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**Editorial**

# Postgraduate Medical Education – Challenges and Innovative Solutions

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This special issue on research in postgraduate education captures four main themes: innovative practice; high stakes selection; challenges in delivering the curriculum in a time restricted system and faculty development. Quality improvement in postgraduate training is being enhanced by educational research. The drivers for this are changes in medical knowledge and practice; increasing patient, consumer and employer expectations of physicians, advances in technology in education and healthcare; changing expectations from specialist trainees and supervisors, and societal demands for greater accountability from the medical profession.

In medicine, evidence based education research is important as the landscape of medicine has changed dramatically. The relationship between work and learning is fundamental to the professional development of doctors and other healthcare professionals as postgraduate education takes place in the workplace. Most of the teaching and learning in postgraduate education focuses on transference of knowledge and procedural skills. How to apply that knowledge in all the myriad of situations that residents face is a challenge.

All educators need to think about what they want from their residents. How does that feature in the way they frame their module, course or programme. What sort of outcomes do we need to deliver the cognitive and the affective development of our residents? As a result of societal changes; social, technological and demographic shifts clinicians have a bigger leadership role. Leadership amongst other non-technical skills development has also to be embedded within the role of being a resident. Thus there is a need for sustainable judgement development. The process of judgement consists of clinical reasoning which leads to clinical thinking and then ultimately to critical thinking. Clinical reasoning is the thinking and decision-making processes associated with clinical practice. This consists of knowledge, skills observation and judgement and informs patient management. The higher-order critical thinking is the cognitive process of clinical reasoning which allows an objective analysis of facts to form a judgement. This enhances the ability to interpret argument or evidence raw information in a logical and unbiased fashion. In effect this is the ability to solve complex problems effectively.

However despite educational research evidence, residency programmes continue to struggle to balance service delivery with their learning and professional development. Residents are the mainstay of the medical workforce in many countries and with economic pressures and the decline comparatively in the proportion of numbers of qualified doctors globally, this is an ever-increasing dilemma. How to manage generation Z and their approach to life in a way that gets the best out of them at work. They have different expectations of life, work and careers than previous generations. How do we help young newly qualified doctors to grow further and become self-aware, self-motivating and self-managing professionals? This is not taught at medical school and there is historically a rite of passage needed to achieve this. All residents now need to be trained in resource management – people, money, medicines, equipment, etc. this includes the leadership, management and organisation skills which a modern doctor needs in any health care system to be fully effective and ensure significant ongoing contribution. Within the professionalization of postgraduate training the national GDP has a huge impact on the pedagogical and curricula implications. This changing conceptualization has to also be incorporated in educational research rigour.

Change comes from within like a ripple effect as an idea creates a circle of influence. The proficiencies and aptitudes of professionalism and professional practice in postgraduate education are best taught through direct clinical care as well as simulation and technology enhanced learning (TEL). In such scenarios it is important that in postgraduate training we do not lose sight of training the soft and non-technical skills such as effective communication, empathy proficiency, leadership,

teamwork, critical thinking, situational awareness or emotional intelligence leading to high order problem-solving. A daunting list but all part of being a resident in a performance led landscape.

Therefore residents need skills not only to learn how to perform procedures, but effectively communicate, lead, and manage teams. There is a need to move away from didactics sessions which have limited impact on physician behaviour and patient outcomes. Simulation-based training has developed in part due to concerns about patient safety and insufficient hands-on experience of trainees. This ranges from low fidelity skills training to full immersion complex team scenarios. Innovative solutions through simulation – based education has been shown to directly impact physician's clinical behaviour and change outcomes as it is learner centred education in which real-time feedback can be given. High – risk patient care situations occur in a dynamic, high pressured environment, with inter-professional teams working together to ensure safe, successful patient outcomes. The inter-professional team is susceptible to adverse events occurring both from technical and non-technical issues. Simulation can allow residents to be put in uncomfortable, high-risk or difficult environments and give them the ability to act out what they might do in a real situation. They are able to get direct feedback, and re-enact to some of the situations if needed. As a dynamic, safe environment for teaching and learning, technology enhanced learning allows errors to be made and corrected and not harm the patient. Such practice can improve not only skills and aptitude but also build confidence. Therefore the scope of practice and the value that professions bring to the healthcare team is increased (Nicksa et al. 2015).

Residents now train in work hour restrictions and therefore the importance of team training, team science, and interprofessional education as well as interdisciplinary working cannot be understated (Farmer, 2015). Healthcare workers no longer work in the same team of professional practice. It is not uncommon that the teams change every day and even within a single day they can be new teams throughout the day. To make patients better postgraduate trainees not only need to address the care of the patient but also simultaneously train the team in assisting in the patient management. So how do you motivate the team and train them to deal with adversity so that judgement is sharpened, and achieve long-term success in an increasingly complex and interrelated work environment, especially as we consistently find patients suffer due to failures in communication, human factors and leadership issues. Indeed, there is the need to go further and realise that training doesn't teach you what to do because that is always changing, but teaches you how to think analytically and sharpen your judgement.

The above is important because residents are often the first doctors that see the patient in a time sensitive and life-threatening environment. They have to appreciate the complexity and the co-morbidities of the situation that they deal with. Thus the clinical narrative leads to a thought process rooted in discussion and enlightenment only happens when patients are monitored and deep learning occurs from validating the diagnosis. Real-time feedback is invaluable and when this does not happen due to lack of continuity of care then learning opportunities are lost and the complexity increases. In high intensity specialties there is a poor track record of increasing stress, sickness among residents and inability to attract good candidates. Nurturing residents with investment in regular appraisal and personal development plans can reduce attrition but unfortunately the most vulnerable budgets are education.

Residents learn by analysis and synthesis. What is going on, and why, are the questions that arise first. As the diagnosis develops through clinical and diagnostic implementation the process of synthesis occurs and the picture is put together. But within this paradigm are the features of dealing with complexity and uncertainty. There isn't always one correct answer. How do we challenge our

trainees who are brought up with their assessments to assume that one answer is correct and the other four are wrong?

The Royal Australasian College of Physicians (RACP) in a commendable paper, is renewing its speciality training programs with a shift towards competency-based medical education by tracking trainees achievements of skills, and demonstrated performance rather than simply the time spent in training; curricula is being modernised through making it more flexible and relevant; a new selection process based on excellence, rigour and fairness and embracing diversity; and, faculty development through more training and support for supervisors. Their experience has guided them to maximise the influence of workplace training experiences and outcomes. They discuss the need to move away from time-based apprenticeship programs with tacit standards, a reliance on high-stakes examinations and variable episodic in training assessments to outcomes-based training programs with more explicit curriculum standards and holistic, longitudinal assessment relevant to the day-to-day practice of physicians and the health of patients and communities they serve (Udemans et al. 2018).

Hernandez et al discuss an innovative paediatric residency training program created between campuses that are thousand miles apart. An emphatic point made is that learning environment is to be constantly attended to, and residents are not there just for service, but need to be educated and trained to become competent as well as gain additional skills and be the professionals to give patients the best care. This particular initiative is using an educationally driven curriculum where decisions optimise the training experience. The prioritisation of education over service was possible due to shared strategic goal between the hospital and program leadership (Hernandez and Dudas, 2018).

They established protected nonclinical time and utilised learning methods to introduce educational content which is traditionally not learned in the clinical environment and usually learned through the hidden curriculum of residency. These include leadership and management skills which are recognised as critical to delivery of high-value care. The program allows residents to be removed from the clinical duties to learn about new competencies. The creation of the learning community engages learners in learning from one another. Faculty members are chosen for their humanism, professionalism and interest in teaching and mentoring. They have invested in education by redesigning the residency model with a supporting business case of increased faculty presence so that residents have the opportunity to engage with the educational needs of the curriculum (Hernandez and Dudas, 2018).

Faculty development is more than about teaching the teachers to teach, encompassing a range of interventions focused on the learning environment and culture and developing professional practice of individuals' teams and organisations. Faculty development includes expertise in learning, leadership, research, scholarship and organisational development. There is a focus on learning environments and learning opportunities. Postgraduate faculty are increasingly under pressure to work beyond their rostered hours with insufficient time plan in their job plan for education. The role of the clinical educator is one of structuring experiences while making learning explicit. Standards for trainers are now integrated into standards for training placements, with a new quality assurance measures including surveys for trainers and trainees. This involves the regulator determining professional standards and regulations. Capacity building for faculty has also happened through increasing numbers of clinicians undertaking postgraduate qualifications in medical education (Morris and Swanwick, 2018).

Faculty development has to respond to a wide range of interventions focused on enhancing educational climate, educational infrastructure and educational practices in healthcare organisations. An impetus to faculty development has been the modernisation of training where time served methods of mentorship are replaced by time measured outcomes, based on competencies system training programs.

The recognition that the effect of growing and ageing populations, with attendant increases in comorbidity and long-term conditions is pushing routine caring to community-based settings, while most postgraduate training continues to take place in hospitals, where patients are more sick and more complex than they have ever been. The patient safety agenda also dominates healthcare leading to risk averse training practices and further limiting opportunities to learn from authentic work activity. Such working practices and cultures skew the types of supervised work activity that is available to trainees, the unintended consequences being gaps in training and increasing concerns about their readiness to assume greater levels of responsibility. This in turn has led to significant changes in the way postgraduate training has been conceptualised, organised and delivered. The introduction of workplace-based assessments are central to the new approach of progression decisions beyond the professional judgement of the trainer worked closely with the training over longer periods of time (Morris and Swanwick, 2018).

Postgraduate doctors in training particularly in the surgical disciplines have diminishing levels of supervision as they are entrusted with higher levels of medical responsibility (ten Cate, 2016). Training is not just about knowledge transference but also the relationship between the resident and the supervisor. Shift patterns in the era of the European Working Time directive could result in the trainer and the resident not seeing each other for several days leading to unsettled restrictive educational practice as patient follow up is lost.

The innovative national selection process in the UK Neurosurgical training set up in 2007 (Alamri et al. 2018) and the RACP aims to select trainees who will uphold the high standards and professionalism of their speciality.

The selection stations in Neurosurgery consist of clinical knowledge and technical skills, judgement under pressure, problem solving, communication skills, motivation, professional integrity and understanding of the specialty. Included are situational judgement tests which assess integrity, empathy, resilience, commitment to continuous professional development and duty of care (Alamri et al. 2018).

Postgraduate training is catching up with its structure, competencies requirement, standards of training, investment and the relevance to patient care. The residents need to be part of a learning organisation with a support structure to ensure personalised learning. Educators and organisations need to drive a culture of quality and sustainability, especially high performance that is sustainable. As we face the big three of population health, patient safety and big data postgraduate training will have to make every encounter count and learn from all aspects such as reflective hand overs and learning from clinical cases through to simulation. The future structure of postgraduate training, roles of the residents may in itself change as these are iterative and may not yet have been defined. The open mind set of postgraduate education has to be future proofed for continuous progress to be made.

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**References**

Alamri A, Chari A, McKenna G, Whitfield P. 2018. The evolution of British neurosurgical selection and training over the past decade. Medical Teacher, In press.

Farmer D. 2015. Soft skills matter. Doi: 10.1001/jamasurg.2014.2250.

Hernandez R and Dudas R. 2018. The evolution of graduate medical education over the past decade: Building a new pediatric residency program in an era of innovation. Medical Teacher, In press.

Morris C and Swanwick T. 2018. From the workshop to the workplace: relocating faculty development in postgraduate medical education. Medical Teacher, In press.

Nicksa GA, Anderson C, Fidler R, Stewart L. 2015. Innovative approach using interprofessional simulation to educate surgical residents in technical and nontechnical skills in high-risk clinical scenarios. JAMA Surgery. 150(3): 201-207. doi:10.1001/jamasurg.2014.2235.

Ten Cate O, Tobin S, Stokes, ML.2017. Bringing competencies closer to day-to-day clinical work through entrustable professional activities. The Medical Journal of Australia. 206(1): 14-16.

Udemans R, Stokes M-L R, Khanna P, Christiansen J. 2018. Educational renewal of physician training in Australia and New Zealand: multiple educational innovations in a complex environment. Medical Teacher, In press.