical ideas about how students view diagnostic reasoning through the analysis of a filmed simulation with an actor followed by a reflective discussion using adapted prompts with the researcher. This involved nine student volunteers who had completed the first two years of the undergraduate programme at Brighton & Sussex Medical School, which adopts a spiral integrated curriculum.

Discussion and conclusion
In diagnostic reasoning terms these students work from a position of ontological insecurity i.e. they illustrate uncertainty in using and applying limited knowledge in a clinical simulation, and find difficulty in making semantic links between this knowledge base and diagnostic ideas. In reality the participants are influenced by the context of the simulation (priming effect) and construct their own boundaries, adopting a deferential role which often limits the meaning of the simulation to data gathering. Consequently explanations for illness are immersed in basic biomedical knowledge linked to risk behaviour e.g. dietary habits, alcohol, and smoking. In order to compensate for this insecurity the participants rely upon a number of learnt cognitive strategies such as mental and written heuristics to facilitate knowledge organisation (Traditional Medical History, the use of mnemonics such as SOCRATES, rudimentary application of a ‘rule in, rule out’ strategy, and use of a ‘worst case scenario’ baseline—‘it’s not cancer’).

They generally adopted a linear, deductive approach to diagnostic reasoning with occasional inductive thought and grouping of features. Clear evidence of Transformative Learning emerged in the reflective discussions after playback of the simulation.

References
International Medical Education
Engaging current and potential medical students in clinical research during an elective hospital attachment: a qualitative study

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Background and Purpose
Exposure of medical students to research may increase the probability of their pursuing postgraduate research involvement\(^1,2\). However, whether research exposure should ideally be mandatory (student-passive) or extra-curricular (student-proactive) is unclear\(^2,4\). Furthermore, whether research exposure has any impact on students interested in but not yet studying medicine is also unknown. This study examines a strategy of actively offering clinical research opportunities to current and potential medical students during an ostensibly clinical hospital attachment.

Methodology
The Cardiothoracic Surgery unit of a university teaching hospital regularly hosts high school and medical students from around the world as part of a volunteer hospital attachment program or medical school elective. All students are offered the opportunity to participate in clinical research by the unit. Over a 5 year period, 29 students volunteered and all 29 became co-authors on one or more of 22 original research abstracts culminating from their work that have been presented at international medical conferences. Fifteen students completed an online questionnaire-based survey.

Results
The commonest motivations for participating in research were the possibility of improving their resumé and of learning research skills. Most students spent 40-60% of their time during the attachment on clinical research. Although most students had no expectations of performing research when commencing their attachment, 92% reported that the research work ‘somewhat’ or ‘significantly’ enhanced their experience. Based on their experiences, >50% students gave a score of ≥7 (scale of 1-10) when asked whether they agreed that: they wanted to pursue research in their future careers; all medical students should acquire research skills; research data can aid clinical care; and they learned about working with others through research. All students ‘agreed’ or ‘strongly agreed’ that medical schools should provide research opportunities for students, although support for mandatory research within the curriculum was mixed. Students most appreciated having a good supervisor and being treated as mature independent adults, but some would have preferred more contact with clinical medicine alongside the research work. If offered, 92% of the students were ‘likely’ or ‘very likely’ to want to participate in clinical research with the unit again.

Discussion and Conclusions
Offering non-mandatory clinical research opportunities during an elective hospital attachment to students interested in or already studying medicine may enhance their interest in pursuing research in future and understanding of evidence-based medicine. Even with limited or no prior clinical exposure, students can appreciate the significance of their studies and can produce good quality clinical research.

References
Distribution change of physicians on specialist training in Japan
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Background and Purpose
In 2004, two years of foundation year programme became mandatory in Japan and a physician-to-facility matching system was introduced. Since then, more foundation doctors have migrated from academic hospitals to non-academic hospitals. The change in distribution of specialty training physicians following the foundation programme has not been studied sufficiently. The purpose of this study was to investigate the change in distribution of Japanese physicians in specialist training after the introduction of the new programme.

Methodology
The government of Japan conducts the National Survey of Physicians every two years. Based on the survey, we first investigated where physicians registered in 2000 and 2002 (before the foundation programme was mandated) and where those registered in 2004 and 2006 (after the foundation programme was mandated) were working (academic hospital or other hospital) in their third year (first year of specialty training). Then, the distribution of field of practice (specialty) of third-year physicians registered in 2006 was analysed to investigate the specialty training programme choice in the different types of training institution. To compare the distribution of field of practice for the different hospital types, we used a χ² analysis, with a P value of <0.05 considered statistically significant.

Results
The percentage of physicians registered in 2000 and 2002 and working at an academic hospital in their third year was 24.0% and 27.3% respectively, and for those registered in 2004 and 2006 was 39.3% and 40.7% respectively. Regarding the distribution of main field of practice (specialty), neurology, nephrology, diabetes and metabolic medicine, gastroenterological surgery, plastic surgery, psychiatry, obstetrics and gynaecology, ophthalmology, otorhinolaryngology, dermatology, urology, radiology, and anaesthesiology were the fields of practice where significantly more physicians worked for academic hospitals than for other hospitals. Internal medicine, paediatrics, respiratory medicine, gastroenterology, cardiology, surgery, orthopaedics and emergency medicine were fields of practice where fewer physicians worked for academic hospitals.

Discussion and Conclusions
The current study revealed that the distribution of physicians in their third year has changed since the introduction of the initial postgraduate clinical training policy in 2004. Because the distribution of specialty training field differed depending on the facility type, the policy change may result in a change in the distribution of specialties. In addition, there are now more female physicians and the trend toward specialisation has become more prominent. Debate on specialty distribution needs to continue.

References
Attitudes to medical student selection – analysis of key stakeholders’ attitudes and perceptions of student selection

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Background and Purpose
Medical schools in Australia used to rely solely on measures of prior academic achievement to make selection decisions, but now also incorporate a standardised test of cognitive ability (the Undergraduate Medicine and Health Sciences Admissions Test (UMAT) or the Graduate Australian Medical School Admissions Test (GAMSAT)), and most include interviews designed to assess non-cognitive qualities such as empathy and communication skills. While the reliability and validity of these different tests has been the subject of considerable academic research1,2,3, the selection process is also under close scrutiny from key stakeholders other than medical schools, including applicants, patients and doctors, and their perceptions of the process have never been directly investigated. This study aims to: 1) Examine the views of key stakeholders in terms of perceived validity of the four selection tests used by Australian universities to select medical students: past academic achievement (as measured by high school or university (GPA) grades, the two measures of cognitive ability (UMAT and GAMSAT), and interviews; 2) Investigate whether perceived validity affects overall confidence in medical student selection; and 3) Identify factors that influence perceived validity.

Methodology
Data was collected via questionnaire involving 938 participants identified as belonging to key stakeholders groups (such as applicants, medical students, patients and doctors) involved in the selection and training of medical students. Questionnaire items were developed by the researchers and also adapted from previous published scales4,5,6 and measured participants’ perceived validity of selection tests, familiarity with selection tests, competencies expected of medical practitioners, selection model preferences as well as overall confidence in medical student selection.

Results
One-way ANOVAs compared differences between groups. Perceived validity was assessed with correlations and regression analyses. Mean confidence was low for all groups, with medical practitioners having lower confidence in current selection processes than other stakeholder group. Tests of cognitive ability were seen as the least valid and interviews as the most valid by most groups. Perceived validity was predicted by the extent participants thought the tests were susceptible to bias and by the type of skills they thought doctors required.

Discussion and Conclusions
There is an overall lack in confidence that universities are selecting students who will make good doctors in the future, with both measures of cognitive ability perceived as the least effective and valid selection measures. Risks associated with negative perceptions about selection might be mitigated by better communication about the actual validity of tests.

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A comparison of preparedness for practice between Irish & English medical graduates in order to better inform curriculum design

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Background
International evidence shows that many graduates feel insufficiently prepared for clinical duties upon graduation (1-3). However, few studies have made direct comparisons between graduates of different countries. This has relevance in the context of increasing globalisation and national and international benchmarking of medical training.

Aim
To compare the self-reported preparedness for practice by graduates of an Irish and an English medical school in their first year of clinical practice.

Methods
Graduating students from the University of Nottingham, more than half of whom stayed locally, were invited to leave their email address for follow-up on how well they felt prepared for practice: 184 gave their email address, of whom 153 replied to the invitation, giving a response rate of 83%. The total graduating cohort was 321, giving a response rate of 48%. Graduates from University College Cork who stayed in Cork were contacted and invited to complete the questionnaire. 66/102 responded, giving a response rate of 65%. The total graduating cohort was 112, giving a response rate of 50%. All these junior doctors were surveyed towards the end of their first year of training, using a previously validated tool(4), which comprises six subheadings – scientific basis of practice; treatment; clinical and practical skills; communication skills; general skills, teaching skills and working environment; and medico-legal & ethical issues. Data were entered into SPSS and compared using Mann-Whitney U test and Cronbach’s $\alpha$.

Results
Data show relative strengths and weaknesses of both curricula. Nottingham students perceive themselves as more proficient in clinical skills e.g. suturing, nasogastric intubation and basic life support (p<0.0005). Irish students appear to be better prepared with regard to their general skills e.g. teamwork, record-keeping and life-long learning (p<0.0005). No differences were noted in some areas e.g. breaking bad news, and responding to patients’ complaints. Data will be presented in more detail in the context of both curricula.

Conclusion
International benchmarking of medical graduates informs curriculum development and stimulates fresh perspectives on how to achieve learning outcomes set in the curricula. Such collaborations promote exchange of teaching initiatives and allow for targeted interventions for identified areas in need of improvement.

References
An innovative method to encouraging learning on the subject of pharmacology in undergraduate medical students

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Background
Students at Leicester Medical School undertake a placement in primary care in their 3rd or 4th year. One learning outcome is for them to increase their knowledge and understanding of pharmacology. A novel method used to engage students is the challenge known as ‘Desert Island Drugs’. Small groups of students select the eight most important drugs they would take with them to a desert island, to treat a population with similar characteristics to that of the East Midlands to add to the four already selected (prednisolone, aspirin, insulin and amoxicillin). The presentation of their list can take any form and often involves considerable ingenuity and creativity. Commonly these are dramatic re-enactments of popular TV programmes in which each drug is presented with a human identity. Teachers on the block were concerned to know if students’ knowledge was increasing and whether the effort spent on their presentations was proportionate.

Methods
Students undertake a test at the start and end of the block, to measure knowledge change. Three focus group interviews were arranged at the end of successive blocks. This discussion was audio-taped, transcribed and subjected to thematic analysis. Amongst the themes being explored are the perceived increase knowledge, or otherwise; the value of the time spent on preparing the dramatic/presentation elements, and whether it is proportional to the knowledge change; the enjoyment and enthusiasm surrounding the exercise; and the overall opinion on learning pharmacology within the undergraduate curriculum.

Results
Data is currently being collected on the degree of knowledge change from paired tests results to illustrate the degree of knowledge change during the block. Analysis of the discussions will provide insight into how students learn about pharmacology, the relationship to their earlier learning of the topic, the relative value of private reading and group discussion in acquiring knowledge and the benefits and disadvantages of using drama to present their findings.

References
BSc intercalation. Time for a re-think

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Background
With the introduction of university fees of up to £9,000 per year from 2012, the usefulness of undertaking a BSc needs re-evaluation. At present the NHS Grants Unit fund medical training from the 5th year of study and take intercalation into account so the cost of an extra year of study is limited to living expenses only. However the true cost is one year’s lost income as a doctor and in the future there is no guarantee the Grant Unit will continue to pay for medical training. Articles written on the subject, whilst considering both positive and negative aspects, emphasize intercalation as desirable1, 2. In Bristol, entry to intercalation is a competitive process with selection based on academic results. Pre-clinical teaching staff are usually enthusiastic scientists, who actively promote BSc intercalation as it brings money to their department. Students who fail to win a place may feel anxious about the implications for their future careers3. We therefore wished to evaluate student attitudes towards intercalation.

Methodology
We conducted semi-structured interviews with 15 intercalating and 15 non-intercalating students from the same year group. We discussed their views on intercalation choice with reasoning; what advice they received and from whom; career aspirations (e.g. academic) and prospects; expectation and enjoyment. We also gained opinions from clinical consultants involved in the selection process for doctors to enter specialist training.

Results
Results from the interviews will be presented with a specific comparison between student and clinical consultant perception of intercalation with reference to career progression.

Discussion
Having two undergraduate degrees in allied fields could be viewed as futile especially if the intercalated degree is not relevant to their career end point. Medical schools have a duty of care to provide balanced information regarding intercalation and its relevance to working as a clinician4.

References
Wikipedia as a Medical Resource: Questionnaire assessment of Medical Student Use and Views

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Background
Wikipedia, the free online encyclopaedia, has over 23,000 medical articles. Its breadth and global popularity combined with its open-edit policy have prompted discussion of its role in medical education. Only one investigation where medical students were surveyed about their Wikipedia use has been published, where students were asked about their views upon its usefulness and reliability. Asking students how and why they use Wikipedia would indicate how important a resource it is to them, and why.

Aim
To characterise the main features of how and why medical students use Wikipedia as a medical resource and how they perceive Wikipedia’s accuracy and usefulness as a medical resource.

Methods
After a pilot study and ethics approval, printed questionnaires were distributed to 2011/12 2nd, 3rd and 5th year (n=1064) Imperial College London medical students at curriculum lectures. The questionnaire assessed frequency of, reasons for and main reason for use of Wikipedia as a medical resource, frequency of checking of information obtained from Wikipedia and editing of Wikipedia articles. Separate questions asked students to rate accuracy and usefulness of Wikipedia alongside lectures, other medical websites and textbooks; free space was provided for comments.

Results
452 responses (42% of student cohort) met inclusion criteria; 94% reported using Wikipedia as a medical resource with the most commonly selected reason for use being to look up new facts or terms. Wikipedia’s mean accuracy rating (6.1/10) was lowest amongst medical resources; its mean usefulness rating (7.4/10) was second only to lectures. Only 11% (48/452) of students reported always checking information obtained from Wikipedia.

Discussion
This study indicates widespread use of Wikipedia by UK medical students for studying; evidence suggesting 70% of UK junior physicians use Wikipedia for clinical work indicates such behaviour continues to postgraduate education. Views upon reliability and usefulness are similar to Australian medical students, perhaps demonstrating global trends. Further investigation, particularly through a validated questionnaire, would provide evidence informing discussions about Wikipedia’s use. Its popularity means medical schools should engage their students before developing policies regarding Wikipedia. Investigation and action is needed to ensure this ever-changing resource is better improved and utilised.

References
Leadership and Management in Medical Education
Clinical Leadership – Developing a non-clinical based internship network for medical students

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Background and Purpose
Clinical leadership and management are becoming ubiquitous within the NHS environment especially with junior doctors. Medical management and leadership (MML) skills are increasingly regarded as essential attributes for all doctors regardless of seniority 1. Additionally the government reforms are looking to place doctors in prominent leadership roles. Despite this, MML development remains hidden in the medical school curricula and undergraduates are not formally assessed on their ability to lead and manage others 2.

The Diagnosis Internship Network (DIN) was a pilot scheme set up in 2011 to create structured placements for medical students to develop leadership and management skills in health care related organizations. Current undergraduate medical school training in England does not provide future clinicians with a broad exposure to the health care system and the wider role doctors can play in health care improvement 3. This pilot of a small number of DIN placements was specifically created to foster cross-sector learning from an early stage in medical training.

Methodology
Placements were negotiated and internship opportunities were advertised via Diagnosis website. The application comprised of a cover letter and a CV. The specific dates and duration of each placement were negotiated between the successful applicant and the host organization to accommodate vacations or medical elective time frames. Students were asked to complete a pre-internship survey and post-internship survey.

Results
More students applied than it was possible to place in year 1. It is anticipated that year 2 will see the expansion of the Diagnosis Internship Network to offer placements for a wider number of students at a broader range of organizations. 83% respondents from the pre-internship survey highlighted they had some or no exposure to health care management and policy at medical school. 66% respondents had a not very good or alright knowledge about broader health care system. Interns who have completed their placements report enhanced leadership competencies, as defined by the Medical Leadership Competency Framework. It is anticipated that such skills will compliment the students’ ongoing clinical training and ability to lead patient safety and quality initiatives going forwards.

Discussion and Conclusions
Following the pilot in 2011, a system has been pioneered for identifying host organizations and recruiting interns. This streamlined process will enable the scheme to expand in future years both in scope and number of placements in order for medical students to experience non clinical placements in health care. As the role and identity of the doctor evolves, it is essential to continually innovate the medical curriculum to reflect the needs of future doctors and training clinical leaders. Exposing medical students to a range of different stakeholders in the health care arena from an early stage in their training imbues a wider appreciation of the opportunities and levers to improve health care.
Management and Administration
Saving For A Rainy Day: In the current climate of NHS economisation, how much do healthcare professionals really know about healthcare costs?

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Background and Purpose
In the current economic climate, the gap between NHS budgets and spiralling healthcare costs is ever widening. Diagnostic investigations account for a large proportion of healthcare costs. In order to economise it is vital that doctors make cost-effective decisions when requesting investigations. Doctors must therefore be educated about the costs associated with more common investigations. The aim of this study was to assess how much healthcare professionals know about the cost of 20 basic hospital investigations. And to establish if there is a need for education about costs. It is a follow on from an initial pilot project completed last year.

Objectives
To determine the cost of 20 basic hospital investigations, to assess, by questionnaire, how much healthcare professionals (students, doctors and allied health professionals) know about the costs of basic investigation to determine if healthcare professional's awareness of costs would influence clinical practice

Methodology
An anonymous survey asking about the costs of 20 basic investigations was distributed to 100 healthcare professionals, replies within 25% of the true cost of the investigation we considered correct.

Results
We received 100% return rate of our questionnaire. This was divided into six categories (1) Medical Students, (2) Foundation 1 Trainees, (3) SHOs (F2s, ST1 & ST2), (4) Registrars, (5) Consultants (6) Allied health professionals (nurses and health professionals).

Conclusions and Discussion
* Healthcare professionals of all grades have limited awareness of diagnostic costs for basic hospital investigations (average of 13% correct).
* AHP and medical students had the highest percentage of incorrect responses (12% overall)
* Consultants achieved the highest correct responses (17.5% overall).
* The majority of professionals felt an awareness of costs would affect their clinical practice (80%).
* The majority of participants felt healthcare costs should be taught at medical school (90%).

The results clearly show that healthcare professionals have limited awareness of basic costs. In light of the current budgetary constraints of the NHS it is vital that doctors have an awareness of these costs to improve their cost-effectiveness. Education about basic costs should be introduced at an early stage of training to enable healthcare professionals to make educated decisions about the resources that they use everyday.

The future
We now intend to complete a study of 500 participants spread over 5 separate hospitals within the Severn Deanery. Following this we aim to introduce a teaching program on healthcare costs and design a computer assisted learning module to improve education about healthcare costs. We will then conduct a re-audit to assess any improvement in healthcare professional’s awareness of basic costs.
Developing leadership capacity and resilience in foundation trainees through an academic training programme

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Background and Purpose
Since 2008, the University of Leicester, Leicester Hospitals NHS Trust and East Midlands Deanery have run an Academic Foundation Programme for F2 Foundation trainees in clinical leadership and management. 12 participants a year are selected through competitive interview. The programme incorporates two parallel components: a postgraduate certificate and a year-long placement in Emergency Medicine which enable trainees to achieve Foundation competencies. Key drivers for developing the programme include an international focus on developing doctors as clinical leaders and managers\(^1\) and a local need for identifying clinical leadership ‘champions’. This study aims to identify the preparedness, capacity and capabilities of early career doctors to take on leadership roles, contribute effectively towards improving healthcare and manage and lead innovation. It identifies key factors in programme design and delivery that support the next generation of clinical leaders.

Methodology
This is a longitudinal cohort study. Methods include questionnaire survey (designed around the Medical Leadership Competency Framework\(^3\), peer and facilitator interviews, focus groups and textual analysis of written reflective and critical evaluative assignments.

Results
Results from the survey, focus groups, interviews and textual analysis of written assignments from three cohorts (N=33) will be presented.

Results indicate that effective leadership development is complex, involving a combination of knowledge of leadership and management theory and models, opportunity to apply this to real life projects or innovations, learning through experience (3) and good academic and clinical support. Early career doctors can lead and manage innovation and change, but in small and bounded ways. Attitudinal change and gaining self-insight through feedback and discussion is critical.

Discussion and Conclusions
Leadership is starting to be embedded as a core competency in undergraduate and postgraduate programmes. However, leadership skills and approaches need to be learned, developed and assessed consistently over time, as this involves inter-personal and attitudinal change. This is time-consuming and resource intensive and discussion and debate needs to be held to define what we can realistically expect and deliver to all students and doctors and how we identify and select those who we want to develop further as the clinical leaders of the future.

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Do Financial Concerns in Medical Students Lead to Perceived Challenges in Learning?

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Background
Student fees for undergraduate courses in the United Kingdom are due to increase to a maximum of £9000 per annum for the next academic year\(^1\). How will students manage with increased financial pressures particularly when the financial burden of debt is increased for lengthier courses, such as medicine which is taught over 5 years\(^2\)?

Current undergraduate students pay fees of £3375 annually until final year, when fees are paid by the NHS\(^3\). With increasing financial pressures many students take on part time work or apply for additional grants, loans or bursaries to help fund their continuing education\(^4\). Previous studies conducted at a lower tuition fee rate demonstrated a link between financial stress and poor academic performance\(^5\).

Aim
We aimed to discover how current students on the lower fees rate manage finances, the causes of their economical strain and whether they perceive that financial difficulties impact on their academic studies.

Method
Ethics approval was granted by the Faculty of Medicine and Dentistry Committee for Ethics (FCE) at the University of Bristol. Qualitative data was gained from focus groups of year 3 and year 5 medical students during their clinical attachments at Gloucestershire Academy. Using information collated from the focus groups a questionnaire was developed to gain quantitative data on the themes identified.

Results
The focus groups highlighted the financial issues experienced by students at different transition stages of the course. Rising costs of accommodation and petrol were prominent concerns as student loan rates have not increased in line with these rises. In some cases the recent economic downturn has had significant impact on student financial support with parents unable to contribute towards additional costs. Overall student participants in the focus groups believed their financial concerns were not having a significant impact on their academic studies but they felt they could not afford to fail academically. Results from the questionnaire will be presented to show how these themes impact on medical students across the undergraduate course.

Discussion
This study provides a ‘snapshot’ of the issues faced by current medical students before the increase in tuition fees. Although the students interviewed stated financial concerns do not impact on their studies they feel they cannot afford to fail exams providing additional academic stress. This is particularly relevant for graduate entry students with a high level of entry debt. Concerns are raised regarding the financial stresses students will be under when fees are tripled.

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‘FY1 Tutor Bedside Teaching Programme’ – an innovative method to enhance access to bedside clinical teaching to Year 3 medical students

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Background and Purpose

The benefits of bedside teaching are numerous and include teaching history and clinical examination skills, clinical ethics, professionalism, communication skills and role-modelling professional behaviour to name a few[1]. Yet, the frequency of this form of teaching is progressively decreasing with increasing clinical and administrative responsibilities coupled with rapid patient discharges and a test-driven approach to patient care rather than clinically based diagnosis[1-4]. Our objective was to increase the amount of bedside teaching of third year medical students through a structured program involving junior Foundation doctors (FY1s).

Methods

Thirteen groups of students (n=44) were allocated to three FY1s each during their 10-week clinical attachment. Students received one hour weekly bedside teaching sessions focused on history taking and clinical examination. All FY1 doctors involved volunteered to teach on the program. Bedside teaching sessions provided by these tutors were supervised by experienced clinical teaching fellows who also provided mentorship during the whole academic year. Students were asked to complete an end-of-attachment feedback questionnaire to assess the effectiveness of the program.

Results

Students received an average of 6 teaching sessions. Despite allocation to a cluster of FY1 tutors, nearly 30% of students still had difficulty in organising the bedside teaching with their allocated tutors owing to busy clinical commitments of the FY1s and lack of communication. Despite this, 95% found the teaching useful and 89% felt more confident in their examination skills after this program. 98% reported the FY1s possessed adequate clinical knowledge and examination skills. 95% felt the sessions were relevant to their end-of-year assessments and 93% found these sessions a useful addition to learning from experienced tutors in weekly small group teaching. All students would recommend this program to their peers and requested an extension of this programme to other teaching hospitals.

Conclusions

We have described a tailored programme to improve the frequency and effectiveness of bedside teaching at a teaching hospital by involving FY1s. This program benefits three different trainee groups. Students benefit by gaining access to regular, supervised teaching in a clinical setting. The FY1 tutors gain valuable teaching experience which is supervised. The FY1s also receive a teaching certificate. The teaching fellows gain management experience by providing mentorship to postgraduate trainees. Better communication should help resolve the difficulties encountered in organising bedside teaching by some students. Since bedside teaching is valuable for learning essential clinical skills, this tailored programme is an effective supplement to senior-grade teaching.

References

Mentoring
Is a near-peer e-mentoring scheme a feasible solution to the problem of providing mentoring to female surgeons?

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Background and Purpose
Mentoring has spread rapidly over the past 40 years and there is much research to support the benefits it provides\(^1\). However, its integration within medicine and, in particular, surgery has lagged behind, with mentoring only recently becoming accepted in this area\(^2,^3,^4\). Women in particular have been shown to reap the benefits of mentoring in the workplace, with evidence to show that women who are mentored outperform those who are not\(^5\). I was challenged to design a mentoring scheme for Women In Surgery (WinS), a rapidly expanding national organisation with over 3000 members, spread over a geographically diverse area. In keeping with the wider surgical community, WinS membership has a pyramidal structure, with an approximate 6:1 ratio of students/trainees to Consultants. For these reasons a traditional face-to-face mentoring scheme in which Consultants would act as mentors was felt to be unworkable and in order to serve the needs of the WinS community, a novel near-peer e-mentoring scheme was suggested. A pilot scheme ran for four months, following which a comprehensive evaluation of the scheme was performed, with the aim of showing whether near-peer e-mentoring provided a feasible solution to enable improved access to mentoring for female surgeons.

Methodology
The evaluation used mixed methods, consisting of an online questionnaire sent to all participants, generating both quantitative and qualitative data, and also email interviews with a small sample of participants. Data analysis used thematic coding to generate key themes, which were used in conjunction with the quantitative data collected, to answer the research questions posed:

- Can one form a successful mentoring relationship using solely the electronic form of communication?
- Is a near-peer e-mentoring scheme a feasible solution to the problem of providing mentoring to female surgeons?
- What are the advantages and disadvantages of e-mentoring in this situation?
- What are the advantages and disadvantages of near-peer mentoring in this situation?

Results
The results showed that a successful mentoring relationship could be established using the medium of email alone, and both e-mentoring and near-peer mentoring were well received, with numerous benefits for both mentors and mentees.

Discussions and Conclusions
I concluded that a near-peer e-mentoring scheme was a feasible solution to the problem of providing mentoring to female surgeons and was one way to increase availability of mentoring for this group.

References
Multi-professional Education
Exploring perceptions of professional identity of health and social care professionals through experiences of interprofessional education

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Background and Purpose
The proposal that identity is constructed through experience and that identity formation is a dynamic process is not new in academic debate\(^1\), \(^2\), \(^3\), and there is some work exploring the extent to which ‘socialisation’ plays a part in professional identity development\(^4\). This research is exploring debates around professional identity formation, and more specifically how these debates apply to members of the health and social care professions, with particular reference to the potential role and impact of interprofessional education (IPE) as part of that identity formation. The purpose of the research is to consider what role IPE and multi-disciplinary working may play in how H&SC staff conceptualise their own ‘professional identity’ and whether this has any potential implications for how IPE initiatives are implemented in the future.

Methodology
The primary research in this study is a mixed methodology of online survey and semi-structured interviews to explore these topics with health and social care staff practicing in England, and with academic staff teaching in health and social care. Additionally, the work of the Assessment and Learning in Practice Settings Centre for Excellence in Teaching and Learning is being used as a case study to explore in more detail the implications of introducing large-scale multiprofessional programmes that aim to improve interprofessional education and consequently working.

Results
Results from the survey and interviews with practicing health and social care staff will be presented here with a discussion of how respondents conceptualise their own professional identity and talked about their own experiences of IPE. The full results will be present, but initial analysis from the survey suggest that whilst there is an apparent desire to embrace IPE amongst the practicing health and social care staff (n = 288), there is much less consensus in defining what IPE is and how and where it should be implemented.

Discussion and Conclusions
Interviews undertaken with practicing members of health and social care staff have implied that staff do not always conceptualise their professional identity as changing over the course of their career, but that they do become more certain of it. Whilst at an early stage of analysis, the results appear to pose questions about whether H&SC professionals need to embrace the ability to work with other professions as part of their identity rather than seeing IPE as something that needs to be ‘done’ separately.

References
Inter Professional Education (IPE) in practice: how a peer-led ‘teaching how to teach’ course can increase undergraduate knowledge, skills and confidence

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Background and Purpose
Guidelines state that undergraduate students from all healthcare disciplines must gain experience of teaching in the clinical years with Inter Professional Education (IPE) providing a collaborative learning approach. As a result the Leicester Medics Association of Teaching (LMAT) ran a one day inter professional peer-led course. This was designed to teach, assess and reinforce the core knowledge, skills and attitudes needed for teaching in clinical practice. The programme was adapted from the Junior Association of Medical Education (JASME) ‘Teaching Toolkit’, combining basic theories of teaching with practical workshops. The day was underpinned by the principles of IPE outlined by CAIPE and enhanced by Peer Assisted Learning (PAL) to ensure students gained hands-on experience whilst receiving continuous feedback from peer tutors and learners.

Methodology
Students completed a pre- and post-day likert scale questionnaire rating their competence and confidence in relation to the core components of the day. In addition, they were asked to comment on their experiences of inter professional interaction throughout the course. Data were collected and evaluated to develop and refine the structure and content of the day, in order to make future events more responsive to the learning needs of healthcare students in clinical practice.

Results
The reported competence and confidence in relation to delivering a lecture, teaching small groups and facilitating a clinical skills session increased significantly throughout the course, with no deficits found. Small group teaching saw the most consistent improvement in both perceived competence and confidence – attributed to the peer-led feedback received during the workshops. 100% of students reported the course had a positive impact on their overall confidence in teaching techniques and that it would positively change their future inter professional practice. Many highlighted the unique benefits gained in learning from other healthcare students with different perspectives, knowledge, skills and experience. Students highlighted that it fuelled their enthusiasm for teaching as a member of the wider healthcare team.

Discussion and Conclusion
Our findings suggest that regardless of initial understanding, a peer-led ‘teaching how to teach’ course can increase knowledge, skills and confidence by providing a unique and valuable exposure to the strategies utilised in daily clinical practice. In addition, student comments demonstrate that the principles of IPE were met, fostering a novel approach to teaching and learning that is vital for both personal and professional development and the facilitation of a more collaborative healthcare team.

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What makes a good FY1 doctor? Developing a tool to assess multidisciplinary teamworking

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Background and Purpose
It is recognised that effective multidisciplinary team-working contributes to good clinical outcomes and safe patient care. As part of an evaluation of multidisciplinary training at HYMS, we wished to collect evaluations of the teamworking skills of FY1 doctors by the members of the multidisciplinary team (MDT). Our attempts to find an instrument to assess such skills highlighted that while the characteristics of effective MDTs have been described, and instruments to assess teamworking effectiveness have been developed, the attributes of individual team members needed to work effectively in the team have not been as widely investigated. The aim of this project was to develop and pilot an evaluation tool.

Methodology
Repertory grid technique was used to gather data from health professionals about characteristics of a good FY1 doctor in the MDT. Constructs have a positive and negative pole, such as “Clinically competent -v- Not clinically competent”. The technique will be briefly outlined and the resulting grid of 15 constructs deemed to be important by members of the MDT will be presented. The grid was tested by collecting data on 55 FY1 doctors from 95 members of the MDTs in four hospitals as well for an ‘ideal’ FY1.

Results
Analysis indicates the instrument is used reliably by the MDT members and differentiates among F1 doctors on their MDT attributes. The FY1 doctors were rated less highly than the ‘ideal’ but, with some notable exceptions, were rated reasonably highly on all constructs by all MDT members, indicating a consensus that most FY1 doctors do possess necessary attributes to work well in the MDT. The constructs were ranked by the MDT members and while all were considered to be important characteristics, consistencies did emerge indicating that when forced, ‘clinical’ constructs were considered more important than ‘social’ constructs.

Discussion and Conclusions
This project indicates that repertory grid technique permits realistic evaluation of the MDT performance of FY1 doctors in the clinical workplace. Personal Construct Psychology would predict that though all constructs may be considered important, when forced to make a decision, rankings can indicate which constructs are prioritised above others. Further research would reveal whether ‘clinical’ and ‘social’ categories of constructs are truly trade-offs or whether relative importance changes in different situations. Research is also needed on whether this grid applies in other settings or if disciplinary differences might emerge in the team with larger sample sizes.

References
Can a pharmacist-taught course in practical prescribing improve final year medical students’ ability to prescribe?

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Background and Purpose
Prescribing errors by junior doctors has been a key issue in medical education, highlighted by the GMC study, EQUIP, in 2009. Up to 10% of medication prescriptions by junior doctors contain an error. This is reflected in the lack of confidence and competence in prescribing reported by medical students. Several studies show the advantage of practical prescribing courses for medical students, taught by pharmacists, but have been limited by study size. This study reviews the impact of a course in practical prescribing taught by NHS pharmacists for final year medical students at a London Medical School, by comparing scores in prescribing assessments at the beginning and end of the course.

Methodology
Final year medical students in five associate teaching hospitals received a four week course in practical prescribing during their clinical placements, comprising standardised teaching delivered by hospital pharmacists (the intervention group). Students in three other associate hospitals did not undergo this course (the control group). Students at all eight hospitals were given a written practical prescribing assessment at the beginning and end of their placements. Only students who took both assessments had their scores entered into the study.

Results
159 students sat the assessments at the beginning and end of the placement, with 110 students in the intervention group and 49 students in the control group. Between the beginning and end of the four week placement, mean student assessment scores in the control group fell by 2.32% whilst assessment scores in the intervention group rose by 14.62%. Thus there was a 16.9% improvement in scores in the intervention group compared to the controls group (confidence interval 9.81-24.06, p <0.001).

Discussion and Conclusions
This practical prescribing course led to a significant improvement in assessments scores and encourages the continuation of these courses within our medical school. This supports evidence which has shown prescribing courses to be of benefit to students in prescribing skills. One limitation of this study was the use of non-validated prescribing assessments. It is also unclear whether skills gained through this course are transferable to the work environment. More work could be considered in assessing whether such interventions produce improvements in the prescribing ability of junior doctors.

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Teaching and learning professionalism – are teachers and learners in harmony?

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Background and Purpose
There is a focus on teaching professionalism in medical education\(^1\). Greater emphasis is being placed on the need for doctors to follow ethical and legal principles as set out by Tomorrow’s Doctors\(^2\).

Aim
Nageswaran et al (2011)\(^3\) described a method to teach professionalism to third year students. We used this same method with third and fifth year medical students and foundation doctors, to see whether their responses were different.

Method
We studied third and fifth year medical students based at the University of Bristol Gloucestershire Academy and Foundation Year One and Two doctors at Gloucestershire Royal Hospital. Participants were split into focus groups and given the four headings of Excellence, Humanism, Accountability and Altruism\(^4\) and asked to produce a list of examples of minor and major faults in professional behaviour in undergraduates under each heading. A group of clinician teachers had previously been asked to give examples of poor undergraduate professional behaviour under the same headings, and again had been asked to categorise them into minor and major faults. The participants then compared their examples to those of the clinician teachers.

Results
The greatest disparity in results was between the third year medical students and the clinicians, and this disparity decreased with further training. Third year medical students were surprised by the clinical teachers views, and this generated a great deal of useful discussion and learning. Fifth year medical students were more able to appreciate the clinicians’ viewpoints when there was disagreement. There was a striking disparity between all medical students and Foundation Year doctors in the area of social behaviour regarding alcohol intoxication, use of illicit drugs and inappropriate comments on social networks.

Discussion and Conclusions
Students develop healthy professional behaviours as they progress through training. Moreover the study generated stimulating discussion even for more senior participants such as the Foundation Year one and two doctors.

This approach encourages participants to reflect on their own behaviour and gain valuable insight. It can provide clinical teachers with a useful tool in understanding students’ view of professionalism.

References
Students self ratings as teachers improve with attendance at a compulsory teaching skills course; use of a simple visual analogue scale evaluation tool

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Introduction
We have established a one week undergraduate medical teaching skills course within a London medical school. The mandatory institutional evaluation of the course concentrates on student reactions to the teaching, in particular satisfaction and perceptions of i) utility of content ii) the ability of lecturers to structure and explain information, and engage with participants. We sought to develop an evaluation aligning more closely with teacher intent. Following an exercise in which core faculty were invited to express their main hopes and fears relating to their teaching or teaching material for the course, the major intent emerged as a desire to effect a change or transformation in the participants. Here we have investigated the feasibility of using a visual analogue scale (VAS) for students to rate themselves as teachers before and after the course.

Method
Students were asked to indicate self-ratings as teachers on a 100mm line at the start of the course and on a second identical line on a separate page at the course end. Measurements to the nearest millimetre were recorded anonymously. Space was given for optional free text reflection. Paired self-ratings before and after the course were compared using Wilcoxon signed-rank tests.

Results
Data were collected for 6 cohorts of the academic year incorporating 190 students. 173/190 (91%) completed self-ratings both before and after. The mean self-rating before was 49.7 (SD 15.26) increasing to 65.3 (SD 14.20) after, representing a significant increase in the paired samples (p<0.0001). The mean difference in self-rating was 15.7 (95% confidence interval 13.7 to 17.6) which was similar for each cohort (figure 1):

![Figure 1](image)

121 (70%) students demonstrated an increased self-rating, 39 (22.5%) demonstrated minimal change (<10mm) and 13 students (7.5%) recorded a negative change. Qualitative reflective data available for some students indicated a link between negative changes, heightened awareness of good teaching skills and a need for personal development following the course.

Discussion
This study demonstrates that use of a VAS is a feasible way of indicating transformation in participants. Furthermore, the quantitative data provides some measure of the impact of the course. When designing evaluation tools, much effort is put into moving up Kirkpatrick’s hierarchy. While the ultimate goal of a teaching skills course is to create better educators and doctors it is important that evaluation, even at the level of student reaction, is optimized to align with the needs of the teachers and course development.

References
The use of simulation in promoting multi-disciplinary team working within the Endoscopy Unit focusing on patient safety and patient centredness

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Background and Purpose
UK Endoscopy Units which function at a high standard can achieve Joint Advisory Group (JAG) accreditation if they score highly on all aspects of the Global Rating Scale, a domain of which is training. Our Unit at the Homerton is JAG accredited. There are no JAG approved courses which focus multi-professionally on real time patient scenarios and their management. A recent review concluded that high fidelity patient simulators were educationally effective and facilitated learning amongst participants when used under the right conditions. There is a need for a course which will focus on human factors and patient safety, and support and transform endoscopy services.

Methodology
We are developing a one day course following patient journeys from initial referral to the Unit, through undergoing an endoscopy, potential complications, and communication with relatives. The course will be multi-professional. Key areas are:

- Full immersion and screen-based simulation scenarios (e.g. torrential gastrointestinal bleeding) developing a range of skills including:
  - Clinical decision making skills and application of knowledge
  - Team work and Medical leadership competencies
- Training in patient advocacy/centredness utilising actors (e.g. cancer diagnosis) developing a range of skills including:
  - Communication skills and promotion of multidisciplinary team (MDT) working
  - Debating dilemmas faced by healthcare professionals when acting as an advocate
  - Discussing implications for patients’, their families and healthcare professionals when breaking bad news and/or making difficult decisions

The course will be evaluated quantitatively and qualitatively.

Results
Training is to be delivered in March 2012, and be reported at ASME July 2012. We perceive the benefits to be:

- Scenarios to expose participants to known error producing conditions (using actual serious untoward events);
- Training in settings that minimise a time pressured clinical environment;
- Scenarios executed in a safe, simulated environment moving away from isolated tasks to complex clinical situations;
- Built in facility for ‘time out’ and availability of expert advice;
- Simulations followed by facilitated debrief;
- Debrief focus on clinical reasoning, decision making, non-technical skills, team work and communication;
- Use of actors will enhance communication skills and promote MDT working thus enhancing patient care.

Discussion and Conclusions
With doctors we successfully piloted ‘torrential gastrointestinal bleeding’ and ‘endoscopic perforation’ in 2010 using both screen-based and full immersion simulation. Incorporating more scenarios and utilisation of actors will allow this multi-professional course to cover key competencies and promote team working within our Endoscopy Unit.
New Technologies
The iSurgery - a contemporary surgical simulator

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Background and Purpose
Laparoscopic surgery is the optimal management for numerous surgical pathologies. However, the surgical skills and technical demands differ from open surgery. Simulators have been developed to augment clinical practice for surgeons and trainees, though are typically expensive, low-fidelity, or unavailable. We describe a method of self-assembling an inexpensive, portable and reproducible laparoscopic simulator— the iSurgery.

Methodology
Materials were purchased from a local hardware store to construct the iSurgery and the assembly is described. A foldable, portable, lightweight three-piece box simulator was created, using the iPhone as a camera and iPad as the display (Apple Inc., USA). Disposable laparoscopic instruments were obtained from our local hospital. Trocars were replicated by drilling 6 holes into the interface to allow for a variety of port positioning. The iSurgery simulator was compared to existing simulators.

Results
The iSurgery is simple to assemble with readily available inexpensive equipment totalling £67. The quality of simulated surgical experience is high, providing real-time feedback and clear images, whilst the portability of the iSurgery permits practice in multiple locations. The iSurgery incorporates ubiquitous telecommunication technology to create a two-dimensional monocular visual field akin to the theatre setting, and allows the user to build their depth perception, visuospatial skills and surgical technique. The trocars and laparoscopic instruments mimic clinical life through tactile feedback and fulcrum effect, and provide a simulation experience accurately reflecting clinical practice. After trialling the iSurgery with surgeons, the quantified satisfaction scores exceed existing simulators.

Conclusion
The iSurgery is an inexpensive, high fidelity and reproducible surgical simulator. It is portable, easy to assemble and provides surgical trainees the opportunity to establish, develop and hone laparoscopic skills to safely augment clinical training.
Does digital engagement predict academic success?

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Background
Our early MBChB curriculum has recently been redesigned. A bespoke new virtual learning environment (VLE), termed MyMBChB was introduced as a vehicle to support and deliver many aspects of the curriculum. The VLE offered a wide range of data that are routinely collected as part of the system for operating the service. The VLE usage data would be a natural extension of the traditional records such as class attendance and meeting work submission deadlines. If failing students showed common VLE usage patterns, the continuous collection and availability of live data could highlight at an early stage those at increased risk of failing summative assessments before concerns were identified through more conventional means (e.g. poor performance in formative assessments). This would facilitate early intervention to support these students\(^1\) in a timely fashion in contrast to only receiving help following to exam failure\(^2\).

Methods
Retrospectively, anonymised data on gender, previous qualifications along with information provided from the VLE and the end of year marks were collected for students at the end of first and second year. Marks for the end of year formal OSCE and written examination were compared with nine VLE variables.

In order to assess if the VLE variables, either individually or in combination, were predictors of either of the two formal end of year marks, several exploratory data analysis techniques were employed. These included correlation, factor analysis and crosstabulation with chi-squared tests. The VLE variables were in some instances grouped into discrete ordinal categories. Finally, prediction models were considered including ordinary least squares regression, logistic regression and generalised linear regression depending on the data types and assumptions.

Results
One year group of students showed association between written exam performance and VLE variables. While there are significant factors, all the confidence intervals are large, indicating large amounts of variation.

Discussion
The data collected covered a number of different areas that students need to master for progress through a medical degree: time keeping, organisation of learning resources, self-test exercises, etc. The data showed a wide variation in the patterns of usage. This variation remained in sub-group analysis. The VLE data can identify behaviour patterns but this does not necessarily mean engagement or otherwise with the course and did not predict subsequent failure (or success) in summative assessments.

References
Situation Awareness Feedback in Critical Illness Simulation: The Keele Experience

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Background and Purpose
High-fidelity simulation is a technique that gives educators the opportunity to observe human factors and provide feedback thereon \(^1\). Situation awareness (SA) is one such human factor relevant to patient safety, however it can be difficult to observe as although performance is related to SA it is not reliant upon it\(^2,3\). This challenge has led to the development of SA assessment tools.

The use of SA assessment tools in medical simulation is in its infancy compared with other fields such as aviation or the military. However, the use of ‘freeze and probe’ techniques has been described\(^4,5\). These techniques present students with queries regarding the situation whilst the simulation is temporarily paused. And assess SA on the basis or correct or incorrect answers.

Keele University has used handheld computing technology to adapt the situation present assessment method (SPAM) for use in medical simulation\(^3\). In this technique queries are presented without pausing the scenario, and SA is assessed on the basis of the latency between query and answer. The instructor is provided with this data for use in debrief.

Methodology
Final year medical students at Keele University receive one day of simulation teaching focussing on human factors. Debrief is a critical part of the learning process and is human factors focussed. This action-research project aimed to find methods for effectively integrating SA data into the debrief structure. Issues were identified through student and faculty evaluation questionnaires and the review of video-recorded debrief, then addressed through an iterative process.

Results
Students and faculty agreed that the data generated by SPAM was an accurate representation of true situation awareness, and students agreed that the SA debrief they received would lead to a change in practice. Our initial debrief technique relied on feeding back the quantitative data generated by the handheld computer, however this was found to be cumbersome and we have progressed to qualitative feedback, integrated into our narrative debrief structure and informed by the SA measurements. The development process and our debrief technique will be presented in detail.

Discussion and Conclusions
Situation Present Assessment Method is a promising addition to the armamentarium of the simulation instructor. The information technology supporting our adaptation of SPAM continues to evolve and our experience of developing the debrief process will inform its future development.

References
‘ITreat’: Increasing time to work and streamlining clinical and educational activities for Junior Doctors via the introduction of a Hospital linked iPhone software application

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Background and Purpose
Smartphones have been shown to be an effective adjunct for healthcare personnel1. On an international stage hospitals have shown great benefit from integrating handheld technology into hospital ICT systems2, however limited evidence exists for the full integration of this technology within British hospitals. Demonstrating a strong evidence base of impact upon patient care and safety is difficult3, and as such hospital organisations may be reluctant to invest time and money4. We sought to evaluate the ease of use of handheld smartphone technology at point of care with a junior doctor population; to grade the perceived improvement in patient care and safety, and identify the time saved searching for clinical resources during working hours.

Methodology
Study methodology was based on a pre-test post-test model. A mixed methods approach was utilised, with questionnaires and interviews as data collection tools. Ethical approval was granted for this study. We provided Foundation doctors (years 1 and 2), across two hospital sites within an East Midlands NHS trust, with a custom-built hospital linked iPhone app; downloaded by the participant via the Apple Appstore. The app housed five sections: an RSS feed from the hospital postgraduate department, an antibiotic formulary section, a disease management section, a ‘favourites’ section, and a contacts/extension number phonebook. All clinical data was obtained from hospital approved guidelines. The study was active for 4 months, during which time participants were asked to use the app freely as they saw fit in their daily working activities.

Results
39 Foundation year doctors participated in the study. Pre-test data reported participants spending over 30 minutes per day searching for Trust guidelines, finding these ‘often’ difficult to locate. The majority of participants described time wasted accessing guidelines as having a minor to moderate negative impact upon patient care.

Discussion
Demonstrating time saved and a perceived positive impact upon patient care strengthens the evidence base to engage NHS Trusts to invest time and money to fully integrate smartphones within hospital ICT systems. A thorough understanding of how healthcare staff choose to utilise smartphones in the clinical environment is vital; not only to shape future app innovation, but to enable the successful assimilation of smartphone technology into the hospital setting. Post-test data collection will be complete by 01/03/2012 and available for presentation. The structure and content of the app and its stages in development and implementation will be discussed, in the context of the data collected.

References
Background and Purpose
Facebook, the social networking phenomenon, has evolved from a platform intended for peer to peer communication to a multifaceted virtual environment. One of the potential uses of Facebook is in the field of medical education as a virtual learning environment (VLE). The use of VLEs is well established in medical education and there are a number of commercial, open source, and bespoke VLEs such as Blackboard, Moodle and University based VLEs respectively. Seventy-one percent of UK medical students have a Facebook account. The widespread use of Facebook suggests familiarity with the user interface. This familiarity may lead to more effective participant access, engagement, and interaction, leading to superior learning compared to alternative VLEs. This innovative study compares Facebook to a University based VLE. Outcome measures will include participant engagement, and performance in a critical appraisal assignment, which will be the topic of discussion in the VLEs, and serve as a proxy for learning.

Methodology
This prospective experimental crossover study of VLE use in final year undergraduate medical students in a single medical school, will take place between May 2012 and July 2013. After informed consent, participants will join a faculty facilitated Facebook VLE discussing a predetermined journal article. Following a two week activity period, participants will be invited to submit a written critical appraisal assignment, before joining the alternative VLE. A second predetermined article will be discussed in the alternative VLE and subsequently critically appraised via a further written assignment. Both assignments will be blindly marked at the end of the project using a standardised markscheme by two independent assessors, and the results statistically analysed. Initially, half the participants will use the Facebook VLE, followed by the University based VLE. The remaining participants will join the VLEs in the opposite order. Both quality and quantity of participant engagement within each VLE will also be measured.

Results
We present preliminary results from the first cohort of participants.

Discussion and Conclusions
If Facebook is found to be equal or better than alternative VLEs in engaging students or enhancing learning; then there may be an argument to use this rapidly evolving, free, and widely accessible learning environment for the purposes of medical education. Potential reasons for differences between VLEs may be due to participant preference, which is likely to be determined by factors such as accessibility, ease of use and familiarity with the user interface.

References
The students’ story: a medical student view of professionalism in practice

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Background
Recent debate around medical professionalism reflects wider cultural changes within the profession and society. Medical students enter training with high ideals which appear to become tarnished along the way to becoming a fully-fledged doctor. This phenomenon may be attributed to contextual influences such as socialisation and the influence of role modelling.

Students will be engaged both as researchers and research participants, with two aims; to use student experiences to build a peer teaching resource which promotes professionalism, and to study students’ perspectives on professionalism from a social constructionist perspective.

Methods
First and fourth year medical students from Queen’s University Belfast are being recruited as researchers. Student researchers will conduct short video interviews with peers and teachers who they perceive as being role models. Student researchers will complete a reflective diary (audio, video or written) during the data collection process. Therefore they will themselves become research participants, as their perspective on the research process and its effect on their conceptualisation of professionalism is analysed.

Results
Data collection is planned throughout spring 2012, with initial results of analysis available by the time of the conference. In addition to the research project, peer and role model interviews will be used in the creation of an online teaching resource which has three strands: a snapshot of first year attitudes to the profession as they enter it for the first time, reflections of senior students on their medical school experience from the perspective of professionalism, and interviews with teachers who have been identified by students as being inspirational.

Discussion
This project is designed to improve our understanding of how students construct the idea of professionalism. The perspectives of universities and professional bodies on professionalism are clear; by using students to research students, we hope to obtain a unique perspective on professionalism. In developing a teaching resource where students talk about professionalism and discuss strategies for coping with adversity, peer support can be offered to students starting out in an attempt to counter the negative effects of the hidden curriculum. Furthermore, in the reflexive aspect of researchers themselves being researched, insight may be gained into how individuals have used the project as a sense-making activity regarding the concept of professionalism.

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Use of technology to determine confidence and knowledge in dealing with acute kidney injury

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Background and Purpose
The NCEPOD Inquiry: Acute Kidney Injury: Adding Insult to Injury (2009) highlighted that the majority of patients with Acute Kidney Injury (AKI) are looked after by non-specialists who may lack current training and knowledge. We therefore aimed to assess differing seniority of doctors confidence and competence in diagnosing and managing AKI to assess whether there was an educational need.

Methodology
University Hospitals of Leicester (UHL) and Royal Derby Hospitals (RDH) evaluated the confidence and knowledge of non-nephrology trained medical staff in dealing with AKI patients using a questionnaire and 16 MCQ style questions designed for this East Midlands Health Innovation & Education Cluster (HIEC) project. The survey was administered anonymously on each hospital site during induction or education sessions during August and November 2011 using Turning Point interactive audience response system. (Turning Technologies, Youngstown, OH)

Turning Point consists of software and keypad devices to collect real-time answers to multiple multiple choice questions in a lecture setting, which can later be compiled into statistical data. Analysis of data from individual sessions was performed as well as a summative merge of all sessions.

Results
342 doctors were surveyed (252 from UHL and 90 from RDH). 40% were FY1 doctors, 23% were FY2 doctors, 18% were core trainees, 15% were specialty trainees and 4% were Consultants. The use of Turning Point as a tool to collect data was evaluated positively; however, the authors suggest that there are key learning points to inform future projects.

Discussions and Conclusions
The benefits of using Turning Point software are two-fold. It allows both the gathering of real-time responses to questions and the ability to compile data gained across multiple sessions, stratified by pre-determined demographics. The access to real-time multiple choice question responses in a lecture setting allows additional teaching on areas which aren’t well answered in the same session. This means that areas of educational need can be dealt with quickly and efficiently, though only for those present at that particular session. The compiling of data across sessions allows detailed assessment of any areas of educational need which can be addressed later with further educational materials. Post session evaluation of the Turning Point data raised several issues relating to software limitations which will inform the design of future sessions.
Patient Voice
Virtual Patients with Rare Diseases: facilitating learning for students, health professionals and patients

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Background and Purpose
Learning about rare diseases can be challenging, textbook descriptions are often dry and uninspiring. Such difficulties are experienced by healthcare professionals and students. For patients and carers it is even more challenging. A deeper understanding of rare conditions comes through personal experience; which is difficult to obtain. Educational resources often concentrate on the symptomology and pathology of the conditions, neglecting the emotional impact on the patients and those who treat and care for them.

One such condition is Pompe’s disease, a very rare disorder of glycogen storage, the symptoms of which can come on slowly over a number of years or even decades and lead to muscle weakness and respiratory failure. The early symptoms of the disorder are non-specific and can be difficult to identify, however the correct diagnosis can lead to treatments, which improve quality of life.

We approached a newly diagnosed patient, ‘Sam’, with this condition to develop a learning resource for healthcare professionals, but which would also be appropriate for patients/friends/relatives.

Methodology
We developed a Virtual Patient (VP) based around a video interview with Sam, illustrating her medical emotional and on-going journey with Pompe’s disease. The core concepts of Pompe’s disease were integrated within this context. The VP has been freely available via the internet since October 2011 (www.som.soton.ac.uk/learn/virtualpatient/locomotor/pompe/). A questionnaire was embedded at the end of the resource to assess its usability, effectiveness and impact.

Results
At the present time, 596 visits to the resource have been recorded, and 11 users have filled in the questionnaire, three health professionals, one medical student, two carers/relative/friends of a patient, and five patients. Five were from the UK, two the USA and one each from South Africa, Romania and Brazil. The responders ranged from the mother of a child with Pompe’s to a Consultant Neurologist. The feedback on the resource was positive from each group of users. Healthcare professionals appreciated the concise and informative nature of the resource. Patients/friends/relatives benefited from the contextualised information presented through Sam’s journey.

Discussion and Conclusions
Whilst a small number of users have participated in the questionnaire to date, the initial results suggest that this type of VP facilitates learning and understanding of rare disorders in a meaningful and relevant way to a variety of users.
Postgraduate Education
Attracting healthcare professionals to remote and rural medicine: learning from doctors in training in the north of Scotland

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Background
Research exploring the experiences of trainee doctors in remote and rural locations is scarce. Our aim was to gain an understanding of the experiences and perceptions of Foundation Programme (FP) doctors training in placements in remote and rural areas of the North of Scotland.

Methods
FP doctors training in remote and rural areas in Scotland took part in a qualitative study (focus groups and individual interviews) exploring their training experiences and career plans. To make sense of a potential multitude of factors, we selected social cognitive careers theory (SCCT) to underpin data collection and analysis.

Results
Twenty trainees participated. Using data-driven analysis, three themes relevant to the SCCT emerged. These are: the educational experience (e.g. opportunities to develop skills, greater responsibility), geographical isolation factors (e.g. the impact of staff shortages, poor accommodation, travel) and personal factors (e.g. social isolation, attitudes towards the experience)

Conclusion
Many factors impact on trainees’ experience of learning and living in R&R environments. These experiences can be very positive for some individuals but factors external to the educational environment influence the perception of the overall experience. Some barriers could be addressed using practical measures but more research is required to identify individual differences possibly relevant to R&R recruitment and retention. Social cognitive careers theory helps clarify the interaction between individual and contextual factors in career decision making.
Are medical career preferences now about life and living rather than specialty and location?

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**Background**

Medical undergraduates come to medical school with aspirations for their future careers. What influences career intention has changed little over many years in terms of the drivers of choice, however, the expectations of what those career choices might entail are subject to influence from shifts in generational perceptions of society and individuals’ place with it. Generation Y who form the bulk of those in early medical careers seek freedom and individualism with high emphasis on work-life balance. They are socially and environmentally aware, passionate and collaborative. This contrasts with the “baby boomers” who form the bulk of senior medical, university and health service managerial staff. They believe in education, hard work and social responsibility, feel the need to achieve and share values. Awareness of differences in generational values may be helpful in considering most effective use of the future medical workforce.

**Methods**

All fifth year medical undergraduates in the four graduating Scottish medical schools were surveyed using a paper-based questionnaire. The questionnaires included closed questions and comment boxes relevant to the quantitative components of the survey. Quantitative data analysis was done in SPSS. Textual analysis was performed according to grounded theory and themes constructed manually. Ethical approval was granted by the relevant bodies.

**Results**

Undergraduate teaching in general was a highly influential factor in career choice by students (63%), followed by the elective (53%), clinical placements (35%) and hospital placements (34%). “Enjoyment” of a placement was frequently cited as was “good teaching”, and feeling “included”. General Practice was very influential in this regard, compared to hospital placements. The importance of a role model was rated by 14% of students in the survey and was influential in the qualitative data. Most students (45%, 55%, 60%, 93% by university) were allocated to a local Foundation Programme. The main qualitative themes about choice of location were about favouring “familiarity” at work and nearness to “family and personal relationships”.

**Discussion and conclusion**

The findings from the qualitative data add depth to the figures from the survey and accord with the recognised, if stereotypical, characteristics of Generation Y from which the participants are drawn. These data begin to provide insight to the complex processes of career decision making with reference particularly to the choice of specialty and preferred location for training; or is it for living?
Research-based learning: a new approach for a new MSc in Geriatric Medicine

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Background and Purpose
Geriatric medicine is a challenging, complex and neglected specialty. As an attempt to bridge the gap between policy and practice, between government aspirations and real life experience, we aim to improve services by critically developing Specialty Trainees in Geriatrics’ understandings of themselves as clinicians, leaders, educators and researchers. The core of this MSc in Geriatrics and its distinctive approach is practice-based inquiry, focussed on improving patient care. This is the approach that Kent, Surrey and Sussex Deanery (KSS) terms ‘Research-Based Learning’.

Methodology
The MSc builds on and develops the existing ST3-7 training programme so that it includes a 3 year MSc. It is fully mapped to the training curriculum. The innovative programme is a collaboration between clinicians, experts from the KSS Deanery, the KSS School of Medicine and Brighton and Sussex Medical School (BSMS). The seven modules will each include a Research-Based Learning element, where learners will undertake assignment and dissertation tasks which focus on quality improvement for the patient, the specialty and the organisation. Projects will be presented within Local Education Provider (LEP) meetings and Specialty School meetings. Evaluations will be reviewed by KSS Deanery, the KSS School of Medicine and BSMS.

A core aim for the MSc will be to collaboratively publish work from the research projects in order to ensure wide dissemination. The course will be qualitatively evaluated on a module by module basis.

Results
A focus group inquiring into trainee opinion revealed enthusiasm for this MSc. Research-based learning, with its emphasis on service improvement and positive change, was seen as good experience for the consultant role.

The innovative educational approach has allowed the values and essence of the specialty of geriatric medicine to remain at the forefront during planning and curriculum mapping.

Discussion and Conclusions
This MSc is designed to enable trainees in Geriatric Medicine to take on consultant roles with more confidence, insight and critical understanding of the processes and challenges within the modern NHS.

Interest has been expressed by other specialties, for similar collaborative Masters degrees. Research-based learning has so far proved to be a useful and popular approach and may have wide applications in postgraduate medical education.
Core Surgical Trainee satisfaction with higher trainee led regional deanery teaching

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Background and Purpose
The Core Surgical Training (CST) Programme in South Wales has incorporated a face-to-face teaching programme to assist in the delivery of the Intercollegiate Surgical Curriculum Programme (ISCP) CST Curriculum 1. Overseen by the Programme Director, this initiative is organised principally by a surgical Fellow with an interest in medical education and is delivered by Higher Surgical Trainees within in the deanery. The aim of this study was to determine the satisfaction of CTs with the above programme.

Methodology
A feedback form was designed, guided by principles from Stufflebeam’s context, input, process, product (CIPP) model of evaluation 2, seeking feedback on the seven domains of: venue, clarity, content/communication, interaction, group size, level of pitch, and opportunity for questions. A 5-point Likert scale was employed using the descriptive terms: poor, below average, average, good and excellent. Only good or excellent responses were deemed to represent trainee satisfaction. All CSTs attending each teaching session were asked to complete the feedback form and the results were analysed.

Results
One hundred and ten completed feedback forms were received from six sessions. The median response rate was 86% (range 55-100%). Median overall satisfaction was 94% (range 79-100%). Median satisfaction by domain was: venue 76% (range 70-100%); clarity/communication 98% (range 85-100%); interaction 100% (range 84-100%); group size 83 (range 76-100%); level of pitch 85% (range 78-100%); opportunity for questions 95% (range 81-100%).

Discussion and Conclusions
CST satisfaction levels with this higher trainee-led teaching programme were high. Verbal feedback from faculty has also highlighted additional benefits as learning opportunities and CV development for tutors.

References
Simulation based multi-professional training program for Geriatric Medicine Specialist Trainees in North Thames focusing on patient safety and patient centredness

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Background and Purpose
Recent reports have highlighted failings in the treatment of elderly people1, 2, 3, 4. This novel training program has been designed to provide multi-professional learning through exploration of communication skills, team working, clinical judgements and leadership. “Real life” situations enable participants to become decision makers and put decisions into action.

Methodology
Aligning with the new geriatric medicine curriculum and regional training programme we have developed and piloted a unique one-day training programme for Geriatric Medicine Trainees focusing on several key areas: Chairing multi-disciplinary team meetings, ethical & legal issues (e.g. decisions regarding life prolonging treatments) and medical leadership competencies. Participants included Geriatric ST3+ trainees, Senior Nurses, Physiotherapists and Occupational Therapists. Full immersion simulation scenarios were complemented by the use of actors. Course development was undertaken over 3 months and feedback sought from relevant specialities prior to delivery. Senior Geriatricians involved in the development also facilitated delivery of the programme. We were supported by the School of Medical Specialities and the Speciality Training Committee. Evaluation was quantitative and qualitative.

Results
100% (8/8) of participants said that they now felt confident to use the skills gained in the programme in the workplace and that it had been a worthwhile investment of their time. Examples of qualitative feedback:
Do you think this will change your day-to-day practice?
- Yes
- Will help me to reflect more on my use of language
- Yes, more patient centred
- Yes, change the way I communicate with the patient, family and team.

The most useful learning for me personally was…
- There is no other setting in which we debrief in peers and share experience- I thought this was excellent
- Discussion about what could have been done differently
- Patient centred care and communication skills
- Video clip feedback
- DNR/CPR discussions scenarios

Discussion and Conclusions
Overall feedback was excellent. Participants appreciated the learning methods used to create scenarios they could apply easily back to ‘real life’ practice and the views of other health care professionals. The programme addresses both the lack of simulation based training for geriatric specialist trainees in the region and areas of curriculum linked training which were previously unexplored. Following the success of this pilot we have now been funded by the London Deanery to develop further programmes for regional training. We are developing one-day courses to follow specific patient pathways in the advanced specialist grid areas of the Geriatric curriculum.

References
1. NCEPOD (2010) “An Age Old Problem; A review of the care received by elderly patients undergoing surgery”
3. Care Quality Commission (2011) “Care for Older People in Hospital”
4. Patients Association (2011) “We’ve been listening, have you been learning?”
Why does a twittering doctor tweet?

AM Cunningham

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The growth of Facebook and Twitter is quite phenomenal and having an impact on medical education (1,2). In medicine we mainly do not hear of social media services unless things go wrong; what should not have been said nor done ends up being shared with the world. The GMC will be consulting on guidance on the use of social media and networking tools later this year and many organisations and institutions have issued their own policies to staff and students.

I have written more than 100 blog posts and 50,000 tweets over the past four years. This activity has contributed to my research, and helped me to form, and engage with a large network of health professionals, educators, patients, public and medical students.

Through this I have developed understandings of the risks and benefits of social media as an educator and as a doctor. In this presentation I will share some of the insights I have gained. I will describe projects such as the #meded chat where medical students, doctors and other health professionals take part in discussions, and the Twitter journal club started by a junior doctor and a medical student. It has been cited in Nature and had prominent journal authors participate.

Negative events have also occurred and I will explore the challenges of being an educator in an unbounded space. Where do our responsibilities stop and start?

I am now planning research for my EdD thesis which will explore how social media impacts on and reflects the professional identity of medical students and doctors. I will also report on some other research projects which are being developed with colleagues. As others have written (3), this is a field that increasingly we will not be able to avoid so perhaps we need to start being more active there now?

References
Professionalism
"I chose to say nothing": Medical students’ explanations of their behaviour in the face of professionalism dilemmas around patient care

CE Rees, LA McDonald, LV Monrouxe

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Introduction
Although an increasing body of research has found that medical students are commonly faced with professionalism dilemmas around patient care, few studies exploring students’ experiences of professionalism dilemmas have reported how students act in the face of these dilemmas. To our knowledge, none have examined students’ explanations of their behaviours within professionalism dilemmas involving patient care except those involving intimate exams without valid patient consent. This study aims to explore medical students’ explanations of their behaviour (doing nothing versus doing something) within the context of patient care dilemmas.

Methods
680 medical students from 29/32 UK medical schools provided a written narrative of their ‘most memorable’ professionalism dilemma as part of an online questionnaire. Qualitative thematic analyses of narratives were followed by a qualitative and quantitative analysis of students’ explanations of their behaviour within patient care dilemmas using a validated coding scheme.

Results
Of 680 written narratives collected, 275 involved dilemmas associated with patient care: typically patient dignity or safety breaches around healthcare professionals’ or students’ actions (e.g. HCPs compromising patient safety through a lack of competence, the student putting his or her own learning needs above those of the patient, HCPs’ communication violations to or about patients). 164 (60%) students reported doing something in the face of these dilemmas and these narratives contained 324 distinct explanations. Conversely, 111 (40%) students reported doing nothing and these narratives included 199 distinct explanations. Students’ explanations for doing nothing significantly downplayed the intentionality of their actions, whereas their explanations for doing something emphasised their intentionality ($X^2=9.001$, df=2, p=.011).

Discussion
By exploring how students explain their action (doing nothing versus doing something) within the context of professionalism dilemmas around patient care, we can understand better how such behaviours are legitimised within the community of medical education. Student and faculty development initiatives are essential to help students act in the face of professionalism dilemmas, and therefore safeguard the dignity and safety of patients within the medical workplace.

References
2. Rees CE, Monrouxe LV, McDonald LA. “It has sort of scarred me”: Medical students’ written narratives of ‘most memorable’ professionalism dilemmas. Medical Education under review.
Professionalism dilemmas during workplace learning: The impact of frequency of occurrence and gender on students’ moral distress

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Introduction
There is much research suggesting that medical students experience a sharp decline in empathy during their first year learning within the workplace (typically year 3).¹ This emotional blunting has also been echoed in one study examining written narratives of professionalism dilemmas: very few contained reference to emotion.² However, other research has contested this notion, finding a plethora of emotional talk within oral narratives of professionalism dilemmas, alongside evidence of long-term distress following these professionally challenging situations.³ However, there has only been one small-scale US study investigating the impact of gender and frequency of occurrence on moral distress following difficult situations.⁴ Their findings suggested that women report more distressing situations than men but there was a trend towards men reporting greater distress the more situations they encountered (although this did not reach significance).⁴

Methods
Cross-sectional study of 2,397 UK medical students from 31 Schools completed an online questionnaire developed using main themes from a large scale international qualitative study.³ Moral distress was rated using a validated scale (no, mild, moderate or severe distress).⁴ Analysis was undertaken using multinomial and logistic regression (distress rating being the outcome, frequency and gender being predictors).

Results
Women reported moderate and severe moral distress significantly more than men. We identified two patterns of adaptation: habituation and disturbance (the more frequently similar events occurred, the less or more distressing they are respectively). Habituation occurred where distress to patients could be justified for students’ learning. Disturbance occurred where distress, disrespect or potential harm to patients could not be justified.

Discussion
Medical students learn to balance the principle of patient autonomy and right to dignity with their needs to learn clinical examinations and procedures (patient-oriented utilitarianism), but they do not become habituated to situations that they believe to be truly unjust. Our findings also have implications for medicine which is becoming an increasingly feminine profession.

References
Medical students’ intimate examination dilemmas: frequency, moral distress and students’ explanations of their behaviours

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Introduction
Although research has found that medical students sometimes conduct intimate examinations on patients without valid consent, no studies have recently explored the extent of this problem across the UK. While previous research has explored medical students’ oral explanations of their action (compliance or refusal) in the face of intimate examination dilemmas, there is a lack of research exploring students’ explanations of their behaviour within written narratives. This study aims to explore the frequency of students’ intimate examination dilemmas, their impact on moral distress, and their behavioural explanations within their ‘most memorable’ intimate examination dilemma.

Methods
2397 medical students from 30/32 UK medical schools completed an online ‘professionalism dilemmas’ questionnaire, and 680 provided a written narrative of their ‘most memorable’ dilemma. Quantitative analyses established the frequency of intimate examination dilemmas and their impact on students’ moral distress. Qualitative thematic analyses of ‘most memorable’ narratives was conducted with an additional quantitative analysis of students’ explanations of their behaviours (compliance or refusal) within intimate examination dilemmas.

Results
14.5% (n=347) and 14.8% (n=354) students reported undertaking an intimate examination on a female and male patient respectively without valid consent following a request from their clinical teacher. Female students were more likely than males to report mild (OR=3.070, CI=1.219-7.737, p<.05) or moderate (OR=5.753, CI=1.443-22.930, p<.01) distress than no distress. 75 narratives of intimate examinations without valid consent were reported as being ‘most memorable’. We are in the process of analysing the behavioural explanations within compliance and refusal narratives and will report these findings at the conference.

Discussion
By exploring how students explain their action (compliance versus refusal) within the context of intimate examination dilemmas, we can understand how such behaviours are legitimised within the medical workplace. We can also establish whether students employ different impression management strategies to account for their behaviour in the context of written versus oral narratives. Student and faculty development initiatives are essential to help students act in the face of intimate examination dilemmas, therefore protecting the rights and dignity of patients.

References
8. Rees CE, Monrouxe LV, McDonald LA. “It has sort of scarred me”: Medical students’ written narratives of ‘most memorable’ professionalism dilemmas. Medical Education under review.
Selection
Does the UKCAT predict Year four examination results at medical school?

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Background and Purpose
The United Kingdom Clinical Aptitude Test (UKCAT) has been adopted by a number of Medical schools across the UK as part of their admissions requirements. As a test of cognitive ability it has been promoted as a predictor of an individual’s performance in medical practice. Although not claiming to predict performance at medical school, a correlation between exam performance and UKCAT score is not an unreasonable expectation. However, evidence to date is conflicting for early year performance 1, 2 and there have been no studies looking at whether or not UKCAT scores predict senior years performance.

Methodology
The sample included all Year 4 medical students at the University of Aberdeen in 2010-11. Information available for each student included: total UKCAT score and sub-section scores, examination results from year four exams, admissions profiles (academic, personal statement and interview scores). Year four examination results consisted of the written examination score (knowledge score) and OSCE score (clinical score). Data were analysed with SPSS. Descriptive statistics were used to describe the various scores and characteristics. Pearson’s correlations where used to assess correlations between variables. Binary variables were compared using independent t-tests. Where significant correlations existed, variables were entered into a linear regression model. Students with missing data for a particular variable were omitted from statistical analyses involving that variable.

Results
The final sample size was 99 students. Analysis indicated a small but significant correlation between knowledge exam score and UKCAT total score (r=.236 p=0.019). A significant correlation was also found between clinical (OSCE) scores and UKCAT total score (r=.368 p=0.0001). Linear regression indicated 7.5% of the variance in knowledge exam scores could be accounted for by UKCAT total score and gender (adjusted R² .075 p<0.05). UKCAT total score and gender where also shown to account for 20.9% of the variance clinical exam scores (adjusted R² .209 p<0.05).

Discussion and Conclusions
UKCAT total score predicted performance on clinical, and to a lesser extent, knowledge based Year Four examination scores. This investigation, although small, is to the best of our knowledge, the first to show that the UKCAT predicts performance in the latter years of medical school. It is recognised that these results only include data from one institution of which the cohort is relatively small. However these are encouraging results and merit further investigation.

References
An Access to Medicine Summer School: Did it Work and What Next?

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Introduction
As part of Bristol University’s widening participation policy¹ we wanted to improve the chances of applicants to Bristol Medical School from state school backgrounds. These students receive 12% fewer offers than applications, whilst independent school students receive 12% more offers than applications². One reason for this disparity is less effective preparation of state school students³. We decided to run a summer school with the following aims:

• To provide an accurate and varied experience of the hospital workplace, medicine as a career and life as a doctor
• To help students prepare for successful personal statements and medical school interviews

Methodology
Bristol University delivers teaching through 8 clinical Academies: we chose Gloucestershire for its willingness to host the summer school and high level of Trust educational commitment. We set a limit of 20 Year 12 students as a number which could be accommodated in wards, investigation areas and teaching facilities. We decided to run the project on 5 weekdays in June 2011 and had two clear priorities:

1. To give students an accurate and varied experience of the acute clinical workplace;
2. To provide preparation and coaching for successful personal statements and interviews.

Morning sessions were spent in clinical environments, and afternoons devoted to ‘admissions’ focussed activities, including a mock interview.

Results, Discussion and Conclusions
Clinically, we wanted to give students a realistic insight into the patient journey and emphasise the routine, careful and team approach. We hoped to dispel images of maverick, individualistic doctors making brilliant solo interventions. It seemed crucial that students understood that a genuine concern for and interest in the welfare of others was a key quality of a doctor, as well as the ability to work happily as part of a team⁴. The ‘admissions’ sessions provided access to those who select and interview prospective medical students, demystifying the process and demonstrating the features of a strong personal statement and the activities which successful candidates had usually undertaken. We wanted to show the predictability of the interview and necessity for preparation⁵. Additionally we wanted to counter the modesty which can be a feature of state school candidates, showing students how to discuss their achievements and qualities without embarrassment.

Initial feedback was very positive. By July 2012 we will have collected full admissions outcome data from our 2011 cohort: we look forward to presenting our results at ASME ASM 2012.

References
2. University of Bristol Medical School interim admissions statistics, March 2011.
Staff/Faculty Development
Bristol’s Clinical Teaching Fellows – Where Are They Now?

D Little

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Background and Purpose
Bristol University academies have had Clinical Teaching Fellow (CTF) posts since 2004 when the first was appointed in North Bristol to facilitate the delivery of medical student education. Since then other academies have developed the idea introducing their own CTFs. There are now 16 different CTF posts throughout the different academies, each 1-year in length. These posts allow junior doctors to take time out from clinical training, either as an out-of-programme experience \(^1\) or between training posts \(^2\), to pursue and interest in medical education. This study aims to identify what teaching fellows do after their year as a CTF and whether they maintain an interest in medical education.

Methodology
A questionnaire is being sent to all previous teaching fellows from the different academies about why they chose to undertake a CTF post, what they gained from undertaking the post, what they are doing now, whether it helped them get the training job they wanted and whether they have maintained an interest in medical education. The latter point will be expanded to include specifics about their involvement and a discussion of future career plans with respect to medical education.

Results
Results from the survey will be presented along with plans to potentially expand the survey nationally to CTF posts around the country.

Discussion and Conclusions
CTF posts have a lot to offer to all involved and are very well appreciated by undergraduates who are able to relate well with teachers only a few years ahead of them. CTFs undertake these posts for a variety of reasons, some because they have a genuine interest in medical education, others because they fail to get the training job they wish for. The results of this survey will be relevant not only to those in Bristol but nationally, particular as CTF or similar posts are becoming increasingly more numerous and popular among trainees. Perhaps the people that undertake these posts will form tomorrow’s medical educationalists, hopefully this survey will provide evidence that the people who undertake these posts maintain and interest in medical education throughout their career and use the skills developed during their time as a CTF.

References
Optimising student experience: an innovative and integrated tutor support and development programme

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Background and Purpose
Hull York Medical School (HYMS) opened in 2003 with a curriculum designed around the principles of student-centred learning with problem based learning (PBL) as the key teaching and learning method in the first two years of the curriculum. Uniquely all of the PBL tutors are practising clinicians who deliver their teaching role alongside day to day clinical practice. These tutors are not embedded within the university and so it was vital that a structure was developed to support these tutors in their key academic roles. Some PBL courses struggle to embed this teaching and learning method securely within the curriculum. As Albanese says “Beginning a PBL curriculum is not for the faint-hearted” 1This poster will outline the essential features of our successful support system that has been developed over the past eight years to address quality assurance needs for the medical school and professional development and job satisfaction for the tutors.

Approach
The essential features of our support system revolve around the establishment of a Community of Practice amongst the tutors enabling them to benefit and learn from each others’ experiences. The features of this include:
- An effective tutor-tutor peer observation system which includes direct structured peer observation and recording and small group video analysis of sessions.
- A robust online student-tutor feedback system
- Regular teaching and training sessions for the tutors
- Regular Action Learning Sets where tutors have the opportunity to raise issues and challenges and share good practice in a safe and supportive environment.
- Involvement of tutors in curriculum development and student assessment and admission
- A mentor system for new tutors and performance review for all tutors
- Appointment of core staff in key roles to facilitate inclusion of these tutors in all aspects of medical school business.
- Engagement of all tutors in undertaking a Postgraduate Certificate in Medical Education (now offered by HYMS)

Discussion and Conclusions
Much PBL research is focussed on its effectiveness in terms of student outcomes and much of this research is confounded by significant methodological problems2,3,4 The system we have established has supported the development of a strong community of experienced PBL facilitators who are experts in both process and content. This is a critical foundation for the coherent, consistent delivery of the core curriculum at the centre of an integrated spiral undergraduate medical programme.

References
1. Albanese, M.A. Problem-Based Learning In Understanding Medical Education Evidence Theory and Practice Ed Tim Swanwick Wiley-Blackwell Chichester 2010
Northwest London Hospitals Trust - The ‘Inter-specialty’ Undergraduate Teaching Fellow Experience


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Undergraduate medical students from Imperial College rotate through Northwest London Hospitals Trust, from year two of their studies. In total, both Northwick Park and Central Middlesex Hospitals sites deliver teaching to a significant proportion of students, 169.50 FTEs pa.

The undergraduate department continues to strive for excellence in medical education. Since the introduction of undergraduate teaching fellows (TFs) in 1997 the department has continued to expand. Across both trust sites there are now nine inter-specialty posts in total, with a tenth post advertised. The specialties represented include surgery, medicine, infectious diseases, anaesthetics/ITU, paediatrics, obstetrics and gynaecology.

The TF model of delivery of undergraduate curriculum has many advantages. All our TFs consistently deliver ‘core’ teaching to undergraduate students, alongside student ‘firm’ experiential learning. TF activities include small-group tutorials, clinical skills-lab teaching, bedside teaching, final year mentoring, grand-rounds, vertical integration, individual and site introductory lectures. The fellows facilitate third year OSCE and final year PACEs examinations held on site. More recently, all the teaching fellows have collaborated for our ‘FY1 tutors programme’, encouraging FY1 doctors gain teaching experience through bedside teaching, with mentorship provided by our fellows.

On site, the teaching fellows also aid delivery of various specialty postgraduate courses (such as BSS, cCRISP, ALS, ATLS) and encourage teaching activities of junior doctors and consultants over both sites.

There is a close working relationship between the teaching fellows and teaching co-ordinators. The teaching fellows receive exceptional feedback from the medical students and consultants alike. Each teaching fellow has a designated ‘lead’ managerial responsibility (quality improvement initiative, FY1 tutor, research, pastoral care). TF attend quarterly departmental faculty meetings, monthly meetings with our director of clinical studies and research journal club. Our TFs have a variety of Imperial College commitments and roles. The TF posts are unique and flexible in the way which TF combine their teaching commitments with clinical duties and / or post-graduate clinical research.

We will describe the NWLH experience of using teaching fellows to deliver the undergraduate curriculum, how these posts are structured across the various specialties and consider future developments.
Experimenting with reflection: how students respond to a non-structured reflective task on a teaching skills course

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Background and purpose
Reflection is ubiquitous in medical education ¹, with many theoretical explanations supporting its use ². However, it can be unpopular with students ³ and there is conflicting evidence about its impact on learning ². A structured reflective logbook is a key element of a compulsory teaching skills course for penultimate-year students at a London medical school, yet students considered it boring and useless ⁴. A small pilot study showed that students valued an alternative, photographic method of reflection, as this allowed authenticity in their responses ⁵. We hypothesised that introducing non-structured reflection would be more engaging and useful.

Research question
Does including a non-structured reflective task impact on student evaluation of the reflective element of the course?

Methodology
This study involved pre- and post-intervention analysis using an existing evaluation tool, an anonymous questionnaire based on students’ hopes and fears about the course. Students rate each teaching activity, including the reflective log book, on a 4-point Likert scale according to engagement and usefulness. Our intervention involved replacing one of four compulsory structured reflective tasks with an optional non-structured reflective exercise. Students could reflect on any aspect of the day’s teaching and could choose their method of reflection. We collected data from 4 cohorts (120 students) before introducing the non-structured task in August 2011; we then collected data from the next 6 cohorts (190 students). We recorded the nature of the non-structured reflection and used thematic analysis to categorise the choice of reflective approach. We compared the logbook evaluation ratings using Chi-squared analysis.

Results
310/310 (100%) of students completed the reflective logbook and 194/310 (62.6%) of students completed evaluation forms. The most common approaches to non-structured reflection (190 students) were prose (27%), art-related (24%), photography (12%), poetry (8%), and diaries (5%); other less common approaches included a doctor’s discharge letter, letter to a journal, song lyrics and a video diary. Students were more likely to rate the reflective logbook as engaging or very engaging (56/118 [47.4%] non-structured vs 18/76 [23.7%] structured) and useful or very useful (68/118 [57.6%] vs 23/75 [30.7%]) if they completed a non-structured reflection (p<0.001).

Discussion and conclusions
Students were creative and varied in their approach to a non-structured task and our data indicates that inclusion of this option makes the reflective logbook more engaging and useful. Educators should encourage students to experiment with alternative approaches to reflection as a way of assisting meaningful engagement with learning situations.

References
Student Abuse in the Workplace
“Oh that student’s starting to get on my nerves”: a multi-school qualitative study of healthcare student abuse

CE Rees, LV Monrouxe, EF Ternan

CE Rees, Professor of Education Research and Director of the Centre for Medical Education, Medical Education Institute, University of Dundee, Dundee

Introduction
Although an increasing body of research has focused on medical student abuse,1 few studies have explored the workplace abuse experienced by other healthcare (e.g. nursing, dental, pharmacy, physiotherapy) students.2-4 The current study aims to examine healthcare student abuse narratives to identify types of perceived abuse, factors cited by students as contributing to abuse and students’ actions at the time of abuse.

Methods
We conducted a qualitative design using narrative interviewing techniques with 3 individual and 11 group interviews to elicit personal incident narratives of professionalism dilemmas. 69 healthcare students participated (dentistry=29, nursing=13, pharmacy=12 and physiotherapy=15) at three Universities (England, Wales, and Scotland). 49-71% of participants across the healthcare groups were female. Primary analysis was conducted using Framework Analysis.5 We report on our secondary analysis of this data: a thematic analysis of student abuse narratives.

Results
Of 240 professionalism dilemmas, 79 (33%) involved perceived healthcare student abuse. Within participants’ narratives of abuse events they mostly reported covert status-related abuse or direct verbal abuse from qualified healthcare professionals of the same or different discipline or patients. Although perpetrators reported were equally male or female, recipients were typically female. Narrators mostly described factors relating to the individual (perpetrator or recipient) rather than organisation as contributing to abuse. 37 narrators reported doing nothing in the face of abuse; 42 reported challenging or reporting the perpetrator or debriefing after the incident. Participants gave several reasons for inaction (e.g. anxiety about receiving bad marks from the perpetrator) and for resisting (e.g. the abuse was perceived to be unfair).

Discussion
Although narratives focus predominantly on individual factors contributing to abuse and responses to abuse, we need to focus on the dynamic interplay between individual and organisational factors to combat abuse.6 We describe several opportunities to mitigate this continuing problem within the healthcare workplace learning environment.

References
Student Welfare
Prevalence and persistence of depression among men and women during undergraduate medical training: a longitudinal study in one medical school

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Context
Psychological wellbeing is important for medical students, for patients whom students meet and for their future medical practice 1,2

Objectives
To determine, amongst male and female medical students: the prevalence of depression; whether the prevalence of depression differs at different points in the medical course; and amongst those affected, whether depression is transient or persistent.

Methods
From September 2007 – September 2010, all University of Cambridge medical students entering Years 1 and 4 (the first years of the Core science and Clinical components respectively) were invited to take part in a longitudinal study comprising an annual questionnaire survey which included the depression subscale (HADS-D) of the Hospital Anxiety and Depression Scale: (HADS) 3. We analysed, separately for men and women, mean HADS-D, and the proportion of students whose HADS-D indicated depression (HADS-D score ≥8) at different time-points in the course.

Results
Amongst groups of male and female medical students in Cambridge, the prevalence of depression varied from 2.2% to 12.9%. No significant changes in mean depression scores over time were observed amongst core science component students. A very small increase in mean depression scores over time was found for both men and women in the clinical component, although the effect for men was not robust to sensitivity analysis. Most students who demonstrated depression during the core science component did so on only one occasion. In the clinical component, although few students experienced depression, approximately half of these did so on more than one occasion. We found no evidence that women were more likely than men to experience depression, either on one occasion or persistently.

Conclusions
These findings do not support the view that medical students exhibit a higher prevalence of depression than other comparable groups or that differences in mean depression score or prevalence exist between men and women. We found some evidence that mean depression score increased amongst women approaching the end of their clinical studies, which may presage the recognised increase in prevalence of depression amongst practising doctors 4. It is important that mechanisms should be in place to identify and support all students suffering from depression, but particularly the very few with persistent low mood.

References
Teaching About Specific Subjects
Preventive Cardiology: A Unique Medical Curriculum Development

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Background and Purpose
The General Medical Council recommend the undergraduate medical curriculum include population health and preventive medicine (GMC, 2009). Currently principles of prevention are integrated into the curriculum but by appearing in the context of many specialties, its delivery and evaluation of the required knowledge, skills and attitudes can be blunted. Cardiovascular disease is one of the leading contributors to the global disease burden, causing one third of all deaths each year (WHO, 2009). A module on Preventive Cardiology was designed for the Clinical Epidemiology Intercalated BSc, representing a highly relevant and innovative medical undergraduate course. The inaugural 10-week module in 2011 aimed to encapsulate the prevention principles required of our graduates in order to bridge individual care and population health. It had a commitment to critical appraisal and application of evidence-based information, and taught specialised communication skills important for preventive practice.

Methodology
Using mixed methods of teaching and encouraging different approaches to learning, the cross-department collaboration involving GP’s, Cardiologist and Psychologist helped deliver multiple concepts of prevention. Internet based critical appraisal of literature, case based learning, and website links to risk estimation tools were other methods used to support the teaching. Motivational Interviewing (MI) and Shared Decision Making (SDM) were taught to equip students with the theory and practical skills using a simulated patient to address unhealthy behaviours such as smoking. Summative written case study and a 2-station practical and formative pre and post-MCQ, along with online surveys, helped evaluate the students’ knowledge, skills, attitudes and understanding.

Results
There was an improvement in knowledge from pre to post-module MCQ (average 53% to 74%). An online survey revealed that all eleven students rated the module ‘high’ or ‘very high’ according to ‘usefulness’, ‘likelihood of applying what they had learnt’ and whether it had ‘addressed the learning outcomes’. Analysis of the free-text survey responses identified (1) appreciation of the greater need for and relevance of preventive cardiology, (2) increased knowledge and application of critical appraisal skills, and (3) appreciation of how MI and SDM help put prevention into practice.

Discussion and Conclusions
Undergraduate curricular developments can be turned into opportunities to expand the role of preventive medicine, for example in the form of stand-alone modules. An effective curriculum should also offer sophisticated communication skills for prevention (e.g., MI, SDM) and appropriate assessment methods. We advocate national initiatives to facilitate sharing of teaching and assessment methods across institutes to help further advance the preventive curricula.

References
“How do I tell a patient they’re fat?” – Exploring the challenges of health promotion and disease prevention through the use of case studies in Primary Care

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Background
Increasing concerns about the prevalence of obesity, and the impact on clinical practice has necessitated inclusion in core curricula. NICE guidance was published in December 2006\textsuperscript{1} which draws on established behavioural change approaches and community interventions although evidence of effectiveness is fragmented and limited. Practice based protocols for managing obesity are still at the development stages in many practices. Medical Schools are exploring ways of equipping medical students with appropriate skills to raise the issues in the clinical context and intervene in an appropriate way relevant to their General Practice placement during their final year. At King’s College London School of Medicine final year students are required to write a 500 word case study related to an obese patient they encounter in general practice, exploring the crucial role General Practitioners have to play in promoting health and preventing disease. Students are encouraged to; reflect on, how and why they raised the issue of obesity; how they proceeded; what, if any, referrals they made; justify their actions; reflect on the experience.

Methodology
Case studies (N=450) will be anonymously collated and a random sample (N= 45) thematically analysed, using NVivo, to explore students’ reflections. Two or three researchers will examine the data independently and then compare. Concurrently students will be invited to focus groups to discuss their experiences and what support or resources were helpful.

Results
The findings will be presented from this mixed method research to identify strengths, acceptability and areas for improvement in the learning out comes and what additional tutor support may be needed.

Discussion
GPs see their patients, on average, three to four times per year\textsuperscript{2} and therefore, have many excellent opportunities to discuss healthy living and for the early detection of illness. They are familiar with the public health problem of obesity and its prevalence but have made only modest change to practice since 2006 when the NICE guidance was published. The relationship GPs have with their patients and the trust it engenders can be important factors in motivating patients to comply with measures designed to maintain health.

The need to support students in this area may be a challenge or may be a timely stimulus for change and development, with students having a proactive role in helping practices develop their protocols. Students may find a valued learning experience, not just about the management of obesity but responding to changing clinical priorities and emerging evidence base.

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Psychiatry: Junior doctors’ preparedness for practice and desire to specialise in psychiatry and factors in undergraduate training influencing this

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Background and Purpose
It is well documented the number of medical graduates choosing careers in psychiatry is in decline. In 2008, of those taking the MRCPsych exam 6% were UK graduates1. Numerous studies and reviews have addressed the current decline. Literature exploring psychiatry career choice concludes that the medical student experience influences recruitment2,3. This study considers these findings on a regional level. The aim of the study is to assess how newly qualified doctors rate their preparedness for practice with psychiatric patients, their attitudes towards psychiatry and the factors in their undergraduate training that influence this. This information can then inform on-going endeavours to improve recruitment to psychiatry training.

Methodology
All foundation year one trainees in the North West Foundation Deanery were asked to complete a survey gathering information about their undergraduate psychiatry training, their self rated confidence in psychiatry learning outcomes and self rated opinion of psychiatry as a specialty. The survey combined Likert scales supported by free text responses to allow some participant elaboration.

Following analysis of the questionnaire responses, suggestions for improving recruitment to psychiatry training were made.

Results
Over 300 surveys were completed. Participants included those trained at each of the UK medical schools and some international schools; they were currently doing a variety of foundation year one jobs across the North West Deanery. Undergraduate training varied but was mainly delivered by senior psychiatrists, the length of training ranging from 12 to 140 days. Half of participants felt sufficiently prepared for practice with psychiatric patients, the specific areas and skills and associated self-rated confidence will be presented in more detail. 9% of participants listed psychiatry as a specialty that interested them in terms of career. Factors positively influencing participants included enthusiastic teachers, passionate doctors and a multi-disciplinary approach; negative influences included not having enough time in the specialty, bored and disillusioned practitioners.

Discussion and Conclusions
A number of areas were researched superficially; with results providing a springboard for further in-depth study and several possible areas that can be looked at long-term for improving recruitment to psychiatry. It has been demonstrated that passion, enthusiasm and time are key to positively influencing doctors confidence in and desire to pursue psychiatry.

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3 - Cutler JL, Alspector SL, Harding KJ, Wright LL, Graham MJ ‘Medical students’ perceptions of psychiatry as a career choice’ Academic Psychiatry 2006; 30:144-149
Case-based reports: Integrating the learning of Medical Ethics and Law into Clinical Practice

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Background
Teaching of Medical Ethics and Law has become a core part of UK undergraduate medical curricula over the last decade (1), partly due to a number of seminal documents including the Pond Report (2). In 2010 the Institute of Medical Ethics recommended "Student should be encouraged to present problems they have personally encountered in the course" (3), in their guidance to medical schools. Medical students have not always engaged well with their ethics teaching: for example, Johnston and Haughton reported that many students think ethics teaching lacks value or is not relevant to their clinical practice (4). Sheffield Medical School introduced case-based reports in 2010 as a learning and assessment tool. These reports aimed to help engage students’ with their ethico-legal teaching and integrate it with their clinical learning.

Aim
To critically evaluate this innovation with the 2010 and 2011 cohorts of Sheffield medical students to examine whether case-based reports are an effective way of integrating the teaching medical ethics and law with clinical practice.

Methods
The 2010 and 2011 cohorts of students completed an online evaluation of the reports. We used thematic analysis to consider the student comments (anonymised), taking guidance from Braun and Clarke 2006 (5). Students were asked to rate the reports on a scale of 1-10, 1 being “Not valuable” and 10 being “Very valuable”. The students were then asked to explain their reasoning behind this rating, what they thought were the best features of the report and what they thought could be improved in the future.

Results
We coded the data in 2010 into five main themes:
1. Clinical Relevance
2. Opportunity to explore a topic of interest in greater detail
4. Lack of Guidance
5. Practical Issues, including consistency of marking

Many of the suggestions to improve the implementation (themes 4+5), such as providing examples and updating guidance were addressed in the 2011 implementation. The mean score for the value of the exercise increased from 6.4 in 2010 to 7.0 in 2011. This and the qualitative comments suggested the revised implementation was improved.

Conclusions
Placement based case reports helped students to relate their ethico-legal knowledge to clinical practice and convince them of the relevancy of the subject to their clinical practice. Placement based case reports are an effective tool to help solve the problem of medical students not engaging with ethics as a topic.

References
Female Genital Mutilation - enabling students to explore the international and national prevalence, presentation and prevention programmes; Feedback from a student lead Global health workshop

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Background and Purpose
Female Genital Mutilation (FGM) is defined by the WHO as the “the partial or total removal of the female external genitalia or other injury to the female genital organs for non-medical reasons”1. However, FGM is not just a practical definition, but an ordeal endured by more than 140 million females worldwide, many suffering lifelong physical and psychological consequences thereafter2.

It is arguably essential to teach medical students both the short and long term implications of this issue. Many students will be travelling to countries with a high prevalence of FGM for their electives and may experience disbelief and shock if encountering such patients. Furthermore, with the number of women migrating from FGM prevalent countries into the U.K. increasing and a predicted 20,000 girls a year at risk of being ‘cut’, clinicians are more likely to treat FGM complications and deal with safeguarding concerns3. As future clinicians, it is paramount therefore to educate students on methods regarding delivering treatment empathetically and preventative measures. This study aims to provide methods of integrating the ‘Multi agency FGM guidelines’ produced by the Foreign and Commonwealth Office (FCO) in 2009, into the medical undergraduate curricula4. Teaching this sensitive subject in an engaging and meaningful manner to students is difficult, but possible.

Methodology
As part of the Global Health Day at King’s College, University of London, a series of student lead workshops for fourth year medical students were organised. The workshop’s learning outcomes were centred on FCO guidelines4. This consisted of a combination of case studies approved by the WHO’s FGM international leads, interactive quizzes based on facts published by the British Home Office and presentations by key speakers2. The presentations included a local NGO exploring anti-FGM prevention programmes nationally and internationally and a clinician specialising in treating women with FGM complications. After the workshop, students were given the opportunity to provide feedback.

Results
Results from the feedback survey and an outline of content and techniques used for teaching will be presented.

Discussion and Conclusion
The response from students was extremely positive regarding both the subject taught and the workshop’s interactive style. Having explored the child protection protocol in an engaging manner, students felt more confident as future clinicians to deal with FGM and other child safeguarding issues. This study proposes an outline of both content and methods used to teach medical students about FGM, which could be incorporated nationally across all medical curricula.

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Teaching and Learning
Students’ Perspectives of Clerking Portfolios as a Means of Learning During Their Clinical Attachments
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Background and Purpose
Portfolio based learning has become extremely prevalent in medical education over the last decade, especially as a means of assessment during postgraduate training and learning through reflection on real experiences. The University of Bristol introduced clerking portfolios as part of the year-three medicine and surgery unit in 2009. This study aims to gain an insight into students’ perspectives of the portfolios by examining their opinions on their appropriateness as a means of learning hospital medicine and also the difficulties encountered while compiling portfolios. The study will also offer suggestions on the support students should receive when developing portfolios.

Methodology
This qualitative research project followed up a group of year-three students on placement at Weston General Hospital during their medicine and surgery attachment. Focus groups were held at the beginning and end of the process to make a comparison between students’ preconceptions of clerking portfolios and their viewpoints having completed their portfolios. Students were asked a broad range of questions to gain an impression of their learning and reflective outcomes and understand the practicalities of developing clerking portfolios. Conclusion on the effectiveness of clerking portfolios and strategies for student support were based on the students’ feedback from these focus groups.

Results
Results will be presented in the form of direct quotes from the student focus groups, as well as key themes and improvement strategies brought out from the discussions regarding clerking portfolios.

Discussion and Conclusions
The initial focus group found that students had been concerned that the clerking portfolio largely acted as a means to ensure they saw a sufficient number of patients and that their learning experience may be too dependent on the patients they clerked. These attitudes changed during the attachment with students stating that their portfolios had prompted study on a broad range of topics in a greater depth than may have occurred otherwise. Overall, the students enjoyed being able to associate their learning with real cases, and felt that portfolios improved their documentation and understanding of patient management. However they did indicate that more initial guidance on documentation, clinical summaries and management plans would have been beneficial. They also wanted more opportunities to individually discuss their portfolios with tutors during the attachment.
The impact of different virtual patient designs: a qualitative grounded theory focus group study

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Background and Purpose
Virtual patients are online representations of realistic clinical cases used in medical education. They have been widely used, and are well placed to teach clinical reasoning skills. There are numerous VP design features. Technical international standards developed in 2009 define VP properties and arguably form the benchmark for future research into VP development. A recent systematic review found only limited evidence supporting individual design typologies. We set out to research the consequences of different VP designs.

Methodology
This is a qualitative grounded theory research study into VP design using focus groups. We conducted a literature review, and reviewed open access VP cases. We integrated relevant design principles into two bespoke VPs, each thirty minutes long. Participant groups (n=6-8) completed both VPs, followed by a written evaluation, and a one-hour focus group. We used an experienced facilitator, moderator and pre-planned funnelled questioning route. Focus groups were digitally recorded, transcribed and analysed using the qualitative software programme NVivo. Our first group arbitrarily invited a group of year four medical undergraduates. We used a classic grounded theory approach for data analysis using a constant comparison technique. Iterative purposeful sampling was informed from the analysis of the data. Axial coding followed initial open coding and conceptual memoing. Theoretical hypotheses and themes emerged from, and were grounded in the data. No new themes emerged after the sixth focus group, so data collection ceased. Institutional ethics approval and informed consent was obtained.

Results
We identified a core emergent category, with sub-categories representing the process of interaction with the VPs. From this, through a series of iterations, we constructed a theoretical model. The model has three layers, with interactions between each layer. The inner layer is formed from the ‘cognitive condition’, and ‘behavioural condition’, the students state prior to the activity. The middle layer describes the VP ‘as an encoded object’, its properties as an elearning artefact; and the VP ‘as a constructed activity’, from pedagogic, environmental and organisational perspectives. The outer layer models the students ‘cognitive change’ and ‘behavioural change’ during and after the activity.

Discussion and Conclusion.
This is the first grounded theory study to explore VP design, and to our knowledge is the first to explicitly author cases for the purpose of evaluating design. Our model may provide practical help to VP authors and institutions. We have used it to inform a multi-centre randomised study into VP design.

References
What are clinical medical students’ experiences of early clinical experience? A retrospective qualitative study

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Background and purpose
Since the General Medical Council’s (GMC) ‘Tomorrow’s Doctors’ 1993 (1), there has been a shift in undergraduate medical education from the traditional pre-clinical / clinical years split, to more integrated courses with early clinical exposure from year one. Several studies have shown that students have positive opinions about their early clinical experience and it has been shown to improve empathy, communication skills and motivation (2, 3, 4, 5, 6). The majority of these studies have been done at the time of or shortly after the students participated in the clinical experience. The aim of this study is therefore to establish the experiences and opinions that current clinical medical students had during their early clinical experience and see the impact it had on them starting their clinical courses.

Methods
This was a retrospective qualitative research project using 3 focus groups as the method of data collection. Focus group discussions were recorded and then transcribed. The participants were twelve fourth and fifth Year medical students at the University of Nottingham. The data was analysed systematically using framework approach with constant comparison.

Results
The most important aspects gained from early clinical experience were professionalism and communication skills. Early clinical experience eased the transition into clinical medicine. The value of volunteer patients and need for consistency have also been shown. In addition, the students found early clinical experience challenging and anxiety provoking.

Conclusions
This study adds to the existing data which shows how beneficial early clinical experience and supports that it improves communication and examination skills, motivation, satisfaction and students interest (2,3,4,5,6) . However, through the use of retrospective feedback, it also highlights that one of the main outcomes for students is the development professionalism. Furthermore, it has shown that early clinical experience is particularly important in helping students move into their clinical years, which in turn ensure that they can use the time in the clinical course more effectively. In addition, it has some important implications for course organisers in terms of quality assurance and expectation of students.

References
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Training by trainees? Evaluation and assessment of a peer-to-peer led surgical teaching programme for medical students

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Introduction
This review demonstrates the findings of an education workshop for medical students, from July 2011, organised by the Leicester Medical School Surgical Society (SCRUBS). Focused teaching on surgical topics, provided by Core Surgical Trainees (CSTs), was used to supplement the Leicester Medical School’s “Perioperative Care Module”. We believe that CSTs are able to utilise their own experience, both as trainees and trainers, to provide effective teaching to medical students. We also believe in the relevance of an educational programme created through feedback and in collaboration with students.

Methodology
CSTs with an interest in teaching were openly recruited to volunteer as tutors. The workshop was run at a purpose built clinical skills unit, equipped with resuscitation manikins and a surgical skills room. The day consisted of 5 interactive clinical scenarios, a surgical skills station and a lecture centred on the management of acutely ill surgical patients. This format had been trialled the preceding year by SCRUBS with the aim of identifying universal areas of weakness. All students sat pre and post-workshop exams and participants were asked to evaluate the teaching programme on its completion. Data was subsequently analysed using an online statistical package (SOFA Version 1.1.3).

Results
A total of 7 CSTs doctors and 49 students participated (33 female, 16 male). Mean score for the pre programme exam was 17.6 (70%), this improved to 19.14 (76.6%) after the programme. Analysis of the students’ marks using a paired T test demonstrated a statistically significant improvement (p<0.001 95% CI: 2.10-0.92, SD: 2.812-2.121). The majority of students (84%) were in their 3rd year (17/49) and 4th year (22/49). 80% (40/49) strongly agreed that the programme had improved their confidence in the management of the acute surgical patient and 86% (41/49) would strongly recommend the programme to their peers. 94% (46/49) strongly agreed that there should be more simulation events like this one during their training.

Discussion
The feedback from this programme demonstrates that CSTs make effective tutors and that this type of event is well received by medical students. This is evidenced by positive feedback and the high level of attendance. Feedback specifically highlighted the approachability of trainees as tutors, the quality of facilities and the SCRUBS course structure. Our model of SCRUBBS surgical events for medical students can be transferred to other specialities as a useful adjunct to clinical teaching, benefiting students and tutors alike.
The Top 10 Diagnostic Errors in Paediatrics: a new focus for training?

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Background
Misdiagnosis can lead to unnecessary procedures, incorrect medication and delays in treatment, all of which risk morbidity and death. This study aimed to identify the 10 most commonly misdiagnosed conditions in paediatrics.

Methods
Articles were identified using the MEDLINE and EMBASE electronic databases for English language papers published to January 2012. Both medical subject heading (MeSH) terms and free-text words were used. The search term ‘paediatrics’ was combined with ‘mistakes’, ‘litigation’, ‘clinical error’, ‘misdiagnosis’, ‘diagnostic error’ or ‘medical errors’. 366 potentially relevant articles were identified. After reviewing their titles, eligible abstracts were read. The selection criterion was articles with data on legal proceedings following an alleged misdiagnosis. Articles focusing on the perinatal period (142), medication errors (108) or misdiagnosis due to radiological or laboratory errors (52) were excluded. The references in the selected articles were also reviewed. Six articles met the selection criteria. The most common conditions involved in legal proceedings in the six papers were identified and ranked according to their frequency. A mean rank for each condition was then calculated.

Results
The 10 most frequently misdiagnosed conditions in order of frequency were meningitis, gastroenteritis, septicaemia, appendicitis, congenital abnormalities, upper limb trauma, pneumonia, lower limb trauma, testicular torsion and malignancy. Diagnostic errors accounted for 48% of all paediatric malpractice claims in one study. 1 The average compensation paid to the claimant for the commonest misdiagnosis, meningitis, was nearly $500,000.2 Paediatrics accounted for the fourth highest legal costs of the 28 medical specialities examined. 3

Discussion
Misdiagnosis is the single most common serious error in paediatrics.4 This is partly due to variation in symptomatology at different ages and to difficulties in communicating with young children. Misdiagnoses are potentially devastating for families and medical professionals, as well as having significant financial consequences. The 10 diagnoses identified in this study should be considered core knowledge in paediatrics and an important part of the curriculum for paediatric and general practice trainees. Doctors must consider these important and serious conditions when assessing sick children. This will help to reduce the morbidity and mortality associated with misdiagnosis. It will also help to avoid litigation and to save money in the financially stretched National Health Service.

References
How Do They Cope? The transition into Year 1, Case-based Learning (CBL) Medicine

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Introduction, Background and Purpose
The transition to university has been described as a “battle” for students because their ways of learning are challenged and threatened. Students transitioning into Medicine at Adelaide University are challenged by the CBL approach. The transition experiences of students across programs have been investigated\(^1\) but not for medical students. Transition pedagogy\(^2\), where co-curricular and curricular components are integrated, provides a theoretical framework for investigating the complex environment experienced by students during the transition process. The framework considers a curriculum that engages students in learning, fostering a sense of belonging, proactive and timely access to learning and life support and sustainable academic-professional partnerships. My research investigated the strategies used in these four areas by students, academic and professional staff involved in transition.

Methodology
A mixed-methods research design was used. Students, academic and professional staff completed questionnaires and participated in Focus Groups. Students completed the “First Year Experience Questionnaire” for comparison with a general cohort of first year university students studying courses at 9 Australian universities\(^1\). Students’ stress levels were measured 2 weeks before examinations in semester 1 and 2. Students and tutors completed questionnaires to investigate the alignment of their perceptions with the CBL approach, and tutors completed the “Approaches to Teaching Inventory”\(^3\) to investigate the relationship between a student’s and their tutor’s perceptions of the CBL approach, and their tutor’s approach to teaching. Focus Groups explored questionnaire findings to generate a deeper understanding of the strategies employed by students and staff involved in the transition process.

Results
Medical students scored significantly higher than the general cohort of first year university students in the domains “Sense of purpose”, “Student identity”, “Course satisfaction” and “Being prepared and present”, but significantly lower on the domain “Comprehending and coping”. They experienced major changes in the nature of learning and teaching. Focus Groups revealed the strategies employed by students and staff to cope with these changes. These will be discussed within the transition pedagogy framework.

Conclusion
The transition pedagogy model requires thinking about the issues of transition from the dimensions of students and academic and professional staff. This study highlighted the need to improve not only student strategies for comprehending and coping, but also the strategies of academic and professional staff. It provides a clear direction on what needs to be done to improve transition e.g. improving accessibility and knowledge of professional staff for students, and providing opportunities for CBL tutors to reflect on issues that arise as they facilitate the transition process.

References
EXCEL Scheme - Early exposure to clinical exam-focused learning: Experiences of a focused clinical teaching program for medical students in the first clinical year

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Background
In the early clinical student years, acquiring the necessary clinical knowledge and skills can prove difficult. Firstly, there is often lack of ownership of responsibility for clinical education amongst doctors. Secondly, doctors often have limited knowledge of the university syllabus and learning objectives. Thirdly, teaching is largely opportunistic and ad-hoc during ward-rounds and clinics particularly in an environment where Specialist Registrars and Consultants have competing work commitments. Consequently, this results in poorly structured teaching lacking in continuity. Moreover, students may feel out of place or ignored, rather than integral members of their firms. We present our experiences of implementing the EXCEL scheme designed to compliment existing clinical training opportunities and the university-delivered lectures.

Methodology
We approached a cohort of first year clinical students, during their joint surgical and gastroenterology rotation, taking ownership of their clinical education. The University syllabus was carefully analysed to design a logically structured voluntary teaching programme with emphasis on early clinical exposure. A component architecture approach was used to divide the syllabus into manageable modules. This was peer reviewed by Consultant colleagues who were also educated on the key university syllabus objectives.

Clinically focused theory was delivered using a range of presentation modalities. Reusable learning objects (RLOs) (Leeder et al, 2002) were employed including interpretation of pathological radiographs, practice prescriptions on drug and fluid charts. There was a strong emphasis on solving extended-matching questions. In addition, patient-based objective structured clinical examination (OSCE) stations were regularly used to individually assess students. Moreover, we introduced a number of changes in the running of the firms to ensure the students are integral members of the firm.

Results
Feedback forms for the programme were obtained per session and scores will be presented, demonstrating excellent learning outcomes.

Discussion
We have shown that our EXCEL scheme has a positive impact on early clinical student education. This outcome is likely multi-factorial. First, core trainees take ownership of responsibility of students’ education. Second, they study the university syllabus, and educate and help focus other trainers in the department, including consultants. Third, EXCEL consists of an exam-focused structured modular trainee-led programme with early exposure to interactive clinical teaching. Fourth, methods are employed to ensure integration of students as key members of their firms. Moreover, the development of an excellent relationship between students and teachers meant no student felt excluded. The modular approach utilising RLOs facilitates a rich and dynamic learning environment transferable to other institutions.

References
A tale of two cohorts: Foundation doctors information-seeking practice in the workplace

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Background and Purpose
There has been an explosion of medical information. Building on pilot work\(^1\), this study explores year two foundation (F2) trainees’ information-seeking practice in the workplace and whether and how it has changed. Given developments in the use of learning technology in the workplace, our intention is to investigate shift in resource-use by the cohort of F2s in Wales in 2012 compared with those in 2011. Findings from the 2011 data were reported earlier\(^2\). This work provides the broad context for an evaluation of the Wales Deanery Smartphone initiative (the “iDoc project”).

Methodology
As part of the iDoc project, the “information-seeking practice” questionnaire was distributed face-to-face to cohorts of F2s attending compulsory study days at seven postgraduate centres across Wales in Spring 2011 (n=260) and Spring 2012 (n=242). The questionnaire comprised mainly closed questions. The data were entered into SPSSv18. Descriptive and correlation statistics are reported. Research ethics approval was obtained from Cardiff University (PGMDE 02/12/2010).

Results
We will present results from the analysis of the full dataset from both the 2011 and 2012 surveys. Comparison will be made between the cohorts regarding: (a) the most frequently used information source in the workplace; (b) views on when a mobile device is most useful; (c) choice of information source by gender; (d) variation in preferences of information source according to the nature of problem being addressed (information-based, skills-based, problem-based); and (e) level of supervision.

Discussion and Conclusions
The 2011 survey indicated that a variety of information sources were used on a very regular basis, and that some gender differences were seen in relation to choice of resource, with more male trainees accessing electronic texts via Smartphones (p<0.01). The comparison of the two datasets will demonstrate change over time: whether greater use is made of mobile technology and how this differs by gender, nature of problem and level of supervision.

Implications for training will be raised: Is there an over-reliance on colleagues and should the use of other information sources be encouraged? What guidance should F2s be provided? Should advice be sensitive to gender, speciality, level of supervision and shift pattern? Can mobile devices support trainees in positions of low experience and increased responsibility? These surveys provide the context for exploring these and other questions.

References
Non-linear Presentation – *beyond bullet points*

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**Background and Purpose**

Complex subjects are traditionally taught linearly; understanding is built up from basic foundations. This accumulative learning is well supported by theory¹. However, constructivism views learning as a physical process, where new learning is established within a network of other related ideas, with deep learning only occurring once new information is adequately and appropriately linked with existing knowledge².

Much teaching is supported by presentation software, with multimedia slide shows supplementing sessions. These shows progress linearly from slide to slide; locking a presenter into a defined path and dictating what can be discussed and presented. Linear presentation of information fails to capitalise on the web-like structure of deep learning.

**Methodology**

Using standard presentation software, we are experimenting with the presentation of teaching materials for undergraduate medical students in a web-like manner. The presenter is enabled to traverse multiple possible paths through a presentation, breaking away from the sequential trap of the standard presentation model. This method has revealed multiple possibilities; not only flexibility in order of presentation, but the potential for the class to steer the direction of learning themselves.

**Discussion and Conclusions**

Non-linear medical teaching is an on-going project, and we shall present work in progress. We are developing projects to investigate the efficacy of non-linear learning of history taking and non-clinical reasoning skills and will present results from these. Feedback from learners and teachers has been positive, and we believe this is an innovation with great potential in many areas of medical education.

**References**

End-of-Week Reflective Meetings Support Clinical Assistantships and Acute and Critical Care Training

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Background and Purpose
In 2009 the General Medical Council issued guidance that medical students undertake clinical assistantships before graduation 1. During their hospital placement, final-year medical students at Keele University undertake assistantships in medicine and surgery and a taught acute and critical care course (ACCC) 2. Assistantships involve working closely with a foundation year one (FY1) doctor, participating in all of their duties under supervision 3. This provides valuable experience to support the transition to FY1, however students are exposed to challenging cases that FY1 supervisors may lack the experience to debrief effectively 4. Critical care is a fast-paced environment where thorough explanation may occasionally be compromised by the demands of patient care.

In order to address these potential issues, end-of-week meetings in which students reflect on cases and present them to their peers have been integrated into both the assistantships and ACCC. These meetings are facilitated by clinical teaching fellows (out-of-programme specialty registrars), whose role includes facilitating discussion, developing clinical reasoning, aiding understanding and acting as a mentor.

Methodology
On the final day of their hospital placement, all final-year students completed an anonymous questionnaire to evaluate the end-of-week meetings. The questionnaire was derived from the intended learning outcomes (ILOs) and developed by faculty consensus. Five point Likert scales were used to evaluate the ILOs, and free text boxes were included for descriptions of strengths and weaknesses. Descriptive statistics were calculated from the ordinal data using Microsoft Excel. Thematic analysis was used to classify the free text.

Results
The majority of students agreed that the end-of-week meetings helped to improve knowledge and reasoning skills, and supported reflective learning. Feedback on the use of the meetings to address emotional and professionalism issues was equivocal though the high degree of variability in this domain indicates a broad range of opinion. Thematic analysis indicated that students enjoyed the variety of cases, they valued discussion amongst peers, and that they felt supported to discuss problems.

Discussion and Conclusions
These sessions represent a successful adjunct to hospital placements. Students value the chance to discuss cases and feel that they are educationally beneficial. The rapport between the clinical teaching fellows and students permits problems to be openly discussed with a member of university faculty and issues are addressed in a timely fashion. We would recommend end-of-week meetings to those considering the implementation of clinical assistantships.

References
Short and long term retention of teaching skills of medical practitioners after attending a two day Teaching Improvement Project Scheme course

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Background
Since 2005 there has been an ever-increasing demand for short courses to improve teaching competencies on the part of junior doctors in their early years of training.

Aims
As relatively little is known of the impact of such courses in relation to the retention of the teaching competencies that these courses aimed to achieve, the present study aims to gain a better knowledge and understanding of the short and long term impact of the Nottingham University TIPS course.

Method
In 2011 a total of 109 participants (65% Specialty trainees, 23% Foundation trainees and 12% consultants) who attended over a period of 6 months were surveyed in the form a pre-TIPS questionnaire asking them to rate themselves against each of 31 competencies. At the end of the course they were surveyed by way of an identical post-TIPS questionnaire. They were also asked various questions in relation to how much they felt they had learnt from the course. Between 4 and 6 months after the course participants were sent a follow up identical post-TIPS questionnaire. They were also asked open ended questions about how TIPS had changed their practice.

Results
Preliminary results show highly significant improvement in all the competencies in both the post TIPS survey (100% response rate) and the follow up survey (70% response rate) in which 91% of respondents said that they had put into practice what they learnt on the course and 78% that their students had benefitted from their having attended the course while 20% felt that they had possibly benefited and 2% were not sure. Greatest improvements were in the core competencies of the course: awareness of drivers and barriers to learning, using appropriate learning outcomes, giving clear explanations, promoting active learning, asking questions, giving clear instructions, encouraging questions from learners, responsiveness to learners and keeping learners motivated.

Conclusions
It appears the participants have benefitted from the TIPS course and significantly increased their competencies both in the short and in the longer term. Broadly similar findings were described by Dennick (2003) in a previous study of long term retention of teaching skills in relation to an earlier version of the same course.

References
Preparing to be a Professional-Incorporating Professionalism into a New Medical Curriculum

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Background
Professionalism is a complicated entity that remains difficult to define and challenging to teach and assess. At our institution we put several initiatives in place across the four years of the programme and here we describe the overall approach.

Summary of work
We integrated several components that encouraged and developed professionalism, including: a code of professional conduct signed by each student; biometric attendance at clinical skills and PBL with early intervention using triggered appraisal for absenteeism; a professional competencies programme incorporating exposure to legal and ethical issues; individual and group feedback on clinical behaviour and bedside manner; and special study modules.

Assessment included reflective journals and specific marks awarded for professionalism in Training Assessments and in OSCE examinations. An electronic logbook was put in place to encourage self-awareness of clinical encounters, with marks awarded.

Summary of results
Our first graduates have completed the programme and all components have been successfully put in place.

Discussion
We feel that in our system there are multiple opportunities to identify unprofessional behaviours, to correct these or to offer remediation where necessary.

Conclusions
The central role of professionalism in the curriculum demonstrates the esteem that professionalism is held in, both to faculty and students. Formalised assessment of professionalism on an equal footing with clinical competencies during the clinical years further reinforces this.
How well prepared are F1 doctors to manage diabetic patients in hospital settings and can this be improved through an educational intervention?

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**Background and Purpose**

Upon graduation, junior doctors are not confident to prescribe\(^1\), with prescribing insulin stated as a particular concern\(^2\). Despite this, they are the front line staff in many UK hospital settings and manage diabetic patients frequently. This study aimed to produce and evaluate an educational intervention to support the development of confidence to managing diabetic patients.

**Methodology**

To explore whether insulin prescribing was an issue of competence or confidence, we first analysed undergraduate assessment data to determine whether graduating students had sufficient underpinning knowledge required to manage diabetic patients.

To develop the educational intervention, key stakeholders (junior doctors, consultants, pharmacists) were interviewed to understand the range of ways in which junior doctors encounter diabetic patients. A range of common, authentic scenarios were created, comprising video / audio clips and associated questions (e.g. What would you do first?) and activities (Can you complete this drug chart?). The educational intervention was made available electronically (www.diabetesscenariosforjunior.doctors.co.uk).

Thirty two F1 doctors and final year medical students worked through some of the scenarios whilst ‘thinking aloud’ and then undertook a semi-structured interview. The participants were also asked to rate (on a scale of 1 to 10) their degree of confidence to manage diabetes in hospital settings before the educational intervention, immediately afterwards and six weeks later.

**Results**

Graduating students appeared to have the required underpinning knowledge to manage diabetic patients but found the practical knowledge underpinning ward-based work more challenging. The educational intervention was well received with pre-test confidence at 4.7 / 10, post-test confidence at 6.4 / 10 and confidence six weeks later at 6.8 / 10.

**Discussion and Conclusions**

Our data indicate that using the e-resource improved confidence of medical students and junior doctors to manage diabetic patients, and that this was a lasting impact. The e-resource was considered authentic, practical and appropriate for the target audience and most said they would recommend it to a friend. The scenarios and expert responses, in particular, were commended.

**References**


Smoking cessation assessment: student engagement with an online approach

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Background
Teaching students about behaviour change approaches as part of the therapeutic strand has been established at many medical schools and the focus is usually related to brief intervention and motivational interviewing to address smoking behaviours. A number of additional resources are now available to help with teaching and learning in and around these topics, as well as teachers and students being able to draw on evidence and NICE guidance. The National Centre for Smoking Cessation Training (NCSCT), which is part of the NHS, has an online training programme with the option for those NHS employees successfully completing Stage 1 being awarded a certificate. Non NHS applicants are welcome to do this online and free Stage 1 course but no certificate is offered those who successfully complete it. At King’s College School of Medicine (KCLSM) we negotiated with NCSCT at the start of the academic year 2011-12 to enable successful medical students to be awarded a certificate for their portfolio, an automated process that involved authorisation and verification. Students were informed and invited to do the Stage 1 training.

Methodology
Approximately 1,200 students were eligible for this option. Details of students from Phase 3, 4 and 5 who were successfully awarded the certificate are maintained and a sample will be approached and invited to focus groups (N=3 or 4 depending on response and with approximately f 40 students, 10 per focus group). They will be invited to share their reasons for completing the online module, how it has benefited them to date, whether they feel this should be mandatory at KCLSM and other medical schools and where in the curriculum they feel it would best fit.

Results
As soon as this option became available a number of students across the three years engaged and within the first 10 weeks about 40 students had successfully completed it, with about 6 having some difficulties registering for their certificate. The data will be analysed and presented.

Discussion
We anticipate that students will need regular reminders of this option although they are unlikely to find it onerous or difficult. We also anticipate they will have a greater appreciation of behaviour change approaches both in terms of the population challenges and as well as effectiveness in the clinical arena and confidence to raise and address smoking with patients using evidence based approaches.
Taking a ‘six hats’ approach to course evaluation

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Background and Purpose
To combat questionnaire fatigue we have developed a novel method based on De Bono’s lateral thinking strategy of using 6 different ‘hats’ to collect feedback on our Masters course from students. This calls for students to take specific viewpoints to look at a course – factual, good news, bad news, emotional, creative and summary. Using this method, evaluation becomes a kinaesthetic group activity, which produces immediate, rich feedback. The method has been further refined and used with undergraduates and senior faculty members. This presentation will share this method, the underpinning lateral thinking approach and analysis of results.

Methodology
This has been a practitioner research project, with the method being refined through use by different teachers and different student cohorts. It aims to re-position feedback from an onerous tick box at the end of a study day to an integral part of the learning event. During the feedback exercise discussion and debate about the content of feedback is encouraged, moving away from the expression of subjective, confidential personal opinion and towards an objectivity moderated by group interaction. There are no taboos and qualitative feedback is encouraged. Data on its implementation is being collected using surveys and documentary analysis to compare the results with other evaluation methods.

Results
Early results indicate students engage enthusiastically with this method of evaluation, in contrast to the participation and commitment shown to more traditional methods. The feedback gives insight into student perception of the course as well as providing a rich source of suggestions for feasible improvements.

Discussion and Conclusions
There appear to be a number of advantages to this method of evaluation. This is an expansive process which encourages and develops responses, rather than the reductive channelling of more quantitative methods. As an evaluation method it produces thorough reflection on a range of aspects of the course. It is an adaptable process that can be tailored for different audiences and in different formats. As one of a range of evaluation methods it can offer triangulation, but also offers an internal triangulation, as the different viewpoints balance each other.

References
Year 5 Community Service-Learning Projects—an opportunity for medical students to develop leadership skills or “the sort of thing we did to get into medical school”? 

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Background and Purpose 
Keele School of Medicine has introduced a new undergraduate curriculum which includes a 15 week GP Assistantship in Year 5. During this placement students work in small groups for a half day a week with Third Sector organisations on projects defined by service learning principles using a model pioneered in North America. These projects aim to help students develop leadership skills (a required Tomorrow's Doctors 2009 outcome and encouraged by the Medical Leadership Competency Framework), enhance social responsibility and develop the School's engagement with the communities it serves. Each group produces a written report, and delivers a presentation to an audience including peers, Faculty, Third Sector representatives and service users/patients. Individual students also write a reflective piece for their portfolios. Early evaluation suggested that while valued by many students, project providers and Faculty, some expressed uncertainty whether this is a worthwhile use of their time. More detailed evaluation of students’ and providers’ experiences and perceptions is therefore being conducted. The results of this evaluation will be considered within the framework of the planned intended learning outcomes (ILOs) for this component of the course. 

Methodology 
This is a detailed multiperspective evaluation of whether a new, innovative course component is achieving its intended aims. Questionnaires will be distributed to all students and placement providers. These have been designed to evaluate the students’ and providers’ perceptions of the students’ success in achieving the ILOs. Project presentations and group reports are also assessed against the stated ILOs and this assessment data will be considered in the evaluation. This year we have piloted but not used peer marking of presentations, and these data will also be included. 

Results 
The results of this evaluation and the analysis of these results within the framework of intended and achieved learning outcomes will be presented. 

Discussion and Conclusions 
This component of the course aims to develop leadership skills in a context where students’ contributions make difference and to encourage the development of socially responsible attitudes. This project will explore whether Faculty, providers and students have been successful. 

References 
5. NHS Institute for Innovation and Improvement and Academy of Medical Royal Colleges: Guidance for Undergraduate Medical Education: Integrating the Medical Leadership Competency Framework. Coventry, 2010.
“I have a life, not just an illness”. Encouraging patient-centred approaches to clinical clerking

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Background and Purpose
A number of changes have been introduced to the Primary Care curriculum at King’s College London School of Medicine in the last two years. In Phase (year) 3, Feedback from General Practice Tutors and faculty observation has given rise to concerns that some students appear to lose empathy as they progress through their clinical years; becoming more focused on disease processes and exam performance, and forgetting about the “patient behind the illness”. This is in line with evidence from the wider medical education literature (1-3). Following a pilot in 2010-11, a new Phase 3 Primary Care module was introduced in 2011-12, focusing on a patient-centred approach to clinical clerking and case presentation. The aim of the module is to complement both hospital clinical apprenticeship experience and existing Primary Care-based teaching in clinical and communication skills and to emphasise the need for an individualised approach to patient care.

Methodology
This project is part of a wider, multi-year study being run by the KUMEC team to evaluate a number of recent interventions that aim to improve medical students’ understanding of social determinants of health. Methodology includes both quantitative and qualitative data gathering, in the form of student on-line evaluation forms (Likert ratings and free-text) and focus-group data from students and tutors.

Results
Preliminary results, focusing on student and tutor experiences of the patient-centredness module; attitudinal change and intended behavioural change in students will be presented.

Discussion and Conclusions
Patient-centred approaches have been shown to improve both patient-satisfaction and outcome (2, 4), and this module aims to encourage students to apply their understanding of disease and management options to the individual. However, there are also practical issues and challenges involved in introducing what equates to over 4000 student-hours of small group learning in the community, which will be discussed.

References
A systematic literature review investigating undergraduate exposure to underserved, difficult and deprived areas

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Background and Purpose
The recruitment and retention of doctors in underserved, difficult and deprived areas (DDA) is an ongoing issue in healthcare. However, there is limited research that addresses this challenge, particularly at the undergraduate level in the UK. Research has shown students trained in a particular setting are more likely to seek employment in that same setting yet with clinical training mainly occurring in hospitals, most students do not have exposure or the desire to work in DDA general practice. In an attempt to address the issue, Durham University is piloting an innovative scheme of an extended placement in DDAs; this is modelled on a successful Australian approach of extended exposure to rural general practice. While the UK has less of an issue in rural areas, there are shortages in areas of deprivation often found in inner cities. Before the DDA placement occurs there is a need to incorporate information learned from published initiatives that aim to increase exposure for medical students to underserved areas.

Methodology
A systematic literature review was conducted. The databases searched included: Medline, Embase, Psychinfo, Web of Science, and ERIC. The review investigated undergraduate exposure to rural, urban, and other difficult areas. Search terms used were combinations and variations of four key concepts exploring: extended placements, medical students, location characteristics, and GP primary care.

Results
The initial search of the databases and removal of duplicates identified 4923 hits. Supplementary methods including citation searching, reference list checking, and pearl growing were carried out. After filtering by title and abstract this left 77 articles. The findings from the systematic review will be presented. Findings will feed into components of the DDA programme.

Discussion and Conclusions
Extended placements in underserved areas have observed an array of positive outcomes for students (exam scores), GPs (personal development), and the community (increased interest in GP posts). Although there is a growing amount of evidence for rural underserved areas there is little in relation to inner city, difficult and deprived areas, and none in the UK. The Durham pilot will allow students to experience the complex issues of primary healthcare in underserved, difficult and deprived areas; with the ultimate aim of increasing GP numbers in these areas.

References
The development of a course on teaching for core surgical and core medical trainees

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Background and Purpose
These innovative courses have been developed through collaboration between Kent, Surrey and Sussex (KSS) Deanery’s Education Department and the Heads of School for Surgery and Medicine. The courses include face to face workshops with accompanying pre- and post- workshop activities. The aim is to develop trainees’ understanding and practice of teaching and learning. The workshops encourage participants to explore the principles underpinning their teaching and learning encounters rather than to approach teaching as the acquisition of a defined set of skills.

Rationale
The Core Surgical and Medical Syllabi include the requirement that core trainees develop the ability to ‘teach and train’, ‘to progressively develop the ability to teach to a variety of different audiences in a variety of different ways’ and ‘to progressively be able to assess the quality of the teaching’. The KSS courses, ‘Educational Training for Core Surgeons’ and ‘Improving Your Teaching’ have been designed to develop educators who can support learning in clinical settings as part of their development as critical and reflective professionals.

The Course
Course participants are asked to prepare for the seven hour face-to-face workshop by observing teaching that is being undertaken in the real-life clinical setting (e.g. in theatre, clinic, a ward round, or other settings). They are provided with an observation framework and bring their notes to the workshop. At the workshop itself, they engage in a range of activities which draw on their existing experiences of, and critical reflections on, learning and teaching in clinical settings. They consider the relevance of educational theories, (e.g. social constructivism) and through differing types of small group work, they experience not only the potential of interactive learning activities but also think critically about the process of giving and receiving spoken feedback as part of formative assessment.

Participants also plan a teaching session which they will carry out and get evaluated by their learners for their own development portfolios.

Outcomes and further research
To date, approximately 10 workshops have been held and feedback has been exceptionally positive. Qualitative evaluations will be shared at the Conference. Further research is planned to evaluate the uses made by participants of post-course tasks and the impact that critical reflection on these activities has had for participants' development as clinical educators.

References
Medical Students and Spirituality

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Background
Medical training recognises that people are not just biological systems but complex individuals with physical, emotional and spiritual needs who hence require holistic care. Consequently, relevant organisations have produced standards for spiritual care. Tomorrow’s Doctors 2009 also states that doctors should respect patients’ and colleagues’ religion or beliefs. Currently, only a few UK medical schools provide teaching on spirituality. This varies in content and delivery and there is a lack of data regarding student attitudes towards spirituality and spirituality teaching. Aberdeen introduced a Personal and Professional Development (PPD) strand in its new MBChB curriculum which incorporates spirituality teaching. This project reports the evaluation of this teaching in terms of student attitudes towards spirituality and spirituality teaching.

Methods
This was a cross-sectional questionnaire survey, comparing Year 1 MBChB students who had not received teaching on spirituality with Year 3 students who had received this teaching. Questions were developed in reference to the literature. Basic demographic data was also collected from participants. Students were emailed in advance of data collection with an explanation of the study and its voluntary nature. Paper questionnaires were distributed following a Year group lecture. Ethical approval was granted for the study. Data was entered into SPSS for analysis. Descriptive analysis and non-parametric tests were carried out.

Results
Questionnaires were returned by 168 (87%) Y1 students and 119 (69%) Y3 students. More students in Y3 agreed that spiritual care is important to patients (68.9% v.s. 60.7%) and disagreed that spirituality and religion are the same thing (87.4% v.s. 68.5%). However, more students in Y3 reported feeling unequipped to discuss spiritual issues if this was desired by a patient or relative (64.7% v.s. 36.3%). Furthermore, 74% of Y3 students were unaware of NHS Scotland spiritual care guidelines (98% unaware in Year 1).

Discussion and Conclusions
The results show a mixed impact of spirituality teaching in our curriculum. There is improved awareness of some key messages but not of others. Students appear to understand that spiritual care is important to patients but perhaps not how it fits into holistic and practical delivery of a patient’s health care. Further work is required to explore students’ ideas on how spiritual care teaching can be delivered more extensively throughout the PPD strand.

References
Exploring the effect of contribution to patient care on medical student workplace learning

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Background and Purpose
Active participation is an essential component of effective workplace learning and may occur at various levels, from simple observation to contribution to patient care. This study aimed to explore active participation at the level of contribution to patient care, from the student perspective, in order to gain insights into how the student experience of workplace learning might be enhanced.

Methodology
Medical students at the University of Edinburgh are not normally able to actively participate in workplace prescribing. In NHS Fife, students have recently been permitted to contribute to patient care as part of a process known as pre-prescribing (students write on in-patient drug charts prior to countersignature by a doctor). This educational opportunity was used as the active participation example around which guided reflection was promoted. Following ethical approval, final year medical students on attachments in Fife were invited to participate in focus groups which were audio-recorded and transcribed verbatim. The recordings and transcripts were thematically analysed using the principles of constructivist grounded theory.

Results
Six focus groups, lasting 20-50 minutes, were conducted with four to seven participants (33 students in total). The emerging themes took the form of facets of development, and features of the experience which influenced development. Facets of development included ability to perform the task, modified attitudes towards the task, professional identity formation and development of relationships within the team. Features of the experience which influenced development included highlighting knowledge gaps, looking things up, needing help from doctors, making mistakes and hearing about others’ mistakes. These themes interact in complex ways, and all contribute towards development as a professional. A visual representation of this theory, and illustrative quotes, will be provided.

Discussion and Conclusions
This study demonstrates that active participation at the level of contribution to patient care allows the student to develop as a professional in a number of different ways. The central experience contributing to development was exposure to making mistakes. Educational theory can explain why making mistakes is beneficial: mistakes afford the opportunity to create new knowledge, elaborate on existing knowledge, or reconstruct inaccurate knowledge. While making mistakes may cause emotional distress, such distress may enhance future performance. Medical teachers should aim to provide opportunities for student contribution to patient care, and expose them to the possibility of making mistakes (in a controlled manner, ensuring the safety of patients), to facilitate their development as professionals.

References
Analysis of an undergraduate clinical reasoning programme using a diagnostic inventory

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Background
As part of Keele Medical School’s development and implementation of a new 4th year curriculum an opportunity arose to pilot and evaluate a new clinical reasoning programme. The course content is based on the work of Croskerry(1), Norman(2), Eva(3) and other contributors to the understanding of diagnostic thinking and consultation dynamics. The course aims to assist students to develop their clinical reasoning and understanding of error and bias, and combines classroom teaching with workplace based consultation experience and serial formative assessment of consultation skills.

In the pilot study we compared the pre and post programme Bordage Diagnostic Inventory(4) results for an intervention and a comparator group. The Bordage Diagnostic Inventory was chosen as the investigative tool for the pilot study because it has been validated on a wide range of clinicians of differing experience. It is also of manageable length to complete within an educational session and asks questions that medical students can answer and which may act as a stimulus for student reflection on their learning on the course. The pilot study suggested some change in flexibility of thinking in the intervention group.

The course has been implemented and by June 2012 approximately 250 students have completed it. We now report the pre and post programme Bordage Diagnostic Inventory results for those students.

Methodology
The inventory was completed as the first task on the first day of the course and at the beginning of the last day approximately 40 weeks later. The last set of inventory results will become available in May 2012. Pre and post test results will be compared for each student.

Results
The subjects of this study were 250 fourth year medical students. Data regarding structure of memory and flexibility of thinking will be presented, relating to two consecutive years of the clinical reasoning programme.

Discussion and conclusions
The pilot study suggested there may be a change in flexibility of thinking and this may or may not be confirmed by the data from the new study. The results obtained will be discussed during the presentation.

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Exploring Foundation Doctors’ Clinical Reasoning Skills within Workplace-based Learning: a National Multi-Centre Study

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Background and Purpose
Acutely unwell patients pose multiple clinical reasoning challenges for Foundation Doctors, with accurate clinical reasoning being paramount to patient safety.1,2 Such situations can occur out-of-hours when senior support is minimal. Mortality rates and duration of hospital stay are increased for patients admitted during such periods.3 Many patients are reviewed initially by a Foundation Doctor: their early appropriate intervention may be critical to a successful outcome.4,5 This paper will discuss the findings of one data collection point in a broader longitudinal study which focuses on how clinical reasoning develops in medical students as they transition between medical school and the Foundation Programme and explores this in the context of the support available in the workplace.

Methodology
19 final year medical students from a single UK medical school have been recruited to this one-year longitudinal study. All are currently Foundation Doctors within the NHS. Workplace-based observations by a medically trained observer are being carried out, over a six-month period, across 10 NHS Trusts/Health Boards and 6 Postgraduate Deaneries. To date, 18 Foundation Doctors, working in multiple clinical settings have been observed over 30 shifts (both in-hours and out-of-hours). Semi-structured field notes with audio-recorded clinical interactions have been obtained where consent has allowed. Contemporaneous stimulated recall interviews have captured participants’ clinical reasoning processes.

Results
The data collection for the workplace observations is on-going, and this is the penultimate phase of this longitudinal study. By the time of the conference, data collection will be finished and preliminary thematic analysis will be completed. Specifically, Foundation Doctors’ clinical reasoning for prioritisation, diagnosis and management within the context of the acutely unwell patient will be identified and analysed along with their help-seeking behaviour. Other factors, pertinent to acutely unwell patients, such as critical reflections of adverse incidents will be presented.

Discussion and Conclusions
This paper will discuss Foundation Doctors’ clinical reasoning with acutely unwell patients, from their initial six months of clinical practice, along with the educational and research implications of factors involved in their clinical reasoning process. While ethical considerations restricted the observational aspect due to a lack of patient capacity, contemporaneous interviews with the participants were still feasible, allowing insight into clinical reasoning processes. This study will contribute further knowledge to the existing literature on clinical reasoning, providing a basis upon which focused educational strategies can be developed to optimise Foundation Doctors’ clinical reasoning abilities.

References
Online professionalism: a vital consideration for the Facebook generation

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Background
With increasing online presence comes more opportunity for medical students and doctors to engage in unprofessional behaviour on the internet. Sites such as Facebook and Twitter facilitate open discussion and comment that may not be appropriate in a public place. In addition there has been poor awareness of how public such sites are. There are several case reports of doctors bringing the profession into disrepute through online actions.

Summary of work
As part of the Year 3 Health Informatics course at our institution, a one hour module on Online Professionalism was created to raise awareness of unprofessional behaviour online and its potential consequences. Topics covered included “Who reads your posts?”, “Interacting with patients online”, “Medical students’ use of social networking” and “Your digital footprint”. Cases were designed with ethical aspects to consider, with a online discussion forum. The session was assessed using a Reflective Journal.

Summary of results
The module was evaluated as part of a three module informatics session. The overall rating was 4.7/5. Comments included: “Definitely applicable”, “hit all the major topics on social media and medicine”, “extremely relevant”, “a lot to consider after today’s session” and “[Facebook] is probably going down before I graduate…” It was also suggested that the module should be given to students in first year.

Discussion
Students enjoyed learning about online professionalism. Discussion forum comments showed that they were able to identify inappropriate behaviour. They also outlined how students increased their awareness of the pitfalls and suggested that they will change their behaviour as a result.

Conclusions
Online professionalism is an extremely important topic for today’s medical students and doctors. Early instruction should be put in place to raise awareness of the pitfalls and encourage people to monitor their online persona.
Can medical students transfer skills performance in early rescue of deterioration from the classroom to a simulated health care environment? An exploratory study using RADAR

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Background and Purpose
Serious adverse events such as unexpected death, cardiac arrest and unplanned admission to Intensive Care are frequently preceded by changes in physiological observations (Buist et al, 2004; Hillman et al, 2001). One 1998 study (McQuillan et al) found that between 30% and 84% of patients who suffer a cardiac arrest show signs of deterioration in the 24 hours before the arrest. This study aims to identify transferable skills in medical students which will allow them to respond in a timely manner to deterioration, to assess and manage patients and to call for early senior help to enhance patient safety and treatment. RADAR is a simulated learning programme which allows students to develop the knowledge and skills of early rescue of a deteriorating adult patient using simulated patients rather than manikins.

Methodology
RADAR has been developed to support learning in the transfer of both technical and non-technical skills to their integrated performance in an authentic workplace environment. A participatory action research approach was used in this study to assess transfer of skills from both subjective and objective perspectives. Focus groups and questionnaires were used to identify students perceptions of skills transfer and an observational tool was used to objectively determine transferability of skills performance by qualified clinical skills tutors.

Results
Results from the preliminary questionnaires and focus groups will be presented along with the construct of the RADAR Course.

Discussion and Conclusions
In most countries across the world, patient safety is a key issue for not only health service providers, but for higher education providers, training staff for healthcare systems. The RADAR Course is different from the many short courses available in that it uses real people as opposed to manikins, it is repeated during the students last three years of medical school and it is focused on knowledge, skills and attitudes towards timely and effective early rescue of deterioration. The increased fidelity which simulated patients bring to RADAR should increases the transferability of students’ skills from the classroom to the clinical setting.

References
Changing Perceptions in the Care of People with Learning Disabilities: The Impact of a Student Selected Component on Medical Students’ Attitudes

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Background and Purpose
In the United Kingdom 0.3-0.6% of the general population have severe learning disabilities and 1-3% have mild learning disabilities (The Mental Health Foundation 2001). Carers and statutory service providers play a major role in assisting people with severe learning disabilities. Those with learning disabilities are more likely to have physical health problems and so have increased contact with healthcare services (Alborz et al, 2005). There have however been reports of suboptimal care for people with learning disabilities caused by poor knowledge and understanding by healthcare staff (Michael, 2008).

Context
This pilot study explored the impact of a four week Students Selected Component (SSC) for second and third year medical students’ attitudes.

Methodology
This SSC was designed to immerse students in the life of a person with a learning disability and to explore the community of support in terms of health, social care and voluntary agencies. Students’ attitudes were explored through a double loop system which included verbal reflective group timeouts during the four weeks and written individual reflective accounts at the end of the SSC; thematic content analysis was used to identify reflective narrative related to attitude shift. This was carried out independently by two experienced tutors.

Results
The immersion of students in the life of a person with learning disability was consistently reported as emotionally challenging with students requiring regular support from the community teams. The initial analysis has demonstrated that the emotional impact of being involved with a person with a learning disability has caused a major shift in attitude towards this sector of society as demonstrated by the following quotes

“I am so much more aware of the presence of LDs in people and how this can affect the level of care they receive. I’m really determined to use my experiences to help change that in the future”

“I will look past the disability and see the person…”

“… I will now view the individual, not the learning disability…”

Discussion and Conclusions
This short intervention has brought about a major shift in attitudes of junior medical students concerning the needs of people with learning disabilities. Limitations of this pilot study are that these are self-reported changes. It would be useful to be able to measure the sustainability of these changes as part of a follow up study also given the number of adverse events reported in healthcare in relation to people with learning disabilities, this is an area of study which requires prioritisation and further exploration.

References


Exploring the role of metacognition in prescribing education

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Background and purpose
Prescribing is a core skill for junior doctors which requires them to apply previously acquired knowledge, skills and attitudes in the complex context of clinical workplaces and demands a high level of cognitive and metacognitive functioning. Metacognition, or ‘thinking about thinking’, is an important aspect of learning and performing a complex skill. It involves monitoring cognitive functioning and then regulating cognitive processing and outcomes.1 For example, junior doctors must monitor the difficulty of prescribing situations and assess their ability to complete the task safely, in order to determine an appropriate level of cognitive engagement or seek help if required. This research programme set out to explore how addressing the metacognitive aspects of learning and performance could improve newly qualified doctors’ ability to prescribe safely. Objectives were to review what is known from previous research, gather new empirical data, and conceptualise an educational intervention for safer prescribing.

Methodology
Literature review: We developed a theoretical model of how prescribing education could work by reviewing theories of expertise development for complex skills; systematically reviewed primary empirical research on undergraduate prescribing education; and mapped the findings to the model.

Empirical research: Final year medical students recorded audio diaries of their prescribing experiences and took part in qualitative interviews about learning to prescribe and influences on that learning. Data were analysed using constructivist grounded theory.2

Results
Literature review: Educational interventions focused mainly on improving students’ knowledge and skills, neglecting other areas of our theoretical model such as learning transfer, social context and metacognition.

Empirical research: Prescribing was a significant cause of anxiety and there was interplay between students’ emotional responses and their learning experiences. Together with students’ beliefs about the potential for error and the complexity of prescribing, emotions acted as a motivating factor for self-regulation of learning. Authentic learning opportunities in workplaces were viewed as being particularly valuable, as were interactions with members of multidisciplinary teams within workplaces.

Discussion and Conclusions
We concluded that workplace-based prescribing interventions which take a contextualised approach to prescribing and encourage students to engage in metacognitive functioning are more likely to reduce errors. With this in mind, we aim to develop a contextualised intervention which encourages learners to engage in the metacognitive aspects of learning and performance. Further empirical work will investigate metacognition for prescribing in more detail, by studying the metacognitive functioning of novice and expert prescribers. This will enable us to target our intervention towards suitable metacognitive strategies for improving prescribing safety and reducing errors.

References
Smartphones and medical education: the MoMEd initiative

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Background

In 2005, Brighton and Sussex Medical School (BSMS) became the first UK medical school to introduce the widespread use of mobile devices for undergraduates\(^1\). All year 2 students were provided with a personal digital assistant (PDA) and a DrCompanion™ SD card containing an extensive suite of high quality medical resources. Now called Mobile Medical Education (MoMEd), it has developed into a model in which year 3, 4, and 5 students are offered the DrCompanion™ iOS app (software application for iPhone users) or with the Dr Companion SD card and a PDA.

Methodology

We have explored the impact of access to high quality mobile medical resources on students’ learning using a mixed-methods approach, including questionnaires and focus groups. We are currently working on a novel data collection system, via the DrCompanion™ app, which we anticipate will permit detailed quantitative analysis of patterns of use of these resources and enable rich triangulation of the data. The rapidly expanding global market in mobile apps\(^2\), including medical ones, is reflected in their use reported by our iPhone participants and we intend to explore this further in order to understand better the influences on students’ choice of learning resources.

Results

Our previous research revealed that those using PDAs were able to access high quality information at point of need and to learn more efficiently\(^3\). We will present more recent quantitative and qualitative data from iPhone users. It is already apparent that the majority of students prefer Smartphones because of features including convenience, usability, and extended functionality. We will also present data on students’ use of other mobile-enhanced resources and barriers to use of Smartphones in the clinical setting.

Discussion and conclusions

Since 2005, we have been researching the ways in which undergraduate medical students are using mobile devices to support their learning. The recent emergence of Smartphones has enabled us to deepen this research and explore the significant opportunity they provide for medical education as well as the need to debate the issue of equity of access and the options for future delivery.

References

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How can we enhance undergraduate medical training in the operating theatre? A survey of student attitudes and opinions

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Background and Purpose
Attending theatre sessions may add substantial value to undergraduate medical education. Currently, medical student participation in operating rooms is left largely to individual initiative and often not formally included in the student syllabus. We assessed student attitudes towards participation in the operating theatre to see how the experience may be improved.

Methods
All medical students from Leeds School of Medicine were invited to complete an online-based questionnaire. The questionnaire gathered responses relating to previous experiences, desired improvements, acquired benefits, impact on career aspirations and level of attendance of theatre sessions. Students were also asked to rate their overall satisfaction on a 10-point scale. Quantitative responses were expressed descriptively (%). Open-ended questions invited free-text responses to allow participants to describe their personal experiences, reflections and recommendations. The responses were explored for recurring themes.

Results
292 students (20%) from years 1-5 responded to the survey. 88% of students have had theatre experience in the past. Of these students, the median overall satisfaction was 7/10 and 90% would recommend attending theatre to their peers. 39% of students described bad or unfavourable experiences of attending theatre. Common themes included: feeling intimidated, unwelcome or ignored by staff, unrealistic expectations of knowledge and non-productive learning experiences. Desired improvements included: more opportunity to actively assist the surgeon (74%); encouragement from supervisors (74%); more structured teaching (71%); feedback on performance (54%) and better induction to the theatre environment (56%). The described benefits of attending theatre were improvements in: surgical scrub technique (82%); increased knowledge of anatomy (72%), anaesthetics (68%) and surgical procedures (86%). There were heterogeneous answers regarding the role of theatre participation in encouraging a surgical career. The totality of students who had never attended theatre would do so if given the opportunity.

Discussion and Conclusions
The role and effectiveness of undergraduate theatre teaching is currently underexplored. The literature focuses on the attitudes of surgeons and clinical teachers1, 2 however few studies have investigated student attitudes towards their experiences3-5. Many benefits can be derived from attending theatre but these can vary significantly and may be offset by other factors. The experience may be of increased value to medical education if a better structured teaching programme is developed.

References
Clinical Examination Videos: with or without commentary? Why not both

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Background
Whilst videos will never be a substitute for first-hand clinical teaching, there is emerging evidence that they can play an important role in enhancing a student’s learning experience. Blended learning combines multimedia learning with traditional instructor-led training where, for example, a demonstration is complemented by a video or online tutorial. Finding high quality videos in one place is difficult meaning the content and style of available videos tend to originate from multiple sources and therefore lack coherence. Of the resources freely available on the internet, the presenters of the videos always explain their actions as they proceeded. This is helpful when you are first learning to perform an examination but closer to end of placement assessments, what students really want is an uninterrupted demonstration of the performance expected from them in an OSCE station; a revision aid as opposed to a learning tool. We wanted to provide students with examination videos that demonstrated both an instructional and a real time clinical examination. This material was not already available therefore we decided to produce it ourselves.

Methodology
Results of the learning needs analysis of 3rd year undergraduate medical students revealed students enjoyed video learning but wanted more information regarding why particular tests were done, especially ancillary tests not part of routine examination. Clinical examination videos were then filmed by five, 3rd year medical students; covering examination of the nervous, cardiovascular, respiratory and abdominal systems. The videos displayed real time examination and a video of the same real time examination but interrupted with commentary and on screen information. The video was then disseminated on DVD to 2nd and 3rd year medical students at Bristol University.

Results
The results of an online questionnaire survey eliciting student views of the videos will be presented. This specifically focused on their ability to function as both a learning and a revision aid, and how they compare to videos already available.

Discussion
We have presented a novel but simple way of using video to teach clinical examination. Using the same video with and without commentary allows the student the choice to decide for him or herself the best way to use the resource. Using this technique is more time consuming due to significant editing requirements, the question is whether the extra effort provides a significant enough improvement in learning to be worth it?

References
Medical students’ narratives of their learning experiences in a community setting

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Background
As a result of government changes to health care delivery, patient care will be moving further into a community setting. The General Medical Council’s own guidance Tomorrow’s Doctors (2009) states that ‘placements should reflect the changing patterns of healthcare and must provide experience in a variety of environments including hospitals, general practices and community medical services’.

Previous research about community learning has focussed predominantly on the tutors perspective (Howe 2000), at whether topics traditionally taught in hospital can be adequately learnt in a community setting (Murray et al 1997), or defining a student consensus as to what community learning is particularly good for (Howe 2001). Others acknowledge that when asked about clinical learning, students speak mostly about hospital experiences (Dornan et al 2007). The research data has been collected geographically and temporally remote from the learning experience. This may affect what students interpret and value in a community setting. Currently, less is known about the subtleties of community learning experiences and how they evolve over time in a placement.

This study aims to explore how students learn in a community setting from a stage before much of the current literature base. Understanding the detail of their experiences through narratives provides rich clues as to the nature of their learning. Thus, the overarching research question is ‘What sense do students make of learning in the community?’ with the focus being ‘How do fourth year medical students narrate their learning experiences in a community setting?’.

Methodology
Year 4 students at the University of Manchester have been recruited to the study. Initially, students’ stories of and reactions to a powerful learning experience were examined using group discussion and individual narratives. Then data was collected from the students’ community audio diaries. The students recorded their learning experiences onto their University iPads.

The data will be analysed using (a) Framework analysis (Ritchie & Spencer 1994) with a subset of narratives to be further analysed using (b) narrative analysis. Results will be presented with discussion of their implications for multiple stakeholders.

Discussion and conclusion
Key outcomes include creating a deeper understanding of students perceptions of learning in a community setting; helping medical schools to address any miseducative experiences; exploring the use of new technology for reflection and research; and providing an opportunity for students to reflect on the nature of learning and provide evidence of this for their university portfolio.

References

190
High realism simulation: students enjoy a stressful learning environment and their confidence remains intact!

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Background & purpose
Newly qualified doctors frequently feel unprepared for clinical practice. ‘Performing under stress’ has been cited as a particular barrier to this transitional period. Conventional views on training using simulation state that it must take place in a controlled environment to benefit learning; however we attempted to create a high realism simulated scenario with stressors for the students built in to try and prepare students for stressful situations in future practice.

Methodology
Session design: Simulations stations were designed for final year students. High realism was incorporated as were factors designed to generate increased stress for students. Examples of this were that tutors did not prompt students during simulations, all bloods had to be taken to a ‘lab’; incomplete/incorrect requests were rejected and results were received in real-time. All requests for senior help had to be made properly by telephone to a ‘registrar.’ An example of a stressor was one simulation where a patient deteriorates rapidly and has a cardiopulmonary arrest despite any interventions initiated by the students. This station was designed to test ethical decision making as the patient had terminal cancer and an undefined resuscitation status. Data collection: Students completed a questionnaire rating knowledge and confidence of various session outcomes before and after the session. Students rated the overall experience of the session out of ten. They also provided free text comments. Before and after scores were compared with a Mann-Whitney test for ordinal data.

Results
The session was highly evaluated by students (mean 9.6 out of 10). The mean score confidence in each domain is shown in table 1.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Pre-session</th>
<th>Post-session</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence-based medicine</td>
<td>3.95</td>
<td>4</td>
<td>0.852</td>
</tr>
<tr>
<td>Ethics</td>
<td>4.15</td>
<td>4.2</td>
<td>0.926</td>
</tr>
<tr>
<td>Advanced communication skills</td>
<td>4.1</td>
<td>4.2</td>
<td>0.513</td>
</tr>
<tr>
<td>Death and Dying</td>
<td>4.1</td>
<td>4.22</td>
<td>0.578</td>
</tr>
<tr>
<td>Patient safety</td>
<td>4.15</td>
<td>4.02</td>
<td>0.904</td>
</tr>
<tr>
<td>Safe prescribing</td>
<td>3.88</td>
<td>4.02</td>
<td>0.347</td>
</tr>
</tbody>
</table>

Free text comments reflected the utility of enhanced realism and stress: “Really challenging but filled with learning”, “It was great although terrifying”, “Felt overwhelmed but good”, “Reinforces principles of basics, even when in a stressful situation”, “Felt real, eye opening, relevant…”

Discussion
We were concerned that incorporating significant stress may have a negative impact on learning. However the session was rated very highly which was further endorsed by the qualitative data and no decrease in student confidence. High realism simulation is complex to set up in terms of design, resources and faculty utilisation. However, we believe this is mitigated by opportunities to teach and assess non-clinical skills and facilitate the transition to clinical practice.
A Novel Approach of Teaching Empathy to Pharmacy Students

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Background and Purpose
Empathy is an important factor in patient-care. However, despite pharmacists being an accessible health-care provider, they fall down on this important inter-personal communication skill. A study suggested that pharmacists have lower empathy scores than GPs and similarly, pharmacy students have lower scores than medical students. Currently within the pharmacy programme at the University of Brighton, there are communication exercises however there is no empathy teaching. Empathy is essential in delivering patient-centred care but research on current teaching methods suggests it is difficult to develop. Moreover, within current literature there is little evidence of empathy being taught to pharmacy undergraduates. Recent publications on the teaching of empathy to medical students describe the possibility of students “putting themselves in their patients’ place”. Based on the idea that observation and imitation of others is an important element of learning, this teaching method explicitly requires the students to “walk in another’s shoes”. The aim of this project was to implement two creative workshops with the objective of increasing levels of empathy in pharmacy students.

Methodology
Two workshops were developed in consultation with a theatre group to teach students how to get into the role of another person. Pharmacy students were invited to participate in two workshops that would help with their general communication skills. Out of a possible 367 students, only eight students responded positively. The two workshops were attended by the students, two academic tutors and the two actors who led the workshops. A validated questionnaire measure of empathy (the Jefferson Scale) was completed before the first session and after the second session. Interviews were conducted with staff and students to elicit their views on the workshops following the final workshop.

Results
No significant differences were found between total scores before and after the workshops. However this may be due to the small sample size. Interviews with the students revealed that the students found it was useful in sharing experiences of difficult patients and in comparing ways of dealing with them but the workshops were held during exam time. The staff felt that the workshops were challenging however when focused on healthcare issues, they become meaningful.

Discussion and Conclusions
This was a different way of approaching communications skills training for both lecturers and for the students. Recruitment was low however this was due to poor timetabling. The main conclusion was that the successful elements of the role plays were those that were contextualised rather than being too abstract.

References
A novel electronic learning tool to facilitate preparation for the Prescribing Skills Assessment

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Background & Purpose
The Prescribing Skills Assessment (PSA) will be introduced from 2013/14 to assess the prescribing skills of final year medical students. The assessments are currently being piloted across selected medical schools throughout the country. The authors have developed a novel electronic learning tool to develop skills and build knowledge in preparation for the PSA.

Methodology
8 interactive modules were developed using the Riverside software to address the 8 topics that are used in the PSA: Prescribing, Prescription Review, Planning Management, Communicating Information, Calculation Skills, Adverse Drug Reactions, Drug Monitoring and Data Interpretation. The material was developed using the Prescribing Skills Assessment author tools, the BNF and medical textbooks. Each module has a teaching component, followed by explanation of how this will be tested in the PSA, and mock assessments with answers and explanations to maximise learning for each question. The modules were introduced to the final year medical students through a presentation in which the resource location and structure were explained. The students thereafter completed the module on calculation skills. A questionnaire survey was completed and the results were analysed and presented below.

Results
Data was analysed using SPSS (Version 10.0). 111 responses were received. On a five point Likert scale, students observed an improvement in their prescribing calculation skills after module completion (+0.60 +/- 0.07, P<0.001, Paired t-test). They also perceived improvements in their prescribing calculation skills in preparation for Foundation Year 1 (+0.80 +/- 0.07, P<0.001), in their understanding of the PSA pilot contents (+0.54 +/- 0.07, P<0.001), and format (+0.64 +/- 0.07, P<0.001). 62% of students will recommend the module to their colleagues.

Discussion
The students and the assessors were not aware that the PSA pilot examination would replace the internal prescribing assessments, and therefore were less enthusiastic in their engagement with the preparatory modules. However, the data indicate significant improvement in prescribing calculation skills as a result of using this tool. Furthermore, it is encouraging that their understanding of the PSA has improved. The survey has provided information on the use of the module in preparing students for the prescribing skills required as a Foundation Year 1 doctor, and some preliminary information on the value in preparing for the PSA.

Conclusion
The e-learning modules developed are a novel tool to prepare final year medical students for the incoming PSA. On-going evaluation will provide evidence for their use and benefit.

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Intercalated degrees - What do we really know about them?

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Background and purpose
Intercalated degrees are available to most medical, dental and veterinary students in the UK. Despite their pervasiveness, their history is undocumented and there has been little systematic research to date. This study set out to undertake the next step – it collated and analysed all available information about intercalated degrees. Firstly, it explored the relationship between intercalated degrees and academic medicine. Secondly, it probed what is known about the impacts of these degrees on future academic performance, career choice and development of medical students. Lastly, it investigated students’ motivations for undertaking intercalated degrees.

Methodology
The data collection for this study was performed according to the guidelines for Best Evidence Medical Education Guide for systematic searching. It included published literatures as well as grey literature. The data was then analysed by means of a realist synthesis.

Results
Limited published literature was found on intercalated degrees; in total the search identified n=21 articles. Much of the grey literature consisted of marketing material on university websites and student discourse in discussion forums. In addition, two relevant government reports, a House of Commons document and an internal university report were identified.

Conclusion
Even the grey literature reveals little about the history of intercalated degrees. These degrees are often presented as an initial step towards addressing the shortages of qualified researchers within academic medicine; the analysis suggests that the presumed relationship requires further scrutiny. Some published literature suggests an improvement in academic performance following ‘intercalating’. However, the data on the uptake of intercalated degrees is conflicting; indicating both a rise and fall in student numbers. Further research is needed to establish the impacts of intercalated degrees on medical students’ future careers. Finally, the grey literature indicates that students’ motivations also require closer investigation: it seems academic medicine is not always on the forefront of the students’ minds when they choose to undertake an intercalated degree.

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Rheumatology Simulated Ward Round: Patients, students and doctors; the value of working together in simulated ward rounds

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Background and Purpose
Dwindling in-patient beds, limited out-patient space and increasing numbers of undergraduate students were resulting in diminished opportunities for good quality clinical examination skills teaching in our phase IIIb (year 4/5) Rheumatology attachment. An innovative solution was sought by utilising and expanding the well-established local “Patients as Educators” [PAE] programme 1, embracing the drive for more simulation in clinical teaching 2,3, together with engaging consultant colleagues in a team-teaching approach. This report presents the qualitative evaluation of student feedback regarding this new learning opportunity. Parallel presentation of feedback from the patient and consultant educators is also reported

Methodology
Full feedback to evaluate this new initiative was sought using written feedback forms from students as well as student focus group interviews. Focus group membership was voluntary, consent was documented and anonymity of views expressed was assured. Patients-as-educators and consultant educators were similarly given an opportunity to provide written feedback; focus group interviews were also conducted with the Patients-as-Educators. Focus groups were videoed, transcribed and subject to thematic analysis using standard qualitative techniques 4,5. Free text from written feedback was analysed similarly.

Results
The virtual ward round is now consistently the most positively-rated element of the Rheumatology attachment. Patient engagement has been strong, with high retention rates. Dominant analytical themes were:

- Patients identify the desire “to give something back” as their initial motivator. Later the realisation of the importance of their role in medical education, the acquisition of personal teaching and feedback skills and simple enjoyment become equally important drivers.
- Consultant educators enjoy the dedicated sessions which remove competing clinical interests. Team-teaching allows commitment which realistically fits within departmental job plans. Teaching has become “enjoyable again”.
- Students value the one to one feedback on their clinical examination skills, without feeling “put on the spot”. Patient feedback gives them an additional perspective “I learnt just how hard to press”. They see this as a model transferable amongst many clinical specialties.

Discussion and Conclusions
Achieving high quality clinical teaching, whilst balancing the demands of physical space and service delivery, is an ongoing challenge for clinician-educators 6. Such challenges can lead to simple but important, and crucially transferable, innovations in local teaching practice. This report demonstrates the practicality, acceptability and success of one such educational development. Close analysis of feedback of all participants has laid the groundwork for further prospective studies of the value of simulated ward rounds.

References
Background and Purpose
This project was undertaken by the Single Prescription and Administration Record for Scotland (SPARS) group which has the remit of co-ordinating evidence-based design, implementation and evaluation of a unified prescription chart in Scotland. A recent study commissioned by the General Medical Council detected a prescribing error rate of 8.4% amongst foundation year one doctors (FY1s).1 Recommendation 1a from the same report stated that “a standard drug chart should be introduced throughout the NHS”.1 The Australian experience of implementing a national medication chart indicates that it can be an effective way of reducing prescribing errors.2,3 This study aimed to explore whether familiarity with a drug chart influences the incidence of error.

Methodology
Following ethical approval, a total of 71 FY1 volunteers from Lothian, Greater Glasgow and Clyde, Tayside, Grampian and Highlands were recruited via email. At least ten FY1s in each region were asked to attend a one-hour prescribing session, during which they were asked to prescribe lists of medications for five fictional patients using a different style of drug chart for each patient. The drug charts and lists of drugs were sequenced differently for each FY1, to avoid order or fatigue effects. Each FY1 was timed completing each set of prescriptions. Data relating to prior usage of the study charts by each participant was collected, in order to assess the effect of familiarity.

Results
There was no statistically significant difference between either the error rate or time taken to prescribe each of the five lists of drugs, suggesting that they were comparable in complexity. Familiarity with a drug chart reduced error rate after accounting for the effects of drug chart and time ($p < 0.05$ for all predictors). The proportion of errors was higher for some drug charts than others, with some charts provoking specific error types.

Discussion and Conclusions
This study is the first to demonstrate that familiarity with a drug chart decreases error and enhances patient safety. It strengthens the argument for a single prescription chart for Scotland, and indeed other countries. The drafting of such a chart will use the evidence obtained in this study to ensure that design features which reduce error are incorporated. The implementation of the new Scottish chart will be accompanied by a comprehensive educational programme to maximise this opportunity to address the multiple facets of prescribing error.

References
Improving student experience of the Operating Theatre by use of a ‘a real time learning tool’

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Background and Purpose
Theatre sessions provide students with diverse learning opportunities, including multi-professional learning, consent, pain management and operative technique. It has recently become apparent that absence of learning objectives and lack of structure, coupled with students’ unfamiliarity with the clinical environment can limit learning outcomes1, 2.

This study examines whether a specifically designed learning tool, which acts as a transferable guide to gynaecology theatre, can improve students’ learning outcomes.

Methodology
At the end of their 8 week clinical attachment, an initial group of 120 students were asked to complete a questionnaire designed to assess their awareness of theatre learning objectives; knowledge and understanding of clinical skills; understanding of process and procedures, and professional skills development opportunities (eg multiprofessional learning)1.

A ‘theatre mind-map’ was then designed to guide students through the theatre process from the pre-operative ward to post-operative discharge. The learning tool, which was available to the second group of 120 students, can be used independently of theatre staff, who frequently have to prioritise patient concerns before student teaching. The questionnaire results from the interventional group were compared to those of the control group.

Results
Preliminary data suggests that students who use the theatre learning tool have an enhanced operating theatre experience and are better able to consolidate their skills when compared to the control group. Full data analysis from 240 student questionnaires will be presented

Discussion and Conclusions
The vast majority of students from both groups felt they improved their clinical understanding, were able to consolidate skills, and learnt about patient consent and theatre processes. In group one theatre sessions tended to be viewed in isolation, with surprisingly few students involved in pre and post-operative care. Using a more structured approach with group 2 using A loosely structured “theatre mind map” can be used to guide students through their operating theatre sessions and enhance student learning outcomes. The guide can be used independently of theatre staff and is transferable from theatre to theatre.

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Educational Interventions to Change Behaviour of New Prescribers in Hospital Settings: a Systematic Review

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Background and purpose
Prescribing is a complex task and a high-risk area of clinical practice. Poor prescribing occurs across staff grades and different hospital settings (2) but new prescribers are attributed much of the blame. New prescribers are frequently neither confident nor competent to prescribe and they are likely to have different support and development needs than their more experienced colleagues. Unfortunately, little is known about the interventions that are effective for this target group. A systematic review on interventions to change prescribing behaviour was published in 1999 but did not distinguish between different grades of staff, was narrow in methodological scope (only randomised controlled trials and non-equivalent group designs) and is now out of date (only covering publications up to 1994). Therefore, to inform the design of educational interventions to change behaviour of new prescribers, we conducted a systematic review of existing hospital-based interventions.

Methodology
A systematic literature review with a deliberately inclusive approach to study design and a broad conception of education was performed. Embase, Medline, SIGLE, Cinahl and PsychINFO were searched for relevant studies published 1994-2010. Studies describing interventions to change the behaviour of new prescribers in hospital settings were included. The bibliographies of included papers were also searched for relevant studies. Interventions and effectiveness were classified using existing frameworks and the quality of studies was assessed using the Medical Education Research Study Quality Instrument.

Results
Sixty four studies were included in the review. Only 13% interventions specifically targeted new prescribers. Most interventions (83%) were deemed effective in changing behaviour but no particular type or types stood out as most effective.

Discussion and Conclusions
Very few studies have tailored educational interventions to meet needs of new prescribers, or distinguished between new and experienced prescribers. More research is required if healthcare educators are to support new prescriber and improve this important aspect of early clinical practice.

References
Workplace-based Assessments
The Role of Case-based Discussion in Teaching and Learning in Oncology

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Workplace-based assessments were recently introduced into oncology training, and include case-based discussions (CBDs). They are primarily designed as formative assessments, and involve the formal discussion of a patient’s case, followed by feedback and scoring using a structured assessment form. The purpose of this study was to evaluate the role of CBDs in current practice in oncology, and to assess how the educational value of CBDs could be enhanced in relation to the time spent conducting them.

The research questions for this project were:
• Are CBDs currently utilised as teaching and learning aids?
• How are they perceived by teachers and learners in oncology?
• How can their educational value be maximised?

Methodology and Methods
This study used qualitative research methods to analyse and explore these research questions. I recorded, transcribed and analysed four CBDs conducted by me, and two by other consultants. I used conversational analysis to evaluate the CBD transcripts for evidence of teaching and learning. The data collection also included semi-structured interviews that I conducted with five consultants and five trainees in oncology. I used thematic analysis for the interviews, to evaluate the perceptions of teachers and learners about CBDs.

Results and Conclusions
Analysis of the CBD transcripts revealed many interesting aspects of language, indicating that learning could be taking place in addition to assessment. Several themes emerged from the interviews, suggesting that both consultants and trainees in oncology perceived CBDs as useful educational sessions. The tick-box structure of the assessment form was not found particularly useful, and free-text boxes were felt to be more useful in providing feedback. In summary, CBDs appear to be useful in teaching and learning in oncology, provided sufficient time is spent on discussion. Further research is required into the format, including modification of the tick-box scoring form.

References

200
Members’ Posters: Abstracts
Academic Support

The impact of specific learning difficulties (SLDs) on undergraduate medical and dental students’ undergraduate studies.

A Rowlands
CM Roberts
G Bevere
S Abbott

Arts and Humanities

Top 10 Films to Make Medical Students Think

K Phillips
K Savage
P Kinnersley

History repeats itself. It has to. No-one listens

K Phillips
K Savage
G Naik
M Mustafa
K Thompson

Exploring the use of drama for educating medical students about Public Health & Health Communication

G Naik
M Mustafa
K Savage
K Phillips
C K Thompson

Assessment

The Role of Audits in Medical Education: An important tool to improve medical student professionalism or just another tick box exercise?

S Raynor

Exploring standard setting methods, which one is best?

C Smith
A Pomeroy
S Rushworth
N Carr

Development by faculty of a set of strategies for improvement of consultation skills

J Lefroy
A Thomas
S Williams
S Gay
F O’Mahony
R Kinston
C Harrison
R K McKinley

Student face validation of a set of strategies for improvement of consultation skills

J Lefroy
A Thomas
S Williams
S Gay
F O’Mahony
R Kinston
C Harrison
R K McKinley

The views of junior and senior doctors in relation to best practice in Workplace-Based Assessments

C Matheson

An examination of the Royal College of Pathologists consultant performance reviews

P W Johnston
E Livingston

How standardised patients award candidate ratings in OSCEs: a qualitative study

J L Johnston
G Lundy
M McCullough
G J Gormley
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring the quality of feedback; a reliable system with construct validity</td>
<td>M H Bartlett, R K McKinley</td>
<td>227</td>
</tr>
<tr>
<td>&quot;What do they really think?&quot;— Anaesthetic Consultants and Feedback</td>
<td>S Cattlin, P Williamson, H Laycock, A Kalbag</td>
<td>228</td>
</tr>
<tr>
<td>Multimedia extended matching questions (EMQs) in undergraduate musculoskeletal education</td>
<td>D J Bryson, A J Batchelder, S C Williams</td>
<td>229</td>
</tr>
<tr>
<td>Is it intelligent to intercalate?</td>
<td>T Stubbs, E Lightman, M Marshall, P Mathieson</td>
<td>230</td>
</tr>
<tr>
<td>Communication In Anaesthetics: Nature vs Nurture</td>
<td>A Wardle, A Osman, J Stone, E Fowler, B Howes</td>
<td>231</td>
</tr>
<tr>
<td>Audit of Foundation Year 1 portfolio quality at ARCP</td>
<td>G H S Vance, N O’Connor, A Williamson</td>
<td>232</td>
</tr>
<tr>
<td>Practical Prescribing in Final Year Medical Students: An interventional study in pre-prescribing</td>
<td>B P Tweedie, S E Smith, V R Tallentire</td>
<td>233</td>
</tr>
<tr>
<td>Assessing clinical performance in 4th year medical students: A comparison of simulated and real patients</td>
<td>E Heffernan, T Gale, L Coombes, A Freeman, P Bradley</td>
<td>234</td>
</tr>
<tr>
<td>Using a tablet PC to improve student work placed based assessment completion during clinical placement</td>
<td>C McNeill, A Denison, M Cruickshank, R Patey</td>
<td>235</td>
</tr>
<tr>
<td>A novel method of giving feedback to Medical students after a formative MCQ exam</td>
<td>E Mitchell</td>
<td>236</td>
</tr>
<tr>
<td>Introducing the Observed Structured Student Interactive Clinical Learning Environment (OSSICLE) - an Interactive Structured Induction Programme for Medical Students</td>
<td>N Hannaway, P Davies, H Chant, H Bland, J Carter</td>
<td>237</td>
</tr>
<tr>
<td>Utilising Direct Observed Procedural Skills (DOPS) enhanced by video as a learning tool for the acquisition and maintenance of procedural clinical skills</td>
<td>R McLeod, C Kellett, N Harrison, J Ker</td>
<td>238</td>
</tr>
<tr>
<td>Streamlining Assessments: Can Weight of Coursework be used to Predict Grade Awarded?</td>
<td>E Medd, L Ashelby, S Glew</td>
<td>239</td>
</tr>
<tr>
<td>Does everyone really leave it to the last minute? Foundation Programme ePortfolio evidence submission dates across a training year</td>
<td>J Smith, T Brown, K Beggs, A Haig</td>
<td>240</td>
</tr>
</tbody>
</table>
### Development of clinical reasoning: a cross-sectional comparative study of three medical schools

A Da Silva  
R Dennick  
241

### Peer estimates of professionalism correlates with the Conscientiousness Index

GM Finn  
MA Sawdon  
242

### Professional Simulated Patients or Professional Examiners: Can Actors Replace Physicians as OSCE Examiners?

I Hancock  
S Greenwood  
243

### Feedback that includes a completed marking rubric is considered to be of significantly higher quality by third year medical students than any other combination of feedback

V Quick,  
A Samuels  
R Greenwood  
S Greenwood  
244

### Early undergraduate medical student experiences of simulated and 'real patient' venepuncture and intravenous cannulation

J Wright  
S Mallappa  
N Pattani  
R Soobrah  
A Jethwa  
J Pitkin  
246

### Do Students Receive Effective Written Feedback on their Workplace-based Assessments?

A Nesbitt  
A Pitcher  
S Clark  
L James  
B Canning  
F Baird  
A Griffin  
A Sturrock  
247

### Construct Validity of A 360° performance measure for postgraduate educational activities focused on professionalism, communications and interpersonal skills, and system-based practice

B W Williams  
W Swiggart  
M V Williams  
248

### Basic Science Education

**Designing and Evaluating a Resource to Teach 3rd and 4th Year Medical Students about “The Importance of Circadian Rhythm and Temporal Variations in Clinical Medicine”**

J Patel  
250

### Students facilitating learning in other students

D J R Evans  
T Jackson  
251

### Medical student attitudes towards post mortem examination and its utility in medical education: A brief qualitative study at one UK medical school

T Quince  
A Bamber  
S Barclay  
P Siklos  
J Clark  
D Wood  
252

### Peer Assisted Learning: win-win opportunity for graduate medical students

H Tam  
253

### Career Planning and Widening Participation

**Exploring the influence of socioeconomic background on the career preferences of medical students at a London medical school**

Z Georgieva  
S Park  
W Coppola  
255

### Clinical Skills

**High fidelity, low cost simulation: an evaluation of a simulated surgical ward round for T year (third) medical students**

L Tincknell  
B Thornton  
J Qureshi  
S Sahin  
D Horton  
R Nagaj  
G McGauley  
257
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparison of using animal models versus artificial latex models in teaching Core Medical Trainees Seldinger Chest Drain insertion skills</td>
<td>C Hariman V Elliott B Burnett</td>
<td>258</td>
</tr>
<tr>
<td>How do doctors perform a fluid assessment of patients with Acute Kidney Injury?: A cross-sectional questionnaire survey</td>
<td>J D P Bond S Fletcher</td>
<td>259</td>
</tr>
<tr>
<td>To deliver a simulation and clinical skills programme to Year 3 Barts and The London School of Medicine and Dentistry medical students at the Homerton University Hospital NHS Foundation Trust</td>
<td>V Dimmock E Wood</td>
<td>260</td>
</tr>
<tr>
<td>Clinical Reasoning in Medicine: Developing students’ meta-cognitive skills</td>
<td>J Henderson A Hammond</td>
<td>261</td>
</tr>
<tr>
<td>The Development of a Simulated Assessment of Procedural Skills</td>
<td>M de Hoest C Melville</td>
<td>262</td>
</tr>
<tr>
<td>Affordable surgical skills teaching for medical students: Evaluation of a novel course</td>
<td>T Boam S Knight D Foong J Yeung</td>
<td>263</td>
</tr>
<tr>
<td>Can unplanned simulation training help prepare undergraduate medical students for the transition from student to junior doctor?</td>
<td>S Watmough H Box N Bennett A Stewart</td>
<td>264</td>
</tr>
<tr>
<td>Continuing Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One-handed Surgical Reef Knots: Tuition or Intuition?</td>
<td>N Gollop M Abdulmajed I Shergill</td>
<td>266</td>
</tr>
<tr>
<td>The development of post-graduate education in safe pleural procedures</td>
<td>O Lucey J Messenger N Sharma</td>
<td>267</td>
</tr>
<tr>
<td>Student Experience of Learning About Prescribing; An Area of Sound Knowledge?</td>
<td>G Woodfield M O’Sullivan S Greenwood A Stanton</td>
<td>268</td>
</tr>
<tr>
<td>Perceptions of training needs in acute kidney injury: A cross-sectional, mixed methods questionnaire survey of West Midland doctors</td>
<td>J D P Bond S Fletcher</td>
<td>270</td>
</tr>
<tr>
<td>Involving junior doctors in complaint feedback; improving the quality of drug history documentation</td>
<td>S Parke M Abdullah Kelali A Brown N Quinton</td>
<td>271</td>
</tr>
<tr>
<td>The Role of Reflection in Postgraduate Dental Education</td>
<td>P Fine R Duhs C Louca</td>
<td>272</td>
</tr>
<tr>
<td>A model of CPD delivery to meet GMC revalidation requirements</td>
<td>K Forrest M Chandra P Atkinson</td>
<td>273</td>
</tr>
</tbody>
</table>
Undergraduate medical student perspectives on the debrief following simulation

When to Stop? A Novel Use of Simulation in End-of-Life Care Teaching for Undergraduate Students

Video Assisted Learning – Is it always worth it? A randomised crossover trial

Curriculum Planning
Trainee voice in designing the foundation programme – Is it time for a change?

Evaluating student’s perceptions following the implementation of a new undergraduate medical curriculum using the Dundee Ready Education Environment Measure (DREEM) inventory

Willingness and attitudes of the general public towards the active participation of medical students in their healthcare

Graduate Entry Medicine at Swansea University – the ‘6S model’

An evaluation of educational environment among module-4 [year - 4] medical students during their Obstetrics and Gynaecology placement

Curriculum Mapping: Trainee Experience of the Curriculum in Psychiatry

An Evaluation of the Teaching of Substance misuse in the undergraduate medical curriculum

E portfolios
Consultants’ attitudes to the E Portfolio: a pilot study

International medical education
How should medical students be identified to patients?

Challenges for implementing health promotion education at medical schools in Japan, the country with the longest life expectancy in the world
Does it do what it says on the tin? Evaluating the impact of exposure to rural practice on medical graduates of the Universities of Aberdeen and Dundee

Exploring professional development in overseas healthcare related volunteering

E-learning in Medical Education - The Future?

Peer-assisted learning: the experience and reflections of medical student teachers in a Danish University

Management/administration
Maximising medical students learning in culturally diverse General Practice placements

Use of the national GMC trainee survey to measure improvement in education provision in a large teaching hospital

Medical Education Leadership Courses – what makes one course better than another?

Factors affecting final year medical student attendance at clinical teaching fellow tutorials preceding final examinations

A mechanism to support quality within a large teaching hospital

Multi-professional education
Tailored and Guided Public Health eLearning – An innovative approach to increasing awareness, understanding and knowledge of the specialty and maximizing accessibility to public health training opportunities for a diverse and expanding workforce

Interprofessional education clinical placement: an exploration of medical and pharmacy student experience

Effective Dementia Training for Health Care Professionals

Evaluation of an acute care patient simulator programme for final year medical students

New Technologies
The use of non-linear video histories as a method of large group simulated bedside teaching

A regional survey of Smartphone and Medical related App use among Junior doctors and Medical Students
| Junior Doctors’ Clinical Use of Communications Technology is Widespread: What Are the Benefits and Potential Pitfalls? | K Nelson  
A Prentice  
M Carson |
|---|---|
| Facebook versus a University Virtual Learning Environment; Is There a Student Preference? | M S Nassrally  
E M Mitchell  
J D P Bond  
C H Hariman  
J Bateman |
| Developing a mobile web application for completion of WPBA in Foundation Training in the North Western Deanery | G Tack  
D Powley  
C Harrison  
J Miles  
P Luthra  
P Baker |
| **Postgraduate Education**  
Use of a Speciality Specific Safe Prescribing Paper for Trainees Doctors Post Foundation Training | S E Jones  
J M Metcalf |
| ‘Don’t be scared’ - Demystifying statistics in postgraduate medicine | T Billmeier  
A Raza  
J Anderson  
D J R Evans |
| Evaluation of the Academic Foundation Programme at Brighton | K J Lankester |
| Trainee perspectives on the design of a regional Core Surgical Training teaching programme | A J Beamish  
C E Thomas  
A M Jones  
W G Lewis  
G W B Clark |
| The Effect of a Structured Skill Training Model for Cultivating Surgical Competency in Taiwan | C C Yeh  
Y H Ni  
H S Lai  
P H Lee |
| Why do trainees take time out of their specialty training programmes? | G Tack  
S Agius  
S Holmes  
J Hayden |
| Awareness of Competency: How Accurate are Doctors Estimates of Their Own Performance? | Y Khatib  
G Myers  
A Sturrock  
J Dacre |
| **Quality Improvement**  
Quality Improvement in the undergraduate curriculum: a pilot project | L Kennedy  
T Collins  
W M Kong  
E Brown  
C Bicknell |
| **Selection**  
A Peer Tutor Recruitment Programme-Selecting Tomorrow’s Teachers | S Sahin  
R Nagaj  
B Thornton  
L Tincknell  
D Horton  
G McGauley |
| Applying for your first job: The weighting game | P Chan  
K M Nepal  
A H Burnett  
B J Holden |
### Staff/Faculty Development

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helping Junior Doctors to ‘Find their Feet’ - Incorporating Shadowing Experiences into a Clinical Microbiology Induction Programme</td>
<td>S Tso J Rangaiah</td>
<td>325</td>
</tr>
<tr>
<td>Medical students’ views on the clinical importance of the musculoskeletal system</td>
<td>M J Seager M Roy J Kirwan</td>
<td>326</td>
</tr>
<tr>
<td>An Assessment of Ward Rounds and Clinics for Medical Students in their Child Health Block</td>
<td>P Davda E Carter</td>
<td>327</td>
</tr>
<tr>
<td>Improving and sustaining departmental quality standards in Safe Prescribing</td>
<td>S Kent A R Da Costa A Felstead A Mathew</td>
<td>328</td>
</tr>
<tr>
<td>Tutors’ experiences on teaching reflective writing to first year medical students</td>
<td>M Moffat S Ross</td>
<td>329</td>
</tr>
<tr>
<td>Teaching Skills Development for Specialist Trainees (ST) tutors involved in Year 3 undergraduate psychiatry block: Evaluation of a development day</td>
<td>M Moffat D M Bennett I Cameron T Gunarathne</td>
<td>330</td>
</tr>
<tr>
<td>Peer Mentoring in Academic Medicine – the importance of informal mentoring for trainee development</td>
<td>G Horne S Glew J Brewin</td>
<td>331</td>
</tr>
<tr>
<td>Intentions and strategy choices when delivering large group lectures to undergraduate medical students</td>
<td>N Salooja</td>
<td>332</td>
</tr>
<tr>
<td>Improving practice as a clinical supervisor through an accredited postgraduate module - capturing the impact</td>
<td>K Duffy J Cochrane</td>
<td>333</td>
</tr>
<tr>
<td>How does a group Peer Observation of Teaching scheme lead to change in teaching practice? The experience of teaching fellows in a UK medical school</td>
<td>A Gaunt A M Feeley B Fruhstorfer A Mahmud J Roebuck M Harper P de Cates S Satish C Bennett</td>
<td>334</td>
</tr>
<tr>
<td>Developing Tomorrow’s Teachers</td>
<td>R Nagaj L Tincknell D Horton B Thornton S Sahin G McGauley</td>
<td>335</td>
</tr>
<tr>
<td>Communities of practice for GP Educators – a case study of faculty development using peer learning</td>
<td>M Kelly P McDonald D Bennett M Boohan</td>
<td>336</td>
</tr>
<tr>
<td>The Impact on the educators of “complex fails” in the MRCGP: Ensuring systems learning through significant event auditing</td>
<td>A Sneddon R MacVicar</td>
<td>337</td>
</tr>
<tr>
<td>Teaching about specific subjects</td>
<td>M Gordon</td>
<td>339</td>
</tr>
<tr>
<td>Improving handover of care to enhance patient safety: A model for education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td>Authors</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>--------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>An Innovative Neonatal Intensive Care module: its place in undergraduate medical education</td>
<td>L V Murray, J Cusack</td>
<td>340</td>
</tr>
<tr>
<td>Undertaking a national undergraduate neurology teaching survey: inception, methods, results and lessons for other disciplines</td>
<td>K Sharma, G Welby, D Athauda</td>
<td>341</td>
</tr>
<tr>
<td>E-learning: Comparing the effectiveness of Virtual patients and Lectures as pedagogies for medical students</td>
<td>C Wek, R Thuraisingham</td>
<td>342</td>
</tr>
<tr>
<td>Teaching and Learning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer assisted learning in undergraduate paediatrics</td>
<td>M Marlais, N Primalani, S Raza, A Gandhi</td>
<td>344</td>
</tr>
<tr>
<td>The efficacy of a Peer Assisted Learning Scheme (PALS) at School of Medicine, University of St Andrews</td>
<td>S Leng, S Whiten, G Browne</td>
<td>345</td>
</tr>
<tr>
<td>iPAD in Education</td>
<td>S Henley, A Denison, A Lobban, G Benzie</td>
<td>346</td>
</tr>
<tr>
<td>A Pilot Study of a High Fidelity Simulation Course as an Integrated Part of an Undergraduate Critical Care Module</td>
<td>C Mason, A Riyat, C Boynton, J Pitkin</td>
<td>347</td>
</tr>
<tr>
<td>Making medical education enjoyable – the ultimate paradox?</td>
<td>A Parekh, T Thorpe</td>
<td>348</td>
</tr>
<tr>
<td>e-Peer-learning': The use of virtual patients authored by students in teaching clinical reasoning skills</td>
<td>R J Jay, R S Patel, A M Hastings</td>
<td>349</td>
</tr>
<tr>
<td>A non-compulsory buddy scheme for clinical medical students, is it used and is it useful?</td>
<td>D Little</td>
<td>350</td>
</tr>
<tr>
<td>Virtual Seminars versus Face-To-Face Seminars for Final Year Medical Students - How Comparable Are the Outcome Measures?</td>
<td>R Paul, R Sugden</td>
<td>351</td>
</tr>
<tr>
<td>Exploring the benefits of high and low Fidelity simulation training as an undergraduate medical student: A study of Foundation year one doctors in Coventry, Warwick and Nuneaton</td>
<td>C Hariman, M Allen</td>
<td>352</td>
</tr>
<tr>
<td>My First Mistake: design and implementation of a session to explore attitudes towards medical error</td>
<td>S O’Hanlon</td>
<td>353</td>
</tr>
<tr>
<td>Implementation of a Cross-Level Peer Assisted Learning Scheme in an Undergraduate Obstetrics and Gynaecology Unit</td>
<td>M O’Sullivan, A Sinha, K Jones</td>
<td>354</td>
</tr>
<tr>
<td>‘They understand what we’re going through’: medical students’ reactions to peer teaching about reflection</td>
<td>S Smithson, R Lindley</td>
<td>355</td>
</tr>
<tr>
<td>Impact of a case-based training programme on the confidence of final year medical students in drug prescribing</td>
<td>M F Peerally, A Walker, M Lyons, A Lawson, N Bax</td>
<td>356</td>
</tr>
<tr>
<td>Title</td>
<td>Authors</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Catching up with Commercials</td>
<td>A Levy, O Jagger, J Lewkowicz</td>
<td>357</td>
</tr>
<tr>
<td>Learning and Teaching across Specialities - Integrated teaching of</td>
<td>R Bhat</td>
<td>358</td>
</tr>
<tr>
<td>mental health for GP and paediatric trainees - An Exploration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early clinical experience in primary care – piloting change</td>
<td>R Knox</td>
<td>359</td>
</tr>
<tr>
<td>Do students with good compatibility of Belbin® team roles express</td>
<td>H V Morris, A J Batchelder, A M Hastings, R T Hsu</td>
<td>360</td>
</tr>
<tr>
<td>greater satisfaction with the way their study groups operate?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does allocating students to study groups according to preferred</td>
<td>A J Batchelder, H V Morris, A M Hastings, R T Hsu</td>
<td>361</td>
</tr>
<tr>
<td>team roles improve academic performance?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students' narratives of clinical reasoning interactions: Using</td>
<td>J M Smith, C E Rees, J S Ker</td>
<td>362</td>
</tr>
<tr>
<td>audio-diaries to understand how they make sense of experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Students for Students: A qualitative study of an informal near-</td>
<td>A Fazakerley</td>
<td>363</td>
</tr>
<tr>
<td>peer teaching student initiative at Southampton</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does simulation training based around the ‘on call journey’</td>
<td>R Martin, J Fisher, D Tate, C Huntley</td>
<td>364</td>
</tr>
<tr>
<td>improve medical students’ confidence in the clinical and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>communication skills required when dealing with an acutely unwell</td>
<td></td>
<td></td>
</tr>
<tr>
<td>patient?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What do medical students gain from acting as problem based learning</td>
<td>A Newton, J Whiteley</td>
<td>365</td>
</tr>
<tr>
<td>facilitators: A preliminary enquiry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical students as public health ambassadors – A grass-roots</td>
<td>L Magee, R Doolub, J Simpson</td>
<td>366</td>
</tr>
<tr>
<td>method for learning about public health promotion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simulating Acute Medical Emergencies: Using a Human Patient</td>
<td>K Armitage, J Horrocks, B Ozalp, M Rudd, C Huntley</td>
<td>367</td>
</tr>
<tr>
<td>Simulator increases Final Year Medical Students’ Confidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audit of the effectiveness of education and individualised feedback</td>
<td>J C Wilson, L Addison, H Neill, G Burt, S McColgan</td>
<td>368</td>
</tr>
<tr>
<td>for reducing prescription error rates among foundation year one</td>
<td></td>
<td></td>
</tr>
<tr>
<td>doctors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developing a systems examination DVD as a learning resource for</td>
<td>K Armitage, M Rudd, I McCallum, C Huntley</td>
<td>369</td>
</tr>
<tr>
<td>medical students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From the D.R. to Dr - Revisiting anatomy in the final year</td>
<td>L Bowen, A Roberts, T Wilkinson, C Cann, M Jenkins-Welch, J Hall</td>
<td>370</td>
</tr>
<tr>
<td>Positive feedback in communications skills training: Enhancing</td>
<td>S Williams, A MacAdam</td>
<td>371</td>
</tr>
<tr>
<td>student ability through Video-Interactive Guidance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td>Authors</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Medical Student’ Perceptions about the Barrier and Bridges to Cultural Competency</td>
<td>M Nazar</td>
<td>372</td>
</tr>
<tr>
<td>Sex &amp; Relationships Learning needs assessment – development and pilot of a novel questionnaire</td>
<td>P Lillie, A Adeogun, G Carr, S Gottschalk, C Umeh, E Reilly, N Jeal</td>
<td>373</td>
</tr>
<tr>
<td>How much do students learn on the Labour Ward?</td>
<td>A Ali, E Medd, S Glew</td>
<td>374</td>
</tr>
<tr>
<td>Can E-learning improve medical student’s ability to interpret chest x-rays in comparison with electronic text?</td>
<td>E Tamaklo</td>
<td>375</td>
</tr>
<tr>
<td>First impressions count: Does FAIRness affect adaptation of clinical clerks in their first clinical placement?</td>
<td>P Chan, O Edafe, N Mistry</td>
<td>376</td>
</tr>
</tbody>
</table>
Academic Support
The impact of specific learning difficulties (SLDs) on undergraduate medical and dental students’ undergraduate studies

A Rowlands, CM Roberts, G Bevere, S Abbott

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Background and Purpose
The purpose of this study is to explore the impact of Special Learning Difficulties (SLDs) on the experience of medical and dental students at St Barts and The Royal London School of Medicine and Dentistry (BLSMD). Annual statistics from the Higher Education Statistics Agency indicate sizable increases in the number of students enrolling at UK higher educational institutions who have disclosed a SLD this correlates to increasing numbers entering medical school either with a diagnosis of SLD or receiving a diagnosis post admission. There is also some debate about the ability and suitability of students with SLDs both at medical school and once they graduate into clinical practice.

A literature review mainly contained reviews of academic issues (few related to medical students) and indicates that individuals with SLDs have difficulties related to reading, writing and short term memory but what is not clear is how these individuals coped with these difficulties in developing their clinical competencies to become a qualified professional.

Methodology
Semi structured interviews took place with 17 medical and dental students who were known to the University’s Dyslexia and Disability Service. The interviews were audio-taped and transcribed verbatim. Detailed analysis was performed using a coding process as described by Rossman and Rallis. Themes were formed to create the main discussion points of the study.

Results
Results from these interviews will be presented as themes identified.

Discussion and Conclusions
Why are some students with SLD are able to cope and achieve highly in written exams and academia at school (and in some cases their first degree) but that these coping mechanisms start to fail when they get to Medical School? Is it that medicine is just more challenging? Is it that the exam format or the volume of work that are different or simply that the opportunity for diagnosis is better? If the former what can we do to change this in order to help these students? Dyslexia is not just about academic work it is more holistic and can affect concentration and organisation. These things have implications for clinical practice and for the medical students once qualified. Should all students be tested for SLD on entry to Medical school in order to diagnose and help those who need it early and avoid the discrimination towards those going for testing as being a sign of trying to achieve an unfair advantage?

References
Arts and Humanities
Top 10 Films to Make Medical Students Think

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Background and Purpose
Using films to raise issue of ‘ethics’ and ‘professionalism’ is becoming more common in medical curricula. For example ‘One Flew Over the Cuckoo’s Nest’ can be used to stimulate debate about the ethics of psychiatric treatments. Studies have shown that students enjoy this type of teaching and find it thought provoking. Many experts have listed their top films. Our aim was to collect a list of the top ten films at our medical school that would make our medical students ‘think’. We wanted to compile consensus list with input from all disciplines of Medicine that is relevant for our community in Cardiff. This list could be used to teach our students.

Methodology
A Delphi method was used to gain a consensus view. 980 teaching staff from Cardiff University were emailed a survey and asked to nominate films they thought would make our students think. 41 people nominated films to give us a list of 131 films. We then asked people to rank their top ten by a second vote. With 129 responses the top 20 from this list was extracted and a final voting round was set up to ensure consistency on the top 10.

Results
Films nominated were varied including documentaries, World cinema and mainstream blockbusters. The Top 10 films were established:

1. A beautiful Mind 30 votes
2. My Left Foot 27 votes
3. One Flew over the Cuckoo’s Nest 26 votes
4. Rain Man 24 votes
5. Trainspotting 24 votes
6. Elephant Man 22 votes
7. To Kill a Mockingbird 21 votes
8. Philadelphia 21 votes
9. The Kings Speech 19 votes
10. Mash 19 votes

Discussion and Conclusions
Our list of the top 10 films covers multiple themes and we hope they highlight many elements of ethics and professionalism. Response to this project from other educators was enthusiastic. We will show these films after lectures, inviting all years of the medical students. After watching a film there will be discussions to examine different views and controversial elements. Evaluation will include student perception of whether this has learning value and supplements the core curriculum. We will collect and analyse reflective statements of ways in which the film has influenced student behaviour. If successful, we hope to extend this project next year and further explore impact on student behaviour.
History repeats itself. It has to. No-one listens

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Background and Purpose
Throughout history doctors have strived to remain pillars of the community. This hasn’t always been the case. Examples from the past can emphasise elements of professionalism and ethics. We consider how analysing these can impact on students’ understanding and application of professionalism and associated skills.

Methodology
A nine-week student-selected special study component was designed on the History of Medicine. Third-year students studied a different discipline of medicine each week. Emphasis was on connecting the past to the present on issues of professionalism. Various methods of teaching were used; weekly themed tutorials covered the history of surgery, women’s health, psychiatry and medicine in the British Empire. Trips were arranged to see medical artefacts and archives. Ethics in psychiatry was illustrated by the film ‘One Flew Over the Cuckoo’s Nest’ and a trip to a Victorian Asylum. Cross department collaborations supported the delivery of teaching.

Students participated in discussions and prepared 10-minute presentations each week relating to the session’s theme, with emphasis on improving public speaking skills. As summative assessment, students submitted a 1500-word essay examining how we can learn from the past in our present-day practice evidenced by a topic of their choosing. The top three students were invited to present their projects to an audience of 120 retired medical professionals.

Results
Written evaluation at the end of the module was collected from 11 of the 15 students. Students commented on whether they found the course professionally or personally relevant, made a reflective statement of what they had learnt and commented on whether studying the history of medicine had changed their opinions on professionalism. A thematic analysis of these free-text questions identified consistent themes:

1. A fresh context to the medical profession
2. Improved appreciation of ethical principles
3. Improved public speaking

Discussion and Conclusions
We found the History of Medicine to be a valuable resource for illustrating professionalism. The course may benefit from increasing the number of tasks that promote professionalism and incorporating more historical examples to richly illustrate learning points. Developing awareness of professionalism through, for example, expanding on the development of ethics, promoting student-led teaching, or developing public speaking with debates and producing press-releases could improve our teaching further. The resounding success was that every one of the medical students would recommend the course to other students. This SSC is running again this year and aims to evaluate new areas that illustrate professionalism.
Exploring the use of drama for educating medical students about Public Health & Health Communication

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Background and Purpose
Public health is a multi-disciplinary activity demanding a team approach to improve the health and quality of lives at a population level. Educational theatrical performances are commonly used methods in promoting health. This Student Selected Component (SSC) was designed to introduce second year medical students to the basic principles of public health and to scripting and performing a short drama to convey a public health message. The aims were to give students both an understanding of the strategies and the opportunity to promote public health messages to the community. The course aimed to improve:

Knowledge
- Understand health in context of the community
- Strategies to propagate public health messages

Skills
- Improve communication, team working & writing skills
- Experiment & enjoy using humanities in field of medicine

Attitudes
- Use a holistic approach to medicine
- Learn by reflection

Methodology
For five consecutive Fridays, students had interactive lectures on principles of health promotion and communicating health messages. The students scripted a drama about healthy eating. The drama was performed at a Junior School; it was about a young boy who improved his eating habits that later helped him win an Olympic medal. Feedback was delivered by tutors after the play. This was followed by reflections on the process.

Results
Evaluation of this SSC showed students found it useful. Thematic analysis of the qualitative statements showed two emerging themes.

- Improvement in public speaking: how to speak, how to frame health messages.
- How to communicate a public health message and the importance of knowing the audience.

Some quotes from student feedback are-
“…as a group we grew in communicating better with each other and so producing a good play”
“Communication skills are always very important in all aspects of life, but this helped to tie in through team-work and public speaking”

Students rated the course at 84.2% overall.

Discussion and Conclusions
This course was a useful and enjoyable method to deliver some of the key curricular skills to medical students. Next time the students will be performing their play at two schools followed by a workshop for the pupils in partnership with the school teachers. The aim is to check the pupils understanding of the drama using small exercises and also receive further feedback for the performers. We are in discussion with schools to see how in future this course could help support their healthy living agenda.

References
Imaginative and Engaged: Engendering reflection through an art exhibition

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Background and Purpose
Since 2007 all first year BM5 students at Southampton have been using literature, creative writing, art, photography, film, drama, history and music to imagine and engage with patients’ diverse perspectives and experiences. The medical humanities module aims to open the hearts and mind of students, facilitating the development of observation, critical analysis, reflection and empathy which are essential to good medical practice.

In October 2011 an exhibition brought together students’ work across four years to illustrate the role creativity can play in medical education and clinical practice. Accompanying each piece were student reflections on their art work. The exhibition also included pieces by the students’ art teachers and members of two patient support groups to represent the relational and synergetic process of learning the science of medicine and understanding human experiences of health and illness.

Outcome
The exhibition was very well attended by university staff and students as well as the general public who recorded their comments in a visitors’ book and on the gallery website blog. The feedback was extremely positive, indicating that the event was regarded as “a revelatory exhibition” and “creative, sensitive, intelligent work at the interface”. Spectators were particularly enthusiastic about the student reflections accompanying each piece because they illustrated how thoughtful the students were, not only about patients, but also about themselves.

Discussion and Conclusion
The medical humanities module affords an opportunity for students to produce and reflect on their piece of artwork. Putting their artwork and reflections in a gallery context, along with work by their teachers and patients, enabled the public to engage with and further reflect on medical students’ knowledge and skills, as well as their compassion and empathy. This facilitates a better understanding of medical education and promotes public engagement with medicine.
The Role of Audits in Medical Education: An important tool to improve medical student professionalism or just another tick box exercise?

S Raynor

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Background
Many medical students undertake clinical audits as a way of boosting their curriculum vitae and enhancing their application to the UK foundation programme. Tomorrow’s Doctors 2009 has advised that all students should become involved in audit as part of clinical governance and teaching on medical professionalism. However, guidance about how to change the already overcrowded medical curriculum is unclear.

Aims
To investigate the current role of audit within the medical curriculum in UK medical schools. To discuss why students should engage with audit and clinical governance and explore how this could be implemented.

Method
All thirty-one medical schools in the UK were emailed in November 2010 to identify the role of audits in their curriculum.

Results
The vast majority (96%) of medical schools surveyed made some provision for students to undertake audits within their programmes, however under half (42%) provided formal teaching in this area.

Discussion
Problems associated with implementing clinical audit include time, cost, support, assessment, standard setting and lack of motivation from students. Schools should ensure that appropriate support mechanisms are provided to combat these problems and to help students develop a good knowledge base and appreciation of clinical audit as an important method to improve patient safety.

Conclusion
Medical students should have audit and clinical governance teaching with focus on improving the quality of services, safeguarding high standards of care and promoting good practice for students to be involved with audit throughout their careers. It is clear that audit has a role in medical education and, if implemented appropriately, could have a significant impact on medical student professionalism.
Exploring standard setting methods, which one is best?

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Background and Purpose
In order to make informed decisions regarding the selection of standard setting methods the project was established to compare two methods: Ebels and Angoff. A key driver was a lack of comparative data, despite there being a wealth of information on each method and information as applied to OSCEs 1. The project was conducted over the course of the academic year 2010/2011. It aimed to identify if there is any difference in the pass mark set and to explore the strengths and weakness of the methods as applied to assessment modalities used within the Faculty.

Methodology
The project involved two papers – one best answer/extended matching item (OBA/EMI) and integrated anatomy practical paper (IAPP) – each taken four times (at the end of each Semester) in years 1 and 2 of the undergraduate medical course. In order to follow the current procedures all assessments were standard set as planned by using a modified Ebels. All assessments were then additionally standard set using the Angoff Method. Standard setting for the OBA/EMI papers involved at least 4 individuals from a range of basic science and clinical backgrounds. Standard setting for the IAPP involved at least 4 anatomists.

Results
No major differences were seen in the OBA/EMI papers between the two methods in terms of pass mark. For the IAPP examination the Angoff produced a higher pass mark on every occasion (difference ranged from 4% to 15%). The higher differences occurred in papers that were judged by more markers.

Discussion and Conclusions
There is no gold standard for standard setting. 2 Validity and reliability of assessments is imperative, not just in terms of theory but how they are suited to the institution and the specifics of the assessment. We found that IAPP papers which were judged and discussed by more markers produced Angoff pass marks which were higher than Ebels. Although a factor may be that judges can find it difficult to concentrate on a borderline candidate, 3 this finding raises the possibility that a panel composed entirely of specialists (i.e. just anatomists) may not be suitable for this method. For our OBA/EMI papers, Angoff and Ebels produced similar results.

References
Development by faculty of a set of strategies for improvement of consultation skills

J Lefroy, A Thomas, S Williams, S Gay, F O'Mahony, R Kinston, C Harrison, RK McKinley

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Background and purpose
Workplace-based assessors can readily identify what a learner has done well and what the learner needs to improve. However the feedback they give is often non-specific and does not assist the learner to address the deficit between the observed and desired performance.¹ The Generic Consultation Skills (GeCoS) assessment tool is used in workplace-based assessment at a UK Medical School.² A key element of GeCoS that each competency has a corresponding set of pre-formulated strategies for improvement from which the assessor (and/or learner) can select those most appropriate to the learner’s needs although, should other strategies be considered more appropriate, they should be used.

The purpose of the pre-prepared strategies therefore is to help assessors provide better quality, more specific feedback. Although GeCoS has been validated, the strategies for improvement have not. The aim of this study was to systematically develop the strategies for improvement by involving hospital and GP clinical tutors in order to enhance their utility for workplace-based assessment in both settings.

Methods
We used a 2 stage methodology:
1. An initial survey accessed tutor opinion of the usefulness of each strategy and their suggestions for improvement.
2. Round table discussions of the tutors’ responses and novel strategies generated by tutors in actual assessments in the year 2010-11. We ensured that there were at least 2 hospital doctors and 2 GPs at each discussion. All suggestions for rewording and new strategies were reviewed using previously described methods.² The roundtable meetings aimed to produce an edited list of strategies combining the best of the originals, editing strategies they deemed useful but poorly received in the survey and including suggestions made by survey respondents and novel strategies from actual assessments.

Results
35 hospital and 21 General Practice tutors generated 84 potential amendments and 69 potential additional strategies in the tutor study. These were considered at 3 round table meetings attended by between 5 and 8 members of the research team. This resulted in a new list of 274 strategies which reflected the combined experience all tutors.

Discussion
The methodology enabled a broad consensus to be achieved with important refinements on advice to give to medical students who need to improve specific consultation skills. The strategies for improvement are being further refined and validated in a follow-on study involving medical students in order to enhance their utility to students for self-assessment and self-improvement.

References
(1) McKinley RK, Williams V, Stephenson C. Improving the content of feedback. The Clinical Teacher 2010; 7:161-166.
Student face validation of a set of strategies for improvement of consultation skills

J Lefroy, A Thomas, S Williams, S Gay, F O’Mahony, R Kinston, C Harrison, RK McKinley

J Lefroy, Senior Lecturer in Medical Education, Keele University School of Medicine, UK

Background and purpose

The Generic Consultation Skills (GeCoS)¹ assessment tool is used in workplace-based assessment at a UK Medical School. A key element of GeCoS is a series of pre-formulated strategies for improvement to help tutors provide specific feedback, each competency in GeCoS having a corresponding set of strategies for improvement. During a workplace based assessment of a student’s consultation skills, the tutor and student discuss and agree the priorities for improvement and jointly select appropriate strategies for improvement which, with any other tutor comment, can be recorded for the student using an online platform based on commercial survey software.

Alternatively a student who recognises a need to improve a particular competency can also access the strategies list to find and utilise the set for that competency. GeCoS has been validated² and the strategies for improvement have been extensively reviewed using input from a large group of hospital and GP tutors. We now describe how we validated the strategies for improvement by a process involving medical students.

The overall aim of the process was to enhance the utility of the strategies for improvement for workplace-based assessment in both hospital and GP and enhance their utility to students for self-assessment and feedback.

Methods

1. Student views of the utility of the list of edited strategies from the tutor study were accessed using a group consensus process which combined elements of Delphi consensus² and Nominal Group technique.³ Groups of students who had used GeCoS and were thus familiar with the process were presented with each competency and its associated strategies for improvement in turn and asked to vote on its utility using keypads (validation by >70% consensus) and to suggest alternatives.

2. Rejected strategies were re-edited by a ‘round table’ of researchers with at least 2 hospital doctors and 2 GPs present, and reconsidered by the final student group.

Results

Ten student groups of 6 to 10 final year students took part in the student study. The final set of strategies as validated by these groups will be available.

Discussion

We will discuss the impact of the student contribution to the study.

References


The views of junior and senior doctors in relation to best practice in Workplace-Based Assessments

C Matheson

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Background
The completion of an e-portfolio, including passing the required Workplace-Based Assessments (WPBAs) is a necessary condition to enter Specialty Training and to exit with a Certificate of Completion of Training which is needed in order to become a consultant.

Aims
The aims and objectives were: to find out how WPBAs are conceptualised; to identify drivers and barriers to good/best practice; to investigate how good/best practice is conceptualised and how to maximise good practice.

Methods
All the participants (mostly Specialty trainees but also Foundation trainees and Consultants) who had attended short course on Teaching and Assessing Clinical Skills (TACS) were invited to take part in an online survey which was based 1/on agreeing or disagreeing with statements derived during brainstorming and ranking exercise done during the course 2/sharing their views in respect to seven open-ended questions about drivers and barriers to good practice in WPBAs. The results of the survey were compared with the ranking exercises.

Results
A total of 181 participants took part in the survey. Key drivers to best practice in WPBAs were positive assessors’ attitudes, protected time, positive trainees’ attitudes and meaningful feedback with action points. Key barriers were negative assessors’ attitudes, lack of protected time, inadequate feedback and negative perceptions of WPBAs. The results of the survey and ranking exercises were broadly similar, providing triangulation of the findings in relation to drivers and barriers to good practice. Three-quarters of the participants agreed that WPBAs provide a set of goals/curriculum. Over two-thirds thought they were a valuable record of achievement and a valuable opportunity to receive constructive feedback. However, more than half did not conceptualise WPBAs as valid and reliable. Two-thirds considered WPBAs to be a source of stress related to a nefarious “hidden curriculum”.

Conclusion
The study revealed the importance of a hidden curriculum and ambivalence towards good practice in WPBAs, not helped by the perception that clinical/educational supervisors should be more approachable and available for WPBAs/meetings, respond to emails, give advice via email and offer bookable slots for WPBAs and that trainees should be more proactive in booking time with their educational/clinical supervisors and turning up for meetings.

References
An examination of the Royal College of Pathologists consultant performance reviews

PW Johnston, E Livingston

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Background and purpose
The Royal College of Pathologists, like other Medical Royal Colleges, is asked to review the clinical performance of its fellows regularly if infrequently. Reviews are requested by health authority chief executives and governed by agreed rules. They take the form of structured visits to the working environments of the individual(s) under review. A panel of two peers and a lay member inspect facilities and interview relevant colleagues before writing a report in a standard template which the College approves and formally submits. Archived reviews provide in-depth analyses of performance concerns over ten years. They do not include disciplinary processes or conduct issues referred to the UK medical regulator, the General Medical Council. The purpose of the examination was to identify consistent themes reported in the context of questionable medical performance to inform awareness and education.

Method
Two reviewers read the review reports, discussed and clarified content and elucidated issues. Components were classified as they arose according to grounded theory, giving rise to themes. Since 2001, the College has carried out 20 reviews, 15 since the current guidelines were introduced. One of these centred on a specific legal (rather than performance) question and was excluded. One of the early reviews was excluded as it was highly personal. The four remaining informed the process but detailed analysis was hindered by the remit and format differing from current practice. Fourteen recent reviews were the mainstay of this analysis.

Results
Interpersonal behaviour was the over-riding feature in poor performance, outweighing knowledge and skill. There was often a mis-match of values or expectations between individuals and organisations. Poor performance usually arose in a complex background of dynamic personal, professional and organisational circumstances. The major themes related to the organisation and management of pathology laboratories and their staff, team working and communication with colleagues, maintaining professional standards, leadership, situational awareness and health.

Discussion and conclusions
Concerns about consultant pathologists’ performance tended to surface over prolonged intervals reflecting long-standing behavioural issues in complicated clinical and organisational environments. The difficulties reported have been consistent over a decade and represent patterns in both the doctors and organisations within which they work. Understanding and being aware of the problems highlighted in the reviews helps recognise evolving scenarios and my enable early intervention to prevent escalation.
How standardised patients award candidate ratings in OSCEs: a qualitative study

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Background
Standardised patients (SPs) are often asked to rate candidates’ performances in OSCEs. Evidence suggests adding SP ratings to examiners’ checklist scores can improve psychometric reliability. At Queen’s University Belfast, SPs are trained to award ratings on only humanistic aspects and not technical aspects of the candidate’s performance. There is limited research about how SPs arrive at their mark.

Methods
Focus groups were used to explore the process of how SPs award candidate ratings in OSCEs. A convenience sample was used. Focus group data was collected until saturation. Thematic analysis was carried out independently by three researchers using a grounded theory approach.

Results
Four major themes contributed to decision-making: environment, relationships within the exam, preparedness for the task and expectations of the student’s performance. Environmental factors included the station itself, the rating scale and examiner fatigue. Relationship factors included first impressions, the sense of purpose derived from rating students and a tendency to mirror the examiner’s reaction. Factors relating to preparedness for task involved experience as an SP, confidence in undertaking an examining role, and technical aspects, such as the need for calibration. Lastly, expectations of performance were related to preconceptions about what makes a “good” student, including their level of studies, appearance and technical performance. The last two themes related strongly to internal factors such as social class and past experiences of the medical profession.

Conclusion
In assessing students, SPs drew on their wider attitudes and experiences. SPs did not limit their assessment to humanistic traits but often included technical performance. Thus, SPs to some extent assessed a similar construct to examiners and this may help explain the increased reliability associated with using SP scores. SP ratings are a useful adjunct but the process by which SPs award marks is complex and provides a challenge for training and standardisation.

References
Measuring the quality of feedback; a reliable system with construct validity

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MH Bartlett, Keele University School of Medicine.

Background and purpose
Medical students at Keele medical school spend 113 days learning in general practices during which they undergo serial workplace based assessments of their consultation skills. They receive an email summary of their verbal feedback which is also forwarded to subsequent tutors. We hypothesised that the quality of the summaries gives an indication of the quality of the verbal feedback and thus the teaching quality, as giving effective feedback is a core skill for medical teachers. We have developed a reliable scale to measure the quality of the summaries. In this study we explored the construct validity of the scale to determine whether we could use the scale in our quality assurance processes and our tutor development activities.

Methodology
The quality of all written feedback summaries for all workplace based assessments for an entire cohort of fourth year students was scored for quality by three assessors using the scale. The correlations between the mean feedback quality score for each practice and the mean students' general satisfaction and satisfaction with verbal and the written feedback were tested using Kendall's Tau.

Results
There were 122 students in the cohort placed in 37 practices which generated 612 written summaries. There was a significant positive correlation between the quality score for the written summaries and the students' general satisfaction with their placements (Kendall's Tau 0.378 p=0.01). There was a non-significant positive correlation between the quality score and satisfaction with feedback (Kendall's Tau 0.21 p=0.07).

Discussion and conclusions
In the absence of any direct measure, we have used student satisfaction as a measure of teaching quality. Using this proxy, the data support the construct that the feedback quality score reflects teaching quality in the practices. The study is limited by having to use this proxy, and by not having had access to student level data. Nevertheless, the data suggest that the scale has validity and support its use in our quality assurance processes and tutor development activities. Further work is needed to study how the students' satisfaction is related to other measures of the quality of teaching.

References
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“What do they really think?”– Anaesthetic Consultants and Feedback

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Feedback is essential to medical education¹, being an integral part of competency-based assessment and has been utilised in anaesthetic training since the mid-1990’s². Supervision requirements in the theatre environment give anaesthetic consultants a unique opportunity for regular delivery of both formal and informal feedback. Using a qualitative questionnaire we aimed to determine consultant perceptions regarding feedback.

Methodology / Results
Teaching Hospital Anaesthetic Department – 87% responder rate of n=26. Questionnaire encompassing four topics on feedback with 5-point scale (strongly agree to strongly disagree) and final free text section. Responder bias avoided by equal division of positive/negative phrasing. Two independent investigators analysed for trends / themes - those common to both were deemed representative of the sample.

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| General opinions              | - Feedback is integral to training programs, not a one way dialogue and formal feedback is more useful than informal  
                             | - 30% felt failure to give feedback was in itself a form of non-verbal communication, possibly impacting on trust |
| Personal Experience           | - Found it positive, specific, delivered with sensitivity and encouraged reflection  
                             | - Addressed skills rather than behaviour                                 |
| Barriers to Giving Feedback   | - Negative feedback can make trainees defensive and do more harm than good, but in general does not damage the consultant trainee relationship  
                             | - 50% concerned they would upset the trainee  
                             | - Feedback from multiple sources often inconsistent                     |
| Giving Feedback               | - All gave feedback but 40% never received any training  
                             | - Areas identified as requiring improvement were giving negative feedback and issues related to behaviour |

Discussion and Conclusions
Feedback is of vital importance in experiential learning ³. Consultants regarded formal feedback as more important, perhaps reflecting current emphasis on work-place based assessments in training. Barriers exist to giving feedback, however are not perceived to lead to an overall breakdown of consultant trainee relationship. A number of consultants lack formal feedback training and acknowledge areas for improvement including delivering negative feedback in a constructive manner and attempting to modify behaviour.
Multimedia extended matching questions (EMQs) in undergraduate musculoskeletal education

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Introduction
Extended matching questions (EMQs) are commonly used to assess knowledge and problem-solving ability in both undergraduate and postgraduate medical education. The use of EMQs serves to redress many of the criticisms levelled at multiple-choice questions, particularly avoidance of the recognition effect or “cueing”. One of the potential disadvantages of EMQs is the under-representation of certain topics which do not readily fit the format. Musculoskeletal practice makes extensive use of dynamic clinical evaluation and interpretation of imaging. Assessment of students in this discipline necessarily requires testing such areas. Here we describe the development and evaluation of multimedia EMQs as an assessment tool in undergraduate musculoskeletal education.

Methods
Key themes in the musculoskeletal curriculum were identified by senior faculty staff. Twenty EMQs were written and edited by a collaboration of clinicians to assess these themes. Each EMQ had 5 stems and 12 items. Stems and items included an admixture of case vignettes, plain radiographs and high-quality photographs of clinical signs. Multimedia elements were collated on a PowerPoint presentation and the examination was performed with each student at a computer workstation. The mean and standard deviation for assessment performance were calculated. Data were reviewed to enable identification of common errors to guide future delivery of the curriculum. In addition, item analysis was conducted with calculation of reliability co-efficients (Cronbach’s alpha) and discrimination indices for each stem. All statistics were performed using SPSS 18.

Results
The assessment was undertaken by 230 fourth-year medical students at the end of a 7-week clinical musculoskeletal placement. The range of scores was 24-71% (mean 51%, standard deviation 8.2%). A histogram of assessment scores demonstrated a mildly positively-skewed distribution. Topic areas where students consistently performed poorly included recognition of radiological changes associated with common arthropathies, selection of appropriate antimicrobial therapy in orthopaedic patients and identification of paediatric fractures.

Conclusion
High-quality procedures for assessing professional performance are essential for good professional regulation. The use of EMQs in both undergraduate and postgraduate education is supported by a growing body of educational theory. Here we have described how the benefits of an extended matching format may be effectively utilised in the context of undergraduate orthopaedic examinations.

References
Is it intelligent to intercalate?

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Background and Purpose
An intercalated degree provides insight into both the methodology and excitement involved in research as well as facilitating acquisition of new skills beyond the level learnt in the undergraduate medical course\(^1\). Previous studies indicate that the benefits need to be better defined and presented to students\(^2\). Our aim was to assess the outcomes of intercalated degrees, the perceived value to medical students, and whether the recent fee increase has changed students’ opinions. We compared two universities with similar intercalation rates.

Methodology
A questionnaire was designed and sent to 3\(^{rd}\), 4\(^{th}\) and 5\(^{th}\) year medical students (previous intercalators and non-intercalators) at Sheffield and Bristol medical schools, which students completed anonymously.

Results
578 students responded, 291 from Bristol and 287 from Sheffield (previous intercalator response rate = 52% and 58% respectively). Of the students that intercalated, 46% achieved first class honours and 53% 2:1. 36.5% gained a poster presentation, 31% an oral presentation and 22% a publication. Of those with first class honours, 57% had a clinical academic supervisor, and these students also gained more posters ($\chi^2 2.77, p=0.6$), and significantly more presentations ($\chi^2 15.2, p=0.0043$) and publications ($\chi^2 24.4, p<0.0001$).

92% of students enjoyed their intercalated year, 98% gained useful skills and 83% thought it would improve their career prospects. A surprising finding was that 72% of students who had previously intercalated said they would not have done so if faced with fees of £9,000. There was no significant difference between the two universities in this regard ($p=0.453$).

The main reasons for students opting out of an intercalated degree included not wanting to spend another year at university (69%), financial constraints (60%) and not finding a project they were interested in (55%). There were differences between the two universities, including the proportion of clinical academic supervisors ($\chi^2 24.8, p<0.0001$), the number of first class honours ($\chi^2 22.4, p=0.0002$) and other aspects of academic recognition, all of which were higher at Sheffield.

Discussion and Conclusions
These results show that students value intercalated degrees. Important factors in the success of the intercalated degree include having a clinical academic as a supervisor, which clearly improved academic outcome. A worrying finding was the number of students who would not have intercalated if faced with fees of £9000. Coupled with the fact that 60% of non-intercalators had financial constraints, this could act as a huge disincentive for students wanting to undertake an intercalated year.

References
Background and Purpose
Poor communication is one of the leading reasons for anaesthesia-related medical errors resulting in severe morbidity or mortality. However, the communication of anaesthetists remains relatively under-studied and the best strategies for its teaching are unclear. This study set out to evaluate consultant anaesthetists’ perceptions of communication skills and the way in which they are taught. It specifically assessed: (1) whether current anaesthetist training is sufficient to meet the standards as set out by the GMC; (2) the current aptitude level of anaesthetist communication skills; (3) how most consultant anaesthetists believe such tacit skills should be acquired and (4) the potential for improving current training strategies.

Methodology
Consultant anaesthetists working throughout the Severn Deanery were contacted via email to receive an online questionnaire ascertaining both quantitative and qualitative data using the online tool, Survey Monkey. 129/194 eligible consultants responded (rate 57%).

Results
The average consultant rated themselves 4.1 (verbally) and 4.0 (non-verbally) out of 5 (1 being poor, 5 being excellent) at communicating with patients. However only 35.1% asked patients for feedback on their consultation’s communication and only 39.4% of this fraction altered practice because of this feedback. Errors at handover due to poor communication occurred on a weekly (7.7%) and monthly (28.6%) basis. Improvements in teaching communication was desired both quantitatively (50%) and qualitatively (84.1%), however, only 16.7% currently teach communication skills. The difficulty of teaching communication fitted a Gaussian distribution averaging 3.04 (1 being easy, 5 being difficult), however this differed significantly (p=0.0004) between those who actively taught communication skills (2.27 [1.82-2.71]) and those who did not (3.16 [2.97-3.36]). Furthermore, 70.0% of consultants believed communication skills are best acquired through equal involvements of explicit teaching and tacit elements, although only 31.1% actually acquired their skills by equal contribution from both, and 65.6% had a learning by experience predominance.

Discussion and Conclusions
This study demonstrates that current anaesthetist communication appears to be failing to reach GMC standards and may contribute to unnecessary risk to patients in the form of medical errors. This is underscored by poor rates of patient feedback, an area that is open to improvement with the aid of the remaining anaesthetic team. Furthermore, results indicate that communication may be more difficult to teach than assumed and that the passing on of tacit skills requires both qualitative and quantitative improvement. This may be achieved by subdividing communications teaching and an increased emphasis on direct teaching.

References
Audit of Foundation Year 1 portfolio quality at ARCP

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Background
Foundation trainees are required to maintain a portfolio that provides evidence of individual attainment of all curriculum competences. The Northern Deanery Foundation School continues to approach trainee ‘sign-off’ at the end of Foundation Years 1 and 2 (FY1; FY2) through a structured Annual Review of Competence Progression [ARCP] system, in which portfolios are assessed by a trained panel of independent assessors rather than simple sign-off by an educational supervisor. Data about trainees’ performance in ARCP may help inform programme educational leads and highlight areas of further training need.

Method
Foundation ARCP panels were held in line with The Gold Guide. Trained panel members completed a standardised proforma for each portfolio reviewed. This itemised work-based assessments [WBA], Team Assessment of Behaviour [TAB (360° feedback)], audit, reflections, teaching delivery, supervisors’ reports and the ‘curriculum summary’ (evidence for achievement of all curriculum competences). Individual items were categorised as: ‘above average’, ‘satisfactory’ or ‘below average’, based on relevance and quality of evidence presented. Proformas from FY1 portfolios completed in 2010 (n=64) and 2011 (n=70) were audited and compared to corresponding ARCP outcomes.

Results
Most trainees had ‘satisfactory’ portfolio items. Trainees scored well in items with independent assessments: WBAs (‘above average’, 25.4% of portfolios); TAB (37.2%) and supervisors’ reports (28.5%). Conversely, 16.4% [20/122], 9.9% [12/121] and 9.6% [11/120] of portfolios were classed as ‘below standard’ for trainee demonstration of appropriate curriculum coverage (‘curriculum summary’), attainment of audit and teaching competences, respectively.

Fewer portfolios in 2011 had either ‘above standard’ or ‘below standard’ ‘curriculum summaries’ than in 2010 (Chi², p=0.018).

ARCP outcomes 2 or 3 were given to 10 (7.4%) of trainees (2010, 4 trainees; 2011, 6 trainees). In 9 / 10 cases, the ‘curriculum summary’ had been scored ‘below standard’ at initial review.

Conclusion and areas for future work
A significant minority of FY1 trainees in this Trust submitted portfolios with items that were below FP standards, particularly the ‘curriculum summary’. The summary describes individual clinical and professional achievements throughout the training year and has a key role in defining a satisfactory portfolio and thus trainee suitability to progress at ARCP. A one-one feedback session following ARCP has now been introduced to support trainee understanding of the assessment process. A greater understanding of how the completed portfolio can demonstrate evidence for professional competence may encourage greater engagement with preparation and ultimately its use as a learning tool.

References
 Practical Prescribing in Final Year Medical Students: An interventional study in pre-prescribing

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Background and Purpose
Prescribing errors affect patient safety throughout hospital practice with errors present in up to 50% of hospital admissions.1 Central to this, is the role of the Foundation Year 1 (FY1) doctor (the majority prescriber in hospitals) for whom the error prevalence is 8.4%.2 Following recommendations from this GMC-commissioned research, pre-prescribing has been developed. This process allows medical students to actively participate in completing prescriptions in the ward environment, prior to verification and countersignature by a doctor.3 This study aims to assess the impact of pre-prescribing training on development of prescribing skills of final year medical students.

Methodology
Following ethical approval, final year medical students studying general medicine in NHS Fife were recruited on a voluntary basis. Students were based in one of two district general hospitals: Queen Margaret Hospital, where the intervention was placed, and the Victoria Hospital, where pre-prescribing did not take place. Students were attached to the hospital medical wards for seven weeks, in groups of five or six. All students received prescribing tutorials covering common FY1 prescribing scenarios throughout their attachments.

At the beginning and end of the attachment, students were invited to complete a prescribing test. The test was developed by two clinician researchers, and aimed to replicate everyday clinical practice. The test detailed two medical admissions cases and required students to correctly prescribe all medications required for appropriate management. Tests were marked from a possible 115 marks by a blinded researcher.

Results
30 students received access to pre-prescribing (intervention group) and 29 students did not (control group). One student in each group declined to participate. Two students in the intervention group completed the initial test but were lost to follow-up. Initial test scores were similar (median 55.0 for intervention versus 55.5 for control). This difference was not statistically significant (p=0.607). Final testing showed a positive change in score across the study population; however the intervention group achieved a significantly greater change in score than controls (median 26.0 versus 21.5, p=0.036).

Discussion and Conclusions
This study provides evidence that pre-prescribing improves final year medical students’ competence in prescribing. Further qualitative research is planned to evaluate the role of pre-prescribing in improving preparation for practice as up to 40% of students feel underprepared at graduation.4 As the GMC mandates UK medical graduates must be able “prescribe drugs safely, effectively and economically,”5 careful future introduction of pre-prescribing in medical education is recommended.

References
Assessing clinical performance in 4th year medical students: A comparison of simulated and real patients

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Background and Purpose
Peninsula Medical School has developed the innovative Integrated Structured Clinical Examination (ISCE) as the primary assessment of clinical performance in 4th year medical students 1. The assessment consists of six stations and utilises both simulated patients (SPs) and real patients (RPs). Each station lasts 45 minutes and is designed to assess a complex combination of skills representing a real patient encounter. Domain specific scoring with global rating scales is used rather than checklist scoring, since the aim is to grade the level of overall performance rather than competence in a specific clinical skill 2, 3. The use of both RPs and SPs has been shown to have adequate reliability for OSCEs and structured long cases 4, 5, but recent work has identified benefits of using RPs over SPs in terms of the number of stations needed to achieve acceptable levels of reliability 6, 7.

The aim of this study was to evaluate differences in the performance of ISCE stations dependant on whether RPs or SPs were encountered by students.

Methodology
This is a quantitative evaluation of RPs and SPs using historical assessment data. Specifically, scores from ISCE stations using a combination of RPs and SPs recorded between 2008 and 2011 were analysed. The scores belonged to medical students in their fourth year of a five year programme. Domain specific scoring was utilised for all stations and all examiners received dedicated training in the use of the scoring system and carried out video-benchmarking prior to assessments. Independent t-tests and Analysis of Variance were used to test between differences in scores due to patient type (RP versus SP) and station type (e.g. Cardiology, Respiratory, Musculoskeletal).

Results
The results of preliminary analyses show that there is minimal difference in scores due to patient type. However there is a significant interaction between station type and patient type (e.g. RPs produce higher scores in the Breast station while SPs produce higher scores in the Renal station). These initial findings will be explored further.

Discussion and Conclusions
The results of this study will have important implications for the design of the ISCE and similar clinical skills examinations, such as whether or not it is justifiable to use a mixture of RPs and SPs. Implications for future research on this topic will also be discussed.

References
Using a tablet PC to improve student work placed based assessment completion during clinical placement

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Background and purpose
Work place based assessment forms are now well established in medicine. Research literature shows that they can be a powerful tool for changing a trainees’ behaviour. ¹ For this reason, and to familiarise students with the forms that they will be expected to use once qualified, final year medical students at Aberdeen University are required to complete both Mini-Cex and Directly Observed Procedural Skills (DOPS) forms during clinical placements. To date, these forms have been completed in paper format and returned to the medical school.

With the rise in the number of hospital staff already using tablet PCs (such as the IPAD), this presented us with an opportunity to use this medium to improve the process of student WPBA completion. By using the tablet PC instead of the paper based form, we hypothesise that it will result in the form being readily accessible, as easy to complete, and more securely and reliably returned to the medical school office.

Methodology
The forms have been adjusted for use on a tablet PC and will be developed further by the IT team. Senior hospital staff will be invited to use the tablet system, either by using their own device or by being given the loan of a university device. The system will then be piloted during clinical placement in March to April 2012. Senior staff completing the forms on the tablet PC will be requested to provide feedback on their experience in the form of a questionnaire and IT data will be analysed.

Results
The forms designed for tablet PCs, results from the staff evaluation and our experience of the process (including any challenges faced and how these were overcome) will be presented.

Discussion and conclusion
Advancing technology has the opportunity to improve medical education greatly. However, it should be introduced with prior planning and thought, and any changes evaluated. This project achieves this and the knowledge gained from it would be applicable to other universities.

References
A novel method of giving feedback to Medical students after a formative MCQ exam

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Background and Purpose
Healthcare trainees value timely and specific feedback after assignments and assessments. This can help them to identify strengths and weaknesses, and guide future learning. This sort of detailed feedback can often be hard to give following multiple choice question (MCQ) papers, especially if only a small bank of questions exist, as there are often concerns that the questions become common knowledge and that future student’s assessments will therefore become less valid. Online MCQ websites will often offer feedback on student performance broken down by subject, and also compare an individual’s results with those of his peer group who also take the same assessments. This style of feedback is likely to be specific enough to guide student learning, without compromising the integrity of the question bank. This study aims to demonstrate that it is also possible to provide customised feedback to students sitting formative assessment MCQ exams which are paper based. In addition, it aims to investigate its usefulness to and acceptability for students as a means of feedback.

Methodology
We divided our MCQ question bank into subjects as per the syllabus for the placement, and MCQ papers set with a balance of questions from each subject area. We mapped question numbers to subject areas using Microsoft Excel 2007. A group of 34 final year MBChB students completed formative MCQ assessments at the start and finish of a 6 week placement in Acute Medicine. In addition to being given their MCQ mark and ranking in the class, the usual feedback provided, they were emailed their results broken down by subject in graphical form. The class averages for each subject were given to allow comparison with their peers. At the end of the block the students were asked to complete a questionnaire aimed at assessing how useful and how acceptable they found this additional feedback on their assessments.

Results
We present examples of the type of feedback that was offered to students following their formative MCQ assessments, alongside results of the questionnaire showing usefulness and acceptability.

Discussion and Conclusions
Students are always likely to benefit from specific feedback to guide their learning. Providing it for MCQ assessments in a manner that is acceptable to both teachers and students alike is likely to remain challenging in the future. We discuss the benefits and challenges of integrating this simple approach into daily practice.

References
Introducing the Observed Structured Student Interactive Clinical Learning Environment (OSSICLE) - an Interactive Structured Induction Programme for Medical Students

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Background
Due to the Academy status of the University of Bristol Medical School, students undergo several Academy inductions during their clinical training. Induction is recognised as an important way of ensuring students meet hospital Trust mandatory requirements. Previous feedback shows that students find the induction process non-stimulating and repetitive. Many assume that it is unnecessary to undergo the process again as it covers old material, with little regard for skill decay. The observed structured student interactive clinical learning environment (OSSICLE) is an innovative method we piloted to induct third year medical students to our Trust.

Aim
The aim was to ensure all students were at the same entry level before exposure to the clinical environment, using interactive learning strategies to both assess and improve previous experiences of mandatory training.

Method
Medical student induction of the Jan 2012 cohort was run with a series of structured tasks. 44 students were divided into 5 groups and spent 20 minutes at each rotation encompassing training in hand washing, professional behaviour, sharps disposal, emergencies and communication techniques. Students also undertook an e-learning module in fire training in a group environment. Students were asked to complete pre-induction questionnaires to assess their experience of induction at other Trusts and prior knowledge on the induction topics. Post OSSICLE evaluation questionnaires were also completed to determine if students felt more confident about the topics covered and to discover what the students thought of the interactive approach.

Results
Students felt more confident in all areas after their induction. Positive feedback was received about the group activity sessions and overall this was preferred to lecture based sessions.

Discussion
The OSSICLE model for medical student induction was more preferable for students compared to traditional, lecture based methods. Students enjoyed the interactive induction process, in particular the social element of learning both in small groups and in the e-learning environment. Entry level behaviour could be assessed and skills refined using a series of clinical scenarios. The pre-induction questionnaire highlighted there is an element of skill decay; therefore students are likely to continue to need to repeat inductions at other Trusts as they progress through the course. Use of an OSSICLE structure may decrease the perception amongst students that this is a mundane and unnecessary task. The OSSICLE model could be trialled on students at later stages of undergraduate training to see if they also prefer a more interactive method of induction.

References
Utilising Direct Observed Procedural Skills (DOPS) enhanced by video as a learning tool for the acquisition and maintenance of procedural clinical skills

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Background and Purpose
There is a pressing need for trials that evaluate skills performance in the simulated setting. In the workplace, publications on what enhances learning in the development of procedural skills are limited. Senior medical students should by graduation be able to demonstrate procedural skills competencies outlined by the GMC. Simulated learning environments can provide a motivational and learner-centred climate which is conducive to learning. The acquisition of competence in a procedural skill can be enhanced through the quality of teaching, and the aptitude of the individual challenge using simulation-based education. Assessment processes that enhance a student’s procedural competence in the simulated setting before skills are attempted on patients would provide significant contributions to medical education and patient safety. This study aims to investigate what enhances the acquisition and maintenance of core procedural skills of year 4 students in the simulated setting using a randomised control trial.

Methodology
Students were randomly assigned to 2 groups: experimental (n=25) and control (n=25). All students carried out a procedural skill (cannulation) on an anatomical arm. The experimental group received a formative DOPS assessment and debrief by a tutor with a personalized video of their own performance. Participants in the control group received a formative DOPS assessment but with a standard cannulation assessment video. All students were invited to carry out the same DOPS assessment again at 4 week, 12 week and 6 month intervals. They received a short questionnaire prior to each assessment in order to ascertain the utilization of their video as a learning tool. A focus group will explore the effectiveness of different video debrief tools in the acquisition and maintenance of procedural skills.

Results
Analysis of the DOPS assessment will give an objective quantitative measure of the impact of self, versus general video debrief. Analysis of the focus group will give student perceptions of the impact of both video types.

Discussion and Conclusions
This study would identify how an audio visual record of a DOPS assessment as a formative learning tool can improve the acquisition and maintenance of skills acquired beyond the post training interval.

References
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Streamlining Assessments: Can Weight of Coursework be used to Predict Grade Awarded?

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Background and Purpose
University of Bristol Medical undergraduates submit a portfolio at the end of their Reproductive Health and Care of the Newborn attachment. The portfolio includes evidence of reflective learning and a logbook of experience. Given the wide variety of sizes of portfolios submitted we wished to determine whether a correlation existed between portfolio weight and grade awarded. No published literature exists which correlates quantity and quality of submitted work.

Methodology
The portfolio forms 30% of the course mark, is double marked by trained examiners who award borderline, pass, merit or distinction. Two cohorts, Group A, 62 portfolios and Group B, 61 portfolios were weighed using digital scales. Investigators were blinded to the mark awarded.

Results
Group A data reveals significant weight differences between the borderline and pass group, mean weights were 0.83kg (+/-0.082) and 1.20kg (+/-0.063) respectively \( p=0.0493 \) (standard error of the mean-SEM). There was a trend to significance for an increased weight moving from pass to merit portfolios, mean weights were (SEM) 1.20kg (+/-0.063) and 1.38kg (+/-0.068) respectively \( p=0.0642 \). There was no significant weight difference between the portfolios awarded either a merit or distinction, mean weights were (SEM) 1.38kg (+/-0.068) and 1.38 (+/-0.15) \( p=0.998 \).

Using receiver operator curve (ROC) analysis, a screening test was derived from Group A. Area under the curve (AUC) using weight as a screening test to distinguish borderline/pass from merit/distinction portfolios was 0.7 (95%CI 0.57-0.84) \( p=0.0072 \) (where a test no better than random guessing would give AUC=0.5). Using a cut-off weight of greater than 1.115kg gave a sensitivity of 78.8% (95%CI 60.9-89.9) and a specificity of 61.5% (95%CI 40.6-79.8). This cut-off was applied to a validation cohort (Group B) with the following marks, borderline-0, pass-33, merit-24 and distincton-4, (weight range 0.23-1.66kg) where it produced a positive predictive value of 52.2%.

Conclusions
There is a significant association between increasing portfolio weight and mark awarded which progresses through the borderline, pass and merit grades. By contrast there is no significant weight difference between portfolios awarded merit and distinction grades, here differences between portfolios are clearly qualitative. It was not possible to validate a screening test which distinguishes borderline and pass grade portfolios from those obtaining merit and distinction, to use such a screening test in educational practise would carry a high moral hazard and would be difficult to defend on the grounds of fairness.

References
Does everyone really leave it to the last minute? Foundation Programme ePortfolio evidence submission dates across a training year

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Background
The Foundation Programme is followed throughout the UK for newly qualified doctors. In this programme proficiency in defined competencies must be demonstrated in order to progress and ultimately be licensed to practice medicine. The NHS Foundation ePortfolio is an online tool used to document progress through this Programme.

A key part of documenting progress is the collection of various types of evidence in the ePortfolio e.g. Supervisors reports, CbDs, miniCEXs and TABs. Some of these have pre-determined deadlines; others are collected throughout the year.

Aims
This paper will investigate the patterns of evidence submissions across the training year and explore the times of the year where greater or fewer numbers of forms are saved.

Methodology
Using anonymised data on form submission from the ePortfolio database from the 2010-11 and 2011-12 foundation training programmes, a medical training year will be divided into its component days. Evidence submission will be counted for each day, and patterns analysed cumulatively and by type.

The initial data set will be drawn from the Scottish Deaneries. So far workplace based assessments and supervisor end of placement report submissions have been analysed for the 2010-11 training year. Approximately 180,000 of these forms were submitted into the accounts of 1585 trainees in this period.

Results to date
Preliminarily results show that there is a marked variation in evidence submission dates towards the end of training placements. This indicates that in many cases an ePortfolio evidence collection is left to the last minute. In addition there is a general trend for form submissions to occur in the last few months of the training year.

Discussions and Conclusions
Although it has been anecdotally observed for some time that form submissions to the ePortfolio are left to the last minute, here we present confirmation that this is indeed the case. It is hoped that by investigating this phenomenon in detail that it will enable training programme providers to discuss potential reasons for the behaviours that drive this pattern and possibilities to change them in future training years.

This could lead to a reduction on the impact on senior clinical staff at certain times of the year who are currently being asked to complete many forms in a very restricted period of time. In future years it will be interesting to observe how the introduction of a new curriculum and new assessment and appraisal mechanisms alter the pattern of form submission.
Development of clinical reasoning: a cross-sectional comparative study of three medical schools

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Background and Purpose
Clinical reasoning research over the past 40 years, has concluded that experts use less, but more selective, knowledge in a more expeditious way, based on the construction of schema, scripts and other representations of the relation between signs, symptoms and diagnoses, derived from clinical practical experience.

The information above is of very little use in assisting Medical Schools in the difficult task of deciding which strategies should be adopted to foster clinical reasoning in undergraduate students and to make sure that this will continue to develop through their professional lives. This study aims to mitigate this lack of information, by investigating which type of the curriculum has a favourable or unfavourable impact upon clinical reasoning at the end of undergraduate medical education.

Methodology
A cross-sectional comparative study between three different medical schools (Derby, Nottingham and Coimbra) was conducted. Two cohorts in each school were selected, one with only little exposure to clinical practice and one of final year students near graduation. Answers to a clinical reasoning test (CRT) (Cronbach $\alpha = 0.64$ Cronbach on standardised items $\alpha=0.73$) were collected and compared between schools and cohorts.

Results
Results from the comparisons between schools and cohorts will be presented and discussed. These show some differences between groups, some of which favour of the PBL group, and also an effect of clinical exposure on clinical reasoning strategies. Possible implication for assessment, educational interventions and curriculum development will be discussed.

Discussion and Conclusions
Clinical reasoning is complex process; research on the effect of different curriculum models seems to indicate that there is a differential effect of PBL on the development of clinical reasoning at an undergraduate level. However some found that effect to be positive, fostering integration of biomedical knowledge and even a moderated effect on reasoning skills. Others found that effect to be negative, reporting students in a traditional curriculum present better results in terms of structure and flexibility of reasoning strategies. Our results add new elements to this discussion.

References
Peer estimates of professionalism correlates with the Conscientiousness Index

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Background and Purpose
Evidence suggests that negative student behaviour during undergraduate programmes is related to the likelihood of subsequent negative behaviour in later careers or post-qualification practice1 - 5. Measures of professionalism in undergraduate medical students are generally subjective in nature, and based on limited observations of behaviours in observed settings. We have previously described the Conscientiousness Index (CI), an objective scalar measure of conscientiousness over many occasions6, and shown that it correlates with independent faculty estimates of students’ professionalism6 and peer estimates of low professionalism7. In this study we test the hypothesis that these measures of conscientiousness relate to independent peer estimates of professionalism, and that this relationship is improved by greater familiarity between peers, thus further validating the CI.

Methodology
First and second year medical students (n=205) completed an online peer assessment exercise. Tutor groups, each consisting of 10 students, were invited via a separate email to participate in this study. Students were required to nominate the peer they perceived to be ‘most’ and ‘least’ professional from their tutor groups. Each student’s peer assessment votes were totalled for ‘most professional’ and ‘least professional’. These totals were correlated with Conscientiousness Index (CI) scores for individual students.

Results
Peer assessment within tutor groups correlated significantly at both the ‘most’ and ‘least’ professional end of the spectrum, respectively, for year 1 (p<0.001, p=0.003) and year 2 (p=0.018, p=0.008).

Discussion and Conclusions
Pearson’s correlations have shown that greater familiarity with the asseesees enhances the correlation between professionalism as measured by peers (votes) and professionalism as measured by faculty (CI scores). This study therefore further validates the use of conscientiousness, as the student outliers as identified by the CI were also identified as either cause for concern or exemplary by their peers, as measured by votes received. It could be speculated that greater familiarity with those being assessed improved the reliability of the peer assessment exercise. Basing the assessment on tutor groups enabled the number of observations potentially considered to be increased as the assessors and asseeses attended multiple compulsory teaching sessions together each week. This meant that students were observing a wider range of behaviours displayed by their peers by observing those they assessed in a variety of contexts. This array of behaviour is often not witnessed by faculty when conducting assessments of professionalism, as students are often able to ‘switch on’ professional behaviour in the presence of those they believe to be their superiors or responsible for assessment.
Professional Simulated Patients or Professional Examiners: Can Actors Replace Physicians as OSCE Examiners?

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Background and Purpose
Medical schools have used simulated patients to teach communication skills for over thirty years. They provide a realistic patient experience in a safe setting. In addition to teaching, simulated patients are used in monitoring and assessing performance within the Observed Structured Examination (OSCE) format. This examination is widely used due to its established reliability and validity. As the demand for OSCE assessments in Medical schools rises, difficulties in physician availability and the cost this involves, has raised the possibility that simulated patients could act as assessors.

This study aims to identify any continuity of scores provided by simulated patients (SP) and examiners. This may be of particular interest during the early years of study, where a global assessment of key aspects of communication such as questioning and listening skills is highly relevant, in comparison to the more senior and post graduate students where higher levels of competencies are required.

Methodology
Third year medical students (n=93) were assessed independently by SP and clinical teaching fellows (CTF) during an OSCE on their history taking skills. Both assessor groups were provided with verbal and written examples what would represent a ‘very poor’, ‘average’, and an ‘excellent’ student and guidance on how to complete the form. A combination of 4 CTFs and 10 actors assessed students on 4 different history stations. After each 8 minute consultation global impressions of students’ questioning and listening skills were marked on a 10cm visual analogue scale, which were then converted into percentage scores. Only following completion were CTF and SP permitted to discuss the candidate.

Results
Initial results show that Actors and CTFs provide similar global assessments of students’ questioning and listening skills. Patterns of marks indicate that they seem to be identifying the same strong and weak students. Initial analysis shows no significant difference in the distribution of scores between assessor groups (Mean scores: Questioning: CTF=67.9, SP= 68.7; Listening: CTF= 66.4, SP= 67.5; Independent Samples Mann-Whitney U Test not significant, p=0.631 for Questioning, p=0.515 for Listening). Full Statistical analysis of data is still underway.

Discussion and Conclusions
As this study indicates no difference in global scores provided the two groups, simulated patients could be used instead of CTFs to assess basic questioning and listening skills. This may bring benefits in terms of cost, patient perspective or other qualitative dimensions. Additional analysis of the data and implications for curricula will be discussed.
Feedback that includes a completed marking rubric is considered to be of significantly higher quality by third year medical students than any other combination of feedback

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Background and Purpose
There is evidence that scoring rubrics may provide more valid and reliable marks and have the potential to promote learning and/or improve instruction¹. This prompted development of a rubric for the written project completed by third-year Bristol medical students as a Student Selected Component in the Musculoskeletal Diseases, Emergency Medicine and Ophthalmology (MDEMO) course. Development of the rubric was supported by literature searches, student and tutor focus groups, a training workshop for tutors, student and tutor questionnaires and a moderator meeting. In this study we investigate the quality of feedback to students regarding their written MDEMO project and the significance of using the rubric in feedback.

Methodology
Students attending a compulsory Central Teaching Day who had completed the MDEMO module in the previous six months were asked to complete a short questionnaire about the new rubric and the types and quality of feedback they had received regarding their written project. Students responded to questions on a Likert scale from 1-10. Statistical analysis was carried out using Mann-Whitney tests to compare groups receiving feedback, including a completed rubric with those who had any other type of feedback for questions answered with the 10 point Likert scale.

Results
Response rate at the teaching day was 84% (76/90). Three groups were identified: no feedback at all (n=24), feedback not including the completed rubric (n=15) and feedback which included a completed rubric (n=37). The group that had received a completed rubric considered their feedback to be of significantly higher quality (p<0.001), had a better understanding of the standard expected of them (both questions p=0.002), better understood the areas where they could improve their essay/project writing (p<0.001), and thought more positively about their learning (p=0.013) than students who received some feedback but not a completed copy of the rubric.
Discussion and Conclusions

Our tutors can use the developed rubric to provide feedback that is valued more highly by students than other forms of feedback. Providing effective feedback takes time and effort and there can often be resistance to change. Demonstrating methodologies with greater impact is therefore important. We plan to publicise these results amongst faculty, introduce a formal feedback pathway which includes the rubric and exemplars to help further clarify the nuances of the rubric and the standard expected of students and tutors. Progress and further analysis and discussion of the project will be presented at the conference.

References

Early undergraduate medical student experiences of simulated and ‘real patient’
venepuncture and intravenous cannulation

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Introduction
Medical students assigned to a clinical attachment are expected to carry out practical
procedures on ‘real-patients’ under supervision, as recommended by the GMC. Simulated
learning in a clinical skills-lab allows repeated practice in a safe environment. We aimed to
evaluate students’ early clinical experiences of two key skills, venepuncture and
intravenous (IV) cannulation during in their first year of clinical attachments.

Methods
41 third-year medical students attended venepuncture and cannulation skills sessions in
our skills-lab as part of their core skills training. Students also performed supervised
procedures in the clinical environment whilst on their clinical ‘firm’ attachments. They were
supervised by experienced tutors and clinicians. Student experiences and attitudes were
evaluated with a post-attachment questionnaire.

Results
All students were comfortable practicing these skills on simulated arms. The Majority of
students agreed that skills-lab practice is useful prior to practicing on ‘real-patients’. 42%
preferred practicing IV cannulation on simulated arms to ‘real-patients’, whilst 32% prefer
practicing venepuncture in this way. Students experienced difficulties performing
supervised ‘real-patient’ procedures. 22% had not performed venepuncture, whereas 37%
had not performed IV cannulation on ‘real-patients’.

Conclusion
The introduction of European working-time directive (EWTD) has resulted in lack of time
for junior doctors to supervise students performing essential bedside tasks. Simulated
venepuncture and IV cannulation provides valuable experience but cannot replace ‘real-
patient’ experience. Medical students experience difficulties practicing procedures in the
busy clinical environment. Learning should be facilitated by simulated clinical skills-lab
practice. Since this study, Imperial College has introduced a ‘DOPS (direct observed
procedural skill) portfolio’ to be completed by all undergraduate third year students, and
the core clinical skills-lab teaching programme continues across all hospital sites.
Venepuncture and IV cannulation are important skills in the undergraduate curriculum and
student experiences require ongoing monitoring and evaluation.
Do Students Receive Effective Written Feedback on their Workplace-based Assessments?

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Background and Purpose
Workplace-based assessment (WPBA) is a key component of medical education. It provides a framework through which the student can be assessed and receive feedback in the clinical setting. Research suggests receiving feedback is a truly valuable exercise for the learner. Effective feedback should be timely, specific, understandable, consistent with the needs of the learner and focus on important aspects of the performance.

In 2009 WPBAs were introduced at University College London Medical School (UCLMS) to all students in their first clinical year. White-space areas were added to the forms the following year, in order to permit assessors to expand on their feedback and provide for a better educational experience.

The aim of this study was to evaluate the written feedback given by assessors on WPBA forms and determine whether the grade of doctor giving feedback affects its quality.

Methodology
A 10% sample of the 367 students completing year three in July 2011 was randomly selected to hand in their WPBA forms for analysis. In total, 250 forms were received. Of these, 121 were mini-Clinical Evaluation Exercises (mini-CEX), 122 were Case Based Discussions (CBD) and 7 were Case Note Reviews (CNR).

The white-space areas of the forms were analysed using content analysis and coded using NVivo software to identify themes.

Results
Themes highlighted in qualitative analysis will be presented fully.

Discussion and Conclusions
This study shows that there is a paucity of effective written feedback given by assessors across all grades of staff at UCLMS. Written feedback was often limited to short comments giving little detail and many assessors provided no areas for improvement. In many cases the written feedback present only served to inform the student that they should continue practising and in some cases, was entirely irrelevant to the task.

Work is ongoing to produce resources for teaching staff in order to improve written feedback, and further research is being carried out at other medical schools evaluating the quality of feedback given on WPBAs.

References
Construct Validity of A 360° performance measure for post-graduate educational activities focused on professionalism, communications and interpersonal skills, and system-based practice

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Background and Purpose
As post-graduate medical education increasingly focuses on objective measures of efficacy and medical professionals are held accountable for performance in areas less directly related to patient outcome, developing effective and implementable instruments for assessment increases in urgency. There is an increasing need for instruments that are deployable in a clinical workplace to guide and evaluate post-graduate training in these areas. This paper reports the construct validity of a specifically designed 360° survey measurement instrument focused on the competencies of Interpersonal and Communication Skills, Professionalism and System-based Practice.

Methodology
The educational activity, entitled The Course for Distressed Physicians, was developed by the Center for Professional Health at Vanderbilt University. The participants in the course are referred for workplace difficulties that relate to team behavior. The class is intensive, small group, and includes sessions that span 6 months. The 360° survey was recently developed based on input from experts and a review of the literature. It was administered at the start of the CME activity, twice during the 6 months of activities time span, and again at 1-year post-activity inception. The construct validity measure chosen is a measure of the degree of “betweenness” of the index physician in their workplace social network. Betweenness is a broadly employed measure of the degree of “centrality” or the degree to which a individual is enmeshed in their workplace micro-system.

Results
The core of the analysis was a comparison of longitudinal measures of betweenness with measures of change in 360° performance ratings. The paper reports the findings of this analysis that indicates a concordance of these two measures.

Discussion and Conclusions
These findings indicate that the 360° instrument shows promise as a measure of behavioral competency improvement engendered by post-graduate medical educational activity. The 360° approach is a convenient, simple to administer and a valid measure of performance in a number of applications in medicine. In this application, the 360° instrument was employed as a measure of behavioral change after an educational activity. It was compared to different measure of behavior – the degree of social betweenness as measured by a social network index. The data indicate that as the activity progressed, the social network measure of team activity correlates with the 360° assessment of team activity of the activity participant.

References
Basic Science Education
Designing and Evaluating a Resource to Teach 3rd and 4th Year Medical Students about “The Importance of Circadian Rhythm and Temporal Variations in Clinical Medicine”

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Background and Purpose
There is increasing demand on medical educators to develop new, innovative platforms based on the emerging concept of active learning. Indeed, the General Medical Council called for radical reforms in medical education supporting the use of active learning, exemplified by the increasing use of Problem Based Learning in the United Kingdom\(^1\). This study was designed to assess whether the combination of an interactive lecture followed by small group discussions was an effective method of teaching in clinical medicine.

Methodology
This approach attempted to correct the drawbacks of pure didactic lectures and group work activities alone, specifically, the lack of active learning experienced in didactic teaching and the lack of guidance as to the level or breadth of knowledge demanded during solely independent learning\(^2\). 3 tutorials were run, each containing 8 students (n=24) from the 3rd and 4th Year of Manchester Medical School. The interactive lecture provided core information surrounding a diverse number of conditions in an environment that enabled student engagement and participation. The second section of these tutorials involved small group discussions surrounding the practical applications of the material delivered in the lecture in clinical case scenarios. A modified case-based approach was used, in which students could apply prior knowledge gained from the lecture to specialist case scenarios.

Results
The combination of these 2 teaching styles lead to a statistical improvement in test scores before and after the intervention, as well as high confidence in applying the information. Improvement in problem solving skills was also seen. Teamwork and communication skills however, did not improve. This may be due to the pre-existing development of these skills through years of Problem Based Learning.

Discussion and Conclusion
The data obtained lead one to conclude that active learning has a valuable role in medical education, and that this system specifically is best used in specific circumstances including acquisition of knowledge that is alien to the learner, revision of material, and for students who are entering independent learning courses from didactic teaching backgrounds. Additionally, this study shows that while the provision of material is important, it must be put in context regarding its practical applications in clinical medicine. Lastly, the results obtained suggest that students from several levels of education should be included in tutorials together to both enable peer-learning and to allow experienced students to practice their teaching skills.

References
Students facilitating learning in other students

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Background and Purpose
Formalised peer-teaching has been introduced into many medical curricula in recent years and is encouraged by professional bodies such as the General Medical Council in the UK\(^1\). The apparent success of peer-teaching relates to the ability of peer-teachers and ‘tutees’ to interact and communicate more effectively thus ensuring an environment conducive for learning. The aim of this study was to look at the effectiveness of introducing near-peer (NP) teaching opportunities, whereby more experienced medical students teach aspects of anatomy and physiology to less experienced students.

Methodology
Fourth-year medical students were invited to apply for NP teacher positions in anatomy. NP teachers were recruited using a defined training and selection procedure and successful students were provided with opportunities to demonstrate in formal practical anatomy sessions. NP teachers were asked a series of questions about the outcomes of the programme via a questionnaire survey and focus group. In addition a specific group of fourth-year students were chosen to design and provide a series of interactive physiology tutorials to run alongside standard teaching in a cardiovascular/respiratory module. Tutee feedback was collected via anonymous evaluation sheets after each tutorial and at the end of the tutorial programme.

Results
Feedback from anatomy NP teachers suggested that the programme provided them with a better sense of what anatomical knowledge and understanding is required at different stages of learning and enabled them to actively use their knowledge to facilitate learning in others. Teachers felt the opportunity also equipped them with more advanced teaching skills, which will be required as they take on future supervisory and teaching duties. For the physiology tutorial programme, feedback showed that students found the tutorials to be useful in consolidating material taught within the module and viewed the small group and interactive teaching styles aided their learning. The end-of-module written examination scores suggest that the tutorials may have had a positive effect on student outcome when compared with previous attainment.

Discussion and Conclusions
The study shows that NP teaching opportunities can be successfully integrated into a medical curriculum and can have positive outcomes for both NP teacher and tutees. Tutees appear receptive to NP teaching as a specific learning mode, whilst NP teachers recognise the benefit of reinforcing and expanding their own knowledge whilst developing essential teaching skills.

References
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Medical student attitudes towards post mortem examination and its utility in medical education: A brief qualitative study at one UK medical school

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Background

Student attendance at autopsies has been regarded as a useful teaching resource in undergraduate medical education: enabling revision of anatomy and pathology within a clinical context, enhanced insight into the results and efficacy of treatment, and an introduction to the reality that many patients will die\(^1\). Despite these educational benefits, obligatory autopsy sessions and formal pathology teaching and examinations have been increasingly cut from medical curricula\(^2\). Autopsies differ significantly from cadaveric dissection/prosection both practically and in terms of their social background, and these differences may make students reluctant and fearful of attending. Previous studies investigating this area have primarily utilised questionnaire-based or written techniques to survey student attitudes\(^3-8\).

Aims

To investigate the attitudes of students who have experienced autopsies, both in respect of its effect on them personally and its utility in medical education.

Method

A brief phenomenological study, comprising a nominal technique discussion group followed by focus group discussions with a small number of Cambridge Graduate Course in Medicine students, all of whom had attended autopsies and were undertaking, or had undertaken, cadaveric dissection. Demographic information, including age, religion and previous exposure death and dying, was collected by questionnaire in an effort to ensure a broad participant mix.

Results

5 key themes were identified, which were divided into 36 sub-themes. The responses varied greatly between students, but there was a general impression of an emotional continuum between dissection, autopsy and the living. Most students acknowledged the benefits of autopsy-based teaching both in terms of anatomy and physiology, and the psycho-social aspects of medical practice. However the variety of personal emotional responses to the experience was striking, ranging from withdrawn disinterest, to excitement, to outright distress, which some students felt detracted from the potential educational benefit. Students felt that the educational value of the session would be increased, and the negative emotional impact somewhat ameliorated, by a preparatory introduction to the mortuary aesthetic and Coroners’ system, and a well-thought out structure to the session.

Conclusions

The autopsy remains a useful and valued tool in medical education, however the emotional impact of attending autopsies should be actively considered when planning and undertaking these sessions, in a similar way to clinical sessions considering end of life issues. In addition, careful preparation and organisation of the sessions is required to maximise the potential educational benefits and reduce the negative emotional impact for students.

References


Peer Assisted Learning: win-win opportunity for graduate medical students

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Background
Peer Assisted Learning (PAL) has been increasingly utilised in medical education with benefits to both the teacher and the learner. In particular, PAL provides a suitable environment for medical students to develop teaching skills, an important recommendation recognised by the GMC\(^1\). Graduate-Entry Medicine (GEM) programmes are recent additions to the UK and few tailored PAL activities are available. Our study explored the effectiveness of an inter-year tutorial scheme in teaching GEM students and fostering teaching skills for tutors.

Methodology
Our student society implemented a comprehensive tutorial programme for the GEM pre-clinical curriculum. 8 senior GEM tutors were recruited and trained using an undergraduate ‘teaching skills’ module, including topics on educational theories, lesson-planning, presentation, question-writing, and feedback. Fifteen 2-hour tutorial sessions and three 2-hour mock exams were delivered to 31 pre-clinical students over the academic year. Each session consisted of two parts: (1) module overview with specific focus on difficult topics and (2) peer-reviewed, exam-format questions. Students and tutors completed anonymous evaluation questionnaires after each session. 5-point Likert-type and open-text responses were analysed.

Results
30 tutees responses (97%) were collected. Of these, 100% of participants agreed or strongly agreed that the teaching was of high quality and comparable to the standard curriculum. 100% and 97% felt that their knowledge was improved and were more prepared for the exams, respectively. 100% of participants felt that PAL tutorial schemes are useful and 97% would consider being a tutor next year. Tutees appreciated the empathetic experiences from senior peers in a comforting environment, enabling identification of learning gaps. Peer-reviewed questions and simulated exam-conditions were particularly beneficial. 8 tutors responses (100%) were collected. All tutors strongly agreed that their teaching skills have improved and pre-clinical knowledge was maintained. Sub-analysis showed increased confidence to deliver small-group teaching sessions and to adapt to different learning styles.

Discussion and Conclusions
This is the first reported study on extra-curricular PAL tutorial schemes for UK GEM students to our knowledge. We showed that PAL, delivered by senior students equipped with teaching skills, provides a high quality revision method to supplement the condensed GEM curriculum and to facilitate exam preparation. PAL not only maintains knowledge for senior students but also provides an early opportunity to build life-long teaching skills and promote teaching activities. PAL is a mutually beneficial tool. Students’ roles as co-educators should be expanded into standard GEM teaching.

Reference
Career Planning and Widening Participation
Exploring the influence of socioeconomic background on the career preferences of medical students at a London medical school

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Introduction

Widening access to medical education, particularly for candidates from low socioeconomic backgrounds, has become an increasingly important educational issue in recent years. Substantial effort has been made to explore the barriers such candidates face in accessing higher education. Whether socioeconomic status affects the career decision-making of medical students remains relatively unexplored. There is evidence that it may be a significant factor in determining the stability of career choices, and that monetary incentives may play a role in career choice in some circumstances. This study aims to explore the factors which medical students consider when choosing a potential career path, focusing on any differences related to socioeconomic background. It is the first stage of a comparison with the 2012/2013 intake of students - the first to pay the new increased tuition fees.

Methods

Following institutional ethics approval, a web-based survey will be circulated to students at a London medical school that aims to elicit the factors which students may consider important in making their career choices (e.g. interest in the field, mentor figures, work-life balance, perceived prestige, job availability, perceived competition, monetary factors). Data will be collected on parental income and socioeconomic class, and students' experience of secondary education in order to gain insight into their socioeconomic background.

Results

Results of the survey for the current cohort of medical students will be presented, including ratings of the importance of a set of factors involved in making career choices, and free text comments where appropriate.

Discussion

A variety of factors have been reported to influence career decision-making, including student temperament, tuition fees, work-life balance, and likely income and job stability. This study hypothesizes that medical students from lower socioeconomic backgrounds may make more 'strategic' career choices, including expressing a career preference earlier on, and place greater importance on factors such as length and cost of training, job availability, and income. It is anticipated that the increase in tuition fees for the 2012 cohort may accentuate this effect, as has happened in other settings. Experiences at medical school may be formative in choosing a career and the values students express may potentially influence their later decisions. The findings of this study may therefore have implications for the demography of medical specialties in the future.

References

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Clinical Skills
High fidelity, low cost simulation: an evaluation of a simulated surgical ward round for T year (third) medical students

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Background and purpose
Simulation is increasingly used in healthcare training. Its merits are well documented including improved participants confidence, communication and leadership skills. However, much of the literature describes training reliant on expensive and complex equipment. Third years at SGUL have some experience of patient contact but very little or no experience of learning in a ward environment. This session was developed for students to experience learning opportunities on a ward round prior to their surgical placement. This presentation will outline the design, describe its evaluation and present the results. Peer tutors simulate patients and nurses. Qualified tutors take small student groups around the simulated ward where they encounter patients, interact with a nurse, write in notes and receive ‘bed-side teaching’. One of the educational aims is to help students combine their observations with communication and clinical skills to increase their understanding and development of a global framework for patient assessment. Peer tutors give written feedback on each encounter to incorporate into the student's personalised feedback.

Methodology
An evaluation questionnaire (0-5 Likert scales and free text boxes) was designed, piloted and disseminated to all students doing the session during December 2011 and January 2012. 90% completed the questionnaires. The responses were analysed using MS Excel and thematic analysis by two researchers.

Results
91% rated the session as excellent or very good for realistic scenarios and patients. 77% found the feedback they received from the peer tutors very or extremely helpful, compared to 94% of the qualified tutors’ feedback. 91% of students now felt very well prepared for learning on their surgical attachment.

Discussions and conclusions
Overall the evaluation was very positive. However, the first tranche of questionnaires revealed that the least valued feedback was that given by peer tutors. In an effort to improve this we have 1) provided peer tutor training on giving feedback and 2) changed the way that feedback was given by asking peer tutors to fill in a written pro forma. The feedback is now more highly rated. This is a high fidelity, low cost flexible method of teaching that can be used in a variety of situations. It was positively evaluated by students and is ideal for supporting students in the transition from the Skills Centre to ward based learning. The small group aspect in the familiar setting eases concerns about a new activity and gives the students an opportunity to see the way in which knowledge and skills need to be integrated.

References
Comparison of using animal models versus artificial latex models in teaching Core Medical Trainees Seldinger Chest Drain insertion skills

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Background and Purpose
As part of the Modernising Medical Careers ¹, Core Medical Trainees are expected to be competent in performing seldinger insertion of chest drains before taking up post as a Medical Registrar. There is limited opportunity for formal training to gain competency without patient involvement. This workshop was developed to help trainees working in University Hospital Coventry and Warwickshire to gain their first stage of competency and to establish which method is more economical and efficient.

Methodology
The level of competency of core medical trainees was established by using a questionnaire prior to attending a lecture on the methods of chest drain insertion. The British Thoracic Society Guidelines ² was used as the basis of teaching chest drain insertions. All trainees were asked to perform chest drain insertion on both models (animal and artificial latex models). Preference of method, perceived level of realism, effectiveness and costs of the two methods were then compared. The West Midlands Surgical Training Centre was chosen for the training exercise due to its proximity and their license to handle animal models for medical training purposes.

Results
Preliminary results from the first 10 trainees indicate a 90% preference towards using animal models vs. artificial models. Experienced trainees and competent faculty members indicated that this was realistic to chest drain insertion in humans. A significant linear correlation was found on improvement in ability to consent (P<0.024) by more than one level of confidence. The four animal models used allowed eight trainees to practice their skills at any one time for the same cost of one trainee practicing chest drain insertion on an artificial latex model. The cost was estimated at £225 for four animal models, compared with £1282 for the artificial latex model (of which £289 was for the replaceable artificial latex skin) ³.

Discussion and Conclusions
Chest drain insertion is an important and essential skill that many medical doctors who work in acute medicine would regularly require. Teaching this practical skill using latex models has not been fully explored to determine its validity and cost effectiveness, whilst using animal models has been found to be both beneficial, valid ⁴ and cost effective.

References
How do doctors perform a fluid assessment of patients with Acute Kidney Injury?: A cross-sectional questionnaire survey

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Background and Purpose
Acute kidney injury (AKI) is a serious cause of mortality in UK hospitals. The recognition of hypovolemia by doctors has been described as inadequate 1. Evidence based clinical examination skills have been described that identify hypo and hypervolemia (Jugular Venous Pulse (JVP) 3, Postural Blood Pressure 2). Foundation doctors use the JVP 50% of the time when prescribing IV fluids 4, yet it is not known if this varies between grade or specialty. This study aims to describe how doctors conduct a fluid assessment and the terminology doctors use to describe this process.

Methodology
We piloted a questionnaire consisting of two free text responses. Questions asked were 1) “how would you decide how much fluid a patient with AKI requires?” and 2) “what would you call this process?”. We distributed the questionnaire online and in-person at teaching sessions between December 2011 and January 2012 to doctors and students in the West Midlands. We quantitatively analysed the use of JVP and postural BP between different groups of doctors using Chi squared and SPSS Ver 19.0. Qualitative responses were coded to allow generation of themes.

Results
Sixty Foundation doctors responded (response rate 61%), with a total of 159 respondents (nephrologists (n=17), general physicians (consultants and registrars) (n=39), 4th year medical students (n=19), surgical Core Trainees (n=12), Acute Common Care Stem (n=12)). Nephrologists (n=17) described using the JVP significantly more than foundation doctors (n=60) (100% vs 55%, p = 0.0008). Nephrologists described postural BP significantly more than foundation trainees (41% vs 6.7%, p = 0.0014). Eighteen terms were used to describe the clinical examination. The most common were “fluid status” (22%), “clinical assessment” (16.9%), “fluid balance” (15%) and “hydration status (12%).

Discussion and Conclusions
Senior doctors were more likely than Foundation doctors to perform a comprehensive assessment, yet less than half of senior doctors used postural BP as a diagnostic tool. The finding of 18 terms for fluid assessment suggests that multiple terminologies may cause confusion regarding what constitutes a comprehensive fluid assessment. We suggest that a standard examination model be developed, which could be taught and assessed. This may enable doctors to improve fluid prescription in AKI and other scenarios.

References
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To deliver a simulation and clinical skills programme to Year 3 Barts and The London School of Medicine and Dentistry medical students at the Homerton University Hospital NHS Foundation Trust

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Background and Purpose
In response to feedback from the Bristol Online Survey and internal end of placement reviews (July 2011) we undertook a pilot programme between September and December 2011 aiming to improve the experience of our Year 3 medical students. This was led by a Senior Nurse who delivers simulation and clinical skills teaching for all staff in the Trust. Students undertake clinical placements for the first time in year 3 - it is their earliest experience of “real life” as a doctor. A practice based programme that would enable them to participate in the day-to-day care of patients was developed.

Methodology
All students were met at induction to the hospital to outline the programme and ensure contact details should problems occur. Core Medical Trainees were keen to teach and so were enlisted to meet with students in their firms to undertake weekly observed history taking sessions. Clinical skills teaching was delivered and involved sessions on taking vital signs and their significance, oxygen therapy, cannulation, phlebotomy, arterial blood gas sampling, fluid challenges, catheterisation and OSCE preparation. This was incorporated alongside high fidelity simulation learning. Weekly feedback forums allowed students to raise issues. Evaluation took place internally and externally by the Bristol Online Survey.

Results
Students valued the clinical teaching input and its practical application to the real world. They were able to settle into their firms much more quickly thus making every moment count. The Senior Nurse was able to see students in the ward areas applying much of their learning with real patients. The week of high fidelity simulation was evaluated as a “light bulb moment” – whereas students have previously examined a patient’s respiratory system or cardiovascular system they now had to examine the “patient as a whole being”. The ABCDE approach was discussed but some students still found this challenging. Weekly forums enabled us to address any issues arising promptly. Overall our feedback was positive.

Discussion and Conclusions
Internal and external feedback has demonstrated an improvement in both the student experience and their satisfaction. We therefore intend to continue this pilot which will culminate in a mock OSCE in June 2012 prior to their assessment OSCE in July 2012. Having a key contact person and practical continuity appears to have helped learning. We plan to extend our programme to Year 4 obstetrics students and Year 5 students as preparation for their transition to Foundation Year 1 doctors.
Clinical Reasoning in Medicine: Developing students’ meta-cognitive skills

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Background and Purpose
This poster will outline the progress of the authors’ project in introducing formal Clinical Reasoning Skills sessions into the undergraduate medical curriculum. The authors had noted students’ limitations in diagnostic reasoning in assessments in Years 4 and 5 of the undergraduate curriculum. It was evident that despite having excellent core communication skills students struggled with the skills needed for effective analytical thinking when faced with complex diagnostic challenges.

Approach
In conjunction with student feedback this prompted development of a Student Selected Component (SSC) delivered to students in Years 3 and 4. This three week SSC was designed to introduce students to the concepts underpinning the process by which clinical reasoning occurs and based upon current educational research evidence1,2,3,4.

The SSC is founded on experiential practice in practical sessions where students analyse their meta-cognitive processes and develop hypothetico-deductive reasoning skills for more effective clinical reasoning. They also design and deliver a teaching resource focused on a specific diffuse complex presentation. Students work in groups directing their own progress through complex cases delivered by experienced simulated patients under the direction of academic clinician tutors.

Feedback from students was overwhelmingly positive:

“These sessions were very useful and could benefit all students, particularly if they were incorporated into the curriculum at the start of the year, rather than as an optional SSC”

“I have learnt a lot which I can use in future to make a more thorough and educated diagnosis”

All students felt that sessions such as these should become a core part of the undergraduate curriculum rather than an SSC. As a result of this work, two formal sessions focusing on Clinical Reasoning have now been introduced into the Year 2 undergraduate curriculum for all students. The SSC continues to be offered and is oversubscribed each time. We are now conducting a pilot research project, recording the sessions to permit analysis of the recordings to guide further exploration of the development of diagnostic reasoning and meta-cognitive skills in undergraduate medical students.

Discussion and Conclusions
Modern medical curricula generally focus on delivering clinical experience in system-specific rotations leaving students unable to organise information effectively when patients present with complex, multisystem illnesses1. This poster describes an approach taken by staff at one medical school to address this.

References
The Development of a Simulated Assessment of Procedural Skills

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Introduction
Simulation is an increasingly important tool in medical education and one which has been recommended by Chief Medical Officers (1). It’s use in post-graduate education is well established and well evidenced and has been shown to be a valid and reliable method of teaching and assessment(2,3,4,5,6,7). Simulation is also increasingly used in undergraduate education although there is little evidence for this. Given the inherent risks in teaching clinical skills procedures on real people, simulation may provide a useful way of establishing the level of training and competence attained by students before they practice on patients. The authors’ institution has recently implemented such an assessment and we hope to discuss its utility and feasibility.

Method
A sequential simulation assessment was delivered to fourth year medical students and consisted of three stations, each assessing two skills, based on the OSCE format. Students were marked against performance criteria agreed by clinicians and academic faculty prior to the assessment. The procedures were presented in the context of an acute care clinical scenario to allow for the demonstration of clinical judgment and to maintain clinical relevance.

Results
Although we had planned fifteen minutes per station for two skills, some students found this insufficient, for example no student was able to complete the urethral catheterisation and subcutaneous injection station in the allotted time.

The fifty students and three assessors concluded that the format of the assessment was efficient and fair to all candidates and that presenting the assessment in the context of a clinical scenario added realism and relevance. Some students reported concern that they would be subsequently unable to practice the skills on patients as they were not working in an appropriate clinical setting for example child or mental health.

Discussion
Despite most students completing the sequence in the allotted time, this will be increased as we suggest time pressure should not affect safe clinical practice. Building the skills into a clinical scenario added realism and relevance into a low fidelity simulated assessment and allowed the student’s experience to be more typical of real life. We were also able to build clinical judgment into the assessment. This method of assessing undergraduate clinical skills appears to be a feasible and acceptable way of assessing skills when compared to individual simulations and in the absence of clinical context. Further work is required to determine an acceptable level of overall performance prior to clinical practice.

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Affordable surgical skills teaching for medical students: Evaluation of a novel course

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Introduction
We evaluated the effectiveness of a new advanced surgical skills programme organised by the Leicester Medical School Surgical Society (SCRUBS) in November 2011. The course aimed to provide affordable training for medical students in surgical techniques which they may not be exposed to as part of their medical school curriculum. Furthermore, the course provided a low pressure environment in which students could develop their skills to a high standard.

Methods
Seven surgical skills (tendon repair, subcuticular suture, aberdeen knot, surgeon’s knot, tying at depth, vertical mattress suture and slip knot) were selected, which provided exposure to a range of surgical theory and techniques. The course was held in a purpose built clinical skills unit due to the use of animal tissue. Teaching was consultant lead and provided by Core Surgical Trainees (CSTs). Student participation was limited to those that had had some experience in suturing before. All students were asked to rate 1) their perceived usefulness of the skill, 2) their confidence in the skill before and 3) after the course. Qualitative feedback on the course structure and content was also sought.

Results
A total of 6 CSTs, 1 consultant and 18 students (12 male, 6 female) attended the course. In total, we received completed questionnaires from 13 students. All of the skills were rated between useful and extremely useful (average of between 4 - 5 on a 1-5 scale), with the subcuticular suture being rated the highest (5.00/5). The vertical mattress suture was the skill that the students were most confident with before the course (2.54/5). The students were most confident with the surgeon’s knot after the course (4.31/5). The skills in which the students reported the greatest improvement were the slip knot, tying at depth and tendon repair (+2.15/5). However students reported that they were the least confident with tendon repair after the course (3.23/5). Overall, qualitative feedback was positive, with the majority of students describing the teaching quality, high tutor:student ratio and the chance for informal career advice from the CSTs as positive aspects of the course.

Discussion
Our results have demonstrated that this is both an economical and highly effective method of teaching for these skills. They have also highlighted ways in which the course can be improved in future as well as validating the usefulness of the skills already being taught.
Can unplanned simulation training help prepare undergraduate medical students for the transition from student to junior doctor?

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Introduction
Preparing medical students with the skills to deal with emergency situations as junior doctors can be very challenging due to the complexities of creating ‘real life’ experiences in artificial environments. Using simulation facilities and high fidelity models can create the effect of the ‘real world’ environment in terms of the physical set up, however it is often more difficult to reproduce the non-physical components. UMUST (Unexpected Medical Undergraduate Simulation Training) is an innovative training programme designed to create a simulated emergency experience for final year medical students to prepare them for practice.

Methods
Final year medical students from Liverpool University who undertake their clinical placements at Blackpool and Whiston Hospitals are randomly allocated into groups of 4 and attend 4 different scenarios at UMUST throughout the year. The scenarios are built on typical situations that foundation doctors will encounter. At the start of each week one group of students are given hospital pagers and are paged to attend a simulated emergency scenario on a high fidelity model. They do not know exactly when they will attend UMUST that week. On arrival at the simulation facility members of the education team facilitate a standardised simulation scenario. Each session is recorded and the students then watch the video of their performance and discuss their performance with the education team. An assessment tool has been developed and the groups are marked after each session by the education team. This assessment tool is not part of any university assessment so it is solely used to gauge if the students’ performances improve from scenarios 1 – 4. Questionnaires, based on previously published research (1) will be delivered to all students when they are Foundation doctors asking them to assess how relevant UMUST was in preparing them for practice. Focus groups will be held with the students before they graduate asking them to reflect on their UMUST experiences.

Results
Pilot studies on 4th year medical students who have used UMUST previously have shown that they felt UMUST was a very good learning experience. Initial feedback from the 5th year students currently undergoing UMUST at both Blackpool and Whiston hospitals have shown that they feel it is helping prepare them to work as junior doctors.

Discussion and conclusions
The students’ experiences so far suggest that UMUST is an effective and realistic method of learning. Results of the full evaluation of UMUST will be available in 2013.

References
Continuing Education
One-handed Surgical Reef Knots: Tuition or Intuition?
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ND Gollop, Medical Student Cardiff University

Introduction & Objectives
Surgical knot tying is a key skill for all surgical and medical trainees. However, it is not adequately taught in undergraduate medical curricula and most doctors attend basic surgical courses to learn these skills after qualification. The aim of our study is to assess whether early education improves the trainees’ ability, speed and confidence in surgical knot tying.

Materials and Methods
Two surgical knot tying sessions, one month apart, were held at Wrexham Clinical training Unit aimed at medical trainees from Cardiff University. The first session included 5 medical students (first exposure), while the second session was attended by eleven trainee, divided into group A (first exposure, n=6) and group B (second exposure, n=5). The second surgical knot tying session was split into three phases: written instruction; audio-visual instruction and one-to-one tuition with all other instructions available. Each phase lasted 30 minutes and was completed by all participant trainees. At each phase, performance of each participant was assessed by a peer trainee measuring time, in seconds, needed to accomplish a successful knot, knot quality, scored from 1 to 10 and number of knots performed.

Results
On comparing the performance of group A and B during the second session, group A were much faster than group B with the ability to tie more knots (median of 20 and 1, respectively). The median time needed to complete a successful knot by group A was reduced from 23 seconds in phase one to 6 and 4 seconds in phase two and three, respectively compared to 15, 5 and 4 seconds in phase one, two and three in group B, respectively. Both groups achieved the same median score during each phase, increasing with each phase (one, 5; two, 8 and three, 9)

Conclusion
Early education in surgical knot tying using progressive educational techniques improves the ability and speed of trainees in performing the skill.
The development of post-graduate education in safe pleural procedures

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Background and purpose
Since the National Patient Safety Agency published a report on the risks associated with intercostal chest drain (ICD) insertion the British Thoracic Society have updated their national guidelines. All pleural procedures must now be performed under direct ultrasound guidance to prevent complications. To reflect these changes, the respiratory department at the RSCH developed a pleural pathway service which aims to treat patients requiring procedures as outpatients, preventing unnecessary hospital admissions and providing doctors with training opportunities. This study aims to identify the obstacles in developing this service, in particular the training needs of doctors responsible for its provision. Appropriate educational initiatives developed as a result, will be evaluated and incorporated into the post-graduate medical education curriculum.

Methodology
A questionnaire survey was distributed among doctors of all grades in the medical, emergency and intensive care specialties. This aimed to assess current experience and proficiency of pleural procedures including the use of thoracic ultrasound. Feedback from trainees following a pilot thoracic ultrasound course was analysed to improve future interventions. Interviews were conducted with two pleural lead physicians in order to identify obstacles to the development of the patient pathway and generate ideas for improving trainee competence in ultrasound. Interviews were analysed using grounded theory.

Results
Quantitative data from the survey and qualitative data from interviews and feedback from the pilot ultrasound course will be presented.

Discussion and conclusions
Important barriers to the successful development of the pleural pathway were identified as lack of communication and support between radiology and respiratory departments; lack of formal ultrasound training for non-radiology trainees and inequality in access to opportunities to perform and practise pleural procedures. In order to address these obstacles, various educational interventions were developed. These included a pleural procedures rota to ensure distribution of supervised opportunities for trainees; a logbook to record competency and progress; a targeted thoracic ultrasound course, and small-group teaching for foundation doctors in basic ultrasound and management of patients with ICDs.

Recent research showed that the greatest gains in patient care and safety are made through implementation of a model that includes mandated effective training, referral of procedures to a focused procedural group and use of real-time ultrasound. By acting on feedback and re-evaluating teaching interventions, we hope to use an iterative approach to providing a sustainable solution to the safety and efficacy of pleural procedures.

References
Student Experience of Learning About Prescribing; An Area of Sound Knowledge?

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Background
Despite the immediate need for junior doctors to prescribe drugs safely and effectively upon qualification, there remains huge variation in what and how this is taught to our future doctors.

Objectives
1. To investigate student experience of prescribing
2. Investigate student opinions of their teaching in prescribing
3. Investigate students’ perceived learning needs and preferred methods of learning
4. Investigate subjective student confidence levels in:
   - Global prescribing as an FY1 doctor
   - Using the BNF
   - Managing common medical emergencies
   - Prescribing for common medical emergencies

Methods
A survey of 35 final year medical students was conducted at the Great Western Hospital in Swindon, shortly before sitting final examinations. Students were asked to grade their confidence on a scale of 0 to 4 in the confidence areas described above from 0 (no confidence) to 4 (very confident).

Results
All students surveyed had practiced prescribing on a drug chart. The teaching was ward based (in 34.5% of cases), informal (34.2%) or formal (87.1%) and was delivered by a registrar/consultant (68.6%), junior doctor (37.1%), pharmacist (42.8%), nurse (3.1%) or self directed (9.3%). Only 13.3% believed that prescribing was well-taught. Confidence scores were very low in all 4 areas measured. Median scores for levels of confidence were:

- To prescribe as an FY1 doctor: 1 (IQR 1-2)
- Using the BNF: 2 (IQR 2-3)
- Managing common medical emergencies: 1 (IQR 0.75-1.25)
- Prescribing for medical emergencies: 1 (IQR 0-1)

All students believed practical tutorials to be useful for learning about prescribing, with 90% believing that formal ward teaching was useful. Only 50% felt that theory tutorials were useful, despite this being the main mode of teaching prescribing in Medical Schools. Most (93.8%) believed prescribing is relevant to final exams (there is a prescribing station in the University of Bristol Final OSCE), and 65.6% believed that prescribing is a useful way to revise the management of medical emergencies.

Discussion and Conclusion
Students are dissatisfied with the teaching they receive on prescribing, and do not feel confident to be an FY1 managing/prescribing for common emergencies. The entire group surveyed believed that a practical tutorial approach would be useful in addressing these knowledge gaps.

Recommendation
Practical teaching on prescribing should be incorporated into University Curricula. Further studies will need to ascertain the best way of doing this and whether it improves prescribing skill and confidence in students.

References
A Comparison Between Tutor-Led Tutorials and Self-Directed Tutorials for Medical Students Learning About Prescribing in Common Medical Emergencies. Are Prescribing Tutorials a Useful Preparation for Practice?

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Background
Despite the need for safe effective prescribing upon qualification\(^1\), there is huge variation in how this is taught. Our survey of final year medical students showed low confidence prescribing and feeling under-prepared for practice\(^2\).

Objectives
1. To determine if a structured tutorial programme could:
   5. Reduce numbers of drug errors, and improve drug chart safety for common medical emergencies
   6. Improve subjective confidence levels for:
      o Global prescribing at FY1 level, Managing common medical emergencies, Prescribing for common medical emergencies, Using the BNF
2. To compare the effectiveness of tutor-led and self-directed tutorials in the above measures, and explore student preferences.

Methods
35 final year medical students participated. Students graded their confidence levels in the above 4 confidence areas from 0 (no confidence) to 4 (very confident).

Students were tasked with individually prescribing on drug charts for 4 medical emergency scenarios, using a BNF. Group A (17) did this weekly within 4 tutor-led tutorials, during which drug charts were collected then answers discussed. Group B (18) prescribed in a self-directed manner using any resources they required. Drug charts were collected weekly and written answers provided. After 4 sessions students re-scored confidence, then swapped tutorial type for 4 further sessions with new scenarios. Preference was determined after 8 sessions. I graded drug charts and drug errors on safety and appropriateness.

Results
Complete drug charts were available pre and post tutorials for 16/17 and 14/17 students respectively in Group A and 18/18 and 16/18 students in Group B. 26/31 (83.87%) preferred tutor-led tutorials.

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<th>TUTOR LED TUTORIALS (Group A)</th>
<th>SELF DIRECTED TUTORIALS (Group B)</th>
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<tr>
<td>Harmful Drug Errors</td>
<td>Before: 57 After: 3</td>
<td>Before: 55 After: 14</td>
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<tr>
<td>Safe Drug Charts</td>
<td>Before: 15/16 (93.8%) After: 3/14 (21.4%)</td>
<td>Before: 16/18 (88.9%) After: 16/18 (62.5%)</td>
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<td>Confidence Scores</td>
<td>Global Prescribing 1 2 2 2</td>
<td>Medical Emergencies 1 2 1 2</td>
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<td>Medical Management 1 2 2 2</td>
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<td>Using BNF 2 3 2 3</td>
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Discussion and Conclusion
Although both tutorial types decreased errors, more dramatic reductions in “unsafe” drug charts and harmful drug errors occurred in the tutor-led group. Students preferred these tutorials. Tutor-led tutorials seemed superior in improving confidence in general and emergency prescribing. Both tutorial types increased confidence with emergency management and using a BNF. Practical prescribing tutorials, ideally tutor-led, should be incorporated into medical curricula to improve prescribing ability and confidence. This may help prevent drug errors, improving patient care and safety.

References

269
Perceptions of training needs in acute kidney injury: A cross-sectional, mixed methods questionnaire survey of West Midland doctors

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Background and Purpose
A national Acute Kidney Injury (AKI) audit highlighted deficiencies in education at the undergraduate and postgraduate level. Previous work has shown that half of Foundation doctors and Core Medical Trainees felt their training on AKI was inadequate. In the same population, most doctors were not able to define AKI. It is not known if this is reproducible in other grades and specialities of UK doctor. AKI can be defined using the RIFLE criteria. The aim of this study is to describe how postgraduate and undergraduates define AKI, and to identify specific topics within AKI they would like further education.

Methodology
We piloted a questionnaire consisting of two free text responses. The two questions were “how would you define AKI” and “if you could ask one question about AKI that you would like further teaching on, what would it be?”. This was distributed online and by paper at hospital teaching sessions between December 2011 and January 2012 to doctors and students in the West Midlands. We used Chi squared to compare proportions of groups correctly defining AKI. Using SPSS Text Analytics for Surveys 4.0, we performed a thematic analysis, coding responses to the second free text question.

Results
We collected 159 responses, including 60 Foundation doctors (61% response rate) and obtained a cross-section from the following: nephrologists (n=17), general medicine consultants and registrars (n=39), final year medical students (n=19), surgical Core Trainees (n=12), Acute Common Care Stem doctors (n=12). Nephrologists were significantly more likely to correctly define AKI than general physicians (94% vs 30%, p<0.0001). 5/60 (8.3%) of Foundation doctors correctly defined AKI. Thematic analysis showed that central themes varied by specialty and seniority. Students were most concerned with “definition of AKI”, and “causes of AKI”. Foundation doctor responses revealed practical themes such as “managing fluid overload in AKI” and “when to refer”. Senior doctor’s themes were concerned around clinical dilemmas in fluid management such as “balancing heart failure and AKI”, “use of diuretics in AKI” and “how much fluid to give”.

Discussion and conclusions
Our results show that AKI remains difficult to define for doctors across grade and specialty. Specific themes have been described that potentially allow educators to modify their teaching to suit their audience. We suggest that AKI education should focus on recognition primarily, followed by audience specific topics.

References
Involving junior doctors in complaint feedback; improving the quality of drug history documentation

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Background and Purpose
The National Patient Safety Agency has identified adverse incidents related to medication as a major cause of potential or actual harm to patients. Many hospital prescribing errors can be attributed to incomplete or inaccurate drug histories on admission. Junior doctors are rarely involved in resolving complaints arising from medication errors, missing opportunities to improve patient safety. Could discussing real medication errors improve the quality of junior doctors’ drug histories?

Methodology
We performed a retrospective documentation audit to assess two aspects of clerking quality; generic record keeping, using RCP approved standards, and drug/allergy history taking, using criteria from the Erice Medication Errors Research Group. Two cohorts of junior doctors (FY2 and ST1; n=10) working on an Elderly Acute Medical Unit were audited. Documentation relating to five admissions by each doctor was examined at the start of their rotation. A case study session, consisting of a small group discussion about complaints based on real clerking on the unit, was facilitated by a Specialist Registrar. The documentation was assessed again after 4 (n=10) and 8 weeks (n=5). Three junior doctors who did not attend the case study session acted as a control. We evaluated the acceptability of the intervention using a questionnaire.

Results
Generic record keeping standards were high for both cohorts prior to the intervention session (mean score 8.1/10 and 9/10); the drug/allergy history was documented poorly (mean score 2.6/6 and 3.9/6). Following the intervention, an improvement was seen (mean score 5.2/6 for drug history). This magnitude of change did not occur with the control group (scores 3.6/6 and 3.7/6). Importantly, standards appear to have been maintained at the three month post-intervention point (average score 5.48/6). Junior doctors found exposure to the complaints procedure beneficial, providing awareness of the possible serious consequences of inadequate clerking and documentation. Many commented that the use of ‘real-life’ case scenarios made the teaching session more relevant to their day-to-day practice. The absence of a consultant in the group meant they felt more able to engage in discussion and reflect on previous mistakes.

Discussion and Conclusions
Medication history errors at the time of hospital admission are common and important. Improved physician training has been postulated as a way to reduce the frequency of these errors. Reporting systems that are accessible and facilitate learning to all healthcare workers have been recommended. This brief intervention demonstrates improved medication documentation and is accepted by the group being assessed.

References
The Role of Reflection in Postgraduate Dental Education

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Background and Purpose
The aim of this study is to identify attitudes to, preparedness for and perceived benefits of reflection for teachers and General Dental Practitioners (GDPs) during continuing professional development (CPD). CPD has been mandatory for all qualified dentists since January 2002.1 The role of reflection in an educational environment is well documented.2 Others have also argued that learning occurs when experience with reflection and theory with practice, are integrated.3,4 A five year, part time Masters in Restorative Dental Practice (RDP) for GDPs starts in January of each year. The teaching approach is traditional and didactic with a significant practical element. A reflective session was recently introduced at the end of each teaching day.

Methodology
Following basic instructions about facilitating a reflective learning session, programme teachers were encouraged to run such sessions at the end of each teaching day. After 3 months the teachers will be offered formal training on how to deliver well managed and structured reflective learning sessions. Questionnaires, focus group discussions,5 and informal conversational feedback will all be used to collect data. The feedback and perceptions of teachers and GDPs will allow comparisons before and after the formal training.

Results
Preliminary feedback has been collected. Teachers have been positive about: (i) the perceived value of reflection as an aid to student learning (ii) the importance of reflecting on their long established teaching styles (iii) the perceived impact on their own personal development as teachers and (iv) the need for dedicated time for reflective learning. Further data collection and analysis from the students will be undertaken.

Discussion and Conclusions
End of day reflective sessions may be an excellent environment for consolidating the day’s learning. Group discussion has been shown to be a suitable forum for reflection/consolidation of the day’s teaching.5 GDPs will probably find reflection easier as they get to know each other and contribute more to the process.7 The unexpected benefits of reflective sessions to the teaching staff include increased awareness of the knowledge gained by the GDPs, what the GDPs have clearly not understood and how they may need to adapt their teaching accordingly in the future. The compulsory nature of CPD does not ultimately guarantee an improvement in the quality of patient care. However, reflecting on the learning experience may contribute to improved knowledge and skill, which could lead indirectly to improved patient care.

References
A model of CPD delivery to meet GMC revalidation requirements

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Background and Purpose
Revalidation has been formalised by the General Medical Council (GMC) to regulate doctors, ensuring that they remain up-to-date and fit to practice.\(^1\) As part of revalidation consultants are required to provide evidence at appraisal of Continuing Professional Development (CPD). The Royal College of Anaesthetists has outlined CPD topics in the form of a matrix which is made up of three levels; 1 = essential; 2 = specific to an individual’s clinical practice; 3 = special interest areas.\(^2\) The matrix covers a range of topic areas including emergency management and resuscitation, education and training, patient safety and healthcare management.\(^3\) Units of CPD are often referred to as credits; one credit represents approximately 1 hour of professional development.\(^4,5\) A programme developed in Leeds, one of the largest teaching hospitals in the UK (140+ anaesthetic consultants), provides consultants with opportunities to complete the level 1 matrix locally. This programme is within time already dedicated for audit/governance, thus providing an internal source of 25 credits annually.

Methodology
The thirty topics are presented at monthly departmental meetings. Over a five year period each topic is presented twice, allowing for annual leave or other absences. The topics are delivered predominantly by trainees, supported by their educational supervisor. Feedback forms are completed by attendees to allow presenters to enhance their teaching skills. The feedback triggers the issue of certificates as evidence for revalidation in both paper and electronic formats. Feedback on content and presentation is collected quantitatively using Likert scales.

Results
Evaluation of the sessions has been extremely positive with a high quantitative feedback response rate. Additionally, 65% of respondents provided useful qualitative feedback on the presentations. Colleagues felt the format offered an effective method of providing evidence of level 1 topic review with a mean score of 4.6 on a 1-5 Likert scale (5 representing definite agreement). Attendance at audit sessions has also improved since the introduction of the scheme.

Discussion and Conclusions
This model of delivering CPD allows consultants to complete essential topics required for revalidation. The CPD matrix could be modified by other medical specialties using their specialty curriculum to create level 1, 2 and 3 topics. A teaching programme covering matrix topics can be replicated by any specialty at a local level. Such schemes would be in line with the academy of medical royal colleges CPD principles.\(^6\) Additionally this model provides an opportunity for trainees to develop teaching methods and receive feedback, essential for their training portfolios.\(^7\)

References
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5. Royal College of General Practitioners, January 2010 RCGP guide to the credit-based system for CPD
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Undergraduate medical student perspectives on the debrief following simulation

D Lehane, N Jakeman, S Greenwood, J Farey

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Background
The debrief is recognised as the most valuable part of a simulation session in postgraduate training having a significant effect on instigating change in practice.1-3 Simulation is being used in undergraduate education with increasing frequency however there appears to be limited research into how undergraduates view the debrief and whether it should be approached in a different manner to that of postgraduate simulation training.

Method
The study aims to establish the features and characteristics of the debrief students value and perceive to be the most effective for learning. Students will be recruited from a cohort (n=36) of final year medical students during their Preparing for Professional Practice module. They arrive in Bath with varied levels of exposure to simulation and debriefing. With this in mind we will conduct a short survey (Feb-March 2012) to look at the amount of simulation and debrief to which they have been exposed. We will ask about the ratio of time spent on the debrief compared to the simulated scenario and ask students to rate their previous experiences of both simulation and the post simulation discussion. For example:

What has been your overall experience with simulation? Please tick ONE

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We then plan to run a series of focus groups (March-April 2012) with students who have experienced simulation delivered in a standard format at Royal United Hospital, Bath. These focus groups will be facilitated by staff not involved in the delivery of simulation with the final years to reduce potential for bias. It is intended to run 2-3 groups of 6-8 students giving a potential for bias. The focus groups will cover topics such as: what the students found to be the most useful aspect of simulation training and what discussion style they perceive to be most effective in supporting learning during the debrief.

Discussion
We will present an analysis of the data from the survey and the focus groups and discuss implications for the use and practice of debrief in simulation teaching. This study will help us understand the most effective way of running a post-simulation debrief to maximise learning for undergraduate medical students. This will help guide training for those tasked with delivering undergraduate simulation teaching.

References
When to Stop? A Novel Use of Simulation in End-of-Life Care Teaching for Undergraduate Students

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Background
Delivery of teaching on End-of-Life Care (EOLC) is highly variable within Undergraduate Medical Education\(^1\). Teaching is often delivered in a didactic manner leaving junior doctors frustrated with their lack of skills when caring for dying patients\(^2\). Simulation training is increasingly used to educate final year students about the rigours of life as Foundation doctors. Paediatric nurse training has used simulation to deliver training on EOLC\(^3-5\), however, there is currently no published description of its use in Undergraduate Medical Education. High fidelity manikin simulation is recognised as an important method for delivering both technical and non-technical skills training\(^6\). We have identified a further role for its use in facilitating understanding of decision-making processes in EOLC and discussion relating to differences with the more familiar acute care scenarios.

Method
We developed a simple simulation scenario that introduces the concept of EOLC decision-making. As most palliative care teaching is centred on cancer care we designed a scenario to address management of a patient with end-stage heart failure. The scenario was used to teach two groups of final-year University of Bristol medical students. We ran the scenario on a Laerdal SimMan simulator, but believe it could be run on a variety of equipment as required. By incorporating the scenario into an ‘Acute Care’ teaching session, we challenged students’ expectations of simulation as they are more familiar with drills for life-saving management of medical emergencies. The aim was to use the scenario to act as a spring board for discussions around EOLC and the appropriate use of the Liverpool Care of the Dying Pathway (LCP).

Discussion
We believe this is a tool that allows students to experience making decisions around EOLC and practice communicating these. Putting this within what students perceive to be an acute care situation adds a novel dimension. Discussions after the scenario allowed personal reflection in a safe, supported environment. This simulation highlights the importance of gathering relevant information to inform treatment options in EOLC through history-taking and thorough examination. Most medical simulation training features life-saving management. Exposing the students to the LCP in simulation settings prepares them to consider it appropriately when dealing with dying patients post-qualification.

We plan to evaluate the scenario using student and tutor feedback during March 2012 and will report on analyses of these data. Our presentation will discuss the extent to which the scenario facilitated student understanding of decision-making in EOLC.

References
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Video Assisted Learning – Is it always worth it? A randomised crossover trial

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Background
Studies have been conducted which use video assisted tutorials as an adjunct to improve clinical skills learning amongst medical students. Some support this new method of delivering teaching, whilst others found traditional practical demonstrations more effective. A previous study in our Academy supported the use of video-tutorials to enhance medical student learning of one core skill.

Aim
To assess whether the use of video assisted tutorials improve overall learning for simpler skills using an RCT.

Method
3rd year medical students from the University of Bristol commencing “Junior Medicine and Surgery” clinical attachments at Gloucestershire Academy were invited to participate in a randomised trial. Demographic information was obtained from a pre-session questionnaire. All students were taught on two core clinical skills, venepuncture and blood pressure measurement. Study participants were randomised into two groups. Group A students received a video tutorial and practical demonstration for venepuncture, and a practical demonstration only for BP measurement. Group B students received a video tutorial and practical demonstration for BP measurement, and a practical demonstration only for venepuncture. A blinded assessor then assessed the students on each of the two core skills, using a marking scheme from the University of Bristol video library of clinical skills demonstrations. Individual student scores comparing video tutorials (both skills combined) versus no video tutorials (both skills combined) was analysed using the paired t-test. A p value <0.05 was considered significant.

Results
The total number of students was 22 (m=8, f=14), 11 in Group A and 11 in Group B. Group A students (video) scored an average of 96% compared to 93% for Group B (no video) when assessing venepuncture. For blood pressure measurement, Group A (no video) scored on average 93% compared with 89% for Group B (video). Paired t-test analysis showed there was no statistical significance in watching a video tutorial prior to having a clinical skills session (p=0.672, CI -0.8 to 0.5).

Discussion and Conclusions
We have now investigated the effect of video learning on both simple and more complex tasks. We have found videos to be a useful adjunct for complex tasks but less so with more simple tasks in this single blind randomised study. One group achieved higher marks regardless of video exposure which might demonstrate an ability of these students to conceptualise skills more readily. Whilst videos can be a useful addition to clinical skills teaching we conclude that video assisted learning should be considered in selected, more complex, clinical skills.

References
Curriculum Planning
Trainee voice in designing the foundation programme - Is it time for a change?

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Background
The foundation programme is a two year programme that aims to prepare junior doctors for specialty training by helping them to develop and acquire the skills and knowledge required to meet the GMC standards. This study evaluates whether the foundation programme aids junior doctors who have already chosen a surgical career, to progress along this path.

Methods and Results
A questionnaire aiming to evaluate the foundation trainees’ thoughts on how helpful the programme is to career progression in surgery, was completed by 20 South Thames Foundation Trust trainees. 75% thought that the prospectus didn’t help them pick the best rotations for their career and 85% thought that the foundation programme was unable to help them choose between various surgical fields. 95% felt that they don’t have enough practical surgical involvement in their surgical rotations and 100% of trainees were allocated educational supervisors without the ability to choose someone in their preferred choice of specialty.

Conclusions
The foundation programme does not fulfil the aspirations of trainees that want to progress in the field of surgery. This fault could be addressed by involving trainees in the design and evaluation of the foundation programme.
Evaluating students’ perceptions following the implementation of a new undergraduate medical curriculum using the Dundee Ready Education Environment Measure (DREEM) inventory

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Background and Purpose
In 2009, Aberdeen Medical School curriculum was changed to include systems based teaching taught over three years with integrated early patient contact and communication skills tutorials. This was in contrast to the older curriculum consisting of less patient exposure at a later stage of their undergraduate training. The purpose of this study was to determine the views of current undergraduate students regarding the updated curriculum.

Methodology
First, second and third year medical students were invited to complete a voluntary and confidential online questionnaire. First and second year students were taught the new curriculum whereas the third year students were taught the older curriculum. The DREEM inventory consists of a 50-item questionnaire based on a five-point Likert scale. Responses were categorised in the domains: Perception of Learning, Perception of Course Organisers, Academic Self-Perception, Perception of Atmosphere and Social Self-perception. The differences between global and domain scores was statistically analysed using SPSS for Windows 17.

Results
We received 143 completed responses which were analysed according to the new curriculum (n= 104) and old curriculum (n = 39). A statistically significant global score favouring the new curriculum was observed in our cohort of students (147.7 vs. 130.8, \( P = 0.001 \)). Subgroup analysis found a significantly higher score among undergraduate students compared to mature students (142.3 vs. 132.3, \( P < 0.05 \)).

Higher significant scores in the following domains was observed between the old and new curriculum: Perceptions of learning (35.5 vs. 31.2, \( P < 0.001 \)); Perception of course organisers (34.1 vs. 29.2, \( P < 0.001 \)); Perception of atmosphere (35.9 vs. 331.6, \( P < 0.001 \)) and Social self-perception (20.5 vs. 18.6, \( P <0.05 \)). There was no significant difference in Academic self-perception difference between the years.

Discussion and Conclusions
The DREEM has been used in multiple healthcare levels previously to establish differences across sites. It is a comprehensive measure to assess areas where a healthcare system is performing well and identify any weakness. Although the students in this study rated the new curriculum highly, there was no statistical difference between the years for academic self-perception. Ensuring early patient exposure, examination, feedback and remediation would increase confidence amongst the medical students and reassure them regarding their academic process. The DREEM has also highlighted many positives with the new Aberdeen Medical School Curriculum, namely that integrated patient contact and systems based teaching has enhanced the learning atmosphere with course organisers being well received.

References
Willingness and attitudes of the general public towards the active participation of medical students in their healthcare

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Background and Purpose
UK General Medical Council (GMC) guidelines stress the importance of the active involvement of medical students in patient care in the undergraduate medical curriculum (1). However, little is known about the attitudes of patients in the National Health Service (NHS) to the active involvement of medical students in their healthcare. Previous studies were conducted on small clinic populations in the US, and focused only on patient attitudes to passive medical student involvement i.e. observing patient interactions with qualified doctors (2), and not active student involvement, i.e. the performing of examinations/clinical procedures by students, under the supervision of qualified professionals. In particular, very few (3) have investigated patients’ attitudes towards medical students performing invasive physical examinations e.g. digital rectal examination, or clinical procedures, such as venepuncture. Even fewer studies have looked at the influence of patient demographic variables on their willingness.

Aims & Objectives
To determine if patients allow medical students to perform more invasive procedures compared to less invasive procedures, and how this is affected by patient demographics and previous experience of medical students.

Methodology
A cross sectional survey was conducted in six areas of Birmingham, UK between January and April 2011. Respondents were asked to rank their willingness for medical students to perform history taking/examinations and clinical procedures of varying degrees of invasiveness in a self-administered, standardised questionnaire.

Results
293 people agreed to complete the survey, with a response rate of 80%. For both history taking/examinations and clinical procedures, people were more willing to allow medical students to perform less invasive procedures compared to more invasive procedures. Only 19.1% were willing for invasive examination (compared to 67.2% for history taking) and 13.7% for intubation (compared to 77.8% for measuring blood pressure). Whites and older people were more willing to allow all history taking/examinations procedures; additionally women were more willing to allow history-taking. Women, older people and whites were more willing to allow blood pressure measurement; whilst older people and those with previous experience were more willing to allow venepuncture. No significant associations were found for intubation.

Discussion & Conclusions
The public is less willing for medical students to perform more invasive procedures, with particularly low rates of willingness in certain demographic groups. This may be severely limiting opportunities for medical students to attain clinical competencies. Steps should be taken to educate and reassure patients of the role of medical students in the clinical setting.

References
Graduate Entry Medicine at Swansea University - the ‘6S model’

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Background and Purpose
The Swansea Graduate Entry Medicine (GEM) Programme is a new, four year standalone curriculum open to outstanding graduate students who have a first degree in any discipline. It developed from a feeder curriculum which allowed graduate entrants to complete two years at Swansea before entering the Cardiff Medical School curriculum in year 4 (1).

Methodology
The two year feeder programme established some curricular innovations upon which the new Swansea curriculum is founded, including ‘Learning Opportunities in the Clinical Setting’ (LOCS): short student-selected clinical learning sessions, and Clinical Apprenticeships with which the students engage from year 1 (2).

The curriculum design process evolved further with the application of established best practice in medical education, together with consideration of the particular requirements and views of a graduate entry student population based in South and West Wales and their teachers.

Results
The Swansea curriculum is founded upon six guiding principles, that it should be - Situated in the Clinical Setting. Learning to be a doctor by doing what a doctor does, where a doctor does it. >60% of total curriculum contact time (including 27% during the first two years) is directly in the clinical setting. Didactic lectures are kept to a minimum. 
Student-driven. Maximising opportunities for learners to ‘work it out for themselves’ through experiential learning (3).
Spiral. Repeatedly revisiting, reconsidering, expanding and reinforcing topics throughout the curriculum.
Simulating Clinical Practice. Varied, complex and unpredictable. Centred on patient presentations and clinical cases. Case-based learning ensures that even the most fundamental concepts are learned in a clinical context. Clinical skills teaching occupies one day a week from the beginning of the course.
Small. Facilitating high-quality learning within a supportive environment through small-group working and a relatively small intake of students. All the clinical teaching at Swansea is in small groups, including the nine Clinical Apprenticeships. These constitute one sixth of the course and the ratio of students to consultant teachers is 2:1.
Serving the needs of patients and the public. Reflecting the needs of its patients and communities. ‘Think global, act local’

Discussion
Curriculum design is a dynamic process. The curriculum continues to evolve, informed by new developments in medical education and with flexibility facilitated by a relatively small cohort size and a dedicated teaching and management team. Ongoing research and evaluation includes a focus on key innovations, such as Clinical Apprenticeships.

References
An evaluation of educational environment among module-4 [year -4] medical students during their Obstetrics and Gynaecology placement

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Background
The medical school learning environment has undergone considerable changes in the recent years under the guidance of GMC’s tomorrow’s doctors. There is an established positive effect between the environment and valuable outcomes of students’ achievements, satisfaction and success. The RCOG published a report in 2006, A Career in Obstetrics and Gynaecology – recruitment and retention in specialty. In this report, a survey of medical students and foundation trainees has shown that bad undergraduate experience is one of the main deterring factors for 11% of undergraduate students for recruitment in Obstetrics and Gynaecology. In order to improve the learning environment in Women’s health placement, we need to evaluate baseline of students’ perception objectively.

Aim
Our aim is to objectively evaluate students’ perception of their learning environment during Obstetrics and Gynaecology placement across three different sites using validated tool, DREEM [Dundee Ready Education Environment Measure] and to identify those aspects of environment that can be improved. In Keele Medical School, the module 4 students are allocated to the following three different teaching sites in their seven weeks of Obstetrics and Gynaecology placement

- University Hospital of North Staffordshire NHS Trust, Stoke on Trent
- The Shrewsbury and Telford Hospital NHS Trust, Shrewsbury
- Mid Staffordshire NHS Foundation Trust, Stafford

Methodology and analysis
The evaluation is done by the DREEM inventory. The DREEM consists of five categories

- Students’ perceptions of learning
- Perceptions of teachers
- Academic self perceptions
- Perceptions of atmosphere
- Students’ social self perception

The questionnaire is given to the students at the last week of the block in person. The study period is from September 2011 till July 2012. The study will be analysed with descriptive analysis.

Results and discussion
The overall mean score out of total score of 200 for the three sites are follows.
- Stoke on Trent - 145.4
- Shrewsbury - 152.6
- Stafford - 151

The individual items such as feedback given by teachers, school timetable issues and student support system have scored between 2 and 3, needing improvement have been identified. Poorly performing areas will form the basis for further qualitative studies. After the data analysis, information will be provided to the curriculum development team for further improvement.

References
Curriculum Mapping: Trainee Experience of the Curriculum in Psychiatry

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Background
There have been several changes to the way mental health services are delivered in the recent years. In one Trust in the south of England, services are being reorganised which change the way Consultants, Educational and Clinical supervisors will work. This is likely to have significant impact on the way training is delivered and will likely impact on trainee experience and expertise. In discussions about the best way to reorganise services it was felt there is a need to understand trainee experience as it is delivered and to map this with the way the curriculum is delivered at present and the trainee experience of this delivery. The curriculum of the Royal College of Psychiatrists (RCPsych) is written with Intended Learning Objectives (ILO’s) which trainees need to achieve. This study aims to understand the trainee experience of the curriculum of the RCPsych which would then feed into the discussions around reorganising trainee jobs within the Trust

Methodology
This study uses a qualitative research paradigm. The main methods used are pile sorting and further in depth interviews with 6 trainees regarding their experience of the curriculum. The trainees’ clinical experience was divided into several clinical encounters that trainees experienced during the course of their attachment. The data from this was recorded and transcribed. Transcribed interviews were then analysed for patterns and themes. These were then grouped based on the ILO’s in the curriculum and various clinical encounters.

Results and Discussion
The results will be presented in the form of graphs and quotes.

The major findings of the study were that the trainees get their experience from a variety of clinical encounters over a period of time. This mapped well into the ILO’s in the curriculum. Trainees identified regular supervision and contact with their clinical and educational supervisors as being important. This could be largely due to the degree of uncertainty associated with the specialty and its nature which required “thinking aloud” as a teaching strategy. These results will be utilised in designing job descriptions for trainees.

References
An Evaluation of the Teaching of Substance misuse in the undergraduate medical curriculum

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Background and Purpose
The use and misuse of alcohol, drugs and tobacco is one of the greatest health challenges today. Doctors have a vital role to play in recognising substance misuse and in assessing and managing the problems associated with it. This role includes working with patients, peers and also self-care. In English Medical Schools the teaching of substance misuse has been reported to be poorly represented in the curriculum with newly qualified doctors often feeling unprepared to deal with problems associated with substance misuse 1,2.

If our future doctors are to succeed in dealing with the multifaceted problems associated with substance misuse they require a better understanding of the problem and the interventions which are available. In 2005, a project with the aim of improving substance misuse teaching in undergraduate medicine was launched at The International Centre for Drug Policy (ICDP) which led to the development of a corporate guidance document. The ‘Substance Misuse in the Undergraduate Medical Curriculum’ document and its associated toolkit covers core aims and learning outcomes for undergraduate curricula, and good practice on delivery and is endorsed by the Chief Medical Officer and the General Medical Council, and is cited in Tomorrow’s Doctors.

Methodology
The project involves a Curriculum Co-ordinator in each participating medical school working with a National Project Co-ordinator based at St George’s, University of London. The Curriculum Co-ordinators working with local academic champions have undertaken a curriculum mapping exercise using the substance misuse toolkit as an initial template and also facilitated the development and implementation of substance misuse training into the curriculum. Many participating schools undertook a student survey to investigate whether students felt adequately prepared for SM related problems in clinical practice.

Results
The project has identified areas in the undergraduate curriculum where teaching of substance misuse is lacking/absent and facilitated the development and inclusion of new teaching materials which include the building of a shared resource of topic specific fact sheets produced by a panel of experts.

Discussion and Conclusions
Overall the project is succeeding in raising the profile of substance misuse issues in medical education and enhancing teaching to better equip graduates to tackle the issues of substance misuse in practice.

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E Portfolios
Consultants’ attitudes to the E Portfolio: a pilot study

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Background and Purpose
The e portfolio is an on-line tool designed to allow trainees to plan, record and reflect on learning. It facilitates assessment, forming the basis of the Annual Review of Competence Progression. While its presence has become increasingly dominant, doctors in training have voiced concerns over its relevance, and even its potentially detrimental impact upon their practice, learning and lives1.

Consultants remain the only group of hospital doctors who do not currently subscribe to the e portfolio. However, they are integrally linked to it, both on a practical level and in a supervisory capacity. There is a paucity of research into their opinions, particularly at a time of dawning revalidation.

Methodology
All consultants at two trusts in the Northern Deanery were contacted by e-mail, using internal mailing lists, and invited to complete an on-line questionnaire during a one month period between October and November 2011. Answers were collated anonymously.

Results
76 consultants responded (37 from Sunderland Royal Hospital, 39 from County Durham and Darlington Foundation Trust). The majority (84.2%) thought e portfolio provided a useful means of giving feedback, however 92.1% agreed with the statement ‘consultants vary in their approach and standards’ when completing workplace-based assessments. Furthermore, respondents were happier describing a struggling trainee, than rating an exceptional one accordingly. 38.2% felt that e portfolio distracted trainees from clinical work. Over half felt e portfolio would not have enhanced their own training.

Discussion and Conclusion
Consultants’ views on e portfolio vary. Whilst support exists for its educational role, the majority felt it would not have enhanced their own training. Moreover, there is evidence of concern about its impact on trainees’ clinical work.

Reference
International Medical Education
How should medical students be identified to patients?

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Background and Purpose
It is widely accepted within medicine that the term ‘medical student’ refers to a person who is training to become a doctor. It has been noted by our peers, however, that lay people misunderstand the term, and this formed the premise of our project. Our objectives were:
1. To ascertain if the lay public know what a medical student is;
2. To enquire if they believe an alternative term would be better;
3. Discover what role medical schools use to describe their students on their identity badges.

Methodology
The first two objectives were achieved by distribution and analysis from 502 anonymous questionnaires; distributed in primary and secondary care settings, plus public places around the UK. The questionnaire asked: “do you know what a medical student is?” and then to rank various titles in accordance to a provided definition of what a medical student is. The third objective was met by contacting each English medical school and ascertaining what details are displayed on their medical students’ identity badges

Results
Of the 63% who knew what a medical student is, 34.5% preferred the title “Student doctor”. Half of the 37%, who did not to know what a medical student is, preferred “student doctor” too. The medical student badge data was variable. Only eight of the sixteen schools had printed “medical student”. Alternative role identifiers include course title, “student”, “student doctor” or none. One school distributed different badges depending on the NHS trust they student worked in.

Discussion and Conclusion
Fifty two percent of all respondents prefer the title “student doctor”. Furthermore, there are wide inconsistencies in identification badge descriptors, thus showing a gap for improvement with clearer terminology and explanation to patients. Our study can only be viewed as a pilot, in the view that a larger population will be sampled in the future. On the basis of our findings focus groups and interviewing techniques could be adopted to further explore people’s understanding and preferences in regards to the validity and accuracy of the term “medical student”. Our findings on badge contents were significant, the discrepancies found here could be adding to patient (and potential health professional) misunderstanding. There is literature to suggest dissatisfaction amongst doctors with medical role jargon already, thus encouraging the need for this subject to be revisited again.

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Challenges for implementing health promotion education at medical schools in Japan, the country with the longest life expectancy in the world

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Background and Purpose
Japan has successfully improved the health status of its population over the past 50 years achieving the longest life expectancy in the world. This has been attributed to a culture of hygiene, educational attainments, an egalitarian society, and public health programmes including universal healthcare\(^1\,2\,3\). However, since the economic stagnation of the mid 1990’s, there has been a widening of income inequality with rising unemployment. About 19 % of households were behind on insurance premiums in 2011. The rate of decline in mortality has slowed relative to other countries. As Japan faces these challenges, it is imperative to reflect on and renew medical education to foster physicians who are able to recognise the social determinants of health, respond to the health needs of their communities, and play an advocate role as described in the Ottawa Charter for Health Promotion\(^4\). This study aims to elucidate the need for health promotion education in Japan and describe its barriers and challenges.

Methodology
We reviewed the medical education framework of Japan, “Model Core Curricula in Medical Education” (equivalent to “Tomorrow’s Doctors” in the UK), to identify learning outcomes in the area of health promotion. In order to explore the perception and attitudes of physicians towards health promotion, and to elucidate the need for implementation into medical school curricula, semi-structured interviews were conducted. Purposive sampling was used to obtain 9 participants. Interviews were transcribed for thematic analysis. A web-based questionnaire survey was conducted to assess health promotion education at Japanese medical schools (n=80).

Results
The Model Core Curricula has a section focusing on the relationship between lifestyle and preventable disease, however, the terms, “health promotion” and “social determinants of health”, were not used or referred to. The survey results (n=34, response rate 42.5%) and preliminary analysis of interviews will be presented.

Discussion and Conclusions
In the past, Japan's egalitarian society, with its strong community public health measures and low health inequalities, meant that Japanese physicians were trained to provide medical care without the social determinants of health being specifically discussed in medical school curricula. In response to societal changes, it now appears critical to have, within core curricula, a “social determinants of health and health promotion” component, enabling Japan's medical graduates to be advocates for the populations they serve. Curriculum developers world-wide have met many challenges with regard to health promotion. Japanese medical schools might encounter additional challenges because of its population's previous good standard of health.

References
Does it do what it says on the tin? Evaluating the impact of exposure to rural practice on medical graduates of the Universities of Aberdeen and Dundee

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Background and Purpose
There is a shortage of doctors in rural practice worldwide (e.g.1). The factors most strongly associated with entering rural practice are2.

- Coming from a rural background
- Positive clinical and educational experiences as an undergraduate in a rural setting
- Targeted training for rural practice as part of postgraduate training.

Most studies in this area have been conducted out-with the UK. However, Scotland faces many of the challenges faced by other remote communities and it is a Scottish Government priority to address this issue3.

In 2005, Aberdeen developed a Remote and Rural programme to offer extended rural opportunities for a cohort of 4th year medical undergraduates as well as a remote or rural placement choice of between 8 and 24 weeks for all 5th year students. The extended programme was evaluated in 2006 and was deemed academically acceptable (4).

The University of Dundee offers all medical students exposure to rural practice during their final year of medicine and has done so for over 12 years. Dundee offers students a choice of a 4, 8 or 12 week placement in a Health Board Region of their choice. Both programmes now have graduates who have completed the Foundation programme and who will now be planning their long term career choices. We wish to investigate if experience of a rural placement influences the career plans of young doctors.

Methodology
This work will be underpinned by a social constructivist paradigm (5). Data will be collected using questionnaires and semi structured interviews. The questionnaires will be designed to allow students from both sites to answer common stem questions as well as exploring their individual experiences. Questionnaire data will be supplemented by interview data in order to develop and enrich themes. Participants will be interviewed by phone; numbers determined by data saturation. Framework analysis will be used to analyse this data.

Results
This research is in progress and results will be available by spring 2012

Discussion and Conclusions
The findings from this work are likely to inform policy and practice in terms of workforce planning.

References
Exploring professional development in overseas healthcare related volunteering

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Background and Purpose
Interest in global health continues to grow. Peer reviewed research in global health education, particularly beyond undergraduate training, is still in its infancy. Increasingly overseas health care volunteering is facilitated by ‘health partnerships’. The demand for these to be mutually beneficial and sustainable is more important than ever in the current economic climate1.

Many claims are made about the potential for healthcare related volunteering overseas to contribute to both professional development and benefit to the employing institution2,3, such as the NHS but sound evidence for this is scarce. This study aims to address this gap. Initially we will explore assumptions within the literature and then establish how, if at all, individuals have developed professionally through such volunteering and what, if any, institutional benefit this has brought. Moreover we will explore how a range of stakeholders perceive overseas volunteering could facilitate professional development and what the barriers to this may be.

Methodology
Using grounded theory we will undertake a thematic analysis of the literature (including grey) of international health care volunteering to explore the assumed or anecdotal statements surrounding individual professional development and institutional benefit. Semi structured interviews will be conducted with previous volunteers and a range of stakeholders. The interviews will be analysed sequentially in an iterative process.

Results
Results from the thematic analysis of the literature review and first stage interviews will be presented.

Discussion and Conclusions
Evidence for individual professional development and institutional benefit from overseas healthcare related volunteering is lacking though interest in this field is growing. Ultimately this research is working towards the development of a metrics for professional development in overseas healthcare volunteering.

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E-learning in Medical Education - The Future?

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Background and purpose
E-learning is the use of internet technologies in order to enhance performance and knowledge and is quickly developing as an extremely useful form of education\(^1\). The effectiveness of e-learning has been discovered by several studies. These have identified that students are very satisfied with e-learning. Their satisfaction rates increase with e-learning compared to traditional learning, as well as interactivity, ease of use and a user-friendly design. Students see e-learning as a supplement to traditional teaching as opposed to replacing it\(^2\). This project was to produce an e-tutorial aiming to inform fellow medical students about heart murmurs which will be made available on the university website. This will ensure competency performing auscultation as part of the cardiovascular examination and to enable students to distinguish between the different types of heart murmurs on auscultation.

Methodology
Bloom’s taxonomy of mental processing arranges six levels of thinking: knowledge; comprehension; application; analysis; synthesis and evaluation in a cumulative hierarchical framework\(^3,4\). Constructivism is a theory stating that individuals gain knowledge by connecting new learning to existing learning. This theory implies that ‘we learn by doing’\(^5\). A student’s recall rate for ‘practice by doing’ is 75% whereas by just listening, a student’s recall rate is only 5%\(^6\). Feedback is also essential in the learning process to encourage students to rectify misunderstandings and help to enhance the learning experience\(^4\). These educational theories were used to produce an interactive tutorial with many questions, exercises (in order to facilitate learning by doing), diagrams (hand-drawn), photographs and flow-diagrams (printable) with minimal text and providing feedback throughout the tutorial. A video was produced as part of this tutorial in order to provide a resource on how to auscultate. Vital to this topic is the inclusion of audio clips about the different heart murmurs in addition to the information provided about this topic. Prior to constructing the tutorial, a questionnaire was produced and brought to a focus group of students and interviews were used to obtain student feedback. This aided what to include in the tutorial. In addition, once the tutorial was complete, a questionnaire and focus group was assembled for suggested improvements.

Conclusions
E-learning has been shown to be effective by several studies. A beneficial interactive e-tutorial about heart murmurs has been produced for fellow medical students. This has incorporated the educational theories embedded with audio clips throughout the tutorial as a supplement to traditional learning.

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Peer-assisted learning: the experience and reflections of medical student teachers in a Danish University

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Background
Medical graduates must be able to “be able to demonstrate appropriate teaching skills” and to “function effectively as a mentor and teacher” (GMC, 2009). However, many medical students are not formally taught the act of teaching. Peer-assisted learning (PAL) programmes have the potential to provide medical students with knowledge, skills and attitudes that will be useful for them as future doctors (e.g., Cate, 2007; Pasquale, 2002). Nevertheless, few medical schools provide opportunities for students to formally be involved in teaching activities (Nester, 2005) and research assessing the perspective of student teachers is limited (e.g., Tolsgaard et al., 2007). The aim of this study is to elicit the views of undergraduate medical student employed as peer, or student, teachers on their experience of peer-assisted learning.

Methods
This is an explorative, qualitative study using focus groups of student teachers working in the Centre for Clinical Education (teaching clinical skills) and Faculty of Panum (teaching physiology/anatomy), University of Copenhagen, Denmark. Four focus groups will be carried out. Sampling will ensure the involvement of participants teaching different subjects, who have a range of experience, those teaching versus those who have done so in the past, in order to elicit a broad range of views. Data collection is organised for Spring, 2012. Ethics permission has been obtained for this study from Danish Research Ethics Committee.

Results
Focus groups will be recorded with consent, and transcribed for analysis. Analysis will be iterative and based in grounded theory. Data analysis will focus on the meaning of peer-assisted learning for student teachers, their views of the benefits of this activity and their reflections on how this will help them develop as medical students and doctors.

Conclusion
Discussion will focus on the meaning of peer-assisted learning for student teachers, their views of the benefits of this activity and their reflections on how this will help them develop as medical students and doctors. The findings will be discussed in relation to the published literature on peer-assisted learning. While this is a qualitative study and hence does not presume to produce generalisable results, we hope that the findings will contribute to an understanding of the impact PAL has on student teachers, as this area of study has been neglected in previous research. We believe this is likely to be of interest to other medical schools looking to formally embed PAL activities into their medical curriculum.

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Management and Administration
Maximising medical students learning in culturally diverse General Practice placements

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Background
Communication training is an integral part of the Manchester Medical School curriculum, featuring strongly in the GMC Tomorrow’s Doctors (2009), together with a strong emphasis on valuing diversity\textsuperscript{1,2,3}. The conurbation of Greater Manchester plays host to a variety of culturally diverse General Practices (GP), many of which are involved in undergraduate medical education, however students have reported poor learning experiences at some of these practices.

Methodology
Following a pilot study a selection of 29 students who had attended a culturally diverse practice between 2010 and 2011 completed an evaluation questionnaire. From the written feedback we set out to determine whether language difficulties were the main barrier to learning or whether other factors influenced their experience and capacity to learn in these practices. We have also begun to identify strategies to help maximise learning experiences for future students.

Results
Results from the pilot study and evaluation questionnaire will be presented.

Discussion and Conclusion
It is clear from student feedback that although language can be a key factor in presenting a barrier to learning in culturally diverse practices, other factors such as prejudice, cultural differences, standards of teaching and student expectation were also important determinants of student satisfaction. A number of strategies have now been implemented to address these issues.

A “Mind Your Language” workshop has been developed to provide GP tutors with techniques to enhance student learning\textsuperscript{4}. This it is now being rolled out to all GP tutors across the North West of England.

A seminar for students is proposed to highlight the learning opportunities available at these practices and formulate ways to overcome language barriers. Students will attend this seminar in preparation for their GP placements.

As the patient population becomes increasingly more diverse it is imperative for students to embrace learning opportunities available to them in culturally diverse GP practices. By educating and developing techniques for both tutors and students, these practices can provide a variety of rewarding learning opportunities and experiences for students.

References
Use of the national GMC trainee survey to measure improvement in education provision in a large teaching hospital

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Background
We introduced a quality improvement programme for education and training of trainee doctors in the Newcastle upon Tyne Hospitals NHS Trust in 2007. This involved a multifactorial approach for each of the 46 specialties which included:
- Creating a dashboard of indicators mapped to the GMC domains which encompass key items required for a good educational unit. Each item was classified according to stage of completion
- Analysis and summary of the GMC national trainee
- Triangulation of the above findings with Deanery and departmental led surveys
- Focus groups with trainees
- One-to-one meetings with educational leads in each specialty
- Assessment of previous action plans and formulation of new action plans based on the above and from additional sources eg intradepartmental feedback, to ensure incremental improvements in junior doctor training

Aim
To assess the impact of the quality improvement programme by analysis of the national GMC trainee survey

Methods
The national trainee survey asks questions about clinical and educational supervision, access to teaching and the quality of that teaching, delivery of curricula, support and development of trainees, and educational resources and capacity. There are a maximum of 21 possible indicators for each specialty, each of which is scored. Data are available for all local education providers in the country to allow comparison. We identified the number of above and below outlying indicators for three consecutive years from 2009 as a marker of impact of the quality improvement programme. An outlier was defined as a score significantly above or below the national mean and in the top or bottom quartile.

Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of indicators</th>
<th>Number of specialties</th>
<th>Total number of trainees sampled</th>
<th>Number (%) of above outliers</th>
<th>Number (%) of below outliers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Foundation and core trainees</td>
<td>Specialty trainees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>1359</td>
<td>23</td>
<td>43</td>
<td>474</td>
<td>61 (4.5)</td>
</tr>
<tr>
<td>2010</td>
<td>1363</td>
<td>24</td>
<td>42</td>
<td>442</td>
<td>44 (3.2)</td>
</tr>
<tr>
<td>2011</td>
<td>1070</td>
<td>17</td>
<td>36</td>
<td>423</td>
<td>47 (4.4)</td>
</tr>
</tbody>
</table>

Discussion
The percentage of below outliers has not changed significantly between 2009 and 2011. However, the percentage of above lying indicators has increased from 3.8% to 5.7%. This effect was more pronounced for foundation and core trainees. Although there is no direct proof of a causal relationship, we believe that the increase is due to the quality improvement measures that we have introduced. There is corroborating evidence: increased engagement from the various specialties with the Trust education team; earlier communication of potential difficulties; and a significant improvement in action plans with evidence of increased completion of actions. Data from future years will allow trend analyses and act as an impetus for further improvements.

Conclusion
A comprehensive, carefully planned quality improvement programme can lead to measurable improvements in education and training outcomes.
Medical Education Leadership Courses – what makes one course better than another?

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Introduction
The topic of Leadership has currency in its role in the efficiency and effectiveness of the NHS1. Increasing structure in Medical Education requires increasing “leadership” within medical training and several courses have appeared on Leadership in Medical Education2. Some are on-line, others face-to-face, some are contextual to role and others associated with an academic institution. There is no obvious way of comparing the efficacy of diverse delivery methods, so we wanted to evaluate our own module, introduced in 2011.

Methodology
Bristol University recently launched an MSc unit on Leadership in Medical Education3 for multi-professional clinician learners, comprised of two linked study days and a written assignment. The module is delivered by a clinician with significant experience of both medical educational leadership and delivering non-HEI accredited leadership courses. A questionnaire was sent out following the module using Surveymonkey4, asking learners about their experiences and reactions using De Bono’s six thinking hats model of evaluation5. 8 of 12 responded.

Results
Experience of the clinical workplace, hearing personal accounts of the rewards and difficulties of educational leadership appear to be highly regarded by students. Participants also identified differences between clinical leadership and educational leadership, and valued the opportunity to discuss these and their own practice with peers and the course tutor. 75% of respondents agreed that leadership theory was useful and influential but 100% agreed that ‘it was useful to be taught by someone who was in an education leadership role’: The tutor was challenged by the perceived expectation for academic theory, whereas attendees on non-HEI accredited courses valued experiential learning from an experienced colleague over University credits. The tutor reflected that the UoB students, with more diverse roles and less leadership experience showed less spontaneous and productive depth and energy in group work.

Discussion and Conclusions
Our study shows benefits in studying leadership in an academic context even for those who are not in leadership roles. The academic environment appears to add weight and extra stimulus to study: we have no data yet on whether students actually become more effective leaders as a result of the course. However, their awareness of their leadership role was raised, even if this role was an informal one. There is a fascinating mismatch in student and tutor perception. Leadership theory is readily accessible and easy to assimilate: delivering that theory in a manner which motivates learners to change their attitudes and behaviours is more challenging. Our study suggests that professional experience coupled with accredited academic rigour can be a successful approach.

References
Factors affecting final year medical student attendance at clinical teaching fellow tutorials preceding final examinations

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Background and Purpose
Medical student attendance rates have been assessed at a pre-clinical level¹, although little has been published on clinical attendance, particularly in the final year. At North Bristol NHS Trust, the majority of medical student teaching is undertaken by clinical teaching fellows. We undertook a study to assess factors affecting the attendance of final year medical students in the lead up to final examinations.

Methodology
At the end of a ten week attachment, all 42 students were asked to complete an attendance questionnaire. The students were asked to list factors that affected their attendance, as well as rank a number of factors from most to least important. A focus group was then undertaken by a clinical teaching fellow independent of final year teaching with the aim of further developing ideas that had been raised by the questionnaire.

Results
The questionnaire suggested that the teaching style of the tutor was the most important factor governing attendance at clinical teaching fellow tutorials. This was seen as more important than the relevance to exams (p=0.0097), and almost twice as important as the title of the tutorial (p<0.001). These findings were reiterated by the focus group and the idea of teaching style expanded. A number of themes emerged including:

- The importance of case based teaching
- Interactive tutorials work best
- The honesty of the teacher
- Clinical teaching fellows should be post-membership

Discussion and Conclusions
Based on these results, the teaching style of the tutor appears to be most important in governing attendance at teaching for final year medical students. We suggest that evaluation of the teaching style of clinical teaching fellows should be paramount when recruiting future teaching fellows.

References
A mechanism to support quality within a large teaching hospital

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Introduction
The Newcastle upon Tyne Hospitals medical education team (MET) has a requirement to complete an annual quality control (QC) report to the Northern Deanery to demonstrate that the education structures within the Trust meet the GMC standards for training. Information provided by national trainee surveys and local reporting mechanisms help inform the team of relevant training issues as diverse as induction arrangements, undermining behaviour and access to educational supervision. In order to robustly inform future training needs, the MET has developed a quality matrix to triangulate quality information with identified action plans.

Aims
To develop a simple and robust structure of QC reporting for departments. To develop and institute an educational support mechanism to facilitate action planning at department level. To raise the profile of and spread good educational practice

Methods
A QC matrix was developed which links directly to the individual GMC standards. Individual departments were asked to self assess current practice with key performance indicators using a RAG (red, amber, green) rating system. A model example was provided for departments as a template. Annual GMC trainee surveys and Deanery trainee information were used to triangulate departmental information and define areas for improvement or of best practice. A MET link tutor was identified for each of 52 departments. 1 to 1 meetings were offered to facilitate robust SMART action plans for developmental needs with clear timescales. Departmental action plans generated were incorporated in the annual comprehensive report to Deanery.

Outcomes
Engagement of individual departments in completion of robust QC for their trainees. Evidence of quality improvement with specific identified issues reflected by trainee feedback. Identification of generic issues relating to educational supervision.

Results

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action Plans completed</td>
<td>15/52</td>
<td>48/52</td>
</tr>
<tr>
<td>Independently completed</td>
<td>2/52</td>
<td>34/52</td>
</tr>
</tbody>
</table>

As an example, in 2009 specialty one had 5 negative outliers in the GMC survey. Facilitated action plans were developed with the MET who provided advice and support in delivering interventions. In 2010 there were 3 negative outliers and in 2011 there were none. Understanding of workplace based assessments and educational supervision process were identified as the most common generic issue in 22 of 52 departments.

Conclusions
The introduction of a QC framework to inform quality reporting has enabled the MET to identify and prioritise departmental development needs. The increase in completed action plans returned is an indicator of engagement of departments with the education process. Generic issues identified including trainer CPD have helped inform the Trust education programme for trainers. 1-to-1 meetings with departmental leads have helped improve completion of action plans to a consistent standard.
Multi-professional Education
Tailored and Guided Public Health eLearning – An innovative approach to increasing awareness, understanding and knowledge of the specialty and maximizing accessibility to public health training opportunities for a diverse and expanding workforce

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Background and purpose

eLearning is one of the many innovations emerging from the internet revolution. Providing flexible, interactive and often free access to learning resources, it can offer a cost-effective and convenient method of learning. A growing volume of Public Health (PH) eLearning resources has become available from a diverse and often surprising range of sources; however, it can be challenging to find them and difficult to identify the most appropriate resource. This project, developed by the Wessex Deanery in collaboration with the University of Southampton Faculty of Medicine, aims to remove these barriers by identifying eLearning resources and organising them in a comprehensive structure, based around a Population Healthcare Model (PHM)\(^1\). It provides a single point of on-line access, increasing the opportunity for learning in PH, promoting inter-professional learning and collaboration and facilitating global knowledge sharing.

Methodology

The PHM identifies 8 core fields of PH practice. These fields were mapped to the Faculty of Public Health Curriculum\(^2\) to generate a comprehensive list of the knowledge and skills required for all aspects of PH practice. A web-based snowball search strategy was used to locate eLearning resources, which were then categorised into a 2-dimensional, visual index based on the PHM using mind-mapping techniques. User feedback from local PH staff informed the development.

The website (www.southampton.ac.uk/publichealth/eLearning/) consists of two elements: an interactive section incorporating a bespoke eLearning solution, illustrating the core concepts of the PHM; and a resources section containing a series of “mind-maps” depicting the 8 fields with branches of each leading to an appropriate eLearning resource(s). Icons are used to provide metadata. User involvement is encouraged to keep the site as a self-sustaining, constantly evolving resource. A pilot study will be conducted, using a mixture of quantitative and qualitative methods, in early spring 2012 to evaluate the usability and effectiveness of the site.

Results

The study results will be used to improve the website and refine the development approach.

Discussion and Conclusions

If the objectives of this project are realised, this website will become a sustainable and dynamic tool to maximise the potential of eLearning to support the development of the global PH workforce. Users will be able to simultaneously identify and address their learning needs and design their own individualised learning experience. The project will also provide an innovative methodology, which could be applied to staff development in other areas of healthcare.

References

\(^1\) Acres, J. The Population Healthcare Model. 2012. Available online at: www.som.soton.ac.uk/learn/publichealth/healthmodel/ (last accessed 10/02/12).

Interprofessional education clinical placement: an exploration of medical and pharmacy student experience

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**Background and Purpose**

The School of Medicine and Dentistry, University of Aberdeen, and the School of Pharmacy and Life Sciences, Robert Gordon University, recognise the importance of interprofessional education (IPE) which is encouraged by NHS Scotland\(^1\) and supported globally by World Health Organisation\(^2\) in the teaching of undergraduate medicine and pharmacy. Both the MBChB and MPharm courses contain elements of IPE to integrate the respective medical and pharmacy students with other healthcare professionals.

Although both sets of students have experienced IPE teaching in their courses neither group of students have experienced an IPE clinical placement of sizable duration. The need for an IPE clinical placement to simulate post-graduate practice is apparent. An IPE placement was developed and then conducted in the Highland Medical Education Centre, Inverness, and Raigmore Hospital, NHS Highland.

**Methodology**

This was a constructivist project which used a variety of methods. We based our teaching ethos on CAIPE’s IPE definition where ‘professionals learn with, from and about each other’\(^3\). Five medical and five pharmacy students were paired for the week where they attended ward rounds, theatre, tutorials, undertook joint clinical history taking and clinical examination. Sessions were facilitated by a range of interprofessional tutors. Informal assessment was conducted by means of mini-CEX and joint presentations on topics relevant to medicine and pharmacy. At the end of the week the IPE cohort participated in a ‘talking wall’ focus group. This acted as a means of evaluating the learning experience and explored their ideas regarding learning with, from and about the other profession.

**Results**

Results from the survey and talking wall focus group will be presented.

**Discussion and Conclusions Pending Results**

There are differences in the style of clinical teaching normally delivered to medical and pharmacy students. Historically, pharmacy clinical placements consist of days rather than weeks, whereas medical students spend a large proportion of fourth and fifth year on clinical attachment. The exposure of both sets of students to each other as part of an IPE clinical placement week was able to highlight the heterogenicity of each group\(^4\). Furthermore, this heterogenicity was explored allowing students to develop and display skills, attributes and functions particular to their profession while enhancing their knowledge and appreciation of the other profession, incubating the concept of professional-self. Data captured from the focus group will be used to inform future IPE placements ensuring a readiness to meet practice requirements for both professional groups post-graduation.

**References**

The population living with dementia in the UK is predicted to increase by 154% over the next 45 years. With associated disability, social and economic burdens, dementia is emerging as a national priority. The National Dementia Strategy was launched in February 2009. It recognised the poor level of both public and professional understanding of dementia and the “need for improved training as a priority that runs across all themes in the strategy.” (DOH, 2009, p65). Furthermore, there is evidence that dementia care quality across health and social care settings is too often less than optimal (Hughes et al, 2007). This suggests that education for health professionals regarding dementia has, to date, been inadequate and ineffective.

Training is often directed towards caregivers’ concerns rather than the concerns of people with dementia. There is an emphasis on: decline, challenging behaviours and loss of humanness (Touhy, 2004). This can produce feelings of fear, frustration and hopelessness in learners (Beck, 1996). How should teachers providing dementia education respond?

My experience is that learning about dementia can be more positive and incorporate Saljo’s understanding of learning: interpreting and understanding the realities of dementia in different ways (Ramsden, 1992), resulting in improvements in the experience of those living with dementia.

I will discuss a successful dementia learning experience, brief Dementia Care Mapping training, and examine what insights educational theories provide for its efficacy as a learning method. I will then consider how educational theories can be applied to facilitate meaningful person-centred health care professional learning about dementia in a variety of settings. Barriers to learning about dementia are examined, including the importance of taking into account the incentive and social dimensions of learning rather than a focus solely on the content dimension (Illeris, 2007). Avoiding these barriers creates the potential for innovation and change in dementia training and avoids ineffective imposed dementia education (Stolee et al, 2005; Perry et al, 2011).

References
Evaluation of an acute care patient simulator programme for final year medical students

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Background and purpose
The transition from medical student to Foundation Year 1 (FY) doctor is a challenging and stressful time. Particular areas of new doctor concern are acute care management, teamwork & prescribing. Simulation patient encounters, using high fidelity manikins, offer unique opportunities to address these learning needs without any risk to patient safety. While the evidence for benefit of simulation training in the post-graduate arena is compelling, there has been limited prospective data on impact of simulation training during undergraduate (UG) studies on new doctor confidence and clinical skills.

Methodology
All final year medical students in Tyne Base Unit took part in the programme, which consisted of common acute care scenarios, delivered over 2 (2010-11) or 3 sessions (2009-10). Final year nursing students were invited to participate in 1 session. All new doctors at Newcastle Trust underwent selected scenarios as part of ‘shadowing’.

Teaching employed a high fidelity patient simulator (Simman 3G®) in a dedicated simulation facility. Change in participants’ confidence was recorded for acute care management, prescribing, handover and record keeping. Assessment of acute care scenario performance was also undertaken in the 2010-11 and shadowing cohorts.

Results
Data were available from medical students (n=135), nursing students (n=33) and FY1 doctors (n=109) [included a number who had undergone the programme in Tyne (n=24)].

Medical student confidence in all domains increased significantly across the programme. Nursing students were as confident as medical students in acute care management and handover skills. At shadowing, confidence amongst all doctors was significantly less than that at the end of the UG course, though not amongst the subset of doctors who had trained in Tyne Base Unit. Confidence in prescribing and handover was significantly higher amongst Tyne graduates than those who had trained in other Newcastle University Base Units/medical schools. Acute care performance scores varied according to the scenario. At shadowing, performance in anaphylaxis management was less good than during the UG course, though not for the subset of Tyne graduates. At shadowing, non-Tyne graduates performed significantly less well in management of acute coronary syndrome than other scenarios, and less well in this scenario than Tyne graduates.

Discussion and conclusions
A longitudinal programme of patient simulator acute care scenarios improves student confidence in clinical skills and may improve performance in certain clinical scenarios. It offers a supportive environment for interprofessional teaching/learning and may contribute to effective preparation of doctors, and nurses, for safe, independent clinical practice.

References
1. Ilking J et al. ‘How prepared are medical graduates to begin practice?’ GMC, 2008. www.gmc-uk.org
New Technologies
The use of non-linear video histories as a method of large group simulated bedside teaching

S Thornton

S Thornton, Clinical Teaching Fellow North Bristol NHS Trust

Background and Purpose
Bedside teaching has often been regarded as the best method for teaching clinical skills1, 2. Unfortunately bedside teaching is limited by a number of factors including increasing medical student numbers, reduced length of hospital admissions and the limited number of students that can be taken to the bedside at any one time. In an effort to develop the focused history taking and diagnostic abilities of final year medical students we devised a non-linear PowerPoint presentation based around video clips of real patient histories.

Methodology
Patients completed a written consent form and had their history taken by a doctor. This was digitally video recorded. Examination was not recorded, but examination findings as well as blood results and original radiographical images were recorded to be included in the presentation. The video was edited into several (15-20) small clips that would provide the answers to questions asked by the students.

20 students took part in each tutorial. Students were divided into groups and played the role of a ‘team’. Teams were provided flipchart paper to write notes and differential diagnoses on.

Teams took a ‘virtual history’ using the video clips provided. Students were shown examination findings and results of investigations on request. At each stage, students were asked to justify their questions. Teams were asked to present their top three differential diagnoses, with evidence to support them.

Students were asked to provide feedback using a questionnaire based around a five point Likert scale, as well as free-text.

Results
The tutorial was highly rated by all students across the domains assessed in the questionnaire. A number of key themes arose including

• ‘able to spend more time discussing cases than... bedside teaching’
• ‘this style allows reflective thinking throughout the session’
• ‘you are able to see how each question gets you to the differential diagnosis’
• ‘good to hear questions other people ask’

The main criticism was being unable to see clinical signs.

Discussion and Conclusions
This method of teaching is a useful adjunct to bedside teaching although cannot replace it. This style of tutorial bridges the gap between bedside teaching and more artificial case-based tutorials.

References
A regional survey of Smartphone and Medical related App use among Junior doctors and Medical Students

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Background
Within the general public the smartphone has rapidly grown in popularity, and is now integrating into the healthcare environment\(^1,2\). Smartphone applications or ‘apps’ have created a vast library of clinical resources available to both hospital staff and medical students. Some evidence exists for how smartphones can be utilised to enhance educational and workplace activities within both medical student and doctor populations\(^2-4\). However little data is available regarding numbers using smartphones, and how they are used. This study evaluated the level of smartphone acceptance, patterns of medical app usage within junior doctor and medical student populations.

Method
We distributed an online survey to Medical students and Foundation level junior doctors within the East Midlands Healthcare region in the United Kingdom. The questionnaire collected data on the following areas: smartphone ownership; type of smartphone; the number of medical apps owned and which were most useful; the medical environment in which they were used; and how often apps were referred to during working/educational hours.

Results
257 medical students and 131 junior doctors responded, with a response rate of 15.0% and 21.8% respectively. 74.8% (n=98/131) of junior doctors and 79.0% (n=203/257) of medical students owned a smartphone, with 68.4% (n=67/98) of doctors and 56.6% (n=115/203) of students owning an iPhone. The majority owned 1-5 medical related applications, with very few owning more than 10. iPhone owners were significantly more likely to own apps ($\chi^2$, p<0.001). Over a 24-hour time frame apps were used for between 1-30 minutes for students and 1-20 minutes for doctors, both showing similar trends of app usage during the day. Students favoured disease diagnosis/management and drug reference apps, while doctors favoured clinical score/calculator apps.

Conclusions
Both junior doctors and medical students display high levels of smartphone ownership and usage. Both groups endorsed the value of organisationally linked apps with a firm desire to see this type of app created. Healthcare organisations and Universities should be encouraged by these findings and become more pro-active in utilising the functionality of smartphones, by developing apps to support students and employees within the organisations. Further evaluation and understanding of smartphone use will improve the outcome of any new smartphone interventions.

References
Junior Doctors’ Clinical Use of Communications Technology is Widespread: What Are the Benefits and Potential Pitfalls?

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Introduction
Today’s junior doctor faces a huge challenge. In a world of rapidly expanding medical knowledge, evidence and guidelines, alongside heightened patient awareness, how is it possible to stay informed, evidence-based and up to date? The pressures of both time and the clinical work environment render extensive reading impractical. Can modern communications technology help us to face up to these challenges? We aimed to assess the prevalence, uses and potential pitfalls of such technology in a cohort of junior doctors.

Method
Fifty junior doctors were surveyed between December 2011 and January 2012. Respondents were from medicine in 43 (86%), anaesthetics in 2 (4%), GP in 3 (6%) and surgical in 2 (4%) specialties and were foundation grade in 10 (20%), core training in 29 (58%) and registrar in 11 (22). Mean age was 27.9± 2.3.

Results
Forty-three/ 50 (86%) respondents owned a smartphone of whom 39 (91%) used their device for work purposes. The most common uses were internet access to view websites in 35 (82%), email access in 38 (88%), use of medical applications (‘Apps’) in 31 (72%), work-related telephone use in 23 (53%) and use of personal organiser in 18 (42%). Medical ‘Apps’ that were most commonly used for access to evidence and guidelines by 16 (41%), medical calculators by 14 (36%) clinical scoring systems by 7 (18%) prescribing formulary or laboratory reference ranges by 6 (12%), revision guides by 5 (10%), and for logbooks by 4 (8%). Most (51%) used medical ‘Apps’ weekly or more often. Forty-seven of the 50 (94%) respondents used the internet at work to help then with their job. 19 (40%) used peer-reviewed reference sources and 31 (66%) used non peer-reviewed sources.

Conclusion
The use of communications technology is widespread amongst junior doctors with a wide range of work-related applications. Without doubt huge potential exists in terms of improving efficiency, clinician education and patient outcomes. The relative popularity of unregulated, non-peer reviewed websites over those that are peer-reviewed is potentially worrying, and may relate to cost or accessibility issues.
Facebook versus a University Virtual Learning Environment; Is There a Student Preference?

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Background and Purpose
Facebook, the online social networking phenomenon, has evolved from a platform intended for peer to peer communication to a multifaceted virtual environment. One of the potential uses of Facebook is in the field of medical education as a virtual learning environment (VLE). The use of VLEs is well established in medical education and there are a number of commercial and open source VLEs such as Blackboard and Moodle respectively. In addition there are bespoke University based VLEs each with their own user interface. Seventy-one percent of UK medical students have a Facebook account. The widespread use of Facebook suggests familiarity with the user interface, and may Intimate an advantage over the alternatives. This familiarity with Facebook may lead to more effective participant access, engagement, and interaction. Facebook is primarily a social website; therefore learners may resent its use for professional or educational purposes. This study aims to ascertain learners’ views on the acceptability of Facebook versus a University hosted learning environment for medical education. Previous published work has focused on surveys regarding the acceptability of Facebook as a learning tool. We are aware of no studies that directly compare Facebook to an alternative VLE.

Methodology
This prospective experimental crossover study of VLE use in final year undergraduate medical students in a single medical school, taking place between May 2012 until July 2013 utilising a questionnaire composed using evidence based principles. The questionnaire will focus on the domains of acceptability, usability and learner engagement.

Results
We present preliminary results from the first cohort of participants.

Discussion and Conclusions
Participant preference for a particular VLE is likely to be determined by factors such as accessibility, ease of use and familiarity with the user interface. Technical advances such as the availability of Facebook on Smartphones may confer an advantage in terms of access. Other VLEs still require access via web browser, and until a dedicated VLE application is designed for Smartphones this may prove to be a disadvantage. If Facebook is found to be equal or better than alternative VLEs in terms of access, usability and engagement; there is an argument to use this rapidly evolving, free, widely accessible learning environment for the purposes of medical education in place of other VLEs.

References
Developing a mobile web application for completion of WPBA in Foundation Training in the North Western Deanery

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Background and Purpose
The nature of modern postgraduate medical training often means the documentation of workplace-based assessments (WPBAs) may be delayed or missed.¹ The demands on trainees’ and trainers’ time, coupled with organisational difficulties and poor IT provision, may also hinder assessments.²,³ The use of mobile technologies offers an exciting potential for documenting WPBAs within the daily time and resource constraints of clinical practice.¹,² After consultation with Foundation trainees, the North Western Deanery has developed a mobile web application for its e-portfolio (Horus), to help support trainees and trainers complete and validate WPBAs.

Methodology
The application was entirely built on standard technologies available in all modern web browsers (html and javascript) and communicated with the main e-portfolio. The interface was built using the jQuery© mobile framework and designed to be quick, user-friendly, easily accessible and free to all users. Three WPBAs were developed for the mobile application: Case-based discussion (CbD), Direct Observed Procedural skills (DOPs) and mini-Clinical Evaluation Exercise (mini-CEX); allowing data entry, collection and validation. The application supported iOS devices (iPhone, iPad), Android Blackberry and Windows Phone 7. It was piloted to a group of Foundation Year 1 (FY1) trainees at a local site in August 2011 and became available to all trainees from November 2011.

Results
Data on the use of the application is currently being collected, including number/type of WPBA, trainee year and feedback. A trainee survey is scheduled to gather further information on the usefulness of the application. Initial data analysis demonstrates 150 WPBAs completed by 82 trainees, the majority are FY1 (57/82) and the highest users are at the pilot site. The overall feedback is extremely positive with 99% users finding it useful once they have tried the application. However, supervisor engagement remains low as less than 5% are using the option for immediate validation.

Discussion and Conclusions
Preliminary results indicate trainees find the mobile web application very useful. The lack of supervisor engagement at this stage may be attributable to various reasons and these will be explored further. The ability to enter and store data contemporaneously at the time of the activity will greatly assist in timely collection of evidence, and the advantages of this will be discussed.

References
¹ Sanders J & Dearley C. Twelve tips for the use of mobile technologies for work based assessment, Medical teacher, 2009; 31:18-21.
Postgraduate Education
Use of a Speciality Specific Safe Prescribing Paper for Trainee Doctors Post Foundation Training

SE Jones, JM Metcalf

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Background and Purpose
The UK Foundation Programme (UKFP) includes a formal assessment of prescribing skills by means of a Safe Prescribing test taken in the first year of programme. Prescription errors are not restricted to this group of doctors and the National Patient Safety Agency reports on themes of drug errors which include management of insulin, anticoagulation and intravenous fluids. Within our Trust we have worked over the last three years to develop and implement a safe prescribing assessment paper for all doctors in training above the grade of Foundation Doctor. This paper was tailored specifically for each speciality within the Trust and aimed to increase doctors’ knowledge of local protocols, to enable them to formally document their training in prescribing within their learning portfolio and we hoped to see a reduction in prescribing errors within our Trust.

Methodology
Papers were drawn up for the following groups of trainees: Anaesthetics, Emergency Medicine, Medicine, Paediatrics, Obstetrics & Gynaecology, Orthopaedics, Surgery and General Practice. The paper consisted of seven questions with common themes but scenarios specific to the specialist area. The themes included: insulin prescribing and insulin infusion, anticoagulation, intravenous fluids, acute kidney injury, pregnancy and antibiotic prescribing. All trainees marked their papers after the assessment with real time feedback of errors and asked to reflect on their errors within their portfolios. Any trainee scoring less than 50% on the paper was given additional support and training in prescribing and then had to resit the paper with a review of their prescribing rights and (if needed) a period of supervised prescribing with the support of our pharmacy education team. Prescription error rates were evaluated to compare the effect of the paper on prescribing safety.

Results
To date the paper has proved to be a valued learning experience and acceptable to trainees. 183 trainees have sat the paper which has been running for the last two years. Trainees who have not completed the UKFP and obstetrics and gynaecology trainees have performed least well out of all the groups. This finding has enabled our pharmacy educators to provide targeted training for these individuals. We have seen a reduction in insulin prescribing errors and work is ongoing to evaluate other areas of prescribing.

Conclusion
This method of prescribing assessment is a useful tool to increase knowledge of prescribing amongst trainees beyond the UKFP and improvements in patient safety are already being seen within our Trust due to reduction in prescribing errors.
‘Don’t be scared’ - Demystifying statistics in postgraduate medicine

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Background and Purpose
Statistics can be a frightening concept for students enrolling in postgraduate medical courses. Research has shown that students have anxiety towards statistics instruction.\(^1,2\) The purpose of this study is to demystify medical statistics by evaluating our postgraduate curriculum. We will evaluate existing practices and identify teaching inadequacies to develop a 2-day intensive workshop to further training in a subject often found challenging by students from a wide array of multidisciplinary health and medical backgrounds. We aim to evaluate the statistics curriculum in 3 ways: (1) pre- and post-knowledge of basic statistics in MDM10 Research Methods and Critical Appraisal, (2) pre- and post-knowledge of advanced statistics in MDM 66 Essential Statistics for Medical Research and (3) student satisfaction.

Methodology
This is a quasi-experimental design using a quantitative and qualitative survey questionnaire. Data will be collected from March to May 2012. Participants will include postgraduate students enrolled in MDM 10 and MDM 66. Students enrolled in MDM10 (N=22) will complete a pre-knowledge test prior to the statistics module on Day 4. Students will rate their perceptions of knowledge on a 5-point Likert scale (strongly disagree to strongly agree). At the end of the module, students will complete a post-test to determine knowledge gained and a complete a satisfaction survey. Students enrolled in MDM66 (N=8) will complete a pre-test rating their perceptions of advanced medical statistics knowledge and methods on the same 5-point Likert scale on the first day of the course. At the end of the course, students will complete a post-test to determine knowledge gained and course satisfaction. Data will be analysed using PASW 18. Mean changes in self-reported knowledge will be measured using Wilcoxon-signed rank tests.

Results
Results of this study will be presented (changes in knowledge, satisfaction) as will the statistics workshop curriculum developed based on our findings.

Discussion and Conclusions
Situational, dispositional and environmental factors can all play a role in statistics anxiety.\(^3\) Several tools have been developed to measure these learning barriers.\(^3\) However, there remains a gap in the literature on whether these factors play a role in postgraduate medicine. We will fill this gap by evaluating our existing curriculum and developing a statistics workshop tailored to our students to alleviate learning barriers. We plan to share our experience of medical statistics with other medical schools in England and roll out workshop programs to NHS South and London areas health workers involved in patient care. Invitation will also be extended to GP and nursing trainees based on success of our program.

References
Evaluation of the Academic Foundation Programme at Brighton

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Background and Purpose
A clinical academic is a doctor who undertakes research and teaching as well as clinical work. It has not been a popular career choice recently, leading to a shortage of lecturers (1). One way to promote academic training is to offer trainees research experience during their Foundation years (as the Academic Foundation Programme - AFP). Trainees typically complete a four-month project instead of one of their clinical posts during their second Foundation year and AFP’s have now been set up in all teaching hospitals. An online questionnaire-based study of 115 academic trainees found that 77% wanted to continue with an academic career (2). This study explores in more depth trainee’ and supervisor’ perceptions of the value of the AFP at Brighton & Sussex University Hospitals NHS Trust.

Methodology
A qualitative case-study approach was used involving semi-structured interviews with four current trainees, three former trainees and three supervisors. The interviews explored trainees’ personal experiences of the AFP, in particular their motivations for applying, what they had achieved, how it had changed their view on academic life and its impact on their clinical practice. Transcripts were analysed for common themes. Kirkpatrick’s model for evaluating training programmes was used (3) as a foundation for structuring the results.

Results
Trainees were enthusiastic about the AFP and reported that they had learnt new skills, including research methodology and laboratory techniques, time-management and how to work with different professional groups. They had also gained insights into academic life and more understanding of what it might be like to be an academic. While there was some concern about less clinical exposure, most felt that they could make adjustments to mitigate this problem, such as making the most of their clinical posts and sometimes doing locums. All but one expressed a desire to pursue an academic career.

Discussion and Conclusions
My initial concerns about the AFP were whether the amount of time allocated for research provided sufficient experience and that it was taking trainees away from clinical practice. After all, the main aim of the Foundation Programme is the assessment and care of the acutely ill patient (4). However, the trainees had enjoyed the AFP and found it a valuable, worthwhile experience. This study offers supportive evidence of the value of the AFP as a ‘taster’ for Foundation trainees who wish to consider an academic career.

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Trainee perspectives on the design of a regional Core Surgical Training teaching programme

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Background and Purpose
The Core Surgical Training (CST) Programme in South Wales encompasses a taught education programme based upon the Intercollegiate Surgical Curriculum Programme (ISCP) CST Curriculum 1. Sessions are principally designed by a surgical Fellow with an interest in medical education and delivered by Higher Surgical Trainees within the deanery. Adaptations to session design have recently begun in order to reflect a drive toward small group, interactive learning. Effective small group teaching can promote independent thinking, problem solving, teamwork, clinical relevance and integration 2. The aim of this study was to determine trainee perspectives on the design of this evolving teaching programme.

Methodology
A questionnaire was designed employing principles from Stufflebeam’s context, input, process, product (CIPP) evaluation model 3. All CSTs attending the induction session were asked to complete the questionnaire and the results were analysed.

Results
Completed questionnaires were obtained from 68/91 CSTs (75%, 18/23 CT1, 50/68 CT2). Most were working in general (41%) or trauma and orthopaedic surgery (24%). There was no preference for theming of CST posts (51% vs. 47%). A preference for organised clinically-orientated teaching (48%) and self-directed learning (34%) over lectures (8%) was demonstrated. Small group work was preferred to large group work (85% vs. 15%). The preferred aim of the teaching programme differed significantly by grade: CT1s favoured syllabus coverage (p=0.05), CT2s favoured preparation for MRCS examinations (p=0.047) and national selection for higher training (p=0.011). Most trainees believed satisfactory completion of CST should be assessed on successful MRCS completion (71%) and satisfactory ARCP outcome (69%).

Discussion and Conclusions
These results are encouraging, demonstrating that trainees’ perspectives support the migration away from a lecture-based programme toward an interactive, small-group orientated local CST curriculum.

References
The Effect of a Structured Skill Training Model for Cultivating Surgical Competency in Taiwan

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Background and Purpose
Competency-based surgical training models with hands-on skills training in surgical skills laboratories are the new trend for cultivating new surgeons\textsuperscript{[1,2]}. However, retention and transfer effect of training in a simulated setting have not been explored clearly. This study aims to identify the effect of a new surgical skill training model in Taiwan and explore its influences on cultivating young surgeons.

Methodology
We set up a new basic surgical skills (BSS) training workshops in Minimally Invasive Surgery Training Center, NTUH in 2008, which combined to advanced animal experiments for junior residents as the new National Taiwan University Hospital Structured Surgical Skill Training Model (NTUH SSSTM). The BBS training workshops included basic surgical skills, small bowel anastomosis, subcutaneous tumor excision and usage of auto-suture devices. Junior residents performed diagnostic laparoscopy and subtotal gastrectomy on pigs and performed exploratory laparotomy 2 weeks later. We assessed the effect of the NTUH SSSTM on the development of young surgeons’ competencies from 2008 to 2010. Mixed method research was conducted included self-evaluated questionnaires for both training courses, surgical skills assessments for suturing, knot tying, bowel anastomosis, subcutaneous tumor excision, an interview study for the trainees, and a group discussion for the trainers.

Results
The results of self-evaluated scores of both courses showed the young trainees gained competency significantly in performing basic and advanced surgical skills. The transfer effect between this training model and clinical performance found that overall performance of suturing in advanced animal experiments highly related to overall performance of subcutaneous tumor excision. The competences which included basic and advanced surgical skills, leadership, teamwork, and teaching ability were cultivated in this training model. Young surgical trainees and surgical trainers thought these competences could be implemented in the clinical setting based on the results of qualitative data analysis.

Discussion and Conclusions
In conclusion, the National Taiwan University Hospital Structured Surgical Skill Training Model was an effective model which could cultivate multiple competences in order to increase a young surgical trainee’s confidence in order to become an excellent surgeon in the future.

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Why do trainees take time out of their specialty training programmes?

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Background and Aims
The aims of Modernising Medical Careers (MMC) were to streamline, modernise and shorten specialty training programmes to ensure a transparent and efficient career path for junior doctors. There remains, however, a number of specialty trainees who opt to take time out of their specialty training programme, thereby lengthening training and delaying their certificate of completion of training (CCT). The Gold Guide for specialty training permits trainees to have the option to take time out of programme (OOP) but at present there is no published data available on the current number of OOP trainees, why they elected to go OOP or what they are doing. The GMC National Training Survey does not survey this group of trainees. The primary aims of the study are to gather information on the number of trainees currently OOP and investigate the reasons why they seek to take time out of their training programmes in England.

Methodology
A survey will be taken of the whole population of OOP trainees currently holding training numbers in English deaneries. The current size of the OOP population is approximately 2,416 (Centre for Workforce Intelligence). Statistical analysis will be conducted, utilising SPSS, in order to identify frequencies, mean, standard deviation and confidence intervals. Multivariate analysis will be applied to identify any relationship between variables. Semi-structured interviews will then be conducted with a small purposive sample of OOP trainees to explore some of the issues raised by the survey data in more detail. This qualitative data will be analysed using a Framework approach to establish recurrent themes.

Results
Data from the online survey and semi-structured interviews, which are being collected between January and April 2012, will enable us to describe the scale of the phenomenon across deaneries and specialties, as well as consider the reasons why trainees go OOP.

Discussion and Conclusions
The data we obtain will enable us to identify the size of the OOP phenomenon in England and explore the reasons why trainees take time out of programme. This is particularly important at a time of major structural changes to commissioning and providing postgraduate medical education. Furthermore, this will help inform training programme development and provide information on postgraduate workforce planning.

References
2) General Medical Council. GMC National Training Surveys. 2010. London, GMC.
Awareness of Competency: How Accurate are Doctors Estimates of Their Own Performance?

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Background and Purpose
There is evidence to suggest poor performers on social and intellectual tasks overestimate the quality of their performance\(^1\). However, most of the research in this area has been conducted on non-medically qualified individuals. There has been some, though limited, research conducted on self assessment of performance amongst samples of medical students or doctors. Some evidence exists to suggest there is a weak association between self assessed estimates of performance and performance in a Problem-based Learning program amongst medical students\(^2\). This aim of this study is to investigate awareness of competency amongst qualified doctors and to explore the accuracy of self assessment of performance amongst a group of volunteer doctors.

Methodology
251 volunteer doctors from a range of specialties completed a two hour knowledge test with 120 Single Best Answer items and a 12 station Observed Structured Clinical Examination (OSCE) circuit. After completing these tests, participants were asked to complete a questionnaire asking about estimates of performance in both the knowledge test and the OSCE circuit.

Results
Overall participants underestimated their performance in both the knowledge test, \(t(250) = -2.57, p<0.01\) and the OSCE, \(t(250) = -28.79, p <0.01\) compared with their actual test scores. When we compared estimates in performance according to those volunteers who scored in the lowest quartile and those who scored in the top quartile, we found that both groups were significantly likely to underestimate their performance in the knowledge test, \(t(57) = 4.00, p<0.01\) and \(t(69) = -7.41, p<0.01\) respectively. Similarly, those volunteers who scored in the lowest quartile and those who scored in the top quartile were significantly likely to underestimate their performance in the OSCE, \(t(61) = 9.16, p<0.01\) and \(t(68) = 19.24, p<0.01\) respectively.

Discussion and Conclusions
Interestingly, there is a tendency for volunteers in this study to underestimate their performance in both the knowledge test and the OSCE. There is no evidence, in this sample, of those volunteers who score lower in the knowledge test or the OSCE compared with their peers to overestimate their performance, as has been found amongst other samples. It may be the case that the underestimation of performance in this sample is characteristic of a high achieving group of qualified doctors. Implications of these findings are discussed.

References
Quality Improvement
Quality Improvement in the undergraduate curriculum: a pilot project

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Introduction
Quality improvement, patient safety and leadership and management skills have always formed part of the ‘hidden curriculum’ at medical school. With the publication of the WHO patient safety curriculum guide for medical schools1, in combination with the requirements set out by the GMC Tomorrow’s Doctors2, and addressing leadership and management skills in accordance to Medical Leadership Competency Framework3, Imperial College Medical School designed a Clinical Quality Improvement Assignment (CQIA). The aim of this study was to evaluate the student experience of the project and their perception of its overall benefit.

Methods
61 third year medical students, grouped into 16 firms participated in the CQIA during their 10 week placement at a central teaching hospital. Following a formal didactic teaching session, each group of students had to identify a key strategy, evaluate existing practice and generate an improvement strategy. They were supported throughout the process by both the teaching co-ordinator and their clinical teams. At the end of their attachment, each group had to produce a poster and give a 10 minute oral presentation, which were assessed by a panel of judges with an interest in clinical improvement. At the end of the assignment, the students were asked to complete a questionnaire to evaluate their experience.

Results
On evaluation of the assignment, 77% of students scored positively in their understanding of the project aims. 82% agreed that they were able to recognise a clinical service deficiency and 67% claiming they were able to establish a clinical improvement idea that could be implemented in practice. The majority of students 72% found this project to be of positive benefit to them.

Conclusions
Our students deemed this assignment a beneficial and worthy exercise in identification, evaluation and development of a quality improvement strategy. The groups were able to identify a key issue, whilst actively engaging with their clinical team to develop a strategy for quality improvement. This project was therefore a successful pilot. We have subsequently introduced this into the formal Year 3 curriculum. The CQIA incorporates the essential requirements of the undergraduate curriculum with regards to quality and patient safety whilst additionally developing student leadership and management competencies.

References
3. Guidance for Undergraduate Medical Education: Integrating the Medical Leadership Competency Framework Academy of Royal Medical Colleges 2010
Selection
A Peer Tutor Recruitment Programme-Selecting Tomorrow’s Teachers

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Background and Purpose
Clinical skills teaching at St George’s University of London (SGUL) utilizes peer tutors who are more senior medical students. The peer tutor programme is highly valued by students and clinicians and every year large numbers of students compete for available vacancies to teach. In other institutions peer tutors are selected either randomly or by using tools such as personal interviews with a mentoring doctor or assessment of knowledge of the course material.

Development of a selection system to fairly and effectively discriminate between applicants has become necessary as applicants exceed places for our peer tutor training programme.

Methodology
Previous experience at SGUL has shown that the best peer tutors are those who are good at maintaining communication with the administrators, demonstrate a high standard of professionalism and have never had to re-take a year. An application form was designed involving a series of questions assessing candidates’ suitability for teaching clinical skills. Candidates are asked to provide information on their past OSCE performance. Three ‘essay-type’ of questions assess how the candidates apply their teaching and communication skills practically. They are also asked to explain how they would handle a common but challenging scenario specifically relating to clinical skills teaching by peer tutors.

Applications are double marked by two lecturers according to the rigorous marking criteria. Each question is marked on a scale of 1-5.

Results
In 2011/12 185 students applied to be peer tutors (lower in comparison with the previous years). Two markers marked each application. All marks were added and a pass mark was set at 8.5 marks (total marks = 20, Max 19.0). Students who had to re-take a year or who did not submit their applications by the deadline were rejected. 81 were successful and offered a place.

Discussions and Conclusions
From the feedback it appears that candidates found the application form more challenging than previously. However the answers to the question were more focused and allowed to discriminate between candidates more effectively. Lower number of students applied compared to the previous years which may indicate that candidates who were not dedicated to the programme gave up early in the application process.
Applying for your first job: The weighting game

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Background
Applying for the first job after medical school is centralised through the UKFPO. An academic ranking for each applicant is an important factor in matching them to available jobs. There is no standard method for calculation of the rankings. The University of Sheffield Medical School has previously used the four summative assessments (Year 1 – Year 4), giving equal weighting to each, in calculating an individual’s rank. The Medical School reviewed this and sought student opinion on the fairest system.

Materials and Methods
Faculty staff members and student representatives worked together to produce two separate options for students to consider. Option 1 was the existing equally weighted system and Option 2 was a new differential weighting.

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<th>Exam weighting</th>
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<td>Year 1:</td>
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<td>Year 2:</td>
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These two options were explained to the entire student body, approximately 1500 students over 6 years. The information was presented in a lecture to each year group, which briefly explained the concepts, the 2 proposed options and allowed time for questions and discussion. Students who were unable to attend were emailed the presentation and encouraged to reply with any questions they may have had. Students were then given the option to vote. Students were able to vote in a number of ways including paper ballots, email and through an electronic audience response system.

Results
Overall students were in favour of Option 1 where their rankings will be dependent upon their exam performance over the four exams equally (380 votes to 279, which is 57.66% of all of the votes cast). The breakdown of the votes by year group showed that all but one year, (Year 1) voted in favour of Option 1.

Discussion and Conclusion
Although class rankings are never popular with students they are an important aspect of job allocation and the UKFPO system. A system using equal weighting for performance in each of the exams was favoured over a differential weighting. Interestingly, this is closer to the concept of a Grade Point Average (GPA) than to the more traditional degree classifications that UK universities currently use for undergraduate subjects other than Medicine. The GPA system is widely used throughout the USA and several UK universities are considering introducing it. Students appear to agree that the equal weighting for all summative assessments is fair for calculating academic ranking for job allocation.
Staff/Faculty Development
Helping Junior Doctors to ‘Find their Feet’ - Incorporating Shadowing Experiences into a Clinical Microbiology Induction Programme

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Introduction
The nature of rotation training means junior doctors have to work in a different specialty every 3 to 6 months. Junior doctors need high quality induction programmes to help them ‘find their feet’ quickly in the new department. This pilot study explored whether or not incorporating shadowing experience into our existing microbiology departmental induction programme can enhance our trainee induction experiences.

Methods
Setting: The Department of Microbiology (Whipps Cross University Hospital NHS Trust, London) consisted of 2 consultants, 1 registrar and 1 FY2. Development of shadowing experience: A microbiology FY2 (ST) performed a curriculum mapping exercise and mapped out the key learning outcomes he gained between December 2010 and March 2011. Harden’s 10 questions were used as a framework to design the 1 day structured shadowing experience. Areas covered included generic skills (communication and teamwork), patient management skills (interpretation and management of blood culture and wound swab results) and clinical experience (telephone consultations and infection ward round). Implementation: Shadowing experience took place prior to the start of the new FY2’s (MF) rotation in April 2011. This was later followed by a formal departmental induction. MF observed and undertook clinical activities under direct supervision from the registrar (JR) and/or ST. Teaching methods employed included problem-based learning and bed-side teaching. Evaluation: Feedback was obtained from the learner and departmental staffs.

Results
The shadowing experience took place as two 3 hours sessions over 2 days (not as originally anticipated due to time constraints). It was perceived by the leaner and departmental staffs to be interactive, clinically orientated and relevant to the new FY2 post holder’s day-to-day clinical activities. The disadvantages of this intervention included the additional staff time and resources required to design and implement the shadowing experience. Some of the induction programme’s learning objectives were duplicated following the introduction of shadowing experience.

Discussion / Conclusion
Shadowing can be a useful part of doctors’ learning experiences through ‘supported participation’, which helps them participate in further practice.¹ Through shadowing an existing post holder, the learner gained an insight into the nature of the job before his post began. The GMC (UK) already expected final year medical students to undertake a period of shadowing prior to first employment. Thus, shadowing experiences (as part of a departmental induction programme) could also be useful in specialties (e.g. microbiology, public health, pathology, genetics) where their new trainees have had limited clinical exposure to as a medical student.

References
Medical students’ views on the clinical importance of the musculoskeletal system

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Background and Purpose
The large prevalence of patients with disorders of the musculoskeletal (MSK) system and the great impact on their lives means that there is great pressure to produce junior doctors of high enough standard to manage these patients. However, it continues to be shown that junior doctors are not currently reaching those standards and criticisms have been levelled at the undergraduate educational system. A survey of current medical students was performed after their undergraduate MSK education to assess their confidence and attitude regarding the MSK system.

Methodology
An online questionnaire was produced and distributed to all 3rd year medical students at the University of Bristol who had completed the clinical MSK course, which forms part of 3rd year.

Results
A total of 51 students completed the questionnaire out of 241 who were emailed a link to the survey, giving a response rate of 20.6%. Students generally felt confident in terms of taking a history, examining and managing patients with MSK disorders (mean confidence ratings 7.6 ± 0.21, 7.4 ± 0.21 and 7.5 ± 0.19 respectively. Scale = 1 to 10; 1 = no confidence at all and 10 = very confident. Error = standard error of the mean). Students selected the 6 most useful foundation training rotations from 21 suggestions. Rheumatology was ranked as the 2nd least useful (2.4% of votes), whilst orthopaedic surgery came 10th (28.9%). 67.4% of respondents rated the MSK examination to be an ‘important’ or ‘very important’ part of the clinical evaluation, yet during a standard medical/surgical clerking, 48.9% of students do not do a MSK systems review and 86.0% never or rarely perform a GALS screen.

Discussion and Conclusions
Students of Bristol Medical School appear confident in their ability to assess and manage MSK patients and most appreciate the importance of considering the system as part of the holistic clinical evaluation. Despite this, students continue to overlook the system when clerking patients and this helps to explain why junior doctors are also not giving the system due attention. It is therefore vital that the importance of considering the system in all patients is stressed during undergraduate education. This must be re-emphasised during foundation year teaching, as well as practically on the wards with the continued inclusion of the MSK system on clerking proformas.
An Assessment of Ward Rounds and Clinics for Medical Students in their Child Health Block

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Aims & Objectives
To determine if ward rounds and clinics provide good learning experiences for students during their Child Health block.

Introduction
Ward rounds and clinics are an integral part of medical student learning and often the foundation of structured clinical placements. They utilise experimental learning theory whereby learning is often most effective through experience, however, experiences are often variable. At Leicester Medical School, students in the 7 weeks Child Health Block are encouraged to attend 2 ward rounds and 1-2 clinics per week, for 2 hours per session. This study was carried out to assess whether these experiences helped students learn key skills such as Paediatric history taking, examination, communication and management of specific conditions, and what attributes of the teacher contributed to a good learning experience.

Methodology
A questionnaire was completed 3 weeks into their placement by one block of medical students (n=31, 100% response rate), which provided both quantitative and qualitative data. The data was analysed and the qualitative comments were grouped into themes.

Results
1) The majority of students found ward rounds and clinics useful and enjoyable.
2) On average, students had attended 4-6 clinics and 3-5s ward and stayed for 2-3 hours.
3) The positive aspects of ward rounds and clinics were the variety in clinical problems, the opportunities to examine children and observing how to interact with children and parents.
4) In clinics, 68% of students felt these helped them learn how to do Paediatric history and perform an examination; 81% how to communicate with patients and families; and 91% how to manage specific Paediatric problems.
5) In ward rounds, 54% felt these helped them learn how to take a Paediatric history; 75% how to perform Paediatric examinations; 75% how to communicate with patients and families; and 82% how to manage specific clinical problems.
6) Qualities of doctors that contributed to the learning experience included:
   - “Active involvement in the consultation (history and examination)”
   - “Asked questions to students”
   - “Enthusiasm to teach”
   - “Willingness to spend time teaching”
   - “Friendly”
7) Ward rounds could be improved by increasing students involvement.

Conclusion
The majority of students found ward rounds and clinics helpful and useful, and most were able to meet the important learning objectives during them. However, many said these could be improved by increasing student interaction and involvement. This information will be fed back to tutors to further improve the students’ learning experiences.

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2. General Medical Council (2011) Clinical Placements for medical students, Advice supplementary to Tomorrow’s Doctors (2009)
Improving and sustaining departmental quality standards in Safe Prescribing

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Background
Maintaining high professional standards for prescribing practice is critical for quality patient care. Clear prescribing guidance does exist\(^1,2,3,4\) but it is widely recognised that maintaining these standards in the workplace is difficult\(^5\) and there are currently no validated tools for competency assessment\(^6\). Previous studies have suggested that standards can be improved with appropriate training\(^7,8\) and ongoing monitoring of prescribing\(^9\).

Methods
An ongoing evaluation of paediatric prescribing standards was introduced using a checklist containing 11 parameters as a template against which to audit our practice. Weekly audits of drug charts were performed; with results reported back to the team and displayed graphically throughout the department. Initial data collection was captured by a pharmacist but was deliberately handed to the junior doctors; to increase their awareness of prescribing practices and allow immediate feedback to colleagues who failed to meet the standards required. Results were verified by an independent member of staff.

Results
Over time, significant improvement in prescribing practices were noted, notably when the responsibility for data collection was handed over to the prescribers. Standards dropped with locums, weekends and festive seasons when staffing levels were stretched.

Conclusions
Driving up departmental quality standards in prescribing occurred by maintaining an awareness of accountability through feedback in ‘real-time’. Collective responsibility, a distributed sense of ownership and the desire to implement change were the keys to success.

References
Tutors’ experiences on teaching reflective writing to first year medical students

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Background and Purpose
A new personal and professional development (PPD) thread, incorporating reflective writing via e-portfolios, was introduced into the 5-year Aberdeen MBChB. This is the first time tutors have been asked to teach and assess reflective writing skills with first year medical students. The aim of this study is to gain understanding of the experiences of tutors involved in teaching/facilitating reflective writing skills and to identify how best to support these tutors in future.

Methodology
This exploratory study employed individual semi-structured interviews to explore individual experiences of teaching reflective writing within a pragmatist epistemology. All tutors involved in the first year of teaching were approached (n=15), six agreed to take part and five interviews were carried out. Analysis was primarily iterative and data driven.

Results
Interviewees were very positive about students developing reflective skills and about their involvement in teaching these skills. All those interviewed wished to carry on their involvement. This teaching was perceived as very different from their other teaching activities and quite a new experience for the tutors. Lack of experience did cause some worry, mainly with regards to feedback on students’ written reflective pieces. Despite previous training and growing experience, a few tutors still reported some uncertainty regarding the quality and usefulness of their feedback. Further training around feedback on reflective writing was suggested, as were methods to do so (e.g. online provision of examples).

Discussion and Conclusions
Overall, tutors were positive about the need for developing the reflective practitioner from the early years of undergraduate medicine. Using qualitative interviews allowed potential solutions on how to best support tutors to come from the tutors themselves (encouraging faculty development). In terms of staff development, this approach might also be an effective way to support ongoing tutors learning requirements e.g. that training should build on existing knowledge and experience and increase tutors’ confidence and self-efficacy in giving feedback. Further work in this area includes creating and evaluating appropriate support materials/training need.

References
Teaching Skills Development for Specialist Trainees (ST) tutors involved in Year 3 undergraduate psychiatry block: Evaluation of a development day

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Background and Purpose
With a new curriculum being rolled out in Aberdeen MBCHB degree¹, teaching resources for Year 3 Psychiatry were revisited and training to support/develop ST tutors was organised.² Previous work had indicated that ST tutors leading the small group teaching sessions felt inexperienced in doing so.³ We report here the development and evaluation of the training for a tutorial-based programme.

Methodology
Firstly, a ‘teaching skills for psychiatrists’ development day was devised. Three meetings took place amongst the authors, prior to the training day which took place one month before Year 3 psychiatric block (Oct 2011). Training content was decided and included generic and specific knowledge and skills; adult learning theories, small group teaching skills, ice breakers, specific Year 3 MBChB tutorial guides and handouts. The content was delivered through a mixture of approaches (from more didactic to more interactive/participant centred) over the course of the day. The learning objectives for the training day aligned with the ST training curriculum.

Feedback for evaluating the training was carried out at various points (i.e. during the training, during the teaching and after the teaching) from both participants and students. It included both quantitative (likert scales) and qualitative measures (free text, interviews - ongoing).

Results
Feedback from ST participants on the day was positive overall. Likert questions and space for comments, used to evaluate the ‘adult learning theories’ session (n=19), were very positive/positive for questions around the presenter, the content and relevance of session. Free text only questions (specifically asking about positive and negative aspects, and also suggestions for improvements) were used to evaluate the ‘small group methods’ session (n=25). Comments aligned with previous session feedback re: interactive and engaging. Suggestions for improvement were given around making scenarios more complex, including role play and the size of room/timing of the session. Of those ST tutors who went on to teach the Year 3 tutorials, feedback from students was positive, with the majority of tutors getting high to very high scores on their teaching (analysis ongoing). Data from interviews will be analysed and integrated into the other evaluation data.

Discussion and Conclusions
Different evaluation methods gave different depths of feedback. Training days such as ours could be useful for STs in other specialties (using a revised/tailored format).

References
1: http://www.abdn.ac.uk/medicine-dentistry/medical-dental/programmes/medicine/
3: Cameron I (abstract also submitted for ASME poster).
Peer Mentoring in Academic Medicine – the importance of informal mentoring for trainee development

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Background

The benefits of mentorship in clinical medicine are well established, and result in significant personal and professional development for the trainee. However, research on mentoring in academic medicine is limited, with the focus more commonly on outcomes rather than the mentoring process. With the changing structure of academic medicine as a sub-speciality, the mentoring role is gaining both recognition and importance.

The mentoring process provides a means by which trainees can develop professional academic skills, including career management and networking. Furthermore, it enhances essential skills, such as medical writing and public speaking. This is particularly important, as it has been previously demonstrated that trainees tend to feel inadequately prepared for academic careers. The increasing requirement for mentors has led to formal mentoring programs in all areas of postgraduate medicine. This form of mentoring is planned and mandatory. Often, this is successful, but occasionally, status differences limit these relationships. Informal mentoring has been shown to provide a more effective mentoring model.

Aims and Methodology

A community-of-practice was arranged independently by academic fellows to explore ideas and concerns within academic trainees about aspects of their training. Small peer mentoring groups (PMG) were arranged for all academic trainees at BSUH in October 2011. Each group contained individuals at all levels of academic training. Monthly meetings have been established within the smaller PMG, and also as a combined group. An action research project has been established and areas where the PMG feel are lacking are, subsequently, acted upon. The study is ongoing. Interviews and focus groups will be used to elicit perceptions and to introduce interventions. Academic trainees will be re-evaluated at three time-points (3, 6 & 12 months).

Results

Early issues highlighted included lack of formal academic education. To facilitate this, the PMG has arranged monthly journal clubs and a peer-reviewing exercise where academic trainees will provide their own work in progress for group critical appraisal. This aims to develop critical appraisal skills within a supportive environment, and enable editing and improve the quality of work prior to submission. Results from the first 3-month review will be presented, as will the framework for this program.

Conclusions

We have found that, as the motivation for informal mentoring lies primarily with the mentees, an introduction between small groups of academic trainees helps nurture and facilitate support networks amongst this cohort.

References

Intentions and strategy choices when delivering large group lectures to undergraduate medical students

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Background and purpose
The GMC has recommended that training of UK medical students should concentrate more on promoting critical understanding of core material and less on rote learning of facts. Large group lectures remain a key part of many undergraduate curricula, yet little attention has hitherto been given to the potential role of the teacher in influencing medical student approach to learning in this setting. Data indicates that teaching strategies aligning with assisting learning processes are more likely to associated with deep learning in students than strategies aligning predominantly with information transmission. In this study I have investigated lecturers’ choices of education strategies when delivering large group lectures to undergraduates and looked at how this aligns with their intentions when teaching.

Methodology
Eleven clinician-educators completed a 16-item validated approach to teaching inventory (ATI) in advance teaching year 5 undergraduates. This includes 8 items on intention and 8 on strategy choice each marked on a 1-5 Likert scale. Although a quantitative tool, here it was used to investigate qualitative variation in ways of approaching teaching. Data was supplemented by interview questions on strategies used to assist learning. The relative importance placed on assisting learning versus delivering facts. Non-parametric paired analysis using Wilcoxon signed-rank tests were used to investigate the statistical association between intention and strategy scores on the ATI

Results
Using this inventory, 9/11 teachers had strategy scores which were higher for presenting facts (median score 13, range 7-16) than assisting learning (median score 9, range 4-15). Interview data confirmed that knowledge of strategies to assist learning were low ranging from 0-3 items per participant. These data did not align with teachers’ intentions, however. ATI scores indicated that only 4 were predominantly in favour of transmitting facts (median score 13, range 11-17) over assisting learning (median score 13, range 8-15) with the remainder in favour of assisting learning or equally aligned with both. Interview data was similar indicating that the majority (6/11) participants had a predominant or equal intent of assisting learning. Despite this, strategy choice scores were significantly lower than paired intent-scores for assisting learning (p= 0.005).

Discussion and conclusion
These data indicate that many of our lecturers value assisting learning as much or more than transmitting facts when delivering undergraduate lectures. They do not know the strategies required to put their intentions into practice, however. Student learning may be improved by educating clinician-educators specifically in strategies that would help align intentions with practice.

References
Improving practice as a clinical supervisor through an accredited postgraduate module - capturing the impact

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Background
As part of an overall educator development strategy, the North Western Deanery commissioned a bespoke Postgraduate Certificate in Postgraduate Workplace Based Medical Education¹. The Deanery works in partnership with Edge Hill University to develop, deliver, assess and evaluate the PGCert, which comprises three modules, aligned with the knowledge and skills needed by: Clinical Supervisor, Educational Supervisor and Educational Lead. The programme is open to all doctors working across the Deanery, and all hospital-based higher specialty trainees are funded to undertake module 1. Since the launch in 2009, almost 1,000 doctors have accessed a module. The programme is delivered by blended learning and encourages reflection on participants’ every day supervisory practice.

Methodology
An evaluation of the first 2 cohorts of module 1 was undertaken. A questionnaire was devised by the joint programme team, delivered via an online survey tool. Semi-structured telephone interviews were then undertaken by a University researcher independent from the programme. The interview transcripts were analysed by the researcher and a senior member of the Edge Hill team, and emerging themes were reviewed by the programme team.

Results
67 (of 160) students, completed the questionnaire (42% response rate). 15 telephone interviews were completed.

The module was rated very highly by the respondents. 84% of respondents reported positive impact on their practice as a clinical supervisor in four broad areas:

• work-place based assessments and giving feedback
• organised, planned and systematic supervision
• actual teaching, teaching skills, and specific teaching methods
• enhanced understanding of learning styles

These findings will be presented and discussed in more detail.

Conclusions
Studying this module on workplace based teaching and assessment appears to have a positive impact on actual practice as a clinical supervisor. Of particular note, in a changing NHS landscape with increasing pressure on time for training², are the reported changes in terms of utilising workplace based assessment tools more effectively with formative feedback to develop competence and the use of structured teaching frameworks in the workplace to facilitate more efficient use of time. Since these results are based on self reporting, the programme team is considering methods for measuring actual impact of the learning on supervisory practice in the longer term.

References
¹ PGCert information http://www.nwpgmd.nhs.uk/educator-development/pgce (accessed 10 February 2012)
How does a group Peer Observation of Teaching scheme lead to change in teaching practice? The experience of teaching fellows in a UK medical school

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Background and purpose
Peer observation of teaching has been shown to lead to subsequent change in teaching practice1,2,3. By undertaking reciprocal peer observation the opportunity for reflective practice and collaborative learning is possible rather than a judgement of teaching performance based on external criteria4. The specific aspects of peer observation which can lead to change in practice for a group of clinical educators have not been fully explored. This study therefore seeks to investigate what specific aspects of a group peer observation of teaching scheme were key to change in practice and the advantages and disadvantages of implementing a group peer observation programme in this setting.

Methodology
Eight (of a total of nine) teaching fellows responsible for facilitating small group learning with medical students in their first 18 months in a single UK medical school agreed to participate. Participants had been in post for several months to several years and participation was voluntary. Following ethical approval, pairings were allocated randomly and the group undertook reciprocal peer observation of teaching. This involved a pre-observation meeting to identify the focus for feedback, observation of teaching using a structured form and a post observation meeting to provide feedback to the observee and to allow for general discussion. This was followed by a focus group discussion which was audio recorded and transcribed. The data was analysed using a basic thematic approach5. Initial themes were generated, checked and further themes identified. Discrepancies in the coding were discussed before applying the agreed coding strategy.

Results
Active participation in the group peer observation process was key to change in practice. Subthemes included feedback, motivation to learn, positive reinforcement and observing others. The benefits of implementing a group scheme included motivation and support for participation, building group relationships, raising the profile of teaching, facilitating informed observation and promoting a culture of teacher development. The disadvantages related to logistics of the process and a fear of fragmenting working relationships.

Discussion and Conclusions
Peer observation of teaching can lead to change in teaching practice in a group setting. Specific factors in the process of peer observation lead to change in practice and benefits outweighed the disadvantages of undertaking a group approach in this case. We suggest a framework for implementing a group peer observation of teaching scheme which may help others considering similar schemes.

References
Developing Tomorrow’s Teachers

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Background and purpose
At St George’s University of London (SGUL) we have been using peer tutors to help deliver our clinical skills teaching since 2001; we currently have 350 peer tutors. The GMC guidance for students requires them to contribute to teaching students and to demonstrate basic teaching skills.¹

Contrary to the widely held belief that teachers are ‘born not made’ it has been long acknowledged that teachers need to develop their teaching skills. ² As the peer tutors do not qualify for any formal training or certification it is especially important that their own development is nurtured. We aim to identify generic peer tutor weaknesses through observation by qualified tutors and feedback from students and peers and address them within our peer tutor development programme.

Methodology
On acceptance onto the peer tutor programme tutors receive their initial training in basic teaching skills as well as information on the scheme, curriculum, our expectations of them and what they can expect from us. They are taught specific teaching methods that we use at SGUL, for example the four-stage approach to teaching manual skills.³

By direct observation and evaluation we have identified areas requiring further development including giving feedback, managing small group dynamics and timekeeping, more complex skills/procedures (e.g. neurological examination or suturing) and the integration of clinical communication into skills teaching. A series of optional workshops, which are run with the support of the Communications Skills Team, has been developed to address these areas. These workshops have been evaluated by using questionnaires which collect both quantitative and qualitative data through the use of Likert scales and free text. Additionally, peer tutors are encouraged to keep a portfolio including peer review and regular self-reflection. Additionally, some senior students have the opportunity to spend five weeks immersing themselves in teaching and education with the opportunity to experience curriculum design and development through a Special Study Component in Medical Education.

Results
Forty places are advertised for each workshop. The feedback from workshops has been overwhelmingly positive with comments indicating that tutors are keen to develop more advanced teaching skills. In this poster we will describe the training programme, developmental input and evaluation of the peer tutor training.

Discussion and conclusions
Tutors are keen to attend and develop sessions which involve practical advice on how to teach, as well as attending those sessions which allow them to develop their own clinical skills.

References
1. Medical students: professional values and fitness to practise. Guidance from the GMC and the MSC, 2003, para. 21, 22
Communities of practice for GP Educators – a case study of faculty development using peer learning

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Background
As community placements expand in medical education, it is important that community preceptors are trained to ensure that essential skills are inculcated into our students. This paper describes a case study of faculty development for a group of general practitioners and is contextualised within communities of practice theory.

Methods
Action research case study, involving 11 general practitioners and academic faculty. In year 2 of an integrated curriculum, students visit the same general practice 5 times in groups of 2-3 for a protected teaching session, in which they are taught clinical history and examination skills. Each session is attended by 2-3 patients from the community.

Each GP recorded a teaching session, with student and patient consent. A training day was organised, and GPs were allocated in pairs of ‘critical friends’ to analyse a teaching session. The session was viewed from 3 perspectives – literal, analytic and evaluative, by each pair of general practitioners. Pairs chose clips to present and discuss at a plenary session. GPs completed the Maastricht Clinical Teaching Questionnaire before and after the workshop. Students evaluated their GP tutor using the same questionnaire. At the end of the study, data was presented back to GP participants. Quantitative data were analysed using SPSS. Qualitative data were analysed thematically. Cork Regional Ethics Committee granted ethical approval.

Results
Ten of the eleven GPs involved in teaching participated in the study (8 male, 6>45years) and attended the workshop. Ten recorded a teaching session. 7 GPs completed pre & post-workshop questionnaires. 82 students completed the MCTQ (response rate 76.6%). Seven GPs received ratings by 7 or more students, needed to ensure reliability of ratings. The mean student score for clinical teaching was 8.8 (out of 10), significantly higher than the ratings GPs awarded themselves pre-workshop (p 0.000). Qualitative comments were positive, but highlighted areas for improvement which weren’t captured using the questionnaire. Emergent themes from peer analysis included the need to reduce teacher talking; increase opportunities for students to practice with guided feedback; the ‘sameness’ of teaching despite individual variety in teaching styles. Post workshop evaluation showed increased self-rating of teaching skills (p0.046).

Conclusion
Collaborative models of peer faculty development were acceptable and enjoyed by our teachers. The integration of self-assessment, student feedback and authentic teaching material was an effective means to promote the development of teaching skills for clinicians.

References
The Impact on the educators of “complex fails” in the MRCGP: Ensuring systems learning through significant event auditing

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Background and Purpose
Significant Event Auditing (SEA) is an approach to continuous quality improvement that is regularly performed in general practice in the United Kingdom and is a process in which all General Practice Specialty trainees are expected to participate. We instituted a routine offer of an SEA meeting for educational supervisors, their colleagues and members of the deanery team where the supervisors had had recent experience of supervising trainees with ‘complex fails’ in the MRCGP. We defined ‘complex fail’ as a failure of WPBA plus a failure of the Clinical Skills Assessment (CSA) and/or the Applied Knowledge Test (AKT).

Methodology
Between May 2010 and June 2011 six SEA meetings were held within the North of Scotland deanery to learn from significant adverse events leading up to and resulting from trainees who had had ‘complex fails’. Some learning from these meetings was shared with the wider team of educational supervisors and the deanery GP Team during a large group session at the annual North of Scotland deanery GPST conference. A “gold fish bowl” discussion was facilitated by the chair of the SEA meetings with five of the participating educational supervisors. A summary document was posted onto our intranet for access by all our educational supervisors and deanery GP team. Subsequently we undertook a survey of all participants in the various meetings to capture the impact of the SEA meetings and whether and how they had changed practice.

Results
The results suggested that participants found the meetings to be very useful with benefits in terms of validating the supervisors’ experience and triangulating their judgements, improved team working, including between the training practices and the deanery, and in stimulating change in educational practice. Examples of change were provided and further changes have been introduced as a result of the meetings. Suggestions were made in how to improve the process further.

Discussion and Conclusions
We have found the routine use of the SEA model, to ensure systems learning when practices have failing trainees, to be of benefit and would commend its use. It has resulted in the identification of changes to our systems, shared learning and has enhanced our teamworking approach to the challenges raised by providing educational supervision for trainees with difficulties.

References
Teaching About Specific Subjects
Improving handover of care to enhance patient safety: A model for education

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Background
In 2004, the European working time directive reduced the maximum working hours of junior doctors in the UK, mirroring similar changes across the globe. While the aim of these changes is to enhance patient safety, they have resulted in an exponential increase in shift handover in acute health care, which also poses risks. Despite extensive published literature discussing mainly system based strategies to improve handover, there is little evidence of extensive improvement. A recently published systematic review of education to improve handover\(^1\) synthesised an evidence based framework for patient safety training that is applicable to all areas of practise. This framework targets human factor and non-technical skills. This was used to design a short, low cost intervention to improve handover, which was piloted locally. Its design and effectiveness will be reported.

Method
The handover teaching session designed will be presented, including a short video. During this pilot, trainees were assessed on their patient safety attitudes pre and post intervention using the previously validated APSQ-II survey, as well as on their perceived handover skills and finally their views on the session.

Results
The teaching was delivered over 2 hours in a single room with one facilitator to 14 junior doctors and medical students. Patient safety attitudes improved significantly post intervention (Mean score pre 134, post 142, \(p=0.026\)). 100% of participants reported that after the session they were more capable at spotting sources of error and challenging colleagues who handover poorly. Likert ratings for the content, relevance, interactivity and enjoyment of the session were positive (Mean ratings 9/10 for all areas).

Conclusions
Using our patient safety education framework, handover education can be designed for use within fellowship training and is well received by trainees. Such training significantly improves patient safety attitudes and perceived handover skills. Gastroenterologists involved in education should consider employing our evidence based framework to guide local design of handover improvement interventions.

References
An Innovative Neonatal Intensive Care module: its place in undergraduate medical education

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Background and aims
Student Selected Components (SSCs) must form at least 10% of the medical undergraduate course time\(^1\). These modules give students a chance to consolidate themes from the main curriculum and develop a career interest. Most medical schools cover a small number of neonatal topics during standard paediatric attachments. Leicester Medical School has an SSC placement on a regional tertiary neonatal intensive care unit, which offers a limited number of students the chance to spend three weeks within this challenging but rewarding paediatric subspecialty. This study aims to highlight the features of the Neonatal SSC that students enjoy and find relevant to the broader medical curriculum.

Methods
Students that had completed the SSC were sent a link to an email survey. This included free text responses about memorable experiences students had had on the unit, and what they had learnt that was relevant to their future practise.

Results
17 Students completed the survey. Results from the survey were grouped by the themes of student responses.
The SSC received excellent feedback with an average rating of 9.38 (out of 10) for how much students enjoyed their time on the unit.
Several learning experiences were highlighted by students:
• Observing neonatal resuscitation on the delivery suite
• Attending emergency neonatal retrievals with the resident transport team
• Taking part in high-fidelity training sessions with state-of-the-art mannequins
• Being exposed to difficult ethical discussions, including end of life care
• Getting to know the families of babies on the unit, and their experiences of having a sick or premature baby
Many students identified skills they had learnt that were relevant to the future practise including:
• The approach to assessing and managing seriously ill patients
• How to perform basic practical procedures on neonates
• How to calculate fluid balance in infants

Discussion and Conclusions
Neonatal Intensive Care is a fascinating paediatric subspecialty. A placement on a Neonatal Intensive Care unit is relevant to an undergraduate medical curriculum as it exposes students to situations they may not come across in their main clinical attachments. It also has many key links with core themes that underpin medical curricula, such as the application of basic sciences, principles of medical ethics, and the importance of teamwork.

References
Undertaking a national undergraduate neurology teaching survey: inception, methods, results and lessons for other disciplines

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**Background**
Neurology has historically been a subject of great difficulty and fear for undergraduate medical students, despite it accounting for a significant proportion of hospital medical admissions\(^1\), \(^2\). The lack of adequate teaching can lead to “neurophobia” defined in 1994 as “a fear of the neural sciences and clinical neurology” by medical students and doctors, \(^3\), \(^4\). Teaching this subject to Bristol undergraduate MB ChB students has been especially challenging; students seemed ill equipped with a vital understanding of how empirical neuroscientific principles integrate with pathology which can then be applied to patients with clinical problems. This was compounded by students rotating to another speciality too soon, without enough time to build on their knowledge and skills adequately. They learn enough to be competent but not enough to be proficient. They know how to perform a neurological exam but do not know how to interpret the signs. A preliminary survey revealed Bristol students wanted more neurology teaching and when the undergraduate programme director was approached with this evidence he was resistant to change. Previous national surveys published 20 years ago established Bristol as having one of the shortest neurology teaching programmes nationally, I therefore decided to investigate if this pattern still persisted\(^5\).

**Methodology**
Undergraduate neurology course leads were identified for all 29 clinical medical schools in the UK. They were emailed an online questionnaire survey and non-respondents were followed with a hard copy. The questionnaire focused on eliciting course duration, timing within the clinical programme, course infrastructure, teaching methods employed and acknowledgment of funding.

**Results**
Results of the national survey will be presented. Data collection thus far has revealed a surprisingly wide discrepancy in course programme structure and duration, sometimes even within the same medical school.

**Discussion**
Medical schools are independent institutions with the right to configure clinical training as they see fit provided they produce doctors who meet the standards required for pre-registration. It is therefore surprising that such a large discrepancy exists for curriculum provision between medical schools. Transparency of teaching infrastructure and methods will allow others to improve their teaching programmes and we feel this is information the GMC (as regulators of undergraduate education) should grant access to freely.

**References**
E-learning: Comparing the effectiveness of Virtual patients and Lectures as pedagogies for medical students

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Aim
To evaluate the relative effectiveness of Virtual clinical case scenarios versus lecture based learning in medical students.

Background and Purpose
There has been growing popularity in the use of Virtual patients to augment traditional teaching methods - such as lectures, as part of a blended curriculum. Virtual patients in the form of simulated clinical case scenarios are believed to encourage students to become active and independent learners. This study aims to analyse the feedback obtained from a comparative analysis of these two teaching strategies in a cohort of Year 3 medical students studying Nephrology.

Methodology
This is a randomized, prospective, qualitative and quantitative study to compare the effectiveness of lecture based teaching and Virtual clinical case scenarios in Nephrology. We designed a clinical case based scenario on the management of Acute Kidney Injury using the authoring software Riverside©, ivimeds. The material used in this module was based on the learning objectives from the lecture given on this topic.

This study will randomize a cohort of Year 3 students into two groups with one group completing the online clinical case scenario on Acute Kidney Injury and the other undertaking a lecture on this topic in March 2012. Following the session, feedback will be obtained using a validated Likert-like questionnaire to evaluate student satisfaction. A formative assessment consisting of 10 Short-answer questions will be given to both sets of students.

Results
The comparative results from the qualitative student feedback and the quantitative analysis of the formative assessment will be presented.

Discussion and Conclusions
There is great variability in the clinical experiences of medical students. Virtual patients can provide highly effective ways of addressing reduced student access to real patients, particularly in the field of Nephrology. Web-based clinical case scenarios may encourage active learning as opposed to the passive learning of factual information from the use of didactic methods such as lectures. We hope to provide further evidence for the use of virtual patients as part of a blended curriculum.

References
Teaching and Learning
Peer assisted learning in undergraduate paediatrics

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Background and Purpose
Peer assisted learning has been shown to be an effective method of teaching with benefits to students and tutors alike. Despite this, the effect of peer assisted learning in paediatrics is yet to be formally evaluated. The aim of this study was to evaluate a student-led revision course for students preparing for undergraduate examinations in paediatrics.

Methodology
All penultimate year medical students at one institution were invited to attend a one-day student-led revision course in paediatrics, consisting of a lecture, small group teaching and a revision booklet. Course participants were asked to complete an anonymous pre-course and post course questionnaire based on 5-point likert scale (1=strongly disagree, 5=strongly agree) and qualitative responses. The difference between pre- and post-course feedback scores was analysed using the independent samples Student’s t-test. Post-course feedback was also collected from peer tutors.

Results
140 penultimate year students attended the revision course, 87 (62%) completed the course evaluation questionnaires. Students felt significantly more prepared for paediatric exams after the course (mean score = 3.47 post-course vs. 2.16 pre-course, p<0.0001). Students also felt significantly more prepared to manage children in clinical practice after the course (mean score = 3.49 post-course vs. 2.53 pre-course, p<0.0001). The course as a whole was rated as good by students (mean score 4.35/5) with the small group sessions voted as the most useful part by 83% of students. 100% of students felt that being taught by peers added educational benefit above the conventional teaching they received by paediatricians during their paediatrics attachment. Positive feedback was also received from peer tutors who reported a perceived improvement in their teaching skills and confidence after the course.

Discussion and Conclusions
The results of this study demonstrate the positive evaluation of a student-led undergraduate paediatrics revision course, in particular the small group sessions which included personalised feedback on performance. Peer assisted teaching is clearly of benefit in paediatrics and students feel that additional learning can be gained from being taught by peers, rather than solely through conventional methods. Peer assisted teaching should be encouraged in undergraduate paediatric curricula not only to bring educational benefits but to increase enthusiasm for the specialty and improve recruitment to paediatrics.
The efficacy of a Peer Assisted Learning Scheme (PALS) at School of Medicine, University of St Andrews

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Background and Purpose
Peer assisted learning has been shown to benefit students who participate in the role of mentor and mentee\(^{(1)}\). Studies available have shown that peer-assisted learning schemes improve the confidence of the mentee \(^{(1,2)}\) and also the mentor \(^{(3)}\), whilst limited evidence shows academic performance also improves in both mentee \(^{(4)}\) and mentor \(^{(5)}\). Schemes involving this kind of learning are being increasingly utilised in higher education settings \(^{(5)}\). However there is still limited research examining the effect of peer-mentoring on participating student’s exam results \(^{(4)}\) and the positive impact of the learning experience\(^{(2)}\). There has also been recognition of the need to assess the effectiveness of such schemes in order to utilise them appropriately \(^{(3)}\).

This ongoing study sets out to examine the efficacy of a Peer Assisted Learning Scheme (PALS) which was introduced to the School of Medicine, University of St Andrews in 2010.

Methodology
This study involves a mixed method approach. This comprises a statistical analysis of exam results and grade attainment for students involved in the scheme alongside a Likert Scale questionnaire\(^{(6)}\). Qualitative data will be analysed to determine if an improvement in participants confidence in studying medicine has occurred due to their involvement in the scheme.

Results
Statistical analysis of exam results will be presented together with analysis of participant questionnaires.

Discussion and Conclusions
Investigating the efficacy of this scheme will supply further evidence as to the value and application of peer mentoring schemes in medical education. Such schemes offer an innovative and valuable resource among a wide range of disciplines and learning environments.

References
\(^{(1)}\) Topping KJ. The effectiveness of peer tutoring in further and higher education: A typology and review of the literature. Higher Education 1996-10-01;32(3):321.
Background
Tablet computer use in education is increasing in popularity for several reasons, including portability, accessible user interface, improving battery life and as an alternative to bulky printed paper notes for lectures and textbooks. One such device, the Apple iPad2® has seen an increase in downloadable applications (“apps”) for teaching and learning in medical education, making use of the innovative interface to enhance and complement medical curricula. Although some institutions have issued tablet computers to students, no evaluation has yet been published on the student experience.

Aims
This study aimed to undertake a pilot of student experience of iPads in our Medical School using the first level of Kirkpatrick’s evaluative framework.

Methods
iPad tablet computers were loaned to six 2nd year MBChB students, all of whom had prior experience of using Apple devices. UoA network settings were applied to the devices and the students were then left to configure features on their own. No specific applications (“apps”) were preloaded. After 9 weeks, a semi-structured focus group discussed patterns of use, technical considerations, educational applications and other themes. The recorded session was transcribed and analysed using grounded theory principles.

Results
The students found the iPads easy to transport and less of a barrier for presenting lecturers (e.g. less obtrusive than a laptop). No students required technical support during the pilot. The easy to use interface meant that flipping between lecture notes, timetables, learning objectives and on-the-spot internet searches were easy and quick to perform. Students identified several paid-for and free apps to support their learning (e.g. anatomy). Apart from cost issues, the main barriers to use were a lack of Adobe Flash® support which precluded access to some University of Aberdeen teaching material and difficulty printing on campus as no compatible printers were available during the trial period.

Discussion/Conclusion
Tablet use is increasing across medical education and healthcare. Careful consideration of the educational advantages of these devices needs to be weighed against the technical, logistical and financial barriers.

References
A Pilot Study of a High Fidelity Simulation Course as an Integrated Part of an Undergraduate Critical Care Module

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Background
High-fidelity simulation is increasingly recognised as a useful tool in medical education\(^1\),\(^2\),\(^3\). The most effective way of integrating simulation into undergraduate curricula remains undefined.

Methods
46 Year 5 and 6 undergraduate medical students rotating through a 2 week critical care module received simulation training. Each student experienced an emergency scenario followed by a debrief session where the emphasis was on prompt patient stabilisation and crisis resource management. Students completed pre and post questionnaires of Likert scale questions and “free text” qualitative questions. Mean scores out of 5 for each quantitative question were calculated. The Wilcoxon signed rank test was used to calculate the statistical difference between the before and after scores. A focus group was then conducted using an interview guide approach on a convenience sample from the cohort with the results then coded by 2 educational fellows.

Results
The overwhelming majority of participants found the session useful (mean = 4.9). Benefits in both clinical (mean = 4.7) and non-clinical skills (mean = 4.1) were appreciated. The most powerful effects were on improvement in knowledge of how to stabilize a patient (mean pre 2.3, post 3.7, P<0.0001) and on improvement in appropriate communication to a senior (mean pre 2.6, post 3.9, p<0.0001). There were relatively less powerful benefits seen on the ability to take a history or clinically examine.

The focus group identified several themes. Students valued the rare opportunity to take clinical responsibility on their own. Interpersonal skills of faculty were valued higher than perceived expertise. It was felt that formative assessment would be detrimental to the session’s educational value. It was felt that simulation should be mandatory from Year 5 onwards and that integration into critical care and emergency modules is a highly effective approach. The group valued crisis resource skills training but, at this level, felt that delivery of theoretical knowledge was at least as important.

Conclusions
The integration of a simulation session as part of a critical care module was extremely well received and demonstrated powerful educational impact on both clinical and non-clinical domains. We suggest that simulation should be an integral part of acute care training at undergraduate level.

References
Making medical education enjoyable – the ultimate paradox?

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Background
Medical education can be boring! Many students complain of hour long lectures in stuffy lecture theatres at the beginning of medical school. And yet, over a century ago, the importance of enjoyment in medical education was well recognised by Sir William Osler: “Hilarity, good nature and cheerfulness help enormously in the study of medicine”. Enjoyment is known to engage people, entertain students and encourage deep learning. Despite this, medical teachers don’t often consider enjoyment when planning teaching sessions. So, should we think about how enjoyable students find medical education? We decided to ask our students this question.

Methodology
Last year, the University of Bristol introduced a new simulation course based around acute medical emergencies for final year medical students. The students had not been involved with simulation exercises before and therefore were new to this style of learning. We evaluated the course by running a focus group and collecting feedback questionnaires in which students were asked whether the simulation sessions were enjoyable, why they were enjoyable and whether this was important to their learning.

Results
Students generally enjoyed the simulation session. They felt that confidence and a safe environment were important factors in promoting enjoyment. Others enjoyed the hands-on approach in simulation exercises. Students also enjoyed the self satisfaction and sense of achievement that was gained from simulation. Most students agreed that enjoyment was important to their learning.

Discussion
Medical education and enjoyment aren’t always considered to go hand in hand. However, students believe that enjoyment does help them learn. In addition, our students emphasised the importance of self esteem and self satisfaction in promoting enjoyment within the classroom.

With this is mind, medical teachers may wish to consider how they can make their teaching sessions more fun and enjoyable for their students.

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e-Peer-learning: The use of virtual patients authored by students in teaching clinical reasoning skills

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Peer-assisted learning (PAL) is the development of knowledge and skill, through active help and support, among status equals or matched companions (1). There are various methods used for facilitating PAL, however there are few reports of students using virtual patients (VPs) to teach peers. VPs are suited for teaching clinical reasoning because they provide an authentic opportunity for students to hold responsibility over patient care as well as practice diagnostic clinical decision-making. They also provide more realistic simulation of examination as actual, rather than author descriptions, of physical signs can be shown. The aim of this pilot study was to investigate students’ perceptions about using question and answer cases repurposed into VPs by their peers, compared with a traditional format authored by faculty.

Methods
An invitation to author VP cases was made to students in the final year of the Leicester MBChB course. Students expressing an interest in writing cases were invited to participate in the study. Three students authored five VPs based on scenarios previously written by staff. The VPs were introduced into the curriculum following peer-review by a clinician and a medical educator. Two cases were selected for this evaluation. One was presented to students studying ‘Clinical Methods’ and the other ‘Care of the Elderly’. For the succeeding cohorts students responded to the same case, presented in the traditional linear format using the Virtual Learning Environment. Information about the patient was followed by a question. After each response students received further information and questions in stages. After completing either the VP or linear case students were asked to provide feedback to Likert items and free text questions.

Results
An analysis of student feedback will be presented at the meeting as this is being collected presently.

Discussion
The data will show whether students consider VP cases to be more authentic and engaging. This will be indicated by responses to the items and completion rates for each case format. Free text data will show their reasons for preference of one over the other. Further evaluation will establish whether perceived benefits translate to improved clinical reasoning, performance at assessment, peer-teaching skills and cost-effectiveness.

References
A non-compulsory buddy scheme for clinical medical students, is it used and is it useful?

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Background and Purpose
The transition from pre-clinical to clinical medicine can be difficult and some students require more help than others. Bath Academy, part of Bristol University have developed a non-compulsory buddy scheme where 3rd year students are paired with junior doctors (F2 or above) during their first clinical attachment. Students are provided with a suggested framework to use when meeting their buddy which covers both pastoral and academic support however they are free to use the scheme as much or as little as they wish. This type of informal mentoring should have a positive outcome for both the student and doctor involved.

Methodology
An anonymous questionnaire was sent to three cohorts of 3rd year medical students following their first 12 weeks of clinical medicine at Bath Academy. Questions were asked about whether they made use of the non-compulsory mentoring scheme, how useful it was, how easy it was to arrange and whether there were any barriers to its use. Responses were collated and analysed.

Results
48% of students replied (n=42). 75% of students made use of the non-compulsory buddy scheme. Most students met their buddy 2-3 times over the 12 week period but this ranged from 1 to 9 meetings. Overall 93% of the students that used the scheme found it useful, mostly for improving their clinical examination technique. Only 33% used the suggested meeting framework given to students at the start of the placement. 93% found their buddy approachable although 33% found it difficult to arrange time to meet their buddy. The biggest barrier to using the buddy scheme was the fact that the buddies were too busy with 55% reporting this as a barrier. Only 1 student felt the buddy scheme should be compulsory rather then non-compulsory.

Discussion and Conclusions
The results reveal that most students do use a non-compulsory buddy scheme and almost all found it useful not only for academic but also pastoral support. It is an easy system to set up without significant cost and has clear benefits, however, there are barriers to the use of the scheme such as limited available time of buddies. Guidance should be provided to both buddy and student about how best to use the time available.
Virtual Seminars versus Face-To-Face Seminars for Final Year Medical Students - How Comparable Are the Outcome Measures?

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Background
Using Virtual Learning Environments (VLEs) are increasingly common as a method of delivering education to undergraduate students. Some view these environments as merely a framework for delivering course materials combined with forums for discussion that are teacher led and highlight the need to personalise VLEs (1). Our learners adapt their approach to their learning needs (2) so as educators we need to focus on the curriculum design issues (3). Current thinking is that a blended approach to learning (combining face-to-face teaching with VLEs) is desirable (4, 5).

At King’s we introduced virtual seminars for final year students on their General Practice placements, geographically too far away to return to campus for weekly face to face seminars (approximately 150 students per year of 450). This year we are piloting Moodle - a different platform (an institution wide change from Blackboard). The compulsory seminars remain similar in format, asynchronous discussions (i.e. we are not all present at the same time) on set topics which are in part student-led with cases they post, facilitated by a GP tutor.

Methodology
We will be analysing student evaluation of both face-to-face and Moodle seminars using data obtained from an online questionnaire (Likert ratings and free text) completed at the end of the placement. We plan to compare the two sets of data, looking for any similarities and differences that emerge. We will expand on these themes from subsequent focus group data.

Results
Preliminary data suggests students in the virtual groups may feel less able to work through controversial issues and learn from their peers on-line and our further findings will be presented discussing what does work in this VLE.

Discussion and conclusions
Our expectation was that virtual seminars would not be a substitute for the face to face seminars. These preliminary findings seem to be in line with current thinking that VLEs are a useful adjunct to face to face teaching. Student focus groups should illuminate further what their perceived needs are from VLEs and how we best utilise this technology within our curriculum.

References
Exploring the benefits of high and low fidelity simulation training as an undergraduate medical student: A study of Foundation year one doctors in Coventry, Warwick and Nuneaton

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Background and Purpose
The highest inpatient mortality rates occur during the start of the new foundation year one (FY1) junior doctors. In preparation for real life acute medical emergencies, high and low fidelity patient simulations have been introduced to many undergraduate medical school curriculums. This study looks at the usefulness of such patient simulations during undergraduate training for FY1 doctors in Coventry, Warwick and Nuneaton in handling acute medical emergencies.

Methodology
Questionnaires using 5-point Likert Scales were distributed amongst FY1 doctors based at University Hospital Coventry Warwickshire, Warwick Hospital, and George Elliot Hospital in Nuneaton between October 2011 and January 2012. Information of origin of undergraduate medical training, prior experience of acute medical emergencies as an undergraduate and as FY1 doctors, number of simulation sessions attended, and information on the different aspects learnt from the patient simulation were collected and analysed using SPSS version 19. FY1 doctors from the three sites were chosen due to their proximity to the author’s location.

Results
A total of 64 out of 84 possible FY1 doctors responded. 30% of FY1 doctors based on the three sites have never attended an acute medical emergency during their undergraduate medical training, whilst 40% of those who did attend felt underprepared in dealing with acute medical emergencies. 59% of FY1 doctors who have been involved in acute medical emergencies as an undergraduate feel they have improved their ability to deal with such situations (by one or two more levels) since graduating. There is a non-significant (P<0.053) linear correlation between number of simulations attended and readiness for acute medical emergencies as an FY1 doctor. At least two-thirds of respondents have identified that CPR training, team working and ALS algorithm were the most useful aspect, whilst data interpretation, knowledge retention and practical procedures were least useful aspects learnt.

Discussion and Conclusions
The use of high and low fidelity patient simulation during undergraduate medical training is a relatively new training exercise that is felt to be an important and valuable teaching method of acute medical emergencies in a safe and controlled environment. It benefits trainees beyond simple acquisition of knowledge, and helps prepare medical students to become a safer FY1 doctor on their initial foray into clinical medicine.

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My First Mistake: design and implementation of a session to explore attitudes towards medical error

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Background
Medical error is common and affects 10% of all inpatient admissions. Despite this, doctors remain reluctant to report adverse incidents and there is little discussion regarding the implications for the patient or the doctor. There is a perception that medical negligence is very common and that apologising to patients is an admission of guilt.

Summary of work
As part of the Professional Competencies programme at our institution, an e-learning module was designed to explore this area and encourage students to reflect on their attitudes to error and how they plan to deal with it in their professional lives. The module was timed to occur in final year, where relevance was likely to be greatest. The two and a half hour session comprised a personal reflection from a doctor on a life-threatening mistake, an analysis of how medical error occurs, and an exploration of the legal and ethical framework. Students interacted with the tutor via an online discussion forum that stimulated them to respond to reflective tasks. An online evaluation was performed.

Summary of results
24 students completed the evaluation (39% response rate). The mean evaluation score was 4.6 out of 5 (range 4-5). Students commented that the session was “though-provoking and relevant”, “really interesting” and “extremely enlightening”. Other comments included that it was “terrifying” and that “more interaction would be good”. 91 posts were made to the discussion forum.

Discussion
An online session on error struck a chord with students and stimulated much discussion. Overall satisfaction ratings were high. Students found the session educational, relevant and interesting.

Conclusions
Dealing with mistakes is a major issue for doctors. An interactive session in final year promoted positive attitudes and generated extensive discussion among students.
Implementation of a Cross-Level Peer Assisted Learning Scheme in an Undergraduate Obstetrics and Gynaecology Unit

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Background
Recent studies have demonstrated that PAL is as effective as teaching from senior doctors, less threatening and that the tutors are more sympathetic.1, 2, 3 In view of this a PALs programme for University of Bristol Medical students based in the Department of Obstetrics and Gynaecology at the Great Western Hospital, Swindon was set up.

Objective
To establish a Peer-Assisted Learning (PAL) programme and to evaluate its effectiveness.

Methodology
The PALs programme was delivered as a series of tutorials from a Clinical Teaching Fellow, who was 4 years senior to the students, and a graduate of the same University. Three structured tutorials were delivered throughout an 8 week posting to an initial cohort of 32 students. The tutorials focussed on supporting the students and advising them on how to maximise learning opportunities within the diverse clinical environments in an Obstetrics and Gynaecology Department. The sessions were not aimed at delivering the core curriculum. The PALS tutorials were evaluated using Likert scales (1 = most negative and 5 = most positive) to allow psychometric bipolar analysis of various parameters of student evaluation; assessments were made of 1) the tutorials, 2) the overall scheme and 3) the tutor.

Results
The results demonstrate that the sessions were beneficial, confidence-building and supportive. Consistently high scores were demonstrated across all areas: 1) the tutorials = 4.62, 2) the overall scheme = 4.47 and 3) the tutor = 4.99. The mean score across all areas was 4.69 (maximum = 5.00). In addition, qualitative data has been collated and draws positive themes such as reassurance felt by the students to have regular contact with the PAL tutor and the non-threatening environment created.

Conclusions
We have implemented a PALs scheme that utilises the mentoring and pastoral benefit of PALS. Continual evaluation has been positive; with students appreciating the support available from an extra tutor closer to their level of experience. Data collection is on-going and it will be compared with the data obtained prior to the implementation of PALS.

References
‘They understand what we’re going through’: medical students’ reactions to peer teaching about reflection

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Background
The Early Clinical Experience (ECE) programme in Manchester provides medical students with opportunities to meet patients in clinical settings during the first two years of their course. To maximise their learning from these clinical encounters, the students are encouraged to develop the skills necessary to critically reflect on their experiences. To support them in doing this, they meet as a small group (of up to 12 students) to discuss their experiences, with a ‘peer teacher’, a senior medical student (year 3, 4 or 5). This study aims to investigate year 1 students’ reactions to peer teaching, at a time when they are first introduced to clinical learning and explicitly to reflection.

Methodology
The peer teachers are volunteers who are prepared for teaching through attendance at an educational session about small group facilitation and learning through reflection. A lesson plan for the peer teaching session is shared and subsequently amended in response to their feedback.

In order to elicit the students’ reactions to peer teaching, they are invited to complete a short evaluation questionnaire, immediately after the teaching session, which is anonymous. Analysis of their free text responses follows.

Results
The results demonstrate that most of the students have a positive attitude towards having a senior student as a tutor. They welcome the opportunity to interact with someone who has been in their position recently and is therefore likely to understand what they are going through. They find the peer tutors professional but approachable, and the atmosphere of the teaching session informal. They identify examples of good facilitation and communication skills in their teachers. Through the peer teaching, they begin to understand the importance of reflection and learn how to structure reflective writing. They value the opportunities to share experiences and learn about other’s approaches to difficult situations. The peer teachers give useful tips about talking to patients. They provide constructive feedback and challenge students to analyse their own experiences more deeply.

Conclusions
The year 1 students’ reactions to peer teaching suggest that its inclusion early in their training is justified, and further that peer tutors appear to be able to teach and support them as they are introduced to learning from clinical experience through reflection, possibly acting as reflection champions. Further work will investigate whether involvement in this teaching enhances the peer tutors own knowledge, understanding and practice of reflection, as well as their mastery of teaching.

References
Impact of a case-based training programme on the confidence of final year medical students in drug prescribing

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Background and purpose
The General Medical Council stipulates that medical graduates must be able to effectively “...write safe prescriptions for different types of drugs...” (1). However a lack of clinically focussed teaching on prescribing at medical school contributes to emotional pressures on newly qualified doctors (2). Previous teaching methods used to improve students prescribing skills and confidence have included online and simulator-based methods (3) (4) (5). This particular course aims at improving the confidence in drug prescribing of final year medical students prior to starting their first year of Foundation training by means of a case-based structured training programme.

Methodology
102 final year medical students from the University of Sheffield underwent three weekly two-hour case-based prescribing exercises. This non-compulsory course was designed and facilitated by four academic Foundation Year 2 Doctors, under the supervision of hospital pharmacists and senior medical education academics. The topics covered included how to safely write commonly prescribed drugs in kardexes and discharge prescriptions. The students self-rated their confidence levels in prescribing before and after the course through 2 online questionnaires using a Likert scale (1-5; 1= not confident at all, 5 = very confident). After the course, students filled an evaluation questionnaire on the course, based on a 5 point Likert scale and provided qualitative feedback.

Results
The response rates for the pre and post-course confidence questionnaires were 85% and 33% respectively. The mean confidence levels in prescribing, based on the likert scale, improved from 2.5 to 4.0 (p value < 0.001 using Students T-test) after the course. Both before and after the course, students scored their lowest confidence levels in writing special prescriptions (like insulin, warfarin) and in writing TTOs with controlled drugs though there was still an improvement from 1.7 to 3.6 and 1.9 to 3.5 respectively. The response rate for the course evaluation questionnaire was 59%. Students rated the teaching very highly with a mean of 4.9 out of 5.

Discussion and conclusions
Students’ confidence levels in prescribing are in general low but these improve after the delivery of a junior doctor-led teaching programme on real life prescribing scenarios. Students demonstrated they value such an intervention by turning out in large numbers and evaluating it highly. Research evaluating whether such an intervention with a resulting increase in confidence translates to reduced prescribing errors is now needed.

References
Catching up with Commercials

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Introduction
Educational possibilities offered by electronic media are frequently squandered because media industry production values are ignored. This study aims to demonstrate that an innovative approach to demonstrating cranial nerve examination, using iconic environments, a fast pace and repetition, reinforces learning.

Aim
To show that an e-learning teaching resource emphasising practical cranial nerve examination methodology in real time, accelerates learning by making the process useful and fun rather than time consuming and uninformative.

Background
Despite only lasting seconds, television commercials are highly memorable and change behaviour. In contrast, medical examination videos are typically lectures interspersed with slow-paced demonstrations that reinforce outdated methodology. Filmed in wide angle against tedious backdrops, they fail to engage the learner. The quality we have come to expect from movies and commercial programming contrasts sharply with typical medical educational videos. We should be able to do better.

Methodology
A Sony HDR-SR12 camera was hand-held for movie capture except for extreme close-ups. Editing with iMovie '09 version 8.0.6 on a mac platform resulted in a finished movie lasting less than 150 seconds containing over 80 short scenes. Handheld shots from different angles made each demonstration dynamic and allowed every pixel to be exploited. Famous backdrops around our city were used to maintain interest, encourage engagement and add value. Repetition produced an enriched resource from which more information and interest could be extracted with repeated viewing. Above all, the fluency and pace of the movie replicates real-time cranial nerves assessment. The movie was linked to a separate movie explaining the rationale for examining cranial nerves and the examination techniques employed.

Evaluation
The impact of the movie will be assessed using focus groups to assess learner satisfaction and the development of skills and knowledge.

Conclusion
The cranial nerve examination movie represents an old approach in the media industry but a new approach for medical e-learning. Why are we so slow off the mark?
Learning and Teaching across Specialities - Integrated teaching of mental health for GP and paediatric trainees - An Exploration

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Background and Purpose
This research explores the difficult area in medical education arising from a large gap created by the absence of mental health training for doctors training in Paediatrics and General Practice (GP). Paediatricians and GPs encounter a significant number of patients presenting with psychosocial problems in their practice\(^1\),\(^2\). However, lack of training in basic mental health leads to inability to address commonly presenting psychological problems. The main aim of this study is to explore the integration of mental health teaching into the paediatric teaching programme. The sub-questions were about whether the integrated teaching should continue, how the knowledge and skills gained from such teaching can be assessed, and what new ideas for future directions can be obtained.

Methodology
This was a qualitative research project; a case study methodology\(^4\) was used. The teaching component called ‘Child in Mind’ (CIM)\(^3\) seminars were integrated into the Paediatric teaching programme. Methods included case based discussions (CbDs), in-depth discussion on cases prior to attending the integrated teaching sessions, focus groups with the participants after having attended the seminars and in-depth discussions with Paediatric Consultants. Nine trainees (4 GP & 5 Paediatric) and two Paediatric Consultants participated. All the interviews were audio recorded, transcribed and the transcripts checked by participants for accuracy. Analysis was carried out on the transcripts and interpretations made using ‘self’\(^5\) and emotions generated during the interviews. Triangulation of the data became possible through multiple interlinked methods for the purpose of validity.

Results
Results of analysis from CbDs, in-depth discussions, focus groups and interviews will be presented. Overall, important changes in practice were reported after mental health training.

Discussion and Conclusions
A number of significant issues are faced by trainees and trainers in learning and practising basic mental health skills, including the dynami causing barriers to learning The outcome of this projt was to establish a community of practice\(^6\) between the Paediatric and Child mental health departments with an integrated model of teaching basics of mental health. A change in medical culture has enabled such an integrated teaching model to work and it is accepted that this has enhanced the practice of patient centred bio-psycho-social medicine.

References
Early clinical experience in primary care – piloting change

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Background and Purpose
The GMC requires that curricula are clinically integrated from the beginning of the medical course. (1) Primary Care early clinical experience is an important part of the undergraduate medical curriculum. (2-4) Recruitment and retention of quality GP tutors to deliver early clinical experience is an increasing challenge as GPs face continued pressure on time and resources. (5) The current early clinical experience programme at Nottingham comprises a series of 1:1 visits to a routine GP surgery, placing 500 medical students with 200 GPs across the East Midlands. We describe development of a pilot programme of early clinical primary care experience, whereby groups of students visit a GP surgery for a more structured programme of activities. It is envisaged that such programmes would provide students with a more uniformed experience, with enhanced quality assurance. Fewer teaching GPs would be involved than in the current model.

Methodology
Six GP surgeries with specific interest in medical student teaching were approached to be involved in the pilot group-visit programme. Questionnaires were sent to students and GPs prior to commencing the programme. Feedback was sought from students, GPs and patients after the pilot visits had occurred. and control opinion was also sought from students who were part of the original 1:1 visit programme. Questionnaires were also sent to other existing GP tutors canvassing opinion of such a pilot programme.

Results
Full data collection will be completed within the next three months. Early results suggest that while students were cautiously supportive of the structured visit programme, they felt at a disadvantage for receiving something different to the rest of their year group. Feedback data from patients suggests that they did not mind having two students in the consulting room compared with one. Putative support from non-pilot GP tutors ranged from positive engagement to ‘this teaching model would lead to my instant retirement from teaching’.

Discussion and conclusion
In order to maintain quality early experience in Primary Care, it is necessary to pilot different models of delivery. Any change must be proven to deliver at least the same quality of experience as the original model, with manageable impact on all parties. As GPs face increasing demands on their time, it is likely that many universities may have to revisit the way primary care attachments are delivered: lessons learned from Nottingham’s pilot programme may be beneficial to such universities.

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Do students with good compatibility of Belbin® team roles express greater satisfaction with the way their study groups operate?

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Introduction
Medical schools are required by the GMC to institute systems for quality management in all areas of undergraduate education, including students' learning experience. Additionally, the introduction of higher university fees is likely to result in greater emphasis on student satisfaction; many institutions already closely heed their performance in the National Student Survey. Here we describe a study comparing whether allocation of students to formal study groups based upon preferred team roles impacts upon their satisfaction with these groups.

Methods
Prior to the commencement of Year One, all new medical students on the standard and graduate-entry courses in 2010 were invited to complete a Belbin® team role questionnaire. This questionnaire identifies an individual's behavioural preferences in a team context, particularly in terms of interrelation with other members. Students were subsequently allocated to study groups either based upon these self-defined team-working preferences in order to achieve a balanced composition or randomly. The students and investigators were blinded to this process.

At the end of Year One all students completed a validated Study Group Inventory which explores students' perceptions of study group function. The inventory comprises of 24 items across four domains: members' attitude to members, group's attitude to members, members' interaction with work and group's interaction with work. The results of the inventory were compared between students who had been randomly allocated to groups and those who had been allocated according to preferred team roles.

Results
A total of 132 students were allocated to 16 study groups based on their Belbin® team role preferences and 133 students were randomly allocated to a further 16 groups. The Study Group Inventory scores for the two cohorts showed no statistically significant difference.

Conclusion
This study suggests that the manner in which students are allocated to study groups in the early years of the medical course does not significantly impact upon their satisfaction with study group functioning. More work needs to be undertaken to explore this further.
Does allocating students to study groups according to preferred team roles improve academic performance?

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Introduction
Medical undergraduates frequently learn in the context of formal study groups, especially in the early years of the course. A meta-analysis exploring correlation between group cohesiveness and performance amongst non-medical teams, such as sports teams and military groups, showed a highly significant correlation. It is unknown whether these findings translate to the academic setting. The aim of this study was to identify how creating study groups comprised of individuals with concordant team roles impacts upon academic performance.

Methods
All new medical undergraduates starting the course in 2010 completed a Belbin® team role questionnaire prior to their arrival in medical school. All students gave formal written consent to take part in the study and ethics approval was granted by the Local Ethics Committee. Students were subsequently randomly allocated to either Team Role or Control arms of the trial. Students in the Team Role arm were assigned to 16 study groups on the basis of their previously identified team roles with the aim of producing well-balanced teams. Students in the Control arm were allocated randomly to a further 16 groups. Students and tutors were blinded to which arm of the study they were in. Academic performance in end-of-semester assessments undertaken during the first year of the course was compared between the two arms.

Results
A total of 132 students were allocated to the Team Role arm and 133 students were allocated to the Control arm. Overall, students in the Team Role arm scored higher marks in the end-of-semester assessments than their counterparts in the Control Arm, however, this difference was not statistically significant.

Conclusion
In this study we demonstrated that there may be an association between academic performance and allocation of students to study groups based on their preferred team roles. Further work is required to confirm these findings and explore the nature of this association in greater detail.

References
Students’ narratives of clinical reasoning interactions: Using audio-diaries to understand how they make sense of experience

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Background and Purpose
Narrative helps us make sense of experience: listening to students’ narratives can enhance our understanding of their clinical reasoning experiences.1-4 Although audio-diaries are now well established, the use of such methods in the clinical reasoning context is limited.1-3 With the final year of medical school being a time when evidence of safe clinical reasoning is of paramount importance, we aim to explore how students make sense of their clinical reasoning experiences and develop their reasoning. This paper will explore the audio-diary aspect of one data collection point in a broader study focusing on clinical reasoning in the transition between final year medical student and Foundation Doctor.

Methodology
Of the 19 final year medical students from a single UK medical school participating in this study, 18 consented to the audio-diaries and were issued with audio-recorders and prompt sheets. E-mail and face-to-face reminders were used to prompt audio-diary activity. Preliminary thematic analyses to identify the nature of the clinical reasoning interactions and their impact on subsequent learning are currently being carried out while narrative analyses are being used to explore issues related to meaning-making.4,5 Positive and negative influences on the development of clinical reasoning are being identified and analysed alongside other factors such as impression management.

Results
6 of the 18 consenting participants sent audio-diaries with 30 audio-diary entries (representing individuals cases) being received during fifth year. Audio-diary narratives of clinical reasoning experiences came from a range of specialties and related to participants’ clinical placements at the time of the recording. Some presented a narrative within a narrative, linking a clinical case and their clinical reasoning around this to a similar case previously reviewed. Others presented diary entries that were linked to the same clinical scenario and described the progression of the case and the development of their clinical reasoning over several entries recorded on consecutive days. Some participants described rehearsing their narratives, writing and then reading them out, illustrating participants’ attempts to manage the researchers’ impressions of them.

Discussion and Conclusions
This paper will discuss participants’ narratives of their clinical reasoning interactions along with the educational and research implications of factors influencing its development. Not only will this study deepen the understanding of such issues, but it will provide a basis upon which focused educational strategies can be developed to optimise clinical reasoning skills.

References

362
Students for Students: A qualitative study of an informal near-peer teaching student initiative at Southampton

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Background and Purpose
Near-peer (NP) teaching describes teaching or tutoring from a peer who is one or more year’s senior to the learner.¹ This does not necessarily mean older in years, but signifies a more senior level.² There are different forms of NP teaching; the size of the learning group, the content covered and the place it fits into the curriculum are all important variables. While there is a growing body of research in this area, most has neglected to consider how NP teaching affects deep and surface learning and how it relates to the informal curriculum. In 2010 a group of fourth year students established a NP teaching programme, which they called ‘Students for Students’. This programme aimed to provide third year students with teaching sessions covering a range of diseases and guidance on exam revision. Set in an informal environment the sessions took place outside the timetabled teaching during weekly evening sessions.

The aim of this research is to explore the perceptions and experiences of the founders, teachers and students involved in S4S. Individuals who did not participate in S4S will also be included in the study because by exploring their reasons for not joining the limitations and potential barriers associated with S4S, as well as the complexities of NP teaching more generally, will be exposed.

Methodology
This study uses qualitative methods including 10 semi-structured, in-depth interviews with founders and teachers and 5 focus groups with student learners including 3 with those who attended S4S and 2 with those who did not. Features of grounded theory and constant comparison will be used to identify themes iteratively from on-going data collection and analysis.

Results
Early findings suggest that both S4S teachers and learners believed that they benefited from S4S by helping them to prepare for a major exam and by developing their learning styles. However, while the teaching methods adopted by S4S have the potential to encourage deep learning, they may promote surface learning. This is in part due to the disease-based approach which focuses on the basic sciences and uses a framework which emphasises facts rather than conceptual understanding.

Discussion and Conclusion
NP teaching of the kind at Southampton is a valuable resource but careful consideration and planning must be given to teaching methods in order to avoid the promotion of prescribed and narrow learning styles

References
2. Lockspeiser TM, O'Sullivan P, Teherani A, Muller J. Understanding the experience of being taught by peers: the value of social and cognitive congruence. Advances in Health Sciences Education. 2008;13(3):361-72
Does simulation training based around the ‘on call journey’ improve medical students’ confidence in the clinical and communication skills required when dealing with an acutely unwell patient?

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Background and Purpose
Foundation Year 1 (FY1) doctors are required to assess acutely unwell patients. Evidence suggests that graduates perceive themselves to be less well-prepared for acute care than other areas1. We aimed to provide high-fidelity simulation training to address this learning need in third year medical students as part of a new ‘Infection in Clinical Practice’ module. Placing the students in the role of the FY1 doctor on-call highlights the relevance of this session; a recognised stimulus for motivation and learning2. The day was based around an ‘on-call journey’ described below.

Methodology
Firstly the students underwent interactive teaching in telephone communication, assessment and management of patients with septic shock, handover and documentation. They then participated in a septic shock scenario which included supplementary resources such as blood results and radiology. Groups of 2-3 students initially learnt of the patient’s clinical status in a telephone conversation with a nurse role-player, audible via speakerphone. Their assessment of the ‘patient’ - a programmed Laerdal SimMan - was observed by a tutor and they were expected to instigate basic management using the ‘Sepsis-Six’ guideline3. Students were then debriefed by the tutor and received feedback on their performance. The next part of the scenario required the students to ‘handover’ to a medical registrar (actor), again using the speakerphone function, and then to communicate face-to-face with the patient’s wife (actor). This was followed by another tutor debrief. Finally the students were asked to document their involvement with the patient, including communication, in a simulated set of medical notes. This was later reviewed by the tutors and returned to the students with feedback. Students’ confidence in four core skills, each relating to an aspect of the ‘on-call journey’, was assessed before and after the session.

Results
Preliminary results suggest that students’ confidence in acute care is increased using the above simulation-based teaching but work is still in progress. Results will be presented along with qualitative data on the students’ experience of the session.

Discussion and Conclusions
The structure of this teaching session was designed to present students with open-ended tasks, requiring reactivation of previous knowledge and utilisation of problem-solving skills in a realistic environment. Applicability to practice is enhanced by mirroring the sequence of processes involved in managing an acutely unwell patient; the so-called ‘on-call journey’. This form of teaching may improve students’ confidence in practical tasks as our preliminary results suggest.

References
What do medical students gain from acting as problem based learning facilitators? A preliminary enquiry

A Newton, J Whiteley

A Newton, JASME Co-chair, Final year medical student, University of Liverpool, UK

Introduction
Evidence suggests that medical students can perform the facilitator role as-well as faculty members in terms of group member’s exam success,\textsuperscript{1, 2} group dynamics,\textsuperscript{2} and the groups’ evaluation of their facilitators.\textsuperscript{3} However, the effects upon the student facilitator have been less well studied. This work aims to highlight the perceived advantages and challenges to the student facilitator, and together with previous work\textsuperscript{3} will form the basis of a larger study into issues surrounding students as facilitators.

Methods
The authors co-facilitated a first year PBL group of 8 students for a total of 18 sessions (one author previously facilitated a further 33 sessions) during our final year of medicine at the University of Liverpool, UK. The advantages and challenges were identified, and thematic analysis was utilised to highlight the key issues.

Results
The key advantages were: to prepare for our role as educators; develop both as leaders in terms of group management and team-workers as co-facilitators; and the chance to re-visit first-year learning, cementing it in the context of our current clinical work. The main challenge was fitting the 2-4 hour per week fixed time commitment around our clinical training. Maintaining the facilitator role in light of the fact that the group are our near peers also required close attention.

Conclusions
In terms of the effect on the student facilitator, we believe that the advantages far outweigh the challenges. The facilitator role is diverse and allows the development of a range of skills which are also transferrable to teaching, mentoring, effective communication and team working. Time pressure is a problem, but we found that co-facilitating a group was an effective way of mitigating against timetable clashes. In conclusion, facilitating PBL has allowed us to develop a wide range of additional skills without sacrificing our clinical training. Mentorship from an experienced facilitator has been key to our positive experience.

References
Medical students as public health ambassadors – A grass-roots method for learning about public health promotion

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Background
Childhood obesity is at epidemic proportions, with 1 in 3 primary school leavers now found to be overweight or obese1. Tackling public health issues, including obesity, requires future doctors to develop skills in health promotion and behaviour change. The new NHS Future Forum suggestion of ‘making every contact count’ includes doctors giving lifestyle advice at every patient contact2, emphasising the need to dedicate more time within medical education to public health promotion.

The Healthy and Pro-active Project for Youth (H.A.P.P.Y.) is a medical student led public health initiative, in its pilot phase. By delivering five, fun and interactive lessons on important elements for a healthy and active lifestyle, we hope to empower children to make positive healthy changes. We aim to assess the feasibility of this program as a method of developing medical students’ skills in delivering health messages and experience of health promotion.

Methodology
The pupils’ knowledge, perceptions and actions of their diet and exercise lifestyle habits will be assessed before and after the lessons using questionnaires. The responses will be used to assess the impact of the lessons on the pupils’ understanding of a healthy lifestyle and the extent of lifestyle change. This information can also determine the success of using medical students as public health ambassadors. Medical students taking part will complete questionnaires to explore their views on lesson success, suggest improvements and evaluate personal learning points. This provides additional qualitative data to improve lesson content and assess the scheme as a tool for learning in medical education. Training for medical students on teaching at primary schools will be provided by H.A.P.P.Y. trainers and a schools volunteer network (STEMNET).

Results
Responses to all questionnaires will be presented. Those completed by pupils will be grouped into responses obtained before and after the lessons. These will be presented under the headings of knowledge, perceptions and actions.

Discussion & Conclusion
By undertaking this grass-roots health promotion project, we hope students will begin to develop the knowledge and understanding that is required to deliver health messages to the public effectively. Evaluation of the pilot will enable us to ascertain the potential of this scheme as a means to deliver health-promotion education to medical students, whilst contributing to the health of the local community. We hope students will be able to apply practical skills in delivering important health messages, gained through participation in the scheme, to future practice.

References
Simulating Acute Medical Emergencies: Using a Human Patient Simulator increases Final Year Medical Students’ Confidence

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K Armitage, Speciality Trainee in Acute Medicine, 15 Elsdon Road, Gosforth, Newcastle

Aim

F1 doctors are expected to assess and manage patients presenting with acute medical emergencies. Providing exposure to such patients within the constraints of the Undergraduate curriculum can be difficult. Simulation allows learners to practise clinical skills without exposing patients to risk. A simulation based teaching method was chosen for final year medical students based at Wansbeck General Hospital. The aims of the project were to; safely expose final year medical students to acute medical emergencies & evaluate the quality of teaching delivered

Method

Five clinical scenarios were designed: acute severe asthma, left ventricular failure, sepsis, anaphylaxis and GI bleeding. Teaching fellows served as facilitators. Sessions were run in groups of 3-4 utilising a Laerdal SimMan, with two facilitators. Students were expected to assess and manage the simulator as a real patient, using an ABC approach. Simulated patient notes and investigation results were available. Teaching was evaluated by the students using a five point Likert scale plus free text comments.

Results and Feedback

Seventeen students participated in the teaching. 100% would recommend that these sessions are delivered to all final year MBBS students in the Northumbria Base Unit. 100% strongly agreed that the sessions were relevant to their clinical need and at an appropriate level.

Quotes from Students

- “Excellent practical opportunity to learn about scenarios very relevant to starting work in August”
- “Very enthusiastic facilitators – feel much more confident now”
- “Really useful – one of the best preparation for managing acutely ill patients. Feel much more prepared than before. Thank you!”

Conclusions

The training was valued by the students. Whilst there is limited evidence regarding the impact of clinical simulation training on patient outcome, students felt the sessions prepared them for starting work. Simulation training is increasingly used within medical education, as both a teaching and assessment method. It is important that there is robust delivery of this as part of the undergraduate curriculum. The positive feedback from these sessions as resulted in more teaching staff at Northumbria being trained to deliver the sessions.

References

Audit of the effectiveness of education and individualised feedback for reducing
prescription error rates among foundation year one doctors

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Background and Purpose
The General Medical Council (GMC) expects foundation year one (FY1) doctors to write safe and legal prescriptions 1, but under-preparedness for prescribing has been described as their most significant weakness 2. The EQUIP study3 found the prescribing error rate among FY1s to be 8.4% and recommended that FY1s should receive education on practical prescribing and explicit feedback on their prescribing practice. Systematic review 4 identified only one study 5 investigating the effect of education upon real life prescribing by junior doctors, and this showed no reduction in error rates. Anecdotal evidence suggested a high prescription error rate among FY1s in our hospital. The purpose of this audit was to quantify this and attempt to reduce the error rate using education and individual feedback.

Methodology
All inpatient prescriptions written by 19 FY1s were audited for prescription errors by three pharmacy staff using a standardised form on a single day. The local Code of Practice for Medicines Governance, based on national guidance from various professional bodies, was the audit standard. Sixteen FY1s then attended a prescribing tutorial delivered by a senior pharmacist. All FY1s received written confidential, individualised, peer-comparison feedback on their own prescribing practice along with a written summary of the code of practice to take away. The audit was repeated four weeks later.

Results
520 individual drug prescriptions were reviewed in the first cycle and 564 in the second cycle. Prescription errors were found in 373 (71.7%) prescriptions in the first cycle, reducing to 286 (50.7%) in the second cycle. Specific improvements noted were in the correct signing and dating of prescriptions, the clarity and correctness of ‘as required’ prescriptions and the correct discontinuation of prescriptions. Based on a Severity Error Classification Scheme 3, 99% of errors recorded were minor.

Discussion and Conclusions
This audit confirmed that prescription errors by FY1 doctors in our hospital occurred very commonly. We concentrated on prescription errors, rather than prescribing faults such as inappropriate prescribing. We included all prescription errors of a minor nature, accounting for our high error rate in comparison to other studies including EQUIP. Despite a notable error reduction, 50% of all prescriptions in the second cycle still contained errors. This audit has shown that while education and feedback are effective tools for reduction of prescription errors, they do not eliminate errors. Other interventions such as electronic prescribing or complementary styles of education and feedback may be required.

References
Developing a systems examination DVD as a learning resource for medical students

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K Armitage, Speciality Trainee Acute Medicine, 15 Elsdon Road, Gosforth, Newcastle

Introduction
The use of technology is increasingly common within medical education\(^1\). Our observational experience showed that medical students demonstrate a high degree of uncertainty around correct examination technique. Video packages have been shown to improve student performance in physical examination skills\(^2\).

Aims
- To assess medical student confidence and revision strategies in clinical examination
- Produce a DVD demonstrating major examination routines
- Assess whether the DVD was beneficial

Method
Teaching staff in Northumbria Base Unit filmed twelve common examination routines onto DVD. Forty medical students at Northumbria completed a questionnaire assessing examination routine confidence and revision methods. They were then each given a copy of the DVD, as an adjunct to face-to-face teaching, and intended as a revision method. Four weeks later the students completed a second questionnaire, reassessing their confidence and how useful they had found the DVD.

Results
Conclusions
The mean confidence of the students was higher after watching the DVD for nine out of the eleven examination systems. The DVD was generally considered useful. As technology advances and changes the concept of traditional classroom based teaching, it is important to find ways to effectively incorporate it into medical education\(^3\). The DVD proved to be a valuable learning tool for the students.

References
From the D.R. to Dr - Revisiting anatomy in the final year
L Bowen, A Roberts, T Wilkinson, C Cann, M Jenkins-Welch, J Hall
L Bowen, Lecturer, Department of Anaesthetics, Intensive Care and Pain Medicine, School of Medicine, Cardiff University

Background
Anatomy is a fundamental component of undergraduate medical education, taught in the early years\(^1\). Later years spent in clinical placements are removed from these basic sciences. Once qualified, students are expected to perform procedures and interpret investigations requiring sound anatomical knowledge. We hypothesise that integrating anatomy with clinical skills and placements improves learning.

Programme Development and Structure
Final year students selected an eight week Intermediate Care Module. During this time was spent revisiting the dissection room where an Anatomist and Clinician linked gross, surface and clinical anatomy to situations relevant to foundation doctors.

<table>
<thead>
<tr>
<th>Anatomical Focus</th>
<th>Clinical Relevance/Related Skills</th>
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<tbody>
<tr>
<td>Major vessels:</td>
<td>Vascular access: indications, procedure, complications</td>
</tr>
<tr>
<td>Thorax</td>
<td>Chest x-ray interpretation, Chest drains</td>
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<tr>
<td>Heart</td>
<td>Electrical conduction, ECG interpretation, Resuscitation</td>
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<tr>
<td>Airway</td>
<td>Airway adjuncts, Intubation, Cricothyroidotomy, Tracheostomy</td>
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This was consolidated by clinical placements in acute care areas, small group teaching and simulation sessions.

Methodology
A questionnaire survey of the 24 students undertaking the module was completed, with a 62.5% response rate (15 responses). They were asked to rate their knowledge before and after the module and how they felt able to apply this clinically.

Results
The sessions were perceived to be highly positive, allowing students to integrate previous basic science knowledge with clinical situations. A sizeable proportion (40%, 6/15) felt their existing anatomy knowledge from the core undergraduate curriculum was insufficient to prepare them to be foundation doctors. Subjective improvements in confidence to perform clinical skills occurred in 73.3% (11/15), and 80% (12/15) were more confident in interpreting investigations. The majority (86.7%, 13/15) wanted teaching on clinical, surface and imaging anatomy to form part of the curriculum in their final years.

Conclusions
Revisiting anatomy as final year students allows 3D visualization of structures, providing a reminder of important anatomical points\(^1\). This learning opportunity increases the clinical relevance of classic anatomical dissection for doctors of the future. We suggest that clinical anatomy aids linking basic science knowledge with the practical applications. Participants felt this improved their confidence in key skills necessary for foundation doctors.

Take Home Message
Revisiting clinically relevant anatomy as a core learning tool for final year students may be beneficial and needs further evaluation of knowledge acquisition and retention\(^2\). There is scope to develop this module further and extend the anatomical areas covered. Integration of anatomy in later years can provide a positive, clinically relevant learning experience linking basic science knowledge with real world practicalities.

References
Positive feedback in communications skills training: Enhancing student ability through Video-Interactive Guidance

S Williams, A MacAdam

S Williams Senior Lecturer in Pharmacy Practice, School of Pharmacy and Biomolecular Science, University of Brighton, Brighton, UK

Background and Purpose
Videoed role-plays have long held a useful role in communications skills training as they provide an excellent opportunity for students to review and reflect on their own performance. However, little guidance exists on how best to review and provide feedback on them and often their potential is under-used. Often videos are watched back in a linear fashion with feedback focussing on what the student could improve.

Video-Interactive Guidance (VIG) offers an alternative approach to reviewing videoed interactions that emphasises the positive. Based on Social Learning Theory 1 VIG is a technique that aims to develop an individual's communication skills by encouraging them to reflect on what they do well. Videos are carefully edited to provide students with images of themselves succeeding at something they find difficult. This kind of positive self-modelling2 has shown to be effective in increasing self-efficacy, developing communication skills generally and in enhancing rapport building skills in particular3. With communications skills being an increasingly important element of all healthcare professional training, we aim to investigate the efficacy and feasibility of embedding VIG into the communications skills curriculum in the MPharm degree at the University of Brighton.

Methodology
This is an action research project. The main outcome measures will be student confidence (measured before and after the intervention with questionnaires) and competence in communicating with simulated patients (measured before and after the intervention with objective scoring of the videoed interactions). Focus groups will also be held with VIG participants (students and staff) to elicit some of the problems and barriers to its use.

Results
Results from the survey and first stage focus groups will be presented along with examples of VIG in practice.

Discussion and Conclusions
Whilst there is evidence to suggest that VIG can increase confidence and communications skills outside of a healthcare education setting, there are a number of considerations to be made before its implementation can be made: the process is time-consuming and requires specific IT skills; selection of students for the intervention; the training of staff. Each of these considerations will be discussed along with a consideration of the suitability of VIG for medical and healthcare education.

References
Medical Student’ Perceptions about the Barrier and Bridges to Cultural Competency

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Background and Purpose
Most communities today are of a diverse nature and include different ethnicities, faiths, abilities, sexualities, and so on, with varied norms, beliefs and practices. It is important for doctors to be aware of such diversity in order to provide culturally competent care. In the UK there is currently disagreement about the best approach to teaching and learning cultural diversity in medical school. The two dominant conflicting approaches, each underpinned by different principles, are that of Cultural Competency\(^1\) and Cultural Humility\(^2\).

In order to help students work with diverse populations of patients the Faculty of Medicine at Southampton has embedded diversity as a theme across all years of all programmes. It is taught on multiple platforms but very little is known about how students experience diversity teaching or how able students feel themselves to be in communicating with people from diverse cultures in order to provide effective healthcare. This study aims to partially address this gap by exploring medical students’ perceptions and experiences of cultural diversity.

Methodology
This study employs seven focus groups, one focus group with each year of the three BM programmes. Focus groups consist of five randomly selected students from each respective year group for a total sample size of 35. This method has yielded a wide range of experiences and responses from each of the different year groups and has shown how students’ perceptions of diversity change as they progress in the programme, including significant events and turning points.

Results
Early results indicate that students generally adopt a Cultural Competency rather than a Cultural Humility model of diversity. In addition, students report receiving confusing messages about diversity because what they are taught often conflicts with what they see in the clinical setting.

Discussion and Conclusion
The emphasis on competency rather than humility, and the cognitive dissonance created by differences in what is taught and in what is seen in clinical practice, has a significant impact upon students’ confidence with patients. The advantages of moving toward a blended model of cultural diversity incorporating elements of both Cultural Competence and Cultural Humility as one means of addressing these issues will be discussed.
Sex & Relationships Learning needs assessment – development and pilot of a novel questionnaire

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Background and Purpose
Bristol University offers a Student Selected Component to year two MBChB students in Peer Led Sex Education. The projects undertaken support and develop delivery of sex and relationship education in a local secondary school. We developed a questionnaire to identify unmet learning needs of the Year 9 pupils that we will be teaching, in order to deliver sessions with content that is relevant and up-to-date.

Methodology
Knowledge topics covered by the questionnaire included sexually transmitted infection (STI), contraception and unplanned pregnancy. Attitudinal topics included risk-taking and its management. Skills covered included finding information about sexual health and local services. In order to assess application of knowledge and make the questionnaire more engaging we decided to develop the questionnaire around a relationship scenario. This also allowed exploration of sensitive topics and avoided personal disclosure\textsuperscript{1}. The terms and language used were chosen to be age appropriate as was the question content, subject matter and length of questionnaire\textsuperscript{2}. To ensure validity and reliability of the questionnaire we undertook a pilot\textsuperscript{3} on 12 of our medical student peers, as medical students might be expected to have above average knowledge of this field. Students completed and handed in the questionnaire before giving verbal feedback on structure and content of each question.

Results
Feedback was generally positive though the questionnaire was felt to be too long and repetitive in parts. None of the respondents circled the “I don’t know” option. This may indicate embarrassment so we changed this to “unsure.” Secondly respondents felt there was a subtle difference between level of risk and the probability of a negative outcome. This resulted in changes to response scales ranging from very likely to impossible. Comments relating to the scenario highlighted the need to involve the male partner in the events relating to the unplanned pregnancy. Also questions relating to teenage pregnancy must avoid negativity as students may themselves be children of teenagers. Medical student responses demonstrated reasonable knowledge about STIs but limited knowledge relating to contraception. They also indicated dissatisfaction with the content and delivery of sex and relationships education they had received\textsuperscript{4}. They felt it was outdated and limited in both time and topics covered.

Conclusions
A scenario-based questionnaire allows exploration of learning domains and sensitive subject matter not appropriate to standard questionnaires. Responses during the pilot reinforced this and suggested that school SRE still needs further development.

References
How much do students learn on the Labour Ward?

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Background and purpose
Evidence of real learning for medical undergraduates on the labour ward is not reported in published literature. Interprofessional learning has shown improved enjoyment of undergraduates in their labour ward experience. This aspect is important and has been highlighted with regards to retention and recruitment into the specialty. While some units are able to employ midwives as lecturers to develop knowledge of the process of labour as well as facilitate medical student involvement, most labour wards do not have the resources for this. Although interprofessional learning improves enjoyment we were concerned that the real learning on labour ward was deficient.

Methodology
At the beginning of their clinical attachment fourth year medical students completed multiple choice questions (MCQs) based on labour ward curriculum. The MCQs tested basic level knowledge that we would expect to be obtained on the delivery suite. At the end of the attachment they completed the same MCQs. They also completed a visual analogue scale which ranked, from 1 to 10, their labour ward experience in terms of enjoyment and learning environment compared to other aspects of the course.

Results
One mark was awarded for a complete correct answer out of 14 and the mean score was calculated for each set of MCQs. The mean pre course MCQ score was 24.4% (3.42/14) and 48.9% (6.84/14) in the post course MCQs. The range of scores in the pre course MCQs was 1-6 and in the post course MCQs was 4-12. At the end the students’ average score for enjoyment was 7.6 whereas the learning environment score was 6.8.

Discussion and conclusions
The scores for the pre course quiz indicate that there was limited basic knowledge as was expected. Although there was an improvement in score in the post course quiz, this was still less than 50% which would be considered a pass mark in an exam. Students ranked a higher score for enjoyment than to learning environment which illustrates our initial concern to be true. Although students enjoy their experience on the labour ward and learning from midwives, their working knowledge seems to be limited. A loosely structured ‘real time’ learning tool is now being developed for students to use during their time on the labour ward to improve learning outcomes.

References
Can E-learning improve medical student’s ability to interpret chest x-rays in comparison with electronic text?

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Background, aims and objectives
Studies have shown that junior doctors, usually being the first point of call, miss life-threatening radiological diagnoses despite their level of confidence. Surveys of medical graduates reveal minimal exposure to radiology teaching during their undergraduate training despite their beliefs that radiology plays an important role in clinical practice. The aim of this study was to determine whether an e-learning package could be used as a resource to radiology teaching, and provide better outcomes when compared with electronic (e)-textbook.

Methodology
This was carried out as a prospective cohort study. Undergraduate medical students from the University of Liverpool (UoL) were handed questionnaires prior to a chest x-ray interpretation test to identify levels of experience and confidence. The students were then randomly allocated into two groups; one to an e-learning resource, Image Interpretation Project, developed by E-learning for Healthcare; and the other group to an e-textbook on image interpretation. The students completed a second questionnaire and repeated the chest x-ray interpretation test.

Results
23 students completed the entire study. The average pre-study test score and average post-study score were 22.9% and 33.6% respectively, with a difference of 10.7%. There was a significant effect on the learning outcome (post study results) of using an intervention of some kind (e-learning or e-textbook). 90% of the students who used the e-learning package reported an improvement in their chest x-ray interpretation compared to 38% of those who used the e-textbook. Of the e-learning group, 100% of students, compared with 15% of the e-textbook group, found the material engaging.

Discussion and conclusions
This study demonstrates that e-learning is a valuable learning resource for radiology training. There was a significant improvement of student’s ability to interpret chest x-rays following use of the e-learning package. Although there was no statistically significant difference between the use of e-learning or the e-textbook, students found the e-learning tool to be very engaging and felt that it made a difference to their chest x-ray interpretation skills.

References
First impressions count: Does FAIRness affect adaptation of clinical clerks in their first clinical placement?

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Introduction
The adaptation of clinical clerks on their first clinical placement has been little described in the literature. The first clinical attachment is a time of major transition in learning environment, teaching practices and personal development1 We set out to perform a one month controlled observational study on the effects of a structured teaching model, based on the teaching principles of Feedback, Activity, Individuality, Relevance (FAIRness), on clinical clerks’ adaptation in their first clinical placement.

Method
Subjects were third year medical students at a teaching hospital during their first clinical placement. We employed a mixed methodological approach, and used convenience sampling to identify participants. 40 controls and 15 from FAIRness placements completed our questionnaire, rating ten items from a scale 1-5. Focus groups were held on the first and final week of the clinical attachment. Focus group discussions were transcribed and independently coded by two authors.

Results
Three questionnaire items were rated significantly higher in the FAIRness group compared to control group. The items concerned organising time for teaching, regular feedback and reviewing students’ history and examinations (p= 0.045, 0.0008 and 0.0002 respectively, t-test). Overarching themes identified in focus groups were teaching/learning atmosphere, teaching structure, teaching practices, teachers’ attributes and course structure. FAIRness students reported more consistent and better Integration within the team, teachers’ awareness of students, written and verbal feedback compared to the control participants. However, some FAIRness students reported a lack of direct observation of clinical activity.

Conclusion
Our results have shown the FAIRness approach to have positive effects in the learning and integration of clinical clerks in their first clinical placement. This structured teaching model is beneficial in their adaptation to this major transition.
What’s Hot in Learning and Teaching Innovations in Medical Education?
What’s Hot in Learning and Teaching Innovations in Medical Education?

The Brighton Centre, Brighton, UK
Wednesday 18th July 2012

9.30am Welcome – Dr Gill Doody
Educator Development Group Lead

9.35 Implementation of the Foundation e-portfolio to medical students: a unique collaborative approach between four UK Medical Schools and NHS Education for Scotland (NES)
Julia Montgomery, Brighton & Sussex Medical School

9.55 Could Medical Education become #MedEd? – Twitter’s Potential as an Educational Tool
Ahmed Osman, Bristol University

10.15 Differences in Medical Students’ explicit discourses of professionalism: acting, representing, becoming
Lynn Monrouxe, Director of Medical Education Research, Cardiff University

10.35 Refreshment break

11.00 Cultural Similarities & Differences in Medical Professionalism: a Multi-Region Study
Madawa Chandratilake, Centre for Medical Education, University of Dundee

EDG Education Innovation Award winners:

11.20 ‘HexaXell’ – Revolutionizing Medical Education
See Yung Phang, University of Glasgow

11.40 Virtual Ward: An authentic approach to understanding the clinical reasoning process
Rakesh Patel, University of Leicester

12pm Finish
Implementation of the Foundation e-portfolio to medical students: a unique collaborative approach between four UK Medical Schools and NHS Education for Scotland (NES)

A Jones, J Montgomery, T Vincent, I Haq, H Spencer, R Belcher, D Gill, N Rawlinson, J Williams, C Cooper, D Marshall, A Jardine

A Jones, Clinical Teaching Fellow in Medical Education, Medical Education Unit, Brighton and Sussex Medical School

Background
The use of portfolios as a tool for professional development and assessment in postgraduate medical training is well established\(^1\). The GMC requires doctors to demonstrate lifelong learning, which is well captured by the portfolio approach. *Tomorrow’s Doctors*, 2009 now also requires undergraduate students to “establish the principles of lifelong learning including… a professional development portfolio containing reflections, achievements and learning needs”\(^2\).

Methodology
Four medical schools - UCL, BSMS, UBMS and GUMS - have joined with NHS Education for Scotland (NES) in a unique collaboration to introduce an e-portfolio\(^3\) for undergraduate students. As many postgraduate doctors are using this e-portfolio throughout their training, we agreed within the user group to use the existing Foundation portfolio so that students will have a smooth transition of their undergraduate portfolio and data to postgraduate training. The schools use existing forms, such as the supervisors’ report, work based assessments (WBAs) and reflective logs, with only minor modifications to ensure their appropriateness for undergraduate use. A combined user group has been established, which reciprocates feedback with postgraduate e-portfolio user groups.

Results
UCL and BSMS introduced the e-portfolio in September 2011 to all Year 3 students, followed by UBMS in January 2012 for all years, and GUMS in February 2012 for Year 3. Each medical school uses varying combinations of the e-portfolio’s available functions: UCL and GUMS have piloted the recording of WBAs, whereas BSMS has concentrated on capturing meetings between students and their Clinical Academic Tutors. UBMS is using it to support the implementation of a new Academic Mentor scheme and record competence in *Tomorrow’s Doctors* 2009 core skills\(^4\). All schools are encouraging students to use the reflective logs and personal library.

Discussion and conclusions
We are conducting wide-ranging research to inform others about our approach. Results of the pilot and research will be presented, including the collection of essential assessment data through the e-portfolio, use of reflective logs by students, engagement of staff and students, and use of student advocates to improve uptake.

A committed group of individuals from four different medical schools has come together to drive forward this unique development. We believe that this will encourage reflective practice and result in a smoother transition to Foundation training.

References
2. Tomorrows Doctors, General Medical Council, 2009, para 21b
3. NHS eportfolios [www.nhseportfolios.org](http://www.nhseportfolios.org)
4. Tomorrows Doctors, General Medical Council, 2009, Appendix 1
Could Medical Education become #MedEd? – Twitter’s Potential as an Educational Tool

A Osman, MJ Seager, J Russell, A Wardle, C Uys, T Stubbs, A Cobb

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Background and Purpose
Twitter is the most popular micro-blogging service worldwide and is rapidly growing in popularity1 with readily accessible mobile-devices. Users have profiles from which they are able to post messages, known as tweets, of up to 140 characters. Users can follow personal profiles or those of organisations, e.g. @TheBMA. Users can also ‘retweet’ messages posted by others, therefore when a topic is posted multiple times information can be disseminated rapidly and widely – a phenomenon known as ‘trending’. When a hash tag is inserted before a word or phrase e.g. #MedEd, it becomes possible to search for topics. The purpose of this study was to assess the use and accessibility of Twitter amongst medical students and its potential application as a medical education tool.

Methodology
A student-led Twitter profile named @askamedic was set-up and managed by seven 4th year medical students at the University of Bristol. The aim was to ‘tweet’ advice, answer questions, ‘retweet’ medical news and provide an open forum of discussion for student-led teaching. Following a trial-period of two months, 3rd year students were invited to a student-led teaching session. Participants completed a pilot cross-sectional survey designed to collect quantitative and qualitative data.

Results
82 students attended the session and all completed the survey. 86.6% of the students had a smartphone and 22% currently had a Twitter account. Of those with an account, 27.8% used Twitter daily and 65.0% followed @askamedic. 60% of these followers found the variety of tweets educationally valuable and in particular, tweets about clinical and preclinical facts were found useful by 88.9% and 44.4% respectively, this reflected the cohort of clinical students. Tweets on exam advice, sample exam questions and links to other educational resources were found useful by 88.9%, 83.3% and 66.7% respectively. 33.3% agreed that Twitter is a good medium for delivering medical education, 50.0% felt Twitter is easily accessible and 66.7% agreed that Twitter is easy to use.

Discussion and Conclusions
This study reflects the current general popularity of Twitter, the extensive ownership of smartphones and perceptions that Twitter is easily accessible. Importantly, the majority of followers found our educational tweets to be valuable. The recent advances in technology and social media are influencing the way in which medical education is delivered2. The continuing growth of Twitter and the ease of accessibility to students makes it a potentially powerful medium for rapid, innovative and effective delivery of education.

References
Differences in medical students’ explicit discourses of professionalism: acting, representing, becoming
Lynn V Monrouxe,1 Charlotte E Rees2 & Wendy Hu3

CONTEXT Rather than merely acting professionally, medical students are expected to become professionals. Developing an embodied professional persona is not straightforward as there is no single perspective of what medical professionalism comprises. In the context of this confusion, medical educationalists have been charged with developing a professionalism curriculum that emphasises, supports and measures students’ professionalism. This paper focuses on medical students’ discourses of medical professionalism in order to understand the means through which students conceptualise professionalism.

METHODS Discourse analysis was undertaken. Two hundred students from three medical schools (in England, Australia and Wales) participated in 32 group and 22 individual interviews. Students’ explicit definitions of professionalism were inductively coded according to the dimensions of professionalism they identified \( n = 19 \) and the discourses of professionalism they used \( (\text{individual, collective, interpersonal, complexity}) \). Connections were explored between pre-clinical and clinical students’ understandings of professionalism across the schools and the respective policies, documents and teaching opportunities available to them.

RESULTS Understandings of professionalism differed between pre-clinical and clinical students and between schools with different approaches to professionalism education. Students who experienced early patient interaction and opportunities to engage in conversations about professionalism within clinician-led small groups demonstrated complex, embodied understandings of professionalism, drawing on all four discourses. Students who learned predominately through lectures used a restricted range of discourses and focused on dressing or acting like a professional.

CONCLUSIONS Providing students with opportunities to engage in active sense-making activities within the formal professional curriculum can encourage an embodied and sophisticated understanding of professionalism.
INTRODUCTION

There is no single perspective or definition of medical professionalism. Indeed, Swick commented: ‘Perhaps professionalism is like pornography: easy to recognise but difficult to define.’ Hafferty suggested that professionalism definitions vary according to differing cultural contexts, including the country one lives in, the theoretical perspectives of authors and journals, and traditional versus new professionalism literatures. To this, we would add patients’ discourses, the discursive practices (i.e. talk and social action) that are evident within medical settings, regulatory or medico-legal pressures and the moral panic invoked by individuals’ transgressions (e.g. Harold Shipman in the UK; Graeme Reeves in Australia). Against this backdrop of complexity, medical educators are tasked with developing and evaluating in today’s students and trainees will succinctly assert: ‘What is taught to, learned by students know about professionalism, an under-

In this paper we focus on students’ discourses of medical professionalism in terms of what they are (what is present or absent) and where influences appear to come from, with the ultimate aim of understanding the means through which medical students conceptualise professionalism. Although some researchers have investigated what medical students know about professionalism, an understanding of medical students’ discourses and how these are variously influenced is largely absent within our expanding literature on medical professionalism. This is of crucial importance, as Cruess and Cruess succinctly assert: ‘What is taught to, learned by and evaluated in today’s students and trainees will influence both practice patterns and the value system of the medical profession of tomorrow.’

Discourse and discourse theory

The word ‘discourse’ comes from the Latin discursus, meaning ‘to run from and to’. Discourse researchers work with texts (e.g. audios, transcripts, written documents). Discourse theory subsumes a number of approaches to understanding how individuals and groups within society make meaning of experiences and how knowledge is constituted. It is a study of language in use, ranging from a consideration of the minutia of language to more global considerations of how representations and ideologies from different places or different times are re-worked here and now.

Thus, from a global perspective discourses are ways of conceptualising ‘sets of practices, ideas and institutions’ through language and social action. Discourse is, quite simply, what we do. Within medical professionalism, for example, there are a number of practices and ideas of professionalism running to and from various institutional policy documents, curricular documents, educational activities and academic literature which ultimately find their way into medical students’ conceptualisations of professionalism through a dynamic process of resistance and negotiation.

When considering the minutiae of language, discourse theorists focus on language as a set of signifiers (e.g. words) representing something that is signified (e.g. concepts). When referring to physical objects (e.g. a book), the signifier–signified relationship is reasonably simple. However, when referring to abstract concepts (e.g. professionalism), the relationship becomes problematic and varies across contexts and between people. Thus, the word ‘professionalism’ signifies a variable abstract notion, within which further signifiers (e.g. altruism) refer to equally variable concepts. The discourse of medical professionalism is therefore imbued with a repeatedly cited myriad of inadequately defined abstract terms. Indeed, Wear and Nixon demonstrate powerfully the numerous ways in which terms such as ‘altruism’ are understood and played out across a complex range of clinical situations and encounters.

One further issue concerns what is ignored or hidden – the so-called blind spots – in discourse. Attending to these enables us to see which values and behaviours are fostered and which are rendered invisible. Indeed, Lingard considered the discourse of competency in health care education and highlighted the individualistic discourse, which focuses on the competent doctor, whose skills and knowledge are assessed. Focusing on individual characteristics, however, ignores contextual and interpersonal issues, including teamwork, where competent individuals can form incompetent teams. Recognising how aspects of professionalism are constructed and rooted in particular ways of viewing the word, and how
Differences in student discourses of professionalism

different possibilities are selected or deflected are all important aspects of discourse theory. Analysing discourses can be invaluable in understanding how students act and embody complex and contextually dependent concepts of professionalism.

**Professionalism discourses**

Professionalism has been constructed within numerous and progressively complex discourses. Although these are variously conceptualised and labelled, we refer to them as *individual*, *collective*, *interpersonal* and *complexity*.

The individual discourse constructs professionalism as a set of individual attributes (attitudes, values, behaviours) that ultimately reside within a person and are context-independent (e.g. one either possesses them or not). This resonates with a cognitive psychological conception of professionalism, which Hafferty and Levinson35 termed ‘nostalgic’.

The discourse of collective professionalism focuses on attributes that uphold the collective body of the profession in which society places trust. Within this frame, for example, the ethic of accountability becomes a collective, rather than an individual, attribute, whereby professionalism comprises a social and moral contract.6 We use the term ‘attributes’ across all discourses to refer to *signifiers* that are similar; however, the *signified* differs according to the specific discourse.

The interpersonal discourse highlights professionalism as consisting of attributes of the social interaction *between* individuals. Thus, attributes are essentially constructs that arise through shared participation in activities. This discourse has more affinity with certain sociological and social psychological theories (e.g. social interactionism, activity theory, communities of practice, etc.), entailments of which are outlined in Lingard’s work.34

Finally, we have the discourse of complexity: professionalism is a dynamic construct of actors and structures shifting across time. Whereas the interpersonal discourse embraces such notions, the complexity discourse is more explicit about how principles and attributes of professionalism are in constant conflict, negotiated and re-negotiated across different situational contexts, and draws on concepts derived from complexity sciences, such as those of ‘self-organising systems’ and the ‘edge of chaos’.35,36

However, these individual, collective, interpersonal and complexity discourses are not mutually exclusive entities, acting in direct competition with one another: multiple discourses of professionalism can be drawn upon in any one encounter to provide richer ways of capturing otherwise fragmented conceptualisations of professionalism. Further, there are so-called *weak* and *strong* versions (‘weak’ versions comprise incomplete or partial conceptualisations).

**Medical professionalism: educators in search of a definition**

Given the task of teaching and assessing students’ medical professionalism, educators must first define the construct. Some approach this as a straightforward task, adopting definitions from policy documents and implementing them accordingly. Others, noting the often conflicting definitions, and incomplete and vague operationalisations of professionalism, prefer to develop their own definitions, based on either an amalgamation or a complete reconceptualisation of existing definitions.2,5,35,37,38 Some definitions comprise succinct explanations that attempt to capture the authors’ understandings of professionalism, whereas others list detailed principles and attributes.

Within these academic endeavours, a number of different discourses prevail, typically individual and collective discourses. For example, Cruess et al.7,39 emphasise that medical educators should focus on the meaning of the word ‘profession’. Basing their definition on that given in the Oxford English Dictionary, they incorporate elements derived from social sciences, reflecting developing relations between the profession and society. Accordingly, their definition possesses strong individual and collective discourses as it constructs the profession as being in the service of others, governed by codes of ethics delineating the social contract, and granting professional autonomy and the privilege of self-regulation. Furthermore, Swick5 defines professionalism by attending to what doctors do: ‘…how they meet their responsibilities to individual patients and to communities.’ Swick’s definition comprises both internal (i.e. competency) and external (e.g. a commitment to scholarship) constructs, and argues for professionalism to be considered at individual and collective levels.

Continuing with these two discourses, Arnold and Stern40 highlight developmental aspects of medical professionalism. They assert that professionalism is founded on clinical competence, good communication, and ethical and legal understandings. From here, they argue that the professional aspires to (and eventually attains) wise application of the core

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principles of excellence, humanism, accountability and altruism. Wise application can be constructed as an individual endeavour, or can be more complexly constructed as an emergent property. As the formulation of what comprises wise application is unclear in their chapter, with no explicit interpersonal or complexity discourse, we classify this as an individual endeavour.

What is obscured by these two discourses are the understandings brought by interpersonal and complexity discourses of professionalism. Arnold and Stern’s definition resonates with the developmental process of professionalism outlined by Hilton and Slotnick. These latter authors offer a definition based around six domains of medical professionalism (i.e. ethical practice, reflection and self-awareness, responsibility and accountability for actions, respect for patients, teamwork and social responsibility) with a succinct definition of a mature practitioner as ‘a doctor who is reflective and who acts ethically’. For them, the sine qua non of the mature professional is practical wisdom – phronesis – ‘knowing which rules to break and how far to break them to accommodate the reality at hand’. Such insight and judgement is thought to come from accumulated experience in managing paradox, complexity and uncertainty. Phronesis is both an art and an intellectual activity and has been likened to mindfulness, tacit knowledge and capability. Indeed, the development of phronesis takes students away from merely acting professionally (an individual activity) to becoming a professional (an interpersonal, complex activity).

Moving further into this discourse and drawing explicitly on complexity science in medicine is Fraser and Greenhalgh’s argument for educating for capability (rather than competence). Whereas competence is defined as ‘what people know or are able to do in terms of knowledge, skills and attitude’, capability is the ‘extent to which individuals can adapt to change, generalise new knowledge and continue to improve their performance’ and thereby effectively manage uncertainty and change.

Commenting on the development of professionalism discourses, Hafferty and Levinson conceptualise this as an unfolding of a series of waves, calling complexity the ‘sixth wave’, which ‘seek[s] to recast social actors, social structures, and environmental factors as interactive, adaptive, and interdependent’. Thus, the multi-situational, multi-dimensional and interdependent dynamics of social interaction and multiple learning environments (including informal and hidden curricula) are stressed. Professionalism is not solely the property of individual motives, organisational structures, systems and policies, but arises from an inherently complex synergistic interplay of multiple factors.

Student, professional and public understanding of professionalism

Given the range of discourses, some medical educators have attempted to define professionalism by asking students, doctors and members of the general public for their interpretations. However, researchers’ own theoretical conceptualisations often impose restricted discourses onto this process. For example, some studies adopt a deductive perspective framed within pre-configured discourses of professionalism (e.g. Swick’s definition). What these studies find is that participants demonstrate a high level of expressed agreement with all principles of professionalism as presented, but their actual behaviours fail to comply with those principles. For example, around half of the 3504 doctors surveyed by Campbell et al. did not follow the principle of self-regulation. These findings resonate with the discourse of complexity, whereby competing institutional, interpersonal and environmental factors impact on professional behaviour. Unfortunately, the authors did not acknowledge this and instead constrained their findings by viewing them through the lenses of individual and collective frameworks.

However, even when an inductive approach is adopted, researchers’ ways of knowing can shift how professionalism is ultimately conceived. Thus, some researchers focus on individual discourses, even when relationship care and partnership models are advocated. For example, Jha et al. interviewed medical educators, students, doctors, allied health professionals and lay individuals. Participants drew on a number of discourses to frame professionalism and the results were developed into seven themes, which included the doctor–patient relationship. Each of these themes was further delineated into ‘clear’ and ‘grey’ examples. So, in a discussion of confidentiality, one participant framed the issue within an unproblematic, black-and-white, individual rule-based discourse (clear), whereas another viewed it as a ‘very complex professional behaviour’ citing contextual and interpersonal factors (grey). However, despite the range of discourses drawn upon by participants, the authors concluded that in order to cope with complexity, medical educators needed to integrate their findings ‘with a theoretical framework of attitude and behaviour change’, bringing the discourse of professionalism firmly back to individualism.
Differences in student discourses of professionalism

One notable difference in the literature is Hafferty’s report of his experiences with students at one US medical school. His analysis focuses on students’ discourses and he notes that although students had little difficulty articulating what they meant by professionalism, their understandings did not always accord with his own view, policy or literature documents. For example, they rejected the collective discourse of professionalism, instead drawing on an individual discourse: professionalism ‘begins and ends at the level of the individual. One acts ethically because one is good’. To our knowledge, Hafferty’s study is the only one to date to specifically touch on the issue of students’ explicit discourses of professionalism (by attending not only to what they say, but also to the ways in which they construct professionalism). What is needed now is a better understanding of medical students’ definitions of professionalism, which includes a consideration of the variety of discourses they draw upon within their own sense-making activities. To address this important gap, we explored how medical students conceptualise medical professionalism using the following research questions: What discourses do medical students draw upon as they define medical professionalism at different stages of their learning, and where do these discourses come from?

METHODS

Context

This study was part of a larger research project on medical students’ experiences of professionalism dilemmas. The three medical schools in this study apply different entry criteria, curricula styles, teaching, learning and assessment of professionalism and patterns of patient contact.

School 1 is a newly developed medical school with a 5-year spiral curriculum. The intake consists predominantly of school-leavers, although some students arrive with a degree. Students are based at one of two geographically dispersed university sites for the first 2 years and their learning is structured mainly around a small-group format with a strong self-directed nature. Students also learn in the clinical environment from their first week, and this type of learning increases in frequency and duration over time. In Years 3–5, students are based at one of three geographically dispersed clinical sites. The student handbook for professionalism predominantly focuses on the individual discourse, despite drawing on all four discourses (see Appendix S1 for further details). It cites three key policy documents, which themselves draw on individual and collective discourses (Appendix S2).

School 2 runs an established 4-year, graduate-entry programme. Like School 1, this school employs problem-based learning (PBL) as its primary mode of learning within the first 2 years. Students also learn in the clinical environment from their first week, and are attached to one of six geographically dispersed hospital-based clinical schools throughout the duration of the course. From Year 3, learning is primarily undertaken in the clinical environment. In 2008, the professionalism curriculum for this school changed. Thus, Year 1 students in this study were exposed to the ‘new’ curriculum, whereas students in Years 2–4 were educated under the older curriculum. The professionalism handbook predominantly focuses on the individual and complexity discourses, despite drawing on all four discourses (Appendix S1). It cites two key policy documents, which draw on individual and collective discourses (Appendix S2).

School 3 is a traditional medical school which runs a 5-year curriculum. The intake consists predominantly of school-leavers, although at the time of data collection, Years 3–5 also comprised graduate-entry students from a linked curriculum. Students are based at a university site for the first 2 years (1 year for graduate-entry students) and acquire some clinical experience beginning 5 months into their first year, although not as frequently as at Schools 1 and 2. From Year 3 onwards, students are based at a range of geographically distant clinical sites. The course outline for professionalism draws solely on the individual discourse focusing on students’ attitudes and conduct within a strict rule-bound framework (Appendix S1). It cites three key policy documents, which collectively draw on all four discourses (Appendix S2). Professionalism is typically taught as part of the formal curriculum through lectures and is assessed through frequent formative and summative assessments, including portfolios.

Participants

After securing ethics approval from all three schools, medical students across all years at all three schools
were asked to participate in either group or individual interviews. Two hundred students participated in 32 groups and 22 individual interviews. (Table S1 shows participant demographics and Table S2 shows the distribution of participants across groups, interviews, years of study and schools.)

Data collection

A narrative approach to interviewing was adopted. Prior to the collection of narratives of professional dilemmas, and in order to establish participants’ understanding of professionalism, students were asked to explain what professionalism meant to them and, more specifically, as a Year X medical student (the focus of this paper). All groups and interviews were audio-recorded with permission. Following each session, the audio file was transcribed to include additional paralinguistic features (pauses, laughter, etc.) and anonymised.

Data analysis

The transcripts and audio files were analysed using a five-step framework analysis. Step 1 involved familiarisation. Four researchers (LVM, WH, LNRD and KS [see Acknowledgements]) familiarised themselves with the data by reading transcripts and listening to audiotapes. Step 2 involved the identification of a thematic framework. Eight transcripts were analysed by the researchers (of one group session and one interview each) to identify key themes and sub-themes. LVM and LNRD then met (with notes from WH and KS) to compare, contrast and negotiate the initial index, paying attention to both what participants said and how they talked. Step 3 involved indexing. Using an initial index developed inductively by all three coders, LVM, CER and LNRD coded all transcripts using ATLAS.ti Version 5.0 (Scientific Software Development GmbH, Berlin, Germany), while simultaneously listening to the audios and reading the transcripts. Step 4 involved charting, whereby, using ATLAS.ti, all data relating to participants’ explicit definitions of professionalism (a major theme) were rearranged according to the dimensions of professionalism outlined in the final index. Step 5 consisted of mapping and interpretation. Subsequently, LVM read the curricula and associated policy documents and analysed them according to individual, collective, interpersonal and complexity discourses. Using the charted data, she then mapped the range and nature of students’ professionalism dimensions against the four professionalism discourses according to six main contexts of learning comprising the pre-clinical and clinical components at each of Schools 1, 2 and 3. This mapping exercise was checked by the other two authors and disagreements were discussed and negotiated.

In the excerpts quoted in Results and figures, reference codes identify the year, sex and unique number of the individual. Transcription conventions are: numbers in brackets = pauses to the nearest second; (...) = missing words; words underlined = emphasis, and ((words in double brackets)) = additional information; [italicised words in square brackets] = explicit dimension of professionalism and discourse in which it is framed.

RESULTS

Unlike Hafferty’s students, participants in our study found it difficult to articulate their understandings of professionalism. This was apparent through students’ explicit comments and also through paralinguistic aspects of their talk, such as lengthy pauses (up to 7 seconds), false starts (‘er’, ‘um’) and laughter, as they were asked to define professionalism. There appeared to be a number of reasons for this hesitancy. Sometimes students said that they had not thought about this before, or demonstrated a certain disdain for the term (because it was ‘bandied about’, ‘drummed into us’, etc.), or generally found the question so complex that they needed time to consider their answer:

‘(4.0) Well I think it’s a massive massive subject…’
(Clinical, School 1, Y5FS38)

‘Okay what – what do I think [about] “professionalism” oh a good question I don’t know that I’ve ever been asked it ((both laugh)) funnily enough ((inhales)) (T.0)’
(Pre-clinical, School 2, Y2FS7)

‘I guess it’s (3.0) acting in a way that (3.0) ((exhales)) oh I have to think about this ((laughs)) (2.0)’
(Clinical, School 3, Y5FS104)

However, once students did begin to describe professionalism, we identified 19 dimensions of professionalism within their talk across the entire dataset. Table 1 gives a detailed overview. The discourses upon which students drew when framing these dimensions depended on the broader context of their discussions. We explore this in more detail below as we consider students’ responses, firstly, from pre-clinical students at each school (Years 1 and 2) and, secondly, from clinical students at each school (Year 3 onwards).
Table 1 Dimensions of professionalism

1 **Professionalism as attributes of the individual**
Here, professionalism is natural and refers to common sense: it is about punctuality, hygiene, manners, integrity, honesty, etc. This individual action-oriented interpretation comprises elements that are superficial (e.g. courtesy) and others that are value-orientated and where actions and values are in harmony (e.g. integrity).

2 **Professionalism as development**
This relates to the formative aspect of professionalism: the development of attitudes, skills, knowledge and behaviour for future practice. Some see this as beginning in childhood in that values developed early are extended into adulthood. So professionalism can be taught, but it is more difficult to learn without the right upbringing. This dimension relates to students not feeling fully formed – some see this as an opportunity to ‘hide behind the school badge’, whereas others see it as a legitimate recognition that they are at a certain level and should not be taking on some responsibilities.

3 **Professionalism as stasis**
This dimension contrasts with item 2 (professionalism as development): professionalism begins as a full set of responsibilities, rules or attributes that students adopt from the beginning. Here, the student’s role might differ from that of a doctor, but the student’s professionalism is the same as that of the doctor.

4 **Professionalism as internalised self**
This takes the ideas in items 1 and 2 further, asserting that professionalism is something that becomes internalised to the self. This sometimes links with feelings of discomfort when students feel that they, or others, are being ‘unprofessional’.

5 **Professionalism as presentation**
This contrasts with professionalism as internalised self and relates to the enactment of professionalism. Simplistic talk focuses on dressing the part. Nuanced talk includes both talking and acting like a professional. When referring to this dimension, students talk about acting rather than being and the notion of a professional persona, using powerful imagery: ‘You put on your doctor hat... or perhaps it’s better thought of as a mask [which] brings with it certain character traits and behaviours that are expected of that role ... that hat or mask that you put on dictates your – your behaviour’ (Y4M59, School 2).

6 **Professionalism as special**
This focuses on the extraordinary attributes belonging to a privileged group, highlighting the concept of the social contract between the profession and the society it serves. Nuanced talk includes the expectation that a professional will ‘act above and beyond a normal person’. It also includes an understanding that the components of professionalism are developed from within that profession and involve self-regulation. In return, students will expect elevated status and power. On a simpler level, students’ talk around this dimension merely highlights shared common goals with fellow doctors and their desire not to let other doctors down.

7 **Professionalism as knowledge**
Here, professionalism is knowledge-based and equates with aspects such as how well one does one’s job, one’s expertise and one’s ability to keep up to date with knowledge.

8 **Professionalism as competence**
This is concerned with being competent at what one is doing, at the appropriate level, at any one time. This competency includes knowing limits and speaking out when those limits are stretched. This is also linked with the wider discourse of ‘patient safety’.

9 **Professionalism as phronesis**
Professionalism here is about practical wisdom: the ability to negotiate real-world complexities, to know when to strictly adhere to ethical and moral principles and when to ‘bend the rules’ in patients’ best interests. Ultimately, phronesis is concerned with particulars in terms of how to act in particular situations, and relates to choices made, which come from internal conversations with the self and interactions with others, out of which the best choice of action emerges.
Pre-clinical students' definitions of professionalism

School 1

Pre-clinical students from School 1 highlighted 12 dimensions of professionalism (Table 2). The concept of being a good doctor, always learning and updating knowledge and skills, striving for excellence, following ethical ‘rules’, maintaining confidentiality and possessing certain personal qualities comprised the initial, and unproblematic, focus of talk. However, discussions quickly moved towards the recognition of ‘grey’ areas of professionalism, which dominated students’ talk as they grappled with the difficult task of

<table>
<thead>
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<th>Table 1 (Continued)</th>
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<tr>
<td><strong>10 Professionalism as segregation</strong></td>
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<tr>
<td>This asserts the notion that one can segregate one’s professional life from one’s personal life and personal views. For the student, this entails not letting one’s opinions and judgements cloud one’s treatment of and behaviour with a patient, not bringing problems from home into work, and knowing how to set boundaries around oneself as a person and as a professional</td>
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<tr>
<td><strong>11 Professionalism as integration</strong></td>
</tr>
<tr>
<td>This is the opposite of 10 (segregation) and relates to the notion that one cannot completely segregate one’s personal and professional life. So, from the outset students need to be careful about the things they do outside of the school</td>
</tr>
<tr>
<td><strong>12 Professionalism as contextual</strong></td>
</tr>
<tr>
<td>This stresses the contextual nature of professionalism in action and asserts that it is the environment (e.g. time pressures, hierarchical relationships) students inhabit at any one time that influences how they behave professionally</td>
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<tr>
<td><strong>13 Professionalism as rules</strong></td>
</tr>
<tr>
<td>Here, professionalism is constructed as being governed by, and abiding to, rules and regulations that may or may not differ from the students’ personal codes. These may come from policymakers, the clinical environment or the school the student attends. This also encompasses the rule of expectations of society, patients and colleagues and the implicit rules of medicine and medical education</td>
</tr>
<tr>
<td><strong>14 Professionalism as patient-centredness</strong></td>
</tr>
<tr>
<td>This asserts that, in order to be a professional, the student should place the patient at the centre of his or her concerns. Sometimes this is framed simplistically, such as by showing respect, being courteous and affording dignity. More nuanced framings include exploring patients’ experiences of illness, understanding (and accepting) the patient as a person, sharing decision making about treatment and even undertaking health-promoting activities (such as teaching patients)</td>
</tr>
<tr>
<td><strong>15 Professionalism as role models</strong></td>
</tr>
<tr>
<td>Here, the interpersonal relationship of role-modelling professionalism is highlighted. This includes qualified doctors being role models to students, students being role models to one another and students acting as role models to their senior colleagues</td>
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<tr>
<td><strong>16 Professionalism as hierarchy</strong></td>
</tr>
<tr>
<td>Here, professionalism is about knowing one’s place in the hierarchy. This superordinate–subordinate relationship entails students keeping to their place and not overstepping their ‘rank’. There is another aspect to this hierarchy, which refers to where medicine is ranked in terms of other health care professions</td>
</tr>
<tr>
<td><strong>17 Professionalism as team-playing</strong></td>
</tr>
<tr>
<td>This highlights the professional relationship between team members. On a simplistic level this focuses on how individual students are assessed on this collegiate aspect of professional relationship. On a more nuanced level, team-playing is seen as part of a dynamic process that requires clear communication and carries a responsibility for developing the team</td>
</tr>
<tr>
<td><strong>18 Professionalism as service provider</strong></td>
</tr>
<tr>
<td>This relates to the notion that professionals are providing services to patients, who are often referred to as clients, consumers or customers. This dimension was infrequently cited</td>
</tr>
<tr>
<td><strong>19 Professionalism as self-care</strong></td>
</tr>
<tr>
<td>Here, professionalism is about protecting oneself, emotionally and legally. This dimension was the least cited</td>
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</tbody>
</table>
defining it. Here students were attempting to traverse a landscape in which attitudes and values are negotiated through interactions with patients and other health care professionals, and ethical and moral codes are re-formatted as guidelines, where judgement is required in order to act in the best interests of patients. This is compounded by the potential for conflict between personal desires and ethical beliefs.

These students framed their definitions within all four discourses of professionalism, although the dominant discourse was individual. For example, although *professionalism as phronesis* was commonly discussed, and phronesis implies a complex dynamic of actors and structures within which judgement emerges, students’ understandings of judgement were typically framed within an individual discourse whereby complexity was, at best, lost. An example is the notion that one needs to be detached from situations in order to have sufficient clarity to make these judgements (Fig. 1). Thus, for these students, the complexity of professionalism as played out in
real-life clinical situations appeared to be more of a theoretical construct than a practical reality.

What was typically lacking within these students’ talk was the collective discourse of the profession’s contract with society, mutual trust and obligations. The word ‘trust’ was never used or alluded to by this group of students. Although they described a form of altruism (putting the patient first, above their own career aspirations and ethical beliefs), the word itself was never used. Such talk was framed within a discourse of patient-centredness and the application of individual judgement, rather than as a collective endeavour.

Students drew their understanding of professionalism from a range of places, explicitly mentioning codes of practice and ethical guidelines (although not explicitly referring to governing bodies such as the General Medical Council [GMC]), along with the expectations of clinical colleagues and patients. No single influence dominated their talk and there were no references to the school or its curriculum and assessment processes as influential factors.

School 2

Pre-clinical students from School 2 outlined 17 dimensions of professionalism (Table 2). By stark contrast with pre-clinical students at School 1, their definitions drew heavily on sociological understandings of professionalism: students talked about certain groups, the members of which are entrusted to behave within an ethical code developed and established within the profession, and who are afforded certain privileges. What this meant for them as students is that they were required to uphold the profession’s status and act accordingly, and they described themselves as taking this responsibility very seriously. This responsibility was linked with the obligation to study hard to increase (and retain) knowledge and skills. These students also talked about professionalism as understanding one’s place in the hierarchy and acting accordingly, an understanding absent from School 1 students’ definitions. School 2 pre-clinical students saw themselves in a position of power with respect to patients, but subordinate to clinicians and more senior medical students in their clinical years. One notable difference in this group was the place that emotions held within professionalism: they perceived professionalism as about feeling comfortable with one’s choice of actions and avoiding feelings of discomfort.

Pre-clinical students from School 2 drew mainly on individual and interpersonal discourses as they defined professionalism. Although some dimensions may have been constructed within an interpersonal or collective discourse, they were often framed within individualistic discourses (e.g. being respectful of people, rather than with people: Fig. 2).

Similarly to School 1, patient-centredness emerged as an important component of professionalism. However, the focus here was quite different. Students at School 1 primarily conceptualised this within a partnership model of care, whereas students at School 2 mainly focused on issues such as respect, privacy and dignity, and dressing appropriately. There was also much talk of rule-following. Professionalism was about not breaking ethical rules and adhering to social rules, including those defined by the expectations of colleagues and the general public. Unlike students at School 1, however, the concern here focused on students’ uns sureness of when and how to extrapolate from the rules.
Differences in student discourses of professionalism

School 3

Pre-clinical students from School 3 outlined 14 dimensions of professionalism (Table 2). They cited a restricted number of attributes compared with School 2 and, compared with students from both the other schools, rarely referred to these explicitly (courtesy was the only attribute mentioned more than once in the data). Importantly, these students never mentioned morals. Instead, the main focus of talk centred on how professionalism was about looking and acting like a doctor in order to uphold the good name of the profession and live up to societal (and school) expectations of them. This caused tension as they had not yet developed professional identities. Thus, tension arose from the identity students currently inhabited compared with the nascent professional identity they felt compelled to adopt.26

Students drew heavily on individual and collective discourses as they defined professionalism, with limited talk within an interpersonal frame. For example, the student–patient relationship focused on how students presented themselves to patients in terms of their dress and manner (Fig. 3). However, students also acknowledged the importance of teamwork, including with other health care workers. This was variously discussed using both individual (e.g. doctors and students being sequentially involved in patient care) and interpersonal discourses (e.g. working together as a team).

The overwhelming influence on these students’ discourses appeared to come from the teaching of professionalism at the school: students made continual references to lectures and to being told by ‘them’ (i.e. the school).

Clinical students’ definitions of professionalism

School 1

Clinical students from School 1 highlighted 16 dimensions of professionalism, drawing on all four discourses of professionalism (Table 2). Some of their talk was framed within an individual discourse, such as when they highlighted the requirement for professionals to dress and act professionally. By contrast with their pre-clinical counterparts, clinical students drew heavily on the collective discourse of...
professionalism, highlighting their roles as members of a privileged group with responsibilities to society and self-regulation. One further difference between pre-clinical and clinical students at School 1 concerned the amount of talk focused around the importance of teamwork: students’ understandings of teamwork had advanced from the notion of individual competency to a deeper understanding of teams as complex systems.

Like the pre-clinical students at School 1, clinical students made much talk of putting the patient first and going beyond the call of duty, as well as being altruistic towards one’s colleagues. Interestingly, this was expressed through a collective (rather than individual) discourse. The most obvious difference between pre-clinical and clinical students at School 1 is that the latter mentioned more dimensions in their talk and conceptualisations were framed less within the discourse of individualism, and more within collective, interpersonal and complexity discourses (Fig. 4).

Clinical students at School 1 appeared to derive their understanding of professionalism mainly from their school (with references to the conversations they had within small-group sessions), their understanding of society’s expectations and their responsibility to uphold the trust between doctors and society. Thus, students frequently cited the GMC and made references to key policy documents, such as *Tomorrow’s Doctors* and *Good Medical Practice*. Students rarely cited patients and doctors as specific influences and never cited fellow students. Finally, there was a strong sense that these students had internalised professionalism in that they talked of it being a natural and embodied aspect of their identities.

School 2

Clinical students from School 2 highlighted 13 dimensions of professionalism (fewer than pre-clinical students at this school: Table 2). When defining professionalism, these students predominately framed dimensions within an individual

Y5MS15: Professionalism as far as I see it only refers to a certain number of occupations and they are the learning professions aren’t they ... like medicine law teaching and it’s the whole thing of trust so if you – if you – you are held in trust by the – by society and so you therefore obviously have the option of abusing that trust but the idea being that you are able to act autonomously without regard to normal convention [special: collective] ... as a professional you are given the privilege [special: collective] of making that decision without having to abide by the rules as long as you can then later justify it to your peers [phronesis: individual] then so that’s kind of professionalism to me

Y5MS13: Rather than adhering to codes of conduct professionalism is more about making codes of conduct so as a professional you are part of a professional body and therefore you are self regulating and responsible for self determination in terms of – of creating the ethical framework for lay people [rules, special: collective] ... and you also – I feel – have the as a professional you have the privilege and position to break your own ethical codes if you consider it right to do so you’re not bound by anything other than your own judgment [phronesis: individual]

Y5FS15: You talking about acting within institutions [presentation: interpersonal] like professionalism can be seen at one – at one end of the spectrum with managerialism at the other end [service provider: interpersonal] so it’s actually acting in a way that’s behaviourally correct even within the pressures of an organisation [presentation: complexity] for example I cheered when a – a – a consultant sort of made the enquiry as to whether there was anybody at home uh for a little old lady – who was big pressure to discharge – because that pressures from the organisation – the management bit – the – the flow of the organisation really so it’s that it’s a sort of tension sometimes between the needs of the institution and almost representing the patient’s best needs [phronesis: complexity]

Y5MS14: So there’s degrees of professionalism ... so could you still classify say bricklayers as a professional but not as kind of – with the same complexity of what – [hierarchy: complexity]

Y5FS15: I think if a bricklayer could lay his bricks anyway he chose and still come up with a result that built the wall then I would say that but he has to lay his bricks in a particular way there’s no other way for him to lay those bricks – correct me if I’m wrong – so that that – th – there’s no room for expansion ... a bricklayer doesn’t have the ability to step outside of those – [Special: collective]

Y5MS14: So you’re saying it’s a creative element

Y5FS15: Yes it is a creative element – it’s a control element – [phronesis: complexity] it’s the leadership element – [role models: individual] that’s why it’s so difficult to define is because it – it encompasses so many different areas and I think to be professional you have to be at least competent in most of those areas to perform – [competence, presentation: individual] to be a good professional and then as you sort of – you know your levels of professionalism [hierarchy: individual] come from how confident you are in those different areas you can be brilliant at looking after your patients [attributes of individual: individual] and all the rest of it but you might not have – be so good at the leadership role and you can work on that and become an exceptional professional [development: individual] and – and I think that’s how you sort of rank them almost [hierarchy: individual]

Figure 4 Interactional example, clinical students at School 1 (Group 2), no dominant discourse

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discourse (and occasionally an interpersonal discourse and a weak collective discourse). Thus, by contrast with their pre-clinical counterparts, clinical students did not draw heavily on medicine’s social contract, although more simplistic formulations of this were apparent: not letting the image of doctors down in society’s eyes.

Although their definitions included aspects such as competence, knowledge and individual attributes, like pre-clinical students at School 3, School 2 clinical students’ definitions focused on the importance of presentation within the clinical environment, the segregation of their personal and professional roles, and adherence to imposed codes of conduct, ethical guidelines and stakeholder expectations (Fig. 5). Teamwork was mentioned and, although this was sometimes framed within an interpersonal discourse (with colleagues, etc.), it was more typically constructed as an individual role: behaving appropriately and knowing your place in the team. Thus, similar to their pre-clinical colleagues, they highlighted the observance of hierarchy — knowing their place in the pecking order — as an important aspect of professionalism. While patient-centeredness was discussed indirectly, this comprised students behaving with respect, and providing the best possible care, rather than formulating care incorporating the patient’s perspective or employing shared decision-making.

Although imposed codes of conduct, ethical guidelines and expectations were mentioned, what was noticeably absent from these students’ definitions (unlike those of clinical students from School 1 and their pre-clinical counterparts at School 2) was any inclusion of the complexity of clinical care and the use of professional judgement when applying these rules. Furthermore, while there was some talk of motivation for actions, quite unlike their pre-clinical colleagues, there was a distinct absence of emotion: with no talk about feeling comfortable about their actions.

What is interesting about these students is that, although they made references to society’s expectations and a few to codes of conduct, unlike the clinical students at School 1, they did not explicitly link their understanding of professionalism to the school’s curriculum (although one student did mention assessment). Rather, they explicitly talked about the influence that their clinical environment had upon how they understood and acted professionally. This was strongly linked to issues of presentation and the understanding of (and adherence to) strong hierarchical relationships within the clinical setting.

School 3

Clinical students from School 3 provided very similar definitions to School 2 clinical students, highlighting 15 dimensions of professionalism (Table 2). These students framed their talk mainly within an individual discourse, with notions drawn from a weak collective discourse. As with School 2 clinical students, the simplified talk focused on upholding the name of doctors. The good doctor discourse was frequently used. As well as having certain essential individual attributes (being respectful was cited frequently), good doctors were perceived as competent and knowledgeable, and as understanding their own limits. However, the overwhelming dimensions of professionalism for School 3 clinical students, like their pre-clinical colleagues, involved dressing and acting like a professional, adhering to rules and fulfilling the expectations of others, not being overly familiar with patients and being careful not to get into trouble in their personal lives. Like their pre-clinical colleagues, they discussed patient-centredness, but in relatively simplistic terms which referred to dressing appropriately, being polite, listening to patients and affording them dignity. The predominant framing of these attributes was individualistic (Fig. 6).

Although students mentioned being respectful to colleagues, references to teamwork were distinctly

![Figure 5 Interactional example, clinical students at School 2 (Group 13), dominant discourse: individual](image-url)
absent. Moreover, although rules were frequently discussed, there was a distinct absence of talk around the complexity of the application of those rules and the need for judgement. Again, like their pre-clinical colleagues, none of the students used the word ‘ethics’, although many of them talked about their own beliefs and the need for them to be separate from their patient encounters.

These students explicitly mentioned a number of influences on their understanding of professionalism: the school (lectures), policy documents from regulatory bodies (e.g. the GMC’s Good Medical Practice11,53), and society’s expectations of doctors and clinical teachers. Once again, school lectures on how to dress appropriately, and clinical teachers’ insistence on a smart appearance, appeared to dominate their conversations.

DISCUSSION

Our study demonstrates that discourses of professionalism differ between pre-clinical and clinical students and also between schools with different approaches to teaching, learning and assessing professionalism. Overall, students at School 1 had the most nuanced understandings, drawing on all four discourses of professionalism, with clinical students demonstrating more complexity in their understandings than pre-clinical students. This complexity of understanding – noticeable in students’ continual reference to professionalism as a form of dynamic interaction between patients, doctors, teams and the wider health care system within which judgements are made – was not an explicit component of either the school documents or the policy documents drawn upon to develop them. Furthermore, both pre-clinical and clinical students at this school seemed to own their definitions of professionalism rather than referring to them as being externally imposed.

By contrast, students at Schools 2 and 3 used a more restricted range of discourses, focusing on individual conceptualisations, with clinical students in this study demonstrating less sophisticated accounts than their pre-clinical counterparts. Thus, pre-clinical students at School 2 demonstrated an awareness of a wider range of the dimensions of professionalism than clinical students and an understanding of medicine’s contract with society, which they expressed through emotional frames of reference (i.e. feelings of comfort when actions are concordant with professional beliefs and discomfort when they are not). The main influence on

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Y3MS59: We do have lectures on it though don’t we – we have a lecture on professionalism
Y3MS62: Actually that’s quite true actually ((laughs)) I think I missed one in the first year...
Y3MS60: Going to lectures is professionalism [attributes of individual: individual]
Y3MS62: Yeah ((laughs)) I know but I thought it was ironic
Y3MS59: How you even wear your hair and what you dress like not to wear trainers... [presentation: individual]
Y3MS62: We had one at the beginning of the third year about how you should be (1.0) and what was it stuff like having long hair and you should tie it back looking smart (1.0) and not wearing creased clothes [presentation: individual]
Y3MS59: Yeah a lot of it was on appearance and visibility things [presentation: individual]
Y3MS60: Yeah something about not having facial hair but it is okay to have a beard (1.0) ((laughter)) you can’t be in between so you at no stage can you grow a beard you have to have one or not... [presentation: individual]
Y3MS59: If you think of treating a patient as a whole [patient centeredness: interpersonal] and part of if you think of it part of it’s going to be how they perceive their care to be (1.0) I think the majority of patients especially elderly patients want to see their doctors wearing smart clothes by smart I mean shirt and tie [rules, presentation: interpersonal]
Y3MS60: But do you think that’s because they like to think that by – by looking smart like that – that you are therefore not only professional but yeah looking like an expert with this knowledge that is kind of above yours [presentation: individual] so they automatically have this authoritative sta–status on (1.0) your illness or situation – and therefore it’s nice to they’re like – [hierarchy: individual]
Y3FS93: But I – I – I want them to feel authoritative [hierarchy: interpersonal]
Y3MS60: That’s what I’m saying – that’s what I’m saying – that’s what I’m saying yeah
Y3MS62: You can be you can be authoritative without being paternalistic with your relationship with the patient [patient centeredness: interpersonal] like I think you can certainly give the impression of being an expert in the field ... without really knowing your stuff [presentation: individual]
Y3MS60: But what I’m saying is do you think that’s needed purely on look – do you think that’s why even
Y3MS61: In the majority of people it is – perhaps for you and younger people it is not – but you can upset a lot of people [rules: interpersonal] if you even – if you don’t wear a tie some people get a little miffed [presentation: interpersonal]

Figure 6 Interactional example, clinical students at School 3 (Group 25), dominant discourse: individual
pre-clinical students’ understandings of professionalism appeared to derive from school handbooks and lectures, with the clinical environment also having some influence. Clinical students at School 2 cited fewer dimensions of professionalism and drew more heavily on an individual discourse than their pre-clinical counterparts, with an absence of emotional referencing and a focus on how they presented themselves. The main influence for these students appeared to derive from their clinical environment.

Pre-clinical students at School 3 demonstrated less sophisticated understandings of professionalism than those at Schools 1 and 2; for them, professionalism entailed *acting* professionally in order to uphold the reputation of the profession and to gain patient trust in order to satisfy their own learning needs. These students did not own their conceptualisations of professionalism; rather, these were externally imposed by the school. This was echoed by their clinical counterparts, whose conceptualisations appeared to be the most restricted and least confident of all the groups. These students also derived their understandings from the clinical setting, as well as from lectures on the importance of presentation. Despite being explicitly taught about ethics (with focused lectures in the pre-clinical and clinical years), ethics were never mentioned by any students at this school, which suggests that these students failed to make connections between theory delivered in lectures and professionalism in practice.

Students have many influences that impact on how they come to understand professionalism; they come from different backgrounds and take a myriad of cues and clues from the broad socio-cultural-economic environment with which they interact. This includes their educational environment (e.g. formal university teaching, clinical settings, patient encounters, etc.) and the written documents to which they have access (e.g. school handbooks, regulatory policy documents, etc.). The relative impacts of these influences depend upon what the students arrive at medical school with, and the amount and type of engagement they have with different influences. Sense-making is a social activity and students’ conceptualisations of professionalism represent a dynamic and ongoing process of meaning-making, contextualised by the students’ initial state, learning environments and interactions with teachers, patients and others.

From our analysis of their talk, students at School 1 appeared to have an embodied understanding of professionalism; they owned their own definitions, engaged in high-level discussions of these understandings and asserted that guidelines should be interpreted with judgement rather than being followed strictly as non-contextual rules. This may have been related to their early interaction with patients and to the opportunities they had to engage in conversations about professionalism and the complexity of being a professional in fortnightly clinician-led small groups held across all 5 years.

Students at School 2, however, appeared to take their understandings predominantly from the clinical environment in which they learned; they focused on following rules, the hierarchy of medicine and the presentation of themselves to patients and clinicians. As clinical students at this school demonstrated less sophistication in their understandings of professionalism than their pre-clinical colleagues, these students may have been socialised into more narrow conceptualisations of professionalism over time. This possibly reflects the relative absence of formal teaching in the clinical years, resulting in greater influence of the informal and hidden curricula. However, the clinical students in this study had been exposed to a different professionalism curriculum than their pre-clinical counterparts (who had more formal teaching sessions in Year 1). This new curriculum may be a factor influencing the more nuanced understandings of School 2 pre-clinical participants. What is interesting, however, is that neither pre-clinical nor clinical students from School 2 appeared to draw on the wider range of discourses present in their school handbooks. Thus, without an opportunity to bring these to life through dedicated interactions such as small-group discussions with peers and clinicians, it seems that this complexity of discourses can be lost.

School 3 students’ understandings of professionalism appeared to be the least sophisticated at both the pre-clinical and clinical stages, and were dominated by aspects of self-presentation and rule-following. Frequent references to lectures and to being told by ‘them’ (the school), along with comments about looking for clues in their clinical environment as to what professionalism is (in response to an apparent paucity of formal teaching on this subject), suggest that professionalism is an enacted, rather than embodied, aspect of the student persona at this school.

Our analysis suggests, therefore, that ‘static’ policy documents, handbooks and didactic lectures alone are insufficient for the development of a deep understanding of professionalism in students, and do
not mitigate against the potentially deleterious effects of the informal and hidden curricula on student understandings of professionalism. By contrast, the more active sense-making opportunities students have within the formal curriculum (e.g. discussing and exploring their experiences via storytelling), the less likely it is that student understandings of professionalism will be negatively influenced by the hidden curriculum. This may be partly a result of the embodied nature of knowing that emerges from such sense-making activities. In situations in which students’ formal learning contradicts what they see in the clinical environment, the provision of a forum in which to discuss such discrepancies can provide students with an opportunity to engage in sense-making activities. Such activities may result in students recommitting to or reconfiguring their ideals to integrate new understandings that have emerged within interaction. Students who are given ‘guidance’ or ‘told’ what professionalism is, however, remain unsure. They tend to seek further clues from other environments that they inhabit, looking to make sense of professionalism by observing and imitating rather than engaging in dialogue and transformation. When they emerge from such activities, students appear to be acting professionalism and representing the profession (repeating what they are told), rather than becoming professionals.

From this, we agree with others that professionalism cannot be fully developed solely through the informal transmission of shared professional values; medical professionalism should also be taught. Furthermore, in order for medical students to develop embodied and nuanced understandings of professionalism, didactic transference from lecturer to student is insufficient. The complexities of professionalism are such that medical schools should be viewed as complex systems comprising a number of learning environments. Included in these environments are what have been termed the ‘formal’, ‘informal’ and ‘hidden’ curricula. By reframing students’ learning to a consideration of these multiple learning environments, we will be able to focus on the dynamic interplay between them, while understanding that some environments may be far more influential than others at certain times within medical students’ learning. In order for students to make sense of the incomplete and sometimes conflicting messages transmitted across these environments, we believe that students should be given frequent and ongoing opportunities to explore their experiences through interaction with peers and clinical educators in order to enable new understandings to emerge. Indeed, Frances noted that current professionalism teaching frequently fails to take advantage of students’ workplace experiences and, consequently, misses ‘powerful opportunities to equip students to apply the principles of professionalism in the social and cultural context in which they find themselves in daily practice’.

Although the research we present here comprises a large-scale, multi-site, qualitative study, we acknowledge its limitations. Firstly, it appears that students’ understandings of professionalism change over time, but this research used a cross-sectional design. Thus, caution must be exercised when attempting to extrapolate our findings developmentally. We have been careful to report our findings within a cross-sectional framework and make no claims that individual students will develop accordingly. Further longitudinal research is needed in order to investigate the developmental trajectories suggested by our data. Secondly, although our sample numbers are extremely high for a qualitative study, our participants represented a self-selected sample from each of the schools and we make no claim to have reached data saturation (indeed, we are sceptical about this claim in qualitative research). We did, however, employ a thorough analysis of our data whereby multiple researchers checked, challenged and negotiated interpretations. Finally, our data comprise student talk about what professionalism means to them. Although understandings of professionalism appeared to be more embodied for students at School 1, and enacted for students at Schools 2 and 3, we are careful to stress that we make no claims about the professionalism behaviours of these students.

We do believe, however, that the way in which we view the world constrains the way in which we act. Thus, if we consider professionalism as rule-following, this constrains the place of judgement and complexity. If we consider professionalism as presentation and acting the part – represented by the donning of a cloak or mask – this may limit authenticity. If we consider teamwork or patient-centredness as an individual endeavour, this may constrain the synergistic and beneficial effects of true collaboration and cooperative action. Thus, echoing Wenger’s words at the start of this paper, as medical educators we have a responsibility to nurture the various discourses to which medical students orient their practices and to enable them to become accountable within medicine’s community of practice. Our study suggests that becoming a professional is an interpersonal and complex activity.
which needs to be nurtured within the formal curriculum.

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Conflicts of interest: none.

Ethical approval: this study was approved by the institutional review committees at the three participating Schools. The Schools have been anonymised for ethical reasons.

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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article available at http://online library.wiley.com/doi/10.1111/j.1365-2923.2010.03878.x/supinfo.

Appendix S1. Professionalism documents across the three schools: discourses and teaching, learning and assessment.

Appendix S2. Definitions of professionalism: policy documents.

Table S1. Participant demographics and year of study (n = 200).

Table S2. Distribution of participants across interviews, groups, years of study and schools.

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Cultural similarities and differences in medical professionalism: a multi-region study

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CONTEXT Over the last two decades, many medical educators have sought to define professionalism. Initial attempts to do so were focused on defining professionalism in a manner that allowed for universal agreement. This quest was later transformed into an effort to ‘understand professionalism’ as many researchers realised that professionalism is a social construct and is culture-sensitive. The determination of cultural differences in the understanding of professionalism, however, has been subject to very little research, possibly because of the practical difficulties of doing so. In this multi-region study, we illustrate the universal and culture-specific aspects of medical professionalism as it is perceived by medical practitioners.

METHODS Forty-six professional attributes were identified by reviewing the literature. A total of 584 medical practitioners, representing the UK, Europe, North America and Asia, participated in a survey in which they indicated the importance of each of these attributes. We determined the ‘essentialness’ of each attribute in different geographic regions using the content validity index, supplemented with kappa statistics.

RESULTS With acceptable levels of consensus, all regional groups identified 29 attributes as ‘essential’, thereby indicating the universality of these professional attributes, and six attributes as non-essential. The essentialness of the rest varied by regional group.

CONCLUSIONS This study has helped to identify regional similarities and dissimilarities in understandings of professionalism, most of which can be explained by cultural differences in line with the theories of cultural dimensions and cultural value. However, certain dissonances among regions may well be attributable to socio-economic factors. Some of the responses appear to be counter-cultural and demonstrate practitioners’ keenness to overcome cultural barriers in order to provide better patient care.

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INTRODUCTION

Cultural background has a major influence on how an individual perceives professionalism.\textsuperscript{1,2} Therefore, although there are many areas of overlap among different conceptualisations of professionalism,\textsuperscript{3,4} to date, there is no consensus on a universal definition. As a result of these differences, the process of ‘developing an embodied professional persona is not straightforward’.\textsuperscript{5}

Anecdotal evidence suggests that the constituents of professionalism vary among countries or regions mainly as a result of cultural variations. However, specific cultural differences have scarcely been researched. To our knowledge, only Cruess et al.\textsuperscript{2} have reported such comparative data in the recent past. Based on comparisons made by a group of international medical practitioners during a workshop on how they perceived the North American understanding of medical professionalism, Cruess et al. postulated the existence of important regional and cultural differences, especially with regard to the ‘role of the professional’ (e.g. doctors’ relationships with wider society).\textsuperscript{2} However, the authors admitted that the reliability and generalisability of their findings were limited by the small number of respondents from each geographic region (19 participants representing 11 countries).\textsuperscript{2}

This study was carried out to identify constituent attributes of professionalism understood to be relevant to medical practitioners from different geographic regions around the globe (the UK, Europe, North America and Asia). The study aimed to establish regional similarities and differences which may help in the teaching and assessment of professionalism in different cultural contexts. We also attempted to understand the reasons behind regional similarities and differences by not only considering the socio-economic backgrounds and climates of the respective regions, but also examining possible cultural reasons based on cultural dimension\textsuperscript{6} and cultural value\textsuperscript{7} theories. These two theories are complementary in configuring the thinking and value patterns of individuals based on cultural frameworks and social structures in different parts of the world.

Cultural dimension theory

According to Hofstede’s cultural dimension theory,\textsuperscript{6} the influence of culture on the socio-societal structure of a country or region can be observed in several dimensions, including: power distance (the extent to which the less powerful members of a society accept and expect that power is distributed unequally); individualism versus collectivism (the degree to which individuals are integrated into groups); masculinity versus femininity (the distribution of roles between males and females); uncertainty avoidance (how comfortable the society is in novel, unknown, unusual and ambiguous situations), and long-term versus short-term orientation in the thinking and behaviour of individuals. Power distance, individualism versus collectivism, weak versus strong uncertainty avoidance and long-versus short-term orientation seemed to be particularly useful in understanding the differences observed in this study. According to this theory, in general, Western cultures (in the UK, Europe and North America) tend to be more individualist (they encourage the development and display of individual personalities, value independence, and are therefore comparatively less socially oriented), weaker in uncertainty avoidance (they prefer fewer rules and guidelines, enjoy informal activities, and are therefore open to diverse opinions) and oriented towards short-term outcomes (they encourage the seeking of immediate stability).\textsuperscript{6} Asians, by contrast, tend to be more collectivist (they value membership of a long-term group and therefore social orientation is comparatively high), are stronger in uncertainty avoidance (they value strict rules and formal activities and are therefore less tolerant of dissent) and demonstrate a long-term orientation (they value thrift and actions and attitudes that affect the future).\textsuperscript{6} Western cultures tend to appreciate a lesser power distance than Eastern cultures.\textsuperscript{6}

Cultural value theory

This theory introduces seven values on the basis of which the cultures of different countries or regions can be compared.\textsuperscript{7} These are: conservatism (emphasis on the maintenance of and respect for social order, tradition, family security and wisdom); intellectual autonomy (valuing of curiosity, broad-mindedness and creativity); affective autonomy (desirability for individuals to independently pursue pleasure and excitement); hierarchy (acceptance of an unequal distribution of power, roles and resources); egalitarianism (voluntary promotion of the welfare of others in order to achieve equality, social justice or freedom); mastery (progressing through active self-assertion, as demonstrated by ambition, success, daring and competence), and harmony (fitting harmoniously with nature and the environment). The general cultural pictures portrayed by this theory demonstrate that: Eastern cultures tend to be
more conservative and hierarchical and to value mastery to some extent; Europeans, by contrast, tend to be intellectually autonomous, egalitarian and harmonious, and North Americans appear to be affectively autonomous and to value mastery to a greater extent. However, to some degree, the strengths of these values may vary among countries within a particular region. We used these theories to help understand our findings more meaningfully.

METHODS

Design

In this study, we used the content validity index (CVI) supplemented with multi-rater kappa ($\kappa$) statistics to demonstrate the degree to which the 46 attributes are perceived as essential (their ‘essentialness’) in the respective regions.

Content validity is the degree of relevance and representativeness of different elements and components to a given concept. Establishing content validity is usually a deductive process, which involves defining virtually all possible elements of a concept under study and systematically determining their relevance to representing this concept. The CVI is an estimate of content validity based on the agreement of a reference group. In this empirical measure of content validity, a reference group is surveyed on the perceived essentialness of each element for operationalising an underlying construct, medical professionalism in this instance. The CVI of an element refers to the proportion of group members out of the total number in the group who indicate that a particular element is essential. For example, if eight of 10 members agree that a particular element is essential, the CVI is 0.80. Given that there are more than five raters in the reference group, the general agreement is that elements that earn a CVI of $>0.78$ are considered as essential for operationalising the construct. As the CVI is a proportion, the agreement calculated in terms of the CVI can reflect chance. Calculation of $\kappa$-values helps to exclude the effect of ‘chance’ from agreement among multiple raters. $\kappa$-values can range from −1.0 to +1.0; a $\kappa$-value of −1.0 indicates perfect disagreement below chance; a $\kappa$-value of 0.0 indicates agreement equal to chance, and a $\kappa$-value of 1.0 indicates perfect agreement above chance. Within the 95% confidence interval, the rule of thumb is that a $\kappa$-value of $\geq 0.70$ indicates adequate inter-rater agreement. The CVI or CVI supplemented with $\kappa$-values has been used to define the constituent elements of various health care-related concepts.

Questionnaire development

As per the first step of establishing the content validity of a culturally appropriate professionalism measurement, we identified the ‘universe’ of professionalism attributes initially by reviewing publications released by the UK General Medical Council (GMC; Good Medical Practice, Medical Students’ Professional Behaviour and Fitness to Practise, and Tomorrow’s Doctors) and the American Board of Internal Medicine (Project Professionalism). As there is no universally agreed definition of professionalism, this list was supplemented with additional attributes identified in the research literature published during 1990–2009. The resultant 57 attributes were reviewed by a group of 32 international delegates from the UK, Europe, the Middle East, Australia, North America, Africa and Southeast Asia during a face-to-face session on teaching professionalism at the Centre for Medical Education, Dundee. These delegates suggested the exclusion of 11 items, either because their meaning was closely related to that of other items (e.g. ‘Honesty and integrity’ was seen as very closely related to ‘Trustworthiness’ and ‘Not being deceptive’ and therefore only ‘Honesty and integrity’ was included) or because they were highly context-specific (e.g. ‘Practice management skills’ as a professional attribute was seen as highly specific to general practitioners and was therefore omitted). As a result, the number of evidence-based items was condensed to 46 (Figs 1 and 2). Nine non-evidenced items (Fig. 3) were added by the researchers to ensure the validity of the literature-based items. The final inventory, therefore, consisted of 55 items.

Sampling and recruitment

Ethical approval for the study was obtained from the University of Dundee Research Ethics Committee. The target population comprised the 2183 international medical educators enrolled in the Postgraduate Certificate, Diploma and Masters courses at the Centre for Medical Education, University of Dundee, UK. They were surveyed using both paper-based and online formats of the inventory and were specifically advised to respond to only one version of the survey; the paper-based version with a self-addressed envelope was posted, and the online version (developed using Bristol Online Surveys, University of Bristol, Bristol, UK) was e-mailed as a web-link. A total of 126 persons proved to be inaccessible as both electronic and postal mails sent...
to them were undeliverable. Thus, the number of possible respondents was reduced to 2057.

A total of 584 doctors worldwide responded to the survey (response rate = 28%). Other than Africa, Australasia and South America, which were eventually excluded from the analysis, numbers of respondents from many geographic regions were sufficient to allow the meaningful calculation of CVIs. Numbers of respondents by region are presented in Table 1.

Data collection

The respondents were expected to rate the 55 attributes by indicating the importance of each item as a professional attribute for doctors using a unipolar, 5-point scale (5 = extremely important, 4 = very important, 3 = somewhat important, 2 = slightly important, 1 = unimportant). We used a 5-point, unipolar scale as the purpose of the survey was to determine the degree of importance of attributes that had already been identified as important by various researchers and governing bodies, with acceptable dispersion.

The submission of responses was anonymous. The results were analysed 11 weeks after the survey had

Figure 1 Professional attributes categorised as essential by all regional groups (content validity indices for these items for all geographic groups were > 0.78)

- Respecting the patient’s autonomy
- Being accountable for one’s actions
- Behaving honestly and with integrity
- Respecting colleagues
- Respecting the patient’s confidentiality and privacy
- Communicating in a clear and effective manner
- Acting in a responsible fashion towards patients
- Acting in a responsible fashion towards colleagues
- Behaving in a reliable and dependable way
- Being receptive to constructive criticism
- Having a positive attitude towards professional development
- Adhering to professional rules and regulations
- Working well as a member of a team
- Reflecting on one’s actions with a view to improvement
- Being attentive to the needs of patients
- Being aware of one’s limitations as a practitioner
- Providing advice to patients and colleagues when required
- Showing compassion towards one’s patients
- Treating patients fairly and without prejudice
- Treating other health care professionals fairly and without prejudice
- Being empathetic when caring for patients
- Being able to manage situations in which there is a conflict of interest
- Treating colleagues fairly and without prejudice
- Not using one’s professional status for personal gain
- Taking a dedicated approach to one’s work
- Functioning according to the law
- Being sound in judgement and in decision making
- Avoiding substance or alcohol misuse
- Making effective use of the resources available

Figure 2 Professional attributes sourced from the literature, but categorised as non-essential by all regional groups (content validity indices for these items for all geographic groups were < 0.78)

- Being mindful of one’s personal appearance
- Behaving with composure
- Conforming to social norms
- Showing leadership skills and initiative
- Looking after one’s own health and well-being
- Being accessible to colleagues
- Speaking with a refined accent
- Having a good sense of humour
- Being physically attractive
- Being physically fit
- Always being busy
- Being well read outside one’s professional area
- Earning a high salary
- Owning a luxurious home
- Having attended a prestigious school before going to university

Figure 3 Non-evidence-based items added to the list of evidence-based items to ensure the credibility of responses from many geographic regions were sufficient to allow the meaningful calculation of CVIs. Numbers of respondents by region are presented in Table 1.

Data collection

The respondents were expected to rate the 55 attributes by indicating the importance of each item as a professional attribute for doctors using a unipolar, 5-point scale (5 = extremely important, 4 = very important, 3 = somewhat important, 2 = slightly important, 1 = unimportant). We used a 5-point, unipolar scale as the purpose of the survey was to determine the degree of importance of attributes that had already been identified as important by various researchers and governing bodies, with acceptable dispersion.

The submission of responses was anonymous. The results were analysed 11 weeks after the survey had
been launched, after one reminder had been sent out to survey targets, as advised by our institution’s ethics committee.

Analysis

The CVI is calculated on the basis of identifying the elements rated as ‘essential’ with the highest level of agreement by the reference panel. Which points on the rating scale should be included in the ‘essential’ category for the purposes of calculating the CVI is a matter to be decided sensibly by the researchers or educationalists running the study.8,13 In this study, ratings of ‘extremely important’ and ‘very important’ were classified as representing ‘essential’, and ratings of ‘somewhat important’ and ‘slightly important’ were grouped as ‘moderately important’; ‘unimportant’ remained the same. Region-specific CVIs for each of the 55 items were calculated using these categories as indicated by ratings given by respondents in each region (e.g. the proportion of UK respondents who indicated that Item X is essential is the CVI-UK for Item X). Items with CVIs of > 0.78 were considered to represent the attributes of professionalism as it is conceptualised by people within a given region. k-values for each of these region-specific sets of ‘essential’ attributes were subsequently calculated using the online multi-rater k calculator.15 The same response categories (essential, moderately important and unimportant) and number of respondents from each geographic region were used for this purpose.

RESULTS

The CVIs for all non-evidence-based items included in the survey were < 0.78 (i.e. below the acceptable agreement level) across all geographic regions, which means that the respondents rated the items discriminately. The analysis of CVIs yielded varying numbers of attributes perceived as essential in different regional groups, including: 30 attributes in the UK (k = 0.77); 35 attributes in other European countries (k = 0.80); 30 attributes in Asian countries (k = 0.83), and 31 attributes in North America (k = 0.84). The agreement among participants in all regional groups on rating these items was above chance (i.e. k > 0.70).

Twenty-nine of the 46 evidence-based items were recognised cross-regionally as essential elements of professionalism (Fig. 1). These attributes are related to personal characteristics (e.g. Honesty and integrity; Reliability and dependability; Reflective practice), doctors’ relationships with patients (e.g. Respect for patients’ autonomy, confidentiality and privacy; Showing compassion; Treating patients fairly without prejudice), workplace practices and relationships (e.g. Being responsible for commissions and omissions; Being accountable for one’s own actions; Working in teams) and socially responsible behaviours (e.g. Law-abiding behaviour; Avoidance of substance and alcohol misuse; Making effective use of the resources available). Six items that are closely related to doctors’ personal well-being (e.g. Looking after one’s own health and well-being; Being mindful of one’s personal appearance), which has been emphasised by professional bodies and researchers, were not identified as essential by any regional group (Fig. 2).

The essentialness of the remaining 11 items varied by region (Table 2). The attributes with regional dissonance appeared to fall into three broad categories: openness to patient-centred practice (Being accessible to patients, Showing altruism towards patients, Being sensitive to the cultural backgrounds of colleagues and patients); workplace values (Acting with confidence in one’s duties, Being attentive to the needs of colleagues, Not taking a cynical approach to one’s job, Punctuality), and attributes contributing to societal well-being in the long-term (Acting in a responsible fashion towards society, Having the skills to train colleagues if required, Working with one’s colleagues towards common goals, Being adaptable to changes in the workplace).

DISCUSSION

This study was able to identify several key similarities and differences among regional groups in terms of medical practitioners’ understandings about doctors’ professional attributes.

Table 1 Number of respondents by region

<table>
<thead>
<tr>
<th>Region</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>368</td>
<td>63.0</td>
</tr>
<tr>
<td>Europe excl. UK (e.g. Greece, Portugal, Germany, Denmark)</td>
<td>56</td>
<td>9.6</td>
</tr>
<tr>
<td>Africa (e.g. South Africa, Nigeria, Sudan)</td>
<td>12</td>
<td>2.1</td>
</tr>
<tr>
<td>Asia (e.g. Sri Lanka, India, Saudi Arabia, Japan)</td>
<td>70</td>
<td>12.0</td>
</tr>
<tr>
<td>Australasia (Australia, New Zealand)</td>
<td>20</td>
<td>3.4</td>
</tr>
<tr>
<td>North America (Canada, USA)</td>
<td>52</td>
<td>8.9</td>
</tr>
<tr>
<td>South America (e.g. Chile)</td>
<td>6</td>
<td>1.0</td>
</tr>
<tr>
<td>Total</td>
<td>584</td>
<td>100</td>
</tr>
</tbody>
</table>
Attributes with global consensus

The 29 attributes that achieved global consensus may constitute the ‘core’ of medical professionalism, or they may reflect the influence on Eastern cultures of Westernised representations of professionalism or vice versa. These attributes overlap considerably with the professional characteristics of doctors as defined by professional and governing bodies around the world. They are also compatible with the UK general public’s expectations of doctors.4 The concordance between public expectations, the recommendations of governing bodies and doctors’ perceptions of professionalism is particularly encouraging in an era in which professionalism is increasingly viewed as representative of a social contract between doctors and society. The presence of reflective practice, recognition of limitations, openness to constructive criticism and motivation for professional development, a set of discrete but related attributes, in the group of attributes that won cross-regional approval suggests these may be the cornerstone of medical professionalism.1

However, contrary to the evidence in the literature, being mindful of personal appearance, conforming to social norms, behaving with composure, showing leadership skills, being accessible to colleagues, and looking after one’s own health and well-being were indicated universally as non-essential attributes for the professional doctor. That some of these attributes are considered as non-essential challenges the recommendations of certain governing and professional bodies, particularly the GMC in the UK, which highlights the importance of doctors being considerate of their own well-being.16 The GMC recommendation on self-care was made to alleviate concerns that British doctors may become psychologically unhealthy in their professional lives, which may, in turn, affect patient care.41 Therefore, there may be a need to reiterate the message that personal well-being is not only important to doctors themselves, but is also essential for patient safety.

Attributes with regional differences

That perceptions of 11 of the professional attributes show regional dissonance may be attributable to differences in social, economic and cultural backgrounds. This is discussed for each of the three themes in which these attributes appear to group.
Openness to patient-centred practices

Being accessible to patients was essential to European, Asian and North American doctors, but not to UK doctors. This difference may reflect the nature of health care provision in different regions. In most European countries and in North America, patients pay health care fees directly, whereas, in the UK, the cost of health care delivery is not borne at the point of contact. Doctors who provide care for fee-paying patients may feel more obliged to make themselves accessible to patients than doctors who do not. Alternatively, it may be that the system in place in the UK to ensure the accessibility of doctors to patients is better than those in other regions and thus individual doctors in the UK do not feel a need to concern themselves in this respect. The essentialness attributed to this attribute by Asian doctors may reflect the collectivist and socially oriented nature of Asian cultures, as, in many Asian countries, health care is delivered free by the state. However, it may also reflect the same cause as for North American doctors because many other Asian countries operate a private health care sector in which patients themselves are required to pay for services.

Altruism was an essential element for Asian doctors. This may reflect the collectivist nature of Asian cultures compared with the individualist nature of Western cultures. Although North Americans are culturally individualistic and altruism is not prioritised in such a cultural background, it is not surprising that altruism emerged as essential to North American doctors because it has represented one of the seven major domains of professionalism as defined by professional bodies in the USA for some time. Therefore, this may represent an example of a counter-cultural response from the perspectives of both practitioners and governing bodies; ‘helping’ professionals, such as doctors, may be more committed to the practice of altruism in a culture in which individualism is strong. The non-essentialness of altruism to British medical professionalism in our study may not be a novel finding as the Royal College of General Practitioners Working Party on Professionalism has acknowledged that there has been greater emphasis on altruism in the US professionalism movement compared with its UK counterpart. UK doctors may not have considered altruism as essential because they assume that British society does not demand such an attitude; altruism may be altruism only when there is a societal demand for it. However, our previous study with the UK general public indicated that altruism is perceived by the public as a very important component of the doctor–patient relationship.

The practice of treating all patients and colleagues fairly was perceived by all groups as essential to the professional doctor. However, being sensitive to the cultural backgrounds of patients was regarded as an essential attribute only by North Americans. This may be because much of the USA has comprised a multicultural society for longer than the other Western and Eastern regions under study.

Attributes related to workplace values

Acting with confidence in one’s duties may be considered as essential by Asian doctors as Asian societies believe that the ‘doctor knows what is best’ and therefore showing confidence is a primary contributor to a successful doctor–patient relationship. In addition, the power distance between individuals who are perceived to stand at higher (e.g. doctors) and lower (e.g. patients) social levels is more evident in Asian cultures, which may also warrant a public display of self-confidence. In view of the patient safety regulations and legal frameworks in place in many Western countries, doctors from these countries may consider this issue differently to their Asian counterparts: they may focus on becoming safe rather than confident practitioners. However, the essentialness attributed by Europeans to this facet of professionalism contradicts the recommendations of their regulatory bodies.

Culturally, Asians value strict discipline, which may explain the Asian doctors’ commendation of punctuality. Attending to colleagues’ needs and not being cynical about their job represent, for Europeans, who are culturally individualist rather than collectivist, values that contradict their cultural outlook. This may show a keenness or need on the part of European doctors to overcome socio-cultural barriers to deliver better health care in their own contexts. In a multicultural study, Schmidt et al. postulated a similar theory of a counter-cultural response to explain medical students’ non-conventional perceptions of holism.

Attributes contributing to social well-being in the long-term

The possession of teaching or training skills has been considered an important component of professionalism since the time of Hippocrates. However, despite worldwide recommendations for and expectations of teaching skills as a professional competence of clinicians, only European doctors valued such...
skills as essential. Teaching skills in doctors have been cited as necessary by the GMC\textsuperscript{18} and UK medical students have been critical of the poor teaching skills of clinical teachers.\textsuperscript{18} Nonetheless, UK doctors felt that teaching skills were not essential to a professional doctor. The perception of training skills as non-essential by North American respondents also contradicts the expectations of US junior doctors of their senior colleagues\textsuperscript{49} and the desires of the majority of promotion committees for doctors in the USA and Canada.\textsuperscript{50} The lack of delivery of formal training in teaching to trainees during postgraduate clinical training has been cited as a principal reason for this perception among clinicians\textsuperscript{51} and may well be the cause of it here. In many Asian countries, such as India, teaching has not been emphasised as a professional competence.\textsuperscript{52} Therefore, Asian doctors may not consider it as an essential attribute.

Acting in a responsible fashion towards society was important to all groups except Europeans. Here, the perceptions of Asian doctors may reflect their collectivist cultural background.\textsuperscript{6} However, the responses of North American and UK doctors are unlikely to be cultural as they appear to be more individualist.\textsuperscript{6} Rather, these latter responses may well reflect socio-economic causes as this survey was launched in early 2010 when the UK, Europe and North America were feeling the hardships imposed on all sectors of society by economic recession. This may well explain the emphasis placed by Europeans and North Americans on working with colleagues towards common goals. However, it is unclear why UK doctors did not emphasise this attribute in concordance with other Western nations. The cultural background of Asians, by contrast, tends to encourage hierarchy and leadership rather than collegiality.\textsuperscript{7}

Adaptability to workplace changes was regarded as essential by Asians, who are culturally less flexible.\textsuperscript{6} This may well represent a counter-cultural response, which again demonstrates doctors’ keenness to challenge cultural barriers in order to help patients.

**Strengths and limitations**

This is the first study incorporating the views of over 500 doctors of different nationalities dispersed around the world and thus identifying cultural similarities and differences in the conceptualising of professionalism to be reported in the literature. In this study, we were able to offer explanations for most, if not all, of these similarities and differences using social and economic factors and two culture-based theories. The CVI values of attributes, supplemented with the $\kappa$-values of each region-specific group of attributes, can be used to make education in professionalism more culturally appropriate. Moreover, the cultural understanding afforded by this study will help to prepare students to undertake overseas electives or global health studies.

However, this study may have several limitations. Although its geographic coverage and the sample numbers representing each region are acceptable for the chosen methodology and meaningful analysis of results, selecting a convenience sample over a random sample as the reference group may have led to bias. In this type of survey, the ceiling effect (i.e. the tendency of respondents to choose the highest points of the rating scale for all items \{‘extremely’ and ‘very important’ in this survey\}) may result in a lack of discrimination among items, which might be minimised by asking respondents to rank the items. As in this study, previous studies have interpreted regional differences in perceptions of professionalism as reflecting cultural differences.\textsuperscript{2,53} However, important cultural variations within geographic regions may have been overlooked in this study. The usefulness of the findings of this study to medical educators in Africa, Australasia and South America may be limited as these regions were excluded because of the very small numbers of local responses received.

**Directions for future research**

A multi-region, qualitative study to explore the reasons behind the cultural differences will expand the insights generated by this study. The understandings of other stakeholders, such as students and patients, will also contribute to a more comprehensive understanding of what professionalism means in different cultures. It would also be worth exploring cultural differences within countries.

**CONCLUSIONS**

Although a large proportion of attributes of professionalism are regarded as essential by a fairly global community of medical practitioners, not every aspect of medical professionalism is deemed to be relevant in each context. The consensus among regions on certain aspects of professionalism may be attributable to either of two causes: these attributes may represent the ‘professional essence’ of allopathic medicine, which all doctors practise, or perceptions of professionalism of doctors in one region may have been
influenced by their colleagues in another. Most of the differences are attributable to the cultural and socio-economic backgrounds of the respondents’ regions of residence. Interestingly, some of these differences appeared to illustrate counter-cultural measures taken to overcome cultural barriers to the provision of better patient care.

Contributors: MC served as the main investigator in this study. He led the study design, and the acquisition, analysis and interpretation of data, and drafted the major portion of the article. SM contributed to the study design, and to the analysis and interpretation of data. SM also contributed towards the first draft of the paper and to its subsequent critical revision. JG contributed to the study design and made substantial contribution to the critical revision of the paper. All authors approved the final manuscript for publication.

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Conflicts of interest: none.

Ethical approval: this study was approved by the University of Dundee Research Ethics Committee.

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Hexaxell
S Y Phang
S Y Phang, Glasgow

*HexaXell* is a medical education application that seeks to marry technology, medical education, and social networking. It unifies the best qualities of each, with a single focus in mind, and that is to make medical education affordable, interactive, mobile, and personalized for everyone.

Having been a medical student for the past five years, I have noticed five shortcomings in the current methods of medical education:

1. Monotonous paragraph based text
2. Isolation associated with self-directed learning
3. Expensive
4. Lack of personalization
5. Immobility

As technology is able to make learning more dynamic and personalized, I have designed an Android™-based application called *HexaXell* that will use the below three platforms to make learning medicine interactive, mobile and interactive:

1. *“LogicFlow”* gives the student a bird’s eye view of a disease by linking the cause of a disease to its clinical presentation by its mechanism. To personalize learning we enable users to collapse and expand each box present in *LogicFlow*. In addition, we have built another feature into *LogicFlow* called “Layers,” that allows for different layers of information to be superimposed onto *LogicFlow*. The different *Layers* that we are proposing to make are: Investigations / Treatments / References / Personal tags / Social tags
2. *“Synapse”* summarizes the information in *LogicFlow* in a screen efficient manner.
3. “Plexus” our social networking platform allows users to post questions in the form of social tags.

*HexaXell* is aimed to globalize and democratize medical knowledge, so that better medical care can be disseminated around the world, irrespective of socio-economic factors. We hope to make medical education a right for everyone who has an interest in medicine and its diseases.
Virtual Ward: An authentic approach to understanding the clinical reasoning process

RS Patel¹, SJ Carr², S Petersen¹, S Bonas¹, J McKimm³


Introduction
Autopsy reports show a 20-40% discrepancy between postmortem findings and antemortem diagnoses (Graber, 2005) suggesting doctors’ fallibility for error is a real phenomenon. The majority of errors made by health professionals are related to clinical reasoning (Croskerry, 2005) however valid, reliable and practical methods for identifying clinical reasoning process are lacking. Virtual patients (VPs) are effective for developing clinical reasoning (Cook, Erwin, & Triola, 2010) but there is limited evidence for the effectiveness of VPs in the identification of clinical reasoning processes. The BADGER (Browser-based Assessment of Decision-making using virtual patients Generated from Expert peer-Review) project is a collaboration between the University of Leicester, University Hospitals of Leicester NHS Trust and East Midlands Deanery to design a learning technology (Virtual Ward) that creates web-based VPs for identifying clinical reasoning processes.

Methods
Mixed-methodology (Wheeldon, 2010) provides a framework for integrating the various methods to identify clinical reasoning processes. A ‘blended’ approach (Academy of the Royal Medical Colleges, 2007) was used to identify the choice of strategy (e.g. non-analytical or analytical), self-regulatory behaviours (e.g. goal-setting, planning, monitoring or reflection) and errors associated with clinical reasoning (e.g. faulty knowledge, data-gathering, information-processing or verification).

The five components of the ‘blended’ approach included:
A VP technology that simulated “real-life clinical scenarios allowing learners to emulate the roles of health care providers to obtain a history; conduct a physical exam, and make diagnostic or therapeutic decisions” (Cook & Triola, 2009).
An ‘authentic’ VP case derived from evidence-based medicine and enriched with multimedia from ‘real’ patients
A complete clinical enquiry so participants undertook integrated problem-solving and decision-making during the VP case
A facilitator who ‘captured’ the clinical reasoning process across the case presentation using mapping (Wheeldon, 2010) and microanalysis (Sandars & Cleary, 2011)
VP trace data collected by the technology to triangulate facilitator findings

The ‘Virtual Ward’ approach was used to answer the question “What is the usefulness and usability of Virtual Ward for identifying clinical reasoning processes?” Ethical approval was obtained from the University of Leicester.

Results
24 students in year 5 of the Leicester MBChB curriculum (‘novices’) and 6 doctors (‘experts’) participated in the BADGER study. Novices and experts frequently used non-analytical strategies across the clinical enquiry. Conversely, analytical strategies were used infrequently even though novices experienced difficulty recognising the evolving clinical problem. The attention of experts and novices was also focused on the outcome of clinical reasoning i.e. formulating a diagnosis or a management plan, rather than the process/technique of clinical reasoning, i.e. strategic
planning and goal-setting, as the clinical enquiry progressed from start to finish. Although self-efficacy levels dropped as novices advanced towards management of the clinical presentation, there were no changes in self-efficacy among experts across the clinical enquiry.

The diagnostic accuracy among experts was 100%, however only 54% among novices despite both groups recognising the clinical presentation early in the clinical enquiry. Nevertheless, there was no difference in the number of errors based on the number of years in clinical practice (t=0.85, P = 0.40 p>0.05). The most frequent error was over- or underestimating the salience of clinical information (e.g. symptoms, signs or investigation results). Other errors included insufficient knowledge of the relevant condition, conducting a standard test/procedure incorrectly and confirmation bias.

All ‘novices’ perceived the experience useful for their learning, however some ‘experts’ commented on the constraints of performing clinical reasoning without the availability of context-specific variables not provided by the VP case or technology.

Discussion
The BADGER project suggests Virtual Ward VPs may be used by clinical teachers to identify the strategies and self-regulation processes associated with clinical reasoning. The Virtual Ward approach may be useful for identifying the (meta)cognitive components associated with common medical errors. The Virtual Ward approach may provide novices with a ‘safe, risk-free’ environment in which they can make errors without fear of reprisal or punishment. Further research is planned to investigate the validity and reliability of errors associated with clinical reasoning identified by individuals using the Virtual Ward approach. The BADGER project suggests the usefulness of the Virtual Ward approach may be limited among individuals with advanced levels of clinical reasoning ability due to the expertise-reverse effect (Kalyuga, Ayres, Chandler, & Sweller, 2003).

References
ERG Research Stream
Presentations Timetable
Each presentation has been allocated 20 minutes presentation time and 10 minutes group discussion time. After all the papers have been presented and discussed individually, there will be a period of 30 minutes rapporteur-led discussion of all the presentations in the stream.

Friday 18th July 2012
Teaching and learning essential skills for patient care

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenter(s)</th>
</tr>
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<tr>
<td>11.15-1.15pm</td>
<td>Chair: Professor Jennifer Cleland, Discussant: Professor Charlotte Rees, Room: Auditorium 2</td>
<td></td>
</tr>
<tr>
<td>11.15-11.35am</td>
<td>Role-modelling patient-centredness within bedside teaching encounters: a video ethnographic study</td>
<td>Christopher Elsey</td>
</tr>
<tr>
<td>11.45 - 12.05pm</td>
<td>What influences student learning on patient safety? – the use of Kirkpatrick's framework as a series of “lenses” to explore the development and testing of a conceptual model</td>
<td>Lucy Ambrose</td>
</tr>
<tr>
<td>12.15pm - 12.35pm</td>
<td>Peer mentoring as an aid to postgraduate medical education in Psychiatry</td>
<td>Howard Ryland &amp; Genevieve Holt</td>
</tr>
<tr>
<td>12.45 - 1.15pm</td>
<td>Rapporteur led discussion of all 3 presentations</td>
<td></td>
</tr>
</tbody>
</table>
Role-modelling patient-centredness within bedside teaching encounters: a video ethnographic study

C Elsey, L Monrouxe, A Grant

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Background and Purpose

There is a plethora of research within social sciences that has examined the nuances of the doctor-patient interaction \(^1\)\(^-\)\(^4\); however, little is known about doctor-patient-student interactions. Much is known about doctors’, patients’ and students’ views \(^5\)\(^-\)\(^6\) about participating within bedside teaching encounters (BTEs) yet very little is understood about what happens interactionally when medical students are present \(^7\). We are presently using a video-ethnographic method to examine how patient-centredness \(^8\) is taught to and learned by medical students in authentic doctor-patient interactional settings (rather than as an abstract concept). When conducted well, patients can benefit from BTEs through being empowered as active participants in the teaching process and by learning more about their illness \(^9\).

Methodology

The primary mode of enquiry for this study is video ethnography in conjunction with a linguistic ethnographic analytic framework \(^10\)-\(^11\). Our data comprises video recordings of BTEs across a variety of primary, secondary and tertiary clinical settings encompassing a range of clinical specialties (e.g. GP, paediatrics, geriatrics, and general surgery and medicine), coupled with debrief interviews with all participants. To date the project is the largest of its kind, comprising 43 separate BTEs across two health boards totalling 937 minutes of video footage.

Results

Data analysis demonstrates that practicing patient-centredness results in interactional ramifications for all parties present throughout BTEs. In order to exhibit patient-centredness as it is taught and modelled during the course of BTEs a selection of video clips (with accompanying anonymised transcripts) have been utilised. In particular we examined openings, the educational phase and closings within BTEs in order to see how patients’ experiences and concerns are considered and adequately incorporated throughout the encounters \(^12\).

Discussion and Conclusions

The analysis illustrates in detail the distinctive shape of patient-centredness as it is taught and enacted during BTEs. That is, patient-centredness-in-action is a feature of BTEs that is modelled and pointed-to by the doctor for the benefit of the medical student during the course of the consultation. As demonstrated by the data analysis it is important to consider the ways in which patient-centredness pervades all phases of BTEs and therefore the ‘learning moments’ that this affords means that medical students must be directed to its recurrent significance and manifestation so as to maximise the learning potential \(^13\).

References

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What influences student learning on patient safety? – the use of Kirkpatrick’s framework as a series of “lenses” to explore the development and testing of a conceptual model
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Background and Purpose
Kirkpatrick’s framework is a hierarchical structure that ranks judgements of evidence in terms of their the proximity to patient outcomes. Debate in the literature has presented contrasting views about its value. Proponents and opponents of it have argued with equal vigour as to the importance of identifying evidence in education and whether Kirkpatrick’s framework is a valid approach. This paper presents a series of three studies in a single cohort of students, which have used the framework in a different context and for a different purpose as a series of ‘lenses’ to explore a complex educational intervention. The use of Kirkpatrick’s framework was not intended to attribute relative importance to each outcome identified or demonstrated, but was used in the development stage of the MRC framework for complex interventions as a way of exploring and illustrating a conceptual framework of the individual factors that influence students learning about patient safety.

Methods
This series of studies used the concept of design-based research to follow a cohort of students using different methods for each study to develop and test the conceptual model.

Study 1 Level 1; used focus group data in year 1 of the curriculum, to identify theoretical influences and a conceptual model of the influences on patient safety learning for medical students.

Study 2 Level 2; used validated questionnaires in year 3 to test associations between individual factors and knowledge and attitudes to patient safety.

Study 3 Level 3; occurred in year five to establish associations between individual factors and behaviours, in a standardised simulated ward setting.

Results
Pilot/Study 1 Level 1: The interpretation of data from seven focus groups involving sixty students identified reflection and intellectual development as individual factors which influenced learning about error.

In studies 2 and 3 the representativeness of the sample was assessed in terms of the cohort overall and no significant difference was identified.

Study 2 Level 2: Sixty-one students participated and the questionnaires showed acceptable levels of reliability; Cronbach alpha for the reflection questionnaire was 0.71 and the patient safety questionnaire 0.90. The following significant associations were demonstrated:
- Reflection and knowledge of actions to take for patient safety, correlation coefficient 0.44 (p=0.0002).
- Critical reflection and intentions regarding patient safety, correlation coefficient 0.40 (p=0.0007)

Study 3 Level 3: Forty-eight students participated and the self-administered questionnaires showed acceptable levels of internal consistency, Cronbach alpha for reflection was 0.70 and for critical reflection was 0.78. The generalisability coefficient for the judgments about safe behaviour was 0.84 and for the error behaviours was 0.52. The following significant association was demonstrated:
- Reflection and knowledge based errors, correlation coefficient r -0.30 (p=0.03)

Discussion
The use of Kirkpatrick’s bands as lenses removes the hierarchy and uses them as a “methodological 360". In this way reflection was identified and tested as an individual factor influencing patient safety in this cohort.

References
Peer mentoring as an aid to postgraduate medical education in Psychiatry

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Background and Purpose
The support doctors receive at the start of Psychiatry training can affect their ability to engage successfully with postgraduate medical education1. Trainees can struggle to develop and evidence competencies in clinical leadership2, despite it having been integrated into medical specialty curricula3. A trainee-led pilot mentoring scheme was established in the School of Psychiatry for Kent, Surrey and Sussex Deanery (KSS) to address both of these needs. Literature is limited with regard to peer-mentoring in medical education4. This study seeks to evaluate the learning opportunities provided by the KSS scheme. It focuses on the enhancement of postgraduate training, including development of clinical leadership skills.

Methodology
This year-long action research project aims to access the subjective experience of medical education for participants through focus groups and questionnaires. Qualitative data will be collected at various points and analysis of initial data will be used to inform subsequent data collection5. Six months into the project, online questionnaires were used to collect anonymous data. The nineteen mentees were asked to complete a survey to investigate the impact on their experience of training. A survey of the eleven (non-researcher) mentors sought to establish how effectively leadership skills were advanced through their role. Additionally, a focus group of mentors allowed in-depth exploration of emergent themes.

Results
The majority of mentees (79%) feel that the scheme is worthwhile, supporting them during their first year of training. Identified benefits include better understanding of their training responsibilities and improved preparation for postgraduate examinations. Mentors report having had very limited leadership experience prior to participating in the scheme; they highlight particular competencies that they are now developing in the domains of scholarship, management and professionalism. The focus group identified three main themes: the role of the mentor as leader, the development of personal attributes and the organisational context of mentoring.

Discussion and Conclusions
A high proportion of mentees are expressing a desire to become mentors themselves, evidencing the potential of the scheme to be self-sustaining for future iterations. This enthusiasm demonstrates the acceptability of this form of learning. Emerging data suggests that peer-mentoring has a significant role in helping trainees realise educational goals. In the changing environment of the NHS, clinical leadership is increasingly being recognised as an important and necessary skill to be acquired during medical training6. This scheme offers a compelling illustration of how competencies can be achieved in this area through practical engagement.

References
ASME Annual Scientific Meeting
18 - 20 July 2012,
Brighton

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1. Hilton Brighton Metropole
2. The Grand
3. Thistle Brighton
4. Barcelo Old Ship Hotel
5. Holiday Inn Brighton Seafront
6. Mercure Brighton Seafront
7. Jury's Inn Brighton
8. Umi Hotel Brighton
9. Queens Hotel
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