




Educating future doctors for uncertainty and complexity

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In 2018 the UK's medical regulator, the General Medical Council, produced a blueprint for undergraduate medical education, *Outcomes for graduates*.¹ This guidance highlights the inclusion of teaching on uncertainty and complexity, in order to reflect the fact that the health and care of many patients is nonlinear and unpredictable. This is an aspect that medical students and newly qualified doctors need to be able to recognise. As a group of medical educators from different UK higher education institutions with an interest in medical

student well-being, we focused our third national symposium for medical teachers (September 2019) around educating for uncertainty and complexity. The emphasis of the symposium was on how we as medical educators can adequately prepare future doctors for the demands of contemporary practice, and indeed more widely for modern society. This focus feels particularly relevant as we write this, poised on the edge of the Covid-19 pandemic.

The insights shared here are equally applicable to other health

care professions, such as nursing, and to educators and learners internationally, although the contexts for different countries will vary. Clearly doctors do not work alone in health care, and part of the complexity of practice is related to the diversity of health and social care professionals working with patients, and the challenges of interprofessional collaboration that this involves. Figure 1 depicts a graphic representation of the day's programme and references specific interventions, such as multidisciplinary reflective Schwartz Rounds, which can be

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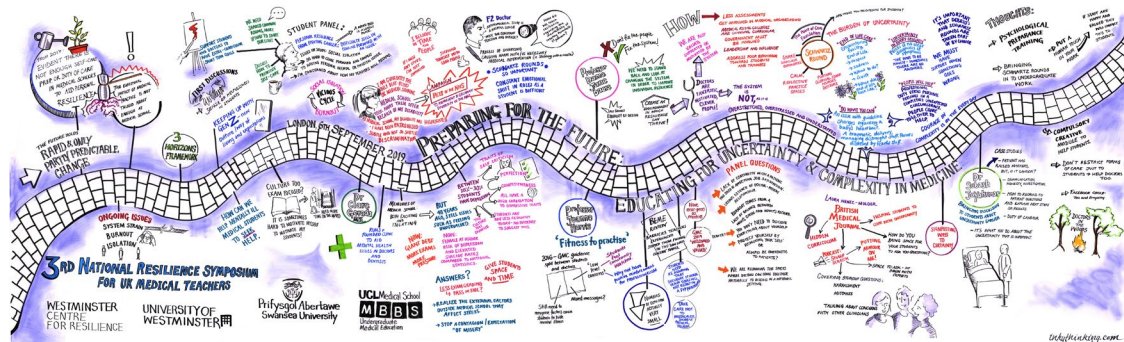


Figure 1. Graphic artist's depiction of the event

used by health care communities to reflect on issues such as uncertainty and complexity.

Recognising and managing uncertainty and complexity is a crucial aspect of professional practice.² This can be challenging to teach in a learning environment where students are focused on models of assessment, which although suitable for assessing knowledge of ‘hard’ science, cannot always reliably test the ‘soft’ skills of professionalism, communication and reflection. As practitioners, we recognise that in reality these ‘soft’ skills are vital and are paradoxically the ‘hard’ skills.

Medical students and trainees are typically motivated individuals who (like all students) should be valued and supported properly, so that their motivation can be reinforced rather than eroded. They are not only amongst the top academic achievers but also have often been selected for their conscientiousness, compassion and communication skills. It has been widely documented that medical students (and doctors) typically exhibit perfectionist traits.³ This may therefore present counter-cultural challenges when faced with managing clinical uncertainty, and in some cases, chaos. Additional challenges and pressures can mount, as our students undertake increasingly significant financial investments in what will usually be relatively low-income career paths, whilst

studying in highly competitive environments where they are closely observed, graded and ranked. Happily, the majority of students and doctors adapt to these demands.

What do we know about the next generation of medical students and doctors and how can we adapt our pedagogies accordingly? They will largely have been born between 1995 and 2010, termed ‘Gen-Zennials’. As their debt burden grows, they will struggle financially more than previous generations.⁴ They are a highly innovative group and expect to be kept informed. Connectivity is utterly intuitive to them. They resent being pigeon-holed into traditional roles and they want the power and personal freedom to work in creative ways. They may also wish to have portfolio careers: ‘a collection of work roles with an overarching theme’, to offer them outlets and variety outside of clinical medicine.⁵ In light of this knowledge, our profession and the health care system in which we work will need to adapt to societal changes, including accommodating growing numbers of less than full-time workers and the wishes of the future workforce, who may expect to fit medical practice alongside other roles.

Medicine will always face new challenges. Although there can be little doubt that the UK’s National Health Service (NHS)

requires systemic change, medical schools will also need to adapt to exercise their duty of care, not only to support students’ well-being but also to prepare them for changing working patterns. As new paradigms emerge medicine will change in unimaginable ways, whereas human emotions will not: suffering and loss will feel just as poignant, and perfectionist doctors will continue to overwork and risk burning out. Nor, despite technological and clinical advances, will medicine have defeated disease and death. Therefore, whatever the future holds, we can be sure that the practice of medicine will be fraught with uncertainty and complexity.

Fortunately, some of our students will be the innovators who evolve new approaches to medical education, research and practice, and will co-create our collective professional future. Symposia such as ours, raising crucial issues, can help to initiate inquiry into the ways medical education must adapt to changing times. Could it be that the further society (and medicine) travel into the hyper-technical and the virtual, the more doctors will need to nurture their own and their patients’ well-being? If so, then whatever the future mindset of medicine and its organisations, new models of medical education must evolve to enable students to grow their emotional

intelligence, refine their tools for self-care, and enable them to tolerate the real-world impact of being unable to solve many of the clinical and human problems that they will face. Our doctors of the future will need to understand that medicine is rarely glamorous and that it often operates in shades of grey, rather than the black-and-white scenarios so often portrayed in medical education. We medical teachers will need to be innovative in our teaching and

assessments in order to reflect the messiness of practice.

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Funding: The University of Westminster funded the event and paid for the graphic artist.

Conflict of interest: None.

Acknowledgements: None.

Ethical approval: No ethical approval was sought for this symposium. No contributors (medical students or medical educators) are identified or named in this article.

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doi: 10.1111/tct.13165