Policy strategies to reduce waits for elective care: a synthesis of international evidence

Sara A. Kreindler*

Department of Community Health Sciences, Winnipeg Regional Health Authority, Research and Evaluation Unit, and University of Manitoba, Winnipeg, Manitoba, Canada

This synthesis seeks to assess and explain the effectiveness of policy interventions to reduce elective wait times or lists. PubMed, EMBASE, EconLit, and grey literature were systematically searched for relevant studies and reviews. Strategies with the strongest evidence base include paying for activity, buying capacity locally and setting targets with strong incentives. There is also evidence for improving the use of existing capacity. Limiting demand through rationing can reduce waits, but is ethically problematic. Short-term injections of funding, cross-border treatment schemes, unenforced targets and promotion of private health insurance had the weakest evidence. Available evidence favours options that act fairly directly on supply, demand or local organizations’ behaviour, over indirect strategies that depend on a ‘domino effect’. Further research is needed to determine how to achieve major, system-wide improvements in the use of capacity.

Keywords: waiting times/waiting lists/elective surgery/policy/international comparisons

Long waits for medical care are a source of dissatisfaction for patients, the public and policymakers. Over the past two decades, governments in many countries have directed a formidable arsenal of policies at the wait-time problem. This paper will review recent evidence on the extent to which various measures have successfully reduced waiting for elective treatment and testing.

Although not all publicly funded healthcare systems have wait-time problems, wait lists are more likely to be found in public systems. This is because universal access to care, when combined with the government’s desire to control health spending, can mean that the supply of treatment does not meet demand. Wait lists thus become a means of rationing the scarce supply. An alternative, rationing by price, occurs when patients invest money (instead of time) to access care. It is often
observed that elective wait times are low in the USA, one of the few countries where the majority of care has been financed by non-universal private insurance. However, the low wait times for insured patients mask the literally endless waits for uninsured persons; often, these simply do not receive care.\(^2,3\) (In the area where universal access to care is mandated—namely, the emergency department—the USA has had significant and growing problems with wait times.\(^4\)) Rationing by price is considered unethical by those who believe that access to care should be based solely on clinical need, not on ability to pay. The mere existence of a wait list is not necessarily a bad thing, but reflects a value-based decision about how care should be distributed. However, long wait times are a source of distress to patients, and in some cases have adverse health consequences.\(^5–7\) The question is not how to eliminate wait times, but how to keep them at a safe and acceptable level, while balancing this aim with other policy goals such as promoting quality, equity and wise use of resources.

**Methods**

This synthesis seeks to assess and explain the effectiveness of wait-related policies. It considers the available evidence on each intervention’s efficacy in reducing wait times/lists, ease of implementation, costs, harms and implications for equity.

Wait-list management is a complex and sometimes highly politicized area. The literature relies on observational studies, and data availability is such that some countries’ policy experiments have not been well observed. Furthermore, policymakers’ assumptions about how an intervention works, or what its active ingredients are, may or may not be accurate. In the light of these complexities and limitations, a best-evidence synthesis was deemed a more suitable methodology than a traditional systematic review. This approach offered the flexibility of using diverse sources of evidence—including studies, reviews and sources of descriptive information—to collectively build up a picture of an intervention’s effects.

A systematic search of databases (PubMed, EMBASE, EconLit) and potential sources of grey literature was undertaken to identify relevant empirical studies and reviews (see supplementary material Appendix A). The search used applicable MeSH headings as well as free-text terms (e.g. ‘wait[ing] time[s]’ and ‘wait[ing] list[s]’, combined with ‘government’, ‘policy’, ‘targets’, ‘guarantee[s]’, ‘reforms’ or ‘benchmark[s]’). Further sources were identified through Google, reference lists and the author’s personal collection. Figure 1 depicts the search and screening process. The search was designed and conducted by
a health librarian; screening and assessment were done by the author. To be eligible for inclusion, reports had to (i) be written between 2000 and 2009 (to avoid duplicating prior reviews, which were already being included in the analysis); (ii) concern government policies aimed at reducing waits for elective treatment and/or testing (not emergency, primary or long-term care, nor organ transplantation); and (iii) present quantitative and/or qualitative research data about the outcome(s) of such policies. Studies on organizations’ wait-reduction efforts were included only if they illuminated the effects of a government policy. Simulation studies were not included. Studies could be reported in any language; however, owing to limited time and resources, reviews had to be written in English. Country was not an exclusion criterion; in practice, however, all of the available evidence came from Western Europe (including the UK), North America and Australasia.
The AMSTAR criteria\textsuperscript{8} were used as a guideline for assessing the quality of systematic reviews. In practice, all of the reviews that covered broad topics were non-systematic, and most of these contained little description of the review methods. Such reviews were assessed in terms of their comprehensiveness, impartiality (e.g. presentation of both positive and negative results) and attention to the quality of included studies.

The Cochrane Review EPOC Group checklist for risk-of-bias assessment\textsuperscript{9} was used as a guideline for assessing the quality of quasi-experimental studies. It was recognized in advance that most of the studies in this area would suffer from significant risks of bias. Controlled experiments on large-scale policies are rare, and investigators are often limited to short interrupted time series designs, before-and-after comparisons with a somewhat dissimilar control group, or worse, uncontrolled pre-post or cross-sectional studies. Furthermore, policies are often introduced in packages, making it difficult for any study to isolate the effects of one intervention. Some interventions within a package may be unrelated to each other, while others may have interactive effects (e.g. A depends on B; C interferes with D). The most informative studies gather evidence to disentangle such issues. The least useful studies consist of speculation on the basis of inadequate or inappropriately analyzed data.

Waiting can be measured in three ways: ‘time waiting’ (how long people on the list have been waiting), ‘time waited’ (how long treated patients actually waited) and the number of people on the list. ‘Time waited’ is usually regarded as the most informative measure, but each option has its own strengths and limitations.\textsuperscript{1,6} The most confident inferences can be made when all three measures of waiting are available. However, as this is seldom the case within the literature, the analysis paid attention to which measure of waiting had been used, and how this might have affected study results.

A total of 32 reviews, 61 studies and 10 additional sources (e.g. updates of wait-time figures, contextual information) were included in the analysis. However, in the interests of length and focus, the discussion below will concentrate on the more relevant and higher-quality evidence regarding each policy. A full description of included and excluded reports is available in supplementary material Appendix B. The analysis took a realist approach, focusing on the ‘theory of change’ behind each intervention, and asking to what extent and under what conditions such causal assumptions have been borne out in practice.

**Results**

Simply put, wait lists arise when the demand for treatment exceeds the supply. The shortfall in supply may reflect either lack of capacity or
inefficient use of existing capacity. It stands to reason that the main policy levers for reducing wait times involve increasing supply, reducing demand, and/or applying global strategies to encourage one or both of these things at the local level. The following section will examine both the posited mechanisms (theories of change) and the strength of evidence behind each policy. The results are summarized in Table 1.

Supply-side strategies

The idea of eliminating wait times by increasing supply is conceptually unproblematic: if the volume of treatments provided is sufficiently high, there should be no queue. Indeed, countries that have not had problems with wait times (e.g. France, Belgium, Germany, Switzerland) tend to pay providers on the basis of treatment volumes (‘money follows the patient’) and avoid tight restrictions on spending. However, keeping supply in line with demand can be costly, especially since increased supply can stimulate further demand (i.e. when supply is abundant, physicians may be more likely to refer patients who previously would not have met the criteria for treatment). For this reason, governments have searched for the most cost-effective supply-side approaches.

Increasing activity directly

The most basic supply-side strategy is to pay for increased activity. Early efforts typically involved temporary funding for extra activity, on the assumption that reducing wait times was simply a matter of working down the backlog. Unfortunately, such short-term injections of funding encouraged unsustainable strategies that failed to address the root causes of the wait list, and the backlog promptly reappeared after the money ran out. More recent approaches have stressed long-term funding for activity (e.g. fee-for-service payment to physicians, activity-based payment to hospitals and/or bonuses for achieving extra volume while maintaining a base volume). To ensure that the new activity actually brings down the wait list, policymakers may make the financial reward contingent on both activity levels and wait-time reduction. This combination strategy has been applied successfully in England, Spain, Victoria (Australia), the Netherlands, Ontario and British Columbia (Canada). The Netherlands provides the clearest case study of the impact of activity-based funding. In the 1990s, as part of its cost-containment strategy, the government replaced fee-for-service payment with lump-sum budgeting, and wait lists ballooned. In 1998–2000, the government made strenuous
### Table 1 Summary of evidence on policy interventions.

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Effects</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Increase supply</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-A. Pay for increased activity (bonuses, fee-for-service, targeted funding, etc.)</td>
<td>If temporary: backlog temporarily decreases, but reappears when funding runs out. If sustained: reduces waits, especially when combined with incentives for reducing them.</td>
<td>Only feasible if there is sufficient capacity to increase activity. Must ensure activity is genuinely new and directed towards reducing waits. Funding should be targeted to specific areas. To reduce waits, capacity must do more than keep pace with ongoing rise in demand.</td>
</tr>
<tr>
<td></td>
<td>Supports reduced waits in the long run. Cross sectionally, higher resources (overall spending, beds, sometimes physicians, equipment) associated with lower waits.</td>
<td>Lack of accountability and follow-up seem to be threat to quality. Firms need guaranteed source of revenue to join healthcare market. May need active coordination to guide patients to private clinics. Tight contracts and careful monitoring also needed (and not cheap) Services may ‘cherry-pick’ healthier patients, so should be paid on basis of actual population served. Efficient stand-alone clinics need not be privately owned.</td>
</tr>
<tr>
<td>I-B. Increase capacity (publicly funded)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-B-ii-a. Encourage private health insurance to stimulate capacity in private sector. <em>(refers to duplicate health insurance—private and public insurance for the same patients and same services.)</em></td>
<td>Lack of effect on public-sector wait times. May not even increase capacity (where private and public sectors use the same resources, e.g. physicians, public hospitals). Or, can increase capacity in ways that do not bring down the wait list (e.g. create new demand). People who can afford private insurance receive care more quickly (equity issue).</td>
<td>Sometimes described as demand-side strategy, but does not reduce demand—only redistributes it to private sector. Shifts from rationing by queuing to rationing by price. Private hospitals often focus on low-cost, low-risk procedures/patients that put little ‘pressure’ on public system. Government subsidies to private insurance can be very costly.</td>
</tr>
<tr>
<td>I-B-ii-b. Buy capacity from the private (for-profit) sector.</td>
<td>Probably has not had major impact, as volume of private-sector activity has been small. If simple, easy-to-monitor service: may facilitate prompt setup of high-throughput stand-alone clinics. If complex, hard-to-monitor service: for-profit (especially large corporate) ownership associated with lower quality and higher costs.</td>
<td>Firms need guaranteed source of revenue to join healthcare market. May need active coordination to guide patients to private clinics. Tight contracts and careful monitoring also needed (and not cheap) Services may ‘cherry-pick’ healthier patients, so should be paid on basis of actual population served. Efficient stand-alone clinics need not be privately owned.</td>
</tr>
<tr>
<td>I-C. Use existing capacity more efficiently (encourage streamlined processes and better-designed systems at the local level).</td>
<td>Move towards day surgery increases efficiency. Good evidence for need/importance of system redesign (e.g. pooled wait lists, addressing bottlenecks in patient journey, reshaping roles, etc.). But evidence on effects of redesign initiatives remains patchy. Promoting uptake of best practices, a challenge even with major dissemination efforts. In isolation: little evidence of impact. Patients have tended to show low uptake of choice (and providers do not always offer it). With new capacity plus central coordinator to offer options to long-waiting patients: reduced wait times.</td>
<td>Case studies suggest major opportunities for better use of existing capacity. Further research (on interventions and knowledge translation) is needed. Patient choice may be end in itself (but patients may care more about choice of treatment, date, than of provider). Some questions remain about equity, especially where patients are not actively supported in making a choice. Pooled wait list may be more efficient way to redistribute patients.</td>
</tr>
<tr>
<td>I-C-i. Redirect patients to shorter wait lists through patient choice.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
II. Reduce demand
II-A. Prevent illness to reduce the need for treatment.

II-B. Prioritize patients, and treat only those who meet a certain priority threshold (rationing).

II-B-i. Prioritize patients, and treat high-priority ones first.

II-C. Eliminate inappropriate tests and treatments.

III. Global strategies
III-A. Set mandatory targets (typically maximum wait time) with direct incentives for meeting them.

III-A-i. Use market mechanisms (e.g. provider-purchaser split, encourage competition) to promote incentives for shorter waits.

III-B. Invest in data collection and use, monitoring, reporting, etc.

Unclear whether patient choice schemes can spur providers to improve their services.

Unclear to what extent this has been attempted, and with what effect.

Reduces waits for patients defined as high-priority, but excludes other patients who might benefit from treatment (especially when threshold is determined on financial basis).

Non-selected patients' waits become 'invisible'.

Unlikely to reduce average wait times/wait list.

Voluntary adoption: degree of implementation remains unclear.

Lack of evidence of large-scale effects.

Local initiatives to improve appropriateness have had mixed results.

With strong central management (positive and negative incentives): clear evidence of reduced waits. Appears to reflect both increased supply and management of demand.

‘Gaming’ is a side effect. Other side effects (loss of quality, treatment of patients out of clinical order) have been alleged but not proven. Effects may depend on which patients are covered by target(s).

Wait times may shift to patients, services or parts of the wait not covered by the target.

Without strong management/incentives: does not reduce waits, or does so only temporarily.

Reduced waits where provider, procedure and patient are covered by the scheme (average waits may not change).

Some evidence that hospitals focus on wait times to the detriment of quality.

Measuring and monitoring wait times can be necessary steps towards understanding and reducing them.

Little evidence of effectiveness by themselves.

Public reporting can be valuable part of strategy that includes incentives. It can attract patients’ interest but may or may not affect their choices.

Maximum wait time targets promote focus on long waits. It can take time, and progressively lower targets, for the bulk of patients to be affected.

Targets should be challenging but achievable.

Need strategies to prevent gaming and promote desirable wait-reduction approaches.

Clinician involvement and ownership may mitigate some of the problems associated with ‘command and control’.

Wait times should not be sole focus.

Competition can interfere with cooperation and coordination.

With indirect incentives, it is harder to control what is incentivized.

Despite the importance of information, effective data management should not be confused with effective wait-time reduction.

Reliable, comparable information is needed for international or even inter-provincial/state comparisons.

Different strategies to avert different needs in different populations may have different effects.

Difficult to develop reliable, valid criteria, especially for general surgery.

Difficult to implement (providers may not comply).

Rationing of care is an issue of ethics and values, not just economics.

Prioritization (by itself) may decrease efficiency by creating multiple queues.

Typically introduced to improve equity, not efficiency.

Can be difficult to identify what is inappropriate.

Difficult to change providers’ clinical practice.
efforts to reduce waits by improving the reporting of wait-related data and offering resources to local wait-reduction projects. However, these efforts had limited success; wait times for certain procedures decreased to some extent, but the overall wait list remained stubbornly constant. In 2001, the government reinstated activity-based funding, with bonuses for hospitals that cleared their wait lists. This move required sharp increases in healthcare spending over the years 2001–03, levelling off in 2004. By this point, wait times and lists had fallen markedly, and they do not appear to have changed greatly since.

Paying for activity—especially combined with paying for wait reduction—is a proven strategy for managing wait times. What can impede it from working is a lack of spare capacity to accommodate more activity. In such cases, there is also a need to increase capacity or improve the way it is used.

**Increasing capacity**

*Increasing capacity within the public system*

Cross-national comparisons suggest a consistent link between greater capacity (e.g. acute-care beds, physicians, overall spending) and shorter wait times. Proactive, targeted investment in public-sector capacity is an effective long-term strategy to control wait times. For instance, in the early 1990s, both Denmark and England anticipated an increase in demand for coronary revascularization, but only Denmark made a major investment in ORs, staff and equipment. Within a few years, Denmark’s procedure rates outstripped England, and wait times began to fall, whereas they rose in England. More recently, increasing capacity was a major plank of Manitoba (Canada)’s strategy to sustain higher volumes of hip and knee replacement surgery. Data from Manitoba’s largest region showed that, some months after the strategy began, the number of surgeries performed finally began to exceed the number of new additions to the list, allowing both the wait list and wait times to decline. While Manitoba experimented with several other wait-time strategies, this direct supply-side approach was the only one that showed a clear link to the subsequent improvement in waits.

*Obtaining capacity from abroad*

Sometimes, it is felt that the public sector cannot respond quickly enough to an immediate need for capacity. In such cases, some governments (Norway, Denmark, Ireland, England, Netherlands, Ontario [Canada]) have chosen to send patients abroad for treatment. This strategy has been found to be very costly, and has not shown a substantial impact on overall wait times. As well, two English studies...
found poorer outcomes for patients who had received surgery outside their own country or region.\textsuperscript{25,26} The authors cited the lack of follow-up provided by distant clinics, and also suggested that provider accountability was an issue.

**Obtaining capacity from the private sector**

Another short-term strategy involves buying capacity from the private sector. Although the private sector technically includes the non-profit sector, most of the literature in this area compares for-profit (private) with not-for-profit (public or non-profit) delivery. Unless otherwise indicated, the following discussion will use ‘private’ to mean for-profit.

Existing research does not indicate whether the purchase of private capacity has made a \textit{major} contribution to any country’s wait reduction. A 2003 OECD report noted that, while many countries (England, New Zealand, Spain, Australia, Denmark, Ireland, Sweden) had applied this policy, there was a lack of information about its effectiveness.\textsuperscript{1} More recently, the English government has touted private-sector contracts as a prominent element of its wait-reduction strategy.\textsuperscript{13} However, in practice, the extra capacity bought from the private sector has accounted for less than 1\% of elective operations (2003–2008), and there is ‘as yet no evidence of its impact on waiting times’ (p. 172).\textsuperscript{27} In Sweden, wait-time problems have spurred an increasing emphasis on private clinics, which now provide a significant minority of care; however, the impacts of this strategy are unclear, and long waits remain a major concern.\textsuperscript{28}

On the other hand, there are case examples in which private-sector capacity, bought to fill some pressing need, has helped to reduce waits. In such cases, the private provider is typically a small business that sets up a stand-alone clinic providing a defined, high-throughput service, often to lower risk patients.\textsuperscript{24,29} Such centres can facilitate the precise targeting and efficient use of resources. However, for-profit ownership is not a requirement; some such clinics are owned publicly or by non-profit organizations.\textsuperscript{30} There is little evidence that private delivery is \textit{inherently} more efficient; rather, private providers tend to choose the type of services that can be run most efficiently (and thus profitably).\textsuperscript{31,32} The primary advantage of private involvement appears to be speed and ease of setup. The private sector may be able to mobilize resources more quickly, and deploy them more flexibly, than the public or non-profit sector.\textsuperscript{32} For instance, when Ontario (Canada) struggled to achieve a sufficiently rapid increase in capacity for radiation therapy, a contract with a new private company permitted the treatment of 1000 additional patients per year, significantly reducing wait times.\textsuperscript{24} The company actually relied on a non-profit hospital’s spare capacity (location and equipment); however, in its ability to recruit
new staff and pay them a generous bonus for working evenings, it succeeded where the non-profit sector had failed. In explaining the service’s success, the CEO also cited its organization as a stand-alone entity (rather than a part of a complex and already overburdened system) and intensive efforts to improve the efficiency of service design. In an epilogue to this story, the Ontario government continued its efforts to mobilize public capacity and, after 2 years, decided the private clinic was no longer needed. The decision appears to have had some practical basis (the most recent data suggest that wait times continued to fall) but also reflected public concern about the potential risks of private involvement in health care. (By way of comparison, the neighbouring province of Manitoba found a different way to address concerns about the private ownership of a high-volume surgical centre: the government bought it out.)

The risks of private delivery are genuine, especially when the owner is a large corporation that must deliver a profit to its shareholders. A systematic review and meta-analysis found that, compared with non-profit hospitals, for-profit hospitals had higher mortality rates as well as higher costs (adjusting for patient characteristics and, where possible, hospital characteristics such as teaching status). The market provides a strong temptation to skimp on quality in order to cut costs, and to divert resources from patient care into profits. Such tendencies are hardest to prevent where care delivery is complex and involves multiple, difficult-to-observe inputs (e.g. in hospitals and long-term care homes). They are less of an issue when a small company is contracted to provide a simple, easy-to-monitor service (e.g. laboratory tests)—as long as the monitoring does occur. Private providers also have a tendency to ‘cherry-pick’ healthier patients, leaving the public system to provide for the sicker ones. This is not necessarily a problem (indeed, it might be an essential part of running a predictable, high-throughput service) as long as the provider’s payment reflects the cost of the population actually treated, and not—as often occurs—the average patient. Despite these known risks, there is a dearth of research on the costs and quality of contracted-out elective services, in part because monitoring systems are seldom in place.

It is worthwhile to remember that contracting with private providers is not synonymous with bringing the free market into health care. Firstly, it is possible for governments to introduce market forces (in particular, competition among providers) without any private ownership. Secondly, turning private capacity into reduced wait times requires considerable government intervention. Private companies are unlikely to brave the healthcare market’s high entry and exit costs unless they have a guaranteed revenue stream, which often comes from the government. (The possibility of generating revenue from privately
insured patients will be discussed in the next section.) The government may even have to actively direct patients to the private service. In an English pilot project, the government bought capacity from new independent (private) treatment centres, and a central coordinator invited long-waiting patients to have surgery there. As a result, surgical activity increased and wait times fell. However, when the government subsequently paid for more independent treatment centres, these frequently did not attract enough patients to use their capacity. (Interestingly, the government’s response was to fund yet more centres in the hopes of spurring competition, rather than to introduce a coordinator.) Finally, tight contracts and careful monitoring are an essential (and not cheap) means to ensure that a company meets quality standards and refrains from poaching staff from the public system. If a government is willing to do all these things, then buying some types of private capacity may be a viable option to meet a shortfall in treatment volumes. However, as the OECD report noted, ‘in the medium to long term, it may well be cheaper to expand activity by expanding public capacity’ (p. 45).

Encouraging private capacity that is privately financed

Although public spending plays the dominant role in most OECD countries, most countries also have a role for private health insurance (PHI). However, the nature of this role varies greatly by country. Some countries (e.g. Germany, the Netherlands, Switzerland), feature primary/substitute PHI: either everyone has private insurance, or some patients have private and others public insurance, but not both. Other countries (e.g. Austria, Canada, France) allow complementary/ supplementary PHI, covering fees and/or services that are not covered by public insurance. The debate around whether PHI can reduce waits typically concerns duplicate PHI, which covers the same patients and services as public insurance. Duplicate PHI plays a major role in Australia and Ireland, and a lesser role in other countries (e.g. New Zealand, UK).

The promotion of PHI is often mistakenly classified as a demand-side strategy. In fact, it does not seek to reduce total demand, but to move demand from the public to the private sector. If we imagine for a moment that the nationwide supply of treatment remains the same, then moving around demand cannot reduce population waits. The assumption behind PHI promotion is that the supply of care will not remain the same. Rather, it is expected that when more patients are able to pay for their own treatment, this will call for an increase in the supply of private treatment, and there will ultimately be more treatment to go around. PHI promotion is therefore more accurately described as a supply-side strategy.
Cross-sectional studies suggest that, if anything, duplicate PHI (or a high level of local private activity or PHI), is associated with longer wait times.\textsuperscript{1,40–42} However, wait times can vary greatly between countries with similar levels of PHI coverage; for instance, a 2004 OECD report observed that Australia had markedly shorter wait times than Ireland.\textsuperscript{39} The authors suggested that the key was private-sector capacity: Australia had an active private hospital sector that contributed to overall capacity, while in Ireland, most private treatments were delivered in public hospitals. (It is worth noting that Australia also had a greater supply of specialist physicians, a type of capacity that the private sector cannot create.) In 2001, the Irish Health Strategy noted that private practice was exacerbating public wait times, and suggested measures to reduce the proportion of specialist hours and hospital resources consumed by private patients.\textsuperscript{1} Ireland has since reported large reductions in wait times, which it credits to a strategy of directly buying treatments from private hospitals.\textsuperscript{43}

The problem of privately financed treatment consuming public resources is not unique to Ireland. Many countries (e.g. Australia, England, Finland, Italy, New Zealand, Spain) allow physicians to practice in both the public and private sectors, earning higher payments in the latter. This arrangement gives physicians an obvious incentive to devote their hours to private patients—and even to keep their public wait lists long in order to steer more patients into their private practice.\textsuperscript{1,39}

Australia provides a unique case study of the deliberate promotion of PHI as a wait-reduction strategy. Australia introduced universal public insurance in 1984, but maintained a thriving market for duplicate PHI. However, in the 1990s, the proportion of citizens with PHI declined. Apparently, most Australians were content to use the public system, and did not consider PHI good value for money unless they anticipated significant health needs.\textsuperscript{44} Although private treatment activity kept expanding, PHI companies found themselves losing revenue as a result of insuring sicker patients.\textsuperscript{31,44} To restore the sector’s profitability, the government introduced a package of measures to encourage PHI uptake. A limited-time offer of special pricing for lifetime coverage had the clearest impact, although its effect may have been facilitated by other measures—notably, a 30% rebate on PHI premiums, as well as an aggressive advertising campaign (perhaps the only one that a government has ever run to undermine confidence in its own health system).\textsuperscript{31,45} The government argued that bolstering PHI would reduce pressure on the public system, decreasing wait lists/times for public care.

Between 1999 and 2001, the proportion of Australians with PHI rose from 31 to 45%, and the increase in private treatment accelerated.\textsuperscript{31}
Some early analyses suggested that there had been a corresponding decrease in public wait times or lists.\textsuperscript{1,46,47} However, these tentative conclusions were later refuted—in one case, by the same author; in another, by longer-term analysis of the same data.\textsuperscript{13,44,48,49} Any short-term changes appeared to have been either continuations of previous trends or temporary fluctuations (sometimes with a questionable link to the timing of the intervention). In the end, there was no evidence that PHI promotion reduced either waits or costs in the public system. It did, however, cost billions of dollars that could have been spent in the public system.\textsuperscript{45,50} (In 2001, the amount that PHI companies received through government subsidy was more than double the amount they paid out in benefits.\textsuperscript{44}).

Why did the increase in PHI fail to reduce pressure on the public system? Analysts noted that the new patients and services absorbed by PHI had not been a great source of pressure in the first place. The growth in privately financed activity tended to involve younger, lower risk patients requiring shorter, less complex, higher-profit procedures (e.g. day surgery), leaving the labour intensive and costly treatments to the public system.\textsuperscript{45,48} Rather than shifting demand from the public to private sector, the rise in PHI may have fuelled new demand—for the types of services that were profitable for private hospitals.\textsuperscript{31}

A major criticism of PHI is that it is a regressive form of funding. Contributions are not income adjusted, and the rich are more likely to be able to afford private insurance, as well as any applicable co-payments.\textsuperscript{31,44} From an equity perspective, a move towards private financing can only be justified if it also benefits patients who rely on the public system. However, the available evidence suggests that it does not. Private financing does not automatically translate into greater capacity, and when it does, this capacity may not be deployed in ways that bring down the wait list. Moreover, any new supply is distributed on the basis of ability to pay, not clinical need. In Australia, where more than half the elective surgeries are now privately financed, the rate of elective surgery rises with socioeconomic advantage—the opposite of what one would expect if treatment were distributed according to need.\textsuperscript{51} PHI promotion remains an indirect, inequitable and potentially very expensive way to increase the supply of treatment—something that can be achieved much more efficiently through other means.

Using existing capacity more efficiently

There is a strong rationale for redesigning healthcare delivery in order to make the most of existing capacity. The literature suggests that inefficiencies—such as unduly complex booking processes, unnecessary steps, avoidable delays, ‘traffic jams’ and poor use of human or physical resources—abound in health care, and can create long queues even
where capacity is sufficient to meet demand. Potential solutions may include pooling wait lists, streamlining the patient journey, consolidating services (e.g. separating elective from emergency surgery, creating free-standing clinics or ‘one-stop shops’), maximizing healthcare professionals’ scope of practice and other measures. However, despite a wealth of promising case studies, there is a lack of high-quality research on the effectiveness of redesign initiatives (apart from certain clear-cut interventions such as promoting day surgery). Even high-profile, nationally supported initiatives may not be thoroughly evaluated. For instance, Australia’s National Demonstration Hospitals Programme was found to create certain efficiencies, but its effect on wait times was never measured.

Past reviews have concluded that increased efficiency does contribute to reducing wait times, but have found it difficult to pinpoint which interventions have had what degree of impact. A complicating factor is that not every change introduced in the name of efficiency actually promotes efficiency. Poorly conceived initiatives can make processes even more convoluted, add unproductive administrative tasks and create new detours and delays for patients. Some projects billed as redesign actually depend on extra work or extra staffing that cannot be sustained. At the policy level, it is not difficult to promote improvement projects (e.g. by funding them), but it is difficult to promote projects that actually improve things. Perhaps most difficult is to ensure that local organizations undertake the thorough, whole-system analysis that is necessary to correctly diagnose the problem and devise an appropriate solution. Some countries have made significant efforts to disseminate and support best practices (most notably England, through the NHS Modernisation Agency/Institute for Innovation and Improvement). However, although these endeavours have shown some local impacts, it is difficult to determine how much they have affected wait times at the national level.

Given the evidence that poorly designed systems can waste significant amounts of time and resources, re-tooling such systems would seem a highly desirable way of tackling wait times. However, there is a need for further research on both the interventions and the knowledge translation strategies that could enable this strategy to have a major, large-scale impact.

Redistributing patients through choice
One relatively common strategy to match capacity and demand is to give patients a choice of providers, on the assumption that they will choose the ones with shorter wait lists. Studies in Denmark, Sweden and the Netherlands suggested some limitations to this strategy: a minority of patients (as low as 5% in Denmark) exercised their right to
choose, and choices were often based on factors other than wait time (e.g. reputation, doctor’s opinion).\textsuperscript{1,57,58} The strategy also raised equity concerns, as middle-class, younger and urban patients were more likely to take up choice.\textsuperscript{59} More recently, the London Patient Choice Project successfully reduced wait times without creating inequalities in access.\textsuperscript{29,37} However, the project was arguably misnamed, as it actually involved buying a significant amount of treatment capacity, enlisting a central coordinator to identify long-waiting patients, and—only then—asking these patients if they wished to switch provider. The most crucial ingredients seemed to be central purchasing and coordination, while patients’ involvement seems better described as giving consent than as actively shopping for providers. On the strength of this pilot project, the English NHS undertook a national roll-out of patient choice, but without the central purchasing or coordination. ‘Choose & Book’ aims to offer patients a choice of at least four hospitals, and of their appointment date and time (which might help to promote patients’ convenience and decrease no-shows).\textsuperscript{10} However, it is difficult to evaluate this initiative’s effects, in part because it is unclear how many patients are actually being offered these choices, especially choice of date and time.\textsuperscript{59} Given that English wait times were already falling when the scheme was introduced, careful analysis will be needed to determine whether it made its own contribution to this trend.

Patient choice may be considered a desirable thing in itself (although it should be noted that patients seem to place more value on choosing their treatment than on choosing their provider).\textsuperscript{57} In theory, it could also spur providers to improve their services (although there is weak evidence that this occurs to a significant extent in practice).\textsuperscript{57,60} However, as means of redistributing patients, patient choice schemes have not always delivered—and seem unlikely to be as efficient as a pooled wait list.

\textit{Demand-side strategies}

The idea of eliminating wait times by decreasing demand is somewhat problematic. It is difficult to change the number of patients who need or could benefit from treatment. The prevention of illness, and/or the effective management of illness within primary care, could be ways to reduce future needs for hospital treatment or surgery.\textsuperscript{6} However, there is a lack of research on how particular prevention strategies might affect elective wait times. The most prominent demand-side strategies do not actually reduce the need or desire for treatment, but adjust the number of patients eligible for treatment to match the available supply. In other words, they replace rationing by queuing with rationing by
prioritization. This practice inevitably raises questions of ethics and equity over and above questions of effectiveness and cost-effectiveness. It may not be surprising, then, that demand-side strategies have been less widely adopted than supply-side strategies.

New Zealand remains the only country to have fully implemented a system of rationing by prioritization. Patients’ Clinical Priority Assessment Criteria scores determine whether they will be booked for treatment, given certainty of treatment within 6 months, or removed from the list (‘active care and review’). The implementation of this system was fraught with difficulties (e.g. lack of evidence for the reliability and validity of scoring systems, obstacles to developing nationally consistent prioritization instruments or cut-off levels, provider and public resistance to rationing). Once the system was in place, wait times indeed fell markedly—for those patients who were counted as belonging to the wait list. Since funding was not adequate to cover all the operations deemed necessary, there developed a ‘residual waiting list’ of patients who met the clinical but not the financial threshold for treatment. Further reforms eliminated this list, making such patients (and their waits) invisible. Equally invisible were patients who failed to meet the clinical threshold but might have still benefited from surgery. Hospitals also ‘culled’ the official wait list when they found themselves unable to treat all of its members within 6 months; in 2006, more than 35,000 patients who had originally been given ‘certainty’ were removed and sent back to their family doctor. Meanwhile, controversy about the assessment criteria continued (e.g. the general surgery criteria were abandoned when it was discovered that these gave higher priority to benign than malignant tumours).

A less aggressive strategy involves prioritization without rationing. Canada and Italy have invested significantly in developing prioritization criteria, but their stated purpose (at least currently) is to influence the order in which patients are treated. Such re-ordering may serve an equity goal, ensuring shorter waits for those patients with greatest need. It is harder to see how it could reduce overall wait times; in fact, prioritization or triage schemes can reduce efficiency by creating separate queues.

A third strategy involves attempting to eliminate not all ‘lower priority’ care, but merely inappropriate care. In theory, abandoning unnecessary testing or treatment is a highly sensible means of reducing wait times. A large body of research has found that efforts to promote clinical practice guidelines (e.g. dissemination, audit and feedback, reminders) do have an impact—albeit typically a modest one—on clinician behaviour. This literature includes interventions aimed at reducing test ordering or, more rarely, certain surgical procedures. However, there is a lack of information about these interventions’
effects on wait times. The present review found only two relevant studies that made wait times a focus. One English region used a multi-faceted approach to encourage physicians to limit their use of operative procedures thought to be of limited clinical benefit.\textsuperscript{65} Rates of certain procedures did fall somewhat, as did waiting lists; however, these reductions were in line with previous trends, making it difficult to tell whether the intervention was responsible. In a Canadian pilot study, a computerized decision-support system was implemented to promote the appropriate ordering of diagnostic imaging tests (e.g. CT, MRI). The intervention’s major purpose was to reduce wait times; however, an evaluation found that its impact on clinician behaviour was so small that any change in wait times would have been miniscule.\textsuperscript{66}

There is a need for continued investigation of strategies to promote appropriate care. However, it should be kept in mind that improving the appropriateness of care does not necessarily equate to reducing demand. Overall, audits of major surgical procedures seem as likely to detect underuse as overuse.\textsuperscript{67} Moreover, regions (or time periods) with very different rates of surgery may have a similar proportion of inappropriate surgeries.\textsuperscript{66} These findings make it difficult to predict how large-scale efforts to promote appropriateness might affect demand—or whether it is possible to design an impactful demand-side strategy while steering clear of rationing.

\textit{Global strategies to influence local organizations}

The idea of inducing organizations or providers to reduce wait times locally is not inherently problematic. Some of the solutions to long waits (e.g. redesign of inefficient services) would seem to be best pursued at the local level. However, it can be difficult to shape the actions of multiple local providers.

\textbf{Targets and guarantees}

One strategy with a strong record involves national wait-time targets, backed up by clear incentives for meeting them. England has set progressively lower targets for maximum wait times, and enforced these through close monitoring and financial incentives as well as sanctions (e.g. firing of CEOs). Although some have decried the approach as akin to Stalinism, there is solid evidence that it has reduced waiting.\textsuperscript{68} Studies have documented sharp declines in English wait times over the intervention period, with no contemporaneous declines in the neighbouring UK countries of Scotland and Wales.\textsuperscript{68–72} Initially, English targets were often achieved by prioritizing long waiters, addressing the problem of long waiting but not reducing waits for the majority of
As the targets became progressively more challenging, however, their effects began to reach patients in the middle as well as the top end of the distribution, and ‘time waited’ at last began to fall. It is widely agreed that a sustained strategy of ‘tough central management...supported by extra cash’ (Harrison and Appleby, 2009, p. 173) has been behind the English success.

In contrast, targets without aggressive performance management appear to have little effect. For instance, both Sweden and Denmark set maximum waiting time guarantees in the 1990s, but abandoned them when—despite some temporary improvement in wait times—the targets were not met. (Sweden established a new guarantee in 2005, apparently with limited success.) Norway and Wales have had similarly disappointing experiences. The ‘guarantees’ in question were non-binding, and there were few incentives for physicians to meet them.

Target setting often involves some attempt to determine the maximum medically acceptable wait time for a given procedure. However, targets may be defined in a variety of ways (e.g. maximum, 90th percentile or median wait time), and may be global or specific (e.g. different targets for different conditions or classes of urgency). From a pragmatic perspective, initial targets should be lenient enough to be achievable, but challenging enough to provoke change.

Whereas most of Canada’s provinces have set wait time guarantees, the procedure(s) covered are typically those for which waits are already short. A few provinces have spent millions of dollars to enshrine guarantees that were already being met for up to 98% of patients.

Meeting challenging targets may require substantial additional funding (as England offered through the 2000s, especially in 2001–04). However, the risks of short-term funding should not be forgotten. In Sweden, targets seemed to be working in year 1992–93, when the programme was supported by much additional funding, but compliance evaporated when the funding ran out.

One key problem with targets is that providers often resist them, perceiving them as a threat to clinical freedom. This may not be an insurmountable barrier to implementation, but it is not desirable, and may promote an environment of mistrust in which ‘gaming’ is more likely. Ontario, whose wait-time strategy has been compared with England’s, has reportedly emphasized the stakeholder and clinician engagement over command and control. However, there is not yet sufficient evidence to assess the contribution of this collaborative approach to the province’s progress on wait times. At the local level, however, there is evidence that clinician engagement facilitates the implementation of wait-reduction strategies.

The most fundamental problem with targets is the difficulty of influencing how organizations meet them. Some local providers find ways
to use capacity more efficiently, while others focus on reducing demand (e.g. by narrowing their criteria for treatment and/or the range of services provided). Demand management is not necessarily a negative thing, but raises many of the same ethical issues at the local as at the national level. Most problematic are such target-meeting strategies as the following:

- **Gaming** (manipulating the data, for instance by inappropriately suspending patients from the wait list and re-setting their waits to zero). Research has suggested that gaming accounts for some (although by no means most) of the observed reduction in English waits, and calls for improved auditing continue.

- **Letting unmeasured parts of the wait grow long.** When targets focus on only a portion of the wait (e.g. from GP to specialist visit and/or from decision to treatment), other portions are free to rise (e.g. waits for diagnostic testing, or specialist-to-specialist referrals) and the total wait may be little changed. The English NHS has recently begun to address ‘hidden waits’ by setting targets for the entire patient journey.

- **Treating patients out of clinical order.** Targets do affect the timing of treatment; the distribution of wait times tends to ‘spike’ just before the designated maximum wait, reflecting organizations’ push to treat patients who were about to breach the target. All things being equal, a focus on long-waiters can mean longer waits for medium waiters. However, despite widespread fears to the contrary, the available English research has not found evidence of any significant distortion in clinical prioritization (e.g. delays for urgent patients).

- **Reducing waits for some patients at the expense of others.** When targets cover only certain types of patients, other patients’ waits may increase. Such redistribution may or may not be acceptable, depending on the risks and benefits to the different types of patients. It should also be noted that efforts to increase the supply of priority treatments do not necessarily provoke a decrease in non-priority treatments.

- **Sacrificing other areas, such as quality of care.** Contrary to fears that the English target regime would lead to a deterioration of quality, two studies have found either stability or improvement in broad measures of patient outcomes. However, for a number of years, the English targets were enforced as part of a ‘star system’ that offered points for quality-related as well as wait-related achievements. The star system was later abandoned, in part due to serious concerns about the reliability and validity of the quality indicators. However, despite the system’s flaws, the concurrent focus might have helped to prevent wait-time targets from being achieved at the expense of quality.

**Targets versus internal markets**

In general, it does not appear that England’s wait-time targets have been achieved for some patients at the expense of others. This finding
contrasts with the results of an earlier English intervention, the internal market. In 1991, the government split healthcare actors into purchasers and providers of services, and strongly encouraged competition among hospitals. Hospitals in more competitive markets (geographic areas where patients would have been able to access more hospitals) were more likely to reduce their elective waits over this period. However, the quality of their emergency care appeared to suffer, as indicated by higher death rates for emergency AMI admissions. When 1997 brought a new government that discouraged competition, these hospitals reduced their volumes of elective surgery, and also reduced their AMI mortality rates. Another study examined the internal market in relation to GP fundholding, a scheme in which GPs received a budget to directly buy procedures from hospitals. Participating GPs were able to secure shorter waits for their patients—but only for procedures that were covered by the fundholding scheme. For any given fundholder, the burden of waiting was shifted from some patients to others, so that on average, fundholders’ patients enjoyed no advantage over non-fundholders’ patients. The disappointing results of the internal market may have stemmed from certain design flaws (e.g. lack of accessible information about hospital performance in areas other than wait times, application of fundholding to a limited group of patients and procedures, etc.). As well, it may simply be more difficult to achieve desired practices (and discourage undesired ones) through the indirect approach of an internal market than through direct incentives.

Over the years, England’s Labour government has changed its attitude towards NHS marketization, coming to advocate increased choice and competition. Ironically, however, there is a lack of evidence that the recent market-oriented policies have affected wait times. What appears to have had the greatest impact is the command-and-control approach that the government embarked on in 2000, but from which it has been trying to distance itself rhetorically ever since.

**Refining target policies**

Target-setting plus enforcement has emerged as a powerful policy lever to reduce wait times. That said, there is room to improve target policies to make them more effective for patients and acceptable to providers, and to avoid unwanted side effects. Involving providers more closely in the design and implementation of targets, introducing some flexibility into the system (e.g. requiring that a target be met for 95% rather than 100% of patients), and promoting fairness through auditing are all worthwhile suggestions to consider. However, if efforts to make the policy more palatable include easing up on central management and strong incentives, it is likely that targets simply will not work.
Information and reporting
Discussions of wait-list strategies often highlight information management, measurement and monitoring. There is little question that these things can provide an essential foundation for wait-reduction efforts. However, the foundation should not be mistaken for the finished building; collecting and reporting data are not enough to reduce wait times. There is a lack of evidence that mere publication of wait time data has sufficient impact on providers (e.g. by motivating them to reduce wait times) or patients (e.g. by influencing their choice of providers) to yield a noticeable change in wait times. However, publicly reported data can contribute to a strategy in which the figures are used to enforce targets or administer incentives.

Discussion
This paper has reviewed the major policy options for tackling elective wait times. As shown in Figure 2, some of these options act fairly directly on supply, demand or local organizations’ behaviour. Others

Fig. 2 Theory of action and weight of evidence for policy interventions to reduce waits. Note: where an intervention could be classified in more than one way, its location reflects the mechanism of action that is currently best supported by evidence.
depend on a domino effect in which a series of factors must influence each other in predicted ways. The available evidence suggests that more direct strategies are more effective. Paying for treatment activity, buying capacity locally to support increased treatment and providing strong incentives for organizations to meet wait-time targets are demonstrated strategies for reducing wait times. There is also evidence that the use of existing capacity can often be greatly improved, and further research is urgently needed to determine how best to accomplish this. Limiting demand by expelling lower-priority patients from the wait list can also be an impactful strategy; however, it is ethically problematic.

In contrast, indirect strategies—for instance, depending on an internal market to provide the right incentives for wait reduction, on increased private financing to generate an adequate supply of needed care, on the reporting of wait-time information to encourage patients to redistribute themselves, or on unenforced guarantees to spur changes in provider behaviour—have a poor record. Governments may be tempted to try such approaches in order to evade the costs of directly increasing the supply of treatment, or the difficulties of enforcing targets and incentives. In the end, however, there are no shortcuts: successful wait-reduction entails ensuring that sufficient capacity exists, and applying sustained intervention to ensure that this capacity is well used. Direct approaches to wait-reduction are not easy; they may require significant financial investment (e.g. paying for activity, developing local capacity), strong regulation to prevent adverse effects (e.g. targets and incentives, buying capacity from the private sector), and/or tireless efforts to disseminate and support best practices (e.g. promoting efficient service design). However, indirect approaches, because of their limited effectiveness, often cost more than they save.

Wait times are not the only priority issue in health care, and wait-reduction must be balanced with other worthwhile goals. However, if a government is serious about reducing wait times, it must commit the necessary effort and resources to a well-organized, centrally administered strategy. In this respect, at least, there is no need to wait.

**Supplementary material**

Supplementary material is available at BRIMED Journal online.

**Acknowledgements**

I am most grateful to Melissa Raynard for her assistance with the literature search and reference list. I also thank Dr. Michael S. A. Kreindler.
Moffatt for his helpful comments, and Reena Kreindler for her editorial advice.

References

44 Richardson JR, Segal L. Private health insurance and the Pharmaceutical Benefits Scheme: how effective has recent government policy been? *Aust Health Rev* 2004;28:34–47.
46 Hanning B. Has the increase in private health insurance uptake affected the Victorian public hospital surgical waiting list? *Aust Health Rev* 2002;25:64–71.


