

What have five years of the shorter stays in the emergency department health target done to us?

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ABSTRACT

This paper reviews the first five years of the shorter stays in the emergency department national health target—its genesis, implementation and impact. Five years of the target have seen a maturing ‘whole-of-system’ collaboration leading to better patient care. However, there is still much to do and demand continues to increase. Assisted by the *Quality framework and suite of quality measures for the Emergency Department phase of acute patient care in New Zealand*, a good structure and methodology driving improvement, and a patient centred focus, this work must continue.

In May 2009, the Minister of Health announced six national health targets for New Zealand, including the ‘Shorter stays in Emergency Departments’ health target (the target), defined as ‘95% of patients will be admitted, discharged or transferred from an emergency department (ED) within six hours of presentation.’ District Health Boards have been required to aspire to the target since 1 July 2009. After 5 years of this aspiration what have we achieved? This paper will briefly discuss this before suggesting future challenges and directions.

A new health target

The target was a very significant development in acute care in New Zealand, being the first and only high-level accountability measure specifically examining the timeliness of the whole system of care for acute (unplanned and urgent) illness and injury. The absence of any specific accountability measure for acute care prior to the target had allowed worsening overcrowding of EDs and hospitals and the associated high levels of adverse events, complaints, and negative media attention.¹

The target’s origins came from the advocacy of clinicians over a number of years and led to a seminal workshop on

ED overcrowding in Wellington in early 2008. A concluding consensus was that a time-based health target should be ‘worked up’. This culminated in the presentation of a document to the Minister of Health in late 2008 called: *The Report of the Working Group for Achieving Quality in Emergency Departments*. The report included a thorough examination of the current state of ED and acute care, a summary of the literature and international precedents regarding ED overcrowding and a number of recommendations. The principle recommendation was the adoption of a high-level health target based around length of stay for patients in the ED.

As a result of the report’s recommendations, the Minister appointed a National Clinical Director of Emergency Department Services—a position also known as the ‘Target Champion’—endorsed the establishment of a National ED Advisory Group (the Group), consisting mostly of doctors and nurses from throughout New Zealand, and agreed to an ED length of stay health target.

While the ED phase of acute care is only one part, it was appreciated that prolonged ED length of stay, and by association ED overcrowding, were manifestations of defi-

ciencies throughout the acute care system (the Minister described ED length of stay as a ‘barometer’ for the whole system). For this reason, and for its ease of measurement and comparison, an ED length of stay target was chosen as the most appropriate single, high-level measure of performance of the acute care system.

The English experience

However, an ED length of stay target was not a new concept. The English National Health Service (NHS) had entertained one for the previous several years. The views in England regarding the success of their 4-hour ED length of stay target were mixed,² with both praise for its influence on reducing ED overcrowding and suggestions that it caused more harm than good.³ With an understanding of the NHS experience and initiatives to improve acute patient care (particularly patient flow through the hospital system) using methodologies such as Lean Thinking, the New Zealand target was defined and implemented.

Quality versus compliance⁴

An important contrasting feature of the New Zealand target was the formative involvement of clinicians in its genesis, definition and ongoing implementation. Clinicians were aware that it was possible to achieve the target without resolving important contributors to patients staying longer in EDs, and without getting patients more quickly to the care they should be receiving.

It is possible to achieve compliance without improving quality—hitting the target, but missing the point. Awareness of this, and particularly perceptions that compliance and not quality drove a number of initiatives in NHS hospitals, was (and still is, to a lesser degree), a barrier to acceptance of the target by many clinicians. A second barrier is the unfortunate but unavoidable focus on the ED in the target’s title, suggesting to many non-ED clinicians that the target was not their concern.

Without embedding genuine quality there are two possible adverse effects of

the target; gaming the target, and shifting the problem.

Gaming the target may include delays to starting the clock, (eg, by keeping patients in ambulances), and premature stopping of the clock, (eg, by calling patients in the corridor admitted ‘observation patients’). If patients are moved out of the ED to hospital wards, without adequate provision for this work, the problem currently manifest in the ED will surface elsewhere (shifting the problem).

From the beginning, pursuit of the target in New Zealand has been prefaced with the proviso that the target must drive quality and not blinkered compliance (the clock must not trump clinical decisions). In addition to the Ministry of Health scrutinising activities, there is a commitment from the clinical community to ‘police’ activities towards the target and to stand against any attempts to achieve the target by gaming or shifting the problem. While this has been successful it is important to reiterate the importance of not gaming or shifting the problem.

The solutions are ‘whole-of-system’—attention to this principle is a pre-requisite for success. To achieve ‘whole-of-system’ commitment to this work requires the willing engagement of all clinicians throughout the system. Gaming the target or shifting the problem will inevitably disengage clinicians, in addition to being bad for our patients. False gains achieved in this way ultimately will undermine target performance as clinicians disengage.

Consequently, underpinning the implementation of the target in New Zealand has been the realisation that achieving the target by any means other than genuine improvements in the quality of care will result in the ‘double whammy’ of poorer care for our patients and, ultimately, failure to achieve the target.

Why does it matter?

First, it matters to the patient. Second, it matters because, by staying longer in the ED and in hospital, it obstructs access for others seeking these resources. Third, it causes the accumulation of patients in the ED—the flow coming in is unabated, but the flow out is obstructed.

The ED becomes overcrowded and ED overcrowding matters. It is associated with delays to care, longer total hospital length of stay, decreased satisfaction, adverse outcomes and, most significantly, increased mortality.⁵⁻¹⁰

Among the patient population who have gone through an overcrowded ED, there are about one-third more deaths over the 10 days following admission. In Australia this equates to a death rate equivalent to the road toll. In New Zealand this would translate to more than 300 deaths each year. How applicable these figures are to New Zealand is open to debate—there might have been relatively fewer or more deaths in New Zealand. However, the least plausible argument is that these figures have no relevance to New Zealand. There is no doubt that ED overcrowding was causing death and other harms in this country.

Achieving the target

The target, like any other intervention in health care, has the potential to benefit, to harm, or to achieve nothing at all. We accept, in relation to medications in particular, the concept of a therapeutic window; too little and nothing is achieved, too much and the adverse effects outweigh the benefits, just right and the benefits predominate. In astronomy, a planet close enough, but not too close, to a star so that the temperature allows a potentially inhabitable context, is described as being in ‘the Goldilocks Zone’—not too hot, not too cold, but just right.

Those who argue that targets of this sort are bad have some merit in their argument. So do those who argue that targets of this sort are good. Six hours and 95% were chosen for a variety of reasons, but among them was the thought that these were less likely to drive blinkered compliance than 4 hours and 98%. That is, we would be better able to keep in the therapeutic window, or Goldilocks Zone, thereby maximising the utility of the target. Similarly, it was appreciated that achieving the target across New Zealand, if we were to do it through genuine quality improvements, would take at least four to five years. Perhaps the most significant challenge for the implementation of this target has been to push it hard enough but not too hard.

Local solutions

Another contrast between the New Zealand and NHS approaches is that New Zealand has seen much less central (Ministry) input into the specifics of the activities undertaken locally. The Ministry devoted a resource to this target of a two-tenths full-time equivalent Target Champion, and one full-time equivalent Senior Advisor. Much of this resource is consumed dealing with the ‘summative’ requirements of measuring and reporting target performance, leaving limited resource for ‘formative’ assistance with activities towards the target. In contrast, the NHS devoted dozens of staff, analysed data on behalf of local Trusts, and came back with specific advice as to what should be done. The New Zealand approach from the Ministry resource has been a supportive and advisory one, with an expectation that solutions, although more generally informed, will be locally derived and implemented. In retrospect, this is a strength of the New Zealand approach. Locally derived solutions are more likely to be successful and success is more likely to be sustained.

The context for change

Although the specifics of the activities undertaken are locally derived, it is expected that these activities occur on a foundation consisting of these layers:

1. Understanding what the problem is and what solving the problem would look like.
2. Having a structure with all the components necessary to address the problem.
3. Constructing a plan, based on a good methodology, which is comprehensive, but prioritises what should be done and in what order.
4. Implementing the components of the plan.

Space in this paper limits opportunity to discuss this context for change at length, and more detail can be found in other publications.^{4,11} However, suffice it to say, a recipe for failure is to take ideas, activities, or projects ‘off the shelf’ (step 4) and expect

Table 1: Top 10 challenges for DHBs in pursuit of the target.

Top 10 challenges for DHBs in pursuit of the target	
1=	Access to hospital beds
1=	Access to diagnostic tests
1=	In-patient registrar delays
4	Increased demand for ED services
5=	ED facility deficiencies
5=	ED staff deficiencies
7	Delays to discharge of inpatients
8	Difficulty engaging hospital clinical staff in changes
9	Difficulty accessing aged care beds
10	Nights and weekends

them to work without the foundation of the prior steps. An analogy relevant to many of our efforts is one of a dog chasing seagulls on the beach. She chases one, then sees another and chases that, then another, then another, and so on. She is a very busy dog, exhausted at the end of this, but she catches no seagulls. Many of our DHBs are very busy with quality improvement projects, based on good ideas, or a successful example from another DHB, or based on precedents from an overseas health system. Staff become frustrated when, despite their efforts, things don't seem to be improving. This results in another 'double whammy' of failure. First, the expected improvements aren't forthcoming. Second, those clinicians who committed to these activities walk away in frustration, more reluctant to commit to similar activities in the future.

Two questions should be asked in relation to such activities. First, how do they fit into the scheme of things? Second, what exactly is the scheme of things? In other words, what is the structure for change? What will change look like once achieved? Is there a group of people leading this, including clinicians with appropriate representation and authority? Is it well supported by management and does it have people to provide 'process improvement grunt' (understanding of process improvement and opportunity to get things done)? What methodology is used so that, of all the good things that might be done, the best things are done in the right order? Without a shared vision, an appropriate structure and good methodologies to populate a comprehensive yet prioritised plan, the seagulls will forever be safe.

How have we changed?

After the first year of the target, all DHBs had been visited at least once by the Target Champion, and the challenges they were facing and the innovations making progress were collated.¹¹ The 10 most significant barriers to achieving the target, at that time, are listed in Table 1.

More details of these can be found in the paper, but they emphasise the need for an appropriate structure and plan, as they are generally not problems confined to a single department or speciality and, indeed, many are the concern of multiple departments. Consequently, overcoming these challenges is unlikely unless all concerned parties gather round a single table with others who can provide appropriate support and authority.

Table 2, from the same publication,¹¹ outlines some of the specific actions being undertaken by DHBs at that time.

Again, more detail can be found in the publication, however, it is not these actions, but the context in which they are occurring, that is the key to success. For example, the creation of special beds (ED observation beds and in-patient assessment units) is listed at the top of the table. While these physical spaces have great utility, of utmost importance is how they are used. Further discussion of the appropriate use of such beds can be found in a guidance statement¹² but, suffice it to say, if they are not used well they will not be a success. To define how they are used and to govern their ongoing use requires a structure with components

Table 2: Some specific examples of DHB initiatives to improve performance

Special beds	Creation of ED observation units and inpatient assessment units so that patients with a particular need, for example further observation or treatment by ED staff to achieve discharge or 'work up' by inpatient teams, have that need fulfilled in a space well suited to that purpose.
Hospital Operations Planning	Dedicated and sophisticated daily hospital operations planning to enhance the use of the human and physical resource, and to improve patient flow between the ED and inpatient wards.
Discharge planning	Good discharge planning, beginning early with multidisciplinary input and as a particular focus of daily activities to reduce unnecessary patient waits and free hospital capacity.
Access to imaging	Guidelines and pathways for accessing imaging and a responsive service for the provision of both images and expert interpretation.
Responsive acute secondary services	Separation of acute and elective medical roster conflicts so that the availability of inpatient specialties is adequate to enable the hospital to provide a responsive acute service.
Pathways for acute patients	Pathways or agreements so that patients with common and relatively straightforward presentations, for example fractured neck of femur, can be transferred to the ward without having to wait in the ED for an inpatient registrar assessment.
Acute demand mitigation	Analysis of the drivers of increased demand for acute services and interventions to mitigate this demand.
Enhanced ED layout	Layout of EDs to enhance function, including 'streaming' of patients and good 'command and control'.
Enhanced ED senior staffing	A greater senior staff presence to enhance decision-making and overview of department activities.
Engagement of staff	Engagement of all staff by 'marketing' changes with an appropriate whole of system and patient focused emphasis.

Figure 1: National Performance broken down by DHB.

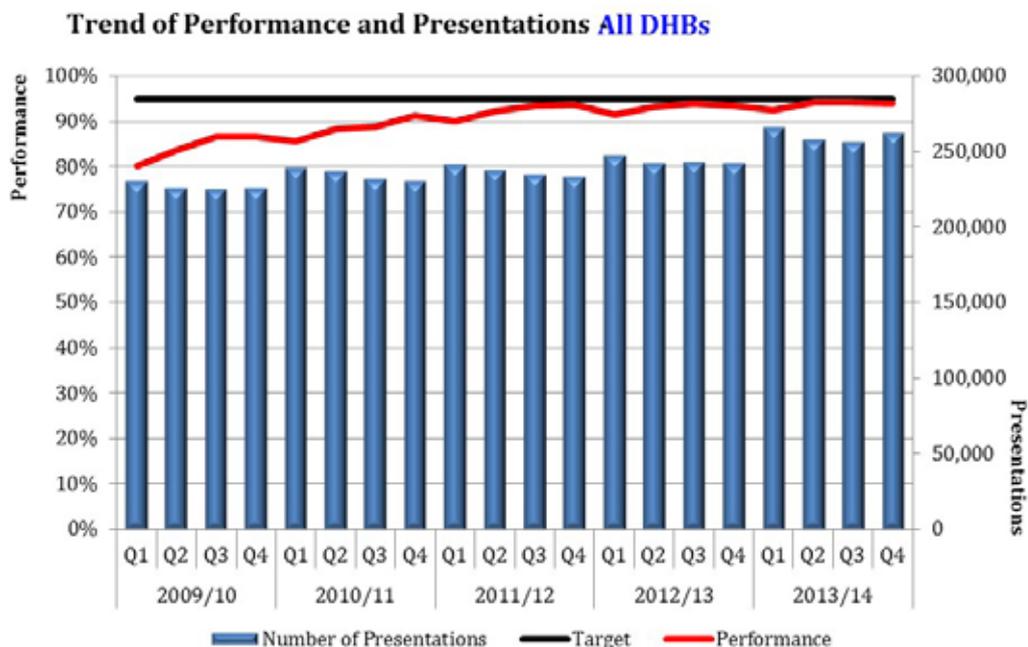
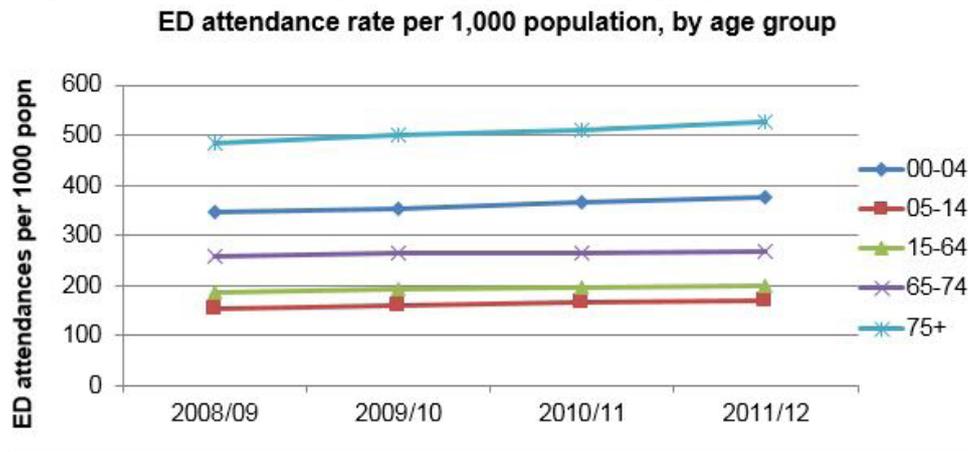


Figure 2: ED attendance rates per 1,000 of population, by age group



of appropriate representation, authority, collaboration and a shared vision.

How have we performed?

Prior to the target few DHBs regularly scrutinised patient length of stay in their EDs. Performance after the first quarter of 2009/10 (July, August and September 2009) showed a national performance of 80% of patients discharged, admitted or transferred within 6 hours of arrival at an ED, with a range from 100% down to 61%. With the exception of Counties Manukau and Canterbury DHBs, which had commenced work on improving acute patient care prior to target instigation, the busier hospital EDs were the poorest performers.

Since then national performance, at the end of five years (quarter four, 2013/2014), had risen to 94%. More importantly, the lowest performing DHB was at 89%, 11 DHBs were over 95% and a further 8 were over 90% (ranging from 94 to 90%). Figure 1 shows the improved national performance from quarter one 2009/10, to quarter 4 2013/2014, and the year-on-year improvements each quarter one.

Of course, performance against the target is less important than improvement in the quality of care. Clinicians report decreased ED overcrowding and generally more pleasant working environments. Nationally available data is not sufficiently discerning to appreciate small changes in various outcome measures amongst the large variations, fluctuations and pre-existing trends, but data available to the Target Champion suggests the performance against the target has not been associated with increased

admissions to hospital, increased re-presentations to EDs or increased in-hospital mortality. A criticism of the NHS target was that it was not subject to appropriate research of its utility.² In New Zealand, a sophisticated, independent 'before and after' study is soon to report on other parameters which might have been influenced by target activities.¹³

What next?

ED presentations and acute admissions to hospital are increasing at a rate greater than population growth, with the greatest rise (in most DHBs) occurring in the elderly (Figure 2). The elderly have a higher ED utilisation rate and a higher rate of admission to hospital from the ED. Effort will be required simply to maintain performance. Considerable effort will be required to continually improve it. If performance is poor because demand exceeds capacity then, in general, two options exist—reduce demand or increase capacity.

Reducing demand through admission avoidance and discharge facilitation initiatives is important to lower the trajectory of growth. However, it is optimistic to think that demand can be made to decrease. Efforts to manage increasing acute demand must continue.

Increasing capacity can be achieved by purchasing more (staff, space, equipment), or by freeing up existing capacity through efficiency gains. Much of the improvement against the target has been through efficiency gains from improvements in process. There is still much scope for improvement in processes, as we still have an office-hours orientated health system, junior doctor-lead acute hospital services, late

definitive decision making, poor use of pathways and other standardised processes, services which work together poorly, and poor command and control of hospital demand and capacity. It is in these areas we must make the most change in the next five years. However, there isn't unlimited scope for freeing up existing capacity. In reality, of the three options—reducing demand, freeing up capacity through efficiency gains and purchasing more capacity—we will need some combination of all three. We are obliged to exhaust the first two as best we can, but inevitably we will need to invest in the third.

Finally, blindly seeking to achieve the target, despite the best intentions, is insufficient. We need a better understanding of what quality is, how we measure it, and how we know if we are achieving it. To this end an important step is the implemen-

tation of 'A quality framework and suite of quality measures for the ED phase of acute patient care in New Zealand.' A description of this framework and these measures has been published¹⁴ and DHBs are required to implement it from July 2014—the five year anniversary of the target.

Summary

Five years of the shorter stays in the emergency department health target has seen a maturing 'whole-of-system' collaboration leading to better patient care. However, there is still much to do and demand continues to increase. Assisted by the 'A quality framework and suite of quality measures for the ED phase of acute patient care in New Zealand,' a good structure and methodology driving improvement, and a patient centred focus, this work must continue.

Competing interests: Nil

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REFERENCES:

1. Ardagh M, Richardson S. Emergency department overcrowding - can we fix it? *NZ Med J*. 2004;117(1189). URL: <http://www.nzma.org.nz/journal/117-1189/774/>
2. Jones P, Schimanski K. The four hour target to reduce emergency department 'waiting time': a systematic review of clinical outcomes. *Emerg Med Australas* 2010, 22(5):391-398.
3. Gubb J: Have targets done more harm than good in the English NHS? Yes. *BMJ* 2009, 338(jan16_2):a3130
4. Ardagh M. How to achieve New Zealand's shorter stays in emergency departments health target. *New Zealand Medical Journal* 2010 123 (1316).
5. Fatovich DM, Hughes G, McCarthy SM. Access block: it's all about available beds. *Med J Aust*. 2009;190:362-3.
6. Cameron PA, Joseph AP, McCarthy SM. Access block can be managed. *Med J Aust*. 2009;190:364-8.
7. Richardson DB, Mountain D. Myths versus facts in emergency department overcrowding and hospital access block. *Med J Aust*. 2009;190:369-74.
8. Richardson DB. The access block effect: relationship between delay to reaching inpatient bed and inpatient length of stay. *Med J Aust*. 2002;177:492-5.
9. Richardson DB. Increase in patient mortality at 10 days associated with emergency department overcrowding. *Med J Aust*. 2006;184:213-6
10. Sprivulis PC, Da Silva JA, Jacobs IG, et al. The

- association between hospital overcrowding and mortality among patients admitted via Western Australian emergency department overcrowding. *Med J Aust.* 2006;184:208-12.
11. Ardagh M, Tonkins G, Possenniskie C. Improving acute patient flow and resolving emergency department overcrowding in New Zealand hospitals-the major challenges and the promising initiatives. *New Zealand Medical Journal* 2011 124 (1344)
 12. Ministry of Health. Shorter Stays in Emergency Departments Health Target: Streaming and the use of Emergency Department Observation Units and Inpatient Assessment Units - Guidance Document for DHBs. January 2012
 13. Jones P, Chalmers L, Wells S, et al. Implementing performance improvement in New Zealand emergency departments: the six hour time target policy national research project protocol. *BMC Health Services Research* 2012 12:45.
 14. National Emergency Departments Advisory Group. 2014. A Quality Framework and Suite of Quality Measures for the Emergency Department Phase of Acute Patient Care in New Zealand. Wellington: Ministry of Health. <http://www.health.govt.nz/publication/quality-framework-and-suite-quality-measures-emergency-department-phase-acute-patient-care-new>