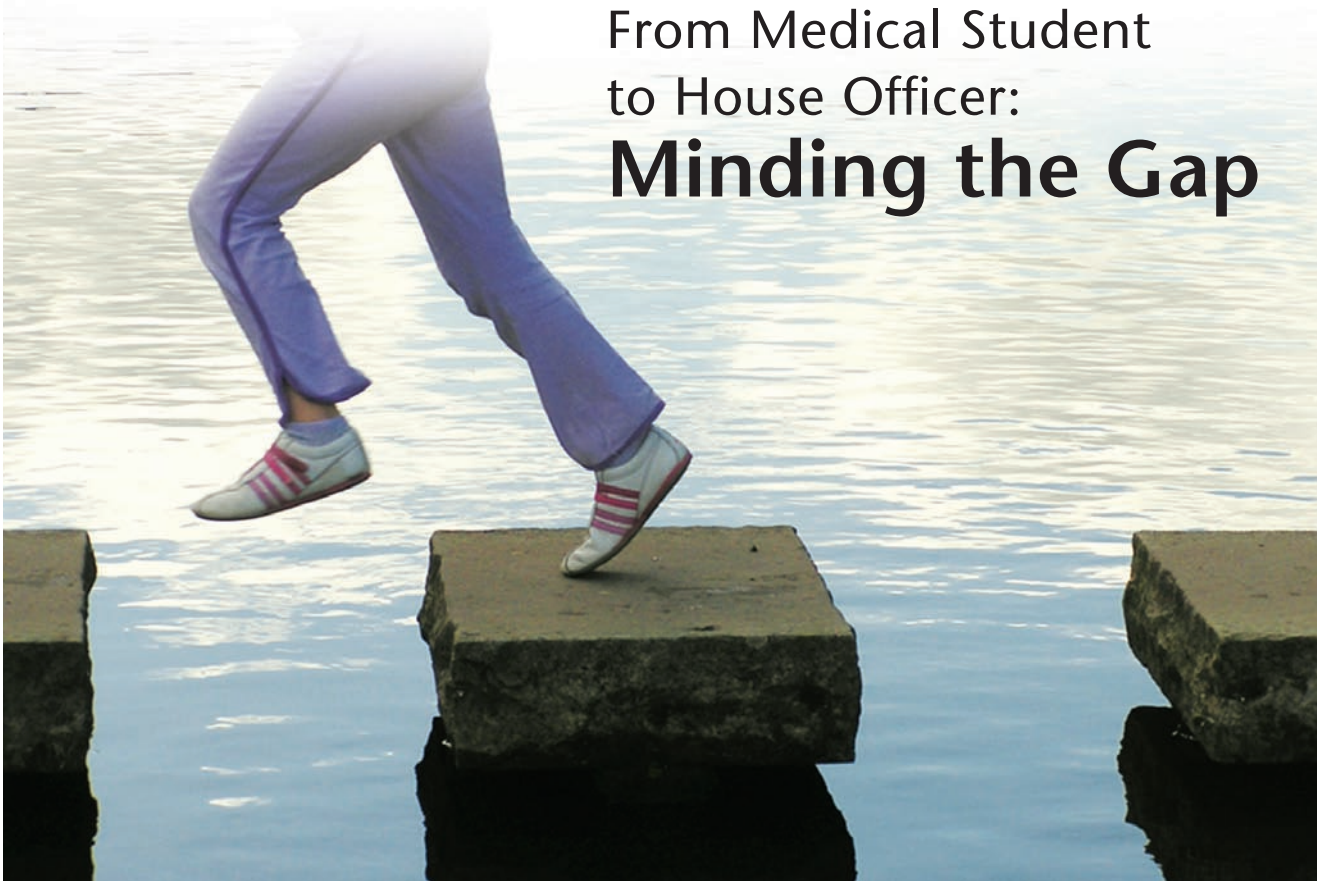


By Dr Tan Wu Meng, Editorial Board Member

From Medical Student to House Officer: Minding the Gap



In many ways, the House Officer (HO) is the 'first line of defence' in the hospital setting, especially on-call at night. In many departments, HOs are the first responders to situations on the ward. Of these situations, some will be emergent in nature, and most will involve performing procedures under time pressure. Other duties, while non-emergent, may be equally challenging; these include providing information to relatives, breaking bad news, and/or handling family members in heightened emotional states.¹

Yet exigencies of service and staffing numbers mean that HOs may often have to function with limited supervision, notwithstanding their provisional registration and ostensibly 'fully supervised' status – the MO may be attending to a medical emergency elsewhere, or (on surgical teams) in theatre performing urgent surgery.

Despite these long-accepted realities, graduating medical students often feel inadequately prepared for their role as House Officers, not just in Singapore but also overseas². Anecdotes circulate about how some of us had to set their first unsupervised urinary catheter or nasogastric tube during the very first night on-call. Sadly, some of these anecdotes are tragic: for example, the HO who gave too much insulin, having never learned how to use an insulin syringe. When hearing these stories, one very much has the sentiment of "There, but for the Grace of God, could go any one of us ..."



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Thankfully, the need to better prepare graduands for HO life has been increasingly recognised. The SMA House Officers Seminar, which provides new HOs with advice and insights, is now in its 11th year³. At least one department has instituted a programme where new HOs shadow their outgoing predecessors for two days before going solo. Professor John Wong, Dean of the Yong Loo Lin School of Medicine, has identified several areas of potential improvement in undergraduate medical education⁴. In this article, I hope to make a small contribution to this developing discussion, drawing on my own experiences overseas as well as conversations I have had with my local colleagues.

ACUTE SITUATIONS AND EMERGENT MANAGEMENT

In many medical schools, the written component of the Final MBBS exam is heavily content-based. While the questions may be stimulating and intellectually challenging, they may not always cover common emergent situations on the ward.

Some examiners will compensate for this during an oral viva if there is one. At my alma mater, there was a highly regarded Senior Consultant in Renal Medicine who would always ask about the management of an emergency condition, regardless of whether the written paper had been borderline, a pass, or in the distinction category. In the latter case, the discussion might move on to Alport syndrome after the student's emergency management had been proven safe, but woe betide the connoisseur of clinical rarities who could neither recognise nor provide a suitable action plan for life-threatening hyperkalemia. However, examiners have differing styles, and the unstructured nature of oral vivas may limit their utility in assessing knowledge of emergency management.

The clinical component of an exam may also not be the best place to test the recognition of emergencies and/or their management. Patients in clinical exams are often chosen for their stable physical signs and ability to tolerate being examined by multiple candidates throughout the day. This usually means chronic diseases with stable signs in a non-DIL (Dangerously Ill List) patient. Thus candidates in the exam are unlikely to encounter the painful, guarded, silent abdomen of a patient with a perforated duodenal ulcer.

One way to compensate for these limitations is to have an additional written paper. The paper could be scenario-based, covering a list of acute

emergencies which the new House Officer would be expected to manage without immediate supervision. Performance on this paper should be a major factor in determining both pass/fail outcomes, as well as eligibility for distinctions.

The absence of acutely unwell patients in clinical exams will be further discussed in a later section of this article.

PRACTICAL SKILLS AND PROCEDURES

HOs have to perform many practical skills on the ward, most of the time without supervision. Yet the concept of structured teaching in these skills is a relatively recent phenomenon.

In line with evidence that simulator training is effective in building skills⁵ that are subsequently retained⁶, some medical schools have instituted a Clinical Skills Laboratory (CSL). The typical CSL has anatomically realistic models and sample equipment, so that students can acquire practice before moving on to real patients. The following is a non-exhaustive list of equipment and skills covered in the Laboratory:

- Synthetic upper limbs – phlebotomy, cannulation, arterial blood gas sampling
- Plastic urogenital models – male and female catheterisation
- Mannequins – nasogastric tube insertion, lumbar puncture, IM/IV/SC injection
- Artificial wounds – suturing
- Sample ampoules – preparation of injectable medications
- Sample forms – prescription-writing

While the most realistic assessment of competency would involve performance on a live patient, this may not be practical or ethical, especially for the more invasive procedures. Thankfully, the Skills Laboratory provides a means for assessment as well; students can be tested while they rotate through a series of stations, with a specific amount of time allocated per task (typically five minutes for simple tasks, and 10 for more involved procedures such as lumbar punctures).

Some medical schools have even gone one step further – a student is not permitted to sit the Final MBBS exam without having passed the Skills Laboratory assessment. This provides a direct incentive for students to acquire these skills, and avoids the problem of the proverbial bookworm who cannot set an IV plug.

COMMUNICATION SKILLS

Patients and their relatives are increasingly educated and sophisticated. As such, communication skills are an increasingly

important aspect of clinical practice, as recognised by their incorporation into the clinical component of the MRCP, MRCS, MRCOG and other postgraduate exams.

However, communication skills should not be the exclusive province of MOs, Registrars and other seniors. The HO often acts as primary liaison officer for the team; at times an on-call HO may even have to provide liaison for relatives of an unfamiliar patient. These are non-trivial tasks, yet many HOs have had to learn communication skills via trial and error.

Formal training in communication skills is likely to be of benefit, especially since poor communication may contribute to patient complaints^{7,8}. Several medical schools have implemented the use of actors as simulated patients, and students engage in simulated patient encounters on videotape. The videotape is then used to provide feedback and promote discussion as part of the learning process.

THE APPRENTICE

In some countries, the final year medical student is essentially an assistant HO. Under appropriate supervision, he/she clerks new patients, performs procedures, initiates investigations, and formulates management plans. This contrasts with other medical schools, where the student has to exercise personal initiative and volunteer himself/herself to get such exposure.

The student intern/assistant HO system, prevalent in the United States, is now making its way across the Atlantic to the United Kingdom. Prof John Wong is developing a similar initiative at the Yong Loo Lin School of Medicine⁴.

There are several benefits to a fully-realised student intern programme. It recognises that medical training has a strong component of apprenticeship; by integrating students as full-time team members, it allows them to learn from their seniors while progressively taking on more responsibilities. By going on-call in an active role (rather than just passively shadowing), the student is exposed to acute presentations of disease in patients that could not safely be fielded in a Final MBBS clinical exam. The student's clinical judgement can also be honed as they devise management plans and have them audited by seniors. Furthermore, students can gain direct experience of the many administrative and clerical tasks they will have to perform as House Officers in future. Immersion in the daily workflow of major clinical specialties also allows the student to refine his/her preferences for specialty training⁹.

The realism of on-the-job training also allows a more accurate assessment of a candidate's prospective fitness to practise, and can help identify specific training needs earlier on, that is, in the final year of medical school rather than during House Officership, when time for additional learning and formal training is often nonexistent.

Nevertheless, the implementation of such a system poses many challenges. For example, HOs and MOs may be reluctant to 'outsource' ward procedures to student interns, for fear that they will either be sluggish or inadequate for the task. There are also the potential medico-legal issues which a medical school might face, when its students are performing procedures and acting with greater autonomy than has been traditional.

One solution which has been mooted in the UK is for the practical skills assessment to take place at the end of Year 4, as a precondition for advancement to the final year of medical school. Thus, final year students, having been certified as competent in ward procedures, can then be integrated into clinical teams with fewer concerns.

CONCLUSIONS

Given the responsibilities involved and the stakes in terms of patient care, the preparation of medical students for House Officership should not be left to the variables of personal initiative, location of student postings, or the availability of tutors. The trend in medical education, including at our own national medical school, is to minimise this variability and improve the practical real-world acumen of newly minted graduates. ■

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