Training the Trainee: A Surgical Trainee's Reflection

By Dr Chew Min Hoe and Dr Alfred Kow

As the new residency training programme looks set to kickstart a new era of postgraduate training, it is probably pertinent to look deeper into what adequate training truly encompasses. The term "training" in medicine is far reaching and encompasses different aspects in various subspecialties. Yet regardless of what specialty you are, trainees are expected to be good clinicians, be a teacher and mentor to students as well as devote a large portion of time to clinical research. And in this new residency programme, it is certainly a mammoth task that is expected of a fresh graduate from medical school. Can these be achieved?

1) The Clinician

Procedural-based specialties such as surgery demand that the trainee on completion be fully independent in performing operations with proficiency and technical expertise. These often include a wide range of both elective and emergency procedures. Emergency work particularly, dominates many a trainee's time and efforts with the myriad of night calls often providing jolts of adrenaline no espresso shot can do.

A colleague once commented in jest that in surgery, scrubbing up and holding a retractor IS training. The truth isn't far though. Surgery remains largely an apprenticeship. Observer-ship and emulating what seniors do forms a large part of how our own surgeries are performed. Simple tasks such as getting the nomenclature of instruments right, knot tying, cutting of sutures, and wound closures remain fundamentals of all surgical procedures. And as we work up the ranks, the trainee finds his repertoire of skill sets expanding from incision and drainage of abscesses, to appendicectomies, hernia repairs and so on. Often at this stage, those who decide that the surgical life is not for them drop out. The advanced surgical trainee then begins to hone his skills both in diagnosis and management of various subspecialties.

What forms an adequate duration of training? Are we fully competent at the end of each current six-monthly rotation? How many operations must a trainee perform before he can be considered competent in a certain procedure? It is unlikely that we can be considered a "specialist" of any sorts after a six-month rotation. But the exposure allows a certain level of appreciation of the subspecialty, and certain procedures should be benchmarked for the posting. For example, a trainee who has undergone hepatobiliary surgery should have at least five laparoscopic cholecystectomies under his belt. Similarly, a breast rotation trainee should have had experience performing at least 15-20 sentinel lymph node biopsies and possibly at least five axillary clearances. These remain an arbitrary estimation with no concrete evidence what an adequate number is. And certainly a third-year advanced trainee will need fewer operations to be proficient as compared to a first-year advanced trainee. Thus it leaves to the various core subspecialties to identify what a trainee should achieve before considered "passing" the posting.

One should not forget that the number of patients that can be "trained" upon continue to decrease. Various reasons exist: the number of elderly patients with more co-morbidities is

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increasing, rendering it necessary for more senior surgeons to perform the operations quicker and better. Also, private patients remain a "no-touch" domain. Certain procedures such as gastrectomies are decreasing in trend with reduced disease incidences such as stomach cancers. The explosions of minimally invasive and robotic surgeries have also reduced the number of open surgeries performed in procedures such as colectomies. A trainee's experience like it or not is often opportunistic, and remains variable depending on unit protocols and number of trainees together in the same centre.

As we seek to increase the number of trainees, it remains vital that core competencies must not be compromised. A complication that occurs will not be explained away simply because the procedure was performed by a trainee. Important technical training programmes need to be designed quickly and validated. What a first-year trainee can do versus what a third-year trainee should accomplish needs to be defined as well. For example, in a Whipple's procedure, the first-year trainee performs the small bowel anastomosis or gastro-jejunostomy, the second-year trainee should be able to perform a hepatico-jejunostomy and a third-year trainee should be able to perform dissection around the pancreatic head. The use of simulators also needs to be introduced — various institutions have created large advanced simulation centers that provide valuable courses in endoscopy as well as minimally invasive surgery for various international and local members in the surgical community but these are often costly. Trainees should be provided greater access to such important training facilities and costs may be bourne by the institutions or specialist training committee funds. In this day and age of Nintendo Wii and Playstations, the learning curves of surgical trainees may be greatly reduced in a safe and efficient environment.

2) The Scientist

I use this term liberally. What defines a scientist? The mantra of the trainee often goes: "I need to write papers, I need to write papers, I need to write papers..." Clinical research remains an integral component of any department, and in every posting, the trainee is often tasked to "look into" and perform reviews of various clinical data. Some who have shown enough aptitude and fortitude are given the role of engaging in prospective clinical trials. But to many, the task of writing a paper seems tremendously daunting. Poring through voluminous dusty case records, making sense of statistical analysis and often the toughest bit, putting all these down into a coherent and logical manuscript, are large obstacles which many trainees have difficulty overcoming. And after all this is done, the trainee often finds his/her work rejected by ubiquitous journals which favour either randomised trials or work with molecular emphasis.

Basic science research remains a greater hurdle. Few have the courage to put their careers on hold to embark on postgraduate degrees enhancing themselves with a PhD or Masters which takes years. Even fewer trainees manage to find time to perform bench work learning techniques of PCR, DNA extraction and molecular analysis. Difficulties include access to labs, using expensive equipment, performing costly and expensive tests which require grants to fund, sitting side by side real scientists who actually know what they are doing... and more often than not, the key question remains: where do I find the time to do all this?

But this is gradually changing. An increasing number of clinician-scientists have returned from prestigious postgraduate programmes and demonstrated excellent achievements and experiences. This has provided much encouragement and mentorship for juniors to follow in their footsteps. Similarly, new programmes locally have allowed concurrent clinical and research programmes to co-exist, and are recognised as part of the training tenure by the Specialist Training Committee. So slowly but surely, avenues are opening up for many to pursue a research programme during his or her training time. But are they suitable for the surgical trainee?

Research remains a core competency and is part and parcel of our daily clinician lives. We need to be current with medical science and knowledge, and be able to critique and appraise the torrent of evidence which patients nowadays demand and expect. Thus like it or not, I believe it forms an important key performance indicator. Publication is often difficult, but like all things, it gets better with practice. So be it basic science or clinical research, all trainees should probably be benchmarked to have at least one publication prior to completion of his or her traineeship. One alternative is to have completed a postgraduate degree such as Masters degree or PhD. These form important core skills in all senior doctors and are vital for progression in one's career.

3) The Teacher

William Arthur Ward, an educator and motivational speaker once said, "the mediocre teacher tells, the good

teacher explains, the superior teacher demonstrates, the great teacher inspires." It is indeed a true representation of the nature of a teacher. Teaching forms one of the core elements in the medical profession. It is an essential mode where senior doctors transfer knowledge and skills to the younger generations, be it students or residents, so as to nurture the future batches of doctors to continue the art of medicine. Thus besides being taught, the trainee also shoulders the burden of being an educator.

Teaching occurs daily in our working life as a doctor: from the way ward rounds are conducted, methods of achieving prompt and accurate clinical diagnosis, performing procedures and learning tips and tricks, and most importantly the acquisition of good bedside manners and how to communicate with patients and relatives. "Experience" is often emulating and following seniors who dictate ways to do things, sieving the good from the bad, and from there, honing our clinical acumen and judgment.

Nonetheless, the skills of imparting knowledge to juniors and students evolved. Crystallised and dissected over the years, terms like "problem-based learning" are bandied around. These are efforts to cultivate a knowledge-hungry pupil and to create one who does not just memorise facts and figures, but is able to derive knowledge from various sources independently. This is a large paradigm shift compared to how we as students were brought up. Compared to the era of pagers and clunky unglamorous handphones without text services, the new generation of medical students have fewer hours in school, are expected to question clinical decisions made and are more interactive with the tutors in the generation of Facebook, Twitter and handphone SMSes.

For the trainee, the model we adopt in surgery is very much an apprenticeship one. The trainee is required to observe and assist the senior surgeon, and in the process learn the skills and knowledge behind the practice. Didactic sessions such as grand ward rounds, formal teaching sessions, journal clubs and Morbidity & Mortality (M&M) conferences provide platforms for further improvement in knowledge acquisition and learning as well as reviewing patient outcome. Importantly, the trainee is also able to benchmark against other peers what he or she should know. Some surgical specialties organise annual evaluations of all trainees with formal viva sessions or MCQ assessments. These are often used to assess whether the trainee can move up to the next level of seniority.

So should teaching be used as a marker to determine whether the trainee is effective to move up to the next level? If so, what are the benchmarks for performance indicators? Objectively, would the number of hours clocked guiding juniors or students be adequate as a sufficient parameter? Or do we need to be subjected to "feedback" quantification where the more popular tutor is considered a better one? These are difficult questions to answer and in all truth, would place a lot of unnecessary stress on the already overworked trainees. In addition, the maturity of a few students sometimes leaves many tutors frustrated with their nonchalance and flippancy towards their own education. Why should the trainee thus be assessed based on a student who isn't interested?

Nonetheless, a trainee will need to recognise that his or her role is crucial in shaping the future of our medical profession. And to teach well, effort is required from the teachers themselves. Preparation is required and students need to be engaged actively. Learning is also a two-way process, and feedback should be sought. Rewards however are not tangible and cannot be measured in dollars and cents, and it should never be! Nonetheless, efforts have been put in by hospitals, the university as well as the newly-formed graduate medical school, to encourage doctors to pick up the role of medical educators and clinician teachers. There are thus numerous and excellent opportunities for all trainees to embrace this change and play their part in shaping medical education in Singapore.

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Conclusion:

Faced with a diminishing number of open operative surgeries, increased expectations in terms of research and training outputs, the trainee certainly faces many challenges and hurdles. It is thus paramount that realistic expectations are laid out and the trainee is counseled on objectives and benchmarks. These are crucial in the overall development of a good trainee. SMA

Chew MH is pursuing a surgical career and also being trained at home by his 3 year old...

Dr Alfred Kow is excited to be involved in the planning for the surgical residency training. He hopes for world peace! :-)