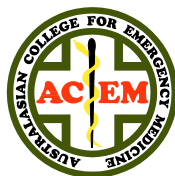


Access Block and Overcrowding in Emergency Departments



Australasian College for Emergency Medicine

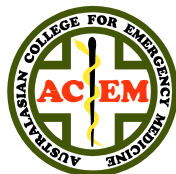
April 2004



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Key Points

1. Emergency department overcrowding is a national problem and requires a coordinated nation-wide approach.
2. Hospital bed closures have resulted in hospital occupancies over 95%. This causes access block for those emergency patients requiring inpatient admission and is the single most important cause of emergency department overcrowding.
3. The solution to overcrowding is to reduce hospital occupancy below 85%. This will require determining both the total requirements for acute care beds and best practice for managing those beds.
4. Solutions to emergency department overcrowding will be found at all levels of the health system from pre-hospital to post-acute care. Solely targeting increased resources to emergency departments will have the least effect in preventing overcrowding.
5. General practice-type patients attending emergency departments represent the low-end of complexity and cost. Significant reductions in this type of patient, if they are capable of being identified, will have marginal impact on emergency department workloads.
6. Meaningful clinician involvement will be essential to any prospect of successful resolution to access block and overcrowding.
7. As the Australian population ages, the demand for acute hospital beds will increase so that increasing efficiency and continuing practise change must become part of managing and working in acute hospitals.



History

Overcrowding in Australian emergency departments was first observed in Sydney metropolitan hospitals in the late 1980s-early 90s. From there, it spread to Melbourne and then subsequently to South Australia and Western Australia. It has become an increasing problem in Queensland hospitals over the past 2-3 years. It was already a well-recognised problem at a time when bulk billing in general practice was at its peak. The increase in ED overcrowding here as well as overseas has followed the increase in access block. **Access block** is the term that describes the delay patients who need hospital admission experience in the emergency department when their inpatient bed is unavailable.



Overcrowding and access block generally show seasonal variations that reflect the demand for inpatient beds. Initially, there were occasional peaks only in winter that over time became more regular. The peaks then became constant for several weeks until the demand crisis persisted throughout winter. Subsequently, overcrowding started occurring in summer to the point that many Australian hospitals now suffer all year round.

This seasonal variation has been misunderstood by some to show that overcrowded emergency departments in winter are due to those walk-in patients who are looking for alternatives to general practice. In fact, this winter demand is due to the heavy toll influenza takes on compromised (typically elderly) patients

who are suffering from chronic cardiac and respiratory disease. This has been reflected in research that has shown that increasing the influenza vaccination uptake in the over 65 years age group to greater than 90% would reduce the need for acute hospitalisation for that group of patients by up to 40% ¹.

Overcrowding and access block are not unique to Australia.



The US General Accounting Office published a report in March 2003 on emergency department overcrowding. This survey of 1,700 US emergency departments looking at overcrowding, boarding (access block) and ambulance by-pass, found the most frequent cause of overcrowding was the decline in inpatient beds ².

In 2001, the Canadian Association of Emergency Physicians and the (Canadian) National Emergency Nurses Affiliation published a joint position statement on ED overcrowding and gave insufficient hospital beds as the first cause ³.

Dr Karen Castille, Director, Emergency Services, NHS Modernisation Agency delivered the keynote address to the National Institute of Clinical Studies symposium on emergency care in Sydney, September 2003. She reported that

the NHS amongst other things set its hospitals the target of reducing bed occupancy to 85% in order to clear access block and overcrowding in NHS hospitals.

The professional bodies representing emergency physicians in all four countries are delivering the same message to their governments: overcrowding in emergency departments is a consequence of increasing hospital occupancy.

Effects of Overcrowding

Emergency departments are designed to deliver episodic acute care. This dictates their physical design, intended patient flow patterns and staffing structures and systems. The staff in some emergency departments spend 50% of their time delivering inpatient care⁴. This is something they are not trained or oriented for and their departments are not designed and equipped to do. This produces a number of adverse effects:

1. Increased adverse incidents such as medication errors and missed diagnostic tests^{5,6}.
2. Service availability and performance degrades eg prolonged waiting times including ramp time and ambulance by-pass^{7,8}.
3. Increased length of patient stay^{9,10}.
4. Staff issues: Some consequences for staff are measurable such as increased sick leave and overtime claims identified in internal audits.
5. Training: The College has concerns about a relationship between trainee dropout rate and emergency department overcrowding. Emergency medicine trainees report high stress levels associated with working conditions¹¹.

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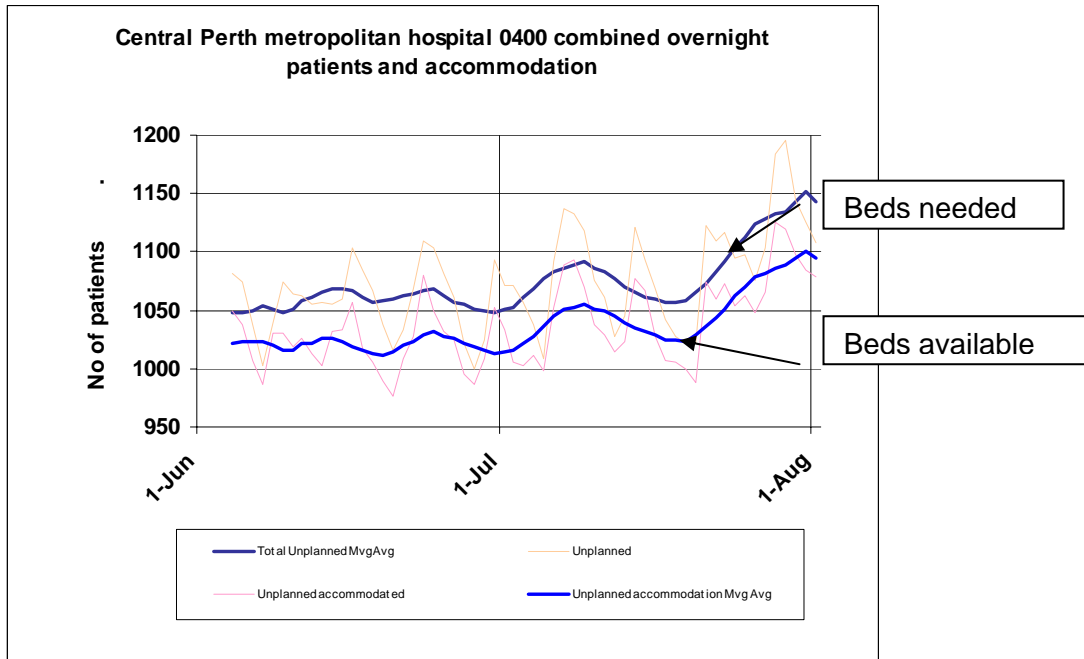
6. **Patient Dignity and Privacy:** Emergency departments are designed on an open plan to facilitate access and movement for staff and patients. With patient processing times of less than four hours, privacy (sound, sight and smell) is not a critical issue. However, when patients spend prolonged periods (over eight hours), these become highly significant. This is especially so during an episode of acute illness when patients and relatives are most vulnerable.



Causes of Access Block

1. **Inpatient Beds:** Over the past 10 years there has been a decline in the numbers of inpatient beds by 15% across the nation ¹². This drop has not been evenly distributed as it has been selectively targeted in order to save money. Some of the biggest cuts have been in our major hospitals. The Royal Brisbane Hospital dropped from 1,056 beds in 1993 to 760 beds in 2003, a drop of nearly 30%. While there has also been a drop in length of stay and an increase in day surgery, increasing demand for inpatient beds has seen occupancy rise (in the case of RBH, to over 90%).

Queuing theory developed by Erlang nearly 100 years ago tells us that systems are most efficient when they operate at 85% capacity. This applies to queues at the local bank waiting for a teller or at ticket booths at the MCG. It is no surprise that queuing theory also applies to acute care hospitals ¹³. Our acute care hospitals are operating at 90-95%+ and are therefore in crisis mode most of the time with little or no surge capacity.



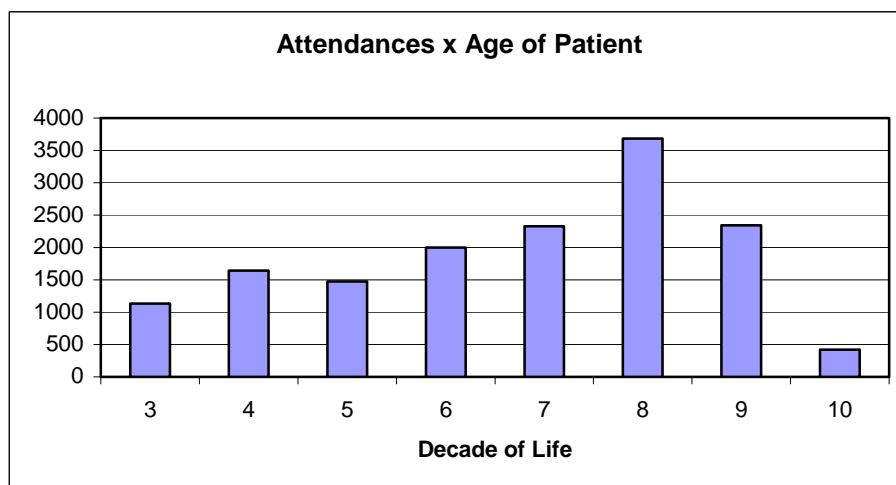
This graph shows the shortfall in inpatient beds needed in Perth hospitals compared to those available for patients requiring admission from the emergency department. This has been termed the “**Gap of Emergency Department Neglect**”¹⁴.



2. **Workforce:** Australia is facing a severe nursing workforce shortage with the result that hospitals have episodes of bed closures due to insufficient numbers of nurses. This accentuates the overall bed shortage. This problem affects all areas including intensive care and coronary care. The Queensland Nurses Union estimates that Australia will have a shortage of 33,000 nurses by 2006.

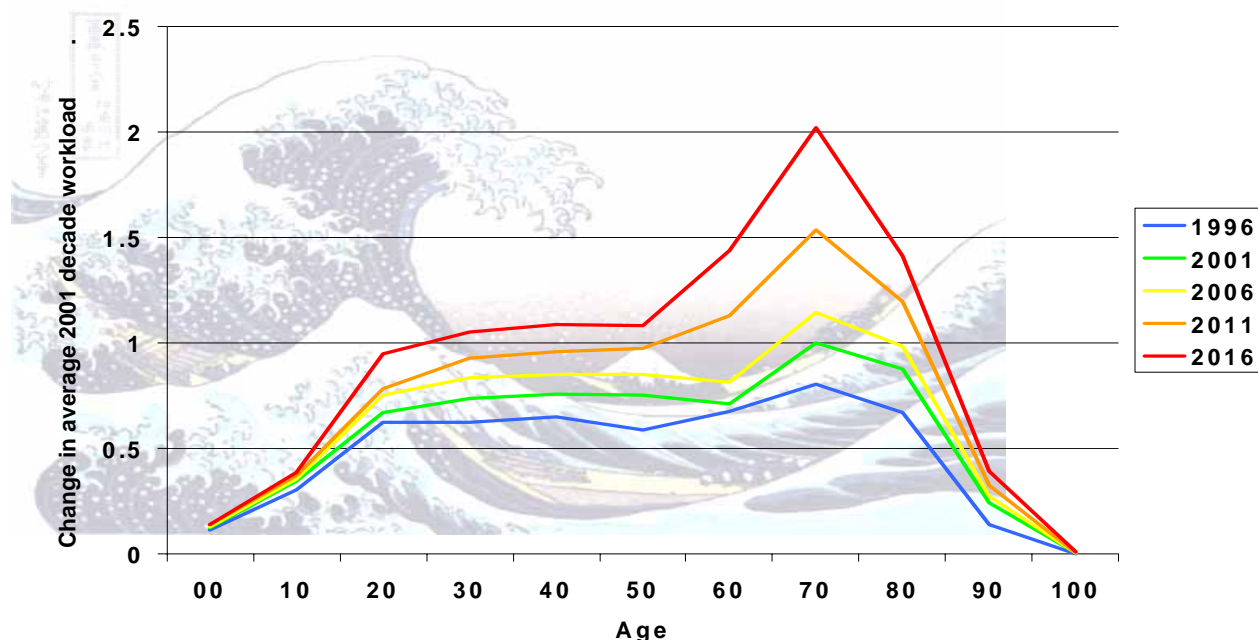


3: **Aging population:** Older Australians are disproportionately represented in emergency department attendances in the same way that they are heavy users of all health services. It is no coincidence that most of the patients pictured in this paper waiting on trolleys are elderly.



(Attendance profile – Ashford Emergency Department, SA 2000: C. Baggoley)

In 1999, 12% of the population was over 65 and one in four of those was over 80 years. By 2016, 16% will be over 65 with one in four over 80.



This graph displays the projected emergency department workload growth for the entire Perth metropolitan area between 1996 and 2016. The workload generated from the 70-80 year age group, which is already the highest workload age group, doubles between 2001 and 2016. This represents a 3.5% per annum compound workload growth rate ¹⁴.

4. Decline in Nursing Home Capacity: There has been a quantitative decline in nursing home capacity with every state reporting bed shortages. As a result, elderly patients who are awaiting nursing home placement may spend prolonged periods in acute hospitals reducing the availability of beds for acute and elective admissions. Aged care shortages will also be affected by the aging population and the decline in the “extended family” supports for the elderly. There has also been a qualitative decline in the capacity of nursing homes to manage illness or to undertake procedures such as IV antibiotic therapy or urinary catheter insertion. This puts pressure back on the acute care system.

5. Funding Arrangements: Problems with the funding model operate at two levels. Firstly, hospital funding arrangements generally encourage an emphasis on elective surgery with no cost weights tied to meeting emergency medicine key performance indicators. For example, Queensland has been lauded as having the best performing system in terms of elective surgery. However, Queensland hospitals with the best performance in terms of meeting elective surgery targets can be amongst the worst performers in terms of access block. This College is concerned that funding arrangements can mean that

achieving elective surgery targets occurs at the expense of emergency patients who are being left to languish in emergency departments waiting for an inpatient bed.

The second funding issue relates to the matter of who pays for inpatient versus outpatient care. Initiatives that reduce inpatient costs generally transfer costs either to Medicare or more often to the patient. Even the daily cost of a taxi fare to attend hospital for outpatient treatment may be sufficient to encourage patients to want inpatient care. This is particularly seen in the private hospital sector where legislation significantly restricts the ability of health funds to support innovations that lead to inpatient substitution.



Causes of Overcrowding

A number of causes have been proposed for emergency department overcrowding including a declining GP workforce, a decline in bulk billing, the medical indemnity crisis and the occurrence of “epidemics” such as the meningococcal scare in 2002. All these issues are important in terms of providing clinical services in our emergency departments and provision for them must be considered in forward planning. However, the evidence does not support the notion that the rate at which patients attend the emergency department is responsible for overcrowding.

This table shows the change in attendances in a number of Queensland hospitals during the winter months from 2000 to 2002 and the corresponding levels of access block.

	Attendances	Change	Access Block	Change
Gold Coast	10,263 to 13,821	+35%	21% to 19%	-10%
Toowoomba	8,512 to 11,112	+31%	no access block	
Townsville	9,346 to 11,753	+26%	25% to 37%	+76%
Mater	6,186 to 6,892	+11%	23% to 51%	+122%
Princess Alexandra	11,313 to 10,660	-6%	15% to 28%	+87%

Changes in Attendances and Access Block in the 3rd Quarters from years 2000 to 2002.

At the current levels of activity, there is not a direct link between emergency department overcrowding and the rate at which patients attend those emergency departments.

In February 2001, industrial action caused the cancellation of elective surgery in South Australian hospitals over a two-week period. This included the Queen Elizabeth Hospital, a 365-bed hospital in Adelaide. Hospital bed occupancy was reduced from 94% to 89%. The effect on the emergency department was that patient occupancy dropped by 25% and waiting time for patients in the waiting room dropped by 36%¹⁵. Reducing occupancy towards 85% allows patient transfer to the wards. This in turn frees up cubicles in the emergency department so that patients from the waiting room can be seen and processed.

	2000/01	2001/02	% Change
NSW	1,441,595	1,456,547	1.0
Victoria	885,453	946,905	6.9
Queensland	694,392	744,905	7.2
South Australia	303,008	304,893	0.6
Western Australia	210,889	228,481	8.3
Tasmania	96,866	97,653	0.8
ACT	89,922	91,197	1.4
Northern Territory	98,969	99,113	0.1
Total	3,821,094	3,969,048	3.9

Changes in Emergency Department Attendances 2000/01 to 2001/02

Despite a number of assertions to the contrary, there has not been a large influx of patients into our emergency departments. Subset analyses and selective examination of various geographic locations may reveal hot spots. However, the overall increase that has occurred is explained by an aging population and the natural population increase.

By international standards, Australians are not heavy users of emergency departments. Each year, one in five Australians will attend an emergency department, compared with one in three in the United States and one in four in Canada.

There is no access crisis in the waiting rooms of our emergency departments. Nationally, 80-90% of all patients presenting to emergency departments are under the care of a doctor within two hours of arrival.

General Practice Patients in Emergency Departments

Emergency medicine overlaps with all medical craft groups and specialties. It would be no surprise that some patients who could just as well be treated by a general practitioner might present to emergency departments. General practice as a medical specialty itself overlaps with all other medical crafts and specialties including emergency medicine. There is no debate about “GP” patients attending other types of specialty practice. The reason for this is that the driver for this debate is who pays rather than what is in the interests of the patient. The debate about “general practice” patients in emergency departments has at its core, the issue of Federal-state funding arguments, not quality of care or cost.

Attempts have been made to quantify the general practice load in emergency departments. One of the first studies was published in the Macklin Papers in the early 1990s and found that 15% of emergency department attendees could be classed as GP-type ¹⁶. The methodology was a retrospective chart review. Similar studies here and in the UK have claimed that up to 60% of patients could have been treated by GPs. These types of studies all have the same fundamental flaw in that it is easy to know where a patient should have gone for treatment once the diagnosis has been made.



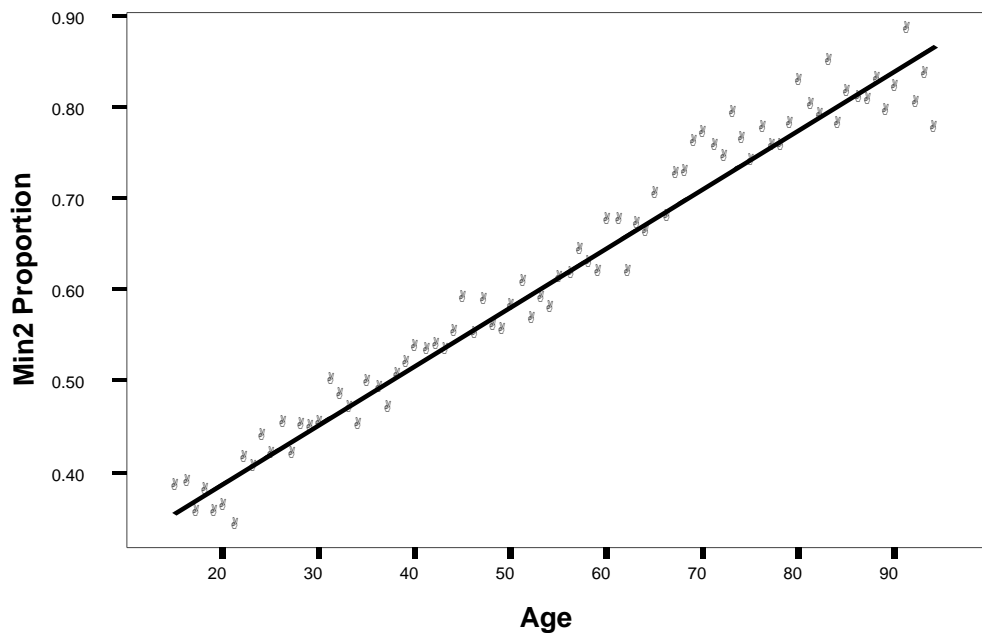
Another approach has been to simply label all Australasian Triage Scale (ATS) Category 4 and 5 patients as general practice. The origin of this is unknown but may have arisen from a misunderstanding of the outcome of negotiations involving the College, the AMA and the Health Insurance Commission that set the rules for private billing for emergency patients in 1993. There has never been any scientific research to support the contention that ATS 4 and 5 patients can be described as GP patients. Three years ago, this College produced a discussion paper discrediting this notion – a paper that has never been refuted ¹⁷.

A mathematical model for estimating general practice workload in emergency departments has been developed. This examined the presenting complaint, triage category, whether the patient was self-referred and took into account presenting complaints that GPs never referred to the emergency department. This estimated, for the hospital studied, the GP load was between 10-14% ¹⁸.



The issue is important. Australia is potentially facing a major problem in relation to general practitioner services. The requirements of the GP workforce have been seriously underestimated, GP remuneration levels calculated in the Relative Value Study have not been implemented and restrictions have been applied to the availability of provider numbers. As a result, we may be seeing general practice financially deregulate. For these and life-style issues, GPs are increasingly reluctant to provide extended hours services. The Commonwealth is trialing a number of options in an attempt to alleviate this problem. One of these is to co-locate general practices in, adjacent to or near hospital emergency departments.

This College supports any initiative to promote general practitioner availability within a quality framework. We have no philosophical objection to this type of proposal. However, there are serious questions regarding these clinics in terms of workforce and financial sustainability. There is an assumption that they will pick up significant numbers of patients from the emergency departments and that this will improve emergency department services to justify the costs.



This chart shows that complexity, as measured by numbers of investigations and procedures, rises in direct proportion to age. This study further shows that taking away the bottom 20% of patients in terms of complexity will reduce the complexity load on the department by only 3.5%¹⁹. Similarly, in the earlier study by Sprivulis, even though GP patients comprised 14% of the attendances, they accounted for only 6% of the cost¹⁸. This is why emergency departments are so sanguine about their GP case load – these patients are easy to treat and don't cost much, provided we can get them into a cubicle.

Evaluation of the after-hours trials show high acceptance by the community but minimal impact on emergency department numbers and workloads. For example, the trial in the Hunter Valley region is one of the most comprehensive projects including multiple clinics, free patient transportation, a patient help line and is provided at no cost to the patient. The clinics are well attended by patients. However, the effect on the largest and busiest emergency department in the region (the John Hunter Hospital which sees 140 patients a day) has been an average reduction in attendances of one patient every two hours while the clinics are open.

Solutions

There are several key features:

1. The solution does not lie in the traditional response to pressure points in the hospital/health system, that is, crisis funding system failures,
2. While improvements can be made in the operation of emergency departments, eliminating access block by reducing hospital occupancy is the only effective way of dealing with overcrowding,
3. Reducing hospital occupancy to the target level of 85% requires a whole of systems approach including reconsidering bed numbers,
4. There must be extensive clinician involvement as this is where the ideas will come from, it will ensure clinician buy-in, and act as a check on gaming by bureaucrats,
5. A new approach to hospital funding that rewards achievement rather than failure ie a carrot and stick approach is needed.

Finding solutions means examining the health system beyond just the emergency department. There have been a number of state health department forums and other symposia sponsored by organisations such as the National Institute of Clinical Studies to examine this. The Medical Journal of Australia ran a series of very useful articles in 2003 in a single edition of the Journal. However, there is still no national focus or leadership to deal with this crisis that is affecting hospitals and individuals around the country. It is essential that the issue of emergency department overcrowding and access block becomes the focus of national attention and a priority within the health system.



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