As easy as ABC?

Acute care and the transition into clinical practice

Vicky Tallentire
University of Edinburgh
Patients at risk when junior doctors start new jobs, says health boss

‘KILLING SEASON’
ON NHS WARDS

By Jenny Hope
Medical Correspondent

HOSPITAL death rates increase by 8 per cent when junior doctors start their jobs in what a leading NHS executive has labelled the ‘killing season’.

Sir Bruce Keogh, medical director of the health service, has admitted publicly – for what is believed to be the first time – that patients are at risk during this period.

Are Edinburgh graduates prepared for practice?

The preparedness of UK graduates in acute care

Understanding the behaviour of newly qualified doctors in acute care contexts

Exploring patterns of error in team-based acute care

Implications for practice
Edinburgh graduates

• How well do Edinburgh medical graduates and their educational supervisors feel that their primary medical training prepared them for starting work as a doctor?

• Questionnaire study over 3 years.

• Preparedness in acute care and prescribing were rated lowest.

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UK graduates

- How does perceived preparedness in acute care compare with perceived preparedness in other *Tomorrow’s Doctors* (2009) outcomes?
- Systematic literature review.
- 256 abstracts reviewed → 10 included studies.

UK graduates

- UK graduates perceive themselves to be least well prepared in **acute care** and prescribing.

- Senior colleagues and AHPs perceive them to be least prepared in **acute care**.

- Perceived preparedness in acute care appears to have **declined** since 1993.

New doctors ‘lack expertise to care for acutely ill patients’

By Rebecca Smith, Medical Editor

NEWLY qualified doctors are less able to look after seriously ill patients than in the past due to changes in their training, according to a new study.

Researchers said that changes to the medical school curricula, which have put greater emphasis on communication and teamwork, may have been to the detriment of basic skills such as technical, persevering and managing emergencies.

They suggested that the problem had got worse since the introduction of new standards for medical training, introduced by the General Medical Council in 2003.

The team from the University of Edinburgh analysed 10 studies on the perceptions of junior doctors published between 1998 and 2011.

They found that in most areas junior doctors felt better prepared for the job.

However, in prescribing and acute care, their confidence appeared to have deteriorated.

“The amalgamation of evidence in this review suggests that recent changes in UK undergraduate training, whilst improving preparedness in some areas, may have neglected acute care,” the researchers wrote in the Postgraduate Medical Journal.

Dr Sam Smith, a co-author of the study, added: “Junior doctors feel less prepared in communication but don’t feel prepared in acute care. One of the reasons is the emphasis on community working. It is very different from the level of emphasis when new doctors were selected for training.”

Dr Claire Smith, a consultant in acute medicine at the Royal Infirmary of Edinburgh, said: “The training of junior doctors today is better than over the past 20 years, but there is room for improvement.”

The research found that junior doctors felt poorly prepared for dealing with acutely ill patients compared with patients assessed in terms of training.

The authors said the findings were “an important area of concern”.

They said the findings were “a wake-up call” and urged the introduction of a new standard for medical training introduced by the General Medical Council (GMC) in 2003.

The authors say the findings will “provide a little surprise” to those involved in medical education, saying: “The research is relevant to all patients, including those with acute illness.”

The findings have prompted researchers to suggest recent changes in undergraduate training may be to blame.

The researchers analysed studies published between 1993 and 2011, covering the preparation of UK graduates in acute care and other required competences set by the regulator in training. The study reviewed the GMC’s guidance on medical school curricula.

The analysis showed UK graduates were less well prepared in acute care.

The study’s lead author, Dr Sam Smith, said: “The findings of this study suggest recent changes to UK undergraduate training, while improving preparedness in some areas, may have neglected acute care skills.”

The findings were published in the Postgraduate Medical Journal.

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Overarching themes

Cognitive challenges
Role and responsibility
The clinical environment
Cognitive challenges

Decision-making and uncertainty → Newly qualified doctors’ behaviour → FY1: “It’s a totally new concept to have to run without a diagnosis. Once you have a diagnosis in your head it is impossible to move away from that and consider other things, you just continue, you know, down the same path.”
FY1: “You don’t want to phone for help and them say ‘what have you done?’ and you have to say ‘nothing’. Because that would make you feel useless. And you feel like, ‘I’m a doctor now, I should be able to at least start to manage a situation’.”
The clinical environment

Newly qualified doctors' behaviour

Acts and omissions

Decision-making and uncertainty

Medical hierarchy

Identity and expectation

FY1: “... so people shy away from making the call until they feel that they have enough armour, in the form of knowledge that is going to be demanded from them, to come out of the call unscathed.”
Inter-theme relationships

Acts and omissions

Decision-making and uncertainty

Medical hierarchy

Identity and expectation

Newly qualified doctors’ behaviour

Transferring knowledge into practice

Medical hierarchy

Identity and expectation

Inter-theme relationships

FY1: “You could make them better... but you’re afraid that if you do something wrong then you could kill them faster than if you’d done nothing.”
FY1: “I think that is what underlies a lot of the time wasting in an acute situation. People are afraid of doing something that will have a bad outcome so they just write the notes...”
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38 FY1s from 7 UK medical schools

High fidelity simulation

18 simulated scenarios:
• post-operative haemorrhage
• severe sepsis
• post-operative respiratory distress
• hypoglycaemic coma
Conceptual framework

Professor James Reason

Generic Error Modelling System (GEMS)

Unintentional error

- Skill-based slips and lapses
- Rule-based mistakes
- Knowledge-based mistakes

Intentional error

- Violations
Results

• 243 errors identified

• 8 to 20 per scenario

• All errors attributed to the ‘team’

• 164 classified using the original version of GEMS
Skill-based slips and lapses

FY1: “The pulse is 97”
Rule-based mistakes

Tutor: “Did 2222 [emergency call] cross your mind?”

FY1: “Yes, it did at one point”

Tutor: “Why didn't you call it?”

FY1: “I felt like the patient's consciousness wasn't impaired”
Knowledge-based mistakes

FY1: “I was thinking about maybe calling the anaesthetist. I was thinking: ‘I need an anaesthetist, where do I get one of those?’”
Errors classification

243 errors identified

190 attributed to single cause

164 classified according to GEMS

53 not attributed to single cause

26 classified in new categories
Compound errors

Error occurring solely because of a preceding error, from own or others’ misperception or misinterpretation of information

FY1: “97% sats [oxygen saturation; actually 77%] so I didn’t think we needed to jump in with all guns blazing”
Submission errors

Error occurring when an FY1 was dissuaded from taking the most appropriate course of action by a colleague advocating less appropriate measures

FY1: “I think we should just give more fluid”

Other FY1: “But if she's bleeding blood then we should give her blood”

FY1: “…can we not just keep giving her saline, or jelly [colloid] or something?”
190 errors attributed to a single cause

164 classified according to GEMS

- 54 skill-based slips and lapses
- 61 rule-based mistakes
- 40 knowledge-based mistakes
- 9 violations
- 21 compound errors
- 5 submission errors

26 classified in new categories
Stages of framework analysis
(Ritchie and Spencer, 1994)

1. Familiarisation
2. Identifying a thematic framework
3. Indexing
4. Charting
5. Mapping and interpretation
Key subject areas

- Treatment
- Ethical principles
- Communication
- Prioritisation
- Hospital systems
- Infection control
- Procedural skills
- Situation awareness
## Indexing

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<th>Description of error</th>
<th>Evidence from scenario (S) or debrief (D)</th>
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<td>Surgeon paged (but had not answered) and junior doctors assumed that the surgeon was therefore on his way to the ward</td>
<td>Junior (S): “He's been called so he's on his way.”</td>
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<td>Recognition of severe sepsis but no attempts made to give antibiotics</td>
<td>Tutor (D):&quot;Did the patient get antibiotics?&quot; Junior: &quot;No, because I didn't know how to administer them“</td>
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# Multidimensional analysis

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Educational strategies

Hospital systems:
• Application of systems-related knowledge needs to be robustly assessed
• Induction processes need to include systems and equipment training

Prioritisation:
• Repeated exposure to simulation training facilitates use of assessment protocols
Educational strategies

Procedural skills:
• Emotional skills training should form an integral part of primary medical training
• Distraction and time-pressure can be incorporated into rehearsal

Communication:
• Strategies for dealing with challenging situations should be taught and rehearsed
Conclusions

• Acute care is a challenging and complex area
• New doctors will never feel fully prepared and errors will never be eliminated

• Patterns of error can guide educational innovations
• Strategies for improvement are multi-faceted
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