

Emergency Medicine Capacity Assessment Study

Final Report
to
Commonwealth of Australia
Department of Health and Ageing

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List of Abbreviations

| | |
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| ACFJD | Australian Curriculum Framework for Junior Doctors |
| ACEM | Australasian College for Emergency Medicine |
| AMGs | Australian Medical Graduate |
| AMC | Australian Medical Council |
| CI | Confidence Interval |
| CMOs | Career Medical Officer |
| DEMT | Director of Emergency Medicine Training |
| ED | Emergency Department |
| EFT | Effective Full time |
| EMCAS | Emergency Medicine Capacity Assessment Study |
| FACEM | Fellow of the Australasian College for Emergency Medicine |
| GP | General Practitioner |
| IQR | Inter-quartile range |
| IMGs | International Medical Graduate |
| JMOs | Junior Medical Officer |
| MoLIE | More Learning for Interns in Emergency |
| NPs | Nurse Practitioner |
| PMCV | Post-graduate Medical Council of Victoria |
| UK | United Kingdom |

Project Team

The Emergency Medicine Capacity Assessment Study (EMCAS) was conducted by St. Vincent's Hospital Melbourne, and overseen by a Steering Committee.

The Project Team included:

Dr Tracey Weiland - Principal Investigator for EMCAS, Emergency Practice Innovation Centre (EPIcentre), St. Vincent's Hospital Melbourne. Dr Weiland participated in the study design and drafted interview questions, undertook all statistical analyses and participated in the drafting and editing of the final report.

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The Steering Committee members included the project team members above and:

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Dr Sally McCarthy – Nominated representative of the Australasian College for Emergency Medicine

Dr Jagdishwar Singh - National Manager, Confederation of Postgraduate Medical Education Councils

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- Dr Shane Curran- FACEM and ED Research Coordinator, Wagga Wagga Base Hospital's ED.
- Dr Diana Edgerton-Warburton- Director of Emergency Medicine Training, Monash Medical Centre.
- Dr David Spain- ED Director, Gold Coast Hospital (Southport Campus).

Additionally, the project team wish to acknowledge the contribution of Ms Michelle Li, Medical Student/Researcher, who assisted in data collection.

Executive Summary

Using interview methodology, the Emergency Medicine Capacity Assessment Study sought to identify the capacity and strategies of Australian emergency departments (EDs) and staff to support increasing numbers of medical graduates and implement the Australian Curriculum Framework For Junior Doctors (ACFJD). The study also assessed the existing supervision, structure, and learning experiences of prevocational doctors during an emergency medicine rotation. Quantitative and qualitative analyses were conducted with the following principle findings summarised below.

- The current level of staffing within EDs was perceived by most interviewees to be inadequate in general, with specific deficits identified in the numbers of Fellows of the Australasian College for Emergency Medicine, interns and nurses. By contrast, the majority felt that there were sufficient numbers of Career Medical Officers. The majority felt that medical resource problems would not be solved through increased intern numbers, and that significant increases in ED staff, particularly at senior medical level, would be required in order to accept more interns. Physical resource constraints, including space/ED design were also identified as major barriers to accepting more medical graduates.
- An overwhelming majority of participants indicated that they would not welcome a 70% increase in medical students given their current resources while most felt that more students could be accepted if appropriate resources were allocated.
- Opinions about having sufficient time to teach medical students were mixed and the majority of participants supported the concept of having a specific educator for medical students in the ED.
- Most ED Directors and Directors of Emergency Medicine Training disagreed that more interns could be absorbed into the ED without problems. The majority of participating emergency trainees and interns felt that increased numbers of interns and medical students would negatively affect the intern ED experience and learning opportunities.
- The majority of staff indicated that interns were adequately supervised with registrars taking most of this responsibility during night shifts. Both feedback and supervision of interns were reported to fluctuate with the service demands of EDs. While several staff reported having structured teaching and feedback in place, qualitative data indicated room for improvement in this area. With respect to education, deficits were identified in training opportunities to improve the teaching skills of ED educators, resources available for medical student teaching, and access by Junior Medical Officers to hospital medical education officers and ED clinical teachers. Of all staff types, Career Medical Officers were perceived as having the poorest opportunities for education, supervision and feedback.

- Familiarity with the ACFJD was poor with just 33% of respondents aware or familiar with this tool. Although there is a large part of the ACFJD devoted to skills that are directly relevant to emergency medicine, the relevance of the ACFJD to emergency was poorly understood. The main barrier to implementing the ACFJD was limited knowledge and understanding of the ACFJD. Most respondents disagreed that educators and supervisors and/or medical education support staff refer to the ACFJD and that prevocational doctors are expected to have knowledge of the ACFJD and how it relates to their rotations.

Recommendations

Several recommendations are made to enhance the capacity and strategies of EDs to support increasing numbers of medical graduates and implement the ACFJD.

- A failure to also address the wider system factors that contribute to ED overcrowding and access block may result in diminished learning opportunities for interns. It is recommended that systems be put in place which address the hospital-wide factors that affect inpatient flow and discharge and which contribute to ED overcrowding.
- A major barrier to the provision of effective learning opportunities for interns is the lack of senior medical staffing to provide supervision and education while also attending to service provision responsibilities. The increased demand on EDs combined with sheer lack of senior medical staff make the provision of clinical education in the ED difficult. Increased participation rates and improved recruitment and retention of these senior staff could be facilitated by financial and other incentives for staff working at this level. Further, in order to maintain an adequate standard in medical student and intern education, supervision and feedback, we recommend the provision of designated medical educators within EDs that do not have concomitant service provision duties.
- Since the cost of employing an intern far exceeds the amount provided to hospitals for accepting these staff, decision makers external to the ED may be the prime sources of resistance to accepting increased numbers of interns. A review of the financial barriers to accepting interns, including a cost-benefit analysis within the ED, is warranted.
- Addressing the accreditation issues of some hospitals may have significant impact on the capacity to provide the requisite number of terms in emergency medicine. Wider dissemination of accreditation policies, particularly regarding supervision of interns, is required for sites not presently accredited for intern training. Where appropriate, these sites should be assisted through the accreditation process.
- We recommend that greater opportunities be given to career medical officers for ED-based education and external courses relevant to ED. Furthermore, we recommend that ED staff that engage in education, supervision or feedback of

junior medical officers be provided with training in teaching methods that are relevant to the ED context.

- To improve awareness and understanding of the learning objectives of medical student rotations, we recommend that the results of the current “mapping of hospital rotations to the ACFJD”⁽¹⁾ be disseminated to ED staff, along with guidelines relevant to the ACFJD. Furthermore we recommend the development of clear methods of self-assessment and objective assessment tailored to these objectives. We recommend increased and improved communication of how the ACFJD can be used to support the ED supervision process in the postgraduate years, a clearer articulation of its relevance and application for speciality EDs, and increased resources to support the implementation of the ACFJD.
- We recommend the development and provision of openly accessible resource modules for undergraduate ED-based teaching.
- Finally, we recommend that an impact analysis be undertaken by the authors of the present study at around 2012 to determine whether adequate learning opportunities in the ED are being maintained for medical students and interns.

1.0 Introduction

St. Vincent's Hospital Melbourne was contracted in February 2008 by the Commonwealth of Australia's Department of Health and Ageing to conduct a capacity analysis of Emergency Departments (EDs). Using interview methodology, the Emergency Medicine Capacity Assessment Study (EMCAS) sought to identify the capacity and strategies of EDs and staff to support increasing numbers of medical graduates and implement the Australian Curriculum Framework For Junior Doctors (ACFJD).

Specific aims of the project were to:

- i. Assess the existing supervision, structure, and learning experiences of prevocational doctors (interns) during an emergency medicine rotation.
- ii. Assess awareness of emergency directors and other supervisors of emergency training of the ACFJD.
- iii. Assess capacity of EDs to absorb increasing numbers of prevocational doctors, and determine the potential impact of this change on staff.

ED Directors and Directors of Emergency Medicine Training (DEMT) were interviewed regarding the numbers of existing prevocational doctors, awareness of the ACFJD, details of any structured teaching, supervision or measurement of experience; and the perceived capacity of EDs to take and provide further prevocational doctors, as well as other issues relating to the implementation of the ACFJD. Current prevocational doctors, and senior emergency medicine trainees were also surveyed.

An evidence base was established to inform decisions regarding assistance that emergency medicine can make to support the increasing numbers of new medical graduates that are expected in the next few years.

The capacity assessment utilised semi-structured telephone interviews designed to gather information regarding:

Demographics including position held, year of graduation medical school and location of ED rotation.

- (1) Information about the participating EDs including number of ED attendances; and type and number of EFT on the weekly rosters.
- (2) Opinions on current staffing levels in EDs.
- (3) Opinions on current supervision, education and feedback of medical staff in the ED.
- (4) Effectiveness of services available for junior medical staff.

- (5) Opinions on having 70%¹ more interns in EDs without any other changes to current workplace and systems.
- (6) The requirements for accepting 70% more interns in EDs.
- (7) The structure, contribution to and experiences of undergraduate medical teaching in the ED.
- (8) The implementation and Emergency practitioners' level of understanding about the ACFJD.

The following report outlines the process undertaken, literature review, methodology, results and recommendations formulated in response to the data collected.

¹the choice to use "70% more interns" or "70% more medical students", was based on the aggregate mean estimated increase for all jurisdictions. Estimated increases per Australian State were provided by the Confederation of Postgraduate Medical Education Councils. While some jurisdictions may exceed an increase of 70%, this figure reflects the calculated average of these estimates and permitted standardisation of the interview schedule across jurisdictions.

2.0 Literature Review

2.1 Literature Search

A literature search was conducted on Ovid Medline, Embase and Meditext using key words:

- Capacity
- Strategies
- Medical graduates (increases, 'tsunami')
- Supervision
- Education
- Feedback
- Nurse practitioners
- Australian Curriculum framework for Junior Doctors (ACFJD)
- Undergraduate experiences

These keywords were combined with "Medicine" or "Emergency Medicine". The search was not limited to the Australian setting and limited to those published in the English language. Forty-five relevant articles were retrieved. There is little located in the literature specifically on the effectiveness of the implementation of the ACFJD. Therefore the ACFJD's purpose and implementation in relation to the learning requirement of junior medical staff was considered.

2.2 Review

The purpose of this literature review is to provide a background on increasing numbers of Australian medical graduates, the capacity and strategies of emergency departments (EDs) and staff to support the increase, and the implementation of the Australian Curriculum Framework for Junior Doctors (ACFJD).

A shortage of doctors in Australia, particularly in the field of General Practice (GP), and in rural areas has been well-documented in recent years^(2, 3). In the 25 years from 1980 to 2005, the annual number of medical school graduates in Australia has increased only marginally from 1278 to 1348⁽⁴⁾. In this same period, the overall population of Australia has increased by almost 50%⁽⁵⁾. Meanwhile, the average working hours of doctors has been decreasing⁽³⁾. For general practice, there was a net decrease in general practitioner (GP) availability, from 104 effective full-time (EFT) GPs per 100,000 people in 2001, to 98 EFT GPs per 100,000 people in 2005. This ratio decreased to just 84 EFT per 100,000 people in outer regional areas⁽⁶⁾. Reliance on foreign trained doctors (international medical graduates; IMGs) has also increased; by 2005 25% of practicing doctors in Australia were trained overseas [65].

In response to the medical workforce shortage, the Federal Government has, from the beginning of this decade, embarked on a large-scale expansion of undergraduate medical education⁽⁴⁾. The intake of students into medical schools has increased, and new medical schools have formed^(4, 7). The number of medical schools in Australia now stands at 18, 14 of which are producing medical graduates, compared with just 10 in 1999⁽⁴⁾. In the decade from 1997 to 2007, the number of domestic medical

graduates increased by 24.1% with a 15% increase between 2006 and 2007 alone. The projected number of domestic graduates is expected to increase from 1544 in 2007 to 2920 in 2012, resulting in an estimated increase in medical graduates of almost 90%⁽¹⁾. While a proportion of these new graduates may undertake rotations in ambulatory care and private hospital settings^(4, 7), it is clear that public hospitals will need to substantially increase the number of places for medical students and junior doctors. The ramifications of this “sleeping elephant” have concerned academic and clinical specialists, medical educationalists, and public health experts alike^(2, 3, 7).

The role of junior medical staff in public hospitals is often characterised on having a dichotomy between service provision and training⁽⁷⁾. Rather than simply being service providers, junior doctors are acknowledged as “doctors in training” whose learning needs and responsibilities deserve consideration^(8, 9). In Australia, the various State Medical Boards and Postgraduate Medical Councils are responsible for stipulating the training and supervision requirements for interns, the nature of rotations that can and must be taken, and the settings in which they can be undertaken⁽¹⁰⁻¹²⁾. There has, however, been concern regarding the lack of uniformity across states, difficulty in identifying common education goals, and inconsistencies in supervision and assessment/feedback⁽¹⁰⁾. To address these problems the Australian Curriculum Framework for Junior Doctors (ACFJD), developed by representatives of the various state postgraduate medical councils, was implemented nationally in 2006⁽¹⁰⁾. In essence the ACFJD outlines a generic core curriculum for junior doctors, with education goals organised hierarchically in a “concept map”. Major “areas” are subdivided into “categories”, which are further subdivided into “topics”, thus giving a “branching tree” format⁽¹⁰⁾. The ACFJD is applicable not only for interns, but also the subsequent years of pre-vocational training before entry into a specialist training programme. A programme also suitable for interns and JMOs and of similar structure is the curriculum of the Foundation Programme that has recently been introduced for junior doctors in the United Kingdom (UK)⁽¹³⁾. It should be noted however, that the Foundation Programme is part of a much larger set of health reforms in the UK known as the “Modernising Medical Careers Programme”. These reforms were driven primarily by the British government, and have been heavily criticised by UK doctors⁽¹⁴⁾. The ACFJD has been well received by some, however concern has been raised by junior medical staff that it could be used as a blunt assessment tool, replacing core rotations⁽¹⁵⁾.

In Australia, the ED rotation is a traditional rotation of the intern year, together with rotations in medicine and surgery⁽¹⁶⁾. For several reasons, the ED represents a unique place for interns to work and train. The nature of emergency medicine is that patients will often present undifferentiated, with a wide spectrum of presenting complaints and possible diagnoses. The intern may be the first doctor that the patient has seen for their complaint. Therefore patients can potentially be acutely unwell, requiring immediate treatment concurrent to assessment. A large percentage of intern time in the ED is spent engaged in clinical work such as history taking, examining patients and performing procedures, rather than clerical work^(16, 17). International studies of medical students in the ED suggest that they receive important exposure to some medical conditions poorly represented on both medical and surgical wards⁽¹⁸⁾. Correspondingly, a large portion of the ACFJD is devoted to skills that are directly relevant to emergency medicine; in particular, the sections pertaining to Emergencies, Common Problems and Conditions, and Skills and

Procedures⁽¹⁰⁾. This is particularly pertinent, given that interns⁽¹⁹⁾ and junior doctors in general⁽²⁰⁾ do not often feel adequately prepared for medical emergencies.

The duration and mandatory nature of the ED intern rotation has been under recent scrutiny due to concerns over the capacity for EDs to accommodate an increased number of medical interns. A nationwide study of doctors working in Australian hospitals, demonstrated overwhelming support for mandatory ED rotations for interns⁽¹⁶⁾. The study, in which interns, registrars and consultants were interviewed, also identified the learning experiences that interns would be anticipated to miss if the ED rotation was not undertaken. The top three responses were: Seeing/management of undifferentiated patients; procedural skills; and seeing sick/unwell patients. In recent years, two Australian States (South Australia and Western Australia) have provided an option for interns to replace emergency terms with General Practice terms⁽¹⁶⁾. Doctors in these States, however, are just as likely to believe that ED terms should be compulsory⁽¹²⁾. It was concluded that ED rotations were an essential core rotation for interns, and that GP rotations, although having important benefits, could not satisfactorily replace them⁽¹⁶⁾.

Presently there is general consensus between several peak bodies in Australia that an emergency rotation should be mandatory for all interns to meet their training needs^{(16),(12),(21, 22)}. The current requirement for interns in Victoria is to have worked at least eight weeks in an ED to be eligible for general registration⁽¹²⁾. Five of these eight weeks must be in a large hospital that has at least one full-time emergency physician working in its ED (a so called core rotation)⁽¹²⁾. With the exception of South Australia and Western Australia, other states have similar requirements with Queensland requiring a 10 week emergency term, New South Wales a 10 week term, and Tasmania an 8 week term during the intern year⁽¹¹⁾. There has been little enthusiasm for short (e.g. five weeks or less) emergency placements⁽¹⁶⁾.

Emergency department intern training can be delivered through a variety of modalities including informal and formal training, supervision, high fidelity simulation training, informal feedback, and formal assessment⁽²³⁾. Supervision is a modality of training that also has the more immediate goal of preventing mistakes, poor practice and adverse events, while facilitating opportunistic and “practice-based” learning together with a degree of junior doctor autonomy⁽¹⁰⁾. The level of supervision of junior doctors by senior doctors has increased in Australia over the years, due to an awareness by the medical establishment, of medical errors, as well as by increased public awareness and medico-legal issues⁽²⁴⁾. Increased supervision is linked with better patient outcomes⁽²⁵⁾, though it is unclear exactly how much or what type of supervision is ideal. In Australia each State Postgraduate Medical Council has made recommendations regarding the level of supervision for interns in the ED (Appendix A, Table A1). For example, the PMCV stipulates that interns undertaking a core ED rotation must be directly supervised by a senior doctor with at least 3 years training, for 100% of the time⁽¹²⁾. In non-core rotations, there must be direct supervision 80% of the time, and senior help must be available within 5 minutes at times when direct supervision is unavailable⁽¹²⁾. It should be emphasised that “direct supervision” does not equate to direct observation, but relates to the continual physical presence in the department of a senior doctor who is expected to “oversee” the intern and be freely accessible for advice and help. In reality, direct observation in the ED appears to occur much less often, with one study citing a figure

of only 3% of total intern work time⁽²⁶⁾. Definitions of what constitutes “appropriate supervision” for interns vary. The PMCV defines it as supervision that is given “case by case”^{(12)P:9]}, while the NSW Institute of Medical Training states “All patients seen by a PGY1 trainee ... must be reviewed by a supervisor before discharge”^{(11)P:4]}. The phrase “clinical oversight” has also been coined to describe how senior doctors might maintain a level of awareness of their junior staff and their patients, stepping in where they have to, to ensure quality of care⁽²⁴⁾.

Perhaps the biggest resource constraint to the provision of ED rotations for an increased number of interns is staff available to supervise. The supervision of interns contributes to the workload of the senior emergency doctor. The ED is a highly unpredictable environment, where all staff, particularly doctors, are exposed to a large communication load, and are often required to multitask⁽²⁷⁾. It has also been shown that emergency doctors are subjected to a high rate of interruptions (i.e. communications which are initiated by others and which occur when the doctor is already doing another task)⁽²⁷⁾. Problems in communication are a common cause of medical errors⁽²⁸⁾. Therefore, supervision will inevitably contribute to such “interruptions”, decreasing the efficiency of supervising staff, while communication failures can potentially lead to mistakes. In the absence of junior doctors the efficiency of EDs has been demonstrated to improve; when EDs have been staffed by senior doctors only during junior doctor strikes ED length of stay and waiting times decreased^(29, 30). Similarly, in a US ED predominately staffed by emergency physicians the average ED length of stay steadily increased after the initiation of a Residency Programme⁽³¹⁾. Conversely, a study from a paediatric ED calculated that by increasing consultant numbers, unnecessary admissions were avoided, patient waiting times decreased, patient length of stay decreased, and the level of complaints were reduced. They also achieved net monetary savings which represented more than nine times the cost of employing the additional staff⁽³²⁾.

This evidence suggests that interns are not the “workhorses” of the ED, and that their role in the department is weighted towards the “education” side of the service/education dichotomy. This begs the question of how to best approach their education to ensure a valuable education, while avoiding a negative impact on the day-to-day efficiency of the department.

The education and supervision experienced by prevocational doctors’ and interns’ in the ED has been investigated in several surveys. One striking finding is the strong opinion that registrars do the bulk of supervision and training^(23, 33). In one study, 90% of prevocational doctors reported adequate informal contact to registrars, but only 56% reported adequate informal contact with consultants⁽²³⁾. Other studies have yielded similar results^(33, 34). Common examples of informal teaching include bedside teaching, case presentations, X-ray meetings, handover rounds, and “teaching on the go/run”^(16)pp.25). Much of this would be expected to occur in a “spontaneous” fashion triggered by aspects of the teacher’s supervisory role. From the perspective of prevocational doctors, registrars have been considered the most highly valued sources of education, significantly more so than consultants⁽²³⁾. Despite this, few registrars get any formal training in teaching methods and learning theory^(23, 34).

While informal teaching from registrars has generally been believed to be adequate, interns have identified other forms of education that they believed were useful, and

for which they needed increased exposure⁽²³⁾. These included formal teaching by registrars and consultants, high-fidelity simulation, professional college tutorials, clinical skills sessions, and consultant feedback⁽²³⁾. Interestingly, several modalities, such as grand rounds, computer programs, unit meetings and videoconferencing, have been thought to be much less useful⁽²³⁾.

Large discrepancies have been shown to exist between the amount of training consultants believe interns are receiving compared with what interns perceive they are receiving, both in regards to formal training and advanced life support training⁽¹⁶⁾. Registrars were found to lie between the two extremes. This discrepancy is concerning, as it suggests a lack of communication and consultation⁽¹⁶⁾.

The level of assessment and feedback provided to interns during their ED rotation is another area requiring attention. Mid-term and end of term formal feedback by supervisors is a general requisite of accrediting postgraduate councils⁽³⁵⁾. However, it has been suggested anecdotally that in most hospitals there is varying compliance with this⁽³⁵⁾. Together with feedback, formal assessment of interns' performance is also a requirement. While the ACFJD does clearly specify which competencies should be achieved by junior doctors, its own authors admit that they are still challenged with developing the robust assessment tools that will give it the "teeth" that it needs to gain acceptance and compliance by both trainees and trainers^(36, 37). On the other hand, reliance on rigid forms of assessment has been a criticism of the British Foundation Programme, with the argument that it artificially "instrumentalises" medical education, and is disliked by junior doctors⁽¹⁴⁾. Another observation which, given the increase in intern numbers, is particularly pertinent to the situation in Australia, is that the assessments introduced by the Foundation Programme are very time and resource intensive.⁽¹⁴⁾

Based on the literature reviewed herein, it is arguable that even before the increase in interns has fully materialised, interns already feel that some of their education in the ED is inadequate. Some have highlighted that while the number of interns in Australia is set to increase, there is unlikely to be a corresponding increase in resources, including senior supervising staff, to train them^(2, 7). In 2007, the New South Wales Institute of Medical Education and Training (IMET) released a discussion paper containing projected numbers of interns in New South Wales EDs⁽¹¹⁾. The capacity of EDs at the time was for 765 intern placements. If this were to remain static demand would outstrip supply by 2011, and by 2014 there would be a shortfall of 333 placements.

The ED is a complex workplace. The requirement for rapid assessment, high patient flow, and the need for around the clock rostering with shiftwork, are all factors that challenge the medical educationalist. Therefore, some innovation is necessary for quality supervision and the mobilisation of education opportunities. Allocation of Protected Teaching Time (PTT) has been one strategy explored, most recently in the More Learning for Interns in Emergency (MoLIE) project being implemented at the Royal Brisbane and Women's Hospital commissioned by the PMCO⁽¹¹⁾. In this project, all interns spent 20% of their working hours "offline" receiving teaching. This approach enabled the 20% more interns to be accommodated by the ED. Such a strategy is not, however, without its disadvantages. The number of hours junior doctors work is positively correlated with how much they learn⁽³⁸⁾. Consequently,

education may be hampered by too much time “off the shop floor”. Further, if junior doctors were to receive protected teaching time, this would require the availability of senior doctors teach them.

There is also evidence that successful teaching is not simply about time allocation. In one study, junior doctors were asked to appraise the teaching performance of consultant emergency physicians. Teaching performance was found to be unrelated to consultant’s clinical workload; clinician’s teach well, regardless of time pressures⁽³⁹⁾. Nonetheless, the perceived need to improve the quality of medical teaching has resulted in the development of courses that “teach teachers how to teach”^(40, 41). Formal recognition of the education role and associated workload of senior doctors is presently lacking. Education of junior doctors has relied greatly on “pro bono” contributions by generous senior doctors with the inclination to teach^(35, 37, 42). Some have hinted that cultural and management changes need to be considered, such as reviewing the current traditional “apprentice” model of teaching⁽⁴³⁾, and rewarding senior doctors suitably for their efforts. Some consider that education has been adversely affected by the ill-defined accountability of hospitals and their departments for education programmes⁽⁴⁴⁾. This is most strongly illustrated in the case of 2nd and 3rd year prevocational doctors referred to by some as “the lost tribes” since they do not belong to any one college or faculty, and little responsibility is taken for their education and guidance⁽⁴⁵⁾.

One strategy to improve education and supervision has been to have one emergency consultant whose sole role during their rostered shift is to facilitate education and supervise the clinical practice of junior doctors⁽⁴⁶⁾. Another has been to create “medical education registrar” positions, with similar roles as above⁽¹¹⁾. The assignment of such defined roles might decrease the number of “interruptions” which plague the multitasking emergency physician or registrar, and allow education to be a priority, rather than an “add on”.

However, even if funding were available for such positions, the availability of suitably qualified staff will be a problem. Although the total number of Emergency Fellows in Australia increased rapidly in between 1997 to 2002 (from 265 to 437), the number of doctors obtaining the FACEM between 2003 and 2007 decreased by 15.9%⁽¹⁾. At the same time, demand has increased at a faster rate, and emergency consultants are, voluntarily, tending to work shorter hours than before⁽⁴⁷⁾. The drop in the participation rate and the growth in demand has meant that there are ongoing vacancies in specialist emergency medicine positions⁽⁴⁷⁾. At the same time numbers of junior doctors entering emergency specialty training have not increased as much as anticipated and drop out rate in emergency trainees during their training is high^(1, 47). The total number of emergency trainees decreased by 21.8% from 1997 to 2004⁽⁴⁷⁾, after which time it increased by just 1.9% in 2008⁽¹⁾. Suggested alternatives to FACEMs in senior medical roles in EDs have included increasing the GP presence in EDs to fill the gap in registrars and consultants⁽⁴⁸⁾, but this is thought to be unviable since GPs are also in shortage, particularly in rural areas⁽²⁾. General Practitioners would need to have some requisite experience in Emergency Medicine, and some have suggested that those working in the Emergency Department at a senior level have credentials such as Emergency Management of Severe Trauma and Advances Life Support⁽¹²⁾. Regardless, it is important to acknowledge that many GPs currently provide an invaluable service in emergency medicine in remote and rural areas⁽²¹⁾.

With the increasing reliance on IMGs, the access to and suitability of ED-based educational opportunities for these doctors demands consideration. An audit of the Australian Health Workforce in 2003 revealed that 25% of medical emergency staff were IMGs⁽⁴⁹⁾. This illustrates that Australia's dependence on overseas trained doctors also extends to the emergency workforce. Interestingly, the overall percentage of foreign trained doctors across all disciplines of medicine is also 25%, but figures differ considerably between different states (17.5% in Victoria compared to 34.5% in Western Australia)⁽⁴⁹⁾. The proportion of IMGs is highest in some rural areas, and it has been claimed to be as high as 50-100% in some areas of rural Queensland⁽⁵⁰⁾. There have been concerns that this heterogeneous group of doctors may miss out on education and career enrichment opportunities⁽⁵¹⁾. Career medical officers (CMOs) are another smaller group who have a variable presence in EDs and may also miss out on education opportunities⁽⁵²⁾. Consequently, a review of the ED-based educational opportunities and resources is warranted.

A relative shortage in trained emergency nurses may also impact on educational opportunities and resources available to junior staff and EDs generally⁽⁴⁷⁾. If agreed nurse-to-patient ratios are enforced, an acute nurse shortage could potentially result in closure of emergency beds. In Australia, Nurse Practitioners (NPs), who manage patients independent to medical staff, are just beginning to have a presence in the ED. Their role in emergency care in North America and Europe is more established; in American EDs NPs have had a presence for over 30 years⁽⁵³⁾. Nurse Practitioners in Australian EDs generally focus on low acuity or uncomplicated presentations, such as wounds, soft tissue injuries, simple fractures, cellulitis and uncomplicated urinary tract infections⁽⁵⁴⁾. By measuring indicators such as patient satisfaction and complication rates, the quality of care provided by NPs has been demonstrated to be comparable to that of a mid level emergency doctor (i.e. senior resident)⁽⁵⁵⁾. Increasing the presence of NPs in Australian EDs has been suggested as a measure to improve patient flow and patient waiting times^(54, 56). Intuitively, this could potentially decrease interns' exposure to certain medical conditions and their management. The ED team is also comprised of staff from many disciplines including social workers, physiotherapists, pharmacists, and support staff such as clerical, transport and cleaning staff⁽⁴⁷⁾. Shortages in any members of the ED team may compromise the department's ability to function.

The resource considerations for accepting an increased number of medical graduates also extends to the physical environment of the ED. Assuming no changes are made, a larger number of doctors will be sharing the same number of desk space, computers and telephones. This further exemplifies the potential inadequacy of resources that may be brought about by increased intern numbers.

"Bed block", also referred to as "access block" has received much attention over the last few years, both in Australia⁽⁵⁷⁾ and internationally.^(58, 59) It describes a situation where patients in the ED who require inpatient care are unable to access a bed on an inpatient ward⁽⁴⁷⁾. In Australia, the generally held timeframe for acceptable transfer of inpatients from entry to the Emergency Department to transfer to a ward is 8 hours⁽⁶⁰⁾. Increased bed block is associated with longer waiting times, longer inpatient stays and poorer inpatient outcomes^(61, 62). While quantitative evidence is lacking, ED overcrowding is likely to make teaching more difficult⁽⁵⁸⁾. However,

patients initially seen by junior emergency medical staff may have been demonstrated to have an increased ED length of stay⁽³¹⁾. It is also claimed that patients seen first by medical students “move through the system more slowly”⁽⁶³⁾. Thus, one could make the argument that an increase in the presence of interns would increase numbers of “bed blocked” patients, if the above definition of bed block was applied.

Despite this, the root causes of bed block have little to do with junior medical staff. There has been a general decrease in the number of beds in public hospitals in Australia concomitant to a shortage of beds in aged care facilities⁽⁶⁴⁾ and an ageing population with an increased demand for emergency services. Bed block has been further exacerbated by cases, poorer access to GPs, and changes in medical therapies and the settings in which they are performed^(47, 49).

The impetus to dramatically increase the number of medical school graduates in Australia is to rectify shortages in the medical workforce. While this may be a necessary initiative, it is not without substantial impact on the educational and resource capacities of EDs. In the period between graduation and specialisation, these same problems have the potential to undermine the training of new graduates. To avoid this, changes may be required in the way EDs function, their resource allocation, as well as the culture of medical education in EDs.

In summary, the recent move to dramatically increase the number of medical school graduates from Australian universities is a response to a chronic shortage of medical practitioners in Australia. There has been consensus among postgraduate bodies that all interns should complete a clinical term in Emergency Medicine, so there is likely to be a considerable increase in the presence of interns in Australian EDs over the next few years. This will impact on the clinical and teaching resources of the ED workplace, as junior doctors require concurrent training and supervision to ensure their professional development as well as safeguard patients’ quality of care. While senior doctors such as consultants and registrars are the main providers of education and supervision to interns, this aspect of their job is not formally recognized. Relying simply on voluntary contribution from those senior doctors who want to teach may not be sustainable. Cultural changes in both medical education and the way EDs function may be required. Some anticipated problems, such as shortages of senior emergency doctors, will be difficult to solve, even with adequate financial resources.

2.3 Rationale

Based on the increased numbers of medical graduates and the likely impact this will have on the educational opportunities, and ED resource, a thorough investigation of the capacity of EDs to accept more interns and medical students is warranted. Consideration of current levels of staffing, educational opportunities, as well as perceptions of the effects of a 70% increase in interns in the ED, and the capacity to absorb more interns is fundamental to such an investigation.

3.0 Methodology

3.1 Project Oversight

The EMCAS was conducted by St. Vincent's Hospital Melbourne, and overseen by a Steering Committee.

The committee held three teleconferences throughout the project and maintained email contact to review the questionnaire design, pilot data collection, national data collection and data analysis phases.

3.2 Questionnaire Design & Development

The semi-structured telephone interview was chosen as the most appropriate method to reach the large dispersed target group.

Interview questions were developed by a Fellow of the Australasian College for Emergency Medicine with input from a researcher/psychologist and a project officer experienced in interview methodology and workforce planning. Face validity of draft interview items was ensured through iterative feedback between project staff.

3.2.1 Pilot Phase & Questionnaire Refinement

Further refinement of the interview questions was undertaken following pilot interviews with St. Vincent's Hospital Melbourne emergency staff, and reference to the Postgraduate Medical Council's previous investigations.

The ED Director and Director of Emergency Training at St. Vincent's Hospital Melbourne as well as a small sample, of up to three each of advanced trainees and prevocational doctors were approached by in person by a study researcher regarding participation in an interview. The purpose of the interview was to refine the interview questions and methodology. Those that consented were interviewed and the responses recorded included comments made in the course of the interview about the structure or content of the interview questions. These data were not combined with results of the larger study. Following review of the pilot phase results, the project team made some minor alterations to the questionnaire prior to the final draft being presented to steering committee for confirmation. Iterative feedback from the steering committee resulted in minor changes and one major change regarding the reference percentage increase in interns; the choice to use "70% more interns" or "70% more medical students" (see below), was based on the aggregate mean estimated increase for all jurisdictions; the estimated increases per Australian State were provided by the Confederation of Postgraduate Medical Education Councils. "70%" reflects the calculated average of these estimates. Although the increase may be up to 80% as a whole, the average is 70%.

The final interview schedule included up to 160 items for ED Directors/DEMT, and up to 97 items for both Registrar and intern participants. The full interview schedule is provided in Appendix B. Briefly, items for the interviews included:

- Demographics: position held in the ED, year of graduation from medical school, hospital of ED rotation, medical school and gender.
- Type of ED: Region, number of attendances, staffing type on roster and staffing EFT.
- Opinions on current staffing levels in the ED: staffing levels and staffing mix.
- Opinions on current supervision education and feedback of medical staff: general supervision in the ED, supervision of medical staff in the ED, interns preparation for work in the ED, clinical supervision of ED staff, feedback to ED medical staff, formal education for ED medical staff, compulsory ED rotations for full general medical registration, contribution to unsocial working hours in the ED, attention to the learning needs of service providers in the ED, the working environment in the ED and adequacy of support services available for junior medical staff.
- Opinions on having 70% more interns in EDs within their current structure: overall ability to absorb more interns, impact on patient care, the impact on patient flow, exposure to clinical cases, exposure to procedures, supervisory requirements, orientation requirements, affect on other staff, affect on medical student teaching, coping abilities of support services, coping ability of educational staff and impact on team building in the ED.
- Opinions on the requirements for accepting 70% more interns: physical requirements, technical requirements, supervisory requirements, support staff, non-clinical assessment time, specific ED supervisors, interns replacing other staffing groups, the role of nurse practitioners, exposure to patients and other adjustments.
- Contributions to undergraduate medical teaching: medical students attachment to EDs, student allocation, Shared university curriculum's in emergency medicine, clinical supervision of medical students, provision of medical student tutorials, payments for time spent with medical students, impact of medical students on patient care, medical students experiences in the ED, feedback, preparation for internship in the ED, involvement with medical schools
- Opinions on having 70% more medical students in EDs: overall ability to absorb more medical students, impact on patient care, time requirements of senior staff, learning opportunities, ability to take on medical elective students, ability to take on Australian Medical Council Observers.
- The ACFJD: familiarity with the ACFJD, depth of understanding of the Framework, practical utilisation of the ACFJD in the ED setting, limitations to the utilisation of the ACFJD and issues affecting the effective implementation of the ACFJD.

The data items sought graded responses using a Likert scales or ordinal multi-category scales enable quantitative statistical analysis. Open-ended questions were

also used to elicit qualitative responses and in some cases numeric answers were sought (e.g., What is the total medical EFT of your ED?”).

3.3 Nationwide Study

3.3.1 Participants

Doctors were eligible for participation if they were Emergency Department Directors, Directors of Emergency Medicine Training (DEMT), Advanced Trainees in Emergency Medicine, or prevocational doctors (interns) that had completed at least half of their emergency medicine rotation.

3.3.2 Method

A structured interview by telephone following consent of individual doctors was used to maximise the response rate. This method is chosen over questionnaire methodology which we have found, in previous studies to yield a low response rate with this participant type.

3.3.3 Sampling

For the larger Australian States, participants were drawn from a stratified sample of two city, two metropolitan and two provincial hospitals of each Australian State/Territory. Hospitals were selected based on the advice of the postgraduate medical councils from each relevant Australian State/Territory who were asked to nominate hospitals with emergency departments and prevocational doctors that were “representative” of the state for each category (city, metropolitan, provincial). As there were insufficient hospitals in the ACT, TAS, NT to meet our stratified sampling criteria all hospitals with applicable EDs from these regions were included. The total number of target hospitals was 37.

3.3.4 Recruitment and Data collection

ED Directors and DEMT: Names and contact details of eligible Emergency Department Directors and DEMTs were obtained from the Directory of Emergency Departments of Australia and New Zealand 2008, published by the Australasian Society for Emergency Medicine. Potential participants were emailed an invitation to participate in the research and were advised that they will be contacted by telephone or email to determine their willingness to participate in the research, and to arrange a mutually convenient time for the telephone interview. This email included the option to opt out of the telephone call and thus the subsequent interview. Those that agreed to the research were then emailed a copy of the questions to be asked so that they could consider their responses prior to the interview, as well as a participant information statement. At the time of the scheduled interview, participants were read the participant information statement regarding the research and their rights as participants, and their consent to participate was recorded verbally by a telephone recording system. The interview then occurred and all answers were recorded by the researcher on an electronic data collection form. Responses to open ended questions were recorded to permit verbatim transcription of responses. All voice recordings were stored as electronic data files. At the conclusion of the interview, recordings were replayed and data were entered into a predefined web-based interview/survey form.

Advanced trainees and Prevocational Doctors: At the end of the interviews with ED Directors and DEMTs, we requested that these participants forward email invitations supplied by the researchers to current prevocational doctors and registrars of their respective EDs in order to invite participation in the research. These invitations

contained an email link for these potential participants who were requested to provide their names and telephone contact to the researcher listed in the email. Recruitment and data collection for prevocational doctors and advanced trainees then occurred by telephone as described for ED directors and DEMENT.

3.3.5 Interview Schedule:

Separate though similar interviews were administered to the three groups: (1) ED Directors and DEMENT; (2) Advanced Trainees in Emergency Medicine, and (3) Prevocational Doctors.

For ED Directors and DEMENT, information obtained included personal Demographics, hospital demographic information, the numbers of existing prevocational doctors; awareness by ED directors of the National Curriculum; details of any structured teaching, supervision or measurement of experience; and the perceived capacity of emergency departments to take and provide further prevocational doctors, and the impact of interns supervision requirements on other staff. Advanced Trainees and Prevocational Doctors were asked similar questions to ED directors and DEMENT with the exception of hospital demographic information which was asked of ED Directors and DEMENTs only (Appendix B).

3.3.6 Sample size:

Since the purpose of the study was to describe rather than compare responses for different groups using inferential statistics no sample size calculations were performed.

3.3.7 Data Analysis: Quantitative

Data entered into the web-based interview/survey data management program were exported to Microsoft Excel with analysis conducted SPSS 15.0 software. Data from the pilot interviews were not included in the final analyses.

Descriptive statistics (frequencies, percentage \pm 95% confidence interval (CI), mean \pm 95% CI, median, inter-quartile range) were calculated for quantitative data. The response distribution for all quantitative items were summarised using frequencies, percentages \pm 95% CI and median as appropriate. Since some interviewees were unable to answer all questions, the total number of graded (Likert Scale or other ordinal scale) responses analysed varied for each item. These data are presented as percentages calculations adjusted for missing data.

For continuous data, preliminary assumptions of normality were assessed using either Kolmogorov-Smirnov test (for >60 cases) or Shapiro Wilks test (for <60 cases). Were a violation of normality was indicated central tendency was summarised using the median (interquartile range). In all other instances both the mean and median are reported.

3.3.8 Qualitative data

Responses to each open-ended questions underwent content analysis which was conducted by an Emergency Physician (in all instances) and one of either an Advanced Emergency Trainee or the EMCAS project officer. For all items the two researchers independently read through and coded the qualitative data derived from the telephone interviews. Responses to open-ended questions were grouped into

themes initially identified by a project officer. This coding system was refined as the analysis of data progressed until the coding system accurately represented the key themes arising from the qualitative data. Derived themes were then compared between the two researchers, and differences in analyses were discussed to obtain consensus. Table 1 demonstrates the inter-rater reliability of the qualitative response coding prior to consensus.

Frequencies and percentages were then calculated for each item. Qualitative data are presented in group and individualised format. During the analysis researchers also identified useful quotes and observational excerpts to illustrate key findings.

Those responses selected for inclusion within this report have been assessed by raters to preserve anonymity.

Table 1: Inter-rater reliability of qualitative response coding

| Qualitative Item | Kappa | Standard Error | Number of responses | Number of respondents |
|---|-------|----------------|---------------------|-----------------------|
| Comments regarding existing staffing levels | .676 | .052 | 92 | 87 |
| Comments regarding existing staffing mix | .672 | .056 | 91 | 76 |
| Comments regarding supervision of medical staff | .801 | .048 | 89 | 83 |
| Comments regarding education in the ED | .760 | .047 | 100 | 89 |
| Comments regarding feedback to JMOs | .668 | .056 | 91 | 84 |
| Comments regarding the working environment | .645 | .050 | 108 | 73 |
| Comments on having 70% more interns | .602 | .045 | 151 | 87 |
| Adjustments for 70% more interns | .70 | .050 | 102 | 75 |
| Comments on the role of nurse practitioners in the ED | .600 | .066 | 71 | 54 |
| Comments about supervision of medical students | .593 | .059 | 89 | 73 |
| Comments about learning opportunities for medical students | .721 | .049 | 102 | 74 |
| Comments about the main obstacles to implementing the ACFJD | .556 | .121 | 22 | 17 |
| Comments about the use of the ACFJD in other ways | .662 | .117 | 22 | 16 |

4.0 Results: Respondents

Although there was a target of 37 sites, ethics approval was not granted from one NSW site during the study period. For this reason, respondents were drawn from a total of 36 sites.

4.1 Response Rate

4.1.1 Overall

A total of 95 of 233 of potential interviews were completed yielding an overall response rate of 40.1%. The study aimed to interview, where possible the ED Director, DEMENT and up to three advanced trainees and three Interns from each of the target sites across Australia. Not all target sites had a staffing make up which was representative of our aims, for example not all hospitals had a DEMENT, some sites had a combined ED Director and DEMENT role, some sites had fewer than three or sometimes no interns or advanced trainees on the ED roster the time of investigation. The response rate is therefore calculated in accordance with the staffing structure of each site.

4.1.2 ED Directors & DEMENTs

A total of 61 ED Directors and DEMENTs were interviewed producing a 100% (36/36) response rate from ED Directors eligible for participation, and a 96.2% (25/26) response rate from eligible DEMENTs. Seven sites did not have a DEMENT role, three sites had a combined DEMENT role and the DEMENT from one site did not respond to the invitation to participate in this study. Where the ED Director and DEMENT role was combined, one interview was conducted with this person.

4.1.3 Advanced trainees/registrars

Twenty-four percent (19/81) of potential interviews with advanced trainee/registrars were completed. During investigations it was established that 24 of the participating sites had at least 3 emergency trainees/registrars, 7 sites did not have emergency trainees and 3 sites only had 1 emergency trainee/registrars on the roster at the time of investigation.

4.1.4 Interns

Seventeen percent (15/90) of potential interviews with interns were completed. During investigations it was established that 25 of the participating sites had at least three interns, four sites had no interns and five sites had fewer than three interns on the current roster.

Table 2 summarises the numbers of participants from each staffing group.

Table 2: Frequency distribution of respondents by participant staff category

| Participant staff category | Number | Percentage |
|--|--------|------------|
| ED Director/Director of Emergency Medicine Training | 61 | 64.2 |
| Advanced trainee/Registrar | 19 | 20.0 |
| Prevocational Doctor/Intern | 15 | 15.8 |
| Total | 95 | 100.0 |

4.2 Participant Demographics

The mean number of attendances to participating EDs during 2008 was 49,984.8 (95% CI 37,231.3- 62,738.3; median=50,726, IQR= 37625- 57000). There was a slight preponderance of male respondents (58%). Tables 3 and 4 demonstrate the frequency distribution of participants in accordance with their setting and jurisdiction. The majority of participants (54.7%) were from EDs based in a city setting. As documented, in the above description of study methodology, there are fewer hospitals in the ACT, Tasmania, Northern Territory, therefore only hospitals with applicable Emergency Departments from this region were included in the study sample. Consequently all sites from these jurisdiction were based in a city setting. This distribution is perhaps also reflective of EDs in city areas having higher numbers of staff at all levels.

Table 3: Frequency distribution of participants by setting.

| Hospital Type | Number | Percentage |
|---------------------|--------|------------|
| City | 52 | 54.7 |
| Metropolitan | 25 | 26.3 |
| Provincial | 18 | 18.9 |
| Total | 95 | 100.0 |

Table 4: Frequency distribution of participants by jurisdiction.

| State or Territory | Number | Percentage |
|-------------------------------------|--------|------------|
| Australian Capital Territory | 7 | 7.4 |
| New South Wales | 13 | 13.7 |
| Queensland | 18 | 18.9 |
| South Australia | 15 | 15.8 |
| Northern Territory | 6 | 6.3 |
| Victoria | 13 | 13.7 |
| Western Australia | 14 | 14.7 |
| Tasmania | 9 | 9.5 |
| Total | 95 | 100.0 |

The length of experience in the ED varied amongst participating emergency trainees, all having graduated from medical school in the years between 1997 and 2005. Participating Interns had all graduated from medical schools during 2006-2008. The majority of participating Emergency trainees and Interns (79.4%; 27/34) did not attend medical school within Australia. Those who did not attend medical school in Australia were not asked to respond to questions relating to their undergraduate rotations in the emergency department.

Advanced trainee participants indicated that the hospital of their most recent ED rotation was one of 12 sites, and that they had attended one of 13 medical schools (eight of which were Australian medical schools).

5.0 Results: Main Findings

5.1 Current staffing levels of Australian emergency departments

ED Directors and DEMENT were asked to quantify the staff full time equivalents (FTE) for each category of doctor. Participating EDs had varying staffing numbers and structures. Table 5 demonstrates the mean and median numbers of staffing groups of the participating hospitals.

Table 5: Mean (95% CI) and Median (IQR) number of medical staff (FTE) by staff type

| Staff Type | Mean | Median |
|--------------------------------|-----------------|----------------|
| Emergency Physicians | 8.3(7.0-9.6) | 9 (3.95-11.6) |
| Registrars/Trainees | 10.3 (8.4-12.2) | 11 (3.88-14.5) |
| PGY 2,3+ | 10.0 (8.2-11.9) | 9.5 (5-12) |
| Career Medical Officers | 2.6 (1.8-3.4) | 1.8 (0-3.5) |
| Interns | 5.2 (4.2-6.2) | 4.75 (2.75-7) |
| Other Medical Officer | 5.8 (2.5-9.1) | 2 (11.5) |

ED Directors and DEMENTs also quantified how many doctors within each staffing group were Australian graduates, graduates from countries identified as competent authorities² or from other international settings. Findings demonstrate that on average, Australian Medical Graduates (AMGs) were more likely to be in these positions than International Medical Graduates (IMGs) with the exception of the 'other medical officer' staffing category for which there were greater numbers of IMGs than AMGs. (Appendix C, Table C1).

The majority (60%) of participating ED Directors and DEMENT indicated that they did not have nurse practitioners on staff (Appendix C, Table C2). The mean number of nurse practitioners on the roster in participating EDs was 1.96 (95% CI .44- 3.48; median=1.8 IQR=1-3). It was evident however that eight participants indicated that they had staff who were in the process of obtaining their nurse practitioner qualifications.

² United Kingdom, Ireland, Canada, New Zealand or North America.

5.2 Perceived Adequacy of Current staffing levels

All participants were asked to rate their agreement to set of statements about the adequacy of staffing levels in their ED. The majority of participants either disagreed or strongly disagreed (64.2%) that their ED was adequately staffed (Figure 1).

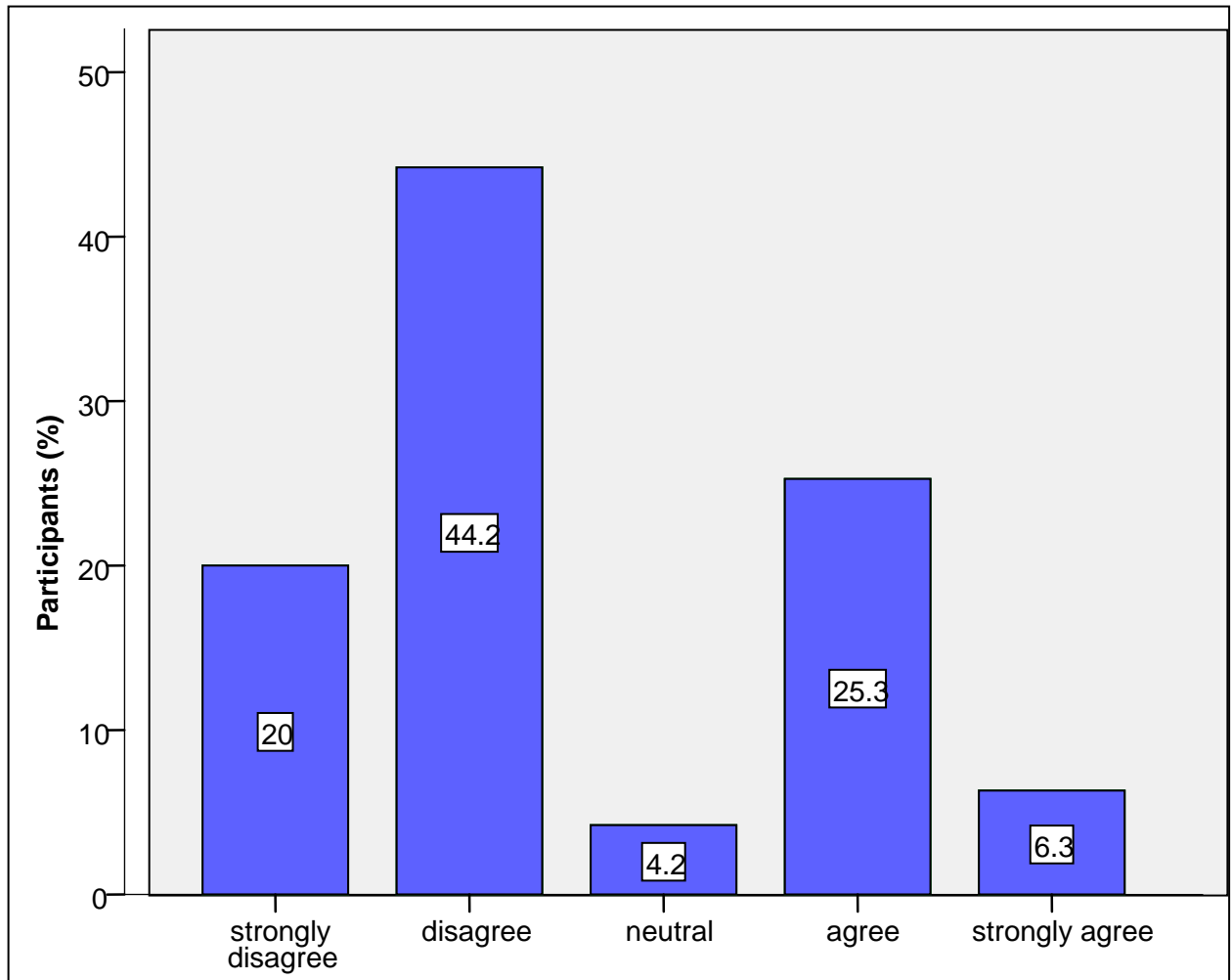


Figure 1: Percentage of participants by level of agreement to the statement, “In general the ED is adequately staffed”.

Opinions of participants about the adequacy of staffing numbers within specific staffing groups were varied (Table 6).

Most participants disagreed/strongly disagreed (60%; 57/95) that there were enough Fellows of the Australasian College for Emergency Medicine (FACEM) working in their ED (Table 6). Opinions regarding the adequacy of the number of Emergency Trainees/registrar working in the ED were variable; 52% felt that there were sufficient numbers of these staff (ie., agreed/strongly agreed) whereas 42% disagreed with this sentiment (Table 6). With regard to the sufficiency of numbers of postgraduate year (PGY) 2, 3+, results were mixed with the most common response being agree/strongly agree (45%). The majority of participants agreed/strongly agreed (75%) that there were enough Career Medical Officers (CMOs) working in the ED (Table 6). Directors and DEMENT respondents that agreed that there were enough CMOs also reported there being fewer CMOs at their ED (Median=1.2, IQR=0-4.1) than those that disagreed that CMO numbers were sufficient (Median=3.0, IQR=.9-3.7). The perceived adequacy of CMOs as reported by Directors and DEMENT was inversely related to the number of CMOs in the department.

Sixty-one percent of interviewees disagreed/strongly disagreed that there were adequate numbers of interns working in the ED, while 34% agreed that current numbers were adequate (Table 6).

Table 6: Number and percentage of participants according to level of agreement to statements regarding adequacy of staffing in the ED

| Statement | Strongly disagree | Disagree | Neutral | Agree | Strongly agree | Not applicable | Don't Know | Total |
|--|-------------------|----------|---------|-------|----------------|----------------|------------|-------|
| There are enough FACEM/consultants for your ED | 16 | 41 | 5 | 23 | 5 | 4 | 1 | 95 |
| | 16.8 | 43.2 | 5.3 | 24.2 | 5.3 | 4.2 | 1.1 | 100 |
| There are enough Emergency Trainees/registrar for your ED | 8 | 31 | 6 | 46 | 3 | 0 | 0 | 94 |
| | 8.5 | 33 | 6.4 | 48.9 | 3.2 | 0 | 0 | 100 |
| There are enough PGY 2, 3 or later for your ED | 3 | 17 | 8 | 41 | 2 | 21 | 3 | 95 |
| | 3.2 | 17.9 | 8.4 | 43.2 | 2.1 | 22.1 | 3.2 | 100 |
| There are enough Career Medical Officers (CMOs) for your ED | 1 | 11 | 6 | 57 | 14 | 6 | 95 | 1 |
| | 1.1 | 11.6 | 6.3 | 60 | 14.7 | 6.3 | 100 | 1.1 |
| There are enough interns for your ED | 18 | 40 | 5 | 31 | 1 | 0 | 0 | 95 |
| | 18.9 | 42.1 | 5.3 | 32.6 | 1.1 | 0 | 0 | 100 |
| There are enough nurses for your ED | 18 | 40 | 5 | 31 | 1 | 0 | 0 | 95 |
| | 18.9 | 42.1 | 5.3 | 32.6 | 1.1 | 0 | 0 | 100 |

When asked to comment about the staffing levels in their ED participants provided 109 responses. These were categorised post hoc into seven themes. The modal responses related to staffing inadequacies, particularly at the senior level (Table 7).

Table 7: Number and percentage of responses about the staffing levels in the ED according to theme.

| Theme | Number of responses | % of responses |
|--|---------------------|----------------|
| Staffing levels are inadequate for service demands | 27 | 24.8 |
| Shortage of senior staff (trainees/physicians) | 24 | 22.0 |
| Staffing levels are adequate | 18 | 16.5 |
| Staff retention or recruitment issues | 14 | 12.8 |
| Shortage of nurses | 10 | 9.2 |
| Other | 10 | 9.2 |
| Over-reliance on IMGs | 6 | 5.5 |
| Total | 109 | 100.0 |

Some of the comments about staffing levels in the ED are listed below:

Many indicated that staffing levels are inadequate for service demands. For example:

“staffing is insufficient for demands however there are not enough beds to deal with the incoming patient load. The bed limitations are not purely within the ED but the outflow to inpatient wards”

“The ED was built in a redevelopment something like 7 yrs ago which did not take into account any real planning about the boom, the population growth that [we have] experienced. So the ED is too small, the waiting room is too small, we have 3 general bays in front of the nursing station, a treatment room with 2 beds in it, a triage room and a resuscitation room. People wait in the waiting room for hours because we physically can't fit them in the building. We don't have a designated triage nurse at the moment because she is doing other things, she has to answer the window but she is also doing something like giving an injection or doing an ECG so our problem is that we are doing more work than the building, staffing and budget ever allowed for. We are...submitting business cases to increase resources, but our ED workload has increased by 14% in the last 6 months and is continuing to do this.... we are not coping.”

Others indicated a shortage of senior staff (trainees/physicians). For example:

“we don't have anywhere enough staff members particularly experienced staff and it is having a negative impact on the ED and as such people are resigning”

“We cant properly supervise interns in terms of senior doctors”

“I think that although they have improved over the last few yrs with the increase in demand in clinical and non clinical work like supervision of medical students and the increased requirements for prevocational doctors, the senior staffing levels are absolutely on a bare minimum to provide adequate clinical care let alone take on those additional roles and I think that if they stay at the same level with the increasing numbers of medical students coming through etc things will be disastrous, particularly for medical students.”

For some, staffing levels were reported to be adequate. For example:

“Current levels are adequate but the physical capacity of the ED can't handle such rapid growth.”

“As a general rule it is adequately staffed, its adequate but would be nicer with a few more”

“I think the staffing levels are fine when everyone turns up, the problem is when there is lot sick leave due to business of the ED, it is so hard to judge.”

Some interviewees reported staff retention or recruitment issues. For example:

“we have 1 advanced trainee and we have allowed for 8 in our budget, can not attract advanced trainees to our hospital- recruitment of trainees is a problem”

“we have a 300% turnover of nursing staff per year which is clearly chaotic at times and this requires re-orientation after re-orientation”

Some respondents report issues other than the main themes identified:

“efficiency is not a reflection of staffing levels but bed block and whole hospital problems”

“We aim to tutor junior staff more so that they can make vocational decisions earlier, e.g. PGY 2 ,3”

Participants also commented about the staffing mix in their ED. Participants made 93 comments which were categorised post hoc into seven themes (Table 8). Most comments related to inadequate numbers of senior decision-making staff.

Table 8: Number and percentage of responses about the staffing mix in the ED according to theme.

| Category | Frequency | Percentage |
|---|-----------|------------|
| Under-representation of senior decision making staff (EM trainees/physicians) | 33 | 35.5 |
| Adequate staffing mix | 16 | 17.2 |
| Inadequate staffing mix | 12 | 12.9 |
| Other | 12 | 12.9 |
| Over-representation of IMGs | 8 | 8.6 |
| Over-representation of JMOs | 7 | 7.5 |
| Under-representation of non-medical support staff | 5 | 5.4 |
| Total | 93 | 100.0 |

Some of the comments about staffing levels in the ED are listed below:

The under-representation of senior decision making staff was an issue for many:

"Numbers of interns: if these numbers are not balanced by senior staff it is a problem, some terms have been very unbalanced e.g. early in this year, there is a deficiency in senior staff in general"

"not enough accredited trainees to support junior staff"

"we have a very junior mix of registrar this is a concern for us because we need a lot of consultant cover because they need a lot of supervision as do our residents"

"Registrars are what is required but the difficulty is with accreditation; the college requirements limit a lot of places in country WA so as a result there isn't any training besides Bunbury which is really a country area so we feel strongly that the college requirements actually limit our ability to train people. Given that there is only one FACEM led department, discounting Bunbury, which is metropolitan there is only one FACEM led department in the whole of WA country. I think [the problem] is the administration of country health and the college."

By contrast many participants expressed an adequacy of staffing mix with some comments qualified:

"We sort have almost got it right, we probably need more residents and we now have nurse practitioners which are making a real difference as well but overall it is ok."

"One of the reasons why the staffing is adequate is that we have had to do a recruitment drive ourselves,...but again that takes away another EFT position away to an auditor to recruit successfully."

"in general its [staffing levels are] fairly good. On weekends it gets light on seniority and the liability and quality can be an issue"

A similar number of responses related to inadequate staffing mix:

"Over 4 years we have gone from 39000 to nearly 69000 with no increase in staffing!"

"I believe we have too many CMOs for a teaching hospital"

"this ED runs on CMOs, they basically are ex-GPs or people who have opted not do post graduate training."

"The skill mix is very varied and this has not been taken into consideration with general staffing...they don't actually examine what that EFT comprises of... CMOs are varied in skill mix"

"It would be lovely to have a better structure with some FACEM input, and training going on but this needs to be balanced with the capacity and skill levels that the CMOs bring to it. The last thing I want is for a FACEM or registrar to come and think that they know more than the people who have been working here for 15 yrs or very senior people who have been working here for 25 yrs and are extremely skilled but don't have FACEM qualifications- I don't want to de-skill them. Its a catch 22 problem."

5.3 Existing supervision, structure and learning experiences of prevocational doctors during emergency medicine rotations

5.3.1 Supervision in EDs

Most participants (61%) agreed/strongly agreed that, the ED was, in general, adequately supervised (Figure 2). Similarly, the majority of participants agreed/strongly agreed (64.2%) that the medical staff in their ED are adequately supervised (Figure 3).

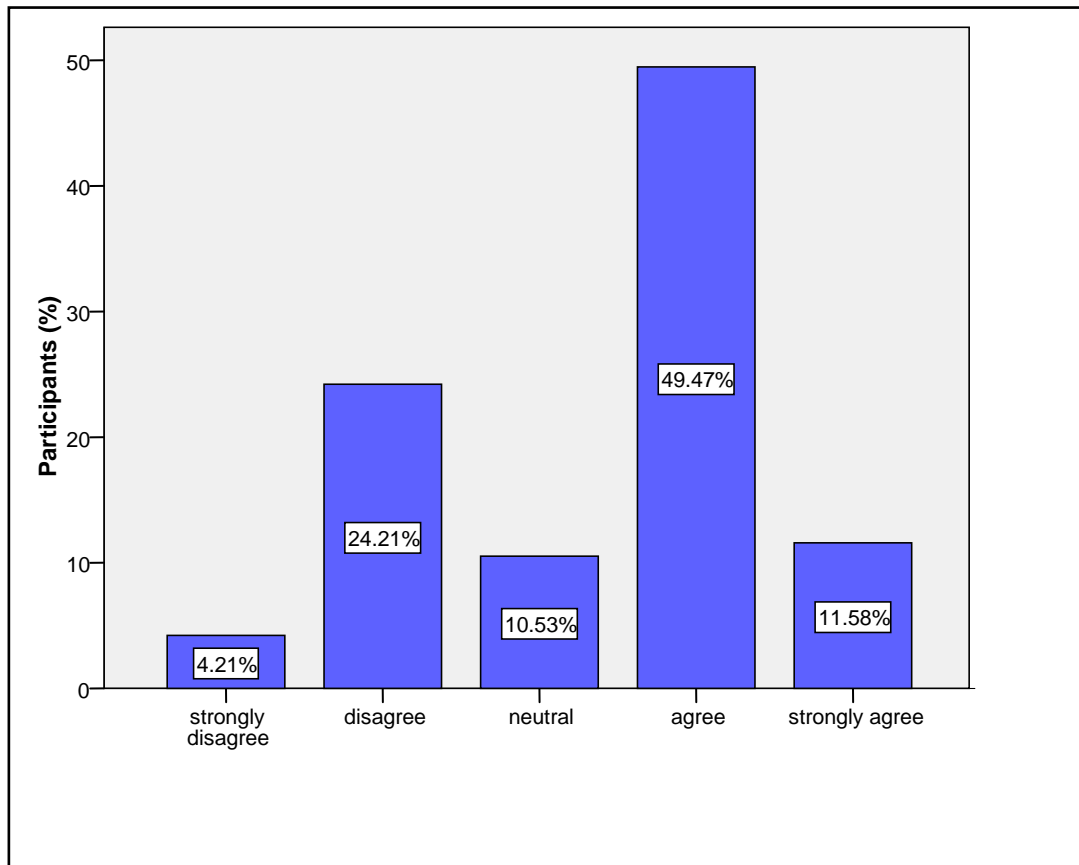


Figure 2: Percentage of participants by level of agreement to the statement, “In general the ED is adequately supervised”

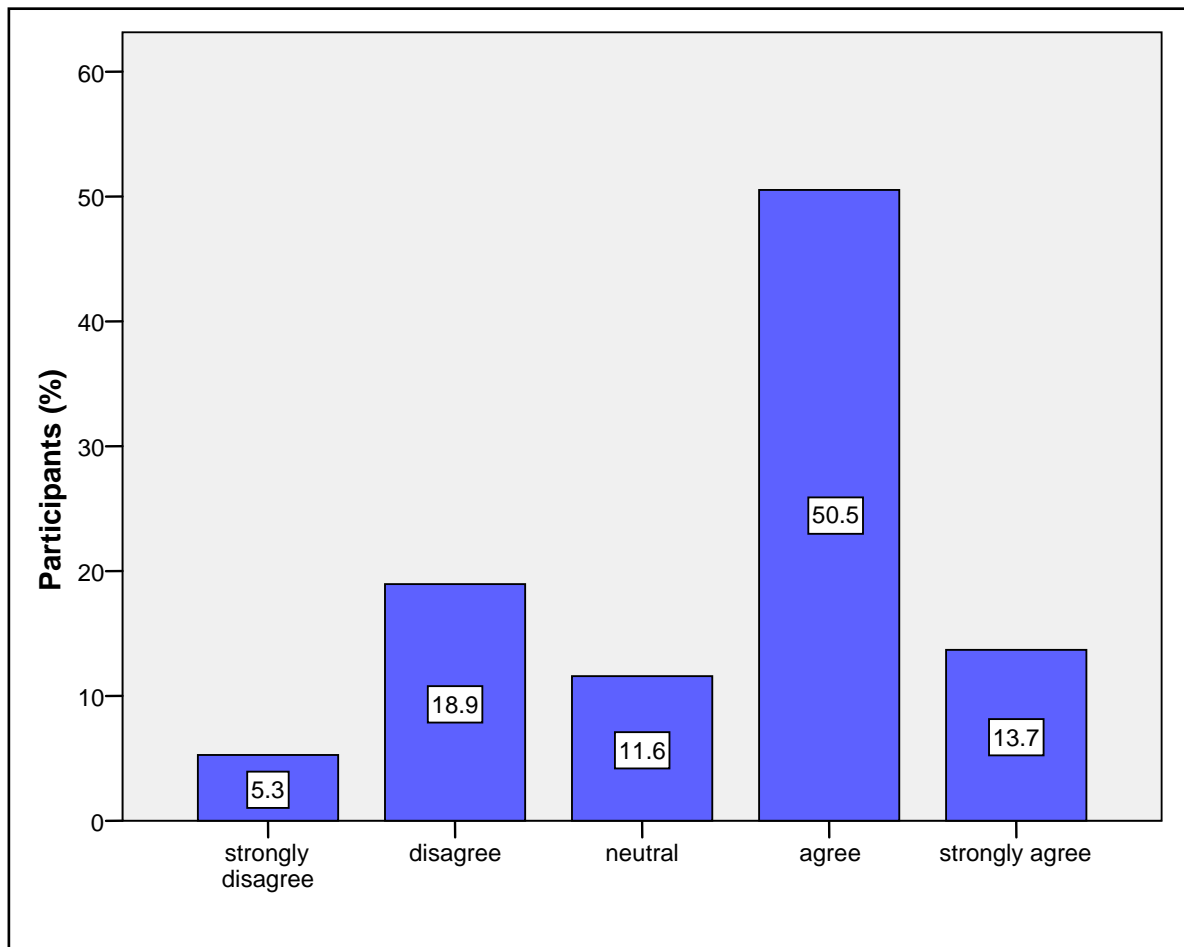


Figure 3: Percentage of participants by level of agreement to the statement, “In general the medical staff of the ED are adequately supervised”

In general, consultants and registrars were reported by participants as being more likely to provide supervision to interns in the ED; 66% indicated that consultants provide most supervision to interns while 55% indicated that most intern supervision is provided by registrars³.

The level of medical staff responsible for supervision of interns was found to vary depending on the shift (Figure 4). Participants reported that during the day and evening shifts, consultants were more likely to supervise interns than registrars. Registrars were, however nominated as being more likely to be responsible for the supervision of interns during night shifts, with 72% of participants indicating that registrars were responsible and 2% indicating that consultants were responsible during these shifts.

³ Data derived from separate questions.

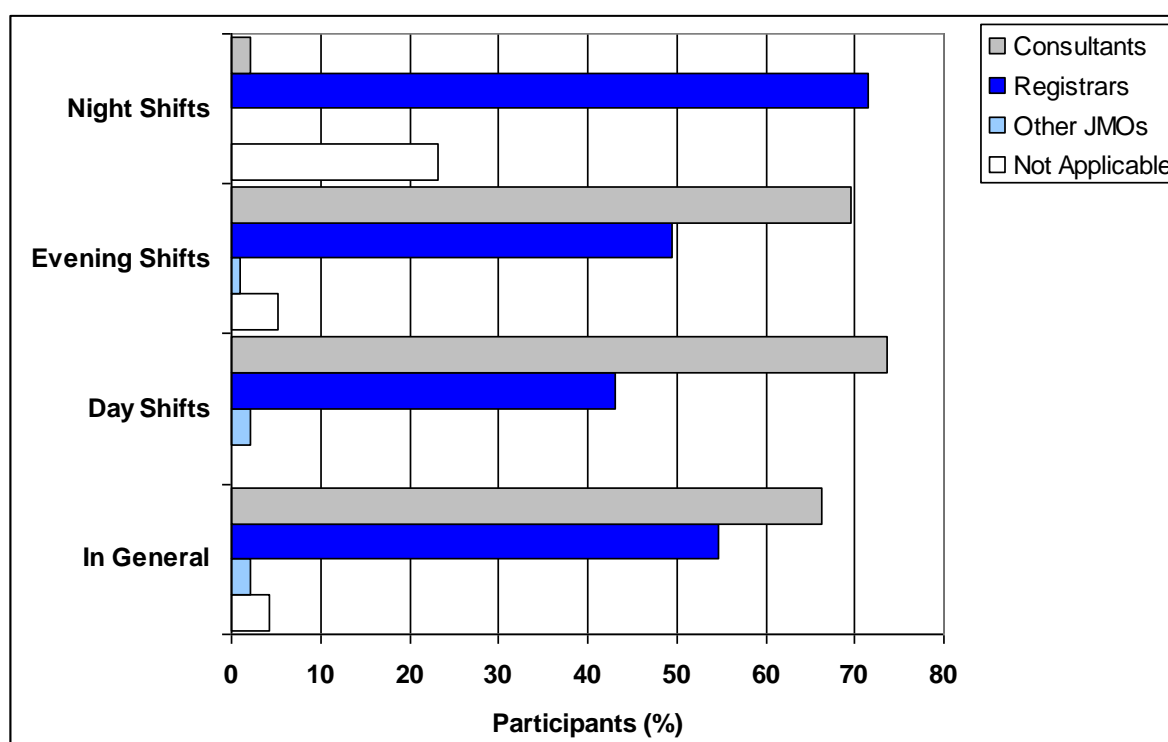


Figure 4. Percentage of participants according to perceived intern supervisory practices in general and across different shifts.

Most (64%) ED Directors and DEMTs agreed/strongly agreed that interns received adequate clinical supervision in the ED (Table 9). Participating Emergency trainees and interns also mostly agreed/strongly agreed (79%) that this was the case (Appendix C, Table C3). A similar result was obtained when analyses were restricted to interns only (Appendix C, Table C3).

Most ED Directors and DEMT also agreed/strongly agreed that adequate clinical supervision was provided to PGY 2,3 or later (69%), emergency trainees (72%) and CMOs (52%). Of those that had pre-registration IMGs on staff, most agreed that they were adequately supervised (Table 9).

Table 9: Number and percentage of ED Directors and DEMTs by level of agreement regarding receipt of adequate clinical supervision by medical staff groups.

| Staff type | N | Strongly disagree | Disagree | Neutral | Agree | Strongly agree | N/A | Don't Know | Total |
|------------------------------|---|-------------------|----------|---------|-------|----------------|------|------------|-------|
| Interns | N | - | 9 | 6 | 32 | 9 | 5 | - | 61 |
| | % | - | 14.8 | 9.8 | 52.5 | 14.8 | 8.2 | - | 100.0 |
| PGY 2, 3 or later | N | 1 | 14 | 3 | 38 | 4 | 1 | - | 61 |
| | % | 1.6 | 23.0 | 4.9 | 62.3 | 6.6 | 1.6 | - | 100.0 |
| Emergency trainees | N | 1 | 6 | 4 | 40 | 4 | 6 | - | 61 |
| | % | 1.6 | 9.8 | 6.6 | 65.6 | 6.6 | 9.8 | - | 100.0 |
| CMOs | N | 1 | 5 | 7 | 31 | - | 16 | - | 60 |
| | % | 1.7 | 8.3 | 11.7 | 51.7 | - | 26.7 | - | 100.0 |
| Pre-registration IMGs | N | 2 | 7 | 1 | 23 | 4 | 21 | 1 | 59 |
| | % | 3.4 | 11.9 | 1.7 | 39 | 6.8 | 35.6 | 1.7 | 100.0 |

When invited to comment about the supervision in their ED participants generated 90 comments which were subsequently categorised into seven themes (Table 10). While the modal response indicated that adequate supervision was in place this represented just 38.9% of responses; other responses were either negative with regard to the level of supervision or identified potential for improvement with more senior staff.

Table 10: Number and percentage of responses about supervision in the ED according to identified theme.

| Theme | Frequency of responses | Percentage of responses |
|---|------------------------|-------------------------|
| Adequate supervision processes in place | 35 | 38.9 |
| Level of supervision decreases during unsocial shifts | 14 | 15.6 |
| Other | 10 | 11.1 |
| Supervision is dependent on service demands | 10 | 11.1 |
| Supervision would improve with more senior medical staff | 9 | 10.0 |
| Overall, Supervision is inadequate | 7 | 7.8 |
| Supervision of pre-registration/middle level medical officers is overlooked | 5 | 5.6 |
| Total | 90 | 100.0 |

Some of the comments about supervision levels in the ED are listed below:

The most common theme with regard to supervision was that an adequate supervision processes in place, with several respondents indicating that this was facilitated by a formal or team-based structure. For example:

"It's a big ED, so having so many people means that you have to get scientific about supervision, have systems and rules in place (e.g. who is supervising who, one supervisor at a time). Not perfect but ok."

"We take supervision very seriously and have only recently revised supervision. We now have a specific person who has a very low patient load and as a result has a much more strengthened role in supervision and provision of advice and service. It is essential that the person who is in charge of the department and flow, has to provide a role where they have no significant patient load, it has taken a long time to get to this but we are starting now."

"[This hospital] is an exception in terms of the amount of supervision. Most other places I have worked at don't have this level of supervision, it can sometimes slow things down things but by and large we are vigilant, if things get busy it is the first thing that suffers, if teaching is included under supervision then it is the first thing to suffer, and they probably don't get the level that they should."

"We have a robust structure not dependent on individuals."

"I think our team based structure is really very good, because there is always an accountable officer, I have worked in EDs where it is every man for themselves and the doctors can work reasonably independently without any one realising that know one is supervising them, so here it is a team based structure, the senior house officers are independent so it is the junior house officers and interns that need to be supported."

Several respondents felt that the level of supervision decreases during unsocial shifts:

"The main issue here is that on night shifts the RMOs (e.g., PGY 2,3,4) are less supervised than they should be."

"During the day shifts [the ED] is well supervised, at night time there is a supervision process where a consultant is on call but sometimes the PGY 2 are in the ED by themselves while there is only one other support available - but at the same time that person might be busy dealing with something else."

"Not enough supervisors and too many people requiring supervision and increasing number of people who require really close supervision with our staffing numbers decreasing weekends are a real problem. Consultant cover is not as good as it used to be and we don't have consultant cover during the entire weekend."

Others felt that supervision was dependent on service demands:

"Because of the level of overcrowding in the EDs and increased patient acuity, even though we try to provide large amounts of supervision, it is not consistent. We have a 30 minute rule: Junior staff have to discuss with senior staff within this time. Because of overcrowding, acuity etc this does not always happen."

"The ED is so busy and we are accessed block so the consultants have to sort out the main part of the ED and supervise the flow so there really isn't enough time to adequately teach and supervise the junior medical staff, to give them the appropriate attention that each doctor deserves. It is very hard for a consultant to run an ED and try and teach someone when it is absolute chaos."

"It is flow dependent, when it is quiet the supervision is better. When busy and senior staff are distracted by multiple nursing requests for assistance and by resuscitation cases or very unwell patients ... the supervision falls off because there is no designated person for supervision and people are left by themselves really, and this is where it falls down.. What happens during these times is that you have more access block because no decisions are being made or patients are given, what we would consider poor advice and the patients just vegetate for hours waiting for something to happen so you have to be very on the ball about grabbing junior doctors at times when it is busy and saying tell me in 5 word or less what is happening and I will tell you what to do."

5.3.2 Provision of feedback

All ED Directors and DEMTs from sites that had interns indicated that interns receive formal feedback during their ED rotation (Table 11). The majority (30/33, 91%) of emergency trainees and interns also agreed/strongly agreed that they receive feedback on their ED Rotation. This was also the case when analyses were restricted to interns only with 14/15 interns agreeing.

Most ED Directors and DEMT agreed that PGY 2,3 or later, emergency trainees and where applicable, pre-registration IMGs receive formal feedback in the ED. Responses varied with regard to feedback provision to CMOs, slightly more disagreed/strongly disagreed that formal feedback was provided (23/61 37.7%) than those who agreed/strongly agreed (17/61, 27.9%) that feedback occurred (Table 11).

Table 11: Number and percentage of ED Directors and DEMENT by level of agreement to statements indicating that feedback is provided to medical staff.

| Staff Type | N | Strongly disagree | Disagree | Neutral | Agree | Strongly agree | N/A | Don't Know | Total |
|--------------------------|---|-------------------|----------|---------|-------|----------------|------|------------|-------|
| Interns | N | 0 | 0 | 0 | 30 | 26 | 5 | 0 | 61 |
| | % | 0.0 | 0.0 | 0.0 | 49.2 | 42.6 | 8.2 | 0.0 | 100 |
| PGY 2, 3+ | N | 1 | 1 | 5 | 37 | 16 | 1 | 0 | 61 |
| | % | 1.6 | 1.6 | 8.2 | 60.7 | 26.2 | 1.6 | 0.0 | 100.0 |
| Advanced trainees | N | 0 | 0 | 0 | 25 | 30 | 6 | 0 | 61 |
| | % | 0.0 | 0.0 | 0.0 | 41.0 | 49.2 | 9.8 | 0.0 | 100.0 |
| CMOs | N | 4 | 19 | 3 | 15 | 3 | 14 | 0 | 58 |
| | % | 6.9 | 32.8 | 5.2 | 25.9 | 5.2 | 24.1 | 0.0 | 100.0 |
| Pre-reg. IMGs | N | 0 | 3 | 0 | 22 | 12 | 18 | 1 | 56 |
| | % | 0.0 | 5.4 | 0.0 | 39.3 | 21.4 | 32.1 | 1.8 | 100.0 |

Seventy-five respondents provided a total of 95 responses regarding the ability to provide feedback to junior staff in the ED. These were categorised post-hoc into one of nine themes (Table 12).

Table 12: Number and percentage of responses regarding the ability to provide feedback to junior staff in the ED according to thematic content

| Theme | Number of responses | Percentage of responses |
|---|---------------------|-------------------------|
| Formalised/structured approach to feedback provision | 34 | 35.8 |
| Informal Feedback provided | 1 | 1.1 |
| Service requirements restrict ability to provide feedback | 10 | 10.5 |
| Feedback concentrates on those who are not meeting standards | 4 | 4.2 |
| Feedback process is inadequate | 14 | 14.7 |
| Pre-registration/middle level medical staff are overlooked | 1 | 1.1 |
| Good Feedback | 23 | 24.2 |
| Consultant driven feedback | 4 | 4.2 |
| Other | 4 | 4.2 |
| Total | 95 | 100.0 |

The most common response regarding feedback to junior medical staff was that a formalised or structured approach is adopted for feedback provision:

"we have a meeting once a month where all consultants can provide feedback and a designate supervisors provides feedback in an interview as well- it is multi-sourced feedback which I think is quite good."

"We have a performance management tool that is being developed by the ED director and the hospital so everybody is performance managed and gets feedback."

"We divide all trainees and non-trainees amongst the consultants so we have dedicated time in our admin time for feedback we discuss them at a senior meeting and it is then feedback to staff, mid term and end of term assessment, as the DENT I do all of the people on the training scheme."

"What I do is a 360 degree assessment, I go to consultants, registrars, to get an appraisal and then I combine it together and sit down with the junior staff member to provide them with the feedback."

Several respondents also indicated that the quality of feedback provided was good:

"Generally it is really good, you get a lot of informal feedback as you go along but I guess as part of an internship you have to get a performance review every rotation, it depends on your consultant, mine has been really supportive and sort of sat down with me and said you have been really good, could improve here and there, but it was really good."

Others felt the feedback process was inadequate or inappropriate:

"There are not enough tools to use for feedback and so on, I would like more training about how to give feedback for staff, you can get frustrated in ED and just tell them off, people need to be trained and skilled to do this in the right way"

"Insufficient- all tied up with the insufficient staff numbers"

I think the current form is flawed, the form is a duffer, there are 2 problems; one is that you don't work with the same person every shift, the supervisors change all the time so what we have implemented over the last couple of years is for each JMO to have a mentor and they provide a commentary on how they perform at a departmental, interpersonal, documentary level and whatever else is required on the form. This is a strategy to try and improve the sensitivity of the observations rather than having the director ticking forms at the end of semester."

"I think that a lot of the feedback when we raise concerns is like a toothless tiger in that you represent your concerns clinically and not a great deal is done about it, in that the system is not built to rehabilitate the flaws of medical staff so the feedback can be a largely pointless... if we raise a clinical concern or something which has not gone well then there is not a lot of support for these circumstances."

Some felt that service requirements restrict the ability to provide feedback:

"It's made significantly more difficult due to significant overcrowding and access block, so it does impact on all of these things, supervision of medical staff in the ED, it has sort of far reaching impacts about workplace flow and work practices which I think impacts on all of those areas which I think would be the primary problem and while we have good set ups in regard to education and supervision, they are all made much more difficult because of overcrowding and access block"

5.3.3 Education provided in the ED

The majority of ED Directors and DEMENT also either agreed or strongly agreed (83.6%) that interns attend formal education session in the ED. Similarly, most emergency trainees and interns also either agreed/strongly agreed (30/35; 88.2%) that they attend or attended such formal education sessions (Table 13).

The majority (83.6%; 51/61) of ED Directors and DEMENT agreed that PGY 2,3 or later attend formal education sessions in the ED. They also mostly agreed or strongly agreed (53/61, 86.9%) that emergency trainees and pre-registration IMGs (32/56; 57%) formal education. Responses regarding the provision of formal education for CMOs were mixed with the modal responses tending toward the negative (strongly disagree/disagree: 39.6%) (Table 13).

Table 13: Number and percentage of ED Directors and DEMENTs by level of agreement to statements that that formal education is provided in the ED to different medical staffing groups

| Staff Type | N | Strongly disagree | Disagree | Neutral | Agree | Strongly agree | N/A | Don't Know | Total |
|--------------------------|---|-------------------|----------|---------|-------|----------------|------|------------|-------|
| Interns | N | 1 | 4 | 0 | 25 | 26 | 5 | 0 | 61 |
| | % | 1.6 | 6.6 | 0.0 | 41.0 | 42.6 | 8.2 | 0.0 | 100.0 |
| PGY 2, 3+ | N | 0 | 6 | 3 | 31 | 20 | 1 | 0 | 61 |
| | % | 0.0 | 9.8 | 4.9 | 50.8 | 32.8 | 1.6 | 0.0 | 100.0 |
| Advanced trainees | N | 0 | 2 | 0 | 25 | 28 | 6 | 0 | 61 |
| | % | 0.0 | 3.3 | 0.0 | 41.0 | 45.9 | 9.8 | 0.0 | 100.0 |
| CMOs | N | 6 | 17 | 3 | 17 | 1 | 14 | 0 | 58 |
| | % | 10.3 | 29.3 | 5.2 | 29.3 | 1.7 | 24.1 | 0.0 | 100.0 |
| Pre- reg. IMGs | N | 0 | 5 | 0 | 22 | 10 | 18 | 1 | 56 |
| | % | 0.0 | 8.9 | 0.0 | 39.3 | 17.9 | 32.1 | 1.8 | 100.0 |

Most participants disagreed/strongly disagreed (68.4%) that interns in the ED are used as service providers with little attention being provided to their learning needs (Figure 5).

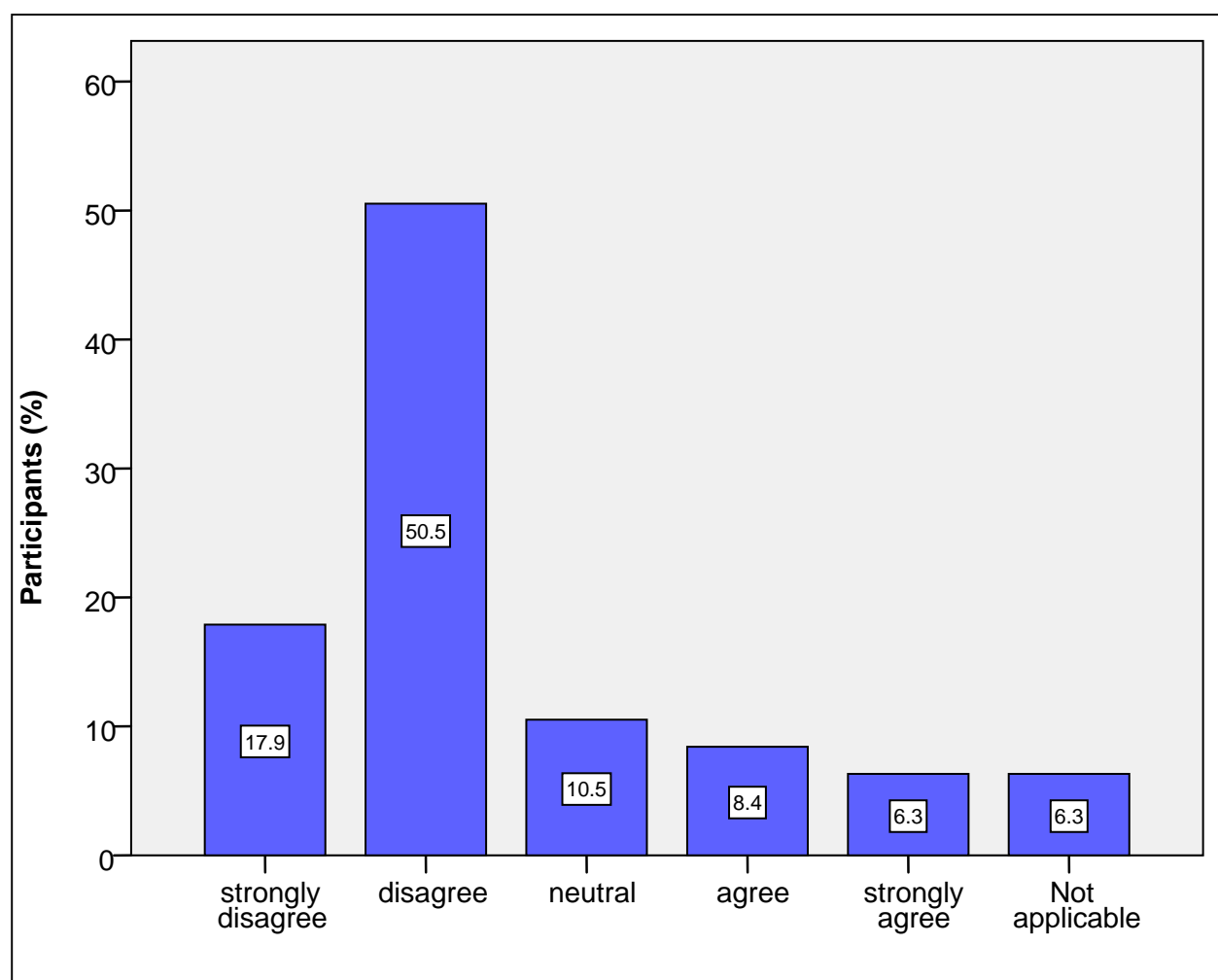


Figure 5: Percentage of participants by level of agreement to the statement, "Interns are used as service providers with little attention to their learning needs"

ED Directors and DEMENTs were also asked whether they thought that other staffing groups were considered as service providers with little attention being given to their learning needs. Most ED directors and DEMENT disagreed with this sentiment with regard to PGY 2,3 or later (65%), emergency trainees (64%) and pre-registration IMGs (50%). By contrast, results for CMOs were mixed with a slight trend towards agreement that CMOs were used as service providers with little attention to their learning needs (Table 14).

Table 14: Number and percentage of ED Directors and DEMENT by level of agreement to statements that specific staff are used as service providers with little attention to their learning needs

| Staff type | N | Strongly disagree | Disagree | Neutral | Agree | Strongly agree | Not applicable | Total |
|------------------------------|------|-------------------|----------|---------|-------|----------------|----------------|-------|
| PGY 2, 3 or later | 6 | 30 | 9 | 11 | 3 | 1 | 0 | 60 |
| | 10.0 | 50.0 | 15.0 | 18.3 | 5.0 | 1.7 | 0.0 | 100.0 |
| Emergency trainees | 11 | 35 | 4 | 3 | 2 | 6 | 0 | 61 |
| | 18.0 | 57.4 | 6.6 | 4.9 | 3.3 | 9.8 | 0.0 | 100.0 |
| CMOs | 3 | 8 | 9 | 18 | 6 | 14 | 0 | 58 |
| | 5.2 | 13.8 | 15.5 | 31.0 | 10.3 | 24.1 | 0.0 | 100.0 |
| Pre-registration IMGs | 4 | 22 | 6 | 2 | 3 | 18 | 1 | 56 |
| | 7.1 | 39.3 | 10.7 | 3.6 | 5.4 | 32.1 | 1.8 | 100.0 |

When asked whether they had any comments about education in the ED, 100 responses were generated by participants. These were classified into nine themes, the most common suggesting that structure or formal approaches to education were present (Table 15).

Table 15: Number and percentage of responses regarding education in the ED according to thematic content

| Themes | N | % |
|---|-----|-------|
| Structured/formal approach to education for ED staff | 28 | 28.0 |
| Adequate education program | 19 | 19.0 |
| Education is dependent on service requirements | 15 | 15.0 |
| Inadequate education opportunities | 12 | 12.0 |
| Other | 10 | 10.0 |
| Education program could be improved | 8 | 8.0 |
| The education requirements for middle to senior staff are overlooked | 4 | 4.0 |
| Formal and informal education provision | 3 | 3.0 |
| Informal Education only | 1 | 1.0 |
| Total | 100 | 100.0 |

Some of the responses comments regarding education are provided verbatim below.

The most common themes related to a structure or formal approach being present:

“We have ED case presentations, grand rounds with uni and specific ED teaching provided by me or another consultant. It can be better but we have something solid in place”

“We have a very structured education program with dedicated and protected teaching time for registrars and Senior house officers and we have daily half hour intern training before every shift, each morning. So the night and day team get education sessions”

"They take us every day at the same time in the afternoon and we get formal teaching the registrars are keen to teach when they get the chance."

"We have a formalised education structure which is delivered under the guidance of a DENT which is very reliable and it is being adhered to and we believe that the education structure that we offer is crucial to our survival as an ED. We place a very high priority on such a structured education proviso. This is one of the things that gives us an advantage for the recruitment of quality junior staff, to be able to do this you have to have the ability to provide quality education, it has to be structured, consistent and being delivered in a way that they can rely on and that is important to us."

Several interviewees reported that an adequate system was in place:

"available if you look for it, you have to ask for it; there are weekly education sessions"

"in general it is good, an ED where consultants and registrars take responsibility for education, it is part of the culture"

Some felt that education was dependent on service requirements:

"ad hoc and structured dependent on how busy you are to be able to get away, the formal teaching was average to poor but the bedside ad-hoc opportunities for teaching were good."

"we have formal education sessions, but hard to make it to them because of shift work (nights), so you can only attend a few each rotation"

"The issue is service provision: getting people off the floor for protected teaching time...when I got here there was no protected formal teaching at all so we implemented 4hrs a week of paid protected time but we found that it bit into the roster so dramatically, so this has been incredibly problematic and very difficult."

"Education in the ED has always been an issue in terms of it conflicting with floor time and the hospital had not supported this because once you take people off the floor it costs too much money etc."

"Education has been compromised because of the work load, a lot has been cancelled in particular bedside education does not happen because of the work load. We get the work the work done as quickly as possible without teaching staff why decisions have been made, this avoids disasters but we have not been able to provide education to senior staff, education is a luxury to them."

5.3.4 Contribution to shifts during un-social hours⁴

The majority (37/61, 61%) of ED Directors and DENTs also disagreed/strongly disagreed that interns do more than their fair share of unsocial hours, in comparison to other groups of medical staff (Table 16). In contrast, just over half of emergency trainees and interns agreed/strongly agreed that they do more than their fair share of unsocial hours (Figure 6).

⁴ For the purpose of the study unsocial hours refer to shifts that occur outside of normal business hours, in particular night and weekend shifts.

Table 16: Number and percentage of ED Directors and DEMTs by level of agreement to statements that particular staffing groups do “more than their fair share of unsocial hours”.

| Staff type | N | Strongly disagree | Disagree | Neutral | Agree | Strongly agree | N/A | Don't Know | Total |
|------------------------------|---|-------------------|----------|---------|-------|----------------|------|------------|-------|
| Interns | N | 5 | 32 | 6 | 9 | 4 | 5 | - | 61 |
| | % | 8.2 | 52.5 | 9.8 | 14.8 | 6.6 | 8.2 | - | 100 |
| PGY 2, 3 or later | N | 2 | 27 | 4 | 16 | 11 | 1 | - | 61 |
| | % | 3.3 | 44.3 | 6.6 | 26.2 | 18.0 | 1.6 | - | 100 |
| Emergency trainees | N | 0 | 21 | 11 | 15 | 8 | 6 | - | 61 |
| | % | 0.0 | 34.4 | 18.0 | 24.6 | 13.1 | 9.8 | - | 100 |
| CMOs | N | 4 | 20 | 4 | 13 | 3 | 14 | - | 58 |
| | % | 6.9 | 34.5 | 6.9 | 22.4 | 5.2 | 24.1 | - | 100 |
| Pre-registration IMGs | N | 1 | 23 | 2 | 8 | 3 | 18 | 1 | 56 |
| | % | 1.8 | 41.1 | 3.6 | 14.3 | 5.4 | 32.1 | 1.8 | 100 |

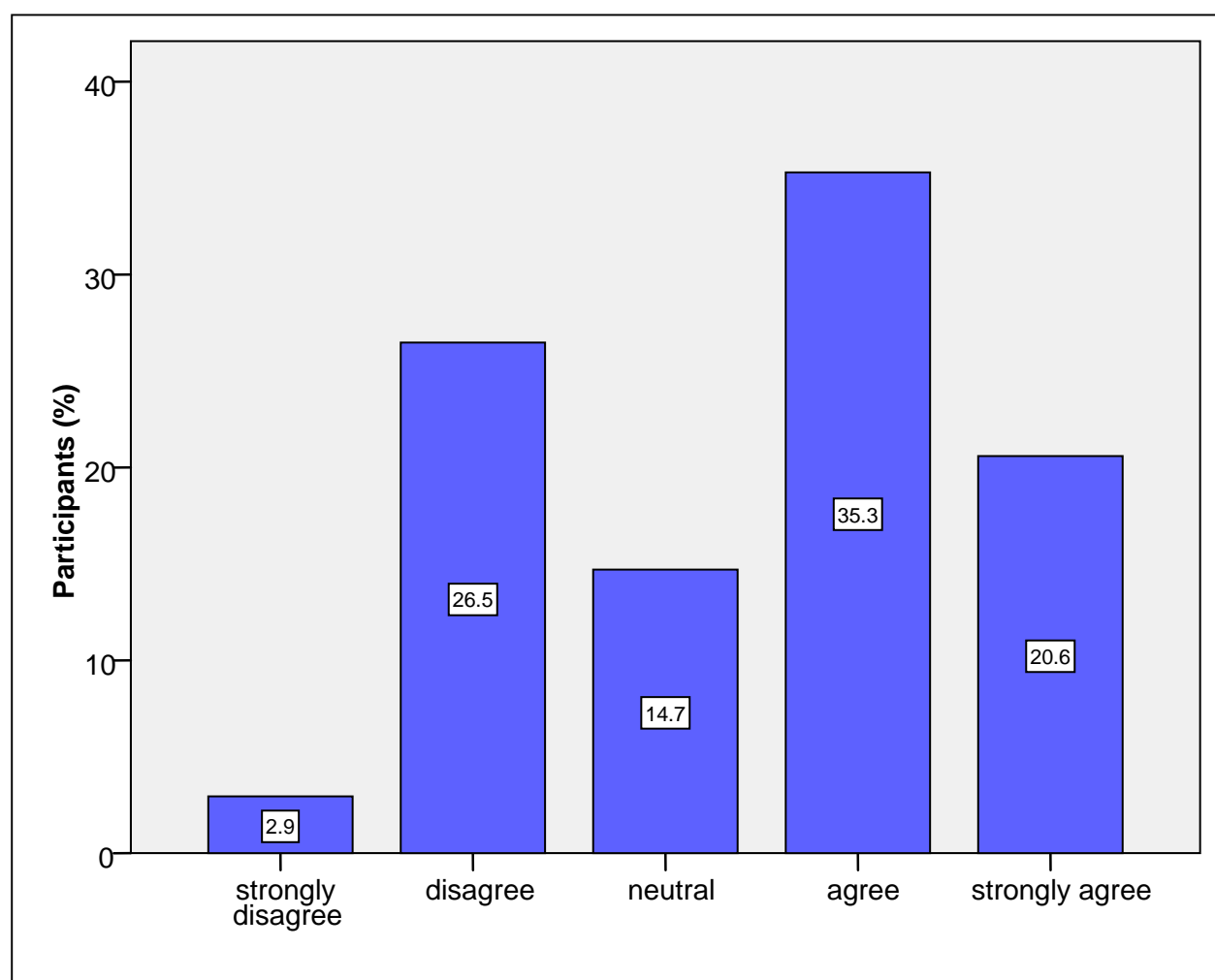


Figure 6: Percentage of emergency trainees and interns by level of agreement to the statement, “I do more than my fair share of unsocial hours in the ED (e.g. nights and weekends)”

ED Directors' and DEMTs' opinions varied regarding the over allocation of shifts involving unsocial hours to other staff to PGY 2,3+, emergency trainees, and CMOs. Most (24/43) of those ED Directors and DEMT that had pre-registration IMGs on staff, disagreed that this staffing group do more of their fair share of unsocial hours (Table 10).

5.3.5 Intern emergency rotation

Most study participants either agreed or strongly agreed that the ED rotation should remain compulsory for full general medical registration (Figure 7). Consistent with this, the majority (14/15, 93%) of participating interns disagreed or strongly disagreed that the ED rotation was not necessary for their training needs and the majority (16/18, 89%) of registrars agreed that the ED rotation was a valuable learning experience for interns (Appendix C, Table C4).

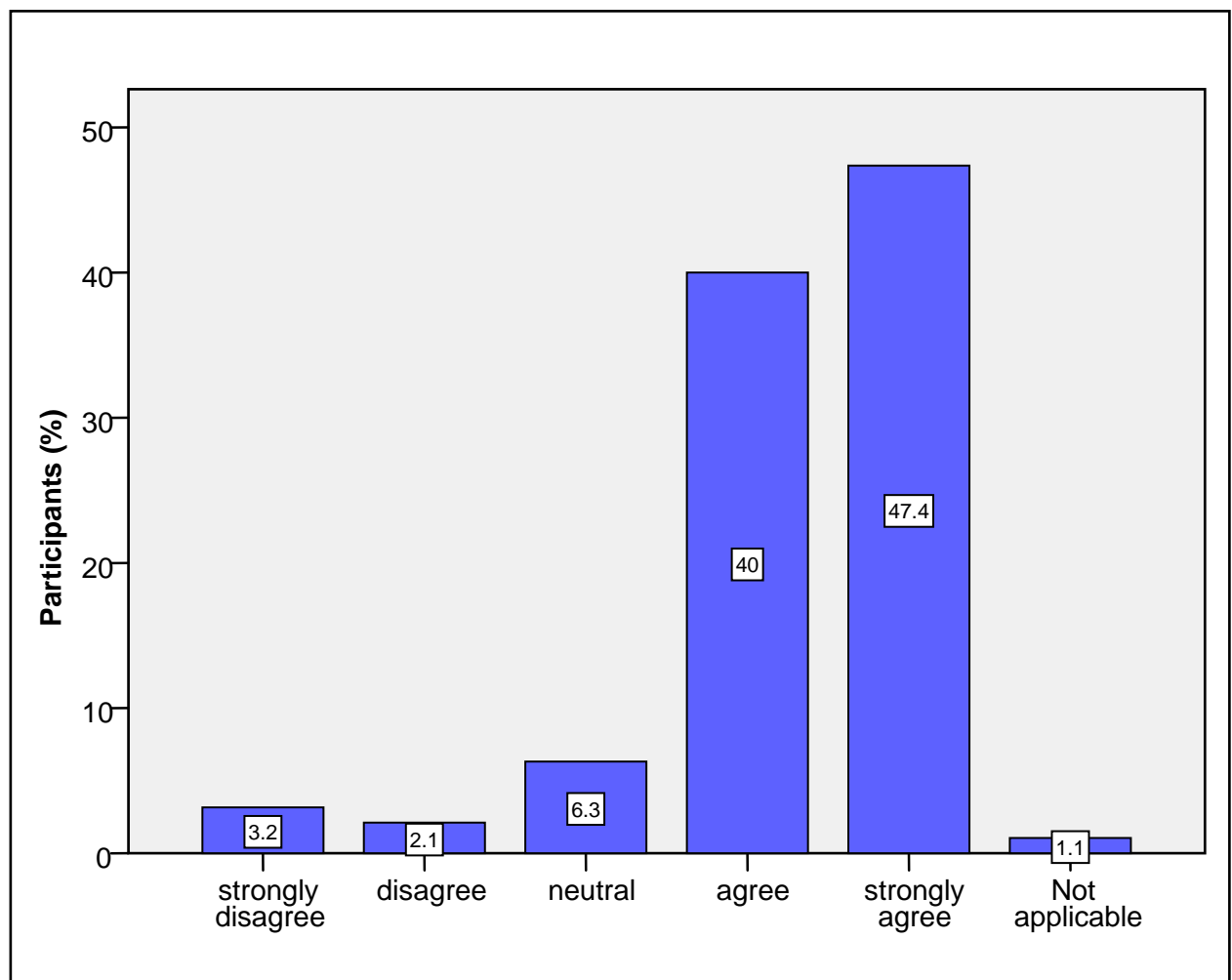


Figure 7: percentage of participants by level of agreement to the statement, “The ED rotation should remain compulsory for full general medical registration”.

While opinions varied amongst ED Directors and DEMENTs about whether interns arrive in the ED adequately prepared by their medical course, the trend was negative with just over 40% disagreeing with this sentiment. Although most (9/15, 60%) participating interns felt that they were adequately prepared by their medical degree for the ED rotation, more than half (9/15) disagreed that they were ready for internship in the ED at the completion of their ED rotation as medical students (Table 17).

Table 17. Number and percentage of Directors, DEMENT or interns by level of agreement to statements regarding readiness for rotations.

| Statement | strongly disagree | disagree | neutral | agree | strongly agree | N/A | Total |
|---|-------------------|----------|---------|-------|----------------|------|-------|
| Interns arrive adequately prepared by their medical course to work in ED* | 6 | 21 | 10 | 18 | 1 | 5 | 61 |
| | 9.8 | 34.4 | 16.4 | 29.5 | 1.6 | 8.2 | 100 |
| At the completion of my ED rotation, as a medical student I felt ready for internship in the ED* | 3 | 6 | 0 | 4 | 0 | 2 | 15 |
| | 20 | 40 | 0 | 26.7 | 0 | 13.3 | 100 |
| My medical degree prepared me adequately for the ED rotation* | 1 | 3 | 2 | 8 | 1 | | 15 |
| | 6.7 | 20 | 13.3 | 53.3 | 6.7 | | 100 |

*interns only

+ ED Directors and DEMENT only

5.3.6 Access to services for junior medical staff

Opinions about the level of access to hospital educators such as Medical Education Officers varied, with few participants indicating that the standard was very good or excellent (Figure 8). A large number (23/95, 15.6%) of interviewees indicated that junior medical staff do not have access to hospital education officers (as indicated by responding not applicable).

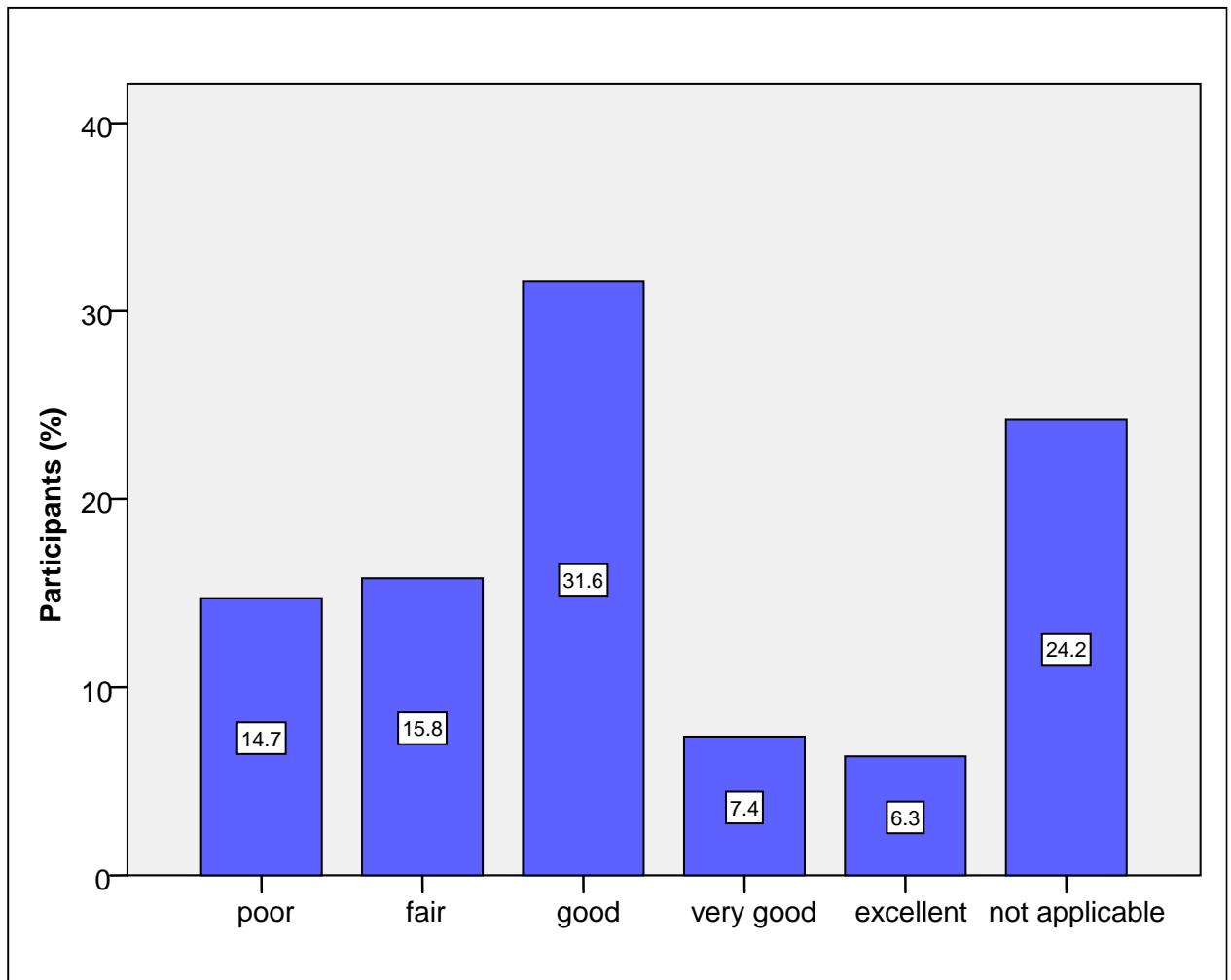


Figure 8: Percentage of participants by rating of perceived junior medical staff access to hospital education officers

The majority of participants felt that junior medical staff had access to ED clinical medical educators to a standard ranging between “good” and “excellent”. While a large proportion of participants indicated a lack of access to clinical medical educators specific to the ED (as indicated by rating “not applicable”), the majority of those that did rate access to these educators as ranging between good and excellent (Figure 9). Of those that responded ‘not applicable’ to rating access of junior medical staff to hospital medical educators, nine (9% of total participants) also responded ‘not applicable’ to ED clinical educators suggesting a lack of access to either.

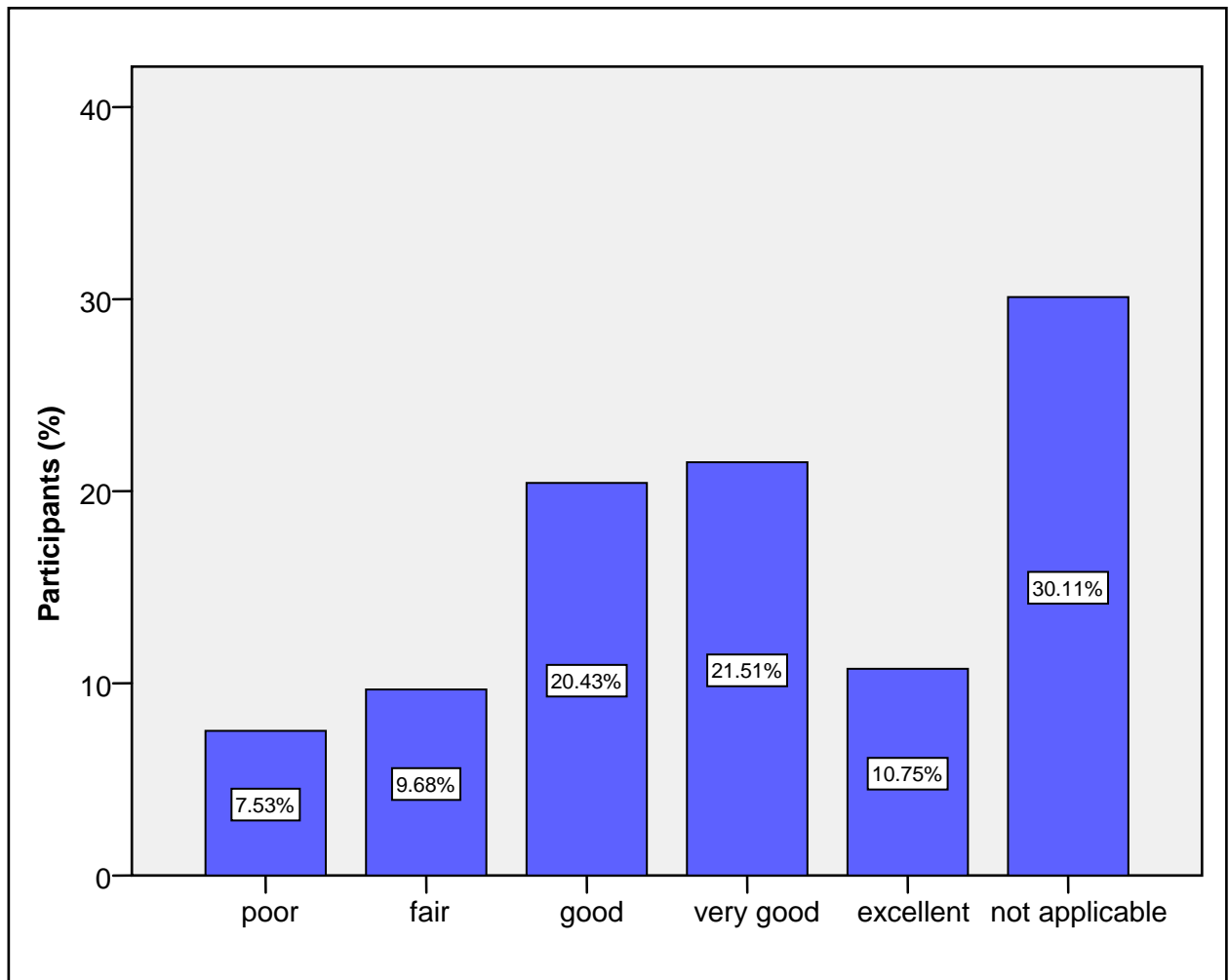


Figure 9: Percentage of participants according to ratings of perceived junior medical staff access to ED clinical medical educators.

Perceived access to support services (pastoral, administrative, human resources) by junior medicals staff was rated to be between poor and fair by the majority of participants (Figure 10).

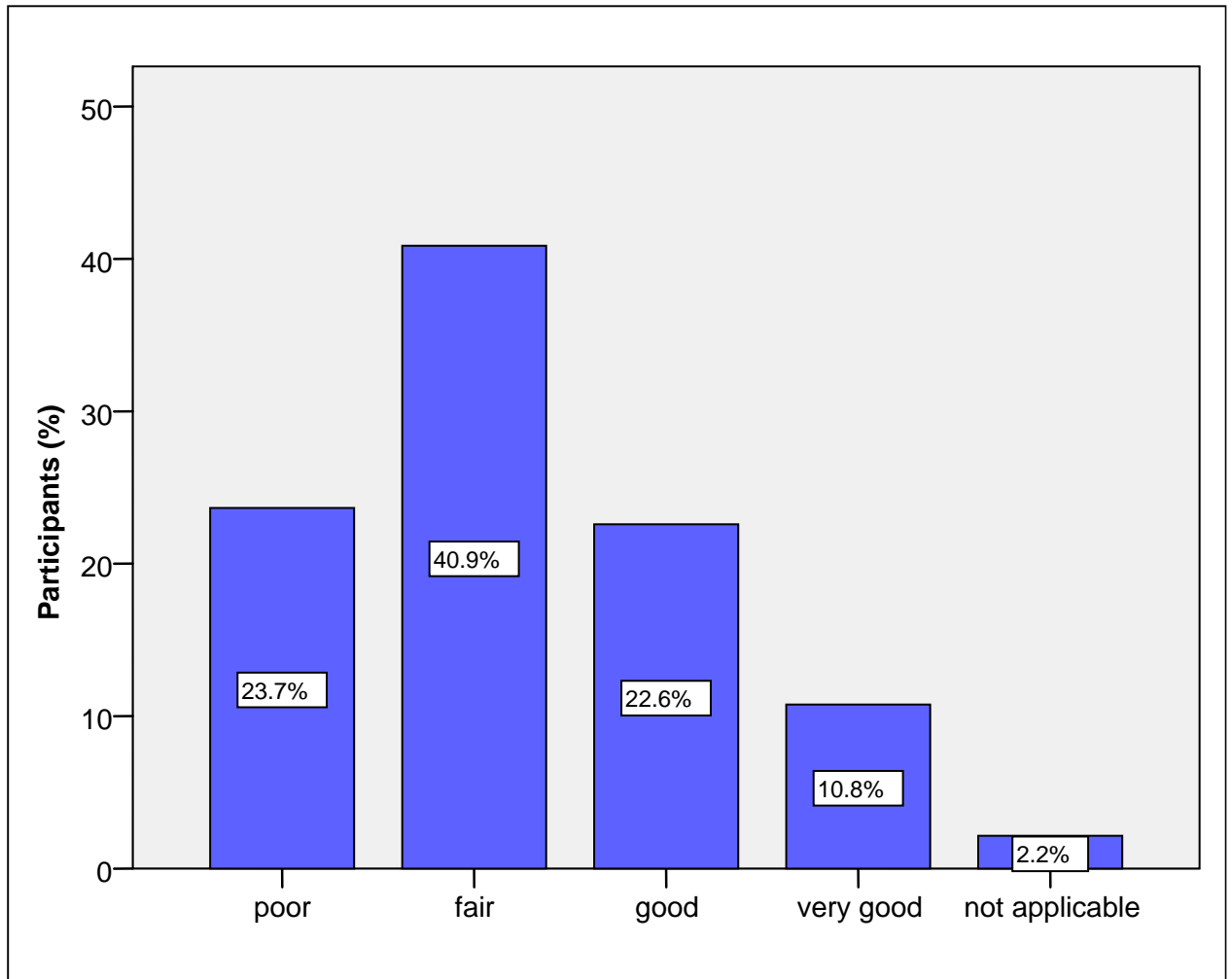


Figure 10: Percentage of participants by rating of perceived junior medical staff access to support services (administration, human resources, and other supports).

5.4 Undergraduate medical teaching in emergency departments

Approximately half of ED Directors and DEMENTs (49.2%; 30/61) indicated that there was a shared curriculum in place between hospital campuses in emergency medicine (Appendix C, Table C5). Based on ED Director and DEMENT reports, the median number of weeks that medical students are formally attached to their ED was 5 (IQR: 3-7.5). The majority (43/61; 70.5%) of ED Directors and DEMENTs, however agreed that the existing ED rotations for medical students were too short (Appendix C, Table C6). The median number of students allocated per rotation was 4 (IQR: 2-7.25). 45.9% (28/61) Directors and DEMENT also indicated that medical students appear in the ED when they are not doing their formal ED rotation (Appendix C, Table C7).

Supervision responsibilities and provision of tutorials for medical students primarily fall to ED consultants (Tables 18 and 19).

Table 18: Number and percentage of responses and respondents according to who is perceived to be responsible for the supervision of medical students in the ED

| Staff Type | N | Percentage of total responses (N=147) | Percentage of total respondents (N=95) |
|--------------------|----|---------------------------------------|--|
| Registrars | 19 | 12.9 | 20.0 |
| Consultants | 43 | 29.3 | 45.3 |
| CMOs | 5 | 3.4 | 5.3 |
| Academics | 2 | 1.4 | 2.1 |

Table 19: Number and percentage of responses and respondents according to which staffing group is perceived to be responsible for providing tutorials to medical students in the ED

| Staff Type | N | Percentage of total responses (N=247) | Percentage of total respondents (N=95) |
|-----------------------|----|---------------------------------------|--|
| Registrars | 11 | 7.5 | 11.6 |
| Consultants | 45 | 30.6 | 47.4 |
| CMOs | 4 | 2.7 | 4.2 |
| Academics | 11 | 7.5 | 11.6 |
| Not applicable | 1 | 1.7 | 1.1 |

With regard to the distribution of payments for having medical students in the ED, the modal response suggested that ED directors were unaware of the way allocation of funds occurred (Table 20).

Table 20: Number and percentage of ED Director and DMT responses and respondents by perceived distribution of payment for having medical students in the ED

| Staff Type | N | Percentage of total responses (N=147) | Percentage of total respondents (N=61) |
|-----------------|----|---------------------------------------|--|
| Don't know | 21 | 14.3 | 34.4 |
| Hospital | 16 | 10.9 | 26.2 |
| No payment | 8 | 5.4 | 13.1 |
| ED Staff | 7 | 4.8 | 11.5 |
| Other | 7 | 4.8 | 11.5 |
| Clinical school | 3 | 2 | 4.9 |
| Supervising GP | 3 | 2 | 4.9 |
| University | 2 | 1.4 | 3.3 |

The majority of all study participants disagreed or strongly disagreed (78.9%) that within their current resources, they would welcome a 70% increase in Medical students (Figure 11). However, most indicated that they would agree or strongly agree (68.4%) to welcoming 70% more medical students if specific resources were allocated (Figure 12).

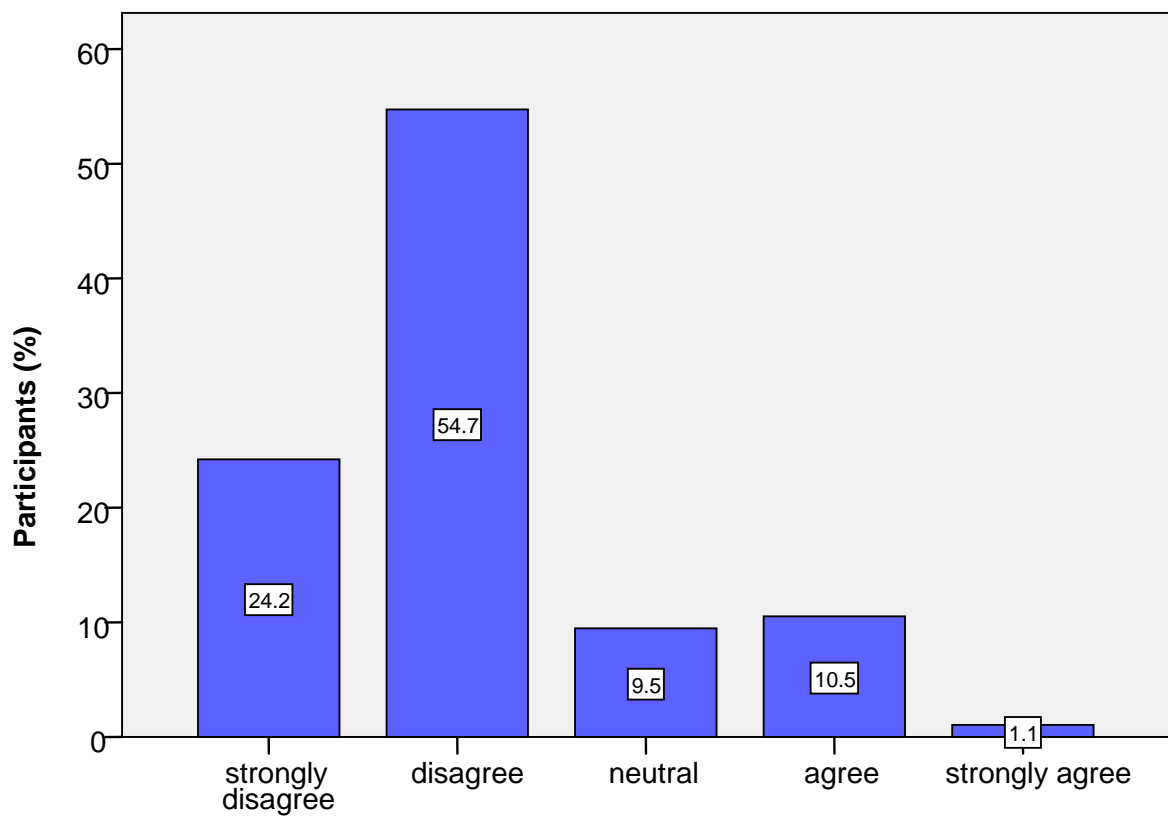


Figure 11: Percentage of participants by level of agreement to the statement “With the current ED resources I would welcome increasing the number of medical students by 70%”.

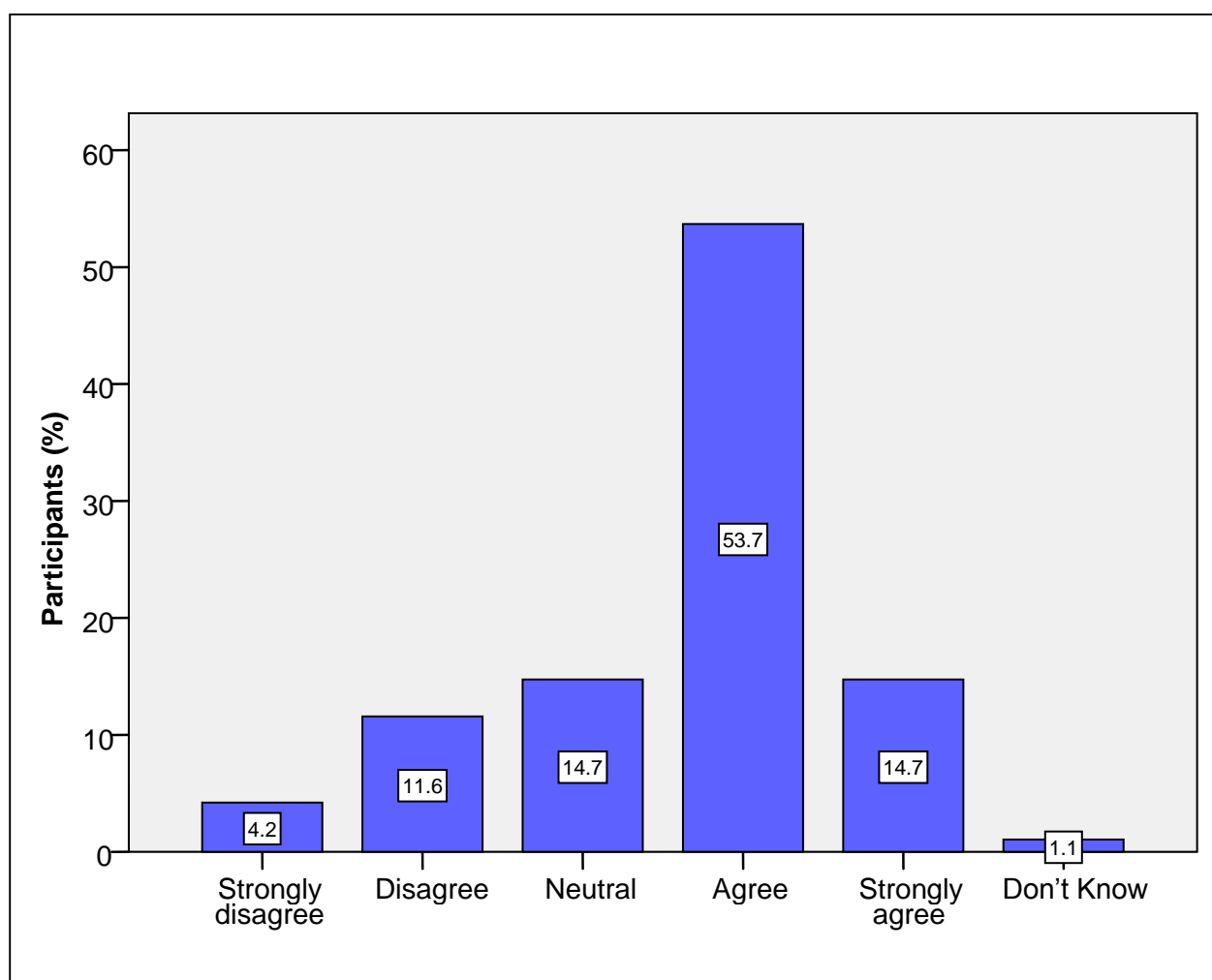


Figure 12: Percentage of participants by level of agreement to the statement “With specific resource allocation, I would welcome increasing the number of medical students by 70%”.

Most participants disagreed or strongly disagreed (50/95; 53) that medical student rotations should be avoided in the absence of specific teaching resources (Table 21). Many qualified their opinion by indicating that despite the frustrations caused by limited resources, the ED rotation remains important for medical student’s learning. Further, the majority (74.8%) of participants supported the concept of having a specific educator for medical students in the ED (Table 21).

Table 21: Number and percentage of participants by level of agreement to statements regarding educational resources for medical student ED Rotations

| Statement | | Strongly disagree | Disagree | Neutral | Agree | Strongly agree | Total |
|---|---|-------------------|----------|---------|-------|----------------|-------|
| Unless specifically resourced to teach and supervise them, medical students shouldn’t do an ED rotation | n | 4 | 46 | 11 | 26 | 8 | 95 |
| | % | 4.2 | 48.4 | 11.6 | 27.4 | 8.4 | 100.0 |
| A specific educator in the ED for medical students is required | n | 0 | 15 | 9 | 51 | 20 | 95 |
| | % | 0.0 | 15.8 | 9.5 | 53.7 | 21.1 | 100.0 |

Most Emergency trainees and interns indicated that they play or will play an active role in teaching medical students in the ED, with 76% (25/33) agreeing with this notion (Appendix C, Table C8). Figure 13 presents the mixed opinions of these interns and emergency trainees about whether or not they have enough time to actually teach medical students in the ED.

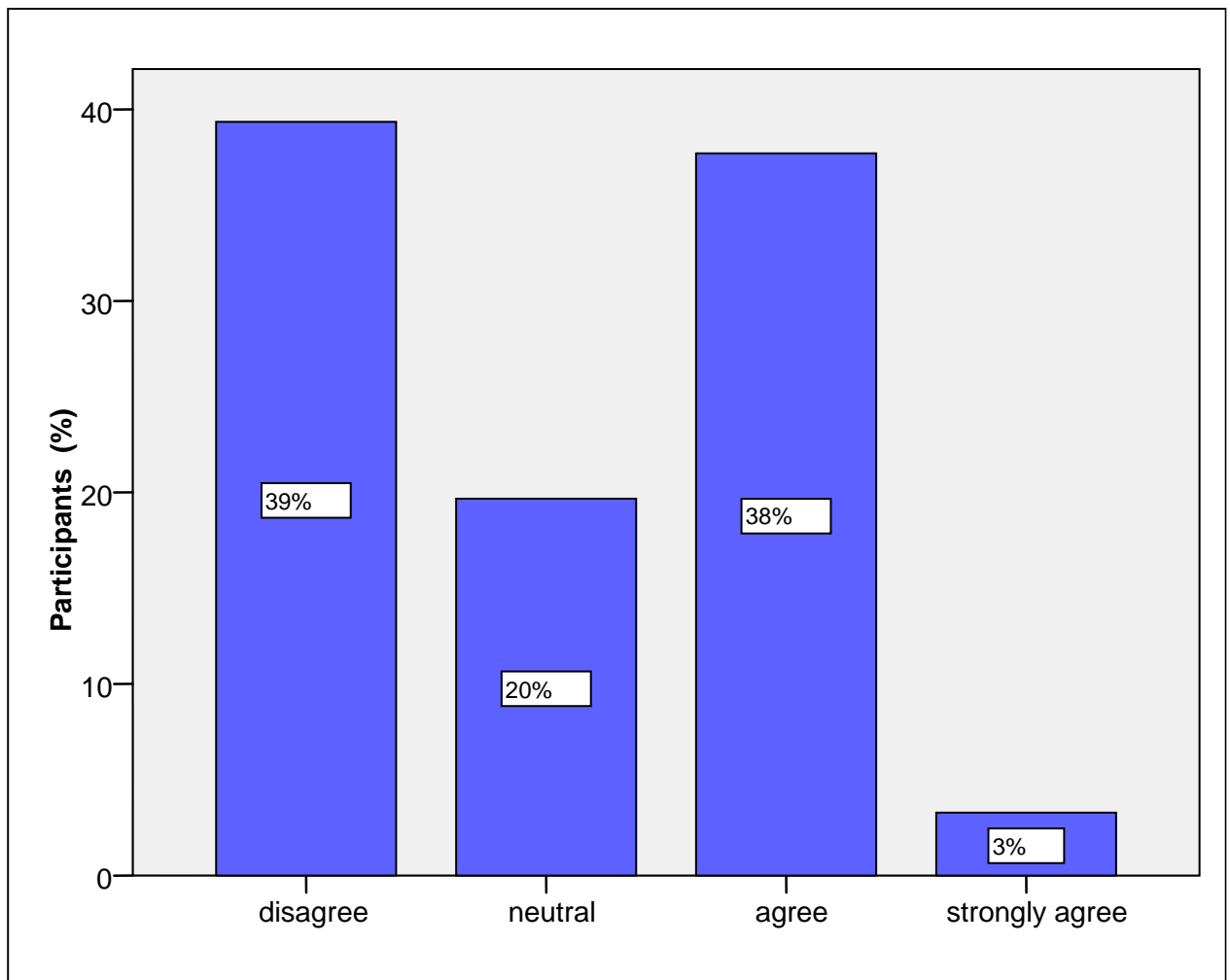


Figure 13: Percentage of emergency trainees and interns by level of agreement to the statement, “I feel I have enough time to teach medical students in the ED” Figures 14 and 15 present the mixed opinions of these medical staff about whether or not they have enough time to actually teach medical students in the ED”.

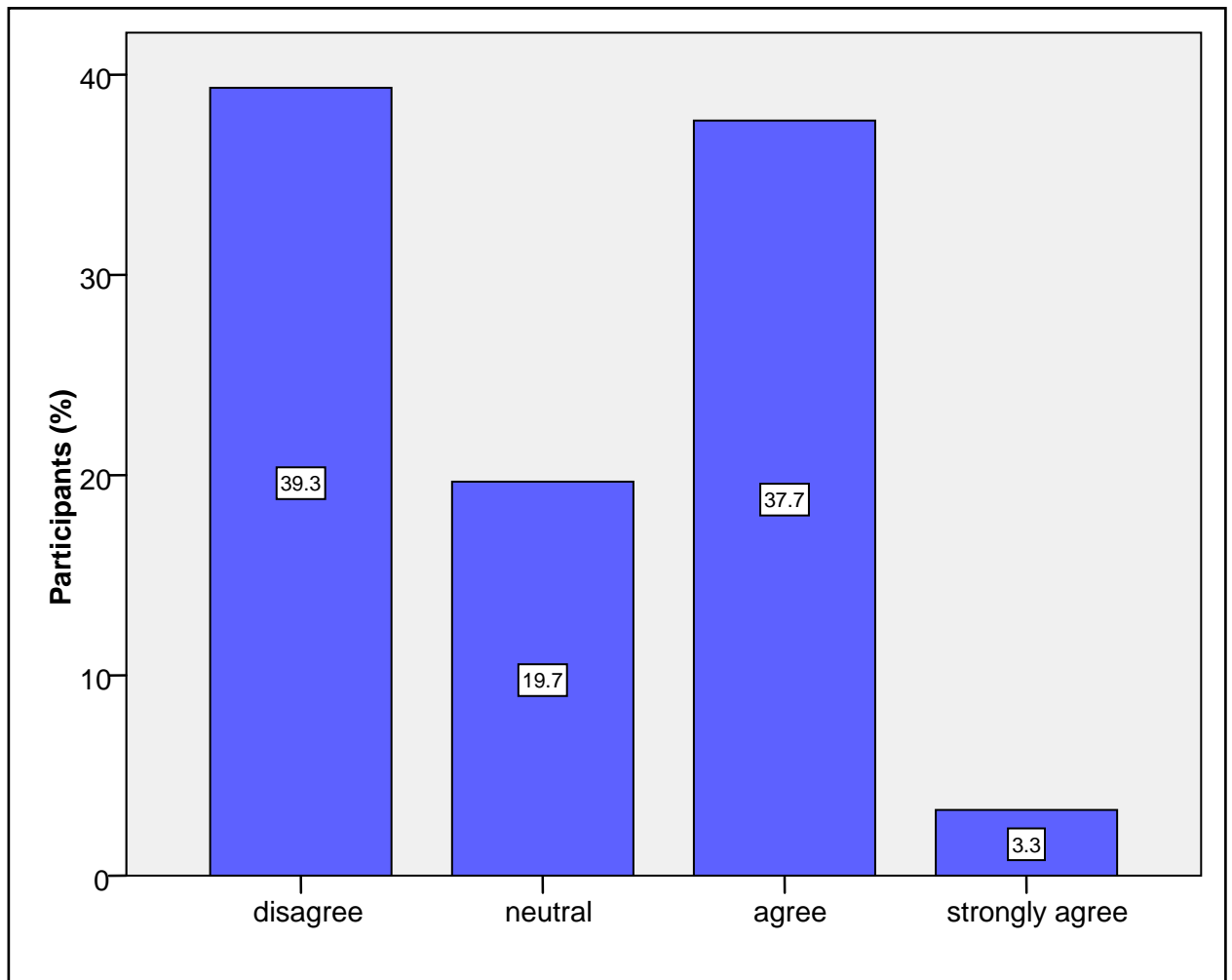


Figure 14: Percentage of ED Directors and DEMTs by level of agreement to the statement *"There is little time to attend to the learning needs of medical students in the ED"*

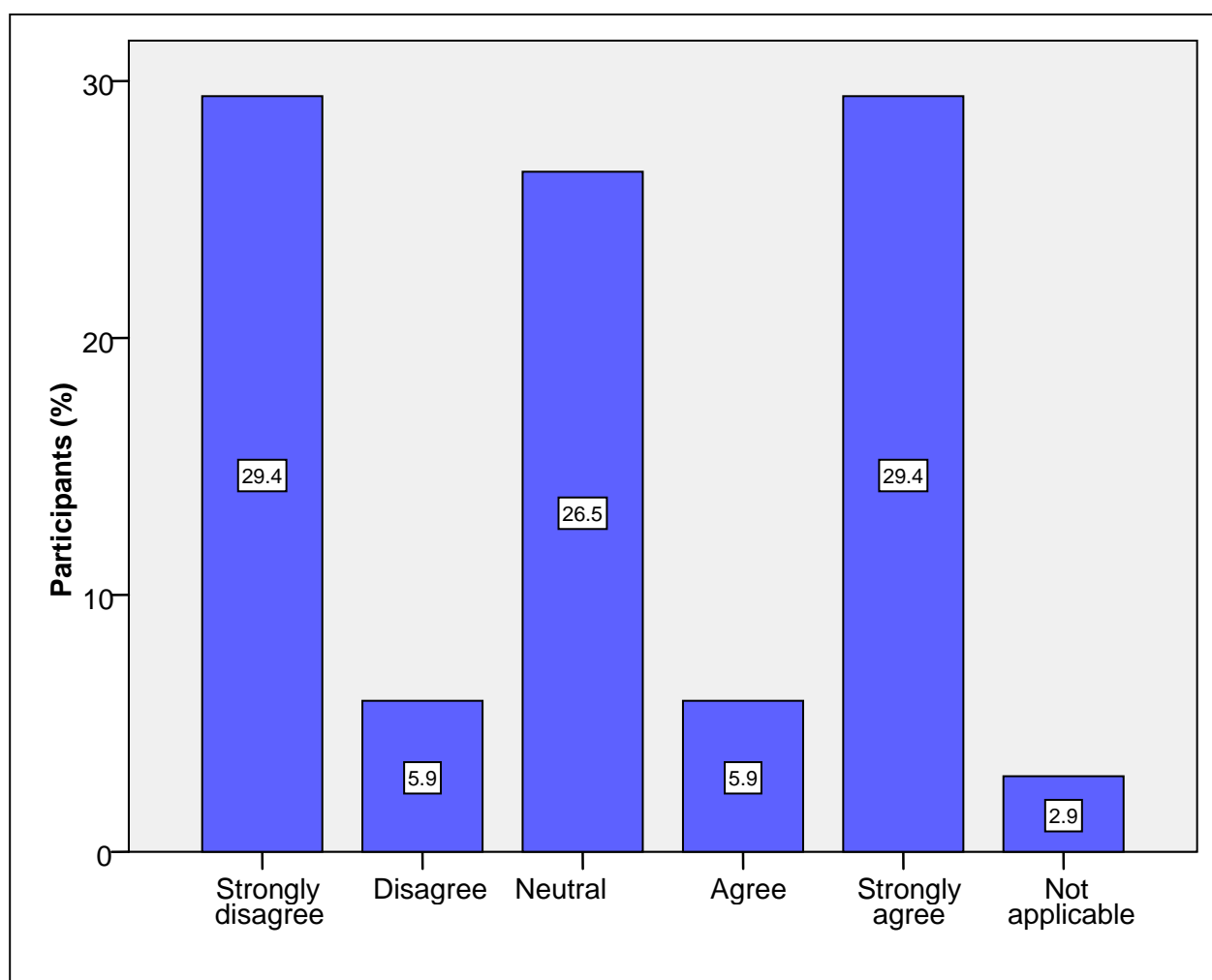


Figure 15: Percentage of emergency trainees and interns by level of agreement to the statement “There was little time for the ED doctors to attend to the learning needs of medical students in the ED”

All but one of the participating ED Directors and DEMTs either agreed or strongly agreed that medical students seem to enjoy their ED rotation. Most (49/61, 80.3%) disagreed/strongly disagreed that medical students detract from patient care (Appendix C, Table C6). In reflecting on their ED rotation when they were medical students most Emergency Trainees and Interns (Australian graduates only) agreed or strongly agreed that they enjoyed the ED rotation (Figure 16). Respondents for whom this statement was ‘not applicable’ completed their under-graduate study outside of Australia.

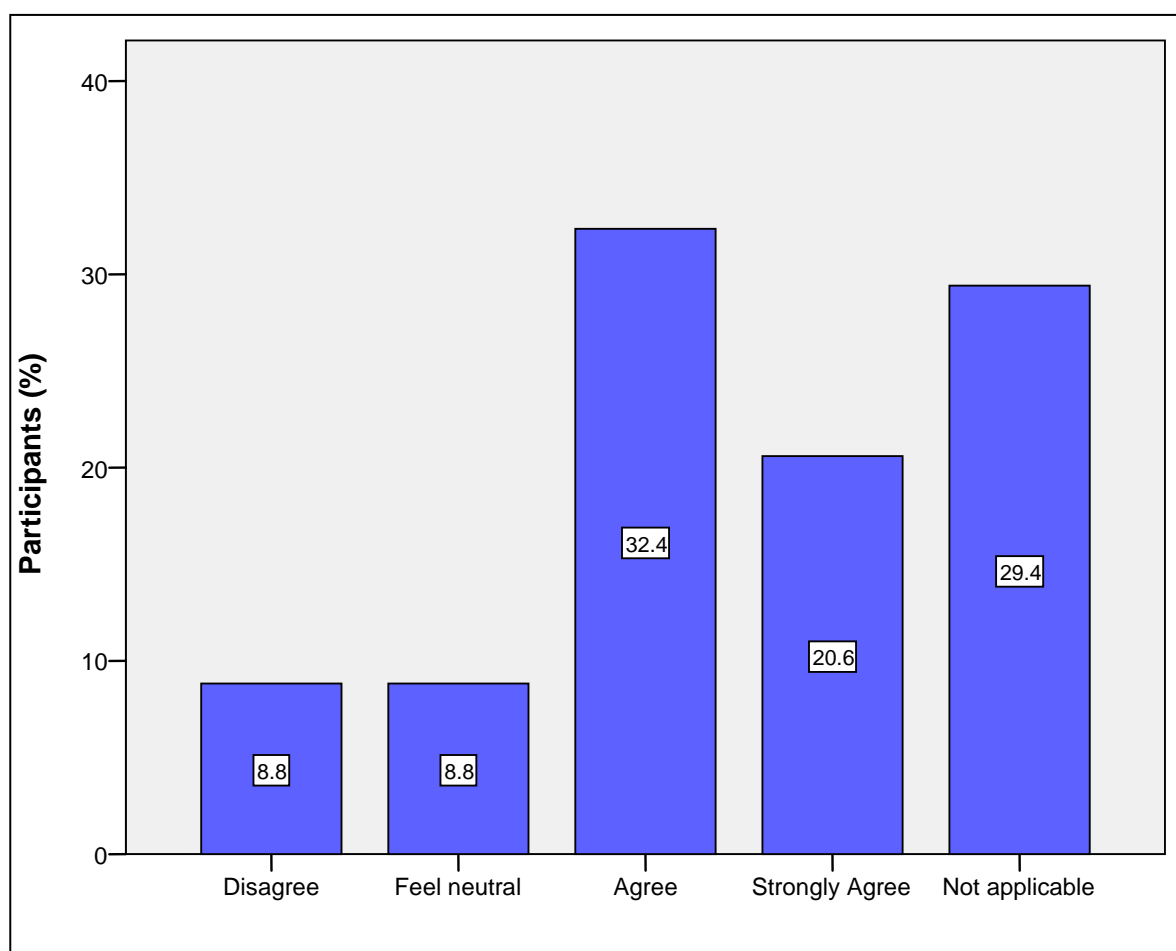


Figure 16: Percentage of emergency trainees and interns by level of agreement to the statement, “As a medical student I enjoyed the ED rotation”

A clear majority of Directors and DEMTs indicated that they disagreed or strongly disagreed (78.7%) that they received regular feedback or contact from Universities about medical students’ ED rotations (Appendix C, Table C6).

Close to half (29/61) of ED Directors and DEMTs disagreed that medical students received feedback at the end of their ED rotation (Appendix C, Table C6). Amongst emergency trainees and interns that completed an ED rotation as a medical student in Australia, most reported receiving feedback (16/23; Appendix C, Table C9). Of this same group of participants all but one disagreed or strongly disagreed that, when they were doing undergraduate rotations, there was a designated area or facility allocated to medical students in the ED (Appendix C, Table C9). Half of this group of medical staff disagreed or strongly disagreed that they felt ready for an internship in the ED at the completion of their ED rotation as a medical student (Appendix C, Table C9).

While most emergency trainees and interns agreed/strongly agreed that they felt welcomed by doctors in the ED as a medical students (13/23) (Appendix C, Table C9), the same proportion disagreed/strongly disagreed that they felt welcomed by nursing staff during this time (Appendix C, Table C9). A similar number

agreed/strongly agreed (14/25) that they felt in the way as a medical students in the ED (Appendix C, Table C9).

5.5 Opinions on having 70% more interns in Australian emergency departments

5.5.1 The impact of a having 70% more interns in the ED

According to reports from ED Directors (DEMTs excluded from analysis), the median “number of interns” typically placed at participating EDs was 5 (IQR 3-7). Four reported having no interns while Directors from four centres reported having 10 or more (Figure 17).

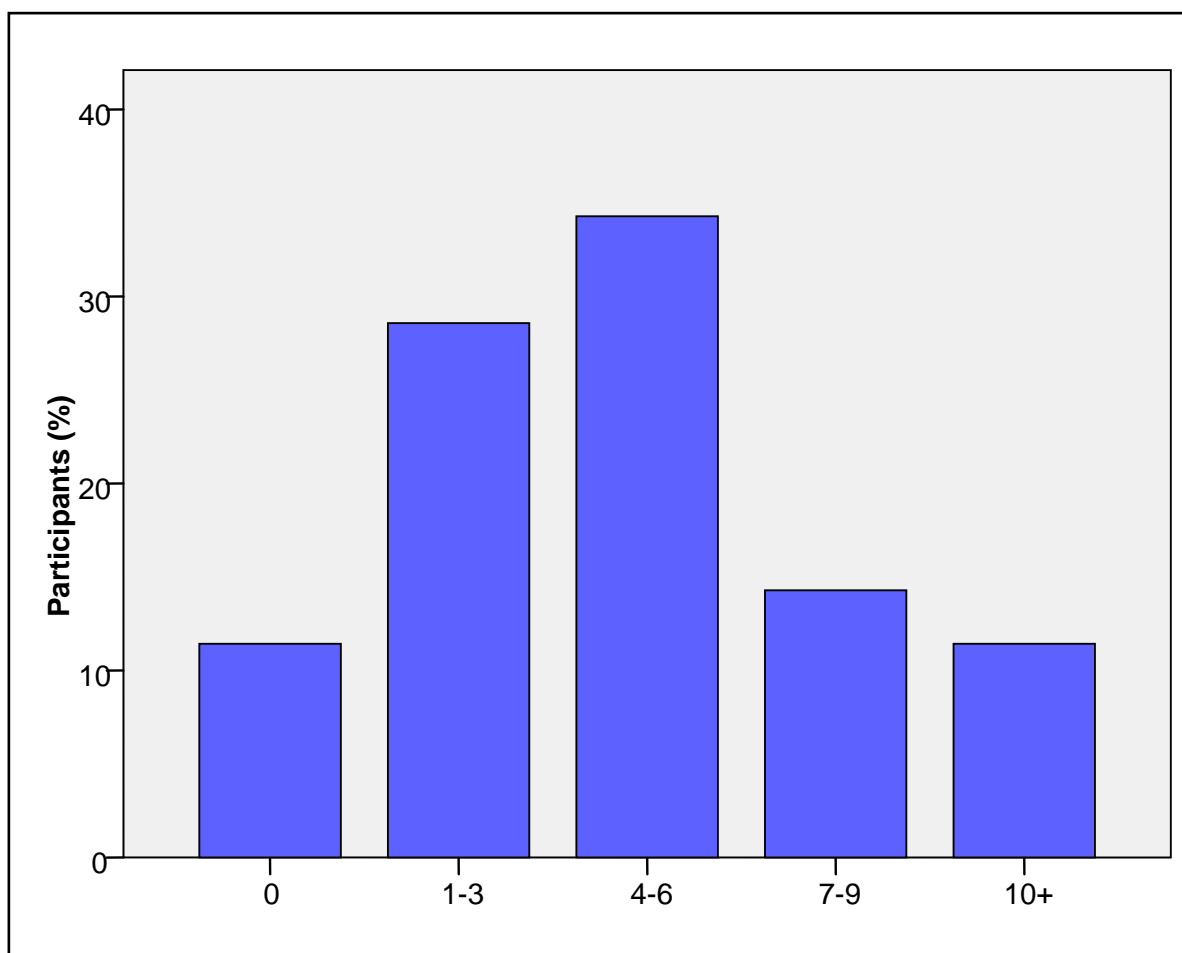


Figure 17: Distribution (%) of the number of interns presently undertaking a rotation in the ED as reported by ED Directors.

The majority of participants either disagreed or strongly disagreed (64/95, 67.4%) that they would like to have 70% more interns in their ED (Figure 18). Most of the ED Directors and DEMTs disagreed/strongly disagreed (43/61, 70.5%) that 70% more interns could be absorbed into the ED without problems. Consistent with this, the majority of participating emergency trainees and interns either strongly disagreed/disagreed (29/34, 85%) that 70% more interns would not affect their ED experience.

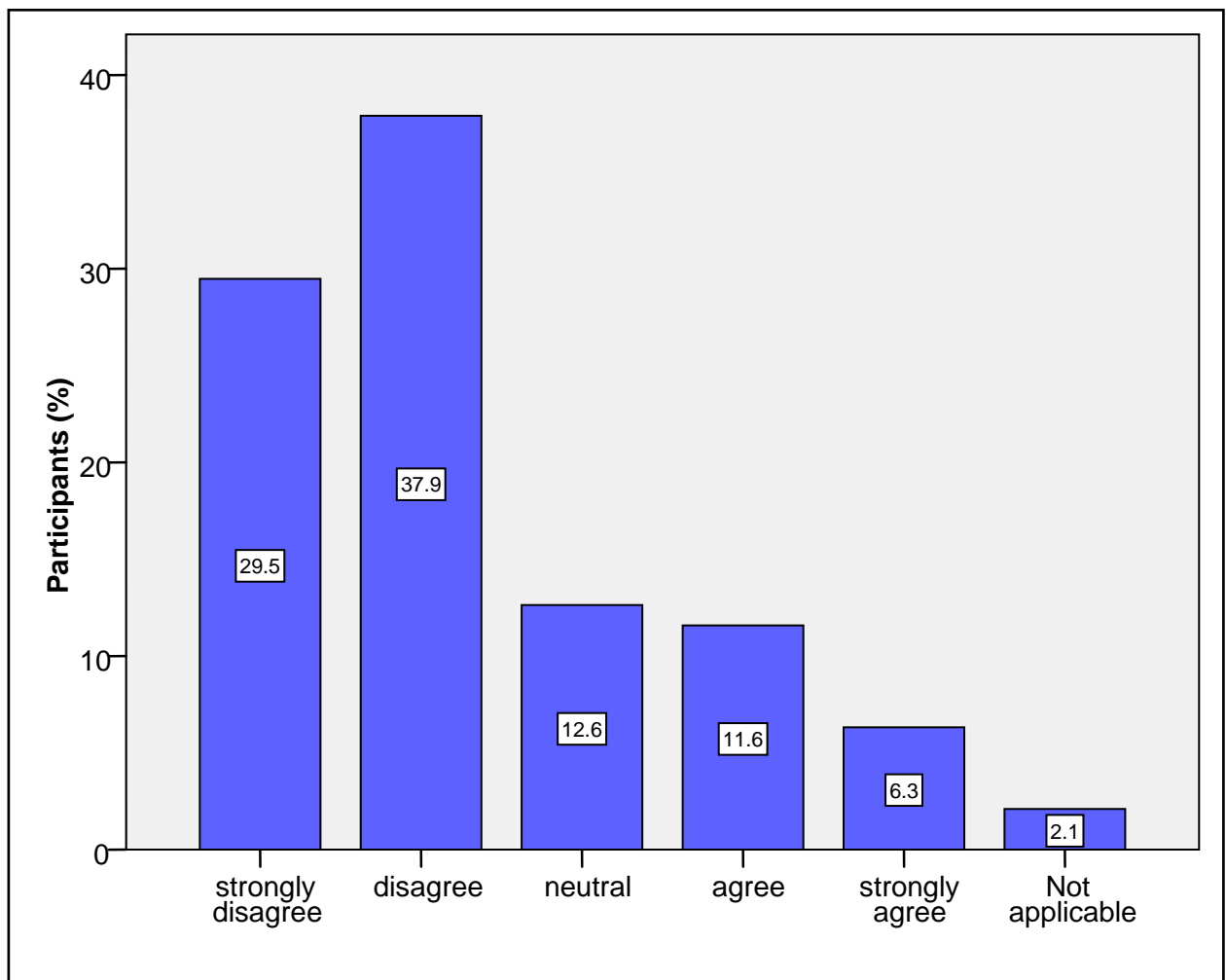


Figure 18: Percentage of participants by level of agreement to the statement, “I would like to have 70% more interns in the ED.”

Participants were asked to indicate what percentage increase in interns the ED would be able to manage without making any changes. The median response of all participants was 25% (IQR=0-37.5). Responses were fairly consistent across staffing groups (ED Directors and DEMENTs: median=25 IQR=0-36; emergency trainees: median=22.5 IQR=0-34; interns: median=25 IQR=25-50).

Participants from EDs located in provincial settings nominated a preference for a greater increase in interns compared to those from EDs in the city metropolitan area. There was, however a substantial degree of variability in this data (Table 22).

Table 22: Median (IQR) percentage increase in intern numbers by setting that would be able to be managed in the ED without making any changes.

| ED Setting | Median (IQR) |
|--------------|----------------|
| City | 25 (0-43) |
| Metropolitan | 20 (0-25) |
| Provincial | 27.5 (6.25-70) |

While the data obtained according to region were variable due to the low sample size, the trend was that fewer interns could be managed in Queensland and New South Wales when compared to other regions (Table 23).

Table 23. Median (IQR) percentage increase in interns that could be managed without making changes as perceived by participants.

| STATE | Median (IQR) |
|-------|------------------|
| ACT | 25 (10-50) |
| NSW | 5 (0-25) |
| QLD | 0 (0-25) |
| SA | 25 (0-37.5) |
| NT | 26.25 (18.75-50) |
| VIC | 37.5 (25-70) |
| WA | 27.5 (0-100) |
| TAS | 25 (10-85) |

Since approximately 30% of participating EDs had fewer than four interns, subgroup analyses were undertaken for the percentage of interns that could be accepted based on the current number of interns. The (median) percentage increase considered acceptable was fairly consistent for those with fewer than six interns (Table 24).

Table 24. Median % increase in interns that could be accepted without changes to ED according to pre-existing numbers of interns

| Current Number of interns | Median (IQR) [%] |
|---------------------------|------------------|
| 0 | 25 (0-29) |
| 1-3 | 25 (0-100) |
| 4-6 | 26.25 (3.25-65) |
| 7-9 | 5 (0-21.25) |
| 10_ | 0 (0-25) |

Most participants were negative about the impact that increasing interns would have on the standard of care provided in the ED. The majority either disagreed or strongly disagreed (70/95, 73.7%) that having more interns in the ED would decrease the total time patients spend in the ED (Appendix C, Table C10). Further, the majority of participants either agreed or strongly agreed (71/94, 75.5%) that having more interns in the ED would actually slow down processes in the ED due to their supervisory and orientation requirements (Appendix C, Table C10). While most (57.4%) disagreed that having 70% more interns in the ED would decrease the time patients wait to be seen by a doctor, several respondents were in agreement with this notion (Figure 19).

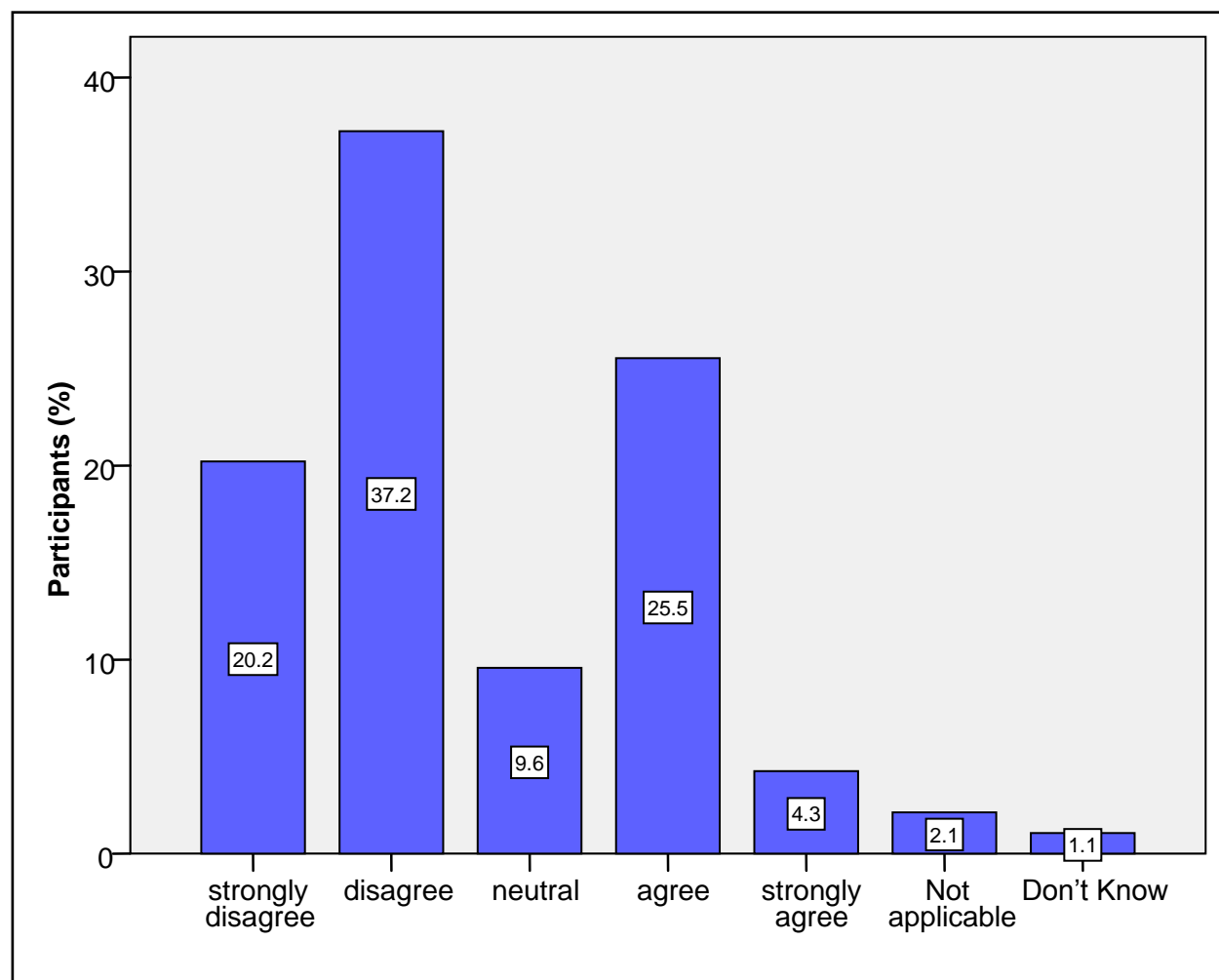


Figure 19: Percentage of interviewees by level of agreement with the statement, “Having 70% more interns will decrease the time patients wait to be seen by a doctor”

The majority of participants agreed (76.8%) that it would be difficult to cope with the increase of 70% more interns with existing support staff (for example, administration, human resources, pastoral care and other supports) (Appendix C, Table C10).

More than half the interviewees disagreed (67/95, 70.5%) that 70% more interns would improve the standard of care provided in the ED (Appendix C, Table C10). It was felt that increasing interns would not solve medical resource problems, with the majority of participants disagreeing (43/95, 45.3%) or strongly disagreeing (38/95, 40%) that such issues could be solved through increased intern numbers (Appendix C, Table C10).

Most respondents disagreed (“strongly disagree”, “disagree”) or were neutral when presented with the statement that “high turnover will negatively impact on team building in the ED” (Figure 20).

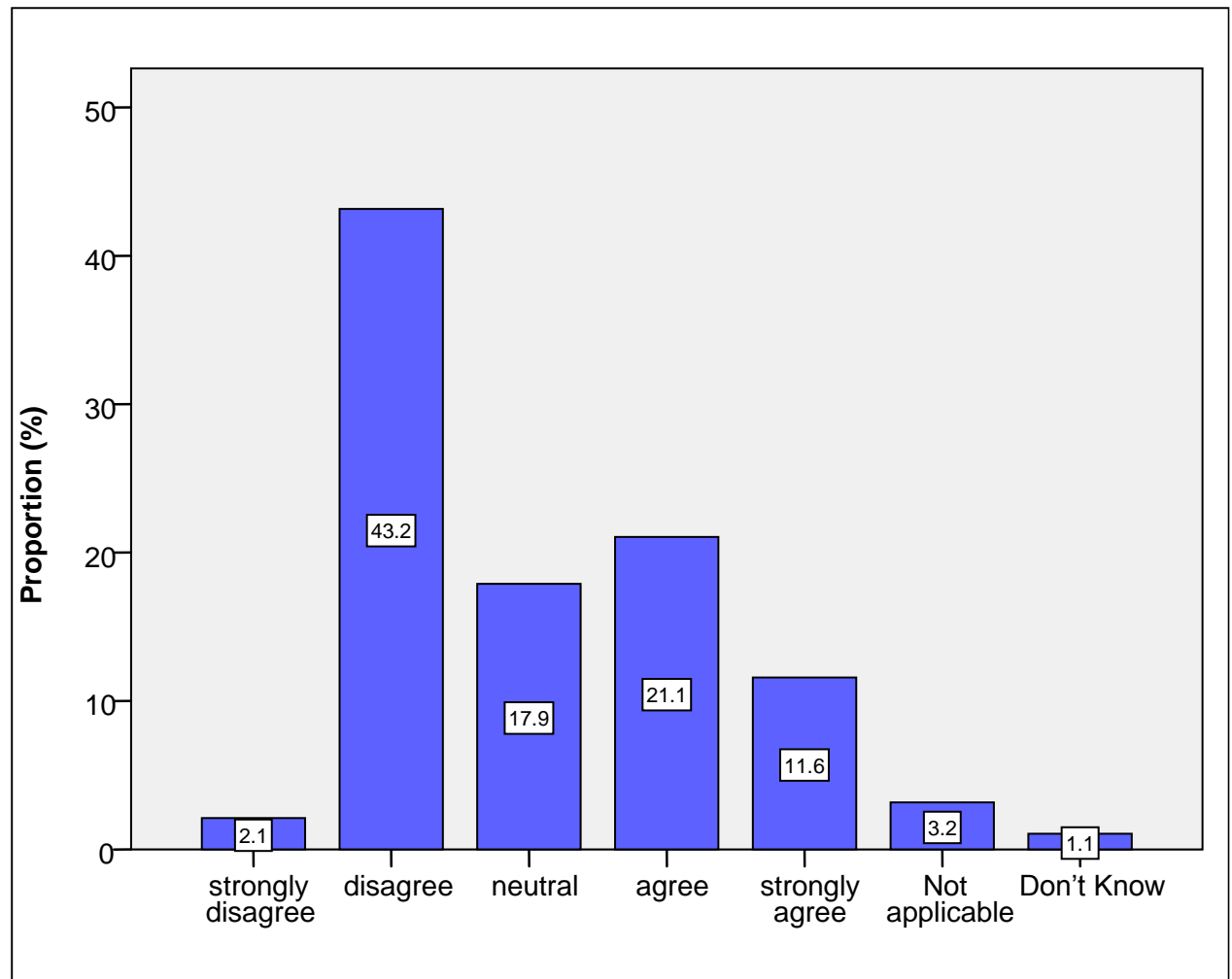


Figure 20: Percentage of interviewees by level of agreement with the statement, “The high turnover of interns will impact negatively on team building in the ED”.

The impact of an increased number of interns on the learning experiences of junior staff was explored. Opinions were polarised regarding the impact of having 70% more interns on interns' exposure to clinical cases (Table 25). By contrast, participants were more likely to agree/strongly agree (56/95, 58.9%) that the increase in interns would decrease interns' exposure to procedures. Having insufficient patients to provide learning experiences for interns did not appear to be a concern for ED Directors and DEMENTs; the majority disagreed that more patients would be required to maintain the learning experience for medical staff at current levels (33/61, 54.1%; Figure 21).

The majority of participants agreed or strongly agreed that it would be difficult to cope with the increase of 70% more interns with existing educational staff (Figure 22).

Table 25: Number and percentage of participants by level of agreement to statements that having 70% more interns would significantly decrease interns' exposure to clinical cases and procedures.

| | N | strongly disagree | disagree | neutral | agree | strongly agree | Not applicable | Total |
|-----------------------|---|-------------------|----------|---------|-------|----------------|----------------|-------|
| Clinical cases | n | 4 | 36 | 15 | 30 | 7 | 3 | 95 |
| | % | 4.2 | 37.9 | 15.8 | 31.6 | 7.4 | 3.2 | 100 |
| Procedures | n | 1 | 27 | 8 | 45 | 11 | 3 | 95 |
| | % | 1.1 | 28.4 | 8.4 | 47.4 | 11.6 | 3.2 | 100.0 |

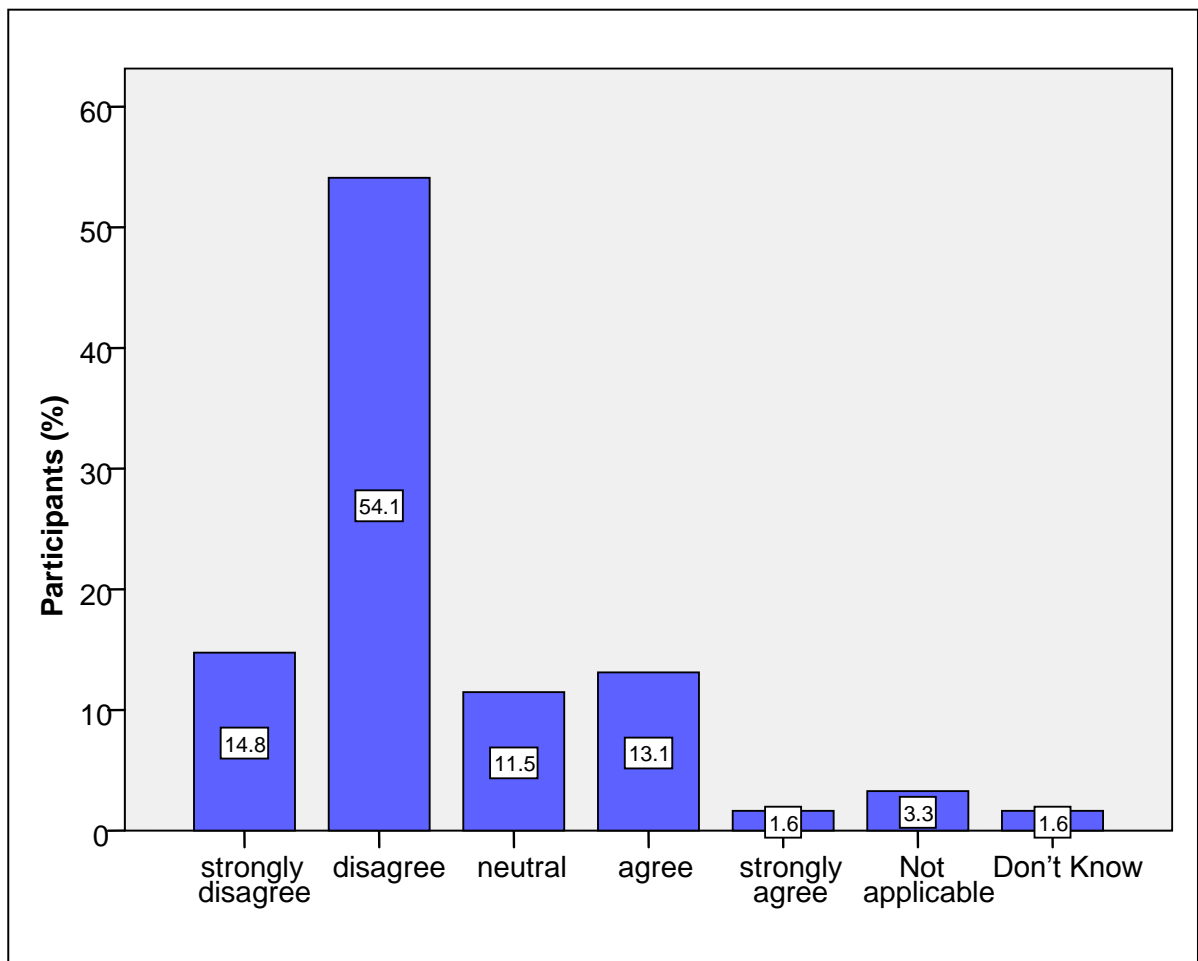


Figure 21: Percentage of ED Directors and DMT by level of agreement to the statement, "more patients will be required to maintain the learning experiences for staff".

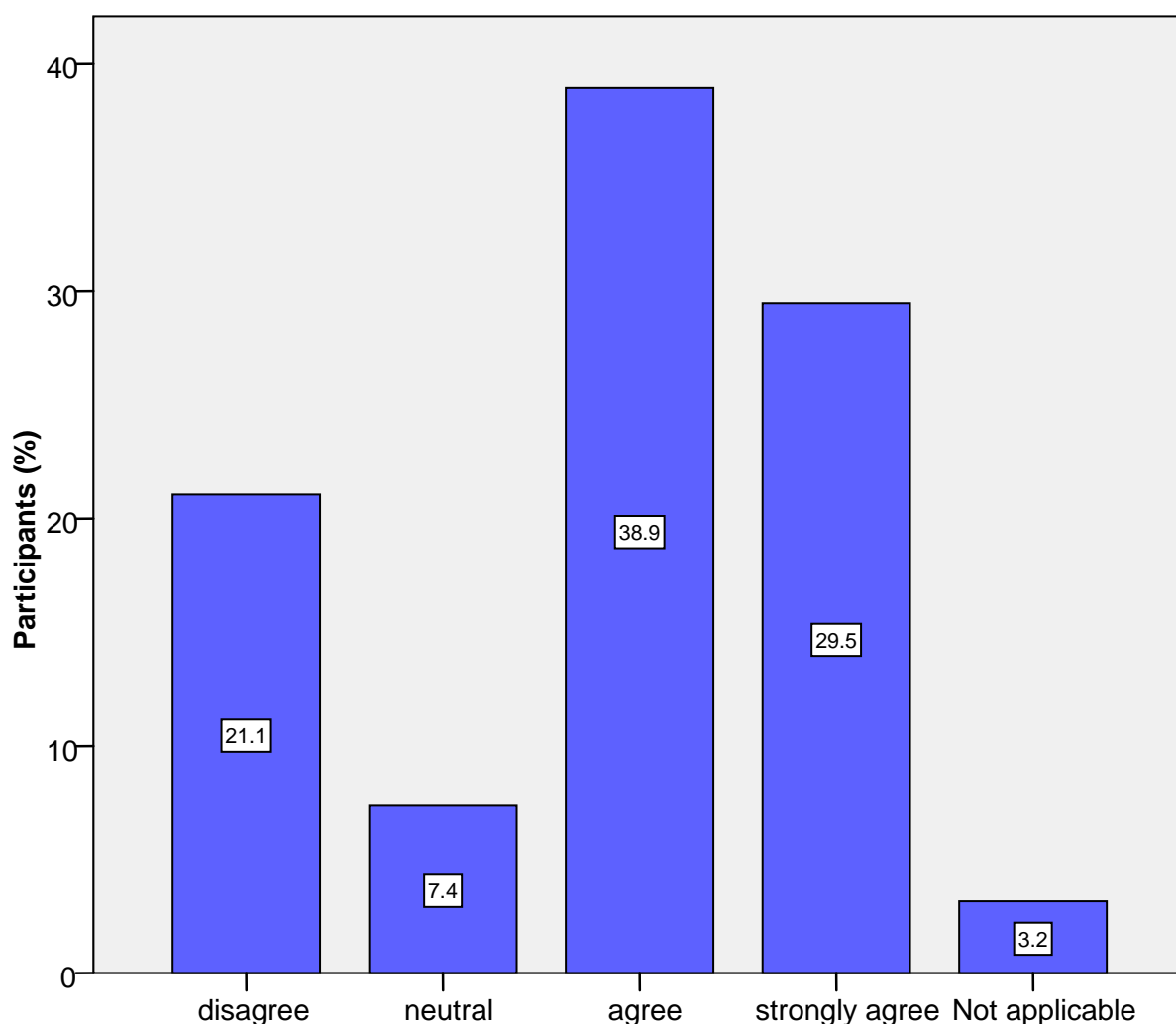


Figure 22: Percentage of participants by level of agreement to the statement, “It will be difficult to cope with the increase of 70% more interns with existing educational staff”

The data presented in Table 26 indicates that participants felt that the supervision of increased numbers of interns would be an issue. Most participants either strongly agreed or agreed that it would be difficult for existing numbers of consultants and registrars to supervise 70% more interns (Consultants: 76/95, 80%; Registrars: 81/95, 85.2%).

Table 26: Number and percentage of participants by level of agreement to the statements “It would be difficult for the existing number of consultants/registrar to supervise 70% more interns”

| Supervising staff | N | Disagree | neutral | agree | strongly agree | Not applicable | Don't know | Total |
|--------------------|---|----------|---------|-------|----------------|----------------|------------|-------|
| Consultants | n | 11 | 4 | 31 | 45 | 3 | 1 | 95 |
| | % | 11.6 | 4.2 | 32.6 | 47.4 | 3.2 | 1.1 | 100 |
| Registrars | n | 10 | 9 | 31 | 40 | 5 | 0 | 95 |
| | % | 10.5 | 9.5 | 32.6 | 42.1 | 5.3 | 0.0 | 100 |

Figure 23 demonstrates participants' opinions as to whether the increase in interns would have adversely affect the teaching of medical students. Opinions were varied although the majority agreed that this would be the case.

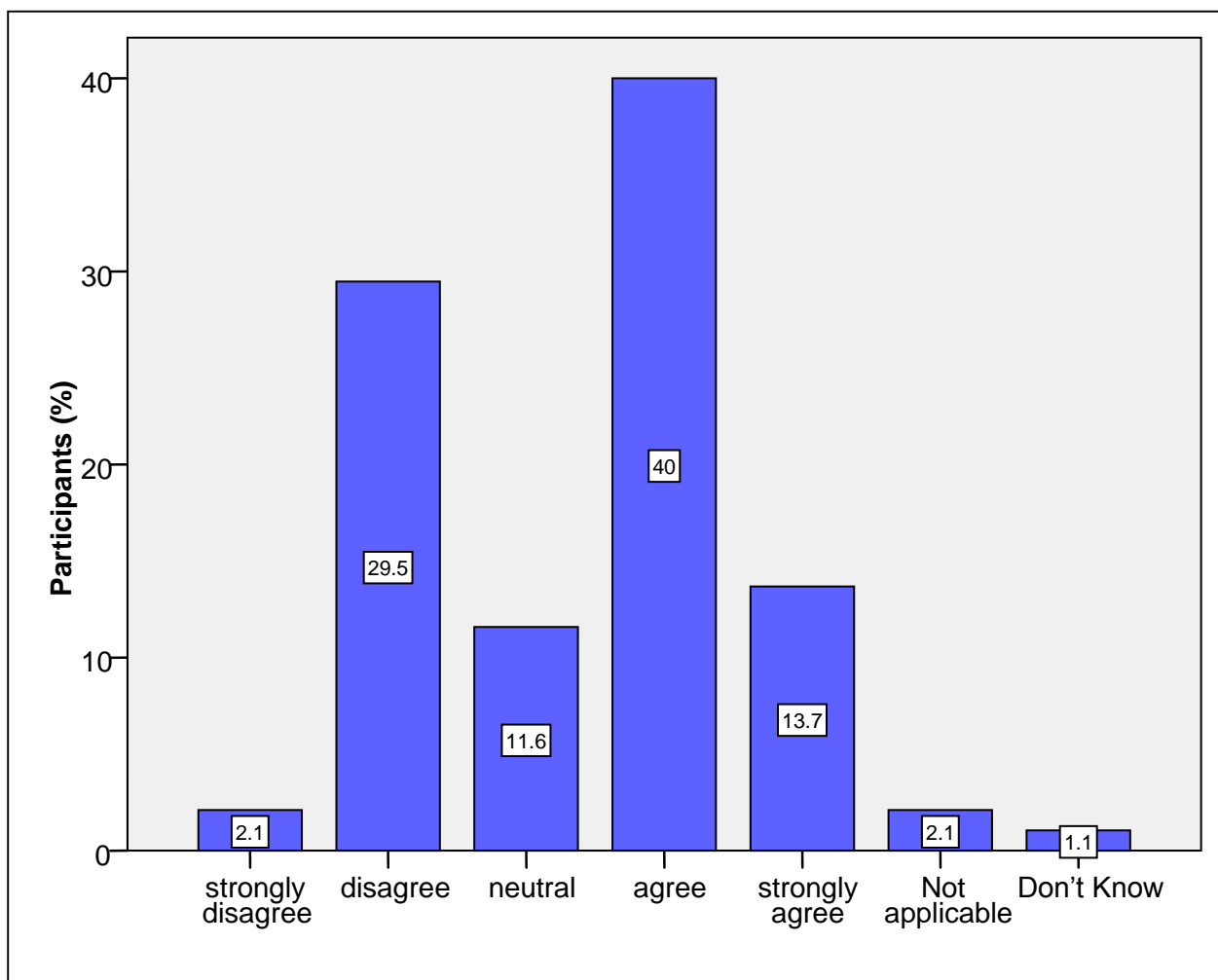


Figure 23: Percentage of participants by level of agreement to the statement, “With 70% more interns medical student teaching will be adversely affected”.

5.5.1 The impact of having 70% more medical students in the ED

Most ED Directors and DEMENT were of the opinion that they would not be able to sustain an increase of 70% more medical students rotating through their department. Seventy-seven percent (47/61) either disagreed or strongly disagreed that they would be able to increase the number of students per rotation in emergency medicine by 70% without difficulty (Table 27). Similar results were obtained with regard to the ability to increase the number of rotations per year of medical students by 70% (Table 27).

Table 27: Number and percentage of ED Directors and DEMENTs by level of agreement to statements regarding the ability to increase medical student numbers and rotations.

| Statement | N | strongly disagree | disagree | neutral | agree | strongly agree | Not applicable | Don't Know | Total |
|---|---|-------------------|----------|---------|-------|----------------|----------------|------------|-------|
| We would be able to increase the number of students per rotation in emergency medicine by 70% without difficulty | n | 17 | 30 | 1 | 10 | 1 | 1 | 1 | 61 |
| | % | 27.9 | 49.2 | 1.6 | 16.4 | 1.6 | 1.6 | 1.6 | 100 |
| We would be able to increase the number of rotations per year of medical students by 70% without difficulty | n | 17 | 30 | 1 | 10 | 1 | 1 | 1 | 61 |
| | % | 27.9 | 49.2 | 1.6 | 16.4 | 1.6 | 1.6 | 1.6 | 100 |

In reflecting on their experiences as medical students in the ED, half of the Emergency Trainee and Intern respondents disagreed or strongly disagreed (17/34, 50%) that a hypothetical increase in medical student numbers of 70% per ED rotation would not affect learning experiences (Figure 24).

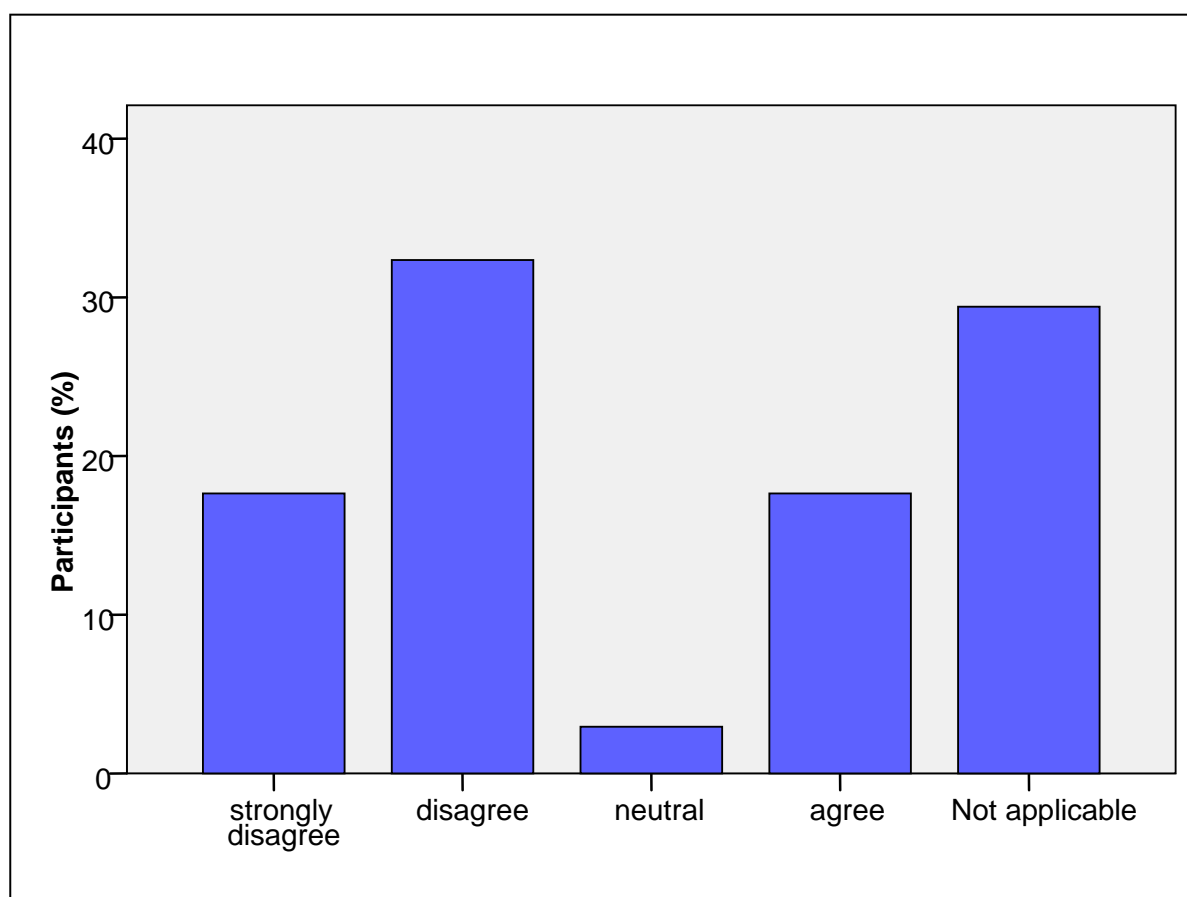


Figure 24: Percentage of emergency trainees and interns by level of agreement to the statement, “We could have increased the number of students per rotation in the ED by 70% without affecting my learning experience”

ED Directors and DEMENT also mostly felt that this increase would affect their ability to take on medical elective students (agreed/strongly agreed: 47/60; 78%) and Australian Medical Council (AMC) observers (agreed/strongly agreed: 70%; 42/60). (Table 28).

Table 28: Number and percentage of ED Directors or DEMENT by level of agreement of statements suggesting that the increased numbers of interns would affect the ability to take on medical elective students and AMC observers in the ED

| Visitor/staff | | Strongly disagree | disagree | neutral | agree | strongly agree | N/A | Don't Know | Total |
|---|---|-------------------|----------|---------|-------|----------------|------|------------|-------|
| Medical elective students | N | 0 | 9 | 3 | 36 | 11 | 1 | 0 | 60 |
| | % | 0.0 | 15.0 | 5.0 | 60.0 | 18.3 | 1.7 | 0.0 | 100 |
| Australian Medical Council Observers | N | 0 | 1 | 4 | 30 | 12 | 11 | 2 | 60 |
| | % | 0.0 | 1.7 | 6.7 | 50.0 | 20.0 | 18.3 | 3.3 | 100 |

5.6 Requirements for accepting 70% more interns in Australian emergency departments

Participants were asked about what changes they thought would be required if they were to accept 70% more interns into the ED in which they direct or work within. While equipment and infrastructure changes were rated as being important, human resource requirements were rated as having greater importance.

5.6.1 Equipment and infrastructural adjustments

All participants were asked to indicate which changes they thought would be important to make if there was an increase in interns in the ED. Participants indicated that changes to the ED set-up such as changes that would allow for more space for staff facilities and more desk space were important, with 17/94 (18.1%) participants indicating that these changes would be essential (Table 29).

Findings were similar with regard to the changes to equipment that would be required to if there was to be a 70% increase in interns. Most participants felt that more telephones would be important (32/94, 34%) or somewhat important (20/94, 21.3%) to better manage the increase numbers of interns. Participants felt that more computers was of greater importance with most participants indicating that the though that more computers would either being important (34/94, 36.2%) or very important (20/94, 25.5%; Table 29).

Table 29: Number of participants by level of agreement that specific equipment and infrastructural adjustments are required if there is to be an increase in interns

| | N | Unimportant | Somewhat important | Important | Very important | Essential | N/A | Total |
|---|---|-------------|--------------------|-----------|----------------|-----------|-----|-------|
| More space for staff facilities* | n | 8 | 15 | 41 | 10 | 17 | 3 | 94 |
| | % | 8.5 | 16.0 | 43.6 | 10.6 | 18.1 | 3.2 | 100 |
| More desk space | n | 13 | 8 | 32 | 22 | 17 | 2 | 94 |
| | % | 13.8 | 8.5 | 34.0 | 23.4 | 18.1 | 2.1 | 100 |
| More telephones | n | 14 | 20 | 32 | 17 | 9 | 2 | 94 |
| | % | 14.9 | 21.3 | 34.0 | 18.1 | 9.6 | 2.1 | 100 |
| More computers | n | 7 | 11 | 34 | 24 | 16 | 2 | 94 |
| | % | 7.4 | 11.7 | 36.2 | 25.5 | 17.0 | 2.1 | 100 |

*participants were given the example of lockers and tearooms.

5.6.2 Human resource adjustments

ED Directors and DEMENTs were asked to consider what changes would be required to their current roster if they were to have a 70% increase in interns. Table 30 demonstrates that while some of the participating ED Directors and DEMENTs agreed that no changes will be required, most felt that changes would be required to the rostering of other junior staff. While the level of agreement varied, most ED Directors and DEMENTs disagreed that numbers of non-ED trainees rotating through the ED would have to be decreased. The majority of participating ED Directors and DEMENT also strongly disagreed/disagreed (35/61, 57.3%) that CMOs would be replaced by interns if the number of interns increased by 70% (Table 30).

Table 30: Level of agreement about the human resource adjustments that may be required if there is an increase in the number of interns

| | N | Strongly disagree | Disagree | Neutral | Agree | Strongly agree | N/A | Don't Know | Total |
|--|---|-------------------|----------|---------|-------|----------------|------|------------|-------|
| No changes will be required to other junior staff for us to take 70% more interns | n | 5 | 29 | 4 | 18 | 1 | 2 | 2 | 61 |
| | % | 8.2 | 47.5 | 6.6 | 29.5 | 1.6 | 3.3 | 3.3 | 100.0 |
| We may have to decrease the number of these non ED trainees rotating through our department if we take 70% more interns | n | 13 | 22 | 4 | 14 | 1 | 6 | 1 | 61 |
| | % | 21.3 | 36.1 | 6.6 | 23.0 | 1.6 | 9.8 | 1.6 | 100.0 |
| Career Medical Officers maybe replaced by interns if there are 70% more interns | n | 21 | 20 | 2 | 0 | 2 | 16 | 0 | 61 |
| | % | 34.4 | 32.8 | 3.3 | 0.0 | 3.3 | 26.2 | 0.0 | 100.0 |

It was however evident that many participants were of the opinion that it was either essential or very important to have more consultants and emergency registrars providing adequate supervision for the increased numbers of interns (Table 31). Participant felt that it was of lesser importance to have more nursing staff to provide this support (Table 31).

Participants were also of the opinion that more non-clinical time allocated for staff who are required to assess interns would be important to cope with an increased number of interns, with the majority of participants indicating that this change would be either important or very important (57/94, 60.6%). Similarly, the majority of participants felt that a specific ED clinical intern supervisor or educator would be more than important in adjusting for such an increase in interns with several respondents considering this essential (Table 31).

Table 31: Human adjustments required if there was to be an increase in interns by level of importance

| Statement | Unimportant | Somewhat Important | Important | Very Important | Essential | N/A | Total |
|--|-------------|--------------------|-----------|----------------|-----------|-----|-------|
| More Emergency Consultants to provide adequate supervision | 4 | 7 | 20 | 25 | 36 | 2 | 94 |
| | 4.3 | 7.4 | 21.3 | 26.6 | 38.3 | 2.1 | 100.0 |
| More Emergency Registrars to provide adequate supervision | 6 | 10 | 18 | 26 | 30 | 4 | 94 |
| | 6.4 | 10.6 | 19.1 | 27.7 | 31.9 | 4.3 | 100.0 |
| More nursing staff to provide adequate support for interns | 23 | 18 | 26 | 16 | 9 | 2 | 94 |
| | 24.5 | 19.1 | 27.7 | 17.0 | 9.6 | 2.1 | 100.0 |
| More non-clinical time allocated for staff who are required to assess interns | 9 | 12 | 33 | 24 | 13 | 3 | 94 |
| | 9.6 | 12.8 | 35.1 | 25.5 | 13.8 | 3.2 | 100.0 |
| A specific ED clinical intern supervisor/ educator | 6 | 6 | 22 | 34 | 21 | 4 | 93 |
| | 6.5 | 6.5 | 23.7 | 36.6 | 22.6 | 4.3 | 100.0 |

One-hundred and two responses were provided when asked what adjustments would be required to accept 70% more interns. Thematic analyses placed these responses into ten themes, the most common relating to a change in staffing balance between supervisors and interns (Table 32).

Table 32: Number and percentage of responses provided by participants when asked to specify adjustments that would be required to accept 70% more interns.

| Theme | N | Percentage of responses |
|---|-----|-------------------------|
| A staffing balance between supervising staff and interns | 37 | 36.3 |
| Infrastructure changes to the ED to improve | 21 | 20.6 |
| Appropriate resources to support such an increase | 8 | 7.8 |
| A dedicated intern supervisor/educator | 7 | 6.9 |
| More interns could not be accommodated | 7 | 6.9 |
| Other | 7 | 6.9 |
| Revised staffing models | 6 | 5.9 |
| No changes would be required | 5 | 4.9 |
| Protected teaching time | 3 | 2.9 |
| Improved demand management | 1 | 1.0 |
| Total | 102 | 100.0 |

Some of the comments regarding adjustments for 70% more interns are reproduced below:

The most common theme related to the need to achieve a staffing balance between supervising staff and interns:

"More consultants to look after them properly, this is something that we take pretty seriously interns are very well supported at any one time and they have an orientation package and that sort of thing so more interns would require more consultant mentors and we just don't have enough to go around."

"to fit in with the guidelines, they would need a lot more registrars and consultants.... I cant imagine a 70% increase, it just blows my mind, I fail to think how it wont impact on patient care so negatively that it will precipitate crisis."

"I really think the most important thing would be to have designated senior medical staff with no clinical load to supervise them, it is the only way to manage this."

"Increased supervision, [we] need to get staffing mix right, e.g. run teams of residents and interns or 4 PGY 2/3 and 1 intern. If we increased interns we would be moving away from this ratio, this ratio/mix is not ideal in terms of experience. We would really have to have a look at our ratios".

Infrastructure changes were perceived by several respondents to be needed:

"I presume that there will need to be a 70% reduction in other staff, that would mean they would have to get rid of some of JMOs because there would just be so many people there would be no desk space or chairs to sit on".

"I think for us it would be about IT issues, there are so many demands on the computers that are already there, there is so much done with IT, pathology, radiology and access to information, each individual needs a computer at all times."

"literally desk space and elbow room in the actual working area. [There are] physical and logistical restraints"

Others felt that appropriate resources would be required to support an increase in interns:

"We would need a significant staffing boost."

"There's not enough of anything for the current number of people let alone increased numbers of interns"

"Overall we could accept a number of interns but not at the expense of other staff groups, if we were provided with resources for supervision and education..."

Some felt a dedicated intern supervisor/educator may be the solution:

"having a dedicated clinical teacher would be useful"

"we need a dedicated medical officer in the ED just to run intern education programs"

"the increase should come with a dedicated intern educator in the ED but we just don't have the resources for that at the moment."

ED Directors and DMTs were asked about the potential for nurse practitioners to replace interns or PGY 2,3 or later in the ED. The level of agreement about this varied; some would consider this approach, however most disagreed that they would make these changes in response to increased numbers of interns in the ED (Table 33).

Table 33: Ed Directors and DMTs level of agreement about whether about nurse practitioners can replace the interns in the ED

| | N | strongly disagree | disagree | neutral | agree | strongly agree | Not applicable | Total |
|---|---|-------------------|----------|---------|-------|----------------|----------------|-------|
| Nurse practitioners can replace the interns in the ED | n | 8 | 27 | 4 | 17 | 1 | 4 | 61 |
| | % | 13.1 | 44.3 | 6.6 | 27.9 | 1.6 | 6.6 | 100.0 |
| Nurse practitioners can replace the PGY 2, 3 or later* in the ED | n | 12 | 27 | 4 | 15 | 0 | 3 | 61 |
| | % | 19.7 | 44.3 | 6.6 | 24.6 | 0.0 | 4.9 | 100.0 |

*Excludes trainees

When asked whether they had any comments on the role of nurse practitioners in the ED, 71 respondents provided a single answer. Thematic analyses revealed seven themes. The views of respondents were polarised with the most common comments provided indicating that NPs benefit or add value to the ED and NPs have a limited role in the ED (Table 34).

Table 34. Number and percentage of responses regarding nurse practitioners according to thematic analyses.

| Theme | N | % of responses |
|--|----|----------------|
| NPs benefit the ED by managing low acuity presentations | 12 | 16.9 |
| NPs add value to the ED | 15 | 21.1 |
| NPs have a limited role | 13 | 18.3 |
| NPs are not a substitute from JMOs | 11 | 15.5 |
| Other | 9 | 12.7 |
| The NP do not benefit the ED | 4 | 5.6 |
| NPs have a role outside of urban/tertiary hospitals | 4 | 5.6 |
| NPs could replace JMOs | 3 | 4.2 |
| Total | 71 | 100.0 |

Several respondents felt that NPs benefit the ED by managing low acuity presentations:

"very useful in limited minor cases, interns and RMOs can do much more complex cases"

"NPs are mainly useful for quick in and quick out, minor operations, they can be useful here, interns can't make these decisions."

"I think NPs are still finding their place in the ED, people use them in different ways, they are good if they have their scope of practice well defined and that being limited to the skills they have e.g. in my ED a NP does not see a chest pain because there is no point because a doc has to see the patient anyway but for lacerations where it can be quickly done by the NP and the patient goes home, this is good otherwise it can be a waste of time."

"the government should embrace them as they are great for fast track and other core services"

"The NPs because of their limited role they become very good at what they are doing they see the minor spectrums of illness e.g. muscle injury or patients with clear management pathways."

Several respondents felt that NPs add value to the ED. For example:

"I think nurse practitioners have complimentary role and they add value to the ED but they need to be seen as complimentary not a substitute, we need the balance to get the learning experience for doctors, they need to get exposure to the patient types that NPs see".

While some were positive about NPs they felt that they were no substitute for JMOs:

"An essential service for interns or other junior staff, but not a substitute"

"They don't replace interns and visa versa"

"I think NPs have a valuable place in the ED but I don't see them as a substitute for doctors and neither do they. The best comment I heard was a NP saying she is not a second class doctor she is a first class nurse. I think they have a specific skill set which is not a substitute for medical staff or nurses but they are able to function as part of the team. The function of interns and RMOs is more than just seeing patients it is or their educational development and understanding whereas NPs are there to help support other nurses and also pick up a specific patient load, so I think the concept of NPs replacing doctors is failing to recognise the relevant structure, it is like saying that NUMs could replace FACEMs, to me it is a nonsensical discussion."

5.7 Awareness Amongst Emergency Medical Staff of The Australian Curriculum Framework for Junior Doctors.

5.7.1 Awareness & Implementation

When asked to rate their agreement to the statement “I am familiar with the ACFJD” approximately half of all participants indicated that they either strongly disagreed/disagreed or felt neutral (51/94, 53.2%) (Figure 25).

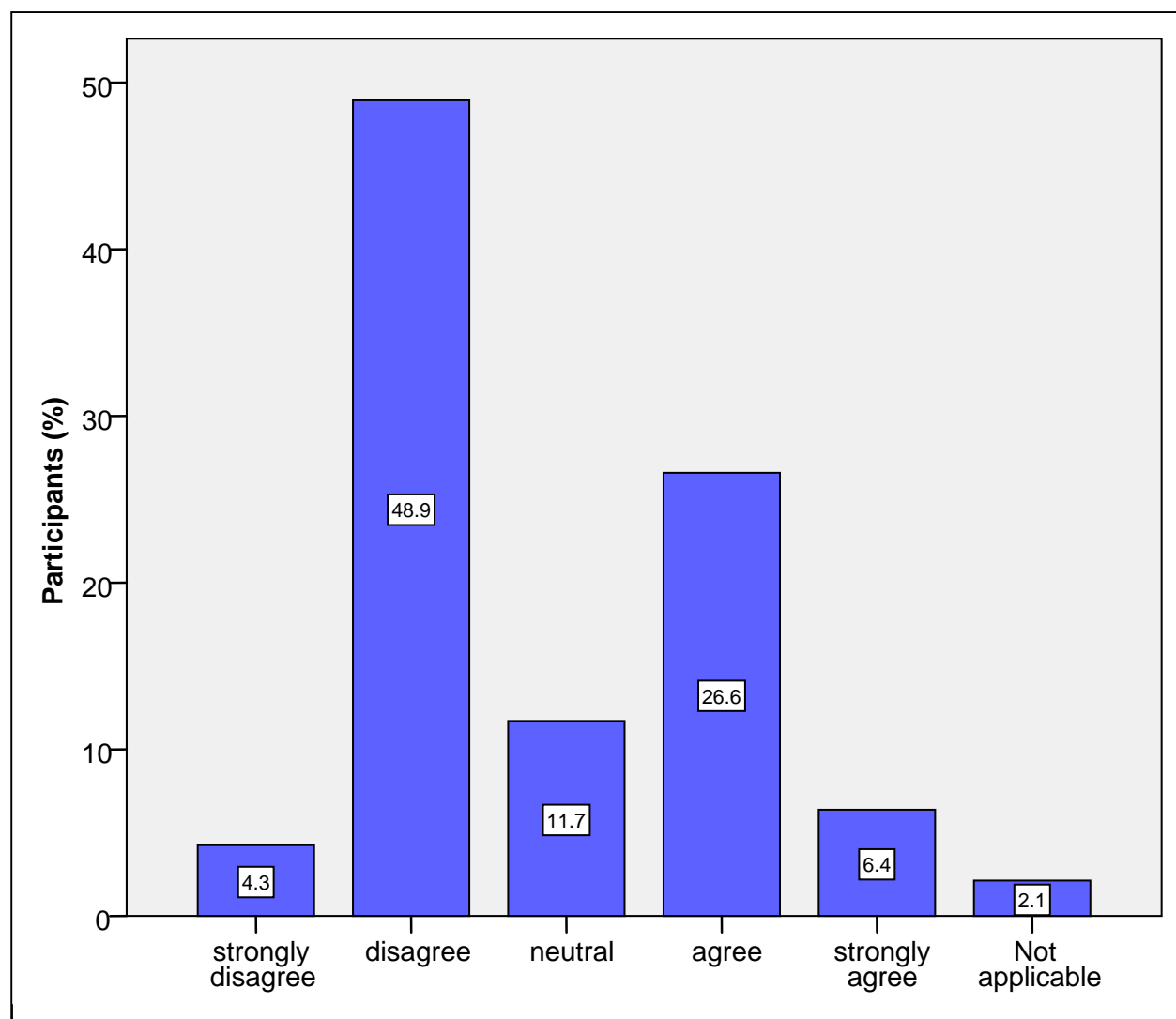


Figure 25: Percentage of participants by level of agreement to the statement, “I am familiar with the Australian Curriculum Framework (ACF) for Junior Doctors”.

While the proportion of prevocational doctors and Directors/DEMTs expressed poor familiarity with the ACFJD, data for advanced trainees was mixed (Table 35).

Of those that 42 participants that indicated being familiar with the ACFJD or responded neutrally, 39 felt that they were sufficiently familiar with the ACFJD to answer a series of questions relating to the Framework. When presented with the questions, some respondents felt that the items were not applicable to them. While these responses have been excluded from the following analyses presented here, complete data are provided in Appendix C (Tables C11).

Among those indicating that they were familiar with or neutral towards the ACFJD, most participants either agreed that they have a good understanding of the framework or felt neutral towards this statement (Figure 26).

Table 35. Comparison between staff in familiarity of ACFJD. Data are number and percentage.

| Staff Type | Strongly disagree | disagree | neutral | agree | strongly agree | Not applicable | TOTAL |
|------------------------------------|-------------------|--------------|--------------|--------------|----------------|----------------|---------------|
| Director/DEMT | 1 1.60% | 33 54.10% | 5 8.20% | 17 27.90% | 5 8.20% | 0 0.00% | 61 100.00% |
| Advanced trainee/Registrar | 2 11.10% | 5 27.80% | 5 27.80% | 4 22.20% | 1 5.60% | 1 5.60% | 18 100.00% |
| Prevocational Doctor/Intern | 1 6.70% | 8 53.30% | 1 6.70% | 4 26.70% | 0 0.00% | 1 6.70% | 15 100.00% |
| TOTAL | 4 4.30% | 46 48.90% | 11 11.70% | 25 26.60% | 6 6.40% | 2 2.10% | 94 100.00% |

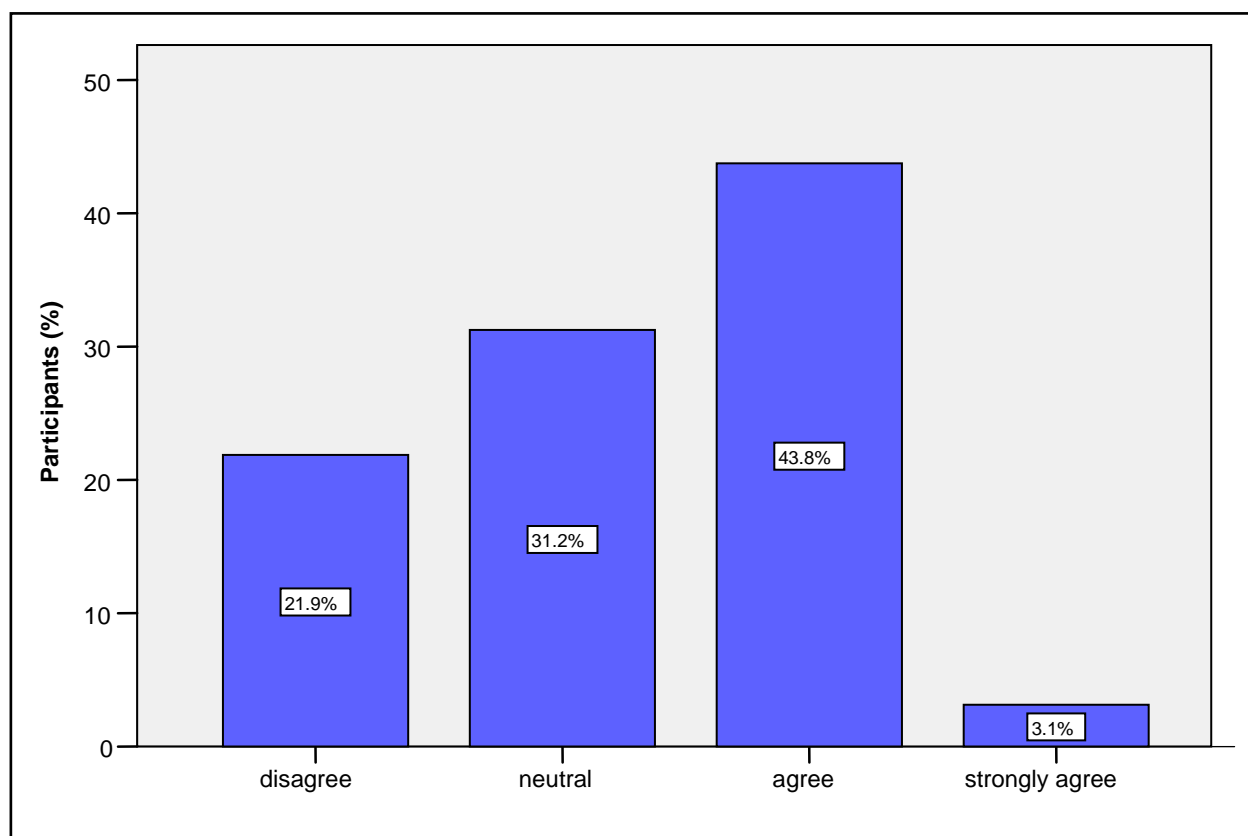


Figure 26: Percentage of participants by level of agreement to the statement, “I have a good understanding of the structure of the Australian Curriculum Framework for Junior Doctors” (n=32).

The majority (26/32, 81%) agreed that the ACFJD helps to clarify what competencies junior doctors are expected to attain in their prevocational years (Table 36). However when the interns who were familiar with the ACFJD were asked specifically about this, 5 of 6 interns indicated that they disagreed that they compared their current rotation with the competencies listed in the ACFJD, and 2 of 6 indicated having used the ACFJD for self-assessment.

There were also varied levels of agreement about the level of understanding about the aspects of the ACFJD that relate to ED rotations, with a small trend toward agreement (15/32, 47%). There was a similar level of agreement about whether the ACFJD accurately reflects the requirements of ED rotations (Table 36).

Participants were polarised in their perceptions regarding whether or not the ACFJD was linked with education/training sessions provided in their hospital and most disagreed that it was linked to assessment (Table 36). Approximately 30% agreed that clinical educators, supervisors and/or medical education support staff constantly refer to the ACF, and most felt that awareness of the ACFJD did not change supervisors’ focus or what they teach (Table 36).

Most also disagreed (21/30) that junior doctors are expected to have knowledge of the ACF and how it relates to their rotations and that the ACFJD has changed the way prevocational doctors approach their ED rotations (Table 36). Despite this, most

participants acknowledged that prevocational doctors in the ED would have experience to meet the ACFJD competencies. Consistent with this most disagreed/strongly disagreed (21/29, 72%) that the ACFJD has no relevance to prevocational ED doctors (Table 36).

Table 36: Number and percentage of participants by level of agreement to statements regarding the Australian Curriculum Framework for Junior Doctors.

| Statement | strongly disagree | disagree | neutral | agree | strongly agree | Total |
|--|-------------------|----------|---------|-------|----------------|-------|
| I have a good understanding of the aspects of the ACF that relate to ED rotations | - | 11 | 6 | 13 | 2 | 32 |
| | - | 34.4 | 18.8 | 40.6 | 6.3 | 100 |
| The ACF helps clarify what competencies junior doctors are expected to attain in their prevocational years | - | - | 6 | 23 | 3 | 32 |
| | - | - | 18.8 | 71.9 | 9.4 | 100 |
| The ACF accurately reflects the requirements of ED rotations | - | 6 | 9 | 12 | 1 | 28 |
| | - | 21.4 | 32.1 | 42.9 | 3.6 | 100 |
| The ACF is linked with the education/training sessions provided in your hospital | 1 | 11 | 5 | 7 | 4 | 28 |
| | 3.6 | 39.3 | 17.9 | 25 | 14.3 | 100 |
| Clinical educators and supervisors and/or Medical education support staff constantly refer to the ACF | 9 | 10 | 3 | 7 | - | 29 |
| | 31 | 34.5 | 10.3 | 24.1 | - | 100 |
| Junior doctors are expected to have knowledge of the ACF and how it relates to their rotations | 2 | 19 | 5 | 4 | - | 30 |
| | 6.7 | 63.3 | 16.7 | 13.3 | - | 100 |
| The ACF is linked to assessment being undertaken at the hospital | 3 | 9 | 5 | 9 | - | 26 |
| | 11.5 | 34.6 | 19.2 | 34.6 | - | 100 |
| The ACF has changed the way prevocational doctors approach their ED rotations | 5 | 18 | 4 | 3 | - | 30 |
| | 16.7 | 60 | 13.3 | 10 | - | 100 |
| Supervisors are aware of the ACF and it changes their focus or what they teach | 4 | 16 | 7 | 1 | 1 | 29 |
| | 13.8 | 55.2 | 24.1 | 3.4 | 3.4 | 100 |
| Most prevocational doctors in the ED will have experience to meet the ACF competencies | 1 | 3 | 5 | 13 | 2 | 24 |
| | 4.2 | 12.5 | 20.8 | 54.2 | 8.3 | 100 |
| The ACF has no relevance to prevocational ED doctors | 4 | 17 | 7 | 1 | - | 29 |
| | 13.8 | 58.6 | 24.1 | 3.4 | - | 100 |

Participants were asked if they had utilised the ACFJD in any other ways than those mentioned in the above analysis. Eleven participants made 22 comments about how they had utilised it in other ways. These were categorised post hoc into 6 groups (Table 37) and the most common use was to advise the supervision and education of junior medical staff.

Table 37: Number and percentage of responses regarding other uses for the ACFJD according to thematic content.

| Use | Frequency | Percentage |
|--|-----------|------------|
| To inform junior medical staff education/study | 6 | 27.3 |
| To advise supervisors of junior medical staff | 5 | 22.7 |
| As an external authority to support local initiatives | 4 | 18.2 |
| Other | 4 | 18.2 |
| For orientation of new staff | 2 | 9.1 |
| To advise CMO education | 1 | 4.5 |
| Total | 22 | 100.0 |

Some of the comments about utilisation of the ACFJD are reproduced below.

To inform junior medical staff education/study

“as a basis for study group with other interns”

“I just look at it and the little boxes, there is clinical and procedural stuff outlined, I just look at it to get an idea of what I should try and get some sort of exposure to particularly on the procedural side of things.”

“it has been opposed as being too prescriptive but I think it helps the junior doctors know that they are meeting the right targets”

To advise supervisors of junior medical staff

“at the back there is an assessment template, this has been adopted by the hosp as a template for end of term assessments.”

“Certainly has been most useful as a framework for supervisors to direct bed side and formal education sessions, we use the ACF in modifying the course we run for supervisors called ‘teaching on the run’”

Some identified reasons for poor uptake (“Other”):

“I fully applaud the ACFJD and have seen no mention of it here, it did come up at some of the smaller hospitals I have worked in, it has had a pretty bad roll out because the AMA has not supported it. Should model the ACF on the UK model for assessment”

5.7.2 Barriers to the implementation of the ACFJD

While several participants agreed that a range of factors were obstructing the implementation of the ACFJD, the barrier to which most participants agreed, was limited knowledge or understanding of the ACFJD (Table 38).

Table 38. Number and percentage of participants by level of agreement to statement regarding obstacles to implementation of the Australian Curriculum Framework for Junior Doctors.* Data excludes those indicating “not applicable”.

| Statement | strongly disagree | disagree | neutral | agree | strongly agree | Total |
|--|-------------------|----------|---------|-------|----------------|-------|
| Limitations on teaching resources have obstructed the implementation of the ACF | 1 | 8 | 4 | 7 | 0 | 20 |
| | 5 | 40 | 20 | 35 | 0 | 100 |
| Lack of support by more senior staff has been an obstacle in the implementation of the ACF | 1 | 11 | 5 | 4 | 0 | 21 |
| | 4.8 | 52.4 | 23.8 | 19 | 0 | 100 |
| Unclear methods of self-assessment have been an obstacle in the implementation of the ACF | 0 | 5 | 5 | 8 | 0 | 18 |
| | 0 | 27.8 | 27.8 | 44.4 | 0 | 100 |
| Unclear methods of objective assessment have been an obstacle in the implementation of the ACF | 0 | 6 | 5 | 8 | 0 | 19 |
| | 0 | 31.6 | 26.3 | 42.1 | 0 | 100 |
| Protected teaching time has been an obstacle in the implementation of the ACF | 1 | 10 | 4 | 6 | 1 | 22 |
| | 4.5 | 45.5 | 18.2 | 27.3 | 4.5 | 100 |
| Limited Knowledge/understanding of the ACF has been an obstacle in the implementation of the ACF | 0 | 4 | 4 | 10 | 4 | 22 |
| | 0 | 18.2 | 18.2 | 45.5 | 18.2 | 100 |

Twenty-two respondents each provided a response to the open ended question, “what obstacle have you experienced in implanting the ACF?” Responses were fairly evenly spread across six themes (Table 39).

Table 39. Number and percentage of responses regarding obstacles to implementing the Australian Curriculum Framework for Junior Doctors, by thematic category

| Theme | Number of responses | Percentage of Responses |
|-------------------------------------|---------------------|-------------------------|
| Limited resources | 5 | 22.7 |
| Not seen as a priority | 3 | 13.6 |
| Not sure of practical applicability | 4 | 18.2 |
| Lack of awareness | 3 | 13.6 |
| Inadequate roll-out of the ACF | 3 | 13.6 |
| Other | 4 | 18.2 |
| Total | 22 | 100.0 |

Some of the comments provided by interviewees are reproduced verbatim below:

Some felt that uptake of the ACFJD had been hampered by limited resources:

“when the hospital is given money by the PGMC and then don't employ people to do the work, then it is no surprise when things don't work like the ACF”

“a time and energy thing. To formalise it and to be made aware of what my requirements as a Director are I don think that has been done so well. A better raising of conscience of what are the exact requirements for Directors, this is not clear and we were not resourced to adjust to the change.”

“The resourcing to go through it step by step with individual medical students; teaching competency-based assessments at a group level is ineffective and trying a way to individualise it is difficult that is why I think specific educators in the ED would be good.”

Others cited concerns about the applicability of the framework as the primary barrier:

“On a hospital wide basis I think there has been a disconnect between the content in curriculum and assessment in curriculum this is a recognised obstacle it has not stopped implementation but could pose a problem”

“It has just been introduced and is still being evaluated against the needs of the ED and to ensure that what we are doing is relevant to its requirements.”

For others the main problems related to inadequate roll-out of the ACFJD or lack of awareness of the framework:

“most people don't know it exists”

“it seems to be mainly related to surgical and medical so I honestly could not have told you that it related to emergency.”

“the reason that our hospital and state have not progressed with implementing the ACF is that we have been waiting for the implementation group of the national ACF to provide guidelines as to specific implementation, so we have done a mapping exercise into what we would like to do with the ACF but we have hung back on implementing it in regards to teaching and supervising because we are awaiting the national guidelines.”

“If we had of had a formal briefing on it and what we were meant to do with it would of worked but there was nothing. I am the core educator and there is an RMO teacher but neither of us has had a sit down briefing on the implementation of the ACF”

6.0 Study Strengths & Limitations

This study has several important strengths and limitations. We interviewed ED Directors, DEMTs, Advanced Emergency Trainees and interns from a national, stratified sample of city, metropolitan and provincial hospitals. To maximise the validity of stratification, selection of hospital sites was based on recommendations made by the relevant post-graduate medical councils for each state or territory; each post-graduate medical council was requested to nominate sites that were representative of city, metropolitan and provincial hospitals for their region, and which were accredited for interns. In the course of the study it was revealed that some sites within our sample were not accredited to accept interns for ED rotations. While this was unexpected, the inclusion of participants from these sites is important to a study of this nature and may have served to provide a broader overview of EDs in Australia thereby improving the generalisability of the findings. Determining the willingness and capacity for non-accredited sites to take interns, should they later become accredited, is critical. Addressing the accreditation issues of such sites may represent an important potential strategy in accommodating the surge in medical graduate numbers.

A major strength of the study is the recruitment of 100% of ED Directors within our target sample. With administrative, management and often clinical duties, ED directors represent a unique and insightful viewpoint. This exceptional response rate combined with the lengthy response provided by this subgroup suggests that this study was particularly well received by these participants. Our response rate for advanced trainees (24%) and interns (17%) was disappointing but not unexpected for interviews dependent on secondary recruitment. Due to constraints of privacy law we could not directly contact registrars and interns but had to rely on third parties to recruit potential participants. While the response rates obtained for these doctors may weaken the validity of results from these staff, there is support in the literature regarding the validity of surveys with similarly low response rates^(65, 66). Nonetheless, it must be acknowledged that without demographic data we are unable to verify whether our sample of registrars and interns is representative of the broader population of these doctors working in Australian EDs. While our overall sample size was small compared to the numbers of doctors working in Australian public EDs, the use of stratified sampling is likely to have minimised any selection bias.

In the context of a small sample size the use of mixed methods (descriptive quantitative and qualitative techniques) is likely to have strengthened the validity of our findings. The convergence of quantitative data with rich, qualitative data is important in contextualising findings. Through the use of personalised examples, greater insight can be obtained regarding the barriers presently facing ED clinicians and their specific concerns regarding the expected influx of medical graduates.

7.0 Main Findings & Implications

To ameliorate the medical workforce shortage, a substantial increase in undergraduate medical school positions was funded by the Council of Australian Governments in 2007⁽⁶⁷⁾. This increase, which is likely to be sustained for some time, will produce a surge in the number of prevocational doctors requiring internship places. Presently, there are simply insufficient intern places to accommodate the anticipated influx of graduates that will peak in 2012⁽⁴⁾. Under major threat is the core term of emergency medicine within which intern places are particularly lacking; in this setting, the contribution of interns to service delivery is largely negated by their educational and supervisory needs⁽²²⁾. To assess the capacity for EDs across Australia to absorb an increased number of interns whilst maintaining quality learning opportunities, the Emergency Medicine Capacity Assessment Study was undertaken. We report here the findings of this study including the perceived value of the core term in emergency medicine, the capacity of EDs to accept the proposed increase in interns, the attitudes of staff towards such an increase, and its anticipated impact on current staffing, resources and ability to deliver quality educational experiences. Since the Australian Curriculum Framework is targeted at junior doctors and their educators from the internship year onward, we also report the familiarity of ED Directors, DEMENT, advanced trainees and interns with the framework and the impediments to its implementation in the ED context.

The Emergency Department provides a unique clinical and training environment for junior doctors in their first postgraduate year. It provides important insight regarding the operation of the ED itself, its interaction with other specialties and hospital services, and hence an understanding of the structure and function of the healthcare system. In contrast to the inpatient setting, the ED offers greater risk exposure due to the need to assess acutely ill, undifferentiated patients, and make time-critical decisions regarding treatment and disposition. In combination with the large and varied patient load, it is arguable that the learning opportunities of the emergency medicine context exceed that of most other clinical settings. This sentiment was reinforced by the attitudes of participants of the present study. An overwhelming majority of participants agreed that the intern ED rotation should remain compulsory for full general medical registration. This is consistent with previous studies that have confirmed the perceived value of the emergency term during the internship year^(12, 16). Despite its perceived importance, most ED Directors and DEMENTs did not agree that 70% more interns could be absorbed into the ED without problems. A median increase of just 25% was nominated by ED directors and DEMENT as being acceptable before adjustments would be required, with participants from city and metropolitan hospitals preferring a lesser increase than their provincial counterparts.

It is arguable that even before the increase in interns has fully materialised, ED staffing, physical and other resources are overstretched to meet service demands. The current level of staffing within EDs was perceived by most interviewees to be inadequate in general, with some reporting insufficient staffing to meet demands. Specific deficits were identified in the numbers of FACEM, interns and nurses. In some cases, the shortfall in senior medical and nursing staff was viewed as a product of chronic problems in staff recruitment or retention. The shortage in both

emergency nursing and FACEM staff is a longstanding issue^(47, 49) that results from the increase in demand for emergency care, a decrease in participation rates of FACEM⁽⁴⁷⁾, and an attrition rate of emergency trainees that exceeds the number of junior doctors entering the specialty^(47, 49). The multifactorial nature of this issue suggests that a single solution is inadequate. Indeed, the majority of study participants felt that medical resource problems could not be solved through increasing intern numbers. The high turnover in emergency nursing staff, with very high use of agency nurses, like the growing attrition in medical staff, has been attributed to the effects of access block and overcrowding. Working conditions and the working environment have become less and less attractive to doctors and nurses in the area as they struggle to balance the competing pressures of an increasing emergency medical demand with the worsening problems of overcrowding of EDs with admitted inpatients unable to be accommodated in inpatient beds.

Predating the announced increase in funding for undergraduate medical student university places was the release of the Australian Curriculum Framework for Junior Doctors (ACFJD). The ACFJD was designed to more clearly define the curriculum and learning objectives of prevocational doctors and was developed largely in response to the lack of integration of post-graduate medical education. The ACFJD comprises three areas (clinical management, communication, professionalism) which are divided into a total of 63 categories, each of which are further divided into topics then capabilities (knowledge, elements, skills, behaviour). While the ACFJD is designed to be applicable to JMOs in the 2-3 years of prevocational training, it outlines capabilities which some interns may master by completion of internship⁽¹⁰⁾. Since supervision is a pivotal aspect of achieving many of the competencies outlined in the ACFJD, determination of awareness and use of the ACFJD is of relevance to our assessment of the capacity for EDs to maintain and deliver adequate learning opportunities for an increased number of interns. To date, feedback regarding the ACFJD has been somewhat unfavourable^(10, 37). The present findings are no exception to this; just over 30% of respondents were familiar with the ACFJD. Amongst those sufficiently familiar to respond to questions about the ACFJD, the main barrier to its implementation was limited knowledge and understanding of the ACFJD. Most respondents disagreed that educators and supervisors and/or medical education support staff constantly refer to the ACF and that junior doctors are expected to have knowledge of the ACF and how it relates to their rotations. Although a large portion of the ACFJD is devoted to skills that have clear relevance to emergency medicine⁽¹⁰⁾, participants felt that the ACF had not changed the way prevocational doctors approach their ED rotations. While the ACFJD specifies which competencies should be achieved by junior doctors, and clearly articulates those relevant to emergency care, the development of robust assessment tools that will be accepted by trainees and trainers alike remains a challenge^(36, 37).

Prior to intern numbers peaking in 2012, the proliferation in undergraduate medical student numbers is likely to present its own challenges for emergency departments and staff. In the undergraduate years, ED rotations provide the opportunity to develop knowledge, skills and experience relevant to the practise of medicine. These rotations are typically brief and often involve a mix of formal and informal education. Participants of the present study expressed mixed opinions about having sufficient time to teach medical students. Most felt that it would be difficult to cope with increased medical graduate numbers with existing educational staff and the

majority supported the concept of having a specific educator for medical students in the ED. An overwhelming majority of participants indicated that they would not welcome a 70% increase in medical students given their current resources while most felt that more students could be accepted if appropriate resources were made available. Some participants highlighted the financial strain that results from employing interns; the costs of employing them far exceed the remuneration provided to hospitals that accept them, and although they represent a long-term investment, their short-term productivity is limited. The increase in undergraduate medical places was to be accompanied by an increase in clinical teachers⁽¹⁾. While this may be the case in the university setting, particularly with an increased number of medical schools in Australia⁽¹⁾, it is of significant concern that a parallel increase in clinical teachers in clinical settings has not eventuated^(2, 7). This is especially pertinent to ED and rural settings where the capacity to absorb increased demand for teaching within current staffing is limited.

Despite the perceived difficulty in being able to accept more medical students with current resources, most ED directors and DMT reported the duration of medical student rotations to be too short. Similarly, previous research has demonstrated a preference for lengthier emergency placements for interns⁽¹⁶⁾. For both medical students and interns, the length of the rotation must be sufficient to gain the full potential of the rotation⁽²²⁾. While medical students are not expected to contribute to the functioning of the unit, the substantial orientation and educational requirements make rotations of insufficient length disadvantageous for both students and their supervisors who do have service provision responsibilities. A substantial aspect of undergraduate medical student ED rotations is directly supervised patient care and the observation of interns and other medical or nursing staff. With an anticipated increase in competition for both patients and supervision and the increased demand for orientation it not surprising that most trainees and interns felt that increased numbers of medical students would negatively affect the learning opportunities of interns.

Effective communication between universities and ED staff is essential in order to ensure that educational objectives are addressed and the transition between clinical rotations is smooth. However, the majority of Directors and DMT indicated a lack of feedback from or contact with universities regarding medical student rotations in ED. This is problematic and is possibly compounded by the fact that, as an academic discipline in its own right, emergency medicine is in its infancy. Few emergency departments have dedicated senior academic staff with joint university and hospital appointments. Communication problems may also be, in part, a result of “teething problems” associated with the increase in the number of medical schools (from 10 to 18 between 1999 and 2009)⁽¹⁾. In any case, it is relevant to note that better communication between ED-based intern supervisors and universities may be facilitated by the current mapping of medical student hospital rotations to the ACFJD⁽¹⁾, the purpose of which is to clarify objectives of rotations.

Although in its present form emergency medicine is deemed as being an irreplaceable term for interns^(12, 16, 22), there is a risk that the quality of learning opportunities will be negatively impacted by the need for increased capacity in terms of staffing combined with increased pressure for service provision. Under the present apprenticeship model, interns are supernumerary to the roster⁽²¹⁾, and operate under

a service-training dichotomy whereby learning takes place in the process of service delivery⁽⁷⁾. The contribution of interns to the functioning of the ED is typically largely negated by their training needs which can place strain on the overall operational efficiency of the ED. Although called into question recently^(12, 16), traditional thinking has been that the learning opportunities gained in the ED are of sufficient value to warrant this shortcoming. The quality of these learning opportunities, however, is largely dependent on the availability of supervision and feedback. Senior doctors are the main providers of education, supervision and feedback to interns, and, with the exception of formal education sessions, are expected to provide much of this while undertaking service delivery themselves. When training conflicts with service delivery, patient care is expected to take precedence⁽²¹⁾. With the increase in emergency demand concomitant to a surge in intern numbers, it is likely that this training model for interns will be difficult to sustain and will place significant pressure on senior doctors most of whom receive no formal recognition for the teaching aspect of their job. The majority of study participants felt that it would be difficult for consultants and registrars to supervise more interns. While quantitative results indicated that, at the time of this study, adequate supervision and feedback was provided to interns, qualitative data suggested a more negative perception; some reported supervision and feedback to fluctuate with service demands and shift type; some felt that it was inadequate for pre-registration doctors; and others identified potential for improvement with the provision of more senior staffing. Since supervision and feedback are the major modalities by which effective learning takes place⁽⁶⁸⁾, and since supervision serves the dual function of preventing errors and facilitating autonomy⁽¹⁰⁾, this has serious repercussions for both the quality of learning opportunities for interns, and patient safety. In this context it is unsurprising that interns and trainees felt that an increase of 70% more interns would affect their ED experience.

While the role of the Medical Education Officers is unique to each setting (T&A guidelines for JMOs) some have argued that medical education in the early postgraduate years has been negatively affected by the poor delineation of hospital and departmental responsibilities regarding education⁽⁴⁴⁾. In this context it is concerning that several interviewees rated access (by JMOs) to hospital medical education officers as poor or fair and 30% of participants indicated a lack of access of JMOs to ED-based clinical educators. Thus, although a strong impetus for the ACFJD was to better integrate hospital based postgraduate medical education, significant shortcomings remain at an organisational level. Lack of support was not, however limited to educational staff resourcing. There is an explicit expectation that adequate pastoral, administrative, and human resource support be provided by hospitals to junior medical doctors in their first post-graduate year and beyond⁽⁶⁹⁾. Access by JMOs to such support services, however, was identified as being a major deficit with over 60% of respondents rating access as poor or fair. The transition from medical student to prevocational doctor can be a particularly challenging period, and opportunities for organisational, pastoral and administrative support are fundamental in retaining the commitment of junior medical officers to medicine and are explicitly expected⁽⁶⁹⁾.

Innovative strategies for meeting the educational needs of an increased number of ED interns are just beginning to emerge. One example is the “More Learning for Interns in Emergency” (MoLIE) project⁽¹¹⁾ whereby 20% of interns’ rostered time was

non-clinical and devoted to receipt of teaching. Although this forward thinking approach was well received and enabled 20% more interns to be effectively accommodated by the ED, other studies have demonstrated that the number of hours junior doctors are engaged in clinical work is positively correlated with how much they learn⁽³⁸⁾. The immersive approach to intern training, where learning is attained and consolidated through direct clinical experience, is considered fundamental to the development of doctors capable of functioning as independent professionals^(10, 22, 70-72). While the use of simulation, computer applications, and non-hospital experiences can complement the experience gained through real-life patient encounters, they are deemed an unsatisfactory substitute for such experience^(22, 70-72). Indeed, as emphasised in the ACFJD, a key facet of prevocational training is practice-based learning which should “take place as much as possible in the context of the learner’s current work or professional environment”^{(10)pp,525}. The development of strategies and educational models that maintain the immersive ED experience whilst preserving the quality of educational opportunities within the ED will be a key challenge of the coming years.

Related to the provision of quality learning opportunities in the ED context is the ability to teach effectively. Although supervisory and educational responsibilities often fall to several staff members in ED, there is variability in the degree to which staff feel prepared to teach as evidenced by qualitative data from this study. The need for training in teaching methods relevant to the ED context is well recognised^(73, 74) and has resulted in the development of relevant courses^(40, 41) (cite examples). The development of educational skills of staff at all levels is an important investment that is likely to yield long term benefits. Fundamental to this, however, is an increased availability of relevant courses.

Supervision is a key aspect of the experiential learning process. Yet there is significant variation between state post-graduate medical councils regarding what constitutes adequate supervision with some states lacking policy directives altogether (Appendix A). Although clear guidelines regarding the experience level of intern supervisors are provided by ACEM⁽²¹⁾, there remains a need for robust guidelines regarding supervision in EDs at the level of state post-graduate medical councils. Of some value in this process may be cross-reference to The National Guidelines for Training and Assessment of Junior Medical Doctors PGY1 and PGY2 which provide a framework for best practice with regard to supervision⁽⁶⁹⁾.

It is clear from this study and others that enhancing the capacity of emergency terms is limited by the availability of appropriately credentialed staff to supervise. Since this is often the rate limiting factor in obtaining accreditation for intern training, reconsideration of who is suitable to supervise may significantly augment capacity. Suggested solutions to this shortfall have included the use of medical education registrars as successfully occurs in Western Australia, and consideration to the use of other non-FACEM supervisors⁽¹¹⁾. The contribution of non-specialist doctors with significant experience in emergency departments is being recognised in the Hospitalist Program⁽¹¹⁾. This will provide some guidelines for which CMOs can supervise interns within NSW. Similarly, the PMCV have expanded the criteria regarding who can provide supervision to doctors in their first post-graduate year. A critical component of the appropriateness of non-FACEM staff to supervise is the completion of training in advanced trauma life support, advanced cardiac life

support and advanced paediatric life support⁽⁷⁵⁾, although these short courses are hardly substitutes for comprehensive emergency medicine specialist training. Should CMOs be considered adequately credentialed by other jurisdictions to provide intern supervision, a major barrier to their use in this role may be access to feedback and continuing medical education. In contrast to other staff types, access to both formal education and feedback by CMOs was reportedly poor. Although the shortfall in staff suitable to supervise may be addressed through the use of registrars and CMOs, it is pertinent to note that CMO numbers, at least in our sample, were substantially lower than those of registrars and postgraduate year two and three doctors.

In the formative prevocational years when junior medical officers experience a steep learning curve, inefficiencies in their practice within the ED context are the norm. Indeed, in the absence of junior doctors, the efficiency of EDs has been demonstrated to improve as indicated by reduced waiting times and ED length of stay⁽²⁹⁻³¹⁾. Similarly, participants of this study anticipated that having more interns in the ED would slow down processes in the ED. This has significant repercussions both for ED overcrowding and patient safety. ED overcrowding is primarily caused by factors external to the ED, specifically, access block and excessive demand⁽⁷⁶⁾. Staff and physical resources become overwhelmed and the rate or quality of treatment is reduced⁽⁷⁶⁾. Thus, although treatment rate is not the prime stimulus for ED overcrowding it is one part of the equation, and since interns typically work at a slower rate, and take supervising senior staff away from their service roles, it is foreseeable that an increased numbers of interns will add to the problem of overcrowding. ED overcrowding is believed to make teaching more difficult,⁽⁵⁸⁾ and importantly, as ED overcrowding increases, so too does the rate of mortality⁽⁷⁷⁻⁷⁹⁾, medical errors, complications and staff turnover⁽⁷⁶⁾. Clearly these have serious consequences for patient care. Since ED overcrowding is a system based problem having causes largely external to the ED, the solution to striking the right balance between effective service provision and quality learning opportunities for interns in the ED requires a hospital-wide, systems-based approach.

8.0 Recommendations

The depth and breadth of this survey has resulted in a large amount of useful information which will be of value in planning for the increase in numbers of medical graduates. The increase in numbers of medical graduate represents a significant change to the health system which will challenge the capacity of the system at multiple levels⁽¹⁾. Meeting the demands of intern training within the current state based structure will require substantial coordination and a systems based perspective.

Based on the findings obtained, there are several specific recommendations that can be made regarding supervision and education of medical students and interns, ED staffing, and physical resources.

8.1 Staffing & Accreditation

Accreditation for intern training may be denied to EDs due to inappropriate casemix or lack of suitable staff to supervise⁽⁷⁵⁾. Addressing the accreditation issues of some hospital may have significant impact on the capacity to provide the requisite number of terms in emergency medicine. Since the accreditation standards with respect to supervisory staff have undergone recent review in some instances⁽¹²⁾ we recommend that systems be put in place to both disseminate these changes more widely and facilitate the process of accreditation for those EDs seeking a change to their accreditation status. Importantly, a review of the barriers to accreditation is required as is particular attention to the financial barriers to accepting increased numbers of interns. Since the cost of employing an intern far exceeds the amount provided to hospitals for accepting these staff, decision makers external to the ED may be the prime sources of resistance to accepting increased numbers of interns. A cost-benefit analysis that estimates short-term costs and long term benefits may provide further direction regarding the resource burden of placing interns in EDs.

At the time of this study, some post-graduate medical councils indicated that a review of policies regarding supervision were required. We recommend that the Confederation of Post-graduate Medical Councils facilitate the state-based review of supervisory arrangements for interns working in EDs.

The ED intern rotation was generally viewed as a valuable learning experience by participants of this study. Most Directors, DEMENTs and registrars felt that more interns could be accommodated provided that appropriate supports and resources were in place. For some EDs, this requires an increase in staffing both in general terms and in terms of senior medical staff. We recommend that greater assistance be provided to sites that experience difficulty in recruiting senior decision making staff, particularly FACEM, and that consideration be given to the provision of financial and other incentives to attract such staff.

In determining the number of interns that can be appropriately allocated to an ED without detriment to the intern and ED staff, consideration needs to be given not only to the numbers of existing staff available to support interns (both as supervisors and clinically, on the floor), but also to the staffing mix and their respective skill sets. Since each ED has its nuances it is unlikely that a simple formula will guide the

numbers that are appropriate. Nonetheless, the development of a set of minimum standards in staff numbers and skill sets and or qualification may assist EDs in self-assessment of preparedness to accept increased numbers of interns.

8.2 Supervision & Educational Models

For both interns and medical students service demands represent the greatest threat to the provision of educational opportunities and adequate supervision while working clinically. This is a major concern that could be addressed, in part, through the introduction of a designated educator role, that is, a senior medical staff member (e.g., FACEM or medical education registrar⁽¹¹⁾) whose sole role it is provide education and supervise the clinical practice of interns and medical students. This strategy, which has been suggested previously⁽⁴⁶⁾, would ensure that time allocated to providing feedback to junior doctors does not get usurped by clinical service-related tasks, and may have the advantage of facilitating feedback. With respect to ED-based educators of medical students, greater financial allocations should be provided by universities.

The roles of intern supervisor and educator are often undertaken by several doctors in ED, some of whom feel adequately skilled to teach or supervise and other who do not. There is a clear need for these doctors to receive training in how to supervise and educate junior doctors and medical students. The ED is a unique environment and is likely to present unique challenges to the educators and supervisors working in that environment. For this reason we recommend the provision of “train-the-trainer” opportunities that are specific to the ED context. We suggest that such a course be offered to supervisors and educators of interns and medical students as well as other staff such as nurses and JMOs (PGY2+) who often engage in teaching clinical procedures to interns and medical students. Although the need to improve the quality of medical teaching within the ED context has been recognised previously^(73, 74) and has resulted in the development of courses that “teach teachers how to teach”^(40, 41), these course are not widely available.

Career medical officers (CMOs) represent a small group of staff that have a variable presence in EDs and who may have a significant amount of experience in the ED context. It is apparent, however, that CMOs are somewhat overlooked with regard to education and feedback. We recommend that strategies be put in place to improve the awareness of these doctors to currently available educational resources in their respective jurisdictions. While the ACFJD is intended for prevocational doctors in the first few years following graduation, consideration could be given to tailoring aspects of the framework to enable self-assessment of these doctors. Provisions should be made for these staff members to access post-graduate training courses relevant to emergency medicine including advanced life support skill. Determination of the barriers that these doctors face in accessing further education should be made a key priority. Whether there is capacity to up-skill CMOs to FACEM level in terms of their supervisory roles requires further input from the regulatory body, ACEM.

While there is no substitute for experiential learning, consideration should be given to introducing alternate educational models for interns in the ED for a small portion of their rostered time. For example, structured “off-floor” case-based teaching (e.g., MoLIE)⁽¹⁶⁾ or use of simulation may provide increased capacity. We recommend,

however, that the maximum proportion of time spent engaged in such activities be supported through policy directives.

While the focus of emergency medicine is largely reactive, a small but significant component of emergency care is the delivery of public health, preventive medicine and health promotion⁽⁸⁰⁾. The development of skills in this area may help to decrease the burden of preventable diseases. For this reason we recommend the introduction of public health/health promotion roles for interns in the ED for a small portion of interns' rostered time.

8.3 Curriculum & Educational Resources

Improved awareness and understanding of the learning objectives of medical student rotations is required by ED staff. This is likely to be best facilitated through the current mapping of hospital rotations to the ACFJD⁽¹⁾. The provision of associated guidelines relevant to the ACFJD, and disseminated through appropriate channels, or through a coordinated approach by state Postgraduate Medical Education Councils is recommended. Furthermore we recommend the development of clear methods of self-assessment and objective assessment tailored to these objectives.

With respect to the ACFJD and its use in the postgraduate years, we recommend increased and improved communication of how it can be used to support the ED supervision process, a clearer articulation of its relevance and application for speciality EDs, and increased resources to support the implementation of the ACFJD. With respect to the latter we specifically recommend the provision of allocated time for ED intern supervisors to become familiar with the framework and designated hospital medical education facilitators to oversee its implementation. Furthermore, we recommend regular reviews and gap analyses relating to access of JMOs to hospital educational, pastoral and other supports.

Evidence from this and other studies suggests that staff enjoy teaching medical students, but require more resources to facilitate education. Consideration should be given to the development and provision of openly accessible resource modules to avoid unnecessary duplication of materials or the failure of such materials to be developed.

8.4 ED Design and Physical Resources

For several EDs, physical space is a key barrier to supporting an increased number of interns. While some reported undergoing or embarking on ED redesign, this was not the case for the vast majority, and any previous redesign had been largely outgrown by the rapid increase in patient attendances of recent years. For this reason we recommend that significant attention and investment be given to the design and space requirements of EDs across Australia with a shift in focus from one of stop-gap measures to one where ED designs reflect the projected growth in the ED population that is likely to occur as Australia's population ages.

8.5 Liaison

Maintaining adequate links and communication between EDs and external bodies including universities, postgraduate medical councils and internal hospital education units will be of prime importance as numbers of medical students and interns

increase. It is recommended that educational liaison workers be affiliated to emergency departments for this purpose and to troubleshoot or prevent minor problems that may occur with increased numbers of students and interns across city, metropolitan and provincial settings. Further, since participants expressed a lack of feedback and guidance from universities about medical student ED rotations, we recommend that results of this study be disseminated to university faculties of medicine to facilitate dialogue between EDs and universities. We suggest that universities accept a greater onus for ensuring that ED staff understand student learning objectives.

8.6 Demand Management

While the specific recommendations outlined above may enhance the capacity to provide emergency medicine terms for interns, a failure to also address the wider system factors that contribute to ED overcrowding and access block is likely to result in diminished learning opportunities for interns. There is now overwhelming evidence that overcrowding and access block are ubiquitous to the hospital system, are worsening, and are associated with poorer patient outcomes⁽⁷⁶⁾. The solution to these problems is likely to reside outside the ED, in provision and management of inpatient beds. Hospital-wide solutions need to be found that improve inpatient flow and discharge and optimise the potential for efficient ED service delivery and teaching.

Finally, we also recommend that an impact analysis be conducted six months to one year from the first intake of medical graduates that form part of the increased cohort.

9.0 Conclusions

The Emergency Medicine Capacity Assessment Study has been well received by the ED directors/DEMT, registrars and interns. This has been evidenced by the high level of voluntary participation in a lengthy, comprehensive telephone interview, and by the provision of detailed responses and suggestions to qualitative questions. The apparent eagerness of ED directors and DEMTs to participate in this study reflects their concern regarding the impact that an increased number of medical graduates will have in EDs.

It is clear that EDs are ill-prepared for the increase in intern numbers that will occur from 2012. The results of this nationwide study indicate that current staffing within EDs is generally suboptimal, and that in some sites improvements are required in physical space/ED design, access to resources, and educational and supervisory arrangements. Attention to these deficits is long overdue and the anticipated influx of interns serves as a timely impetus for change in these areas. This study serves as a basis for planning for the workforce changes brought about by the expected increase in medical graduate numbers. We have made several recommendations with respect to staffing, resources, education, and supervision and believe that it will be crucial to assess the actual impact of increased intern numbers on EDs in the years to come.

Appendix A: Level of Supervision of interns in the ED according to jurisdiction:

Table A1: Intern supervision requirements

| Jurisdiction | Intern supervision standards |
|--------------------------------|---|
| Victoria⁽⁷⁵⁾ | <p>Term supervisors must be a FACEM or a Fellow of one of the following colleges: Anaesthetics (FANZCA), General Practice (FRACGP), Medicine (FRACP), Surgery (FRACS), Intensive Care (FANZCA or FRACP), Rural and Remote Medicine (FACRRM) who has completed ALL of following training areas: Advanced Trauma Life Support or Emergency Management of Severe Trauma and Emergency Life Support or Advanced Cardiac Life Support and Paediatric Advanced Life Support Course or Equivalent internationally recognised courses.</p> <p>Interns undertaking a core ED rotation must be directly supervised 100% of the time by either a Fellow or an appropriately qualified and experienced medical practitioner with a minimum of three years experience in hospitals in Australia or other countries with similar health care systems.</p> <p>In non-core rotations, there must be direct supervision 80% of the time, and senior help must be available within 5 minutes at times when direct supervision is unavailable.</p> |
| South Australia[a] | <p>At the time of this study, supervision policies were under review. Provisional standards include:</p> <ol style="list-style-type: none"> 1. PGY1 must be supervised by PGY3 and above. 2. They must not do ward rounds alone and must check decisions on patient care/discharge with a PGY3 or consultant. |
| Tasmania [b] | <p>Interns should be directly supervised 100% of the time.</p> <p>The level of the experience of the supervisor isn't supported by policy however ACEM guidelines are adopted.</p> |
| NSW⁽⁸¹⁾ | <p>A PGY2 trainee <u>must not</u> be the most senior doctor in a facility.</p> <p>Clinical supervision must:</p> <ul style="list-style-type: none"> • provide a safe environment for patients and prevocational trainees • ensure optimal training of prevocational trainees • allow for increasing opportunities for independent decision making • be readily available at all times. • The proximity of clinical supervision required in each work situation is determined by: • the medical facility setting • the type of term • the knowledge, experience and skill level of the prevocational trainee • the scope of practice • the complexity of patient care required. <p><u>Supervisors must:</u></p> <ul style="list-style-type: none"> • make themselves known to the prevocational trainees • have at a minimum greater clinical experience than a PGY2 trainee • be aware of their responsibilities in providing clinical supervision • have demonstrated competencies to provide clinical supervision • supervisors must meet conditions as defined by the facility for suitability of supervision • be registered with the NSW Medical Board. • actively assess the level of supervision required. • evaluate the adequacy and effectiveness of prevocational trainee supervision. <p>Supervisors supervising a PGY1 trainee must be awake and onsite at all times.</p> <p>Supervisors supervising a PGY2 trainee can be asleep but must still be onsite and readily accessible.</p> <p>A specialist opinion must always be available.</p> <p>Term supervisors must ensure that their contact with the each prevocational trainee is sufficient to permit a valid assessment of the prevocational trainee's performance.</p> <p>Term Supervisors must fulfil the roles, responsibilities and criteria outlined in the NSW IMET Term Supervisor position description template.</p> <p>If the supervisor is not present on site, supervision must be delegated by the supervisor to another suitably experienced practitioner on site.</p> <p><u>The facility must:</u></p> <ul style="list-style-type: none"> • ensure appropriate levels of clinical supervision are provided at all times • ensure supervisors are aware of their responsibilities in providing clinical supervision • ensure the process for contacting supervisors is clear to all involved • ensure supervisors have the skills, experience and training to provide safe and effective clinical supervision • monitor the workload of supervisors to ensure they can effectively fulfil their role as a clinical supervisor |

| | |
|---|--|
| | <ul style="list-style-type: none"> • assess the suitability of a doctor to provide clinical supervision when there are conditions placed on their registration • ensure there is continuity of responsibility for supervision during periods of supervisory leave • provide the term supervisor with a position description inline with the NSW IMET Term Supervisor position description template <p>The position description for all staff responsible for supervising prevocational trainees clarifies their roles and responsibilities for supervision</p> |
| WA⁽⁸²⁾ | A term supervisor should provide supervision to prevocational doctors to the level appropriate to their year of training. The term supervisor takes direct responsibility for individual patients. The level of supervision is determined by casemix. Supervisors must be either on site or available on site within ten minutes. The PGY1 doctor must consult their term supervisor about the management of all patients. When the term supervisor is not available, supervision responsibility must be delegated to an appropriately trained medical practitioner who has adequate training in the area of clinical care and is aware of their responsibilities for patient safety. This delegation must be made known to the delegated supervisor/s and the PGY1 Doctor. |
| NT | Data Unavailable. |
| QLD⁽⁸³⁾ | <p>Supervisor – A medical practitioner who is responsible for ensuring that the Intern is performing his or her duties safely and effectively, and for providing feedback and training in the course of the work of the Intern. Given the complexity of the tasks performed by Interns, supervision should be provided by a medical practitioner with unrestricted general registration with the MBQ and at least three years postgraduate clinical experience. Appropriate Senior Medical Staff opinion must always be available.</p> <ol style="list-style-type: none"> 1. Interns must be supervised at all times regardless of which shift they are working or the location of their workplace. This supervision must ensure a safe clinical environment for patients and a safe learning environment for the Intern. Levels of supervision have been defined: <ol style="list-style-type: none"> a. Level 1 Supervision – the Supervisor is physically present with the Intern in the performance of the Intern's duties b. Level 2 Supervision – the Supervisor is not physically present with the Intern, but is immediately available on site if required by the Intern without impediment to access 2. The Facility Manager is responsible for ensuring that the appropriate level of supervision is provided 3. Term Supervisors must ensure that supervision of Interns: <ol style="list-style-type: none"> a. Is adequate at all times, to ensure safe patient care, and b. Provides a safe learning environment for the Intern, and c. Meets the Criteria as per the definition of Level 1 or Level 2 supervision <p>In considering this, Term Supervisors should be aware of the skills and experience and workloads of all Supervisors within their teams. If the Supervisor is not present on site, supervision may be delegated by the Supervisor to another suitably experienced practitioner on site</p> <ol style="list-style-type: none"> 5. The Facility Manager is responsible for ensuring that there is continuity of responsibility for supervision during periods of Supervisor leave 6. DCTs must ensure that Supervisors are aware of their responsibility to determine the appropriate proximity of supervision, by considering the clinical situation, and the knowledge and experience of the Intern |
| <ol style="list-style-type: none"> a. source: Personal communication Prof Richard Ruffin, Chair PMCSA (30/03/09) and Geoff Thompson, Postgraduate Medical Council of South Australia (13/5/09). b. source: Personal communication Terry Brown, Chair PMCT committee (3/5/09). | |

Appendix B: Interview Schedules

DIRECTOR/DEMT INTERVIEW

1. ABOUT YOU

(a) Are you an ED Director, Director of Emergency Medicine Training (DEMT) or both?

2. ABOUT YOUR ED

(a) How many ED attendances were there in the year 2007? _____

(b) What is the average no of Emergency Physicians (EFT) on weekly roster that are:

- Australian Medical graduates _____
- UK, Irish, NZ or North American Graduates _____
- Other international graduates _____
- How many ED physicians in EFT terms in total _____

(c) What is the average no of Registrars/Emergency Trainees (EFT) on weekly roster that are:

- Australian Medical graduates _____
- UK, Irish, NZ or North American Graduates _____
- Other international graduates _____
- How many Registrars/Emergency Trainees in EFT terms in total _____

(d) What is the average no of Post Graduate Year (PGY)2, 3 or later rotating to the ED, not emergency trainees, on your weekly roster, again in EFT terms that are:

- Australian Medical graduates _____
- UK, Irish, NZ or North American Graduates _____
- Other international graduates _____
- How many PGY 2, 3 or later in EFT terms in total _____

(e) Average no of Career Medical Officers (CMOs), service positions (EFT) (including unclassified permanent or part time staff)

- Australian Medical graduates _____
- UK, Irish, NZ or North American Graduates _____
- Other international graduates _____
- How many CMOs in EFT terms in total? _____

(f) What is the average number of ED interns in EFT terms on a weekly roster that are:

- Australian Medical graduates _____
- UK, Irish, NZ or North American Graduates _____
- Other international graduates _____
- How many ED interns in EFT terms in total _____

(g) Any other medical officers on the weekly roster?

[if yes] How many are:

- Australian Medical graduates _____
- UK, Irish, NZ or North American Graduates _____
- Other international graduates _____
- And how many other medical officers in EFT terms in total _____

(h) Any nurse practitioners? _____

(i) [If “yes”] How many? _____

3. YOUR OPINION ON YOUR CURRENT STAFFING LEVELS

Please rate your agreement to the following statements according to whether you strongly disagree, disagree, feel neutral, agree, strongly agree, feel it is not applicable to you or you don't know.

In general the ED is adequately staffed.
 There are enough Fellows of the Australasian College for Emergency Medicine (FACEM)/consultants for your ED.
 There are enough Emergency Trainees/registrars for your ED.
 There are enough PGY 2, 3 or later for your ED.
 There are enough Career Medical Officers (CMOs) for your ED.
 There are enough interns for your ED.
 There are enough nurses for your ED.

Do you have any comments you wish to make on your existing staffing levels?

Do you have any comments regarding your existing staffing mix? (*E.g. one staffing group overrepresented or underrepresented on your roster*)

4. YOUR OPINION ON CURRENT SUPERVISION, EDUCATION AND FEEDBACK OF MEDICAL STAFF

Please rate your agreement to the following statements using the same scale which is strongly disagree, disagree, feel neutral, agree, strongly agree, feel it is not applicable to you or you don't know.

In general the ED is adequately supervised.
 In general the medical staff in ED are adequately supervised.
 Interns arrive adequately prepared by their medical course to work in ED.
 Interns are adequately supervised clinically.
 Interns all receive formal feedback.
 Interns have ED formal education sessions.
 The ED rotation should remain compulsory for full general medical registration.
 Interns do more than their fair share of unsocial hours (e.g. nights and weekends).
 Interns are used as service providers with little attention to their learning needs.

In general, who provides most of the intern supervision in your ED? (Emergency registrars, consultants, other junior medical staff or other-*please specify*)

During the day-time shifts, who provides most of the intern supervision? (Emergency registrars, consultants, other junior medical staff or other-*please specify*)

During the night shifts, who provides most of the intern supervision? (Emergency registrars, consultants, other junior medical staff or other-*please specify*)

During the evening shifts, who provides most of the intern supervision? (Emergency registrars, consultants, other junior medical staff or other-*please specify*)

PGY 2, 3 or later are adequately supervised clinically.
 PGY 2, 3 or later all receive formal feedback.
 PGY 2, 3 or later have ED formal education sessions.
 PGY 2, 3 or later do more than their fair share of unsocial hours.
 PGY 2, 3 or later are used as service providers with little attention to their learning needs.

Emergency Trainees are adequately supervised clinically.
 Emergency Trainees all receive formal feedback.
 Emergency Trainees have formal ED education sessions.
 Emergency Trainees do more than their fair share of unsocial hours.

Emergency Trainees are used as service providers with little attention to their learning needs.

CMOs are adequately supervised clinically.

CMOs all receive formal feedback.

CMOs have ED formal education sessions.

CMOs do more than their fair share of unsocial hours.

CMOs are used as service providers with little attention to their learning needs.

Pre- registration International Medical Graduates are adequately supervised clinically.

Pre- registration International Medical Graduates all receive formal feedback.

Pre- registration International Medical Graduates have ED formal education sessions.

Pre- registration International Medical Graduates do more than their fair share of unsocial hours.

Pre- registration International Medical Graduates are used as service providers with little attention to their learning needs.

Do you have any comments you'd like to make about:

(a) supervision of medical staff in the ED?

(b) education in the ED?

(c) the ability to provide feedback to junior medical staff in the ED?

(d) the working environment in your ED?

Please rate the following services at your hospital for junior medical staff (other than ED trainees) in terms of whether they are poor, fair, good, very good or excellent.

Hospital educators such as Medical Education Officers.

ED clinical medical educators.

Administration, Human Resources, pastoral and other supports.

5. YOUR OPINION ON HAVING 70% MORE INTERNS IN YOUR ED WITHOUT OTHER CHANGES

Rate your agreement to the following statements using the scale strongly disagree, disagree, feel neutral, agree, strongly agree, feel it is not applicable to you or you don't know.

70% more interns could be absorbed without a problem.

I would like to have 70% more interns in the ED.

Having 70% more interns will decrease the time patients wait to be seen by a doctor.

Having 70% more interns will decrease the total time patients spend in ED.

Having 70% more interns will improve the standard of care.

70% more interns will solve medical resource problems.

70% more interns will slow down the ED due to supervisory and orientation requirements.

Having 70% more interns will significantly decrease interns exposure to clinical cases.

Having 70% more interns will significantly decrease interns exposure to procedures.

It will be difficult for the existing number of consultants to supervise 70% more interns.

It will be difficult for the existing number of registrars to supervise 70% more interns.

With 70% more interns medical student teaching will be adversely affected.

It will be difficult to cope with the increase of 70% more interns with existing support staff (e.g. for provision of administration, Human Resources, pastoral care and support etc).

It will be difficult to cope with the increase of 70% more interns with existing educational staff.

The high turnover of interns will impact negatively on team building in the ED.

Do you have any comments on having 70% more interns in your department?

6. YOUR OPINION ON REQUIREMENTS FOR ACCEPTING 70% MORE INTERNS.

Please rate each item as to whether you consider it unimportant, somewhat important, important, very important, or essential.

- More space for staff facilities (e.g. lockers and tearooms).
- More desk space.
- More telephones.
- More computers.
- More Emergency Consultants to provide adequate supervision.
- More Emergency Registrars to provide adequate supervision.
- More nursing staff to provide adequate support for interns.
- More non-clinical time allocated for staff who are required to assess interns.
- A specific ED clinical intern supervisor/ educator.

Now, returning to the agreement scale, of strongly disagree, disagree, feel neutral, agree, strongly agree, feel it is not applicable to you or you don't know, please rate your agreement to the following statements:

- Career Medical Officers maybe replaced by interns if there are 70% more interns
- We may have to decrease the number of non ED trainees rotating through our department if we take 70% more interns.
- No changes will be required to other junior staff for us to take 70% more interns.
- More patients will be required to maintain the learning experience for medical staff at current levels.
- Nurse practitioners can replace the interns in the ED.
- Nurse practitioners can replace the PGY 2, 3 or later (who are not emergency trainees) in the ED.

From your perspective, what percentage increase of interns would the ED be able to accept without making any changes? (25%, 50%, 70% or other- please specify)

Any other comments on adjustments that may be needed for the ED to accommodate 70% more interns?

Do you have any other comments about increasing the number of ED interns in your department?

Do you have any comments on the role of nurse practitioners in the ED?

7. UNDERGRADUATE MEDICAL TEACHING.

For how many weeks in their medical course are medical students formally attached to your ED?

How many students are allocated per rotation? _____

How many students are likely to be rostered on the floor at any one time? _____

Is there a structured University curriculum shared between hospital campuses in emergency medicine? _____

Do medical students appear in the ED when they are not doing their formal ED rotation? _____ -

Who is principally responsible for clinical supervision of medical students in ED? (interns, registrars, consultants, CMOs, academics or other- *please specify*) _____

Who is principally responsible for giving tutorials to medical students in ED? (interns, registrars, consultants, CMOs, academics or other- *please specify*) _____

Do any ED staff specifically get paid for the time they spend with medical students?

Who receives payment for having medical students? (ED staff, hospital, university, academic unit or other- *please specify*) _____

Continuing with the theme of undergraduate medical training, please rate your agreement to the following items using the scale: strongly disagree, disagree, feel neutral, agree, strongly agree, feel it is not applicable to you or you don't know.

Medical students in the ED detract from patient care.
 In general, medical students seem to enjoy the ED rotation.
 There is little time to attend to the learning needs of medical students in the ED.
 The existing ED rotations for medical students are too short.
 Medical Students all receive feedback at the end of their ED rotation.
 At the completion of their ED rotation, our medical students are ready for internship in the ED.
 We get regular feedback and contact from the University about medical students' ED rotation.
 We would be able to increase the number of students *per rotation* in emergency medicine by 70% without difficulty.
 We would be able to increase the number of *rotations per year* of medical students by 70% without difficulty.
 With current ED resources, I would welcome increasing the number of medical students by 70%.
 With specific resource allocation, I would welcome increasing the number of medical students by 70%.
 A specific educator in the ED for medical students is required.
 Unless ED are specifically resourced to teach and supervise them, medical students shouldn't do an ED rotation.
 The increase in 70% of medical graduates will affect the ability to take medical elective students.
 The increase in 70% of medical graduates will affect the ability to take Australian Medical Council (AMC) Observers.

Do you have any comments you wish to make about supervision of Medical Students in the ED?

Do you have any comments you wish to make about learning opportunities of Medical Students in the ED?

8. THE AUSTRALIAN CURRICULUM FRAMEWORK (ACF) FOR JUNIOR DOCTORS

Please rate your agreement to the following items using the scale: strongly disagree, disagree, feel neutral, agree, strongly agree, not applicable or you don't know.

I am familiar with the Australian Curriculum Framework (ACF) for Junior Doctors. *(If not then complete interview)*

If yes to the above question; answer the following:

I have a good understanding of the structure of the ACF.
 I have a good understanding of the aspects of the ACF that relate to ED rotations.
 The ACF helps clarify what competencies junior doctors are expected to attain in their prevocational years.
 The ACF accurately reflects the requirements of ED rotations.
 The ACF is linked with the education/training sessions provided in your hospital.
 Clinical educators and supervisors and/or Medical education support staff constantly refer to the ACF.
 Junior doctors are expected to have knowledge of the ACF and how it relates to their rotations.
 The ACF is linked to assessment being undertaken at the hospital.
 The ACF has changed the way prevocational doctors approach their ED rotations.
 Most prevocational doctors in the ED will have experience to meet the ACF competencies.
 Supervisors are aware of the ACF and it changes their focus or what they teach.
 The ACF has no relevance to prevocational ED doctors.
 Limitations on teaching resources have obstructed the implementation of the ACF.

Lack of support by more senior staff has been an obstacle in the implementation of the ACF.
Unclear methods of self-assessment have been an obstacle in the implementation of the ACF.
Unclear methods of objective assessment have been an obstacle in the implementation of the ACF.
Protected teaching time has been an obstacle in the implementation of the ACF.
Limited Knowledge/understanding of the ACF has been an obstacle in the implementation of the ACF.
There have been other obstacles to the implementation of the ACF *(please specify)*.
I have utilised the ACF in other ways *(please specify)*

REGISTRAR INTERVIEW SCHEDULE**1. ABOUT YOU**

- (a) Please confirm that you are an emergency trainee: _____
 (b) What was your year of graduation from medical school? _____
 (c) What is the Hospital of your ED rotation? _____
 (d) What was your medical school? _____

2. YOUR OPINION ON YOUR CURRENT STAFFING LEVELS

Please rate your agreement to the following statements according to whether you strongly disagree, disagree, feel neutral, agree, strongly agree, feel it is not applicable to you or you don't know.

- In general the ED is adequately staffed.
 There are enough Fellows of the Australasian College of Emergency Medicine (FACEM)/Consultants for your ED.
 There are enough Emergency Trainees/Registrars for your ED.
 There are enough PGY 2, 3 or later for your ED.
 There are enough Career Medical Officers (CMOs) for your ED.
 There are enough interns for your ED.
 There are enough nurses for your ED.

Do you have any comments you wish to make on your existing staffing levels?

Do you have any comments regarding your existing staffing mix? (*e.g. one staffing group overrepresented or underrepresented on your roster*)

3. YOUR OPINION ON CURRENT SUPERVISION, EDUCATION AND FEEDBACK OF MEDICAL STAFF

Please rate your agreement to the following statements according to whether you strongly disagree, disagree, feel neutral, agree, strongly agree, feel it is not applicable to you or you don't know.

- In general the ED is adequately supervised.
 In general the medical staff in ED are adequately supervised.
 In general interns in the ED are adequately supervised.
 I feel adequately supervised in the ED.
 I receive formal feedback on my ED rotation.
 I participate in formal education sessions in the ED.
 The ED rotation is a valuable learning experience for interns.
 I do more than my fair share of unsocial hours in the ED (e.g. nights and weekends).
 I feel that I am a service provider in the ED with little attention being provided to my education.
 Interns are used as service providers with little attention to their learning needs.
 The ED rotation should remain compulsory for full general medical registration.
 I play an active role in teaching medical students in the ED.
 I feel I have enough time to teach medical students in the ED.

In general, who provides most of the intern supervision in your ED? (Emergency registrars, consultants, other junior medical staff or other-*please specify*)

During the day-time shifts, who provides most of the intern supervision? (Emergency registrars, consultants, other junior medical staff or other-*please specify*)

During the night shifts, who provides most of the intern supervision? (Emergency registrars, consultants, other junior medical staff or other-*please specify*)

During the evening shifts, who provides most of the intern supervision? (Emergency registrars, consultants, other junior medical staff or other-*please specify*)

Do you have any comments you'd like to make about:

- (a) supervision in ED?
- (b) education in ED?
- (c) feedback in ED?
- (d) the working environment in ED?

Please rate the following services at your hospital for junior medical staff (other than ED trainees) in terms of whether they are poor, fair, good, very good or excellent.

Hospital educators such as Medical Education Officers.

ED clinical medical educators.

Administration, Human Resources, pastoral and other supports.

4. YOUR OPINION ON HAVING 70% MORE INTERNS IN YOUR ED WITHOUT OTHER CHANGES

Please rate your agreement to the following statements according to whether you strongly disagree, disagree, feel neutral, agree, strongly agree, feel it is not applicable to you or you don't know.

Having 70% more interns on the roster would not affect my ED experience.

I would like to have 70% more interns in the ED.

Having 70% more interns will decrease the time patients wait to be seen by a doctor in ED.

Having 70% more interns will decrease the total time patients spend in ED.

Having 70% more interns will improve the standard of care.

70% more interns will solve medical resource problems.

70% more interns will slow down the ED due to supervisory and orientation requirements.

Having 70% more interns will significantly decrease interns exposure to clinical cases.

Having 70% more interns will significantly decrease interns exposure to procedures.

It will be difficult for the existing number of consultants to supervise 70% more interns.

It will be difficult for the existing number of registrars to supervise 70% more interns.

With 70% more interns medical student teaching will be adversely affected.

It would be difficult to cope with the increase of 70% more interns with existing support staff (e.g. Administration, Human Resources and pastoral care etc).

It would be difficult to cope with the increase of 70% more interns with existing educational staff.

The high turnover of interns will impact negatively on team building.

Do you have any comments on having 70% more interns in your department?

5. YOUR OPINION ON REQUIREMENTS FOR ACCEPTING 70% MORE INTERNS.

Please rate each item as to whether you consider it unimportant, somewhat important, important, very important, or essential.

More space for staff facilities (e.g. lockers and tearooms)

More desk space.

More telephones.

More computers.

More Emergency Consultants to provide adequate supervision.

More Emergency Registrars to provide adequate supervision.

More nursing staff to provide adequate support for interns.

More non-clinical time allocated for staff who are required to assess interns.

A specific clinical intern supervisor/ educator.

From your perspective, what percentage increase of interns would the ED be able to accept without making any changes? (25%, 50%, 70% or other- please specify)

Any other comments on adjustments that may be needed for the ED to accommodate 70% more interns?

Do you have any other comments about increasing the number of ED interns in your department?

6. UNDERGRADUATE MEDICAL TEACHING.

Looking back to your time as a medical student, please rate your agreement to the following items using the scale: strongly disagree, disagree, feel neutral, agree, strongly agree, feel it is not applicable to you or you don't know

There was a designated area or facility allocated to medical students in the ED.
I felt welcomed in the ED by doctors as a medical student.
I felt welcomed in the ED by nurses as a medical student.
I felt in the way as a medical student in the ED
I felt as if I detracted from patient care as a medical student in the ED.
As a medical student I enjoyed the ED rotation.
We could have increased the number of students *per rotation* in the ED by 70% without affecting my learning experience
There was little time for the ED doctors to attend to the learning needs of medical students in the ED.
The ED rotations for medical students are too short.
At the completion of my ED rotation, as a medical student I felt ready for an internship in the ED.
I received feedback at the end of my ED rotation as a medical student.

Regarding your experience in ED at the moment, please rate your agreement to the following items using the scale: strongly disagree, disagree, feel neutral, agree, strongly agree, feel it is not applicable to you or you don't know.

Within the current ED resources, I would welcome increasing the number of medical students by 70%.
With specific resources allocated, I would welcome increasing the number of medical students by 70%.
A specific educator in the ED for medical students is required.
Unless ED are specifically resourced to teach and supervise them, medical students shouldn't do an ED rotation.

Do you have any comments you wish to make about supervision of Medical Students in the ED?

Do you have any comments you wish to make about learning opportunities of Medical Students in the ED?

7. THE AUSTRALIAN CURRICULUM FRAMEWORK (ACF) FOR JUNIOR DOCTORS

Please rate your agreement to the following items using the scale: strongly disagree, disagree, feel neutral, agree, strongly agree, not applicable or you don't know.

I am familiar with the Australian Curriculum Framework (ACF) for Junior Doctors.

If yes to the above question; answer the following:

I have a good understanding of the structure of the ACF.
I have a good understanding of the aspects of the ACF that relate to ED rotations.

The ACF helps clarify what competencies junior doctors are expected to attain in their prevocational years.
The ACF accurately reflects the requirements of ED rotations.
The ACF is linked with the education/training sessions provided in your hospital.
Clinical educators and supervisors and/or Medical education support staff constantly refer to the ACF.
Junior doctors are expected to have knowledge of the ACF and how it relates to their rotations.
The ACF is linked to assessment being undertaken at the hospital.
The ACF has changed the way prevocational doctors approach their ED rotations.
Most prevocational doctors in the ED will have experience to meet the ACF competencies.
Supervisors are aware of the ACF and it changes what they teach or focus on.
The ACF has no relevance to prevocational ED doctors.
I have utilised the ACF in other ways (*please specify*).

INTERN INTERVIEW SCHEDULE**1. ABOUT YOU**

- (a) Please confirm that you are an intern: _____
 (b) What was your year of graduation from medical school? _____
 (c) What is the Hospital of your ED rotation? _____
 (d) What was your medical school? _____

2. YOUR OPINION ON YOUR CURRENT STAFFING LEVEL

Please rate your agreement to the following statements according to whether you strongly disagree, disagree, feel neutral, agree, strongly agree, feel it is not applicable to you or you don't know

- In general the ED is adequately staffed.
 There are enough Fellows of the Australasian College of Emergency Medicine (FACEM)/ consultants for your ED.
 There are enough Emergency Trainees/Registrars for your ED.
 There are enough PGY 2, 3 or later for your ED.
 There are enough Career Medical Officers (CMO) for your ED.
 There are enough interns for your ED.
 There are enough nurses for your ED.

Do you have any comments you wish to make on your existing staffing levels?

Do you have any comments regarding your existing staffing mix? (e.g. one staffing group overrepresented or underrepresented on your roster)

3. YOUR OPINION ON CURRENT SUPERVISION, EDUCATION AND FEEDBACK OF MEDICAL STAFF

Please rate your agreement to the following statements according to whether you strongly disagree, disagree, feel neutral, agree, strongly agree, feel it is not applicable to you or you don't know.

- In general the ED is adequately supervised.
 In general the medical staff in ED are adequately supervised.
 In general interns in the ED are adequately supervised.
 My medical degree prepared me adequately for the ED rotation.
 I felt I was/feel I am adequately supervised clinically during my ED rotation.
 I received/receive/expect to receive formal feedback on my ED rotation.
 I had/have/ expect to have formal education sessions in the ED.
 I did/do more than my fair share of unsocial hours in the ED (e.g. nights and weekends).
 Interns are used as service providers with little attention to their learning needs.
 The ED rotation should remain compulsory for full general medical registration.
 An ED rotation is not necessary for my training needs.
 I play/ will play an active role in teaching medical students in the ED.
 I feel I have/will have enough time to teach medical students in the ED

In general, who provides most of the intern supervision in your ED? (Emergency registrars, consultants, other junior medical staff or other-*please specify*)

During the day-time shifts, who provides most of the intern supervision? (Emergency registrars, consultants, other junior medical staff or other-*please specify*)

During the night shifts, who provides most of the intern supervision? (Emergency registrars, consultants, other junior medical staff or other-*please specify*)

During the evening shifts, who provides most of the intern supervision? (Emergency registrars, consultants, other junior medical staff or other-*please specify*)

Do you have any comments you'd like to make about:

- (a) supervision during your ED rotation?
- (b) education during your ED rotation?
- (c) feedback during your ED rotation?
- (d) the working environment during your ED rotation?

Please rate the following services at your hospital for junior medical staff (other than ED trainees) in terms of whether they are poor, fair, good, very good or excellent.

Hospital educators such as Medical Education Officers.

ED clinical medical educators.

Administration, Human Resources, pastoral and other supports.

4. YOUR OPINION ON HAVING 70% MORE INTERNS IN YOUR ED WITHOUT OTHER CHANGES

Please rate your agreement to the following statements according to whether you strongly disagree, disagree, feel neutral, agree, strongly agree, feel it is not applicable to you or you don't know.

Having 70% more interns on the roster would not affect my ED experience.

I would like to have 70% more interns in the ED.

Having 70% more interns will decrease the time patients wait to be seen by a doctor in ED.

Having 70% more interns will decrease the total time patients spend in ED.

Having 70% more interns will improve the standard of care.

70% more interns will solve medical resource problems.

70% more interns will slow down the ED due to supervisory and orientation requirements.

Having 70% more interns will significantly decrease my exposure to clinical cases.

Having 70% more interns will significantly decrease my exposure to procedures.

It will be difficult for the existing number of consultants to supervise 70% more interns.

It will be difficult for the existing number of registrars to supervise 70% more interns.

With 70% more interns, medical student teaching will be adversely affected.

It will be difficult to cope with the increase of 70% more interns with existing support staff (e.g. Administration, Human Resources and pastoral care etc.).

It will be difficult to cope with the increase of 70% more interns with existing educational staff.

The high turnover of interns will impact negatively on team building.

Do you have any comments on having 70% more interns in your department?

5. YOUR OPINION ON REQUIREMENTS FOR ACCEPTING 70% MORE INTERNS.

Please rate each item as to whether you consider it unimportant, somewhat important, important, very important, or essential.

More space for staff facilities (e.g. lockers and tearooms)

More desk space.

More telephones.

More computers.

More Emergency Consultants to provide adequate supervision.

More Emergency Registrars to provide adequate supervision.

More nursing staff to provide adequate support for interns.

More non-clinical time allocated for staff that are required to assess interns.

A specific clinical intern supervisor/ educator.

From your perspective, what percentage increase of interns would the ED be able to accept without making any changes? (25%, 50%, 70% or other- please specify)

Any other comments on adjustments that may be needed for the ED to accommodate 70% more interns?

Do you have any other comments about increasing the number of ED interns in your department?

6. UNDERGRADUATE MEDICAL TEACHING.

Looking back at your time as a medical student, please rate your agreement to the following items using the scale: strongly disagree, disagree, neither disagree or agree, agree, strongly agree, feel it is not applicable to you or you don't know.

- There was a designated area or facility allocated to medical students in the ED.
- I felt welcomed in the ED by doctors as a medical student.
- I felt welcomed in the ED by nurses as a medical student.
- I felt in the way as a medical student in the ED.
- I felt as if I detracted from patient care as a medical student in the ED.
- As a medical student I enjoyed the ED rotation.
- We could have increased the number of students *per rotation* in the ED by 70% without affecting my learning experience.
- There was little time for the ED doctors to attend to the learning needs of medical students in the ED.
- The ED rotations for medical students are too short.
- At the completion of the ED rotation, as a medical student I felt ready for an internship in the ED.
- I received feedback at the end of my ED rotation as a medical student.

Regarding your experience in ED at the moment, please rate your agreement to the following items using the scale: strongly disagree, disagree, feel neutral, agree, strongly agree, feel it is not applicable to you or you don't know.

- With the current ED resources, I would welcome increasing the number of medical students by 70%.
- With specific resources allocated, I would welcome increasing the number of medical students by 70%.
- A specific educator in the ED for medical students is required.
- Unless ED are specifically resourced to teach and supervise them, medical students shouldn't do an ED rotation.

Do you have any comments you wish to make about supervision of Medical Students in the ED?

Do you have any comments you wish to make about learning opportunities of Medical Students in the ED?

7. THE AUSTRALIAN CURRICULUM FRAMEWORK (ACF) FOR JUNIOR DOCTORS

Please rate your agreement to the following items using the scale: strongly disagree, disagree, feel neutral, agree, strongly agree, not applicable or you don't know.

- I am familiar with the Australian Curriculum Framework (ACF) for Junior Doctors.

If yes to the above question; answer the following:

- I have a good understanding of the structure of the ACF.
- I have a good understanding of the aspects of the ACF that relate to ED rotations.
- The ACF helps clarify what competencies I am expected to attain in my prevocational years.

I have utilised the ACF for self-assessment.
I compare my current rotation with competencies listed in the ACF.
The ACF accurately reflects the requirements of ED rotations.
The ACF is linked with the education/training sessions provided in the hospital where you are currently an intern.
Clinical educators and supervisors and/or Medical education support staff constantly refer to the ACF.
Junior doctors are expected to have knowledge of the ACF and how it relates to their rotations.
The ACF is linked to assessment being undertaken at the hospital.
The ACF has changed the way prevocational doctors approach their ED rotations.
Most prevocational doctors in the ED will have experience to meet the ACF competencies.
The ACF has no relevance to prevocational ED doctors.
I have utilised the ACF in other ways (*please specify*).

Appendix C: Responses to Items Not presented in main report

Table C1: Origin of medical degree attainment by medical staff category

| Average number of Emergency Physicians (EFT) on the weekly roster | Mean(95% CI) | Median (IQR) |
|---|------------------|--------------|
| Australian Medical Graduates | 7.2 (2.53-11.91) | 8 (5.95) |
| UK, Ireland, New Zealand, North American graduates | .7 (-.31-1.72) | .75 (1.38) |
| Other International Medical Graduates | .4 (-.12-.92) | .5 (.75) |
| TOTAL Emergency Physicians | 7.7(3.08-12.28) | 9 (5.6) |

| Average number of Emergency Physicians Registrars/Trainees (EFT) on the weekly roster | Mean (95% CI) | Median (IQR) |
|---|-------------------|--------------|
| Australian Medical Graduates | 5.2 (1.14-9.26) | 7 (5.5) |
| UK, Ireland, New Zealand, North American graduates | 4.4 (1.16- 7.63) | 6 (4) |
| Other International Medical Graduates | 1.6 (-.28-3.48) | 2 (3) |
| TOTAL Emergency Physicians | 10.6 (2.49-18.74) | 11 (10.95) |

| Average number of Post Graduate Years 2, 3 or later (EFT) on the weekly roster | Mean (95% CI) | Median (IQR) |
|--|-----------------|--------------|
| Australian Medical Graduates | 6 (1.27-10.73) | 5 (7.5) |
| UK, Ireland, New Zealand, North American graduates | .6 (-.08-1.28) | 1 (1) |
| Other International Medical Graduates | 3.4 (-.49-7.29) | 2 (5.5) |
| TOTAL International Medical Graduates | 9.4 (4.18-14.7) | 11.2 (6) |

| Average number of Career Medical Officers (EFT) on the weekly roster | Mean (95% CI) | Median (IQR) |
|--|-----------------|--------------|
| Australian Medical Graduates | 1.9 (-.36-4.16) | 1 (3.25) |
| UK, Ireland, New Zealand, North American graduates | .4 (-.71-1.51) | .0(1) |
| TOTAL Career Medical Officers | 2.1 (-.32-4.56) | 1.2 (3.7) |

| Average number of ED Interns (EFT) on the weekly roster | Mean (95% CI) | Median (IQR) |
|---|-----------------|--------------|
| Australian Medical Graduates | 2.8 (1.76-3.83) | 3 (1.5) |
| TOTAL ED Interns | 2.8 (1.76-3.84) | 3 (1.5) |

| Average number of Other Medical Officers (EFT) on the weekly roster | Mean (95% CI) | Median (IQR) |
|---|-------------------|--------------|
| Australian Medical Graduates | 2.8 (-.97-6.57) | 2 (4) |
| Other International Medical Graduates | 3.4 (-4.72-11.52) | 0(8.5) |
| TOTAL Other Medical Officers | 5.8 (-2.12-13.72) | 2 (11.5) |

Table C2: Number and percentage of EDs with Nurse Practitioners on staff

| Nurse Practitioner on Staff | N | % |
|-----------------------------|----|-------|
| Yes | 24 | 39.3 |
| No | 37 | 60.7 |
| Total | 61 | 100.0 |

Figure C3. Number and percentage of Intern and Advanced trainees by level of agreement to statements regarding adequacy of supervision.

| Statement | | strongly disagree | disagree | Neutral | agree | strongly agree | n/a | Total |
|--|---|-------------------|----------|---------|-------|----------------|-----|-------|
| In general interns in the ED are adequately supervised | N | 1 | 5 | 0 | 16 | 10 | 1 | 33 |
| | % | 3 | 15.2 | 0 | 48.5 | 30.3 | 3 | 100 |
| I feel adequately supervised in the ED (clinically) | N | 0 | 1 | 3 | 10 | 5 | 0 | 19 |
| | % | 0 | 5.3 | 15.8 | 52.6 | 26.3 | 0 | 100 |

Table C4. Number and percentage of interns and registrars by level of agreement to statements regarding the value of internship.

| Statement | | strongly disagree | disagree | Neutral | agree | strongly agree | Total |
|--|---|-------------------|----------|---------|-------|----------------|-------|
| An ED rotation is not necessary for my training needs* | N | 9 | 5 | 1 | - | - | 15 |
| | % | 60 | 33 | 6.7 | - | - | 100 |
| The ED rotation is a valuable learning experience for interns‡ | N | - | 1 | 1 | 2 | 14 | 18 |
| | % | - | 5.6 | 5.6 | 11.1 | 77.8 | 100 |

*interns only

‡ registrars only

Table C5: Is there a structured University curriculum shared between hospital campuses in emergency medicine?

| Response | N | % |
|--------------|-----------|--------------|
| other | 11 | 18.0 |
| yes | 30 | 49.2 |
| no | 20 | 32.8 |
| Total | 61 | 100.0 |

Table C6: ED Directors and DENT's level of agreement about medical students in the ED

| ITEM | | Strongly disagree | disagree | neutral | agree | strongly agree | N/A | Don't Know | Total |
|---|---|-------------------|----------|---------|-------|----------------|------|------------|-------|
| Medical students in the ED detract from patient care | N | 6 | 43 | 7 | 5 | 0 | 0 | 0 | 61 |
| | % | 9.8 | 70.5 | 11.5 | 8.2 | 0.0 | 0.0 | 0.0 | 100 |
| The existing ED rotations for medical students are too short | N | 1 | 7 | 3 | 35 | 8 | 2 | 5 | 61 |
| | % | 1.6 | 11.5 | 4.9 | 57.4 | 13.1 | 3.3 | 8.2 | 100 |
| Medical Students all receive feedback at the end of their ED rotation | N | 8 | 21 | 11 | 17 | 1 | 3 | 0 | 61 |
| | % | 13.1 | 34.4 | 18.0 | 27.9 | 1.6 | 4.9 | 0.0 | 100 |
| We get regular feedback and contact from the University about medical students' ED rotation | N | 16 | 32 | 4 | 7 | 2 | 0 | 0 | 61 |
| | % | 26.2 | 52.5 | 6.6 | 11.5 | 3.3 | 0.0 | 0.0 | 100 |
| At the completion of their ED rotation, our medical students are ready for internship in the ED | N | 3 | 19 | 4 | 30 | 2 | 0 | 3 | 61 |
| | % | 4.9 | 31.1 | 6.6 | 49.2 | 3.3 | 0.0 | 4.9 | 100 |
| We would be able to increase the number of students per rotation in emergency medicine by 70% without difficulty | N | 17 | 30 | 1 | 10 | 1 | 1 | 1 | 61 |
| | % | 27.9 | 49.2 | 1.6 | 16.4 | 1.6 | 1.6 | 1.6 | 100 |
| We would be able to increase the number of rotations per year of medical students by 70% without difficulty | N | 17 | 30 | 1 | 10 | 1 | 1 | 1 | 61 |
| | % | 27.9 | 49.2 | 1.6 | 16.4 | 1.6 | 1.6 | 1.6 | 100 |
| The increase in 70% of medical graduates will affect the ability to take medical elective students | N | 0 | 9 | 3 | 36 | 11 | 1 | 0 | 60 |
| | % | 0.0 | 15.0 | 5.0 | 60.0 | 18.3 | 1.7 | 0.0 | 100 |
| The increase in 70% of medical graduates will affect the ability to take Australian Medical Council (AMC) Observers | N | 0 | 1 | 4 | 30 | 12 | 11 | 2 | 60 |
| | % | 0.0 | 1.7 | 6.7 | 50.0 | 20.0 | 18.3 | 3.3 | 100 |

Table C7: Do students appear in the ED when it is not part of their formal ED rotation?

| Response | N | % |
|----------------|-----------|--------------|
| other | 13 | 21.3 |
| yes | 28 | 45.9 |
| no | 18 | 29.5 |
| not applicable | 2 | 3.3 |
| Total | 61 | 100.0 |

Table C8. Number and percentage of interns and advanced trainees by level of agreement to the statement, "I play/ I will play an active role in teaching medical students in the ED".

| Statement | | strongly disagree | disagree | Neutral | agree | strongly agree | n/a | Total |
|--|---|-------------------|----------|---------|-------|----------------|-----|-------|
| I play/I will play an active role in teaching medical students in the ED | N | - | 3 | 4 | 17 | 8 | 1 | 33 |
| | % | - | 9.1 | 12.1 | 51.5 | 24.2 | 3.0 | 100 |

Table C9: Emergency trainee and Interns level agreement about their experiences during their ED rotation

| ITEM | N | Strongly disagree | Disagree | neutral | Agree | Strongly agree | N/A | Total |
|---|---|-------------------|----------|---------|-------|----------------|------|-------|
| At the completion of my ED rotation, as a medical student I felt ready for internship in the ED | N | 6 | 11 | 2 | 4 | 0 | 11 | 34 |
| | % | 17.6 | 32.4 | 5.9 | 11.8 | 0.0 | 32.4 | 100 |
| There was a designated area or facility allocated to medical students in the ED | N | 8 | 16 | 1 | 0 | 0 | 9 | 34 |
| | % | 23.5 | 47.1 | 2.9 | 0.0 | 0.0 | 26.5 | 100 |
| I felt welcomed in the ED by doctors as a medical student | N | 2 | 4 | 4 | 13 | 2 | 9 | 34 |
| | % | 5.9 | 11.8 | 11.8 | 38.2 | 5.9 | 26.5 | 100 |
| I felt welcomed in the ED by nurses as a medical student | N | 5 | 8 | 4 | 7 | 1 | 9 | 34 |
| | % | 14.7 | 23.5 | 11.8 | 20.6 | 2.9 | 26.5 | 100 |
| I felt in the way as a medical student in the ED | N | 0 | 3 | 3 | 14 | 5 | 9 | 34 |
| | % | 0.0 | 8.8 | 8.8 | 41.2 | 14.7 | 26.5 | 100 |
| I received feedback at the end of the ED rotation | N | 1 | 5 | 1 | 14 | 2 | 11 | 34 |
| | % | 2.9 | 14.7 | 2.9 | 41.2 | 5.9 | 32.4 | 100 |

Table C10: Participants agreement about the impact of having 70% more interns in the ED

| ITEM | N | strongly disagree | disagree | neutral | agree | strongly agree | N/A | Don't Know | Total |
|--|---|-------------------|----------|---------|-------|----------------|-----|------------|-------|
| Having 70% more interns will decrease the total time patients spend in ED | n | 33 | 37 | 10 | 12 | 0 | 2 | 1 | 95 |
| | % | 34.7 | 38.9 | 10.5 | 12.6 | 0.0 | 2.1 | 1.1 | 100 |
| Having 70% more interns will improve the standard of care | n | 22 | 45 | 15 | 11 | 0 | 2 | 0 | 95 |
| | % | 23.2 | 47.4 | 15.8 | 11.6 | 0.0 | 2.1 | 0.0 | 100 |
| 70% more interns will solve medical resource problems | n | 38 | 43 | 6 | 6 | 0 | 2 | 0 | 95 |
| | % | 40.0 | 45.3 | 6.3 | 6.3 | 0.0 | 2.1 | 0.0 | 100 |
| 70% more interns will slow down the ED due to supervisory and orientation requirements | n | 0 | 11 | 10 | 37 | 34 | 2 | 0 | 94 |
| | % | 0.0 | 11.7 | 10.6 | 39.4 | 36.2 | 2.1 | 0.0 | 100 |
| It will be difficult to cope with the increase of 70% more interns with existing support staff | n | - | 8 | 8 | 49 | 24 | 3 | 3 | 95 |
| | % | - | 8.4 | 8.4 | 51.6 | 25.3 | 3.2 | 3.2 | 100 |

Table C11: Awareness of The Australian Curriculum Framework for Junior Doctors amongst emergency medical staff*

| ITEM | N | strongly disagree | disagree | neutral | agree | strongly agree | N/A | Don't Know | Total |
|--|---|-------------------|----------|---------|-------|----------------|------|------------|-------|
| I have a good understanding of the structure of the ACFJD | n | 0 | 7 | 10 | 14 | 1 | 5 | 0 | 37 |
| | % | 0.0 | 18.9 | 27.0 | 37.8 | 2.7 | 13.5 | 0.0 | 100 |
| I have a good understanding of the aspects of the ACF that relate to ED rotations | n | 0 | 11 | 6 | 13 | 2 | 5 | 0 | 37 |
| | % | 0.0 | 29.7 | 16.2 | 35.1 | 5.4 | 13.5 | 0.0 | 100 |
| The ACF helps clarify what competencies junior doctors are expected to attain in their prevocational years | n | 0 | 0 | 6 | 23 | 3 | 5 | 0 | 37 |
| | % | 0.0 | 0.0 | 16.2 | 62.2 | 8.1 | 13.5 | 0.0 | 100.0 |
| The ACF accurately reflects the requirements of ED rotations | n | 0 | 6 | 9 | 12 | 1 | 8 | 0 | 36 |
| | % | 0.0 | 16.7 | 25.0 | 33.3 | 2.8 | 22.2 | 0.0 | 100 |
| The ACF is linked with the education/training sessions provided in your hospital | n | 1 | 11 | 5 | 7 | 4 | 7 | 2 | 37 |
| | % | 2.7 | 29.7 | 13.5 | 18.9 | 10.8 | 18.9 | 5.4 | 100 |
| Clinical educators and supervisors and/or Medical education support staff constantly refer to the ACF | n | 9 | 10 | 3 | 7 | 0 | 8 | 0 | 37 |
| | % | 24.3 | 27.0 | 8.1 | 18.9 | 0.0 | 21.6 | 0.0 | 100 |
| Junior doctors are expected to have knowledge of the ACF and how it relates to their rotations | n | 2 | 19 | 5 | 4 | 0 | 7 | 0 | 37 |
| | % | 5.4 | 51.4 | 13.5 | 10.8 | 0.0 | 18.9 | 0.0 | 100 |
| The ACF is linked to assessment being undertaken at the hospital | n | 3 | 9 | 5 | 9 | 0 | 11 | 0 | 37 |
| | % | 8.1 | 24.3 | 13.5 | 24.3 | 0.0 | 29.7 | 0.0 | 100 |
| The ACF has changed the way prevocational doctors approach their ED rotations | n | 5 | 18 | 4 | 3 | 0 | 7 | 0 | 37 |
| | % | 13.5 | 48.6 | 10.8 | 8.1 | 0.0 | 18.9 | 0.0 | 100 |
| Most prevocational doctors in the ED will have experience to meet the ACF competencies | n | 1 | 3 | 5 | 13 | 2 | 12 | 0 | 36 |
| | % | 2.8 | 8.3 | 16.9 | 36.1 | 5.6 | 33.3 | 0.0 | 100 |
| The ACF has no relevance to prevocational ED doctors | n | 4 | 17 | 7 | 1 | 0 | 8 | 0 | 37 |
| | % | 10.8 | 45.9 | 18.9 | 2.7 | 0.0 | 21.6 | 0.0 | 100 |
| Supervisors are aware of the ACF and it change their focus or what they teach | n | 4 | 16 | 7 | 1 | 1 | 8 | 0 | 37 |
| | % | 10.8 | 43.2 | 18.9 | 2.7 | 2.7 | 21.6 | 0.0 | 100 |

*participants that strongly agreed, agreed or were neutral when presented with the statement, "I am familiar with the Australian Curriculum Framework for Junior Doctors".

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