# PTAS Project Report (for REGULAR PROJECT GRANTS)

**Project Title:**

Preparing graduates to manage acutely unwell patients – exploring the role of stress and strategies to mitigate its effect

**Project type**:

**A Research Project** (research focus on particular dimension of teaching, learning, assessment)

**Principal Investigator:** Scott Clarke
**Schools/department:** Edinburgh Medical School: Medical Education

**Team members (including Schools and Departments):**
David Hope & Janet Skinner (Edinburgh Medical School: Medical Education)
Catriona Bell (previously Royal (Dick) School of Veterinary Studies, now AdvanceHE)

**For further details, please contact:** Scott Clarke, scott.clarke@ed.ac.uk

Project teams must submit a report within 4 months of the conclusion of their project.
Copies of dissemination material (eg journals/newsletter articles, conference papers, posters should be listed and attached (separate to the word count). The brief report will be published on the IAD web pages.

**Report (maximum 1500 words)**

**What did you do?**

Medical graduates still report feeling under prepared for their role in the management of acutely unwell patients, known as acute care, despite increased use of simulation in undergraduate curricula. As first responders to deteriorating patients, this is a critical part of their job. Junior doctors have described their experiences with these patients as particularly stressful, but little research has explored the contributing factors. Consequently, our learning activities have been based largely on "work-as-imagined" (WAI), how we think others, in this case junior doctors, experience work. Inevitably, this is different from the realities of "work-as-done" (WAD) because past experiences of WAD, a key source for WAI, quickly become outdated, particularly in rapidly developing areas like healthcare.

To come closer to understanding WAD, we interviewed junior doctors to investigate the factors making acute care challenging or stressful; furthermore, how their medical school experiences had impacted their preparedness for this aspect of their role. We hoped to inform development of learning activities to improve graduate preparedness, safety and employability.

We conducted 16 semi-structured interviews, sampling graduates from seven UK Medical Schools, analysing the data using reflexive thematic analysis.

**What did you find out?**

We generated six main themes – Figure 1. shows a three-tiered model depicting the relationships between them.

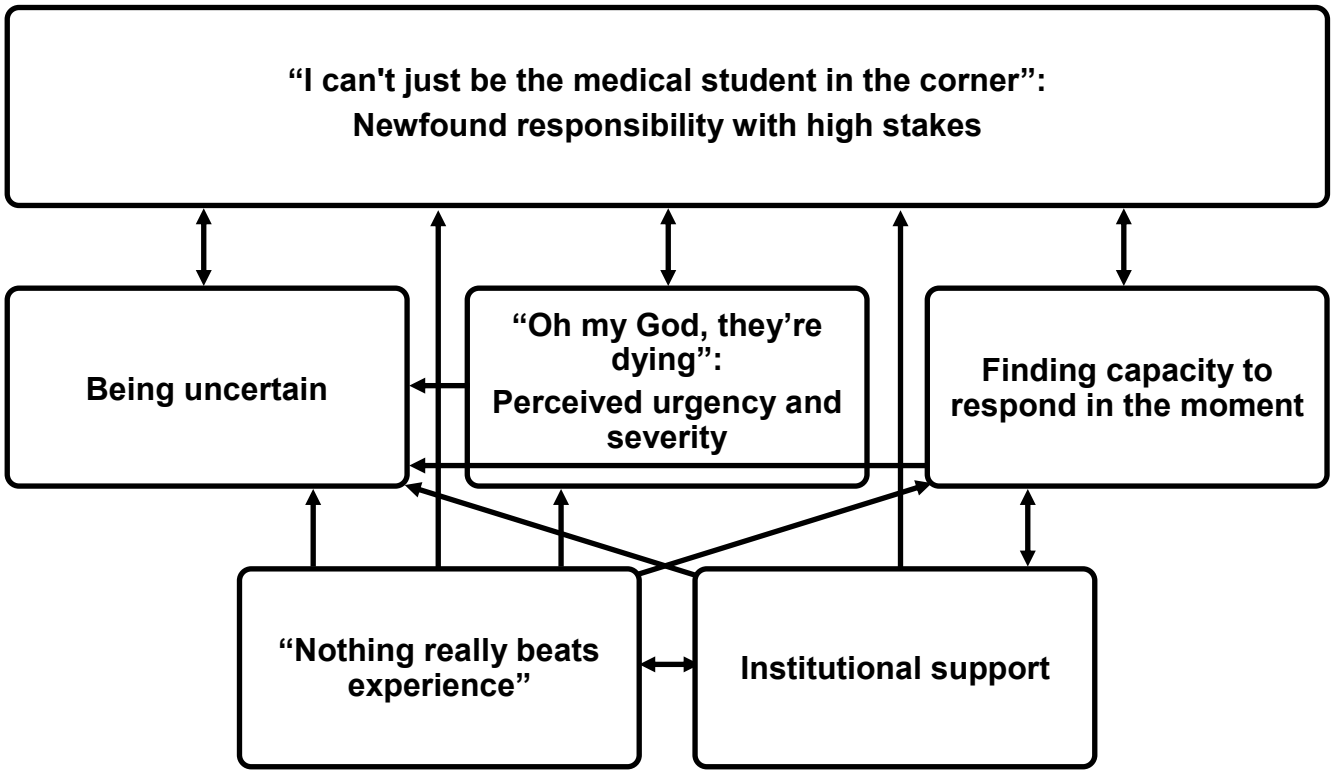


*Figure 1 - Thematic map depicting the main themes emerging from the study*

*"I can't just be the medical student in the corner": newfound responsibility with high stakes*

A fundamental sense of responsibility or 'need' to do the 'the right thing' pervaded their accounts. This was clearly the defining difference between medical school and real-world practice, brought sharply into focus by the acute and time pressured nature of acute care. Notably, the language used was overwhelmingly negative, emphasising the risk of consequences from a 'bad' decision, rather than the benefits of doing the right thing. Moreover, this perceived imperative to do the right thing and avoid adverse consequences was intrinsic to the stress participants experienced. Overall, participants felt that you couldn't comprehend this stress until experiencing it; however, many still flagged up missed opportunities for medical students to have more responsibility.

Importantly, whilst undoubtedly their priority, the imperative to do 'the right thing' and fear of repercussions extended beyond patient wellbeing to perceived risks for the junior doctors themselves, especially their professional identities. The possibility of appearing incompetent was a particularly common worry, together with concerns about not fulfilling their role or burdening their colleagues. Asking senior doctors for help was particularly problematic; participants struggled to balance patient safety against the risks of appearing incompetent or provoking a negative reaction by calling inappropriately.

*Being uncertain*

Whilst a few participants explicitly referred to a stressful state of "uncertainty", the majority simply described situations that were particularly difficult because they "weren't sure" or "didn't know". This appeared to threaten their primary goals; being uncertain raised the possibility of not doing the "right thing" or "missing something" and the resultant risk of negative consequences.

Participants described a dichotomy between the reality of acute care and scenarios and assessments undertaken as students. Their simulated 'patients' were usually obviously unwell with readily identifiable diagnoses and clear protocols to follow for treatment. In reality, participants had clearly been affected by uncertainty throughout. Common issues included trying to decide if a small change constituted significant deterioration and complex patients presenting with 'non-textbook' or multiple, sometimes competing, problems.

*"Oh my God, they're dying": perceived urgency and severity*

Participants described becoming stressed when they felt a patient was very unwell, often triggered by the patient's appearance or concerns about a diagnosis they perceived to be serious. It was directly linked with concerns about the patient deteriorating further or dying. Interestingly, with experience, the effect of this stressor appeared to diminish more quickly than others as participants became more confident in their abilities. Moreover, perhaps counterintuitively, managing very unwell patients was sometimes less stressful because participants were more certain that this was outside of their role and escalation was straightforward.

Many participants reported limited exposure to 'actual' sick patients as a student and it being a totally different feeling from doing scenarios with plastic manikins. They also questioned whether medical school had given them an appreciation that many conditions have a spectrum of severity. This led to panic in the face of presentations such as sepsis or myocardial infarction when, realistically, many of these patients didn't die, responding well to relatively simple treatments.

*Finding capacity to respond in the moment*

This theme refers to short-lived or context-specific factors that made it more challenging or stressful to manage unwell patients. The unifying feature was difficulty finding the capacity to respond when under added pressure. In these situations, participants described struggling to find either the time to manage the patient or what we will refer to as 'headspace', the ability to generate sufficient 'cognitive effort' to think through the clinical situation and make decisions.

Managing multiple demands, be it looking after multiple patients or just several straightforward but outstanding tasks, was a particularly prominent subtheme. Looking after more patients clearly led to an increased, or cumulative, sense of responsibility. Moreover, each additional task to complete, or patient to review, required extra time and headspace, often resulting in less time per patient and heightened concerns about "missing something". Many participants contrasted this with looking after one unwell 'patient' during scenarios in medical school, A few participants did report benefiting from multi-patient simulations or teaching on dynamic prioritisation.

Other key challenges were delivering acute care whilst fatigued and an almost paralysing sense of empathy when looking after patients either that were clearly suffering or that they had developed a relationship with.

*"Nothing really beats experience"*

Generally, experience afforded participants greater confidence because they'd dealt with similar situations before. More specifically, participants derived two key benefits from experience that reduced the challenge and stress of acute care. They described a liberating realisation that not all unwell patients deteriorated rapidly or died, leading to a diminished sense of risk and time pressure. This contrasted with their accounts of medical school where simulated patients almost always rapidly deteriorated, and scenarios or assessments lasted under 10 minutes. Also, experience reduced their uncertainty as they developed their own "barometer" of how unwell patients were; pattern recognition for specific diagnoses; and 'pre-scripted' management strategies. Importantly, whilst most participants alluded to experiences as a doctor, clearly this process had begun at medical school if they'd had exposure to unwell patients.

*Institutional support*

The availability and quality of support was clearly linked to the stress participants experienced during acute care. The perceived availability of support, when needed, had affected participants' entire working experience. Effective support appeared to ease stress by reducing perceived responsibility, providing direction that reduced uncertainty, helping participants to fulfil their role in the team. – Importantly, this applied to experienced nursing staff as well as senior doctors. Approachable seniors diminished anxiety about escalation by reducing the perceived risk of being seen as incompetent or receiving a negative reaction. Participants directly contrasted the readily available, approachable support in medical school simulations with real life where this was not always the case.

**How did you disseminate your findings?**

Findings presented and discussed at the Medical Education Department's unit meeting.

Oral presentations at international conferences:

Making it "real": designing an evidence-based acute care simulation programme for final year medical students.
Society for Simulation in Europe, Glasgow 2019

Challenging the simulation panacea: Preparing junior doctors for the stress of acute care.
Association for Medical Education Europe, Vienna 2019

**What have been the benefits to student learning?**

Our findings have informed ongoing development of our acute care and resuscitation curriculum. Specifically, we have:

- Developed learning activities targeting particularly challenging areas such as dynamic prioritisation, managing uncertainty and the socio-cultural aspects of calling for help.
- Redeveloped our simulation scenarios using the experiences of participants in our study to better reflect the challenges of WAD.
- Made explicit some of the differences between real-life and medical school scenarios so that they form part of learning discussions in tutorials and scenario debriefs.
- Ongoing deliberate engagement with recent graduates in the development and delivery of our learning activities.
- Begun to explore ways for our students to increase their exposure to acutely unwell patients, rehearse decision making and take (supervised) responsibility for elements of their care.

**How could these benefits be extended to other parts of the university?**

- Consider deliberate and regular engagement with recent graduates to inform the development and delivery of learning activities that more closely reflect WAD.
- Seek out opportunities for students to take (supported) responsibility for activities relevant to their future careers, ideally in a workplace environment. For example, our colleagues in the Veterinary School developed critical care placements, with distant supervision, where senior vet students care for an unwell dog overnight. Likewise, final year nursing students undertake placements where they are supervised whilst co-ordinating an acute hospital ward.
- For valid logistical and pedagogical reasons, our learning and assessment activities often differ from the reality of work facing our graduates, particularly in terms of uncertainty, complexity, emotional response and available support. Where possible, make these differences explicit and consider activities to help students mentally rehearse managing these scenarios. For example, newly qualified vets may well have to make their first decision about euthanasia alone. The emotional response associated with making this decision when faced with a suffering animal or distressed owner will inevitably be different to practising delivering bad news in a simulated setting or writing about the legal aspects of euthanasia. A facilitated group discussion could be used to explore these issues, ideally using scenarios based on real-life experiences of newly qualified vets.

**Financial statement (please delete as appropriate):**

This project has utilised the funding awarded to it by the PTAS adjudication committee and the Principal Investigator or School Administrator appropriate can provide financial statements showing the funding usage as and when required by the UoE Development Trusts who may require it for auditing purposes.

**Please send an electronic PDF copy of this report to:**
Email: iad.teach@ed.ac.uk