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**WHY IS THERE A WORKFORCE SHORTAGE IN NSW
EMERGENCY DEPARTMENTS?**

CHALLENGES AND OPTIONS FOR ACTION

A DISCUSSION PAPER PREPARED FOR THE NSW
EMERGENCY CARE INSTITUTE

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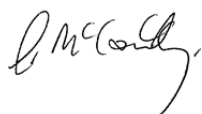
PREFACE

March 2014 marks the third anniversary of the establishment of the Emergency Care Institute, part of the NSW Agency for Clinical Innovation. The Emergency Care Institute's (ECI) remit is to network and engage clinicians, consumers and all relevant stakeholders in improving the emergency care provided by NSW hospital Emergency Departments, and to provide strong leadership for improvement on behalf of staff, patients and NSW communities. To do this successfully the ECI must ensure we are informed by the views of clinicians, consumers and other stakeholders, as well as learning from other experts at a state, national and international level.

With this objective, the ECI has conducted and published emergency care stakeholder surveys annually since 2011. Consistently, and unsurprisingly, workforce shortages, and the shortage of senior clinicians in particular, has featured every year as one of the top two challenges alongside ED overcrowding, for EDs across the state.

Back in 2008 in his final report of findings from the Special Commission of Inquiry into Acute Care Services in NSW Public Hospitals, Peter Garling SC found that NSW hospitals were "often unable to deal with the sudden increase in patients, the rising cost of treatment, and the pressures on a skilled workforce spread too thinly and too poorly supported". Nowhere is this description more apt than in emergency departments, where year on year demand for care continues to increase, and where analysis of ED adverse incidents, and the (welcome) requirements to meet time based access targets to improve whole hospital patient flow and reduce ED overcrowding, have all made addressing prevailing serious workforce shortcomings even more necessary in the quest to deliver high quality emergency care to the NSW community.

Whilst there may be variation from ED to ED, the key fact is that there are not enough staff and, in particular, there are not enough senior clinicians in NSW EDs. This is not contested. Why this is the case and what action should be taken as a result are hotly contested. By commissioning this review of the literature accompanied by broad stakeholder input including from those who deliver clinical emergency care day to day, it is hoped to identify a way forward. This is part of the ECI's approach of ensuring that that the energy and goodwill of all stakeholders can be applied to devise and implement sustainable solutions as soon as possible. I wish to express my sincere thanks to all who have assisted the reviewers by contributing time and effort to this work.



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EXECUTIVE SUMMARY

This discussion paper has been prepared for the Emergency Care Institute to examine workforce issues facing Emergency Departments in New South Wales, in the context of concerns about the ability of Emergency Departments to meet existing performance indicators. It has been prepared on the basis of recent literature and also interviews with 34 practitioners, academics and public servants, all knowledgeable about the current state of emergency care in NSW hospitals.

ACEM defines “Emergency Department (ED)” as “the dedicated area in a hospital that is organised and administered to provide a high standard of emergency care to those in the community who perceive the need for or are in need of acute or urgent care including hospital admission.” Interest in new models of care means that in addition to nursing and medical roles, ED roles often include a range of allied health roles.

The paper raises some important questions for discussion about how existing systems determining workforce capacity and workforce development are influenced by the nature of demand and a variety of factors outside the control of Emergency Departments themselves. Staff shortages across all emergency care disciplines have been noted for a number of years and are projected to continue into the future. Particular issues include a heavy reliance on immigration for filling nursing and medical vacancies, and an extreme shortage of specialist emergency staff in rural areas.

The problem and its causes

The workload for ED staff is commonly described by key stakeholders and in the literature as being extremely demanding. Patient demand for ED care has three main characteristics which impacts workload pressures: it is high volume and growing; it is increasingly complex; and it is variable. While some work has been done looking at the possibility of establishing minimum staff/patient ratios, there is also a view that staffing numbers and ratios need to take account of the context in which an ED sits and the analysis of ED needs at a local level. The psycho-social demands of the job are also significant and are influenced by high levels of demand, the regular occurrence of death, and the high level of scrutiny under which EDs operate.

Problems with patient flow are the most visible manifestation of staffing problems. High levels of occupancy in hospital beds can reduce the extent to which ED patients may be able to be admitted from an ED. Similarly there may be restrictions on the availability of appropriate care in the community for discharged patients, either as a result of lack of capacity, or an absence of people with the right level of skill to provide care.

Implications for the workforce

Workforce shortages have a number of implications for the workforce. Chief among these is the impact on job quality, with ED staff suffering stress and burnout as a result of long hours, shift work, and the nature of the problems being dealt with.

Workforce shortages can also limit the ability of senior ED staff to contribute to on-job learning for trainees and interns and new staff; and the on-going professional development of permanent staff. In addition, shortages may limit the extent to which new and existing staff have the opportunity to develop non-technical cognitive and behavioural skills needed within EDs – such as skills in complex decision-making, leadership skills and team working and interpersonal skills.

Importance of understanding the issues as systemic and not ad hoc in nature

The analysis of causes and their impact for the workforce concludes that current ED staff shortages are not a passing problem arising from minor imperfections in an essentially sound system. Instead, EDs in NSW are best understood as being on an evolutionary trajectory of unsustainable workforce development and use. Researchers working in the dynamic system modelling tradition have noted ‘that service organisations are vulnerable to a wide range of self-reinforcing processes that can act as death spirals’. Short term responses to pressure can often make a situation worse. This appears to be the dynamic currently underway in NSW EDs.

New Directions

A significant number of initiatives have been developed to improve health care delivery and workforce planning in EDs. These include consideration of the skills mix in hospitals based on an understanding of the demands on their services and service drivers; the development of new roles (such as that of Nurse Practitioner); and the formulation of nurse-patient ratios. In addition, new services are being developed that reduce pressure on EDs. These include community-based services to reduce hospital admissions from aged-care facilities and for mental health patients.

Initiatives to manage the implications of understaffing are also being explored. These include attempts to address the causes of work stress, improve the supply of emergency specialists, and increased focus on non-technical skills such as leadership, communication and teamwork. In addition, initiatives are being implemented to address specific issues such as recruiting emergency medicine specialists, training in emergency care skills for the non-specialist workforce, and initiatives designed to improve training for rurally based practitioners.

Long-term solutions to the problems, however, require systemic solutions. We recommend mobilising staff insights to establish commitment to effective reform through three distinct initiatives:

- Improving system design and staffing levels through the formation of an “Emergency Department of the Future” working group
- Better managing labour flow through the development of an annual workforce development agreement for NSW EDs
- Improving workplace culture and leadership – in particular establishing an annual staff climate survey and using the results from this to create a channel for staff to provide feedback.

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ABBREVIATIONS & ACRONYMS

ACEM	Australasian College for Emergency Medicine
ACOSS	Australian Council of Social Services
AIHW	Australian Institute of Health and Welfare
AMWAC	Australian Medical Workforce Advisory Committee
DEMT	Directors of Emergency Medicine Training
DOHA	Commonwealth Department of Health and Ageing
ECI	Emergency Care Institute
ED	Emergency Department
FACEM	Fellow of the Australasian College for Emergency Medicine
HWA	Health Workforce Australia
NEAT	National Emergency Access Target
SIMG	Specialist International Medical Graduates

INTRODUCTION

The quality of service in the Emergency Departments (EDs) of New South Wales' public hospitals is of considerable public interest. The issue regularly surfaces in the news, and critical events in the State's EDs have triggered large scale public inquiries, the most recent being the thorough-going Garling Royal Commission into the entire NSW Public Hospital system.

Despite the importance of the topic, problems within this key part of the health system persist. This paper has been prepared to help open up and broaden the debate about why this is the case, focusing on the key issue of workforce shortages. It is widely recognised that problems in ED have multiple dimensions and multiple causes. Cataloguing these, while useful, misses the point. Unless the key issues of staffing (and all that is connected to it) is properly understood and better managed, enduring improvements in the State's ED will not be achieved.

The paper has been prepared at the request of the Emergency Care Institute. It is based on scrutiny of a vast literature from wide range of sources – peer reviewed articles, reports of official inquiries and the extensive 'grey literature' which provides a rich source of data and insights. These were supplemented by interviews with 34 key stakeholders, working as practitioners, academics, managers and public servants, and all familiar with contemporary ED operations in NSW. It commenced as a general overview of the key issues shaping the ED workforce today. Having considered all the key sources it became apparent that understanding and responding effectively to the problems of workforce shortages was the key topic requiring both analytical and policy attention. The authors acknowledge that there is a predominant focus on the medical workforce in this paper – this reflects the nature of the literature.

This paper is comprised of three substantive parts. The first provides a concise account of the nature and scale of the staff shortage problem. This highlights that this has long been recognised as 'a problem' – yet despite constant calls for addressing it, it continues to persist. The second section outlines the causes. It notes that shortages are not so much a scarcity of skilled ED personnel, but a systemic failure to hold the skilled staff who are recruited into EDs. In a nutshell it argues that a new approach is needed to the inter-related factors of staffing levels, staff development and support for skilled personnel working in inherently demanding jobs. The third section summarises key pointers on what the key elements of a new approach to the ED workforce could entail. The paper has benefited from the insights of a reference group from the ECI who not only shared many limited circulated papers and reports – but also their insights as current practitioners living the realities described in the following pages. The paper's primary purpose is to allow a broader audience to appreciate the key challenges facing the ED workforce today and foster informed debate on how best to overcome a problem that has persisted for too long.

1. DEFINING THE PROBLEM

A key challenge for the provision of optimal patient care is the persistent and significant shortage of experienced staff in the emergency care workforce. This shortage was reported by key informants to present itself both in terms of current vacancies and in terms of funded positions.

Reports of these shortages are not new. In 2003, the Australian Medical Workforce Advisory Committee (AMWAC) released a report entitled *The Specialist Emergency Medicine Workforce in Australia: an update 2002-2012*. That report aimed to identify an “optimal supply and distribution” of emergency physicians to 2012¹. AMWAC concluded that the ED workforce was undersupplied, based on a range of indicators, including numbers of vacancies, comparison of the then existing workforce size with requirements that had been estimated in 1997, State/Territory health departments’ opinions, and specialists’ perceptions on the adequacy of the workforce. In the report, undersupply was connected to a shortage of emergency medicine trainees. The 1997 AMWAC report had recommended a reduction in trainee places². In the 2003 report, this recommendation was withdrawn because since the 1997 report had been published, trainee intake was below the anticipated number and the large cohort of trainees anticipated to enter the workforce did not materialise. In 2003, AMWAC recommended that trainee intake levels be increased to ensure that future workforce supply met industry requirements.

In 2008, the Australasian College for Emergency Medicine (ACEM) in its submission to the Special Commission of Inquiry into Acute Care Services in NSW Public Hospitals, posited that the shortage of specialist emergency physicians (FACEMs) and trainees and non-trainee doctors in NSW ED was one of the three main systemic issues facing the delivery of acute care services in NSW public hospitals³. ACEM noted that in 2007, NSW had the second lowest ratio of FACEMs to ED patient presentations in Australia at 1.4. In comparison, VIC and QLD were at 2.1, WA at 2.4 and TAS at 2.6. NSW also fared poorly in the ratio of FACEMs to population, with the lowest number of emergency physicians per capita in Australia at 36 per million population compared with 52 in VIC, 44 in QLD, 53 in WA and 58 in TAS. ACEM further noted that “No emergency department in NSW meets the Australian Medical Workforce Advisory Committee 2003 recommendations on specialist medical staff number in ED”⁴. In addition, ACEM raised the concern that staff shortages were not only to be found in terms of staff to patient or per capita ratios, but that there were also inadequate ratios of senior to junior staff, threatening NSW EDs' capacity to supervise, teach and support pre-registration of overseas trained doctors and medical students. While the submission focused on the medical workforce, ACEM acknowledged that similar issues also applied to nursing and other clinical disciplines.

¹ Australian Medical Workforce Advisory Committee, 'The Specialist Emergency Medicine Workforce in Australia: An Update 2002 to 2012', (Sydney: Australian Medical Workforce Advisory Committee, 2003).

² Australian Medical Workforce Advisory Committee, 'The Emergency Medicine Workforce in Australia: Supply, Requirements and Projections 1997-2007', (Sydney: Australian Medical Workforce Advisory Committee, 1997).

³ Sally McCarthy and Tony Joseph, 'Australasian College for Emergency Medicine (ACEM) Submission to the Special Commission of Inquiry into Acute Care Services in NSW Public Hospitals March 2008', (West Melbourne: Australasian College for Emergency Medicine, 2008).

⁴ *Ibid.*, p13.

The Commonwealth Department of Health and Ageing (DOHA) commissioned St Vincent's Hospital in Melbourne to undertake a capacity assessment of EDs in Australia⁵. The study, published in 2009, interviewed ED Directors, Directors of Emergency Medicine Training (DEMT), Advanced Trainees in Emergency Medicine and prevocational doctors (interns) who had completed at least half of their emergency medicine rotation. The study reported that most interviewees felt that the current level of ED staffing was inadequate, especially with regards to FACEMs, interns and nurses. Despite expressing concerns with the inadequate numbers of interns, *“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.”*⁶.

Health Workforce Australia (HWA) is currently undertaking long-term national projections for the nation's health workforce, which are being published in a series of volumes. Volumes 1⁷ and 2⁸ of Health Workforce 2025 (HW 2025) have focused on doctors, nurses and midwives finding that there are likely to be highly significant workforce shortages for nurses (109,000 or 27%) in 2025⁹ yet currently, there are insufficient employment opportunities for new graduates. Also of concern is the high reliance on immigration for doctors and nurses and the implications for self-sufficiency. Demand for critical care and emergency nurses are projected in HW 2025 to have a shortfall in supply by 9,999 or 17% under current trends. However, by changing exit rates through reforms targeting workforce retention, this shortfall could potentially be transformed into a surplus¹⁰.

Volume 3 of HW 2025 focuses on doctors by medical specialty¹¹. Using a traffic lights approach, HWA's assessment of the position of the emergency medicine workforce was at “orange”, meaning *“some perceived difficulty in filling positions, either through maldistribution or insufficient workforce”*¹². It reported that in stakeholder consultations, distribution issues were raised as a major issue, with most emergency physicians situated in major metropolitan areas rather than being geographically spread. While HWA's projected outlook for Emergency Medicine staffing is not listed as one of the specialities most at risk of undersupply in 2025, it estimates the likelihood of worsening of key workforce dynamics indicators (average age, replacement rate and dependence on specialist international medical graduates (SIMGs)). HWA has also suggested a substantial (40%) reduction in the number of new fellows per annum across the projected period¹³, although ACEM does not necessarily concur with this view.

⁵ St. Vincent's Emergency Practice Innovation Centre, 'Emergency Medicine Capacity Assessment Study: Final Report to Commonwealth of Australia Department of Health and Ageing', (St Vincent's Hospital Melbourne: St Vincent's, 2009).

⁶ *Ibid.*, p1.

⁷ Health Workforce Australia (2012), 'Health Workforce 2025 – Volume 1 – Doctors, Nurses and Midwives', (Adelaide: Health Workforce Australia).

⁸ Health Workforce Australia (2012), 'Health Workforce 2025 – Volume 2 – Doctors, Nurses and Midwives', (Adelaide: Health Workforce Australia).

⁹ Health Workforce Australia (2012), Volume 1, *op. cit.*, p.iii.

¹⁰ Health Workforce Australia (2012), Volume 2, *op. cit.*, p.9.

¹¹ Health Workforce Australia, 'Health Workforce 2025 – Volume 3 – Medical Specialties', (Adelaide: Health Workforce Australia, 2012).

¹² *Ibid.*, p.90.

¹³ *Ibid.*, p.91.

While workforce shortages are felt across NSW, they are most keenly felt in rural and regional areas. A 2007 report produced by the Rural Doctors Association of Australia¹⁴ highlighted the extreme shortage of emergency medicine specialists. This has led to

“most emergency departments in regional and rural hospital [being] led either by general practitioners who are increasingly likely to lack the procedural training of their predecessors or International Medical Graduates (IMGs) whose knowledge and skills vary widely”¹⁵.

It referred to a 2005/6 survey of 230 doctors working in 57 rural and regional emergency departments which found that only 13 were ACEM Fellows. 27 per cent of the respondents reported that they had had no specific training in emergency care. One pertinent issue raised in this review’s consultation is the shortage of FACEMs has led to a lack of capacity to train and develop new FACEMs, which in turn exacerbates recruitment issues as it makes it hard to attract potential emergency specialist trainees.

Key informants noted that compounding recruitment issues, attrition and churn were major concerns, especially amongst younger staff. In addition, they reported that younger doctors were increasingly choosing to work fewer hours. In 2007, Wise and Buchanan surveyed NSW Emergency Physicians and Registrars and found that Directors of ED and EM Training faced shortages in applications from local graduates and difficulties in retaining those who did apply. Directors reported that on average, just under four in five FTE posts were filled by salaried FACEMs, while the majority of the participating hospitals had a net headcount loss over the past year as fewer FACEMs had been recruited than had resigned or they had reduced their hours¹⁶.

Furthermore, key informants interviewed for this report noted that workforce capacity assessments are often based on head counts not full-time equivalent (FTE) numbers due to inadequate data around staffing. Thus the frequency of part time work potentially misrepresents and underestimates actual FTE and capacity that is available in the ED.

¹⁴ Rural Doctors Association of Australia, 'Emergency Medicine in Rural Australia', (Canberra, 2007).

¹⁵ *Ibid.*, p.9.

¹⁶ Sarah Wise and John Buchanan, 'Survey of NSW Emergency Physicians and Registrars: Key Findings', (University of Sydney: Workplace Research Centre, 2007).

2. CAUSES: UNDERSTANDING EMERGENCY DEPARTMENT STAFFING

This section considers the factors that contribute to the workforce shortages outlined in the previous section. In particular, it unpacks a number of the issues associated with workloads and the difficulties associated with managing demand for ED services. It then goes on to consider the workforce implications, particularly for job quality and workforce development, before considering how the negative cycle within which many EDs are found can be interrupted.

2.1 CONVENTIONAL WISDOM: SUPPLY-SIDE IMPERFECTIONS

The conventional approach to assessing workforce challenges facing the ED has tended to focus on supply-side imperfections. The essentials of this narrative are as follows:

- demand has increased
- there are imperfections in the supply response (e.g. quotas on medical training places, insufficient doctors willing to become specialists or service remote locations)
- special interim measures are needed to boost supply (within NSW this is being achieved through increased use of locums and overseas trained doctors to fill the gaps.)

The focus is on increasing numbers of staff rather than on understanding the forces generating high staff turnover. A direct consequence of this narrative is an approach to policy that concentrates on the recruitment and deployment of staff. After decades of trying to 'fix the problem' by these means, it is now clear that there are severe limitations with current 'solutions' and the roots of this problem reside in the deficient analysis embedded in the narrative.

2.2 THE REAL PROBLEM: UNSUSTAINABLE SYSTEMS OF STAFFING AND WORKFORCE DEVELOPMENT

The conventional wisdom has superficial appeal. This occurs because elements appear to provide a plausible account of reality. Increasing queues for service at EDs (i.e. increasing demand) and constraints on labour supply are recognised as a longstanding feature of medical labour markets in particular (i.e. limit on labour supply). The problem with conventional wisdom is not so much that it is totally wrong, but that it is highly partial in its account of the workforce shortage challenge. It pays little attention to problems in the development, and retention of the workforce, which occurs through management systems and the design and organisation of work. Consequently its prescription – pushing more untrained, labour hire and overseas trained staff into EDs - adds to the burden of the remaining core workforce who are required to take on additional training and supervisory burdens as 'solutions' are recruited from 'outside'.

2.3 THE PROBLEMS OF WORKLOADS

A careful reading of the literature reveals that the problems of ED workforce shortages cannot be understood without a proper appreciation of connections between workloads and how this impacts

on job quality. It is not just a problem of increasing work intensity, but also the way it exacerbates problems concerning work organisation and patient flows within the ED; between the ED and the hospital if an admission occurs; and the ED and the broader local networks of care when an ED patient is discharged. All these pressures compromise the capacity of ED teams to work effectively, thereby reducing both their attractiveness as places to work and the ability of workgroups to pass on skills.

This section opens with an account of the nature and importance of the ED Team as a key unit that needs to be nurtured and supported – and not simply assumed to function as if it were merely a collection of personnel recruited and easily replaced to fill set roles. This is followed by an account of the multi-dimensional impact of rising workloads on ED operations and performance. The implications of the current trajectory of ED evolution for staffing, workforce development and recruitment and retention are examined in the subsequent two sections.

2.3.1 THE EMERGENCY DEPARTMENT TEAM

ACEM defines “Emergency Department (ED)” as *“the dedicated area in a hospital that is organised and administered to provide a high standard of emergency care to those in the community who perceive the need for or are in need of acute or urgent care including hospital admission.”*¹⁷. ACEM previously grouped EDs into three categories¹⁸ based on role and level of function: Major referral; Urban district; and Major regional/rural base emergency departments. In addition, there were two categories of hospital-based emergency services that have insufficient capacity to be classified as emergency departments: Rural emergency service and Primary care/remote rural service. From 2013, as shown in Table 1, these groupings were revised to create four levels of categories, effectively adding an additional category of a designated area of a remote or rural hospital as the minimum level of service that can be defined as an Emergency Department.

Table 1: 2013 Emergency Department Delineation contrasted to ACEM Delineation prior to 2013¹⁹

Emergency Department Delineation	Old ACEM Delineation (prior to 2013)
Level 4 Emergency Department	Major Referral Emergency Department
Level 3 Emergency Department	Urban District Emergency Department
Level 2 Emergency Department	Major Regional/Rural Base Emergency Department
Level 1 Emergency Department	Rural Emergency Service

¹⁷ Australasian College for Emergency Medicine, 'ACEM Policy on Standard Terminology (P02)', (2013), p.2.

¹⁸ Australian Health Workforce Advisory Committee, 'Health Workforce Planning and Models of Care in Emergency Departments', (North Sydney: NSW Health Department, 2006), p.7.

¹⁹ Australasian College for Emergency Medicine, 'Statement on the Delineation of Emergency Departments (S12)', November 2012

In order to be considered an emergency department, the following elements must be in place as a minimum:

- must operate structurally and functionally within a hospital;
- 24 hour dedicated nursing staff with a dedicated Nurse Unit Manager or equivalent;
- daily rostered medical staff and 24 hours a day, seven days a week access to medical staff after hours;
- dedicated facilities to manage emergency presentations;
- co-located dedicated resuscitation area with appropriate equipment to provide advanced paediatric, adult and trauma life support prior to transfer to definitive care
- 24 hour access to blood products;
- 24 hour access to laboratory and radiology services;
- 24 hour access to specialty care or advice;
- 24 hour access to retrieval services, as appropriate; and
- if there are no emergency specialists (Fellows of ACEM (FACEMs)) on staff then the Emergency Department must be part of an Emergency Medicine Network.²⁰.

There has been a keen interest in new workforce models and models of care to create roles that can help make more efficient use of highly trained staff. However, the evidence base for many of these initiatives is thin. One literature review (Schofield and Callander, 2009) concluded that there are few evaluations of department-wide staffing initiatives with most research looking at individual teams within EDs²¹. The non-systematic and ad-hoc nature of the initiatives was confirmed in the consultations. Interestingly, those department-wide studies that do exist have found positive effects from increased senior staffing²². Two natural experiments (in New Zealand²³ and Spain²⁴) where senior staff were required to fill in for junior doctors on strike, reported that an increase in senior staff resulted in improved ED performance. In addition, Schofield and Callander note that the literature provides evidence of better patient outcomes where there are more senior emergency physicians in attendance.

²⁰ Australasian College for Emergency Medicine, 'ACEM Policy on Standard Terminology (P02)', p.2-3.; Australasian College for Emergency Medicine, 'Statement on the Delineation of Emergency Departments (S12), November 2012.

²¹ Deborah Schofield and Emily Callander, 'Literature Review of Emergency Department Staffing Redesign Framework,' (North Sydney: NSW Health, 2009). It is important to note that detailed case study evidence is important, however, for giving insights into the complexity of ED teams and the work they perform. A recent detailed study of this dimension of EDs in NSW is provided in Marie Manidis, *Practising knowing in emergency departments: tracing the disciplinary and institutional complexities of working, learning and knowing in modern emergency departments*, Ph D Dissertation (Faculty of Arts and Social Sciences, University of Technology, Sydney, 2013).

²² See also for similar findings: Matthew Cooke et al., 'Reducing Attendances and Waits in Emergency Departments: A Systematic Review of Present Innovations: Report to the National Co-ordinating Centre for NHS Service Delivery and Organisation R & D (NCCSDO)', (National Co-ordinating Centre for NHS Service Delivery and Organisation R & D, 2005).

²³ Thornton, Vanessa and Hazell, Wayne (2008), 'Junior doctor strike model of care: Reduced access block and predominant Fellow of the Australasian College for Emergency Medicine staffing improve emergency department performance', *Emergency medicine Australasia : EMA*, 20 (5), 425-30.

²⁴ Salazar, Albert, et al. (2001), 'Impact of a Resident Strike on Emergency Department Quality Indicators at an Urban Teaching Hospital', *Academic Emergency Medicine*, 8 (8), 804-08.

Though most of the focus on staffing is on nursing and medical staff, the Allied Health Workforce Advice and Coordination Unit note that there is a growing body of literature suggests that multi-disciplinary ED teams that include allied health professionals may improve patient flow and outcomes²⁵. Queensland staffing data from 2010 show that funded allied health roles in ED include physiotherapists, medical imaging and radiography, social workers, pharmacists, occupational therapists, dietetics and speech pathology. Interest has also been expressed in expanding funding into cardiac science, psychology, audiology, podiatry and neurophysiology.

Establishing, maintaining and developing well balanced and well led ED workgroups is, however, becoming increasingly difficult. The forces compromising the capacity of these workgroups to flourish are analysed in the following sections.

2.3.2 THE EMERGENCY DEPARTMENT CONTEXT – WORKLOAD PRESSURES

Quantitative Dimension

(i) High, Complex and Variable Demand

The workload for ED staff is commonly described by key stakeholders and in the literature as being extremely demanding. Patient demand for ED care has three main characteristics which impacts workload pressures: it is high volume and growing; it is increasingly complex; and it is variable.

NSW EDs are reported to have received more than two million presentations from over one million individuals in 2008-2009²⁶. A direct one-on-one time and motion study conducted in an ED located in a Victorian tertiary referral hospital (Royal Melbourne Hospital) in 2008 found that ED consultants performed a median of 101.4 discrete tasks per observed hour with a high level of multitasking resulting in 77 minutes of overlapping activity for each observed hour. The study found that consultants spent on average:

“42% of each hour on communication, 35% on direct clinical care and 24% on computer use; only 9% was spent on non-clinical tasks. Consultants spent little time (0.6%) accessing e-resources.”²⁷.

A great deal of variation was recorded, however, ranging from 66 to 171 tasks per hour, for individual consultants. Female consultants were found to have a higher hourly task rate (120) compared to male consultants (93) and did more multitasking with 85 minutes of recorded activity in the hour compared to the male consultant's 75 minutes. The study noted that *“no female consultant was recorded taking a bathroom break during the 40 h of observation of their cohort.”²⁸.*

Not only is the volume of patient demand in ED high, key informants indicated that increasing complexity of presentations complicated to increase workload. An analysis of the key drivers of demand in the Emergency Department commissioned by NSW Health in 2007²⁹ found that ED

²⁵ Allied Health Workforce Advice and Coordination Unit, 'Discussion Paper: Allied Health Profession Staffing in Queensland Health Emergency Departments', (2011), p.5.

²⁶ PriceWaterhouseCoopers, 'NSW Department of Health Emergency Department Workforce Research Project: Final Report', (2010), p9.

²⁷ Kee Rongsheng et al., 'One Hundred Tasks an Hour: An Observational Study of Emergency Department Consultant Activities', *Emergency Medicine Australasia*, 24/3 (June 2012 2012), 294-302.

²⁸ *Ibid.*, p297.

²⁹ Booz Allen Hamilton, 'Key Drivers of Demand in the Emergency

demand from both primary care and non-primary care patients had been growing 6.9% annually since 2004/05. They found two distinct patient cohorts were driving this increase in demand: the under 25s (34% of all attendances) with increased acute presentations such as injuries and poisonings; and over 65 year olds (24%) with increasing non-primary care needs due to chronic disease. The key informants noted that the latter chronic and age-related presentations also the increase in complexity of presentations in emergency care because frequently multiple issues required treatment.

Fitzgerald et al. (2012) have analysed Australian ED data over a 10 year period from 2000-2001 to 2009-2010.³⁰ They found a 37% overall increase in demand for public ED care across Australia in this 10 year period, though with considerable variability in the figures between states. The highest overall growth occurred in Tasmania (73.3%) and the lowest in ACT (14.8%). NSW recorded 37.9% over growth over the decade. The growth could not be explained purely in terms of population growth. When the analysis examined the utilisation rate per 1000 persons, NSW had an increase of 23.6% over the 10 years (2.6% average annual growth), the growth was the highest in the country after Tasmania (with a 60.3% utilisation rate increase). The increase in ED presentations is not isolated to Australia, with a recent study of US emergency department data finding that in the eight years from 2001-2008, the number of ED presentations has increased at a rate that is 60% faster than population growth, with mean occupancy increasing even more rapidly³¹.

Another notable feature of emergency care demand is its variability of demand. As emergency departments are required to be open 24 hours a day, 7 days a week and have an open door policy unlike elsewhere in the hospital, the ED is subject to considerable natural variability in the numbers, types and acuity of patient presentations, with periods of extreme overload being commonly reported by key informants and in the literature. It is important to note that variability is commonly reported as being 'fully utilised' to 'extreme overload'.

(ii) Understaffing Relative to Volume

Consultations with key stakeholders suggested that staffing levels were not generally determined on a systematic basis. They are often locally determined, dependent on available funding, hospital context and, if implemented, applicable models of care. The failure to match staffing levels to the volume of demand resulted in increased workload pressures on staff.

Key informants suggested while the open-ended nature of emergency medicine was a major challenge, predictable patterns of high demand (such as seasonal peaks) do exist. However, EDs were not adequately funded to respond to these through increased staffing. It was argued that an analysis of hospital admissions data could help identify and predict these fluctuations and be used to inform workforce planning processes. It was also noted that recent changes to hospital information collection and management systems make it harder to obtain and use real time data reports.

Department', (Sydney: NSW Department of Health, 2007), p.3.

³⁰ Fitzgerald et al., 'Demand for Public Hospital Emergency Department Services in Australia: 2000-2001 to 2009-2010'.

³¹ Pitts et al., 'National Trends in Emergency Department Occupancy, 2001 to 2008: Effect of Inpatient Admissions Versus Emergency Department Practice Intensity'.

Work has been done by ACEM to propose guidelines for ED medical workforce staffing³². However, the focus of this work is exclusively on medical staff and primarily FACEMs, rather than nursing or allied health professionals. The guidelines note that:

“The research literature and national surveys have made evident that there is not one model of ED staffing that will suit all needs, as local factors vary considerably. A formulaic approach is therefore impossible.”³³.

NSW Health have developed an Emergency Department Workforce Analysis Tool (EDWAT) as a comprehensive tool to assist in planning staffing need.³⁴. This recognises the reality that every ED site is different and thus does not stipulate staffing numbers in a prescriptive way. The tool is intended to be used by ED managers to review the context within which the ED resides and facilitate discussion and analysis of the ED needs at an appropriately local level. It is intended that the tool be worked through in a workshop format with managers from key areas of work and key stakeholders are included. NSW Health is currently (2014) undertaking an evaluation of the use of the tool among NSW hospitals.

The need for minimum staffing numbers and ratios to be based on the context of the hospital, junior/senior staff mix, its patient type and acuity, the season and the shift time was recognised by the key informants interviewed, with support for stipulating minimum staff numbers and ratios being mixed. Mention was made of unintended consequences in Victoria where nurse/patient ratios led to ward closures due to inadequate staff numbers. Other key informants felt that staffing ratios would be too complex to stipulate because of the variability in the nature of patient presentations, and the resources and layout of hospitals. Against these observations, however, there is extensive evidence of the positive impact nurse-patient ratios have had on the Victorian and California public hospital systems. Gordon et al (2008) have highlighted their capacity to improve care and labour market outcomes for nursing staff – and at the very least, the value of creating a floor below which standards cannot fall as pressures on health budgets increase³⁵. Findings of recent research on nursing ratios in NSW EDs completed by Wise et al. (2013) concludes:

Th[is] study adds to the limited literature on ED staffing and demonstrates the utility in the simplicity of ratios in flagging potential staffing problems. Ratios cannot determine the optimal staffing levels in every clinical situation; their purpose is to force an increase in nursing supply and to prevent individual units from becoming dangerously understaffed.³⁶.

Despite the view amongst key informants that more research is needed on appropriate ratios and numbers, some research and planning fatigue amongst ED staff was also noted. A number of stakeholders consulted suggested that more funding not research is needed. Their view was that they have already undertaken planning and have a good understanding the staffing needs of their ED, but lack the funding available in order to implement recommended changes.

³² Australasian College for Emergency Medicine, 'Guidelines on Constructing an Emergency Medicine Medical Workforce (G23)', (2013).

³³ *Ibid.*, p.1.

³⁴ NSW Health Emergency Department Workforce Research Project, 'Emergency Department Workforce Analysis Tool', (North Sydney: NSW Health, 2010).

³⁵ Suzanne Gordon, John Buchanan, and Tanya Bretherton, *Safety in Numbers: Nurse-to-Patient Ratios and the Future of Health Care* (Cornell University Press, 2008).

³⁶ Wise, Fry, Roche, Duffield and Buchanan (2013) Ratios and the intractable problem of nursing supply and demand: the vexed case of Emergency Departments, research paper, UTS Nursing Faculty.

Qualitative Dimension: Psychosocial demands, Job Control and Role Delineations

In addition to the quantitative dimensions of workload pressures, there is also a qualitative aspect to workload pressure. Robert Karasek's influential demand/control model of job strain proposed and found evidence to support the theory that occupational strain is a function of the psychological demands of a job and an employee's latitude over their work (control)³⁷. According to this model, high levels of workplace demand need not necessarily result in adverse outcomes and may not if the employee has correspondingly high control over work decisions and tasks. On the other hand, jobs that are most likely to result in high strain for employees were ones where there were high demands placed on the employee coinciding with low control over their work.

It is not just the volume of patients that makes work in the ED psychologically demanding. Dr Christopher Ryan, Director, Consultation–Liaison Psychiatry Westmead Hospital, writes of the regular occurrence of death in the ED, and notes that very little is known about the incidence of Post Traumatic Stress Disorder among ED workers who deal regularly with dying patients³⁸. Dr Keith Edwards of Liverpool Hospital also notes the personal effects of confronting regular death in terms of his assuming

*".... something like a Ned Kelly suit of armour – an outer hard shell that protects me from the bullets of misery, and anguish and stress of people sick and dying; a mask that prevents too much eye contact, and therefore emotional connection, while at the same time preventing the emotion within me from escaping and being seen in the raw."*³⁹.

There is also a qualitative dimension to the need for 24 hour, 7 day staffing. ED staff are unique in being rostered to work anti-social hours on a regular basis and are able to make comparisons with other medical staff employed by the same hospital. At the same time, their work is constantly monitored. For example, the National Emergency Access Target (NEAT) has been introduced which requires EDs to perform to a standard whereby by 2015, 90% of all patients will be discharged, admitted or transferred to another hospital within 4 hours. As one Emergency Physician remarked in Wise and Buchanan (2007):

*"We also have to meet a number of key performance indicators regarding waiting time and access performance on a daily basis. Again no other specialty consultants are being subjected to this level of scrutiny. The current situation will only result in staff leaving or reducing hours and making it a very unattractive option of training for the younger doctors."*⁴⁰.

There are strong professionally-based hierarchies within the ED but at the same time, models of work organisation are in a state of flux. Roles are changing with new models of care being introduced that involve task substitution and delegation. The breakdown of traditional role delineations may have implications for task control and clarity but there has been little research specifically looking at

³⁷ Robert Karasek, 'Demand/Control Model: A Social, Emotional, and Physiological Approach to Stress Risk and Active Behaviour.', in Jr. Hurrell, Joseph J et al. (eds.), *Theories of Job Stress* (Encyclopedia of Occupational Health and Safety; Geneva: International Labor Organization, 2011).

³⁸ Ryan, Christopher J. and Dowsett, Robert P. (2003), 'Feeling at home in an emergency: coping with death in the emergency department', *The Medical journal of Australia*, 179 (11-12), 646-46.

³⁹ Keith D Edwards, 'Death in the Emergency Department: A Not So Absolutely Ordinary Rainbow', *Med J Aust*, 179/11 (2003), 647-48.

⁴⁰ Sarah Wise and John Buchanan, 'Survey of NSW Emergency Physicians and Registrars: Key Findings' (University of Sydney: Workplace Research Centre, 2007), p.9.

the ED workforce. However, when teams are functioning well, they can improve the quality of the work. For example, Kalisch, Lee and Rochman (2010), surveying 3,675 nursing staff from five US hospitals and 80 patient care units, found that higher ratings of teamwork and higher levels of job satisfaction were associated in a way that was statistically significant⁴¹. The capacity for teams to flourish in this way, however, is seriously compromised in situations of chronic understaffing.

2.3.3 PHYSICAL CONSTRAINTS WITHIN THE ED

The *ED Workforce Research Project* found that the physical design or layout of the ED has workforce implications⁴². It was noted in the key informant interviews that more staff may be required to staff a small but “rabbit warren-like” ED than a larger open-plan area.

The physical environment of an ED also can create issues for the workforce. For example, the ED’s layout may physically impede communication. The effect of noise on cognitive tasks and staff wellbeing has also been noted. Tijnunelis, Fitzsullivan, and Henderson (2005) found that the ED that they studied experienced noise levels that were regularly over the acceptable level (not exceeding 40dB) recommended by the (US) Environmental Protection Agency⁴³. As the authors note: “*Noise pollution makes errors more probable and is one of the risk factors for provider burnout and negative outcomes for patients.*” Ratnapalan et al. studying physicians' perceptions of background noise in a paediatric emergency department, found

*“high background noise levels in a pediatric ED are perceived as stressful and interfering with communication and teaching. Noise levels in EDs should be measured, and noise reduction strategies should be implemented because physicians are not consistent in identifying excessive noise levels.”*⁴⁴

2.3.4 DYNAMICS AND CONSTRAINTS BEYOND THE ED

Problems with patient flow are the most visible manifestations of staffing problems. Once treated by an ED, a patient is expected to be admitted, discharged or transferred to another hospital for treatment, within the 4 hours determined by the NEAT. However, this cannot be solved by the ED in isolation. Understanding this problem (and devising any lasting solution) requires engagement with how EDs are integrated to the rest of their associated hospital and, more broadly, with the existence and quality of external health services, particularly in aged, mental health and community based care services.

Integration of the ED within the hospital

Key informants raised two main issues that can impede patient flow from the ED to appropriate care elsewhere in the hospital. The first is access block due to lack of available beds when required. The second is difficulties finding medical practitioners to assume responsibility for the patient. Both these issues were recognised as having workforce impacts. Both problems are currently being addressed in

⁴¹ B. J. Kalisch, H. Lee, and M. Rochman, 'Nursing Staff Teamwork and Job Satisfaction', *J Nurs Manag*, 18/8 (Nov 2010), 938-47.

⁴² PriceWaterhouseCoopers, 'NSW Department of Health Emergency Department Workforce Research Project: Final Report', (2010), p118.

⁴³ Marius A. Tijnunelis, Elizabeth Fitzsullivan, and Sean O. Henderson, 'Noise in the ED', *The American Journal of Emergency Medicine*, 23/3 (2005), 332-35.

⁴⁴ S. Ratnapalan et al., 'Physicians' Perceptions of Background Noise in a Pediatric Emergency Department', *Pediatr Emerg Care*, 27/9 (Sep 2011), 826-33.

NSW Health through a “Whole of Hospital” program that aims to improve access to care through streamline existing work and processes both within EDs and other hospital services.

Access Block

ACEM (2004) identifies access block as the greatest impediment to service delivery in EDs - a problem it views as resulting from policies of bed closures that have seen hospital occupancies rise to over 95%. It ties access block directly to problems in EDs of staff morale, evidenced by increased sick and overtime claims identified in internal audits; and has suggested that emergency medicine trainee dropout rates are directly linked to access block and problems of overcrowding⁴⁵ ACEM released an updated statement on Access Block in March 2014, reiterating that access block was still “the single most serious issue facing Emergency Departments in Australia”⁴⁶.

Richardson and Mountain (2009) have examined the evidence around overcrowding and access block. They argue that access block is:

“the principal cause of overcrowding, and is mainly the result of a systemic lack of capacity throughout health systems, and not of inappropriate presentations by patients who should have attended a general practitioner.”⁴⁷

They found no evidence that telephone advice lines or co-located after-hours GP services were able to reduce ED workloads. A separate and independent evaluation of the nurse-led ACT Health Walk-in Centre found that despite positive feedback from patients and staff, *“the most likely result is that the overall impact is a net increase in ED activity due to the Walk-in Centre.”⁴⁸* Likewise, a systematic review of UK innovations to reduce attendances and waits found no evidence to suggest that walk-in centres reduced attendances at emergency departments⁴⁹. Instead, Richardson and Mountain found that a whole-of-hospital approach was needed:

“the causes of overcrowding, and hence the solutions, lie outside the ED. Solutions will mainly be found in managing hospital bedstock and systemic capacity (including the use of step-down and community resources) so that appropriate inpatient beds remain available for acutely sick patients.”⁵⁰

A similar finding was made in a US study (McManus et al., 2003) of the impact of hospital management of scheduled treatments on the ability of the hospital to respond to emergency needs. The study separated two types of variability for demand on intensive care services: the “natural” variability of emergency requests for admissions and what was termed “artificial variability” which was the variability that was due to controllable factors in the design and management of the

⁴⁵ Australasian College for Emergency Medicine (2004), Access block and Overcrowding in Emergency Departments.

⁴⁶ Australasian College for Emergency Medicine, ‘Statement on Access Block’ (S127), Mar 2014.

⁴⁷ D. B. Richardson and D. Mountain, ‘Myths Versus Facts in Emergency Department Overcrowding and Hospital Access Block’, *Med J Aust*, 190/7 (Apr 6 2009), 369-74.

⁴⁸ Rhian Parker et al., ‘Independent Evaluation of the Nurse-Led Act Health Walk-in Centre’, (Canberra: Australian Primary Health Care Research Institute, ANU, 2011), p.14.

⁴⁹ Cooke et al., ‘Reducing Attendances and Waits in Emergency Departments: A Systematic Review of Present Innovations: Report to the National Co-Ordinating Centre for NHS Service Delivery and Organisation R & D (NCCSDO)’.

⁵⁰ Richardson and Mountain, ‘Myths Versus Facts in Emergency Department Overcrowding and Hospital Access Block’, p.369.

hospital's systems. The researchers found that while there were more emergency requests, the variability in the excess demand for intensive care services that resulted in diversion was statistically correlated with scheduled caseload rather than with unscheduled volume⁵¹.

ACEM acknowledges that there is "no simple solution to access block" and addressing the issue will require improvements on multiple fronts, namely⁵²:

- A whole-of-hospital and whole-of-system approach
- Increasing hospital and alternative care capacity
- Reducing hospital inpatient bed demand; and
- Creating an evidence base of interventions that successfully decrease access block.

Referrals within the hospital

Less attention in the literature has been paid to the difficulty faced by the ED in referring patients to other medical staff within the hospital. One key informant noted that a private hospital was advertising to new recruits that its point of difference was its medical officers were happy to take on the ED's referring patients. Exacerbating this problem is the increasing presentation of chronic and age related illness with greater complexity that requires multiple specialisations. As with the bed shortages leading to access block, this is a problem that is external to the ED and cannot be solved within it.

External services

Not only is capacity in the ED able to be affected by what happens in the rest of the hospital, but it can also be affected by the provision of services external to the ED.

Aged Care Facilities

A number of consultations indicated a concern with the way in which medical care in nursing homes is provided, with anecdotal examples suggesting a decrease in senior nursing staff that has led to increased load on nearby EDs. This could result for example, in inadequate care resulting in minor issues developing into more serious problems. It was suggested that this should be recognised as a community issue rather than mainly an ED issue, with the need for an increased focus on better transitions of care between community and hospital settings. Put another way, an issue worth investigating is: how much pressure on ED services could be reduced if the quality of staffing, especially experienced nursing staffing, is improved in the aged care sector, both residential and non-residential?

Mental Health Services

According to Australian Institute of Health and Welfare (AIHW), there were approximately 172,000 mental health-related visits to public hospital emergency departments in 2008–09 across Australia⁵³.

⁵¹ M. L. Mcmanus et al., 'Variability in Surgical Caseload and Access to Intensive Care Services', *Anesthesiology*, 98/6 (Jun 2003), 1491-6.

⁵² Australasian College for Emergency Medicine, 'Statement on Access Block' (S127), Mar 2014, p.1-2.

⁵³ Australian Institute of Health and Welfare, 'Mental Health Services—in Brief 2011. HSE 113.', (Canberra: AIHW, 2011).

From AIHW's survey in 2004–05, it appears this is a growing issue and that there has been an average annual increase of 5.5% in mental health-related visits in emergency departments. An analysis of these visits found that over 80% were classified as urgent or semi-urgent and 11% were classified as emergency. However, more than 60% were resolved without the need for admission or referral to another hospital. These increases in ED presentations have occurred *"within a context of increased awareness of mental illness in the community, decreased GP accessibility and mainstreaming of mental health services since the 1990s."*⁵⁴.

Grave concerns have been voiced in the media about emergency treatment for the mentally ill. In Victoria, documents released as a result of a Freedom of Information action revealed that a third of mentally ill patients wait longer than 8 hours in emergency departments before being transferred to a bed for treatment⁵⁵. Not only does this lead to greater access block in the ED but also there are serious concerns about the adequacy of care received by those who are mentally ill who have presented at hospitals. A Sydney Morning Herald investigation obtained NSW Health data that reported increases in the numbers of suicides, with a link made between this rise and increasing pressure to discharge patients to free up beds⁵⁶. Further complicating treatment is the co-morbidity of mental illness with physical and drug and alcohol related issues.

Social Services

The increase in the use of the ED by those who are homeless has highlighted difficulties in accessing social welfare provision for this vulnerable group. Overlapping with the presentation of those who are homeless, are presentations involving sexual assault and domestic violence. The Australian Council of Social Services (ACOSS) has reported that in one 1999-2000 survey, *"57% of homeless women with children and 44% of homeless single women aged over 25 looked for housing assistance because of domestic violence."*⁵⁷. There is a limited research on sexual assault and homelessness, though existing studies suggest a large proportion of those who are homeless have also experienced sexual assault⁵⁸.

Moore, Gerdtz and Manias (2007), in a review of the available literature and published data, found that there were many barriers –financial, bureaucratic and personal – to accessing care for the homeless and that these barriers led to homeless people accessing ED *"as the default service which is accessible 24 hrs a day"*⁵⁹. Examples of bureaucratic barriers include:

*"long waiting times, inflexible scheduling, lack of transportation, inadequate service options (low-cost accommodation), multiple services with complicated admission criteria and identification requirements for financial assistance and medication."*⁶⁰.

⁵⁴ Victorian Government Department of Human Services, 'Mental Health Care: Framework for Emergency Department Services', (Melbourne: Victorian Government Department of Human Services, 2007), p.1.

⁵⁵ Farrah Tomazin, 'Mentally Ill Languish in Emergency', *The Age*, 2 September 2012 2012.

⁵⁶ Natasha Wallace and Amy Corderoy, 'Pressure to Leave Hospital Early Blamed', *The Sydney Morning Herald*, 26 October 2011 2011.

⁵⁷ Australian Council Community of Social Sector Service, 'Australian Community Sector Survey 2012: National Report (Acos Paper 191)', (Strawberry Hills: ACOSS, 2012).

⁵⁸ *Ibid.*

⁵⁹ Gaye Moore, Marie Gerdtz, and Elizabeth Manias, 'Homelessness, Health Status and Emergency Department Use: An Integrated Review of the Literature', *Australasian Emergency Nursing Journal*, 10/4 (2007), 178-85.

⁶⁰ *Ibid.*, p.183.

Moore, Manias and Gerdtz (2011) conducted a subsequent study looking at the complex health service needs for people who are homeless and concluded that:

“The demand on hospital services continues to increase and unless government policies take into consideration the psychosocial demands of the communities most vulnerable people efforts to divert hospital demand will continue to fail.”⁶¹.

2.4 WORKFORCE IMPLICATIONS AND MANIFESTATIONS

The literature clearly establishes the core problem in EDs is workloads and the roots of the problem involve more than ‘skill shortages’ arising from ‘increasing demand’ occurring in a situation of ‘restrictions on supply’. Before considering possible solutions, it is also important to understand just how the increasing workload pressures create a range of workforce problems. Solutions require not only addressing root causes, they also need to engage with the diverse manifestations of the problem. The next four sections examine the implications of the issues for staff (especially the implications for job quality), workforce development, recruitment and retention and, ironically, how current ‘workforce solutions’ may be making the situation worse.

2.4.1 JOB QUALITY AND EMPLOYEES’ EXPERIENCES OF WORK

Working time arrangements in EDs have a substantial impact on staff. The combined effect of long hours of work, sleep deprivation and shift work on ED and other hospital staff performance has been the focus of a number of studies. A systematic review of published and unpublished studies (1950-2008) on intervention studies that have reduced or eliminated extended shifts in the US found that:

“reduction or elimination of resident work shifts exceeding 16 hours did not adversely affect resident education, and was associated with improvements in patient safety and resident quality of life in most studies.”⁶².

Similarly, Zhao and Turner, in a literature review analysing the association between shift work and health habits and health outcomes, found that:

“Shift work impacts negatively on daily health habits and can lead to adverse health outcomes, such as poor dietary intake, smoking, and becoming overweight. The majority of Australian health care workers, and in particular nurses, work rotating shifts. It is important to have a greater understanding of the impact of shift work on our health care workforce.”⁶³.

Key informants interviewed for this report suggested that the growing number of emergency care staff are moving towards part-time positions and reduced hours, and do so, at least in part, because of the stressful environment of the ED.

⁶¹ Gaye Moore, Elizabeth Manias, and Marie Frances Gerdtz, 'Complex Health Service Needs for People Who Are Homeless', *Australian Health Review*, 35/4 (2011), 480-85.

⁶² A. C. Levine, J. Adusumilli, and C. P. Landrigan, 'Effects of Reducing or Eliminating Resident Work Shifts over 16 Hours: A Systematic Review', *Sleep*, 33/8 (Aug 2010), 1043-53.

⁶³ Isabella Zhao and Catherine Turner, 'The Impact of Shift Work on People's Daily Health Habits and Adverse Health Outcomes', *Australian Journal of Advanced Nursing*, 25/3 (2008), 8-22.

In addition to working time arrangements, the work in the ED is notoriously high stress. The causes and effects of stress and its association with workforce retention have not been extensively studied and are somewhat contested. Green (2002) has argued that research from the US and Canada suggests that long shifts are the primary reason why people leave their ED careers rather than burnout⁶⁴. Green posits that “burnout” has been misconceptualised in the industry, and that all indications suggest that while it is a problem for ED workers “... *burnout may just be a speed bump in the career of an emergency physician rather than a cataclysmic career-ending phenomenon that few return from*”⁶⁵. On the other hand, a study published in 2010 that surveyed 3196 physicians in France, of which 538 were emergency physicians found greater prevalence of burnout and intent to leave the profession amongst emergency physicians compared to the general physician population⁶⁶. The main factors associated with higher intent to leave were a serious lack of quality of teamwork and burnout (which doubled the risk of intent to leave according to a multivariate analysis).

A study of Western Australian ED nurses⁶⁷ found that the most highly ranked occupational stressors were violence against staff, excessive workload and poor skill-mix, followed by dealing with a mass casualty incident, the death/sexual abuse of a child, and dealing with high acuity patients. Access block ranked seventh as a stressor (however, it should be noted that it was separated from its effect of “excessive workload”). The emergence of violence as a major stressor in this study is particularly concerning and the authors recommend that improved support and protection is needed for staff.

In respect of ED doctors, a cross-sectional survey of ACEM fellows to assess their psychological health, and the work reduction strategies they have in place to deal with stress has also been undertaken⁶⁸. The survey was prompted by anecdotal evidence that many ED physicians had reduced or intended to reduce their clinical workload, for reasons related to stress. The study found that ED physicians had significantly decreased their clinical workload over the previous 5 years and planned to continue this trend in the future. In turn, involvement in other professional activities such as administration, committees and research, had increased over the same period. The main reasons cited for reducing clinical load were workplace concerns of: excessive workload and lack of resources; family life and emotional health effects; shift work; and work stress.⁶⁹

In regard to overall psychological health of emergency physicians in Australasia however, the study concluded that overall, the situation was good. Compared to a sample of the general community, the physicians surveyed appear psychologically “very healthy” with better scores on all measures of psychological well-being. The study indicated that a minority of physicians appeared not to be thriving, however, and were “at risk” of psychological disorders, due to stress. As with reasons for reducing clinical load, the stress was reported as stemming from work environment issues such as access block, dealing with management, insufficient staffing, workload pressures and staff

⁶⁴ David Green, 'How Long Do Emergency Physicians' Careers Last?', *Emergency Medicine*, 14/1 (2002), 1-7.

⁶⁵ *Ibid.*, p2-3.

⁶⁶ M Estryn-Behar et al., 'Emergency Physicians Accumulate More Stress Factors Than Other Physicians—Results from the French Sesmat Study', *Emergency Medicine Journal*, 28/5 (May 1, 2011 2011), 397-410.

⁶⁷ Gail M. Ross-Adjie, Gavin Leslie, and Lucia Gillman, 'Occupational Stress in the Ed: What Matters to Nurses?', *Australasian Emergency Nursing Journal*, 10/3 (2007), 117-23.

⁶⁸ This was reported in Heather D Crook et al., 'Workplace Factors Leading to Planned Reduction of Clinical Work among Emergency Physicians', *Emergency Medicine Australasia*, 16 (2004), 28-34 and Taylor, David McD, et al. (2004), 'The psychological health of emergency physicians in Australasia', *Emergency Medicine*, 16 (1), 21-27.

⁶⁹ Heather D Crook et al., 'Workplace Factors Leading to Planned Reduction of Clinical Work among Emergency Physicians', *Emergency Medicine Australasia*, 16 (2004), 28-34

supervision. Clinical work in particular reportedly impacts most upon family life, social life and emotional health.⁷⁰

2.4.2 COMPROMISED WORKFORCE DEVELOPMENT

Training and education are essential parts of professional development for all ED staff. It is noted, however, that while considerable attention on the training needs of doctors has been undertaken, much less attention has been paid to nursing staff and other allied health workers. Given the workplace pressures that impact on the ability of staff to access and take time out for on-going development, it is likely that this is an area in which there are issues. Certainly stakeholder consultation indicated that this is inadequately planned for. Despite numerous calls for more and better training (e.g. NSW Health Workforce Action Plan), in reality the demands of clinical service delivery and a shortage of supervisory staff have reduced opportunities and time for educational development. This contention is supported by an earlier survey of ED Directors across 23 hospitals, which:

“identified a problem with reduced on-the-job support, supervision and training as a result of high workloads and low FACEM numbers. Out-of-hours working further reduced the time and energy available to Registrars for study in non-work time.”⁷¹

When training and education are not adequately planned for in terms of time and supervisory staff, this can lead to increased pressures on the ED staff. A common view in the consultations was that training was not adequately recognised and funded as part of day-to-day workloads, and was considered to be a burden. Of particular concern is the rising number of medical interns required to undertake a mandatory rotation in ED. The consultations indicated that the influx of medical interns has created an additional burden on ED staff, but in addition, the ED also is reported to act as a “bottleneck” as it has limited capacity to safely accommodate intern training. This has not been entirely unexpected, with Joyce and colleagues⁷² warning in 2007 that *“the wave of students flowing into the Australian medical workforce represents substantial growth, and we must plan carefully – now – if we are to ride the wave, rather than being swamped by it.”*

Other concerns raised included the lack of guidance of what might be a safe ratio between junior and senior staff, and anxiety about junior staff making decisions beyond their clinical capability without adequate supervision. It was felt that increased service delivery demands reduced their ability to fulfil this role. The tensions between training junior staff and provision of services were also reported to create issues of work intensity for staff if sufficient resources were not allocated. These issues echo finding from one study of ED staff which found that:

⁷⁰ Taylor, David McD, et al. (2004), 'The psychological health of emergency physicians in Australasia', *Emergency Medicine*, 16 (1), 21-27.

⁷¹ Wise and Buchanan, 'Survey of NSW Emergency Physicians and Registrars: Key Findings'. p13.

⁷² C. M. Joyce et al., 'Riding the Wave: Current and Emerging Trends in Graduates from Australian University Medical Schools', *Med J Aust*, 186/6 (Mar 19 2007), 309-12.

"[t]here was a common view that a systematic approach to supervision that was not dependent on individuals worked best, although that required clear departmental and hospital support in freeing up senior staff from their patient load."⁷³

Respondents also noted that training opportunities depended on staffing hours with reduced opportunities at night or on weekends, as well as clinical service demand with access block and overcrowding being major threats to learning. One study has noted that:

"In most settings, trainee supervision is largely driven by the enthusiasm and goodwill of senior clinicians. This is seldom remunerated directly (although some employment contracts stipulate teaching and supervisory duties) and often incurs a substantial opportunity cost for consultants. With the estimated growth in trainee numbers, this pro-bono system is unlikely to be sufficient. There is a real risk of supervisor disengagement and burnout, which could ultimately influence clinical outcomes."⁷⁴

Similar research has been carried out in Australia, where Ward et al. (2013) conducted an online survey that was sent to all FACEMs looking at factors that motivate or constrain Australian emergency medicine physicians to teach medical students⁷⁵. Of the 639 respondents, the most cited factor (90% of respondents) was having protected teaching time. Other facilitators included personal satisfaction and receiving continuing medical education credits. Gregory, Fox and Arnold (2008) recommend that the whole of the training spectrum from medical student to specialist be better planned, with substantial and quarantined increases in funding for medical education and training.

Another factor limiting capacity to train new emergency medicine specialists is the shortage of FACEMs. Not only does this shortage of FACEMs limit supervision opportunities but also means that hospitals cannot obtain the accreditation required from ACEM to offer specialist training. Whilst ACEM are introducing strategies to mitigate these factors, including networked training models, lack of FACEMs remains a barrier to Accreditation for many hospitals. This issue is not limited to rural and regional areas that face particularly high difficulties in attracting FACEMs. ACEM Faculty Chair Richard Paoloni notes in a letter (29 April 2011) to the Audit Office of NSW, that several metropolitan hospitals have insufficient numbers of FACEMs to meet accreditation requirements despite the existence of recently qualified FACEMs who are without permanent employment. Paoloni asserts that one of the main reasons for this shortage has been a failure of public planning and that a proactive centralised approach is required.

Supporting the continued professional development of existing staff is also critical to the ongoing skills development of the emergency care workforce. Stakeholder consultation noted the challenge of doing this in a busy and demanding ED environment. Appropriate supervision is required to support on the job learning and that the fragmented nature of the staffing of some EDs made this particularly difficult. Key informants identified the potential for universities to play a greater role in developing postgraduate training modules. Use of technology also could also play a role in continuing

⁷³ George Jelinek, Tracey Weiland, and Claire Mackinlay, 'Supervision and Feedback for Junior Medical Staff in Australian Emergency Departments: Findings from the Emergency Medicine Capacity Assessment Study', *BMC Medical Education*, 10/1 (2010), 74.

⁷⁴ Gregory J Fox and Stephanie J Arnold, 'The Rising Tide of Medical Graduates: How Will Postgraduate Training Be Affected?', *Medical Journal of Australia*, 189/9 (2008), 515-18.

⁷⁵ Elizabeth Cochran Ward, James Kwan, Karen Garlan, Elizabeth Bassett and Linda Klien, 'To teach or not to teach? Factors that motivate and constrain Australian emergency medicine physicians to teach medical students', *Emergency Medicine Australia*, 25 (2013), 353-358.

professional development opportunities through online learning and simulations. However, in both these areas, it was felt in the consultations that more research was required to better understand the effectiveness of learning using these methods and whether face-to-face consolidation was required. Also raised was the issue of finding sufficient time to engage in formal learning even if it was flexibly delivered. Formal and informal learning may be facilitated by education specific roles such as a clinical nurse educator, however, the consultation revealed that in practice, this role was not always sufficiently valued and was frequently used to back fill staff taking breaks and holidays.

The Right Skills?

Key informants also raised the question of adequate recognition and development of the full range of skills needed for optimal ED performance. When identifying the skills needed in the workforce and issues related to their development, Mounier (2001) argues that there are multiple dimensions that need to be taken into account⁷⁶. While frequently attention to skills issues tends to focus on the technical dimension (e.g. recognised trade or professional skills), Mounier argues that the need to address two other key dimensions of skills:

- the cognitive dimension (such as general skills like literacy); and
- the behavioural dimension, (such as inter- personal skills.)

A number of skills that can be seen as falling within these dimensions were identified through the literature and key stakeholder consultation. One of these was the level of English language skills, not just among overseas trained staff, but also among those who completed their studies in Australia. While the Medical Board of Australia has standards for registration that require applicants achieve a minimum of level 7 on the International English Language Testing System (IELTS) or equivalent, there are exemptions for those who have had secondary schooling in an English speaking country⁷⁷. Research is needed to better understand the levels of English language skills amongst ED clinicians and whether this is indeed leading to issues for service delivery for patients and staff communication.

Decision making is another important cognitive skill for ED staff. Croskerry (2002), notes the density of decision-making that prevails in EDs and the need for cognitive short-cutting strategies to deal with the time and resource constraints that they are working under⁷⁸. He proposes that training could help improve clinical decision making in the ED to avoid costly but highly preventable errors.

It is important to appreciate, however, that the development of such deeper cognitive capabilities amongst all parts of the ED workforce is not something that be simply learnt in the classroom. Often it can only be acquired with experience - especially in context of well supported, on-the-job education and training arrangements.⁷⁹ It is notable that a 2012 survey of junior doctors' perception

⁷⁶ Alain Mounier, 'The Three Logics of Skill in French Literature. Sydney', (NSW: NSW Board of Vocational Education and Training, 2001).

⁷⁷ Medical Board of Australia, 'English Language Skills Registration Standard ', (Medical Board of Australia). <http://www.health.qld.gov.au/medical/docs/ELSRS.pdf>

⁷⁸ Pat Croskerry, 'Achieving Quality in Clinical Decision Making: Cognitive Strategies and Detection of Bias', *Academic Emergency Medicine*, 9/11 (2002), 1184-204.

⁷⁹ Barry Schwartz and Kenneth Sharpe, *Practical Wisdom* (New York: Riverhead, 2010).

of their training, education and supervision conducted by the AMA⁸⁰ noted the perception of respondents that the area in which there was most room for improvement in their training was in developing non-clinical skills. An issue that has not received the attention it deserves is the extent to which workload problems are steadily compromising the capacity of co-workers to pass on their deeper cognitive skills to new entrants.

In addition to cognitive skills, there was general consensus in the literature and consultation with key stakeholders about the importance of behavioural skills - those that facilitate our interactions with others.- in the ED. Those that were most commonly mentioned were leadership, communication and team work skills.

The importance of leadership skills for good ED and hospital management is key. Anecdotal reports of the close connection between good leadership, positive staff morale and better recruitment and retention outcomes were common and are supported by research evidence. There is also evidence that better leadership leads to better patient outcomes: for example, a study by Yeung and colleagues found an association between teams led by leaders with the best leadership skills and higher quality cardiopulmonary resuscitation⁸¹. Despite the linkages between the quality of leadership and staff and patient outcomes, a 2011 US study found that emergency residents did not have well developed approaches to learning leadership skills and had narrow perspectives on leadership. The authors posit that this may be due to *“the lack of formal leadership training in medical school and residency, or it may reflect assumptions regarding how leadership skills develop”*. They conclude that:

“substantial opportunity exists for enhancing emergency medicine residents' learning of leadership skills as well as the teaching of these skills by the attending physicians and nurses who facilitate their learning.”⁸²

Communications and team work skills were also raised by key informants as being critical for the performance of EDs. Communication errors have been found to be frequent contributor to critical incidents^{8384 85}. Eisenberg et al. (2005), with funding from the US based National Patient Safety Foundation, undertook an extensive study of communication in two US academic emergency departments and implications for patient safety. They identified four key processes that were vulnerable to communication errors: triage, testing and evaluation, handoffs, and admitting.

⁸⁰ Australian Medical Association, '2012 AMA Junior Doctor Training, Education and Supervision Survey', (ACT: Australian Medical Association, 2013). Accessed at: <https://ama.com.au/2012-ama-junior-doctor-training-education-and-supervision-survey>

⁸¹ J. H. Yeung et al., 'Factors Affecting Team Leadership Skills and Their Relationship with Quality of Cardiopulmonary Resuscitation', *Crit Care Med*, 40/9 (Sep 2012), 2617-21.

⁸² E. F. Goldman et al., 'Learning Clinical Versus Leadership Competencies in the Emergency Department: Strategies, Challenges, and Supports of Emergency Medicine Residents', *J Grad Med Educ*, 3/3 (Sep 2011), 320-5.

⁸³ AIHW and Commission for Safety and Quality in Health Care, 'Sentinel Events in Australian Public Hospitals 2004-05', *Safety and quality of health care no. 2. Cat. no. HSE 51*. (Canberra: AIHW, 2007).

⁸⁴ Y Donchin et al., 'A Look into the Nature and Causes of Human Errors in the Intensive Care Unit', *Quality and Safety in Health Care*, 12/2 (April 1, 2003 2003), 143-47.

⁸⁵ Kathleen M. Sutcliffe, Elizabeth Lewton, and Marilyn M. Rosenthal, 'Communication Failures: An Insidious Contributor to Medical Mishaps', *Academic Medicine*, 79/2 (2004), 186-94.

Similar findings have been identified in a literature review on non-technical skills assessment measures available that were relevant to emergency care.⁸⁶ The authors note that while the assessment of “soft skills” has been used in emergency care departments there are differing views about the relative dimensions of non-technical skills, and/or a lack of emphasis on their importance. They question the labelling of soft skills as “non-technical” on the basis of this suggesting that these skills are not as important as technical skills. The researchers note the importance not just of the “global collective interactive skills” that are often the focus of leadership and teamwork measures but the skills involved in individual clinical decisions, which are less often the focus of attention. The researchers highlighted the need for greater focused assessment of these broader teamwork skills, both to better understand the dynamics of team performance and to improve patient outcomes.

As with the situation concerning the development of cognitive skills, the impact of increasing workloads on the capacity to develop these areas of identified skill shortage needs further research. It also again highlights that the workforce problem is not just a shortage of technically trained personnel, but also a problem of inadequate arrangements within EDs as currently organised for the coherent development of the full range of skills necessary for efficient operations. Adequate arrangements will emerge where there are adequate staffing levels not just for service delivery but also for the systematic transmission of skills on the job.

Training to improve behavioural skills is a key issue for the ACEM Curriculum Revision Project (CRP)⁸⁷ that commenced in 2011. An earlier review⁸⁸ of ACEM training and assessment had made a number of recommendations, including a greater emphasis on developing and assessing non-clinical skills. The review recommended the development of learning outcomes in a range of non-technical domains of practice to balance the previous emphasis in the medical expertise domain of practice.

2.4.3 RECRUITMENT AND RETENTION PROBLEMS

Even with optimal staffing targets, a matching of the supply of appropriate staff who wish to work in ED with vacancies is needed. Currently EDs suffer from workforce shortages and face significant challenges for staff recruitment and retention. This is especially in rural and regional areas but problems exist in metropolitan areas as well. Despite these challenges, there are no known evaluations of recruitment and retention initiatives.

An issue raised in consultation with key stakeholders was the lack of information about the preferences, motivations and career pathways of potential recruits, trainees and current ED staff. It was suggested that if these were better understood, more effective recruitment and retention policies could be designed. While the literature provides some insights, more regular and standardised surveys of ED trainees, the current workforce and management would assist to proactively identify potential issues and opportunities for recruitment and retention.

As noted earlier, Wise and Buchanan (2007) identified that Directors of ED and EM Training faced difficulties in persuading local graduates to apply for vacancies and difficulties in retaining those who

⁸⁶ Simon Cooper, Ruth Endacott, and Robyn Cant, 'Measuring Non-Technical Skills in Medical Emergency Care: A Review of Assessment Measures', *Open Access Emergency Medicine*, 2 (2010), 7-16.

⁸⁷ ACEM, Curriculum Revision, accessible at: <http://www.acem.org.au/Education-Training/Emergency-Medicine-Specialist-Training/Curriculum-Revision.aspx>

⁸⁸ ACEM, Training and Assessment Review, accessible at: http://www.acem.org.au/getmedia/aebe5b1-3e84-45b9-8e2f-ec539b175ba2/Training_and_Assessment_Review_01_2010-07_2011.pdf.aspx

did apply. The reason most commonly cited for this was that other medical specialities were seen as more attractive than emergency medicine:

“Lower long-term pay prospects associated with constraints on private incoming-earning was not in itself the problem; lower pay had to be understood in high levels of unsocial hours, work intensity and ‘burn-out’ found in emergency medicine. There was also a clear sense that emergency medicine had a lower status than other specialities.... Common destinations for those leaving or reducing their hours were ICU, locum and permanent work in Queensland; administrative and service development roles outside emergency medicine; and locum work in both public and private hospitals in NSW. Directors also noted that a number of FACEMs had reduced their hours or were on long service leave due to stress and the pressure of long working hours; taking the time for ‘lifestyle’ or family reasons.”⁸⁹

Comments such as the following from Directors in the study were reported by the researchers as typical:

“The prospect of becoming a Specialist and still having to work the onerous shift on the floor is also turning people away from the specialty. More and more, we are getting trainees who want to do part time as it suits their family situation and this trend of high proportion of part time staff will continue.”⁹⁰

In response to questions about whether registrars had *seriously* considered changing their career in the last twelve months, just over one in five had considered leaving the medical profession altogether, while just over half had considered changing their speciality away from emergency medicine. More positively, 63% responded that they would like emergency medicine to be their long term career. A similar finding was made by HETI (2011) in a survey of ACEM registered trainees with 88% saying that they were highly likely or likely to complete their emergency medicine training.

While there are apparent problems with recruitment and retention for EDs across NSW, rural and regional areas face additional challenges. A shortage of FACEMs means difficulties obtaining accreditation to offer specialist training as appropriate supervision cannot be arranged. A small amount of research has been done to better understand the motivations for exploring employment opportunities outside of cities which appears to suggest some link between exposure during training to working in rural or regional areas and later working in non-metropolitan areas.

Some research that supports this has been undertaken by Eley, Eley and Rogers-Clark (2010), who surveyed a cross-section of regionally located nurses and nursing students to find out their reasons for entering and leaving nursing⁹¹. The researchers found that both nurses and students below and above 30 years of age indicated that self interest, vocation and altruism were their main reasons for entering nursing. Conversely, however, reasons for leaving differed by age and group with nurses more likely than students to cite disillusionment. Likewise older students were more likely to cite disillusionment and health concerns. Younger students under 30, nominated pursuit of another career and starting a family as major reasons. The researchers highlighted the need for differentiated retention, but not recruitment, strategies.

⁸⁹ Wise and Buchanan, 'Survey of NSW Emergency Physicians and Registrars: Key Findings'. p.12-14.

⁹⁰ *Ibid.* p.12.

⁹¹ Diann Eley, Robert Eley, and Cath Rogers-Clark, 'Reasons for Entering and Leaving Nursing: An Australian Regional Study', *Australian Journal of Advanced Nursing*, 28/1 (2010), 6-13.

2.4.4 CURRENT 'SOLUTIONS' IN FACT PART OF THE PROBLEM

The primary long term solution to workforce shortages in both ED and in NSW hospitals more generally, has been to increase student quotas. However, these have been unsuccessful in resolving challenges faced in workforce recruitment and retention, and have led to a greater reliance on short-term solutions of using locums and overseas trained medical staff to fill in the workforce shortages.

These approaches are all focussed on increasing the numbers of staff, but do not target systematic issues facing the ED. As a consequence, these 'solutions' run the risk of exacerbating problems in NSW EDs.

Medical Interns

Key informants raised concern about the pressures placed on EDs as a result of the large number of medical interns that are required to undergo training within the ED as part of their registration requirements. Issues have been identified from the perspective both of EDs and trainee staff. For example, Weiland and colleagues in interviews found that most ED Directors and Directors of Emergency Medicine Training felt that increases in the number of interns would affect their ability to take medical elective students (78%) and Australian Medical Council observers (70%) as well as reduce clinical exposure for interns⁹². Conversely, Jelinek et al. found in their interviews with senior and junior ED staff that the critical resource requirements to support major increases in intern numbers were communications systems and human resource adjustments, especially the provision of supervisory staff and time dedicated for senior medical staff to oversee workplace learning⁹³.

A further issue that has arisen due to the increase in student numbers is that medical students now face increased competition for internships. Australian states allocate internships to medical graduates according to each state's system of priorities. Kevat and Lander raise the concern that this priority system operates to discriminate against Australian interstate applicants and restricts the free movement of medical graduates across state borders⁹⁴. The implications of this development on the future recruitment of emergency specialist trainees need further exploration.

Locums

The shortage of ED specialists has led to a reliance on employed locums in NSW EDs. Since the late 1980s and 1990s this reliance has moved from one that only afflicted hospitals in remote localities to one that affects hospitals across the State, including flagship teaching hospitals in metropolitan Sydney. Between 2004 and 2006 there was a concerted push to address the problem of increasing reliance of locum medical staff in NSW EDs. Research was undertaken by a working group of the Greater Metropolitan Clinicians Taskforce⁹⁵, which found that key parts of the NSW public hospital network were chronically dependent on locum employment. In one metropolitan hospital, 41% of

⁹² T. J. Weiland, C. Mackinlay, and G. A. Jelinek, 'The Emergency Medicine Capacity Assessment Study: Anticipated Impact of a Major Increase in Intern Numbers in Australian Ed', *Emerg Med Australas*, 22/2 (Apr 2010), 136-44.

⁹³ G. A. Jelinek, T. Weiland, and C. Mackinlay, 'The Emergency Medicine Capacity Assessment Study: perceived resource requirements to support a major increase in intern numbers in Australian emergency departments', *Emerg Med Australas*, 23 (1) (2011), 76-83.

⁹⁴ Kevat, Dev A. S. and Lander, Fiona J., 'Emerging inequality and potential unconstitutionality - the case for reform of the intern priority system', *The Medical journal of Australia*, 198 (6) (2013), 334-37.

⁹⁵ Skinner, Clare A, et al., 'The challenge of locum working arrangements in New South Wales public hospitals', *Medical Journal of Australia*, 185 (2006), 276-78.

the shifts in a two week period studied were filled by locum doctors. Most had only worked a single shift during this period.

The reliance on locums has created a number of quality and safety issues. Many locums reported being poorly inducted into the sites they worked at. Reports on locums spending considerable time obtaining access codes for computers with vital information were common. The quality of screening of staff provided by locum agencies was identified as being highly variable, and raised concerns about the capability of staff being deployed. It was often unclear if locums were employees or contractors, meaning they had an ambiguous legal status, with implications for liability in the case of accidents or mistreatment. As an act of administration they were often hired through 'procurement' processes and did not even register in hospital or NSW Health HR systems.

Far from being a 'solution' to the problem of staff shortages in EDs, the rise of locum employment became part of the problem. Locums, earning between \$150 and \$200 an hour could earn up to three times the earnings of salaried medical staff, resulting in additional costs for NSW Health. Key stakeholders also reported this as being demoralising for salaried staff – particularly where locums relied on professionals for advice and direction given the limitations of their local knowledge. In addition, many locums were also reported as being more junior than salaried staff, a fact that was perceived to be particularly unjust by salaried hospital staff. In particular FACEMs reported discontent at the fact that they were expected to spend inordinate amounts of administrative time trying to find people to do the clinical work, only to employ junior locums at a higher rate of pay, for after-hours work that the DOH was unwilling to pay FACEMs for.⁹⁶

Overseas Trained Workforce

As noted earlier, there has been heavy reliance over recent years on immigration for solving workplace shortage issues. Concerns were raised in the consultation with key stakeholders about the lack of support for the overseas trained workforce. McGrath (2004) summarises these as being:

“... the need for better information access; better orientation to our healthcare systems and the workplace; improving communication with patients and healthcare workers; standardised assessment of knowledge and skills; and education and training support.”⁹⁷

However, many EDs just do not have the resources or systems to provide this support.

Taken together, an increased reliance on interns, locums and overseas trained doctors, has the appearance of providing labour to resolve workforce shortages in ED services. In reality, it remains unclear the net gain that has been made in terms of the quantity and quality of service delivery. However more effort has been devoted to making these 'solutions' work rather than properly defining and addressing the key problems of rising workloads and their implications for staffing.

⁹⁶ Australasian College for Emergency Medicine, 'A Proposal to Resolve Assessment and Resuscitation Delays for Patients in NSW Emergency Departments, Appendix 2'.

⁹⁷ p.640. Barry P. McGrath, 'Integration of Overseas-Trained Doctors into the Australian Medical Workforce', *Medical Journal of Australia*, 181/11/12 (2004 Dec 06 2004), 640-2.

2.5 SYSTEMATIC CAUSES AND EFFECTS OF THE STAFF SHORTAGE

EDs in NSW are now in a trajectory of evolution that can best be understood as a negative spiral.

Research to examine system level dynamics and how they might indicate whether a system is operating optimally or not has demonstrated through simulations that *“major recurring problems in the service industry – erosion of service quality, high turnover, and low profitability – can be explained by the organization’s response to work pressure.”*⁹⁸ A key finding has been that:

*“The simulation results show that **service organizations are vulnerable to a wide range of self-reinforcing processes that can act as death spirals** [emphasis added]. In each case, the short-term benefits of an action, whether overtime, corner-cutting, service standard erosion or hiring, can trigger harmful long-term effects that either lead to insufficient capacity, drive away customers, or reduce the organization’s budget, forcing further service capacity erosion.”*

Oliva and Sterman note that a common management response is to hire more people to deal with reduced capacity in the face of higher demand. This has been the case in emergency care with increasing student quotas, engaging locums and overseas trained staff. However, the authors point out that the addition of new people who need to be trained serves to increase demands on the other workers in the system, which leads to further drop-out and a perpetuation of the problems in the system. This is especially problematic where there is a long time lag in training new hires to full capacity, as is the case with the emergency care workforce.

Another ecological approach which has come to similar conclusions is the skills ecosystem approach. Originally formulated by David Finegold⁹⁹ to explain the proliferation of skills and innovation in Silicon Valley in California, this approach has been used to examine the conditions which lead to skills growth or skills atrophy in a range of industry sectors. Like problems in the natural world, trying to rectify a problem in one part of an eco-system will be of limited utility if other key parts of the eco-system causing or sustaining the problem remain unchanged.

Adopting this approach, research into the Victorian precision engineering, automotive, food, biotech, chemicals and plastic sectors found that while employers articulated needs for workers with higher order cognitive and behavioural skills, and reported skill shortages in particular trades, the greatest challenge they faced was their systematic incapacity to meet new and emerging skill needs. Excess productive capacity, intense competition and pressures on margins were leading, on the one hand, to reduced intakes of apprentices and reliance on an aging workforce for skills, and, on the other hand, to new forms of business organisation and non-standard labour.

Taking a skills ecosystems approach, the research team identified four dimensions to the problem.¹⁰⁰ Firstly, labour intensification and a preoccupation with ensuring labour was fully deployed on-the-job

⁹⁸ Rogelio Oliva and John D Sterman, 'Death Spirals and Virtuous Cycles', *Handbook of Service Science* (Springer, 2010), 321-58.

⁹⁹ D Finegold, 'Creating Self-Sustaining, High-Skill Ecosystems', *Oxford Review of Economic Policy*, 15/1 (March 1, 1999 1999), 60-81.

¹⁰⁰ The following summary is taken from John Buchanan, Ian Wason, and Chris Briggs, 'Skill and the Renewal of Labour: The Classical Wage-Earner Model and Left Productivism in Australia', in Chris Warhurst, Irena Grugulis, and Ewart Keep (eds.), *The Skills That Matter* (Houndmill (UK): Palgrave Macmillan, 2004), 197 – 98.

undermined the capacity of workplaces to conduct skills development. Secondly, systemic approaches to on and off-the-job training were breaking down. For example, under pressure from head office to defend shareholder value, broad-based training now trained only in competencies directly relevant to the job. Thirdly, declining skill formation capacity was linked to new forms of business organisation and rising usage of non-standard employment. Fourthly, whereas larger firms previously had regularly taken responsibility for nurturing appropriate levels of skilled labour for particular local and occupational labour markets, larger firms and workplaces now tightly controlled the levels of labour required for production, and this control led directly to a large drop in apprenticeship numbers.¹⁰¹

The current manufacturing dynamic underway has been nicely characterised by a group of AMWU delegates in the following terms¹⁰²:

"[Managers] equate 'reform' with arbitrarily cutting levels of full time, permanent employees so there are not enough people to do the work required. When demand rises additional workers are engaged as casuals, contractors or through labour hire firms. Management control has been greatly enhanced in recent years with the introduction of ever more sophisticated information and monitoring systems. These are often used to closely monitor the performance of individual workers and counsel them when time allocations for tasks are not met."

The failure to reinvest back into the workforce, such as through training and development, has been likened to the metaphor of "farmers eating their own seeds".

On the other hand, if policies are implemented to target these destructive "death-spiral" processes then, the opposite – "the virtuous cycle" - is achievable. These policies include expediting capacity acquisition by creating more responsive hiring processes that can proactively monitor, plan for, and deliver on recruitment needs; reducing the effect of work pressure on time per task; creating quality pressure; and maintaining a reserve margin of capacity. Of all these policies, Oliva and Sterman suggest that perhaps it is the latter that is the most important¹⁰³:

"Even if the policies above are instituted, they will have little impact if the budget for service is continually tightened... The long delays in adjusting service capacity coupled with unpredictable variations in service demand mean an organization must maintain a strategic margin of reserve capacity to avoid the corner cutting, standard erosion, and other behaviors that trigger the death spirals. However, to many senior managers, reserve capacity looks like waste, leading to continual pressure to reduce budgets and headcount. Worse, financial

¹⁰¹ Buchanan, J. and Briggs, C. 2004, 'Not with a bang but a whimper?' *Skills and the future of NSW Manufacturing and Engineering*, NSW TAFE Commission, Sydney, available at www.lg.tafensw.edu.au/2387/workforce.report2.pdf. and

Buchanan, J., Evesson, J. and Briggs, C. 2002, *Renewing the Capacity for Skills Formation: the Challenge for Victorian Manufacturing*, Victorian Learning and Employment Skills Commission, Melbourne, available at www.vlesc.vic.gov.au/vlesc/pdfs/VLESC_acirrt.report.pdf.

¹⁰² ACIRRT, 'Work/Time/Life: An issues paper for the Australian union movement', prepared by the Australian Centre for Industrial Relations Research and Training with assistance of researchers at RMIT University for the Work/Time/Life conference in Melbourne 19-20 November 1998.

¹⁰³ Rogelio Oliva and John D Sterman, 'Death Spirals and Virtuous Cycles', *Handbook of Service Science* (Springer, 2010), 321-58, p.54.

stringency often prevents organizations from undertaking the process improvement initiatives that could lead to genuine improvements in productivity (Repenning and Sterman, 2001, 2002)."

Solutions that do not address the deeper systematic issues that have led to ED workforce shortages will be of limited and transitory value and may even be adding to the problem. Solutions cannot just target surface recruitment issues, but need to also address underlying causes of retention issues. Failure to do so sets up a paradoxical situation where attempts to alleviate staffing issues, such as increasing new or temporary hires, serve only to further increase pressures on staff in the ED.

3. SOLUTIONS: NEW DIRECTIONS IN ED STAFFING AND WORKFORCE DEVELOPMENT

A range of promising, innovative initiatives are emerging to address the problems identified. Most, however, are piecemeal in nature and are poorly evaluated. Table 2 provides a summary of the material covered in this report and highlights the fundamental findings of the literature on solutions.

To date, most attention in NSW has been directed at developing, recruiting and deploying technical skills, despite the growing evidence supporting the importance of non-technical skills. The importance of these is not currently sufficiently valued in recruitment or training in NSW. Neither is adequate attention paid to initiatives that focus on improving retention in the ED, despite attrition being a major concern at all stages in the careers of doctors and nurses.

While there is a significant and growing literature on new models of care and role delineation, much of this neglects the key issue of chronic understaffing in the face of rising levels and complexity of demand for ED services. Unsurprisingly there is little documentation (reflecting lack of initiatives) directed at addressing the systemic 'death spiral' logic noted at the end of the previous chapter. The 'Four Hour Rule' initiative in WA and Ramsay Health Care's Employee Wellbeing Program provide some pointers as to what initiatives of this nature could look like. They are, however, scarce and highlight the extensive work still needing to be undertaken if a lasting solution to the current workforce problems in EDs in NSW are to be devised and implemented.

Table 2: Understanding and responding to ‘workforce shortages’ in NSW Emergency Departments – key findings from the literature reviewed.

Dimensions of the problem	Summary of reform initiatives documented in the paper	Comment
<p>Generative mechanisms: The problem of workloads</p> <ol style="list-style-type: none"> 1. The ED Team 2. Workload pressures <ul style="list-style-type: none"> Quantitative: high, complex + variable demand Understaffing relative to demand Qualitative: Psycho-social, job control + role delineations 3. Physical constraints in the ED 4. Constraints beyond the ED <ul style="list-style-type: none"> Within the hospital: access block : referrals within the hospital External services : aged care : mental health : social services 	<ul style="list-style-type: none"> - New roles and models of care to improve ED efficiency and workflow - skill mix initiatives - [nurse-patient ratios in Victoria] - access block study (rare) - aged care initiatives (limited) 	<p>While there has been growing interest in the nature and operation of ED teams, much of this has not engaged with the key issue often overwhelming positive reform initiatives: the context of chronic understaffing. One of the few initiatives to address this defining issue has been the operation of nurse-patient ratios in places like Victoria and California.</p> <p>Documented initiatives on matters other than new models of care and role delineation are scarce.</p>
<p>Workforce manifestations + implications</p> <ol style="list-style-type: none"> 1. Compromised job quality 2. Workforce development <ul style="list-style-type: none"> Technical Skills Cognitive skills Behavioural skills 3. Recruitment and retention 4. Current ‘solutions’ part of the problem <ul style="list-style-type: none"> Interns Locums Overseas Trained Workforce 	<ul style="list-style-type: none"> - very limited work (eg violence in the ED) - FACEM Training - identifying non-technical skills - communication + team work skills - leadership skills - Alberta nurses, - Qld Web-site, - initiatives for rural EDs - Qld More Learning for Interns in Emergency (MoLIE) - Supervised Practice for Overseas Trained Specialist 	<p>The great bulk of initiatives and documentation on solutions concerns issues of education/training and recruitment. There is little on retention. Evaluation of the effectiveness of these initiatives is scarce. There can be no solution to the current ED workforce challenges without better approaches to these matters, but interventions on these matters alone will not address the forces generating the problems. As such they do nothing to change the currently unsustainable systemic logic which can be characterised as ‘death spiral’. Initiatives directed at the matters identified in rows above and below (ie section [2.3] and [2.5] of the paper) will be needed if EDs are to move into a ‘virtuous cycle’ or trajectory of skill development, deployment and renewal.</p>
<p>Systemic logic</p>	<ul style="list-style-type: none"> - WA Four Hour Rule - Ramsay Health Care Employee Well Being program 	<p>Initiatives directed at changing the systemic problems are extremely scarce.</p>

3.1 INITIATIVES CONCERNING THE UNDERLYING STRUCTURE AND OPERATION OF EDS

3.1.1 DEVELOPMENT OF NEW ROLES AND MODELS OF CARE TO IMPROVE ED EFFICIENCY AND FLOW

NSW Health and the ECI have recently reviewed a number of models of care currently being implemented in NSW within the ED, outside the ED and within the community setting. The result of this review has found that implementation of ED models of care were not standardised, nor were the implementations of proven models of care implemented using a standardised process or with consistent adherence to business rules¹⁰⁴. Not surprisingly then, the review reports “... a lack of confidence in the models of care by clinicians.” The review also sets out guidelines key models of care, noting the potential benefits and challenges. While technical skill delineation is a prominent component of the models of care guidelines, there are also considerations of other factors including behavioural skill requirements and the contexts in which the ED is located.

3.1.2 SKILL MIX

The 2010 ED Workforce Research Project¹⁰⁵ aimed to develop an evidence base for decisions on skill mix in EDs, along with guidelines and principles for use across EDs in determining ED staffing profiles. Skill mix was defined as “the combination of skills available at a specific time in the ED... which acknowledges that some skills can be shared across professional groups.”¹⁰⁶ The project operated under the assumptions that there was no “one size fits all” formula for ED staffing, that the number and type of clinical and non-clinical staff would vary between departments, but that all the skills should be covered in the staffing profile.

The research mapped the existing activities, skill mix, roles, operational and workforce models of care within EDs participating in site visits. It found systematic patterns of difference between metropolitan and rural hospitals, including education profiles being more variable among rural sites and metropolitan sites having “significantly higher average volumes of activity, greater number of paediatric and aged presentations, and significantly higher proportions of clinical urgency and admission rate.”¹⁰⁷ It also provided evidence that no single driver influences hospital characteristics on its own, and that factors such as remoteness, activity, proportion of aged presentations, proportion of paediatric presentations and proportion of urgent presentations have an influence. On the other hand, the research did not find evidence to support the assumption that the socioeconomic status of sites was a driver of average annual activity, clinical urgency number of paediatric patients, number of aged patients and the admission rate.

A Scenario Framework to define ED profiles was developed that used the three drivers: Remoteness (rural, metropolitan), Activity (high, moderate, low), and Complexity (Aged: high/low proportion; Paediatrics: high/low proportion; Clinical urgency: high/low proportion; Volume of complex patients: high/low proportion) to map hospitals to one of 19 potential scenarios. This resulted in the

¹⁰⁴ NSW Health, 'Emergency Department Models of Care', (North Sydney: NSW Health, 2012). p5.

¹⁰⁵ PriceWaterhouseCoopers, 'NSW Department of Health Emergency Department Workforce Research Project: Final Report', (2010).

¹⁰⁶ *Ibid.*, p12.

¹⁰⁷ *Ibid.*, p83.

development of principles and guidelines for staffing Level 3-6 EDs, including recommendations for baseline skill mix recommendations.

The Allied Health Workforce Advice and Coordination Unit has also prepared a paper that proposes models of care and staffing needs for allied health profession staffing in Queensland Health EDs¹⁰⁸. It provides advice on minimum ED staffing levels for a range of other health professionals, including social workers, physiotherapists, psychologists and pharmacists. The report quotes research that found that use of allied health professionals could potentially reduce ED presentations,¹⁰⁹ readmission rates into the ED¹¹⁰ and improve continuity of care between the ED and inpatient wards as well as the community¹¹¹.

3.1.3 NEW ROLES IN ED

There have been three notable trends in staffing redesign. The first is the creation of more advanced and more autonomous nursing roles to take on greater responsibility within the ED. One prominent example is the development of the Nurse Practitioner (NP) role. The nurse practitioner's role expands the tasks and responsibility of the traditional scope to be more *"dynamic and flexible, responding to demands in patient services"*¹¹² and can include diagnosis and treatment. The expansion of the nursing role also creates expanded career pathways in nursing. Schofield and Callender (2009) have documented tasks as now including prescription of medication, initiation of diagnostic imaging and tests, referral of patients to specialists, admitting and discharging patients and health promotion and education. However, the role is not always well defined thus subject to variation between hospitals¹¹³. There is general support in the literature for the use of NPs to improve ED patient outcomes, with one systematic review finding evidence to suggest that NPs *"can reduce wait times for the ED, lead to high patient satisfaction and provide a quality of care equal to that of a mid-grade resident."*¹¹⁴. However, the NP value proposition is far from uncontested, with the same review finding that, in comparison to resident physicians, the costs of utilising NPs on a per patient basis was higher. Similarly a Cochrane Review of substitutions of doctors by nurses in primary care found that:

"... appropriately trained nurses can produce as high quality care as primary care doctors and achieve as good health outcomes for patients. However, this conclusion should be viewed with caution given that only one study was powered to assess equivalence of care, many studies had methodological limitations, and patient follow-up was generally 12 months or less.

¹⁰⁸ Allied Health Workforce Advice and Coordination Unit, 'Discussion Paper: Allied Health Profession Staffing in Queensland Health Emergency Departments', (2011).

¹⁰⁹ W Kurowski et al., 'Integrated Care Facilitation for Older Patients with Complex Health Care Needs Reduces Hospital Demand', *Australian Health Review*, 31/3 (2007), 451-61.

¹¹⁰ J. E. Moss et al., 'A Multidisciplinary Care Coordination Team Improves Emergency Department Discharge Planning Practice', *Med J Aust*, 177/8 (Oct 21 2002), 435-9.

¹¹¹ *Ibid.*

¹¹² Grainne Lowe, 'Scope of Emergency Nurse Practitioner Practice: Where to Beyond Clinical Practice Guidelines?', *Australian Journal of Advanced Nursing, The*, 28/1 (2010), 74.

¹¹³ Schofield and Callender, 'Literature Review of Emergency Department Staffing Redesign Framework', p.17.

¹¹⁴ Alix J.E. Carter and Aleks H. Chochinov, 'A Systematic Review of the Impact of Nurse Practitioners on Cost, Quality of Care, Satisfaction and Wait Times in the Emergency Department', *Canadian Journal of Emergency Medicine*, 9/4 (July 2007 2007), 286-95.

While doctor-nurse substitution has the potential to reduce doctors' workload and direct healthcare costs, achieving such reductions depends on the particular context of care. Doctors' workload may remain unchanged either because nurses are deployed to meet previously unmet patient need or because nurses generate demand for care where previously there was none. Savings in cost depend on the magnitude of the salary differential between doctors and nurses, and may be offset by the lower productivity of nurses compared to doctors."¹¹⁵

The second trend is the use of non-medical auxiliary staff to assist the medical and nursing staff to focus on higher-level clinical provision. Promising outcomes have been reported from the use of non-medical staff to free up clinician time that would otherwise be spent on non-medical tasks. These roles include communication officers whose tasks involve assuming the clerical burden of dealing with test and admission records, managing communications with the rest of the hospital and with external services, as well as managing rosters and timesheets; emergency department support officers who assist ED staff in the lifting and transport of patients and taking care of their comfort; and equipment coordinators who are responsible for ordering stock and mending equipment¹¹⁶.

The third trend is the development of clinical assistant roles that are designed to reduce the burden of lower-level clinical tasks to allow clinicians to focus on higher-level ones. The Technical Assistant role was trialled at Royal Prince Alfred Hospital in Sydney to perform venepuncture and intravenous cannulation, with the evaluation results suggesting that *"staffing the ED with technical assistants resulted in improved measures of ED performance, including triage performance and average patient length of stay"*¹¹⁷.

Another innovative role that has been developed is the Physician's Assistant (PA). The PA role goes beyond that of basic tasks, and can involve mid-level tasks, including diagnosis and treatment. The role was developed in US, where career pathways are developing that include field specialisations and postgraduate coursework and higher degree research options. While people who fill these roles may have previously worked as nurses, the PA's training is based on a medical model. Like the Nurse Practitioner role, the scope of practice is intended to be flexible and locally negotiated¹¹⁸ and thus there are concerns about the overlap of the PA and NP roles and issues that might arise in multidisciplinary teams. PAs work under the supervision and clinical responsibility of a medical practitioner, though *"the nature of the supervision varies according to geography and setting"* and may include supervision by telecommunication. There have been calls to adapt the PA role for Australian conditions to assist with the workforce shortage, especially in rural areas¹¹⁹. A pilot in Queensland had some promising results with support found amongst nurses, doctors and patients. However, concerns that the role not jeopardise the training of junior doctors or the development of the NP role were raised¹²⁰. There were also *"a number of structural, regulatory and legislation considerations [that] also would need to be addressed before the PA role is firmly established."*¹²¹. A

¹¹⁵ M Laurant et al., 'Substitution of Doctors by Nurses in Primary Care (Review)', *Cochrane Database of Systematic Reviews* 2004, 4 (2009).

¹¹⁶ Schofield and Callander, 'Literature Review of Emergency Department Staffing Redesign Framework', p.19.

¹¹⁷ Michael M. Dinh et al., 'Impact of Technical Assistants for Venepuncture and Intravenous Cannulation on Overall Emergency Department Performance', *Emergency Medicine Australasia*, 23/6 (2011), 726-31.

¹¹⁸ Allan Forde and Teresa O'Connor, 'Augmenting the Rural Health Workforce with Physician Assistants', *10th National Rural Health Conference* (2009), p.6.

¹¹⁹ *Ibid.*

¹²⁰ Urbis, 'Evaluation of the Queensland Physician's Assistant Pilot – Final Report', (Queensland Health, 2010).

¹²¹ *Ibid.* p.ii.

small pilot in South Australia also found that there were significant regulatory barriers that limited the flexibility and scope of practice that is the norm in the US¹²².

3.1.4 MANAGING WORKLOADS DIRECTLY: NURSE – PATIENT RATIOS

One of the few initiatives directed at confronting the key problem of understaffing has been the formulation and implementation of nurse-patient ratios. Some of the best documentation of reforms of this nature concerns developments in California and Victorian public hospitals¹²³. The defining feature of this initiative is that discretion about staffing levels is, to an extent, taken away from management operating unilaterally. The ratios set minimum staffing levels which must be complied with, or the facility closed. Clearly the effectiveness of the ratios depends on the level at which they are set. In Victoria and California, when they were initially introduced they had a very positive, documented impact on both the quality of patient care and the working life of nurses. Keeping the ratios up to date with changing demands is, however, difficult. Once established, managers and employers work to limit their development over time. Indeed, in Victoria, the ratios as won in the year 2000 have to be defended through each round of wage bargaining. While the Australian Nursing Federation (ANF) has run an extremely successful set of campaigns to retain the ratios over the years, it is widely recognised that they now only provide the minimum staffing necessary – i.e. a floor in staffing standards that management cannot compromise. If the quality of care and working life is to improve, then ratios for ED set over a decade ago should be adjusted to be appropriate for modern conditions.

3.2 INITIATIVES CONCERNING CONSTRAINTS BEYOND THE EMERGENCY DEPARTMENT

3.2.1 EXTERNAL SERVICES: AGED CARE FACILITIES

One model of care noted favourably in the consultations was the Acute Care for Aged Care Residents Model of Care (also known as the Geriatric Rapid Acute Care Evaluation, or GRACE, model of care) developed by the Hornsby Ku-ring-gai Hospital Service (HKHS)¹²⁴¹²⁵.

The GRACE model of care involves a Clinical Nurse Consultant (CNC) working with hospital staff, GPs and staff from aged care facilities to reduce hospital admission, increase appropriate residential care, and where a patient is required to be admitted to hospital, manage the patient's journey so that the stay is as short as possible. Evaluation of the initiative in 2011 reported greater patient and staff satisfaction, 47% reduction in hospital, reduced length of stay in the emergency medical unit and a 45% reduction in access block for the patients¹²⁶.

¹²² Phyllis B Ho and Guy J Maddern, 'Physician Assistants: Employing a New Health Provider in the South Australian Health System', *Medical Journal of Australia*, 194/5 (2011), 256-58.

¹²³ Gordon, Buchanan, and Bretherton, *Safety in Numbers: Nurse-to-Patient Ratios and the Future of Health Care*.

¹²⁴ Australian Resource Centre for Healthcare Innovations, 'Geriatric Rapid Acute Care Evaluation (Grace) Model of Care', <<http://www.archi.net.au/resources/moc/older-moc/grace>>

¹²⁵ NSW Health, 'Grace (Geriatric Rapid Acute Care Evaluation)', (North Sydney: NSW Department of Health, 2006).<<http://www.archi.net.au/documents/resources/models/grace/grace.pdf>>

¹²⁶ Nadia Yazdani, 'Grace: Geriatric Rapid Acute Care Evaluation. Bridging the Gap between Acute and Residential Aged Care', (NSW Health: Northern Sydney Local Health District, 2012).

Building on the GRACE model and others, John Hunter Hospital piloted the Aged Care Emergency (ACE) model of care to facilitate acute care to residents within residential aged care facilities rather than transporting them to Hospital Emergency Departments. The pilot reported successful outcomes including reduced ED presentations, reduced ED length of stay^{127 128}. This program is now being rolled out to 10 EDs in NSW.

3.2.2 EXTERNAL SERVICES: MENTAL HEALTH

There is clearly a need to improve the care within hospitals and the ED for mental health patients. Forero and Hillman (2008) found support in the literature for the view that *“Mental health patients can benefit from the co-location of psychiatric emergency services within the ED. The service improves clinical care for patients and the emergency department by using direct access to reduce access block.”*¹²⁹ In addition, Morphet et al (2012) reported that that the Victorian government’s ED Mental Health Mapping Project¹³⁰ *“identified that the introduction of ED Mental Health workers had a significant and positive impact on ED staff awareness of the needs and management of clients with mental illness, moving from a model of containment to one of treatment, enhancing recovery.”*

Access to mental health clinicians appeared to also have workforce development benefits, with reports that the access to mental health expertise *“increased the confidence levels of ED staff and facilitated the implementation of the MHTT [Mental Health Triage Tool].”*¹³¹ The Australian Resource Centre for Healthcare Innovations (ARCHI) outline two innovations to improve the quality of mental health care in the ED that have workforce implications: improving the cross-skilling of ED and mental health staff in order to improve the mental health skills of ED staff and the physical care skills of mental health staff¹³²; and making more effective use of the medical expertise including making better use of hours, introducing telemedicine to reduce night and weekend on call demands, and initiating a Resident Medical Officer (RMO) mental health post¹³³.

The need for better in-hospital care, however, should not distract from the need for better community access to mental health services. Like aged care, mental health is a community issue that needs community-based solutions. Improving the care delivered in the community could reduce the demands on the ED and improve outcomes for those with mental health issues.

¹²⁷ Sarah Hoy, 'Ministry of Health & Emergency Care Institute Projects - Project Scoping', (2012).

¹²⁸ Jacqueline Hewitt, 'Aged Care Emergency Aged Care Emergency (ACE) Project', *Emergency Care Symposium and ECI Launch* (Stamford Plaza Sydney Airport, 2011).

¹²⁹ Roberto Forero and Ken Hillman, 'Access Block and Overcrowding: A Literature Review', (University of New South Wales & Simpson Centre for Health Services Research, 2008).

¹³⁰ Julia Morphet et al., 'Managing People with Mental Health Presentations in Emergency Departments--a Service Exploration of the Issues Surrounding Responsiveness from a Mental Health Care Consumer and Carer Perspective', *Australasian emergency nursing journal : AENJ*, 15/3 (2012), 148.

¹³¹ *Ibid.*

¹³² Australian Resource Centre for Healthcare Innovations, 'Improved Cross-Skilling of Emergency Department and Mental Health Staff', <<http://www.archi.net.au/resources/redesign/mh-ed-redesign/cross-skilling>>

¹³³ Australian Resource Centre for Healthcare Innovations, 'Make More Effective Use of Medical Expertise', <<http://www.archi.net.au/resources/redesign/mh-ed-redesign/use-expertise>>

3.3 INITIATIVES CONCERNING THE WORKFORCE MANIFESTATIONS AND IMPLICATIONS OF UNDERSTAFFING

3.3.1 JOB QUALITY

A study that sought to identify occupational stressors experienced by Western Australian ED nurses, which identified violence against staff as the major stressor recommended implanting zero-tolerance policies to help protect staff. Better psychological support was also recommended by the authors, including proactive preparation for grief issues, better availability of psychological services and making debriefing after stress-evoking workplace incidents mandatory as 60% of respondents report not being made the offer of debriefing after such incidents. Furthermore, they recommend “*a consistent and objective system of staff allocation to manage workload and patient acuity should be implemented.*”

3.4 EDUCATION AND SKILL FORMATION

3.4.1 FACEM TRAINING

There is clearly a need to better manage the existing FACEM workforce, however, there is also a need to attract more doctors to specialist training. The consultations raised the possibility of universities playing a greater role in helping to address current and anticipated shortages through better promotion of specialities. The information collected and reported as part of the Medical Schools Outcomes Database project¹³⁴ could help to inform this process in conjunction with advice from the colleges and any further research done into the preferences of graduates.

Key stakeholders also noted that there has been little research looking at the best ways to train emergency physicians. A more structured and proactive system could incorporate systematic evaluations of training outcomes like the previously made suggestions for evaluating intern training outcomes. Curran and Taylor suggest that analysis of the National Coroners Information System (NCIS) data could help to inform priorities for emergency physician training, particularly in identifying what are the high-risk patients and presenting complaints as well as ensuring that coronial recommendations are adopted where possible¹³⁵. ACEM are also undertaking a Federally-funded project to identify a specialist emergency medicine ‘scope of practice’. This initiative aims to identify the key functions undertaken by an emergency medicine physician and has the potential to assist with future workforce planning¹³⁶.

The introduction of an ACEM student membership category, starting 1 May 2014, is intended to assist in engaging potential specialists early in their careers. This new category of membership is open to any person who is enrolled in an undergraduate medical degree as a full-time student.

3.4.2 IDENTIFYING NON-TECHNICAL SKILLS

¹³⁴ Medical Deans Australia and New Zealand, 'Medical Schools Outcomes Database', <<http://www.medicaldeans.org.au/msod>>

¹³⁵ Justin Curran and David Mcd Taylor, 'National Coroners Information System: A Valuable Source of Lessons for Emergency Medicine', *Emergency medicine Australasia : EMA*, 24/4 (2012), 442-50.

¹³⁶ See ACEM's National Program Initiatives, < <https://www.acem.org.au/About-ACEM/Programs-Projects/National-Program.aspx> >.

As mentioned previously, the ACEM Training and Assessment Review and subsequent Curriculum Revision Project have identified a number of key non-clinical skills that should be prioritised¹³⁷. These include:

- Prioritisation and Decision Making
- Communication
- Teamwork and Collaboration
- Leadership and Management
- Health Advocacy
- Scholarship and Teaching
- Professionalism

The introduction of workplace-based assessment into the emergency medicine specialist training program is expected provide a means for assessing many of these non-technical skills as part of obtaining ACEM Fellowship¹³⁸.

In addition, work has been undertaken by researchers at Imperial College, London, to develop a tool to better assess non-technical skills, with a focus on ED registrars¹³⁹. The project involved two EDs in the UK and included interviews and direct observations along with a survey and a scoping review of the literature. They identified twelve core emergency medicine nontechnical skills organised into four main groups¹⁴⁰:

- Management and Supervision:
 - Maintaining standards
 - Managing workloads
 - Supervising and providing feedback
- Teamwork and Cooperation:
 - Team building
 - Communicating effectively
 - Authority and assertiveness
- Decision Making:
 - Generating options
 - Selecting and communicating options
 - Reviewing outcomes
- Situational Awareness:
 - Gathering awareness
 - Anticipating
 - Updating the team

¹³⁷ See ACEM Curriculum Framework <<https://acem.org.au/Education-Training/Specialist-Training/Curriculum-Revision.aspx>>

¹³⁸ See ACEM, Work-based Assessment < <https://www.acem.org.au/Education-Training/Specialist-Training-Assessment-and-Exams/Workplace-Based-Assessment.aspx> >.

¹³⁹ See the project's website: <

https://www1.imperial.ac.uk/medicine/about/institutes/patientsafetyservicequality/research_themes_2/clinical_programmes/surgery/nontechnical_skills>

¹⁴⁰ S. Russ et al., 'Measuring Safety and Efficiency in the Operating Room: Development and Validation of a Metric for Evaluating Task Execution in the Operating Room', *J Am Coll Surg*, 216/3 (Mar 2013), 472-81.

Suggested uses for the behavioural marker tool include facilitation of the observation of trainees and *“during teaching sessions to structure discussion around actual or hypothetical clinical scenarios and clinical incidents.”* It was recommended that additional evaluations be conducted with the tool for different uses, for example, in a simulator environment.

3.4.3 COMMUNICATION AND TEAMWORK SKILLS

Eisenberg et al. (2005) in a study of communication in US based academic emergency departments, made the following suggestions to improve communication, taking into account what might be appropriate for the institutional culture and context¹⁴¹:

- Increasing the amount of contextual information available (e.g. from the police, aged care, electronic medical records) when the patient arrives.
- Standardise and improve the communication between consulting physicians and the ED staff, e.g. increasing face-to-face conversations and reducing asynchronicity.
- Redesign rounds to better support group cognition and dialogue, including encouraging nurses to feel safe in communicating concerns about a physician’s judgement. An example was given of a “two challenge rule” where nurses were supported to question a physician’s actions twice if they felt it was in error so as to prompt the physician to reflect.
- Develop reflective triggers for questioning diagnoses and courses of treatment and flagging uncertainty as part of the ED’s systems.
- Foster cross-functional communication between the ED and other parts of the hospital, with the acknowledgement that many problems that manifest in the ED are “often better characterised as hospital-wide concerns.”
- Make physicians and nurses more aware of the cognitive and communicative switching that occurs between taking in patient stories (characterised as “narrative rationality”) and translating it to lists and charts (“technical rationality”) whereby information can be lost that can put the patient at risk.
- Encourage other investigators to undertake further qualitative studies to better understand clinical decision-making.

Slade et al. (2011) studied communication practices within five EDs in NSW and ACT¹⁴² and identified three main categories of context that impact on the ED. The first category was the material or practical factors that characterise the ED, which include schedules, workplace conditions, who can access it (generally it is open to all), multicultural nature of the workplace, spoken communication, training facilities, multidisciplinary, time constraints. The second was the competing priorities in the ED, in particular, those of the organisation, clinician and the patient. Third, was termed the “conventional staged structure of ED consultations”, that is, the systems in place that separate the workflow into separate stages such as triage, nursing admission, initial assessment and stabilisation, and the management, diagnoses and disposition. Challenges for communication include: disruptions to continuity of care and risks to information transfer due to complex communication networks; differences in the effectiveness of senior and junior communication styles; discipline boundaries and barriers to communication; the communication burden on the patient, especially in being required to

¹⁴¹ Eisenberg, Eric M., et al., 'Communication in Emergency Medicine: Implications for Patient Safety', Communication Monographs, 72 (4) (2005), 390-413.

¹⁴² Diana Slade et al., 'CHEC: Communication for Health in Emergency Contexts. Final Report July 2011', (Australian Learning and Teaching Council, 2011).

repeat the same information to multiple people; constraining the patient's ability to communicate; and insufficiently establishing interpersonal rapport. The researchers made a number of recommendations to address these challenges and reduce risks of adverse outcomes:

- Achieve a balance between medical and interpersonal communication.
- Provide explicit explanations to patients about processes and procedures in the ED, in particular: develop an orientation protocol; explain triage categories; explain ED processes; and provide clinical explanations.
- Develop effective interdisciplinary teamwork.
- Develop cross-cultural communication awareness and strategies.
- Introduce more effective and durable forms of patient records.
- Provide training with authentic materials. The researchers highlight the Communication for Health in Emergency Contexts (CHEC) Project, which was informed by this study.
- Examine communication in clinical handovers.

Dr Dan Smith from Studer Group noted in an ECI presentation that global ratings of care are more closely linked to communication than technical skill. He outlined the Studer Group developed AIDET communication tool that can be used to improve communication skills within the ED¹⁴³. AIDET is an acronym for: Acknowledge, Introduce, Duration, Explanation, and Thank you. Another framework for improving communications in clinical settings is the SBAR tool (Situation, Background, Assessment, and Recommendation).¹⁴⁴ The SBAR tool was tested for use in training handoff communication skills to US based first year emergency medicine residents¹⁴⁵. It was found to have positive results and was well received.

Cinar et al. (2012) evaluated a 6-week communications training program provided to emergency medicine residents with sessions on empathy, awareness, and active communication. The assessment of the program used a communications skills scale, an empathy scale and a patient satisfaction survey and measured the number of undesirable events between doctors and patients in the ED. The study found that participation in the training *"was associated with improved communication skills of emergency medicine residents, increased patient satisfaction, and decreased complaints."*¹⁴⁶

A training resource developed in the Australian context is the CHEC project¹⁴⁷ as mentioned above. The CHEC project developed a multimedia resource based on real-life and complex clinical situations that aims to aid the learning and teaching of effective communication in emergency healthcare. In a letter to the editor of *Emergency Medicine*, Simon Leigh-Smith made the novel suggestion that *"A secondment to general practice would be the ideal environment for emergency doctors to improve*

¹⁴³ Dan Smith, 'Communication in the ED: Evidence-Based Approaches', *NSW ED Workshop* (2012).

¹⁴⁴ K M Haig, S Sutton, and J Whittington, 'SBAR: A Shared Mental Model for Improving Communication between Clinicians', *Joint Commission journal on quality and patient safety*, 32/3 (2006), 167-75.

¹⁴⁵ Matthew C. Tews, J. Marc Liu, and Robert Treat (2012) Situation-Background-Assessment-Recommendation (SBAR) and Emergency Medicine Residents' Learning of Case Presentation Skills. *Journal of Graduate Medical Education*: September 2012, Vol. 4, No. 3, pp. 370-373. <http://www.jgme.org/doi/abs/10.4300/JGME-D-11-00194.1?journalCode=jgme>

¹⁴⁶ Orhan Cinar et al., 'Communication Skills Training for Emergency Nurses', *International journal of medical sciences*, 8/5 (2011), 397-401.

¹⁴⁷ Slade et al., 'Chec: Communication for Health in Emergency Contexts. Final Report July 2011'.

these skills assisted by the teaching of general practitioner trainers who are by far the most experienced in this area.”¹⁴⁸

Kalisch, Curley and Stefanov (2007) in an evaluation of an intervention to enhance teamwork and engagement amongst nursing staff in community hospital oncology unit, found that “the intervention resulted in a significantly lower patient fall rate, staff ratings of improved teamwork on the unit, and lower staff turnover and vacancy rates.”¹⁴⁹

Kilner and Sheppard (2010) conducted a systematic review of the literature on teamwork and communication specifically in the emergency department context finding that while teamwork and communication were essential in the ED, they were difficult to quantify¹⁵⁰. They assessed the majority of studies on this topic with mid-range quality scores, finding that further research needed to be conducted but that there was preliminary support for teamwork and communication playing a role in improving patient satisfaction, improving staff satisfaction, reducing clinical errors and improving patient safety, and positively affecting access block. The highest scored study in the group assessed and the only one meeting the requirements for Level III-2, was conducted by Morey et al. (2002) and involved nine teaching and community hospitals EDs in the US with a sample group that comprised 684 physicians, nurses and technicians¹⁵¹. It found a statistically significant ($p = .012$) improvement in the quality of team behaviours in the experimental group after training compared to the control. The experimental group had improved staff attitudes as well as a significant ($p = .039$) decrease in the error rate from 30.9 percent to 4.4 percent.

3.4.4 LEADERSHIP SKILLS

Yeung et al (2012) looked at team-leadership skills and quality of cardiopulmonary resuscitation in an adult cardiac-arrest simulation, finding that teams led by those with the best leadership skills performed higher quality cardiopulmonary resuscitation with better technical performance¹⁵². Interestingly, the study found that having prior training in team leadership skills was independently associated with better leadership behaviour, prompting the researchers to suggest that leadership skills should be considered an integral part of resuscitation training.

LaSalle (2004) recommends that leaders in emergency medicine develop better organisational awareness including studying leadership theory literature and recognising that “*the Realpolitik of the modern hospital must be accommodated if leadership efforts are to succeed.*”¹⁵³

¹⁴⁸ S. Leigh-Smith, 'Communication Skills Training for Emergency Department Doctors', *Emergency medicine journal : EMJ*, 18/3 (2001), 234-34.

¹⁴⁹ B. J. Kalisch, M. Curley, and S. Stefanov, 'An Intervention to Enhance Nursing Staff Teamwork and Engagement', *J Nurs Adm*, 37/2 (Feb 2007), 77-84.

¹⁵⁰ E. Kilner and L. A. Sheppard, 'The Role of Teamwork and Communication in the Emergency Department: A Systematic Review', *Int Emerg Nurs*, 18/3 (Jul 2010), 127-37.

¹⁵¹ John C. Morey et al., 'Error Reduction and Performance Improvement in the Emergency Department through Formal Teamwork Training: Evaluation Results of the Medteams Project', *Health Services Research*, 37/6 (2002), 1553-81.

¹⁵² Yeung, J. H., et al., 'Factors affecting team leadership skills and their relationship with quality of cardiopulmonary resuscitation', *Crit Care Med*, 40 (9) (2012), 2617-21.

¹⁵³ Gar Lasalle, 'Leadership and the Emergency Department', *Emergency medicine clinics of North America*, 22/1 (2004), 1-18.

3.5 RECRUITMENT AND RETENTION

QLD Dedicated website for recruiting emergency medicine physicians

Under the previous government, Queensland Health adopted a proactive approach to recruitment in emergency medicine. A dedicated government recruiting website¹⁵⁴ was established for interested parties to submit an expression of interest as well as search and apply for available positions. The expressions of interest were then matched to vacancies according to skills and preferences stated. Currently there are no publicly released evaluations though there are anecdotal reports that the service has been useful and may have created better outcomes as it could help to weed out people who are unlikely to be a good match.

Alberta, CA –Nursing Retention and Recruitment Programs Evaluation

The Multi-Employer/United Nurses of Alberta Joint Committee introduced seven different programs to address nurse retention and recruitment issues in Alberta, Canada¹⁵⁵. These seven initiatives involved programs to support entry into the workplace, pre-retirement strategies and flexible work options. Post-hoc evaluation found higher satisfaction, increased morale, decreased stress and perceived improved ability to provide high-quality care. Recommendations for future improvements include developing evaluation plans and KPIs before implementation; assessing social return on investment (SROI); developing a communication plan so that stakeholders are aware of initiatives; and better support employers and managers with the rollout of initiatives with a toolkit.

3.6 NON-SPECIALIST WORKFORCE TRAINING

Emergency Medicine Certificate (EMC), Emergency Medicine Diploma (EMD) and EMET Initiatives

The Federal Government funded ACEM National Program has introduced two initiatives¹⁵⁶ designed to improve the emergency medicine skills of medical practitioners who work in ED but who do not have specialist emergency medicine training.

The first initiative is the development of a 6 month Certificate and 18 month Diploma of Emergency Medicine (EMC/EMD) to provide competency based formal qualifications in emergency medicine. The training program includes a mix of workplace-based assessment, online learning, workshops and FACEM supervision.

In order to support the increased demand for staff to deliver and support education and training, a second initiative, the Emergency Medicine Education and Training (EMET) program was developed. The EMET program creates a framework to support site specific development of education and training programs in emergency medicine for doctors and nurses who are not specifically trained in emergency medicine but who work in emergency departments or urgent care services in regional, rural and remote settings.

¹⁵⁴ Queensland Health, 'Work for Us', <<http://www.health.qld.gov.au/medical/>>

¹⁵⁵ Arlene Weidner et al., 'Alberta: Evaluation of Nursing Retention and Recruitment Programs', *Nurs Leadersh (Tor Ont)*. 25/Spec No 2012 (2012), 130-47.

¹⁵⁶ ACEM, National Program, accessible at: <http://www.acem.org.au/About-ACEM/Programs-Projects/National-Program.aspx>

While these initiatives are not limited to rural/regional areas, they are particularly relevant to rural/regional workforce development needs. ACEM reports that *“reach of the EMET program now extends to remote communities such as Thursday Island and Tennant Creek as well as growing regional areas like Warrnambool.”*¹⁵⁷

3.7 RURAL/REGIONAL FOCUSED INITIATIVES

ACEM’s National Program initiatives, the development of the Emergency Medicine Certificate/Diploma and the EMET program outlined above, aim to improve emergency medicine training to a non-specialist workforce who work in ED. While not limited to rural/regional areas, there is a strong focus on the delivering these supports beyond metropolitan EDs. Other initiatives with a rural/regional focus are outlined below.

Rural Specific Short courses and postgraduate courses

Strategies to deal with rural and regional emergency physician shortages include rural specific emergency medicine short courses and postgraduate courses. One example of short courses aimed at rural practitioners is the Rural Emergency Skills Training program (REST), a two-day face-to-face course for rural GPs designed to *“enhance skills in the initial management of medical emergencies in rural areas.”*¹⁵⁸

QLD Rural Generalist Pathway

Queensland Health has developed a Rural Generalist Pathway (RGP)¹⁵⁹, which has been in operation since 2007 and has recognised “Rural Generalist Medicine” as a generalist discipline since May 2008 leading to specialist pay rates. The aim of the pathway was to address the rural workforce shortage and skills crisis. The RGP is open to doctors from their intern year, with the requirement to do some advanced training in their third year in one specialist discipline, which could include emergency medicine. This initiative has been reportedly successful in attracting candidates, with an excess of applications over training vacancies. Other state governments are either developing their own rural generalist program or considering doing so¹⁶⁰. However, concerns raised against the program have included the issues that the credentialing process for ‘rural generalists in emergency medicine’ may have been less robust than would be expected for doctors who are expected to be working independently in emergency medicine. Also of concern is the adequacy and rigour of the emergency medicine specialist training. ACEM have proposed that integrating its established training into the pathway could help address this concern as well as helping to build learning networks with the emergency medicine community. Furthermore, ACEM raise the potential for unintended distortions that could arise due to equating rural generalists with emergency medicine advanced training on the same pay scales as FACEMs. Further independent evaluations are needed to see if these concerns are founded.

¹⁵⁷ *ibid.*

¹⁵⁸ Australian College of Rural and Remote Medicine, 'Rest: Rural Emergency Skills Training', <<http://www.acrrm.org.au/rest-rural-emergency-skills-training-0>>

¹⁵⁹ Queensland Health, 'Rural Generalist Pathway', (updated 11 June 2013) <<http://www.health.qld.gov.au/ruralgeneralist/default.asp>>

¹⁶⁰ Marge Overs, 'The Road Ahead: Queensland’s Rural Generalist Pathway Is Leading the Way for Rural Training', <<https://www.mja.com.au/careers/197/7/road-ahead>>

Rural clinical schools

Exposure to rural settings increased later willingness to work in such settings

There is evidence to suggest a link between exposure to rural settings during training and later willingness to work in rural and regional areas. One such initiative that has sought to address rural and regional staff shortages is the establishment of Rural Clinical Schools. In one study, students spent a year at the University of Queensland rural clinical school (UQRS) with researchers finding that over the year *“interest in a future rural medical career increased measurably across the cohort... Comparison of graduates’ choice of internship location for 2006 compared with 2005 showed a trend away from urban or metropolitan toward regional or rural hospitals.”*¹⁶¹ A later follow up study that included alumni confirmed that *“longer rural clinical experience is more effective in eventual choice of workplace location and future interest in a rural career. This corroborates the positive impact of Australian rural clinical schools toward rural medical workforce improvement.”*¹⁶² Interestingly, amongst these alumni *“General practice and emergency medicine were most preferred specialities.”*¹⁶³

Rural Allied Health

Queensland has developed policies to encourage allied health professionals to take up opportunities in rural locations. These are:

- *HP3 to HP4 rural development pathway (HP3-4 RDP):* The HP3-4 RDP facilitates rural and remote based services to recruit early career allied health professionals where an advertised position has not been filled and provide *“a structured and intensive supervision, support and professional development program.”*¹⁶⁴
- *Rural Remote AH Priority Transfer Scheme (RRAHPTS):* RRAHPTS is designed to provide permanent allied health staff a priority transfer to location of their choice when a position becomes available as an incentive for undertaking work in rural or remote locations. Completion of a period of service in a rural (3 years) or remote (2 years) facility is required to be considered.¹⁶⁵

3.8 REMEDIES FOR ‘SOLUTIONS’ THAT DEEPEN CURRENT PROBLEMS

3.8.1 RESPONDING TO THE INFLUX OF INTERNS

Queensland More Learning for Interns in Emergency (MoLIE) project

¹⁶¹ Diann S. Eley and Peter G. Baker, 'Will Australian Rural Clinical Schools Be an Effective Workforce Strategy? Early Indications of Their Positive Effect on Intern Choice and Rural Career Interest', *The Medical Journal of Australia*, 187/3 (2007), 166.

¹⁶² Eley, Diann, Baker, Peter, and Chater, Bruce, 'The Rural Clinical School Tracking Project: more IS better--confirming factors that influence early career entry into the rural medical workforce', *Medical teacher*, 31 (10) (2009), e454-E59.

¹⁶³ *Ibid.*

¹⁶⁴ Queensland Health, 'B66 (Qh-Pol-382): HP3 to HP4 Rural Development Pathway. Human Resources Policy', (2012).

¹⁶⁵ Queensland Health, 'B67 (Qh-Pol-383:2012): Rural and Remote Allied Health Priority Transfer Scheme. Human Resources Policy', (2012).

More Learning for Interns in Emergency (MoLIE) project in Queensland was a trial initiative to better deal with training requirements of interns. The Royal Brisbane and Women's Hospital ED were approached by the state health authority to accommodate a large increase in the number of interns. With Queensland government funding, they created a structured program to accommodate these interns and minimise the stress on the existing ED staff. The program involved hiring additional staff and organising schedules to ensure that the interns had "8 hours per week of "off the floor" structured learning time supervised by consultants". The results of the study were published in the MJA and despite increases of almost a third, both the students and staff reported positive experiences and that service delivery or supervision workload in the ED were not adversely affected.

"Overall, the 90 interns surveyed were highly satisfied with their training. Most agreed or strongly agreed that the sessions were relevant and covered the right mix of clinical and professional issues. Most of the 12 senior staff surveyed felt that the participating interns performed slightly or much better than interns in previous years, and that their experience as supervisors and overall patient care were improved."¹⁶⁶

Queensland Health has since undergone restructuring and this program was not renewed.

3.8.2 SUPPORTING OVERSEAS TRAINED WORKERS

Supervised Practice for Overseas Trained Specialists (SPOTS) program to attract and train overseas trained specialists

An initiative designed to attract overseas trained emergency medicine specialists to and better support them in Australia was Queensland Health's Supervised Practice for Overseas Trained Specialists (SPOTS) program. This program was designed to assist overseas trained specialists to gain recognition as a specialist by ACEM with substantive help including the development of an individual learning plan, support for research skills requirements, workplace supervision and assessment, and access to medical education. While there are no evaluations of this program that are publicly available, anecdotal reports from the consultation were that the program was successful in attracting and supporting overseas trained specialists.

ACEM National Program Initiatives

ACEM's National Program (Improving Australia's Emergency Medicine Workforce) commenced in 2011 and was later expanded in 2012¹⁶⁷. It includes a number of projects funded by the Australian Federal Government that are intended to improve Australian emergency medical care. Two planned initiatives (the Overseas Trained Specialist (OTS) Induction Package and First Shift in ED) aim to improve the support provided to Overseas Trained Specialists (OTSS) and International Medical Graduates (IMGs) and reduce professional isolation by developing an improved induction process.

¹⁶⁶ Victoria A. Brazil, Jaimi H. Greenslade, and Anthony F. Brown, 'Enhancing Capacity for Intern Training in the Emergency Department: The Molie Project', *The Medical Journal of Australia*, 194/4 (2011), 165.

¹⁶⁷ ACEM, National Program, accessible at: <http://www.acem.org.au/About-ACEM/Programs-Projects/National-Program.aspx>

3.9 SYSTEMATIC APPROACHES THAT ADDRESS THE ED'S CONTEXT WITHIN THE HOSPITAL SYSTEM

4 Hour Rule Program (WA)

The most notable recent proposed solution to Access Block is the National Emergency Access Target, also known as the “four hour rule” or “four hour target”. The four hour target originated in the UK as part of the government’s 2001 Reforming Emergency Care agenda¹⁶⁸. The NHS plan was that “By 2004 no-one will have to wait more than 4 hours in an A&E department from arrival to admission to a bed in the hospital, transfer elsewhere or discharge. The average length of waiting should fall to 75 minutes”. The incentive scheme was overhauled to reward successes rather than failures. Similar targets were implemented in New Zealand in 2009, the initiative called Shorter Stays in ED set the target that “95 per cent of patients will be admitted, discharged or transferred from an Emergency Department within six hours.”¹⁶⁹

A National Partnership Agreement on Improving Public Hospital Services was endorsed by COAG in 2011 that, on the recommendations made by an Expert Panel of doctors, health professionals and administrators, included a new emergency department four hour access target for patients in all triage categories commencing from January 2012¹⁷⁰.

The evaluations thus far of four hour or similar targets have been largely positive. Western Australia has implemented a 4 hour rule since April 2009. A review conducted by Professor Bryant Stokes and published by the WA Department of Health in December 2011 looked at the progress and issues found at four hospitals leading the implementation of the Four Hour Rule Program (FHRP): Fremantle Hospital, Princess Margaret Hospital, Royal Perth Hospital and Sir Charles Gairdner Hospital¹⁷¹. The review found that not one of the over 315 health workers consulted wanted to return to pre-FHRP processes, however there were still difficult challenges faced in implementing the reforms and dealing with the resulting changes. The review looked at ED attendances from July 2008 to October 2011, and found with the implementation of the FHRP there were substantial decreases in access block (defined as the percentage of patients who wait longer than eight hours for an inpatient bed), with access block in October 2011 at 11.2% down from a peak of 49.5% in August 2008. Similarly, the percentage of ED attendances with a length of episode less than or equal to four hours increased across all four hospitals. These improvements were found despite a concurrent increase in presentations to the ED and possible increases in complexity of presentations.

While there are clear benefits for patients, the review raised some concerns for the impact on staff, in particular, the potential for increased workload and stress and reduced opportunities teaching and training. It concluded that more attention needed to be paid to the effects of more patient per unit

¹⁶⁸ Department of Health, 'Reforming Emergency Care', (London, 2001).

¹⁶⁹ New Zealand Ministry of Health, 'Shorter Stays in Emergency Departments Health Target', <<http://www.health.govt.nz/our-work/hospitals-and-specialist-care/emergency-departments/shorter-stays-emergency-departments-health-target>>

¹⁷⁰ Australian Government Department of Health and Ageing, 'National Partnership Agreement on Improving Public Hospitals', <<http://www.yourhealth.gov.au/internet/yourhealth/publishing.nsf/content/npa-improvingpublichospitals-agreement#.UyktHj-Szng>>

¹⁷¹ Bryant Stokes, 'Four Hour Rule Program Progress and Issues Review', (Government of West Australia Department of Health, 2011) accessible at <https://www.health.wa.gov.au/publications/documents/FourHourRule_Review_Stokes.pdf>

time and the resultant increase in staff workload across the hospital and whether increases in staffing and other resources were appropriate.

It also found considerable variations in quality of clinical placements for junior doctors among the hospitals and thus advised that *“a set of principles and minimum criteria for junior doctor placements will provide a range of experiences in a structured way to enable the junior doctor to be supervised, supported and developed in their role as a clinician.”*¹⁷² Also, importance needed to be placed on the teaching and training of medical staff and graduate nursing to ensure that there was not a reduction of skill mix and learning.

The review stressed the importance of sustained executive support and accountability. It was important that there was ongoing engagement with all levels of staff and that feedback channels were readily accessible to pick up issues. This was not found by the review to be consistently the case amongst all four hospitals.

Professor Frank Daly, Executive Director of the Royal Perth Group, in a presentation on the implementation of the FHRP at Royal Perth Hospital, reported that the program required a strong set of agreed values shared by staff and patient¹⁷³. One of three core values chosen was that *“the most important resource in health is its workforce.”* It was recognised that in order to reduce the percentage of patients who were in ED for longer than four hours, a re-engineering of processes across the whole hospital was needed. This was not seen as a problem that could be solved solely within the ED. Extensive maps of the processes across the hospital were created and 808 issues that affected patient flow were identified and classified and these included poor management and communication. Daly noted that, with hindsight, he would have started the implementation of the program with an analysis of the hospital’s organisational culture, with a focus on determining whether it had characteristics of a high performing organisation such as clear shared values, absolute transparency about performance and clear leadership and management training.

Ramsay Health Care Employee Wellbeing Program

Ramsay Health Care was recently included for the second year in a row in the World Economic Forum’s Global 100 Most Sustainable Corporations in the World. They have won numerous awards including the National RUOK? Day workplace award at the Australian Human Resource Institute Awards and were finalists in the Australian HR Awards for the categories of best HR Strategic Plan and Best Health and Well-Being Strategy. Ramsay Health Care operates 117 hospitals and day surgery facilities across Australia, the United Kingdom, France and Indonesia. A cornerstone of Ramsay’s HR activities is their Wellness Program.

Ramsay Health Care’s wellbeing strategy is outlined on the Commonwealth government’s Healthy Workers Portal:

“The program was first implemented in 2002. In 2009, all 117 hospitals were invited to develop workplace health programs tailored to their local needs. In 2011, 20 hospitals had a program with more hospitals preparing to launch programs in 2012. The program provides a framework

¹⁷² *Ibid.*, p.4.

¹⁷³ Daly, Frank, ‘Implementation of the Four Hour Program at Royal Perth Hospital’, accessible at <<http://www.ecinsw.com.au/sites/default/files/field/file/Daly%20Four%20Hour%20WA%20October%202012.pdf>>

for individual hospitals to develop and implement their own programs. Firstly, a member of staff is identified to fill the role of the Wellness Coordinator. The ideal person is one who embraces and values health and wellbeing and will be a good role model and program ambassador. The Wellness Coordinator manages the program on site and has a group of other members of staff who act as a Wellness Committee within the hospital to support them. Secondly, the staff are surveyed and focus groups conducted to provide critical data about the health risks and needs of the workforce. Data collection also includes statistics on staff turnover, absenteeism and lost time through injury. The program is developed to ensure there are both health outcomes for staff and productivity outcomes for management. Individual hospitals facilitate activities that staff identify to be of most benefit to them. Some costs are subsidised by the hospital and some activities are at a cost to the employee. If an activity is at a cost to the employee, Ramsay negotiates with external providers to attempt to make the activity or event more affordable.”¹⁷⁴

In a key informant interview, Genevieve D’Adam, Ramsay’s then Wellness and Employee Benefits Manager, explained that the wellness initiative was led by the CEO and embedded in HR due to the recognition that staff wellbeing was essential to quality patient outcomes. Staff wellbeing is a key performance indicator for the organisation and there are regular staff engagement surveys and feedback processes in place. She also reports finding improved retention and staff engagement and decreased recruiting and on-boarding costs due to the focus on wellbeing.

¹⁷⁴ Australian Government Department of Health, Healthy Workers Portal, accessible at <<http://www.healthyworkers.gov.au/internet/hwi/publishing.nsf/Content/ramsay-casestudy> >

4. TOWARDS THE FUTURE

Mobilising ED staff insights and commitment to effective reform.

This project has devoted attention to providing the evidence and an analysis of the key factors contributing to the ED staffing crisis. The key forces at work have been identified – and within each of these a wide range of issues has been uncovered as contributing factors. The temptation is to provide a long list of recommendations to address each variable has been avoided because the central finding of this study is that the under-staffing problem is systemic in nature. A series of specific initiatives may ameliorate some of the matters of the concern but they are unlikely to address the systemic nature of the issues under consideration.

As researchers we cannot specify what ‘the solution’ to the current problems is – only those responsible for managing and contributing to the delivery of ED services can do that. They must be the agents who devise and lead reform initiatives. Our central recommendation is that their insights and support will be essential for success. To help structure the consultative process necessary for successful change, we propose ED managers and staff engage in a process of change management that takes into account three distinct domains of activity: work redesign, improving labour flows and monitoring employee engagement. The three domains and their associated means of devising and effecting change are summarised in the table below.

Table 3: Recommended framework for devising and carrying through reform to NSW ED staffing arrangements

Domain of activity	Primary means of achieving change
1. Improving system design and staffing levels	Emergency Department of the future working group
2. Improving labour flow (i.e. recruitment, development, retention and career destinations of ED staff)	Settlement of an Annual Workforce Development Agreement for NSW EDs
3. Improving workplace culture and leadership	Conduct of an annual ED staff climate survey + associated workshop to reflect on ED staff morale and engagement

Improving System Design and Staffing Levels

Key Initiative: Formation of an “ED of the Future” working group

Any lasting improvement in the staffing situation in the State’s ED will require change in the way EDs are organised internally and how they are connected to the hospitals and communities they serve. To help achieve this, we propose that an ‘ED of the Future’ working group be created to review system design and staffing levels. This working group would operate at State level and would comprise a core group of ED experts and other stakeholders in the healthcare system. This group would undertake a systems analysis of the care network as relevant to EDs, including LHDs and external services and referrals, with a focus on improving the efficiency, quality and safety of services.

Specific actions that this working group could consider, given the findings of this report, include the following recommendations.

Short Term

- › Obtaining explicit acknowledgement by leaders (especially at hospital management and higher levels) of the systemic nature of problems facing EDs and the staffing needs, including the importance of non-clinical support for clinical capacity and quality.
- › Continued ministerial commitment to use NEAT/4 hour rule targets to address whole-of-hospital issues that lead to access block.
- › Obtain explicit ongoing commitment from leaders (especially at hospital management and higher levels) to address systemic issues at a systems level rather than expecting all problems that manifest in ED to be solved in ED.

Medium Term

- › Build the infrastructure to embed the prioritisation of staff wellbeing and support into systems operations. This should include:
 - Embedding wellbeing initiatives in HR, such as the creation of a wellbeing officer role located in HR, with genuine executive buy-in.
 - Develop and prioritise staff wellbeing KPIs for management accountability (measures can include engagement survey results, retention).
- › Proactively plan and provide support at a systems level for in-hospital training and other non-clinical time
 - A good example is the MOLIE initiative, which trialled a structured response to increased intern training load.
- › Develop systems to make better use of workforce and patient data to predict ED demand and proactively ensure appropriate staffing levels.

Longer Term

- › Structure budgets (especially in relation to staffing) to value and maintain a strategic margin of reserve capacity.
- › Develop KPIs that assess performance across the hospital system on a range of variables – not just waiting times.

Managing the Labour Flow

Key Initiative: an annual workforce development agreement for NSW EDs

By definition, structural issues take some time to effect. Immediate action is needed to improve the flow of labour through EDs. One of the key findings of this report is that there is no absolute 'shortage' of people interested and willing to work in EDs. Rather there is a major problem of churn – too many people working EDs do not stay long enough. Arguably the worst example of this has been

the growing, and now seemingly entrenched, reliance on locum doctors in many of the State's EDs. Better management of labour flows is therefore something that needs to be addressed immediately.

By their nature, labour flows are not fixed. They evolve as a whole range of factors change and require ongoing management. It is for this reason we propose that an annual agreement be reached between all with an interest in sustainable labour flows in NSW EDs. The discipline of having to reach agreement every 12 months will give all concerned an incentive to take the issue seriously and ensure they regularly review the effectiveness of agreed reform initiatives.

To support the development and implementation of these agreements, a centralised unit/group for ED workforce planning needs to be created, situated in the Ministry or ACI with management, employee and training institution representation.

This unit should be co-chaired by the DDG and ECI and include representation from government, ECI, HETI, CEC, Bureau of Health Information, ACEM, CENA, HWA, LHD representative, an ED Director and a Nurse Manager (tertiary, urban, rural), and other members (AMA, ASMOF, NSW NMA) as needed.

The unit/group should commit to producing an Annual Workforce Agreement that reports key data and sets accountable KPIs for the first five years and then move to a bi-annual agreement.

Given the findings of this report, specific actions that those involved in devising these agreements could consider are listed below.

Short Term

- › Explicit acknowledgment of the need for coordinated workforce planning and development.
- › Explicit acknowledgment of the value of and commitment to the support of improving non-technical skills (e.g. behavioural, cognitive skills, CanMEDS competencies).

Medium Term

- › Develop more proactive and systematic approaches to recruitment, including:
 - One centralised unit for workforce planning, situated in government with industry body and training institution representation.
 - Centralised recruitment initiatives
 - Improved coordination with universities to ensure training optimises opportunities for targeting identified priorities (e.g. ED specialisation, rural exposure, non-technical skills) and to collect data on student preferences and trends to inform workforce planning and recruitment initiatives.
- › Develop more proactive and systematic approaches to retention, including improved data collection to better understand workforce trends and preferences (e.g. more accurate FTE data, tracking geographical and career pathways) and structured workforce development.
- › Support the development of coordinated training pathways that support workforce recruitment, retention and development goals, including:

- Developing better pathways for people who are already in the system (e.g. graduates, locums).
- The use of training to support recruitment initiatives, e.g. Rural Clinical Schools.
- The development of qualifications to improve the skills and capacity of the rural workforce, or where these exist, support for the workforce to attain them.
- The development of postgraduate courses for career and skills development.
- › Improve the planning and support provided to employed internationally trained workforce, while ensuring a commitment to self-sufficiency
 - Programs to mentor and train overseas qualified personnel for NSW settings

Longer Term

- › Develop better coordination between government, professional bodies and training institutions to support workforce development.
- › Invest in further research on how to best teach and develop the skills of ED staff.

Improving ED Workplace Culture and Leadership

Key Initiative: an annual staff climate survey and allied workshop

An annual staff climate survey would measure staff engagement and create a channel for staff to provide feedback. An allied workshop would provide an opportunity to reflect on the findings and discuss necessary responses. Such a survey in of itself cannot be expected to substantially change ED workplaces; however, it would provide key information and measures to inform the Annual Workforce Development Agreement and the ED of the future working group. It would provide an annual spur to scrutinise the workplace culture in the State's EDs – and thereby provide an incentive for all concerned to change practices in a way that boosts and does not undermine morale.

In addition, the following initiatives directed at improving the workplace culture of the EDs could also be considered. Responsibility for their implementation should lie with either the ED of the future working group or those party to the annual ED workforce development agreements.

Short Term

- › Senior health system leader should give explicit recognition that staff wellbeing and development is integral to quality patient outcomes.

Medium Term

- › Develop workplace support structures that prioritise and support staff wellbeing as integral to quality patient outcomes.
- › Develop workplace cultures that prioritise and protect time for essential non-clinical work such as in-hospital training.
- › Develop workplace cultures that cultivate the flourishing of non-technical skills as integral to quality patient outcomes.

- › Support the development of leadership and collaboration skills to create high performing supportive workplace cultures.
- › Ensure appropriate KPIs are in place to hold management accountable to improving workplace cultures and support.

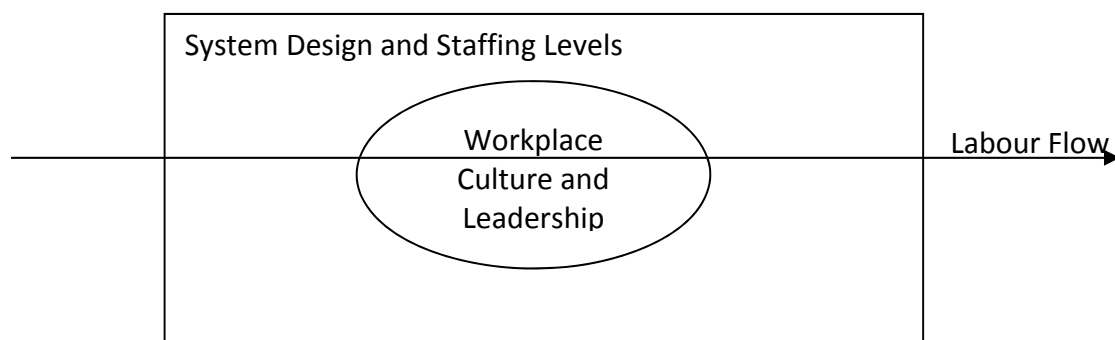
Longer Term

- › A long term commitment to the development of high performing and supportive workplace cultures.
- › Investment in further research on the cognitive contexts and how EDs can be designed to support and not diminish cognitive function.

5. CONCLUSION: MOVING FROM DEATH SPIRALS TO VIRTUOUS CYCLES

The literature documents many immediate problems faced in ED such as significant retention and recruitment issues, over-reliance on expensive locums, and stress and burnout in the ED. However, the analysis contained in this report has highlighted the need to understand the presenting problem (i.e. the ED staff shortage) as being symptomatic of deeper causes. Prime among these are the structure and operation of the EDs, which can only be described as seriously sub-optimal. The immediate manifestation of this problem is significant churn in ED staffing. Initiatives to improve the management of labour flows are needed, but these will be limited in their impact unless there is better system design. And this in turn is unlikely to happen unless the workplace leadership and culture in EDs is improved. The connections between these forces driving the ED staff shortage are summarised in the figure below.

Figure 1: Understanding the determinants of the NSW ED staff shortages



Having identified the key elements driving the current situation, our recommendations outlined a means for mobilising the insights and enthusiasm of ED staff to devise and implement reform initiatives in each of these domains. The means for improving current arrangements are already within the NSW health system. The challenge is for the ECI to mobilise them effectively to achieve the improvements everyone wants.

Evidence from units and initiatives that have been successful in improving ED performance suggest that the problems cannot be understood and addressed in isolation, but need to be viewed and tackled as linked to larger underlying systemic issues. By analysing the constituent systems, often it becomes clear that while the ED is the place where problems manifest, the causes reside elsewhere. Broader analyses of the long term effects of an accumulation of policies, such as dynamic systems modeling and a skills ecosystem approach, highlight patterns that lead to creating healthy or “virtuous” systems that nurture skills and workforce development, or lead to systems in crisis or “death spirals” which perpetuate workforce problems, especially in recruitment and retention. One pattern that stands out in healthy systems (and that is notable by its absence in systems in crisis) is the incorporation of a strategic margin of reserve capacity. Another feature of thriving systems is investment back into the system in the form of planned workforce development and renewal.

There are limits to what can be addressed within a system in distress or on a ‘death spiral’ trajectory. There are some improvements that can be made, however, they will be constrained by the greater

systemic issues. Lasting change will require changing the cycle/trajectory, not just one or two elements of it. Such change will require an encompassing and widely supported change coalition involving all occupational groups of ED work, those with a 'whole of hospital' outlook in the delivery of acute care services and those committed to proper coordination of all health care services, especially for the aged and mentally ill.

While the systemic forces are powerful, they are not necessarily overwhelming. WA's implementation of the 4 hour rule is a good example that these issues can be addressed with the right leadership and values. The maintenance of a 'strategic margin of reserve capacity' and the recognition that staff wellbeing and development is essential to quality patient outcomes must be at the centre of any such reform.

APPENDIX 1: NOTES ON METHODOLOGY

The literature review consisted of two linked parts:

- A literature search
- Literature discovery interviews with key stakeholders and experts

A reference group (Appendix 2) was formed to advise and review the literature review and recommend key experts for the discovery interviews.

Literature Review

The review focused on the literature specifically covering the Emergency Department workforce in Australia with relevance to the NSW workforce. It also included the following subjects where was strong relevance to NSW Emergency Department workforce planning:

- Literature specifically covering the Emergency Department workforce in UK, Canada and NZ.
- Literature concerning the future of the health workforce.
- Literature concerning skills eco-systems and workforce development.
- Literature concerning workforce engagement and sustainability.

The following specifications were determined prior to the search:

Included Literature	<ul style="list-style-type: none"> • English language • Peer reviewed journal articles • ‘Grey’ literature (e.g. policy reports and discussion papers) • Published research • Unpublished research that is available to the public (e.g. downloadable from an organisation’s website) • Literature from 2000 onwards
Excluded Literature	<ul style="list-style-type: none"> • Not English language • Pre-2000 literature unless deemed to be seminal and still relevant • Literature outside of scope

The following sources of information were searched:

- University of Sydney Library database
- Academic databases
- Websites of relevant associations, societies, research centres, institutes, colleges, government bodies
- Key journals
- Bibliographies of key literature
- Web search engines (e.g. Google and Google Scholar)

A snowball approach was used to map the available key literature specifically covering the Emergency Department workforce in Australia that has relevance to the NSW workforce. The literature search was also informed by the discovery interviews.

Literature Discovery Interviews

In addition to the literature search, interviews with key experts and stakeholders (see Appendix 2) were held concurrently. The literature discovered from this process was incorporated into the literature search using a snowball approach.

These interviews were conducted by phone and were semi-structured around the following questions.

The overall questions guiding this project will be:

- What does the established (and readily available 'grey') literature reveal are the key problems confronting the emergency care workforce?
- What options have been identified, trialled and evaluated to address them?
- What options appear to be worthy of more detailed consideration for the emergency care workforce in NSW in:
 - the short term;
 - the medium term;
 - the longer term.

When considering research that can inform the development of the emergency care workforce in NSW:

- Which organisations are the key sources of information (consider relevant associations, societies, research centres, institutes, colleges, industry and government bodies)?
- What are the key journals to consult?
- What are the most helpful or important journal articles?

- What are the most helpful or important government produced research/reports/guidelines?
- What are the most helpful or important non-government produced research/reports/guidelines (consider relevant associations, societies, research centres, institutes, colleges, industry bodies)?
- Do you know of any important data collection in this area?
- What do feel are the major gaps in the research that need addressing?
- What information or data do you wish was available but isn't?
- Who else do you recommend we interview?
- Do you have any further recommendations for the literature search?

APPENDIX 2: REFERENCE GROUP AND DISCOVERY INTERVIEWS

REFERENCE GROUP

- **Paul Collett**, Rural Doctors Association (RDA) representative
- **Margaret Fry**, Professor, University of Sydney and Adjunct Professor, University of Technology Sydney
- **Paul Gavel**, Local Health District Director of Workforce representative
- **Jon Hayman**, Emergency Medicine State Training Council Chair, Health Education Training Institute (HETI)
- **Simon Leslie**, Health Education Training Institute (HETI) non-specialist representative
- **Jonathan Magill**, College of Emergency Nursing Australasia (CENA) representative
- **Katherine Maka**, Metropolitan Allied Health representative
- **Sharene Pascoe**, Rural Emergency /Critical Care Clinical Nurse Consultant and Rural Critical Care Taskforce (RCCT) nursing representative
- **George Rubin**, Metropolitan Director of Clinical Governance representative

DISCOVERY INTERVIEWS

1. **Brad Astill**, Hospital General Medicine representative
2. **Andrew Bezzina**, Senior Staff Specialist, Emergency Medicine, Shoalhaven District Memorial Hospital and Chair, Emergency Life Support Course Management Committee.
3. **Rod Bishop**, Former Ministerial Taskforce on Emergency Care (MTEC) Chair, ED Director
4. **Victoria Brazil**, Senior Staff Specialist, Department of Emergency Medicine, Royal Brisbane and Womens Hospital
5. **Trevor Chan**, ED Director
6. **Liz Cloughessy**, Executive Director, Australian College of Emergency Nursing (ACEN)
7. **Paul Collett**, Rural Doctors Association (RDA) representative
8. **Mark Cormack**, CEO and **Ian Crettenden**, Executive Director – Information Analysis and Planning, Health Workforce Australia
9. **Shane Curran**, FACEM Wagga Emergency Department
10. **Genevieve D’Adam**, former Wellness and Employee Benefits Manager, Ramsay Health Care
11. **Frank Daly**, Executive Director, Royal Perth Group
12. **Cathy Ellis**, NSW Health
13. **Margaret Fry**, Professor, University of Sydney and Adjunct Professor, University of Technology Sydney
14. **Paul Gavel**, Local Health District Director of Workforce representative
15. **Tim Green**, ED Director and Chair Workforce Analysis Tool Working Group

16. **Anne Hawkins**, Clinical Nurse Consultant, Rural Critical Care Taskforce (RCCT) member, former Ministerial Taskforce on Emergency Care (MTEC) member
17. **Jon Hayman**, Emergency Medicine State Training Council Chair, Health Education Training Institute (HETI)
18. **Carolyn Hullick**, Director ED and former Ministerial Taskforce on Emergency Care (MTEC) member
19. **Lea Kirkwood**, NSW Health
20. **Simon Leslie**, Health Education Training Institute (HETI) non-specialist representative
21. **Matthew Lutze**, Nurse Practitioner and former Ministerial Taskforce on Emergency Care (MTEC) member
22. **Jonathan Magill**, College of Emergency Nursing Australasia (CENA) representative
23. **Katherine Maka**, Metropolitan Allied Health representative
24. **Olivera Marjanovic**, Senior Lecturer, University of Sydney Business School
25. **Richard Paoloni**, ACEM NSW Faculty Chair
26. **Sharene Pascoe**, Rural Emergency /Critical Care Clinical Nurse Consultant and Rural Critical Care Taskforce (RCCT) nursing representative
27. **Evan Rawstron**, Chief Operating Officer, Macquarie University Hospital
28. **Bruce Robinson**, Professor and Dean, Sydney Medical School, University of Sydney
29. **George Rubin**, Metropolitan Director of Clinical Governance representative
30. **Kylie Stark**, College of Emergency Nursing Australasia (CENA) NSW President
31. **Meg Tuipulotu**, Rural Critical Care Clinical Nurse Consultant and Co-Chair Rural Critical Care Taskforce (RCCT)
32. **Toni Vial**, Manager of Hospital Skills Program, Health Education Training Institute (HETI)
33. **Matthew Wilde**, Emergency Medicine Trainee
34. **Representative from Workforce Development, Qld Health**, who requested not to be named

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