

Sleep Faster! (Somebody else needs your blanket. . .)

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Abstract. One of the elements of the health reform plan, as agreed to by Australian state and federal governments, is to introduce a 4-h National Access Target, to reduce emergency department (ED) waiting times. This article highlights the flawed rationale behind the 4-h rule, the UK experience of this rule and discusses the potential dangers it poses to Australian patients. An alternative solution proposed is the separation of elective and emergency surgical streams to reduce the variability in demand for inpatient services.

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Introduction

At the Council of Australian Governments meeting in February 2011, state leaders signed on to a shared agreement for health reform with the Federal government ‘to improve health outcomes for all Australians and ensure the sustainability of the Australian health system.’¹ One of the elements of the reform, guided by an expert panel, is to introduce a 4-h National Access Target to reduce emergency department (ED) waiting times.

The ‘4-h rule’ refers to a target percentage of patients presenting to the ED being either admitted or discharged within 4 h of arrival. The target has undergone several revisions from the original UK target of 98%, to the Australian target of 90%.² The Australian government should be commended for attempting to tackle the serious issues of rising demand and costs with its health reform plan. We agree that an analysis of wait times helps provide information to improve patient flow, but as the UK Secretary for Health, Andrew Lansley, stated when he proposed the abolition of the policy in the UK, the 4-h rule ‘provides an incentive to move patients through accident and emergency quickly, but does nothing to ensure that patients are receiving the highest quality care.’³ In our opinion, the 4-h rule does not directly address the issues that reform seeks to tackle, namely ‘improved patient access to timely and safe ED services’.^{2,3}

The production line analogy

The ‘patient flow’ movement has adopted the ‘Toyota approach’ by considering a hospital as analogous to production lines: sick

patients enter at one end, undergoing various treatments, and hopefully emerge improved.⁴ However, in contrast to a production line, there is no homogenous ‘product’, but rather, widely varying presentations of diseases (the ICD-10 lists 12 420 different disease codes), and patients have differing social backgrounds and comorbidities that all need consideration when deciding on the appropriate treatment.⁵ In addition, patients do not arrive to EDs in a steady flow and clinicians are not robots in their abilities to provide care.⁶

A more appropriate, although still rather simplistic, analogy could be that of a restaurant. When diners go to a restaurant, they expect that their differing tastes and demands will be catered to. Consider the introduction of a ‘1-h rule’ in a busy restaurant. Advocates would argue that this would force the management to streamline their production and service times. However, merely enforcing a time constraint does not necessarily confer the capacity to meet such process goals. Complicated meals could not be offered, or there might be inadequate time for communication between staff and customers. The restaurant would be forced to pre-prepare many meals to rush patrons through. In addition, perhaps encouraged by waiting staff much more familiar with the system than they, customers might over-order, requesting a dessert at the start of their meal, and wasting it once unexpectedly full at the 58th min.

The implications of such a ‘cut-off rule’ for the functioning of a restaurant are analogous to those for an ED. Doctors under time-pressure may order what are ultimately proven to be unnecessary investigations, or give rushed and inadequate patient

care. UK surveys revealed significant concerns amongst nursing staff about compromised care as a result of the rule.^{7,8} In Western Australia, recent polls revealed similar results, with over 80% of doctors surveyed feeling pressured by the rule and that it compromised their capacity to deliver 'proper patient care'.⁹ The other significant factor is that not all EDs and hospitals have the same capacity (ED and hospital beds, staff, diagnostic resources) and it would appear unfair and irrational to place the same constraints on all hospitals.¹⁰

Hospital capacity

As the expert panel described, and has been shown in many studies, the 'principal cause of emergency department overcrowding' is the 'lack of available and appropriate inpatient beds'.^{2,11–15} Compounding this problem, hospital beds in the public system have declined by 11% (per 1000 population) between 1998 and 2008, despite only a small reduction in the average length of stay (for public hospitals, excluding same day surgery cases, from 6.5 days in 1997–98 to 6.2 in 2007–08).^{16,17} At the same time, EDs and hospitals are facing rising patient numbers, with the number of emergency presentations rising to 7.1 million in 2007–08, dramatically increased from 4.1 million in 2003–04.^{17,18}

Therefore, if the major problem is insufficient inpatient beds, then the obvious solution would be to increase the absolute number, or the utilisation of these beds.

Doesn't the 4-h rule improve efficiencies?

The ED is caught between receiving sick patients and needing to move others onwards (home, or to a ward). If the 4-h rule is implemented without increasing inpatient capacity, then there are two ways that hospitals could meet their 4-h target. First, if there are insufficient ward beds, patients could be streamed into observation or holding wards or corridors, pending discharge or admission to the ward. The second way the hospital could meet the 4-h target would be via increased patient discharges. Conceivably, this could lead to the dangerous premature discharge of patients both from wards and the ED, with subsequent readmissions.

The supposition behind the 4-h rule is that by reducing waiting times, quality of care will improve. Indeed, perceived waiting time is linked to patient satisfaction, and it is known that extended stays in the ED lead to adverse outcomes for patients.^{19,20} There is evidence showing that the 4-h rule can reduce access block.^{21,22} However, it is not clear that the quality of care received by patients actually improves, and it may even worsen.^{8,23} A recent systematic review found that the 4-h rule in the UK made no changes to waiting time and hospital mortality.²⁴ Modelling of patient flow through UK EDs demonstrated that where targets were successfully 'achieved', this required some redesignation of patients into alternative categories, as opposed to truly faster processes.^{25–27} Simply moving patients to observation or holding wards does not mean that their care will improve. Early discharges, high turnover and lower nursing staffing levels have all been associated with adverse outcomes.^{28,29} In addition, as wards offer increasingly specialised nursing care (such as orthopaedic, cardiology or neurosurgical wards), pressure to move patients to a bed will lead to them being sent to a hospital bed in an

inappropriate speciality unit, where the care for their condition is likely to be suboptimal.³⁰

The target

In responding to stakeholder concerns about the safety and clinical risks of high compliance targets with the 4-h rule, the expert panel settled on a target of 90%.² Similar to a test that is too hard to pass, reducing the pass mark would suggest that either the target is too hard, or not a very good measure of what is being tested. Although the improvements in Western Australian access block numbers are to be applauded, it is still too early to look at changes in the quality of care (sentinel events, mortality). The reports do not elaborate on whether these patients are getting more timely ward care, or whether they are being placed in holding wards (outside the ED).²¹ In the UK, the focus has shifted to a set of eight quality indicators, where the 4-h target is de-emphasised.³¹ These indicators still include time-based factors, such as time to treatment, but importantly introduce a 'patient experience' indicator.

Recommendations

Reduce variability

Given that the major challenge for access block is the perceived lack of hospital beds, an alternative approach is to examine whether there are insufficient hospital beds all the time (suggesting that the capacity is too low) or whether there are large fluctuations in occupancy. Hospitals receive patients from two main sources: the ED and elective surgery.^{6,12,32} Although there are trends in the arrival of patients to the ED (such as increased demand in winter, less demand overnight), the arrival pattern for a given season is patient driven (random or 'natural' variability), which cannot be controlled. On the other hand, elective surgery is scheduled by people, which produces a form of artificial variability.^{6,12,33} Elective surgical cases are frequently scheduled in an irregular manner throughout the week. This leads to large peaks in demand for hospital beds and nursing services. Such peaks can overwhelm the hospital's capacity to treat patients and lead to increases in wait times for elective surgeries due to their frequent postponements or cancellations.^{34–36} This phenomenon was exemplified by a study that found surges in admissions to an intensive care unit were associated with an increased chance of unplanned readmissions to the unit.³⁷

One solution for dealing with such peaks is to have sufficient capacity around the clock, in terms of bed numbers and appropriate staff, to absorb these peaks in demand. This requires excessive staffing and beds, and leads to significant wastage of resources in the absence of such peaks. Alternately, one can largely prevent these peaks from occurring in the first place. Variability is significantly reduced, and that which remains is simply patient and disease driven, as opposed to due to idiosyncratic, human-made scheduling practices, thereby improving patient safety.^{32,35} There are examples from forward-thinking hospitals tackling these problems by implementing structural and process changes, the most important of which is to separate emergency and elective surgical streams, along with smoothing of elective case scheduling.^{33,38–40} These hospitals were able to reduce wait times in ED, while also improving the throughput

for elective surgical cases. This strategy therefore addresses both the emergency and elective surgery COAG targets.^{2,41,42}

Tackle increasing demand for hospital beds

During the time that the 4-h wait target was introduced in the UK, there was a dramatic increase in new attendances (by more than 37% between 2002-03 and 2005-06).⁴³ Examining the WA experience also reveals an increase in demand of ~10% in each of the WA hospitals surveyed.²¹ As well as pursuing ED inefficiencies, it is necessary to analyse other parts of the health system for improvements, as it is likely that there are bottlenecks elsewhere. An interesting example of reducing demand is the Hospital Admissions Risk Project (HARP) in Victoria, which has successfully reduced ED presentations and hospital admissions amongst patients with chronic diseases.⁴⁴ This approach has also been shown to work overseas and, as opposed to many other projects, it is patient-focussed.^{45,46} Another current obstacle to improving patient flow through hospitals is that acute hospital beds are often blocked by patients awaiting discharge to aged care or rehabilitation facilities.⁴⁷ With an aging population and the concomitant problems of frailty and dependency, this is a problem that will continue to rise.

Lastly, there is a significant imbalance in the healthcare system between treatment and prevention. More widespread efforts to improve physical activity and diet, to reduce smoking and excessive alcohol intake are much needed, to reduce the burden of disease. Although the healthcare profession has a role in promoting healthy lifestyles, approaches that focus on integrating public policy measures, urban planning and taxation are likely to have more significant results.^{48,49}

Conclusion

The government should be commended for prioritising the problem of healthcare inefficiencies and wait times. Indeed, there is much to be gained from 'systems thinking approaches' and establishing coordinated national data collection, to further examine how to improve patients' experiences in the ED.⁵⁰ The Australian healthcare profession should embrace the government's plans for health reform and work with them to guide this process, especially in embracing proven operational management methodologies. However, we should not accept the introduction of artificial process targets that are at odds with improving the quality of care. We owe this to our patients.

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