How prepared are medical graduates to begin practice?

A comparison of three diverse medical schools

Study funded by the GMC

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GMC’s Tomorrow’s Doctors

“Students must be properly prepared for their first day as a PRHO”

(para. 51, p20 Tomorrow’s Doctors 2003)
Background

• National survey (2003) reported that over 40% of medical graduates did not feel fully prepared to start work as a doctor.

• The study also reported that the level of preparedness varied between medical schools.
Aim

To examine preparedness for practice in three diverse medical schools in order to explore the extent to which three differing medical schools can prepare graduates for the workplace.

Systems-based Graduate Problem
Integrated Entry Based
Curriculum Cohort Learning
Curriculum
Method: multi-method
- qualitative and quantitative
- prospective and cross-sectional

Qualitative data
- Interviews with 20 final year students from each medical school at the end of final year
- and after 4 months and 12 months in F1 (n=60).
- Last interview used to validate early findings.

- Triangulate above with:
  - Interviews with undergraduate tutors, educational supervisors, key managers
  - and focus groups with portfolio assessors.
Quantitative data

Cohort questionnaire
• Questionnaire administered to graduates at all three medical schools during shadowing.

Assessment data
• Learning portfolio assessment data reviewed at the end of first placement.

Prescribing assessment
• Newcastle and Warwick F1s took part in a prescribing test.

Clinical team questionnaire
• Questionnaire distributed to teams who work with F1s.
## Results: cohort questionnaire

<table>
<thead>
<tr>
<th>Location</th>
<th>Completed questionnaires</th>
<th>Size of cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newcastle</td>
<td>226 (74%)</td>
<td>304</td>
</tr>
<tr>
<td>Warwick</td>
<td>123 (80%)</td>
<td>154</td>
</tr>
<tr>
<td>Glasgow</td>
<td>131 (55%)</td>
<td>239</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>480 (69%)</strong></td>
<td><strong>698</strong></td>
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</tbody>
</table>
Results of cohort questionnaire
Graduates prepared for:

- Respecting team roles and working in team
- Working with people from different backgrounds
- History taking
- Performing a physical examination
- Communication skills
- Employing a patient centred approach
- Managing own health
- Probity issues
Results of cohort questionnaire
Graduates less prepared for:

- Administering nebuliser correctly
- Complex procedures e.g. catheterisation
- Pre-operative assessment of patients
- Using knowledge of legal and ethical issues in practice
- Knowledge of structures and functions of NHS
- Knowledge of alternative and complementary therapies
- Dealing with challenging patients
- Writing safe prescriptions and calculating dosages
- Writing part A of cremation form
Differences between medical schools?

- Greater variation within each medical school than between schools
- Majority of items rated highest or lowest were same at each medical school
- The Glasgow higher ratings for ‘identifying own learning needs’ and ‘managing own time effectively’ may be related to PBL
Prescribing assessment

- Conducted at Newcastle and Warwick only
- Test developed from King’s College London
- Test taken October in Newcastle and December in Warwick
- Need to get 100% to pass by end of F1 year
- Involves 8 questions
- Marked by pharmacists

- 19% passed first time in Newcastle
- 16% passed first time in Warwick

Low pass rate
- but test was very challenging
Portfolio assessment

Assumed that early assessments were more likely to reflect areas of greatest preparedness

Newcastle: e-portfolio

Warwick: paper-based portfolio

Glasgow: e-portfolio (assessments are slightly different in Scottish portfolio)
Completed assessments

- 60% of DOPS (Direct Observation of Procedural Skills) or WPA (Work Place Assessments) were in:
  - Venepuncture
  - Cannulation
  - Arterial blood sampling
  - Catheterisation
  - Naso-gastric tube insertion
  - Blood culture (peripheral)

The picture is broadly the same from each Medical School
Clinical teams questionnaire and clinical team interviews

- 78 questionnaires
- 18 interviews

Data from:
- Consultants, SpRs, F2s
- Nurse consultants, sisters, staff nurses
- Pharmacists
Results from clinical teams data

Prepared for:
• Communication skills
• History taking
• Clinical examination
• Practical procedures
e.g. cannulation, venepuncture, catheterisation
• Working with multi-disciplinary team
Results from clinical teams data

Less prepared for:

- Naso-gastric tube insertion
- Prescribing (reported only by pharmacists)
  - Drug history
  - Writing prescriptions
  - Completing drug charts
Conclusions from quantitative data

• Prepared for - history taking, examination and team working.
• Prepared for simple procedures and F1s opted to have them assessed early.
• Less prepared for complex procedures.
• Less prepared for prescribing: as assessed by F1s and pharmacists
• Low pass rate on safe prescribing assessment
• Greater differences within medical schools than between.
Results from qualitative data

- Interviews with 20 final year students from each medical school at the end of medical school and after 4 and 12 months as an F1 (n=65, 55, 46)
- Interviews with undergraduate tutors, educational supervisors and key managers (n=92)
- Three focus groups with portfolio assessors
- 250+ qualitative interviews + focus groups
Qualitative results reported thematically

- Transition – becoming a doctor
- Factors that impact on preparedness
- Role of F1 and colleagues
- Managing the duties of a doctor
- Knowledge
- Clinical and practical skills
- Prescribing
- Communication skills
- Using a learning portfolio
- Identifying learning needs
- Improvements to training
Areas of preparedness

- Communication skills
- History taking
- Clinical and practical skills
- Team working
- Anatomy? no worries!
Lack of preparedness

Managing the duties of a doctor

• On call and working nights
• Time management and prioritising work
• Dealing with paperwork (not Glasgow)

Clinical and practical skills

• Managing acutely ill patients
Lack of preparedness

- Lack of knowledge about the F1 Role
- Lack of knowledge about the NHS
- Legal and ethical issues
Lack of preparedness for prescribing

• Prescribing was singularly the weakest area of practice
• Lack of preparedness in areas ranging from pharmacology knowledge to calculating drug doses
• Area where most mistakes were made
Some quotes to highlight the issues

Ward work

“I don’t feel that medical school prepares you at all for any sort of ward work in any sort of way really”
(WPS3, follow-up, quartile 1)

“I think they are not particularly well prepared...they could be more familiar with the ward environment...way the ward works”
(G undergraduate tutor 9)
Management of acute patients

“I’ve had difficulty with being in the acute situation...being the first person to initiate basic management for that patient and recognising what’s wrong” (NPS26, follow-up, quartile 4)

“The hardest thing for them is the acute on calls. I think they struggle with assessing truly sick patients” (N educational supervisor 14)
"Initially I might struggle to prioritise my jobs"
(GPS14, follow-up, quartile 1)

"The big thing that has come through with quite a few of my trainees is time management...the other problem is that they can’t - it takes a long time to learn how to prioritise”

(N educational supervisor 3)
“You... presume if you write urgent on it, it will happen urgently and then it doesn’t”
(NPS93, follow-up, quartile 3)

“A lot of them don’t understand the importance of filling in a blood transfusion request properly”
(W Undergraduate Tutor 1)
"I think starting on nights was really tough"
(NPS18, follow-up, quartile 4)

"In hospital they are very supervised, apart from on nights...that’s the fear, where they are most exposed”
(G educational supervisor 5)
"I think you feel just a little bit silly when you don’t know common doses”
(NPS143, follow-up, quartile 2)

“There is one area where they aren’t prepared and that’s prescribing”
(W educational supervisor 4)
Conclusions from qualitative data

Lack of preparedness for practice was found in the following areas:

• Prescribing
• Managing acutely ill
• On-call
• Prioritising patients and managing time
• Hospital procedures and paperwork
Stress was reported and was particularly related to:

- A heavy workload
- Lack of support
Overall finding from qualitative data

Core theme
Lack of preparedness is about lack of exposure to clinical practice or learning on the job.

Theory
Preparedness for practice increases with exposure to clinical practice.
Possible reasons for lack of exposure to clinical practice

- No locum posts
- NHS structure (firm, shift working, EWTD)
- Competing with other students and current F1s
- Prioritising library learning over experiential
Were our three medical schools different?

Three diverse medical schools but the results showed similarities in preparedness.

All three schools were similar in terms of exposure to practice.
Recent survey on preparedness

Preparedness has increased to 59% in 2005 but this ranges by medical school from 30% - 89% (Cave et al 2007)

Personal communication with Cave May 2008

Newcastle and Glasgow – ranked in similar position (Warwick and Leicester data combined)

Two medical schools who took final exams in penultimate year were ranked first and second in preparedness

MRCP
But the same two medical schools was ranked last in performance on MRCP (UK) Part 1 and 2 (McManus et al. 2008)
Conclusions

Preparedness for practice is related to exposure to clinical practice

Lack of preparedness was found in areas of practice that are learned on the job i.e. prescribing, managing acute patients, working on-call and prioritising work.
Conclusions continued

- MTAS scores were not found to be related to preparedness
- Minor differences between medical schools - maturity and self directed learning
- Greater knowledge of role, legal and ethical issues and NHS would also be improved by increased exposure through on-the-job training
Recommendations

- More structured placements that involve the student in authentic workplace practice as part of the team
Situated learning and legitimate peripheral participation

• Learning in the workplace enculturation into real practices authentic activity.

• Initially ‘peripheral’ moves more to the ‘centre’ with increased competence and skill

Recommendations cont.

- Graduates to have a role in the team
- Prescribing – there needs to be more applied learning
- Improvements to shadowing
- Consider moving final exams back in time
Thanks!

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“It's bad news I'm afraid - you live in the North.”