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Addressing the Barriers to Clinical Education in Emergency Medicine

Cover Page Footnote

Winning entry: Sarah Kabir - AJCE Student Essay Competition 2016. This paper was submitted in response to a student essay competition dealing with matters relating to clinical education issues in law and health in Australia and globally. It has been published in its entirety without peer review.

Addressing the Barriers to Clinical Education in Emergency Medicine

All students entering the healthcare profession must bridge the gap between theory and practice through vigorous clinical education and experience. Recent literature regarding the clinical education of medical students, interns and trainees has grown exponentially, particularly in regard to emergency medicine. Undoubtedly, effective clinical training is vital in the development of future doctors, providing them with the opportunity to gain invaluable skills and guidance under the supervision of senior physicians. However, there are multiple obstacles to student integration in the practicing environment. Key barriers to be addressed include supporting training capacity in the face of an ever-growing number of medical graduates, as well as the need for a shift in administrative and physician values to better support clinical education. Delivering effective clinical teaching to students is a universal struggle among all the healthcare disciplines, highlighting the need promptly address these barriers. Although numerous solutions and models have been proposed, further discussion and analysis on the means of practical implementation is required in the best interests of future doctors and the future of emergency medicine pedagogy in Australia.

Logistical restrictions, such as the need to place the increasing number of medical students and graduates into clinical rotations, already limit the capacity of emergency care teaching. During university, medical students often complete rotations in emergency care settings, and once they graduate, are required to complete an eight week rotation in emergency medicine care as an intern. Domestic medical graduate numbers alone increased by over 500 from 2011 to 2015 (Medical Deans, n.d.), and the Australian Medical Students' Association suggested that in 2015 there was only approximately 3300 intern positions available for 3673 applicants (n.d.). To address the increasing placement demand, the classification of intern emergency clinical settings has been broadened to include some general practices and smaller hospitals (Brazil, & Mitchell, 2013). This solution can address patient access limitations, where a minimum of only 40% of tertiary Emergency Department (ED) patients are accessible for student learning (Celenza, 2011). However, this inevitable shift towards other clinical locations substituting for the ED, may result in variable education quality among interns, due to the wide-ranging supervisory capacities among placements. Poor senior support has already been identified by interns as a limiting factor to learning in rural locations (Hohenberg, 2016). Thus, the sheer number of aspiring doctors requiring clinical teaching incites more discussion on logistical methods of delivering satisfactory and effective clinical education.

In addition, the recent national administrative focus on time-based targets has reduced attention towards clinical training. ED patient management was reformed in 2012, with the implementation of the National Emergency Access Target (NEAT), which outlined a nationwide goal to admit, discharge or transfer ED patients within four-hours of presentation (Sullivan, Staib, Khanna, Good, Boyle, Cattell, Heiniger, Griffin, Bell, Lind, & Scott, 2016). The ultimate objective of NEAT is to minimise access block, overcrowding and patient mortality. A four-hour target has operating in Western Australia since 2009, where its adverse effects on clinical teaching have already been identified: 2011 survey revealed that 48.4% of trainees and clinicians believed it negatively impacted training opportunities, with recurring complaints of "lack of support for junior doctors" (Maor, O'Sullivan, Bonning, & Mitchell, 2011, p. 28). Acknowledging the concerns for clinical education, teaching models compatible with NEAT, such as Thermostat which emphasizes learning through demonstration and observation, have been proposed (Wright, Staggs, Middleton, Burke, Markwell, Brazil, Mitchell, Brown, 2013). However, a severe criticism of the model is the lack of experienced-based learning, potentially leading to ineffective clinical training. Hence, administrative support for NEAT appears to contest the delivery of effective clinical education and teaching in the ED setting.

Since the national application of NEAT in 2012, varied anecdotal and surveyed responses have recorded its impact on emergency clinical teaching and education. Predicted negative effects of NEAT included the reduction of trainee proficiency in the skills of history taking, examination, investigation and procedural skills. A 2014 survey revealed that Australasian College of Emergency Medicine (ACEM) trainees felt there was less time for bedside teaching and that they were inadequately supervised (Naidoo, 2015), as foreseen in 2012. On the other hand, some argue the time-based targets have improved the training environment, as the emptier ED and quick transfer of stable patients allows student to focus on the “higher acuity, more unstable and diagnostically challenging patients” (Stevens, 2015, p. 360). Furthermore, studies have shown an increasing rate of ED presentations “by at least twice the rate of general population growth” (Richardson, 2016, p. 13), resulting in a busier and an even more demanding teaching environment. Thus, analysis of the current situation implies the logistical aspects of co-ordinating increasing student numbers in limited placements, compounded with the administrative focus on time-based targets in a busy emergency setting, endangers the delivery of satisfactory clinical education.

The importance of the emergency medicine rotation lies the myriad of potential benefits it offers, to both students and educators. The emergency department offers a unique training experience, with exposure to undifferentiated presentations in a time-sensitive and high pressure environment (Robinson, Daniel, & Kong, 2015). Research has shown that underperformance of interns was 3.8 times more likely during the emergency medicine rotation (Aram, Brazil, Davin, & Greenslade, 2013). Many of the areas that required improvement were skills that were only attainable in a clinical setting, such as clinical judgment, teamwork, time management and professionalism. Key experiences of the emergency care setting highlighted by students include conflict resolution, acquiring skills of prioritisation and learning to be proactive in their own education (Hohenberg, 2016). Exposure to the clinical setting also plays a role in shaping the professional identity of students, facilitating their “feelings of belonging to the medical profession” (Weaver, Peters, Koch, & Wilson, 2011, p. 1223). Furthermore, a notable benefit for clinical educators and supervisors is reflection on their own practice, inciting improvement and ultimately leading to more efficient patient care (Osborne, 2015).

Despite these numerous known benefits, difficulties in the recruitment and delegation of educators in the emergency care setting often restrict the delivery of clinical education. Systemic and administrative blocks, as identified by senior clinicians, have been responsible for preventing doctors from taking on educator roles in Australia (Ward, Kwan, Karen, Bassett, & Klein, 2013; Dahlstrom, Doria-Raj, McGill, & Owen, 2005). For example the disproportionate student-educator ratio is a common administrative block identified (Dahlstrom, Doria-Raj, McGill, & Owen, 2005), supported by 2012 studies showing there are twice as many interns as fellows (Killen, & Gosbell, 2013). Killen and Gosbell also suggest that there is a high burden on certain fellows of the ACEM who have an interest in medical education, as this small group is often continuously delegated into supervisor roles. A proposed solution is increasing emergency medicine placements in rural and regional areas, as a means of expanding training capacity, but as mentioned before, these areas have poorer clinical education support. Thus, there is a wide-spread reluctance of senior doctors accepting educator roles which needs to be urgently addressed.

External constraints inhibiting emergency medicine registrars and physicians from embracing teaching roles are diverse and complex. Notable reasons comprised of lack of time, clinical pressures, limited resources, lack of teaching skill and meeting efficiency

targets (Ward, Kwan, Karen, Bassett, & Klein, 2013; Killen, & Gosbell, 2013). The awareness of clinical pressures in emergency medicine is conveyed in Ilancheran's use of the theories of working memory to justify the inability of registrars to take on educator roles, arguing that division of one's 'memory slots' between patients and teaching inhibits one's capacity to do either task effectively (2015). The inability to isolate available time is also a common argument, where a study involving surveying trainees and fellows revealed that 90% of respondents agreed they would commence or increase their instruction if they had protected teaching time (Ward, Kwan, Karen, Bassett, & Klein, 2013). Surprisingly, financial and academic incentives weren't identified as the most common motivators for taking on educator role, but were recognised as possible enticements (Ward, Kwan, Karen, Bassett, & Klein, 2013). Multiple factors cited, such as time constraints and clinical pressure, embody the enduring characteristics of the emergency care setting, warranting exploration into other approaches to increase clinical educator numbers.

Systemic barriers are indeed a large factor in discouraging interest in educator role among clinicians, but recent literature implies that the emergency medical community's attitude to teaching also needs to be addressed. Multiple studies highlighted inherent factors as a key motivator driving clinical educators to teach. Intrinsic and personal factors, such as altruism, intellectual satisfaction, attracting students to their specialty, enjoyment of student interaction and professional duty, were identified as the most common incentives (Ward, Kwan, Karen, Bassett, & Klein, 2013; Dahlstrom, Doria-Raj, McGill, & Owen, 2005). However, external influences also play a large role, as the same studies revealed that physicians would be more encouraged to take part in clinical education if teaching was valued by their peers (Ward, Kwan, Karen, Bassett, & Klein, 2013; Dahlstrom, Doria-Raj, McGill, & Owen, 2005). Another notable driving force was inspiration from previous mentors and teachers (Dahlstrom, Doria-Raj, McGill, & Owen, 2005). This implies that student doctors receiving instruction from enthusiastic and effective clinical educators may lead to these aspiring clinicians also taking on teaching roles in the future. Thus, planting seeds of inspiration, in the form of successful clinical educators, can potentially perpetuate a positive cycle of teaching and incite changes in attitudes to emergency medicine education and administrative values.

However, producing eager clinical teachers will be ineffective if they do not possess the necessary skills and qualities to deliver valuable clinical education. One solution, also applicable to potential educators lacking confidence in teaching ability, is upskilling. A study involving residents who received instruction on teaching methods relevant to emergency medicine, such as the One Minute Preceptor method, was conducted in order to determine the efficacy of such training (Wachtel, Greenberg, Smith, Weaver, & Kane, 2013). Afterwards, 79% of the residents felt more prepared and likely to teach. There is a multitude of literature and guides published by doctors already in educator roles discussing methods of balancing teaching with practice. Approaches to clinical teaching had common aspects, such as providing students with the opportunity to act as the independent doctor. This involved allowing students to examine patients, followed by supervisors questioning them on their observations and provisional diagnosis (Wen, 2011). This ensures participation and incites an awareness of responsibility from student in the clinical setting, features identified as powerful stimuli for learning (Kelly, 2002). Another recurring feature was encouraging debriefing and feedback from clinical educators, which acts to stimulate reflection and clinical growth in students (Kelly, 2002). Other notable features were setting realistic goals for the emergency medicine rotation and "teaching by example," in terms of "modelling professionalism for students" (Wen, 2011).

The success of the clinical training also relies on the relationship between students and their educators, so the next question to address is: what are the desirable qualities students seek in their clinical educators? A literature review identified competency in skills and clinical knowledge to be favoured, but also various non-cognitive attributes were found to be highly desirable among students (Sutkin, Wagner, Harris, & Schiffer, 2008). The review also highlighted that clinical educators served as role models to students, highlighting the significance of senior clinicians beyond their educator roles. Some non-cognitive qualities included being: inspirational, supportive, able to actively involve and communicate with students, able to arouse students, as well as possessing self-awareness. This implies that there should be more emphasis on clinicians developing these desirable traits, in order to deliver effective and favourable clinical teaching. Thus, greater administrative support, in the form of funding and implementation of such upskilling and character-development programs, can potentially improve teaching contribution and efficacy in emergency medicine.

Reforming delivery methods of clinical teaching in emergency medicine may also have to be explored, in order to accommodate for education needs of increasing medical students and junior doctors. A 2014 trainee survey emphasised lack of protected teaching time, and “minimal to no on the floor teaching from consultants” as major complaints for emergency medicine teaching (Health Education and Training Institute, 2015, p. 8). Although immersing students in the clinical setting is ideal, ‘off the floor’ teaching is a practical solution that must be considered. Ilancheran proposes adopting the nursing college model of teaching, where dedicated nurse educators train students, removing the burden from clinical ED nursing staff (2015). The benefits of non-clinical physician educators includes uninterrupted teaching, as well as the high quality education delivered by capable and trained staff; but a limitation of this model is the lack of student-patient interactions, potentially leading to inexperienced and unprepared junior doctors. The MoLIE project (Brazil, Greenslade, & Brown, 2011) highlighted the benefits of ‘off floor’ teaching in supplementing the clinical experience of medical students and interns. The project involved structured learning time, supervised by consultants who facilitated “clinical reasoning and group discussions” (2011, p. 166). The results showed that both the students and supervisors believed that intern experience and performance had improved. Constraints identified with this study were funding and availability of educators, which will have to be addressed if similar models are implemented on a bigger scale.

The possibility of expanding the university role in emergency medicine training has also been proposed as a method of alleviating some of the teaching burden in clinical settings. Some Australian universities already offer postgraduate medical master courses, such as the University of Sydney’s Masters of Critical Care Medicine which supplements the ACEM’s program (Jamieson, Mitchell, Le Ferre, & Perry, 2015). Potential benefits to shifting education from the clinical setting to a university environment include: better learning resources, addressing the disproportionate student-supervisor ratios in the clinical setting and consistency in teaching and knowledge among trainees (Roberts, 2015). However, dire repercussions of shifting specialist education to a university setting consists of the need for transitioning didactic university teaching into the clinical workplace, as well as the division of clinical teachers between universities and colleges (McCarthy, 2015). This may precipitate negative flow-on effects, as less emergency residents in clinical settings will also mean less supervisors available for interns and medical students. Over all, the proposition of increasing ‘off floor’ or expanding the university role in teaching is promising, but will have to be further developed for practical use.

In conclusion, there are multiple barriers to the clinical education of medical students, interns and registrars in the emergency care setting that need to be addressed. Limitations in the capacity to offer placements, systemic barriers as well as the recruitment and shaping of suitable doctors for the clinical educator role are common obstacles identified in the literature. Increasing numbers of medical graduates and emergency trainees demand greater investment in efforts, in the form of administrative support and government funding, to tackle these restrictions. Addressing the logistical aspects of placing students and clinical instruction must also be accompanied by a change in attitudes towards teaching and reformation of current teaching methods. Although various solutions have been proposed, more wide-scale trials and projects need to be conducted in order to gain a comprehensive insight into how to best address these barriers to the invaluable clinical education received in emergency medicine.

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