

Evolving doctors from medical students

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It is a widely-held belief that August is a dangerous time to attend or be admitted to a hospital in the UK. The most frequently cited reason for this is the annual changeover of the most junior tier of doctor.^{1–3} The evidence to support this latter hypothesis has demonstrated a 6% increase in mortality for those patients admitted on the first Wednesday in August (the traditional changeover date in the UK) when compared with the week before.⁴ Others have disputed these conclusions.^{5,6} A similar correlation has, however, been observed in the US where because of the earlier changeover it has become known as the ‘July effect’.^{7,8} If the research presenting an association between changeover and mortality are a true reflection of the facts, this should alarm us. If this increase in mortality were to be associated with any other intervention it would be the subject of rigorous and emergent investigation, instead the annual changeover typically passes comparatively unchallenged.

Irrespective of the evidence supporting either side of the debate there are inescapable truths associated with this stage in the newly-qualified doctor’s career that relate directly to the transition from medical student to junior doctor. Prior to qualification, undergraduate medical training occurs in a composite fashion through the assimilation of facts and figures combined with routine assessment via clinical and written examination. Exposure to both acute and chronic disease is typically integrated through graduation, a process that has traditionally favoured the evaluation and management of stable, chronic medical problems. The majority of medical students thereafter qualify and may ultimately do so without having had significant exposure or assessment of their ability to treat an acutely ill patient particularly in an out of hours setting. Some medical schools are now including more complex acute and integrated patient scenarios in exams to ensure this important aspect of

practice is incorporated into the curriculum. For all newly-qualified doctors the first supported, tangible experiences of real responsibility come in the early in August when most hospitals complement the functional necessity of mandatory corporate induction with a brief period of clinical work-shadowing in accordance with national guidance.^{9–11} This enables them to work the wards alongside their outgoing colleagues thus gaining much desired practical advice and on-the-job training before these fledgling doctors fly solo.

The reality is that the end result of medical school training has traditionally been a medical student who has demonstrated their capacity to both absorb knowledge and to perform certain tasks and assessments in a reproducible fashion. A good medical student is of course the foundation of a good junior doctor, however the transition from the former to the latter is not an inevitable process if left unstructured and most certainly does not occur quickly. Medical schools have become increasingly aware that this process requires careful nurturing and evaluation – the design and implementation of contemporary simulation training augmented with preparatory modules designed to combine the student’s existing knowledge-base with skills required for clinical practice have begun to enter the mainstream. Furthermore, Modernising Medical Careers and Foundation training programmes with their formalized assessment, multi-source feedback and enhanced clinical supervision have evolved to evaluate in greater detail an individual’s progression during these formative years of postgraduate training. Consequently, the number of F1 doctors who fail to meet the mandatory benchmarks year on year is diminishing.¹² Have these measures gone far enough and does the medical school experience endow the individual with sufficient professional self-confidence to function safely and with the ability to challenge

poor practice in the world they migrate into? The natural response to this question is to ask in turn what process is required in order to transform a good medical student into a competent, confident and safe junior doctor and how does the healthcare system ensure that this evolution occurs effectively?

A composite problem . . .

At a recent meeting of the local Trust's executive team, three recently qualified doctors presented their own anecdotal evidence of life in the first few weeks of August. The discourse was insightful; concerns surrounding independence of practice and new-found responsibility were familiar areas of concern that in many respects remain thematically unchanged from those being voiced 10 years ago. The group of doctors universally identified a lack of real-world exposure to the wards as the single largest driver of fear at this time of change particularly when adapting to the demands of working in a skeleton-staffed system out of hours. Stress, fear and apprehension are commonplace themes in this group of professionals and have been extensively studied previously.

In many respects, working for the first time with a sense of unpreparedness (that is commensurate with the degree of exposure to the management of acute illness out of hours offered within the present undergraduate system) is analogous to walking at the edge of a cliff – anxieties are generally heightened by the perceived threat coming from all aspects of the immediate environment. As these anxiety levels cross an individual's threshold to manage a self-fulfilling cycle is established – anxiety ignites further anxiety. Everything around them feels unsafe and it is no surprise that this group consequently feel out of their depth.

The situation is slowly evolving, however it remains akin to poorly controlled immersion therapy and is frequently described by those passing through it as a baptism by fire.

In more recent years the issue has been modulated by the European Working Time Directive (EWTD). The Time for Training report on the impact of the reduction in working hours recognizes the complexity of the issue surrounding balancing the needs of the trainee and the needs of the patient.¹³ Where once we were faced with a group over-burdened by acute exposure in many areas we now face the opposing dilemma. The recent population explosion of junior staff and a move towards a consultant-led service have brought with them the novel issue of generalised day to day experience-dilution interspersed with

short-sharp bursts of exposure to the out-of-hours system and its inherent focus upon the management of acutely-ill and deteriorating patients. The unintended consequence of achieving EWTD targets may well be a dilution of the experience for this cohort of doctors. This may in turn have been the very thing that enabled their predecessors to cope albeit in a dysfunctional manner.

The problem is therefore composite:

- Medical schools produce good medical scientists with a robust knowledge-base but with limited practical experience of being a junior doctor.
- The associated sense of unpreparedness for this new role is associated with anxieties which heighten the perception of risk.
- The group's under-developed ability to manage as a result of either a lack of clinical exposure or training in self-management techniques permits a self-perpetuating cycle of anxiety and dysfunction.
- The exposure-dilution phenomenon as a consequence of the implementation of the EWTD has resulted in a reduction in 'on-the-job' training.

If these points are accepted there are several areas that could be focused upon when developing an enhanced model for undergraduate medical training and its interface with the real world.

. . . requires a composite solution

Real-world experience

Ultimately there is nothing that can prepare you for life as a junior doctor quite like the tangible experience of the real-world and there are good examples to be learnt from training pathways outside of medicine.

After a period of theoretical training, pilots undergo focused one-to-one tuition on the job, learning to apply the classroom theory and simulation experiences in the real-world cockpit.¹⁴ Through this they quickly learn to adapt what they have learnt and apply it in increasingly demanding situations therefore learning to manage their response to stress concurrently.^{15,16} An evolution of the present medical training model would similarly focus on the benefits of practical workplace experience and expand the current work-shadowing days to encompass a greater percentage of the final year of training (months rather than weeks) as has been implemented in healthcare systems elsewhere.¹⁷ The results of the effectiveness of this scheme are yet to be published, however others have demonstrated the psychological

benefits of shadowing even over relatively brief timescales.¹⁸

This might be best thought of as a near-peer apprenticeship between the final-year medical student and the newly-qualified doctor. The timetable of the student would mimic those of the qualified trainee and critically would include exposure to the out-of-hours system. In this role they would function as a student doctor with heavily supervised front-line commitments and responsibilities as opposed to an observing medical student as is presently the case. Without this change of focus the medical student experience will continue to represent an exercise in the accumulation of knowledge and theory with only limited genuine opportunities to practise at being a doctor.

Self-awareness and self-management training

These issues are conceptually more difficult to address. On a cultural level medicine is ill at-ease with the reflective nature of understanding one's own limitations, however it is considered to be an attribute of paramount importance in other professions including the military. These are not areas that traditionally have not been embraced within the curriculum. Consequently, those accepted to enter the medical training system typically qualify without having undergone specific training or assessment in their capacity to cope under challenging real-world conditions. It is recognized that our performance particularly under duress or *in extremis* is linked to our ability to acknowledge and manage our own limitations. Thus it would be advisable to formally incorporate the principles underpinning programmes of leadership training such as the NHS Staff College¹⁹ within the final year of medical school in order to identify those who might most benefit from targeted support and training. It will remain difficult for the profession to commend and adopt these self-enlightening practices while they remain something that it has little practical experience of.

While others have proposed more limited structural changes to the changeover process in August²⁰ our belief is that the current system might be best evolved through more fundamental change that simultaneously offers newly-qualified doctors a better understanding of themselves and their limitations through the integration of theory, reality with the double-sided coin of self-awareness and self-management.

Furthermore, we believe it is timely with the wave of local and national initiatives surrounding the provision of safe, high-quality clinical care being brought to the fore that the debate surrounding the preparation of junior doctors entering the medical workplace is revisited.

Irrespective of the wider acceptance of the need for the proposed changes, we should all ask ourselves how well as a profession we perform in our task of producing competent junior doctors who are sufficiently self-aware and confident in their abilities. Extrapolating from this we need to ask if the present system could look beyond the current generation of national recommendations to fundamentally reform the final year of training and its interface with the real world and in doing so radically redefine the transition from medical student to doctor.

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