

Hospital overcrowding: a threat to patient safety?

Managing access block involves reducing hospital demand and optimising bed capacity

Hospital overcrowding causing “access block” — a lack of available inpatient beds for emergency department patients — remains a major impediment to the delivery of good health care both in Australia and overseas. It is obvious that making elderly or disabled patients wait on uncomfortable emergency trolleys in corridors, with sleep deprivation and minimal privacy, is inhumane. Previous research has shown that hospital overcrowding is actually inefficient: it is associated with increased length of hospital stay,^{1,2} thus potentially reducing throughput. The number of adverse events has also been shown to increase with worsening access block.^{3,4}

Two articles in this issue of the Journal have put pressure on efforts to solve this problem. Sprivulis and colleagues (*page 208*)⁵ and Richardson (*page 213*),⁶ using different methods and different populations, have shown a strong association between access block and mortality rate. Their findings now make access block a patient safety issue for which all health care workers and the community must be responsible. It is incumbent on governments and administrators to prevent overcrowding by improving management of the health care system and, where necessary, providing increased resources.

These two studies have certain methodological issues that require comment. Firstly, both studies used administrative databases. These are convenient and allow very large populations to be studied. Sprivulis et al, in their study, have also taken advantage of the linked databases in Western Australia and looked at outcomes beyond hospital admission, thus avoiding the potential bias of only studying outcomes in hospital.

Unfortunately, many data elements are not available on administrative databases. Data on physiological variables, details of treatment and past medical history, for example, were not available to more accurately adjust for risk within patient groups. It is also likely that unknown confounders may have been present, such as changing referral patterns, patient choice, and non-seasonal changes to illness patterns. Despite this, the association between periods of overcrowding and increased mortality is quite strong. Both studies have attempted to adjust for obvious confounders such as age, type of illness, seasonal effect, and so on.

What Sprivulis et al and Richardson have shown is that there is an association between overcrowding and mortality, not that overcrowding causes mortality. It is possible (but unlikely) that an influx of sick, elderly patients at high risk of death may actually cause overcrowding, thus resulting in the apparent association. Without a controlled intervention study, it is not possible to conclude that reducing overcrowding would reduce mortality. There are good reasons for assuming a causal relationship: known effects of overcrowding include delays in patient management, poor hospital processes, poor infection control, patients not being placed on the appropriate ward, and so forth. Given that it is logical that there is a causal relationship and that there is no known increased risk to patients under conditions of normal hospital bed occupancy, it is unacceptable to continue to allow hospital overcrowding to occur.

There have been many attempts to ameliorate the problem of access block across Australia⁷ and internationally.⁸ The exacerbation

of access block seen in the past few years is symptomatic of much larger changes occurring within the health system. Changes to workforce, working hours, aged care, and funding, as well as fewer hospital beds, and increasing demand for seemingly limitless new treatments and procedures, have all contributed to access block. Governments have responded to these challenges by increasing resources (health care now consumes 9.6 % of Australia's gross domestic product⁹), improved monitoring of performance through various indicators, and myriad initiatives to improve efficiency within hospitals as well as divert some patients away from hospitals. This effort has alleviated access block in some jurisdictions,¹⁰ but there are still major difficulties across Australia.

An overcrowded hospital should now be regarded as an unsafe hospital

What should be done?

There are two broad strategies for managing access block resulting from hospital overcrowding — reducing hospital demand and optimising hospital bed capacity.

Reduce hospital demand

Diversion/substitution: The major focus of this strategy has been to divert patients to community services and provide more services in the community that traditionally occur in hospital (eg, hospital outreach programs, hospital in the home, and improved after-hours general practice services).

Reducing expectations: Reducing community expectations of what a public hospital system can provide is a politically sensitive strategy that has not been systematically addressed. Access block cannot be controlled without some limits being placed on the provision of services. Demand for health care is elastic and potentially unlimited, especially in an essentially free health care system. There must be public debate about what is essential versus what is desirable, and how much the community is willing to pay.

Prevention: There is potential to reduce demand by disease prevention strategies, and improved management of patients with chronic ill health.

Optimise hospital bed capacity

- *Improved processes:* There has been an enormous effort by health care workers to increase capacity by improved efficiency of health care delivery. Many initiatives with quick returns have already been implemented. Further significant improvements will need major investments in infrastructure, especially information technology. Workforce reform is necessary to increase the flexibility of the workforce and the capacity of the health care system. There is presently a shortage of virtually every type of skilled worker in the health care sector.

- *Balancing elective and emergency workload:* Contrary to popular opinion, the emergency workload is highly predictable across metropolitan areas. Elective treatment must be tailored to match the capacity allowed by predicted emergency work.

- *Better discharge:* Moving patients quickly from acute hospitals to more appropriate facilities increases hospital bed availability. Access to rehabilitation, residential aged care and community outreach programs is an essential component of an efficient and well managed health system. Addressing physical, social and psychological issues through care coordination in the emergency department and after hospital discharge can also help reduce hospital length of stay and readmission.

- *Increased bed numbers:* It is important to note that access block does not correlate well with the absolute number of hospital beds. Increasing the number of hospital beds temporarily alleviates access block, but does not solve the problem — the beds quickly fill and the problem recurs. Nevertheless, governments must fund an adequate number of beds to provide the health care that the community demands.

An overcrowded hospital should now be regarded as an unsafe hospital. Health care workers should not have to provide services in an environment that potentially jeopardises patient safety. Government and communities must decide whether they want a well managed, adequately resourced health care system where demand is matched to available resources or to take their chances with the present system.

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