



MEMO: An Evidence-Based Wait Time Threshold

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PURPOSE

We reviewed studies of the effects of long wait times or of wait time targets in primary care and primary mental health care. Evidence on the outcomes of longer wait times has the potential to assist decision-makers in determining clinically reasonable wait time measures and targets.

BACKGROUND

In 2001, the Institute of Medicine's (IOM) Committee on the Quality of Health Care in America called for a redesign of the U.S. health care delivery system and appealed to all health care constituencies to commit to reducing delays as one of six specific aims for improvements.¹ Rather than cite evidence about the consequences of delays, the IOM report argues that "...timeliness is an important characteristic of any service and is a legitimate and valued focus of improvement in health care and other industries."

To this end, the Veterans Affairs health care system has collected data on wait times and tried to decrease primary and specialty wait times for established patients by using advanced access and priority access strategies, performance incentives panel management tools, telemedicine, co-location of primary care and mental health services, and other strategies²⁻⁵ From 2000-2004, primary care wait times for established patients fell dramatically, and performance on a wide variety of clinical measures improved.⁶ Between 2002 and 2010, the average wait time for a new primary care patient decreased from about 50 to 20 days.⁷ Still, in 2010, 10% of VA facilities had waits of more than 25 days for new primary care patients.⁷

Outside the VA system, waiting times for a first primary care appointment are seldom measured in the U.S. health care system. An exception is Massachusetts, where wait times came to attention after a statewide insurance mandate was passed in 2006. Since 2007, wait times in Massachusetts have been audited by survey research methods. In 2013, new patient wait times for internal medicine physicians and family practice physicians were 50 days and 39 days, respectively.⁸

CONSEQUENCES OF LONGER WAIT TIMES

Most research about the consequences of waiting lists focus on specialty and emergency services. Five types of consequences of waiting have been cited in policy discussions:

- *Effects on health outcomes.* Most research on wait times concerns patients waiting to see a cancer specialist, a surgeon, or an emergency room physician. In systematic reviews, longer wait times are associated with poor health outcomes for coronary artery bypass surgery and some emergency procedures. Evidence is mixed for orthopedic procedures; longer wait times did not increase pain for hip and knee surgery.⁹ No systematic reviews have evaluated the effect of waiting for a first-time primary care or mental health visit.*
- These studies may have little relevance to primary care, but may provide potentially important evidence about the unintended consequences of wait time targets. In the UK,

* A new Cochrane Review of waiting times in specialty care, which may take up these issues, is not yet available to us.



for example, average waiting times in the emergency room fell since a benchmark was implemented, but critics note two unexpected consequences. First, managers developed strategies to game the system. Second, the clinical impact would be negligible or negative if seeing a high proportion of patients within the target period took precedence over seeing patients at highest risk from complications.^{10,11} Gains in average wait times may even come at the expense of appropriate care for relatively urgent cases.

- *Effects on ambulatory sensitive conditions.* Hospitalization or poor outcomes of these conditions[†] are thought to be associated with barriers to access to care. However, only one study has tried to link them to waiting times for an initial appointment in primary care, and it had negative results.¹² Randomized trials of the effect of insurance coverage—notably the Oregon Health Insurance Experiment (2008 to present)—report on use of primary care services but not on primary care waiting times.
- *Effects on equal access to care.* Patients with fewer social connections or lower socioeconomic status wait longer, even in systems with no insurance barriers to care.¹³ Waiting lists may favor patients who know how to “work the system” or who have friends and family who can advocate for them.
- *Effects on public or patient satisfaction.* In many countries, long waiting lists, particularly for surgery, cancer, and other specialty services, have been a significant political issue since the 1990’s. In 2001, when the National Health Service in the U.K. set targets for waiting times, 284,000 patients had been waiting thirteen weeks or more for a first outpatient consultation with a primary care physician.¹⁴
- *Effect on Medicare enrollment among Veterans.* Waiting times can reduce demand for services. Faced with long waits, some patients will simply decide not to seek care or will seek care outside the VA system. For example, VA patients with diabetes seen in facilities with longer wait times tend to have fewer primary care visits than similar patients in less congested facilities.¹² An econometric analysis estimated that “a 10% increase in VA waiting times increases demand for Medigap insurance by 5%, implying that a representative patient would be indifferent between waiting an average of 5 more days for VA appointments and paying \$300 more in annual premium.”¹⁵

The effects of waiting lists are inherently difficult to study. Even when triage is not a formal part of the waiting list process, patients who are seen as having the greatest need may be given sooner appointments. As a result, in observational studies, patients with shorter waiting times often have the same or worse outcomes than patients who wait longer.^{16,17} Studies that find a positive association between longer waiting times and worse outcomes are also difficult to interpret. Usually, it is not possible to tease out whether the wait caused the outcomes, because longer waits may be associated with other problems in the delivery or quality of care that have stronger effects.

[†] Asthma, heart failure, hypertension, angina, diabetes, grand mal seizures and other epileptic convulsions, and chronic obstructive pulmonary diseases.



POLICIES TO REDUCE WAITING TIME

International comparisons indicate that levels of spending, beds, or physician supply do not explain which countries have longer waiting times.¹³ Table 1 summarizes the results of a comprehensive review of the effectiveness of wait-time policies in countries with relatively high GDP and health status. In most of these instances, the policies have been used to reduce waiting lists for specialty services, particularly surgery and cancer care, rather than for primary care.

Establishing wait time targets or benchmarks is the most commonly used strategy to reduce wait times.¹⁸ Targets have reduced waiting lists, particularly when they are combined with other approaches, but there is debate about whether the benefits outweigh the unintended consequences.^{10,11} As noted in the table, the main concern arises from the fact that the target wait time is usually the same for all patients regardless of acuity or need. Except for New Zealand, which uses a triage system to determine which patients should be prioritized for elective surgery based on their needs and ability to benefit,¹³ countries have not developed formal triage systems.

Because there is little evidence on which to base them, targets are most often set pragmatically: “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.”¹⁹

Except for triage (prioritization), the policies summarized in Table 1 take for granted that all patients want and need to be seen by a provider. Another approach is to substitute other types of encounters for face-to-face visits. The 2001 IOM report asserted that “much waiting today appears to result from the presumption that certain kinds of face-to-face encounters are required for patients to receive the help or interaction they require.”²¹ The IOM did not cite any evidence for this viewpoint, which could be relevant for patients on the waiting list who have an established source of primary care outside the VA and are enrolling to receive specific VHA services, such as a pharmacy benefit or a second opinion for surgery or specialty care, or who want VHA coverage as a backup in case they lose their private insurance.

STUDIES OF WAITING TIME AND OUTCOMES IN PRIMARY CARE PATIENTS

No studies have evaluated the association between wait times for a first appointment in primary care and outcomes of patients on the waiting list. No studies have evaluated the effect of primary care wait time targets on health outcomes in the VA system or elsewhere.

Retrospective, observational studies using VA utilization data of the association of “congestion” at a facility with outcomes of vulnerable, established patients have had mixed results.^{7,12,15-17,20-22} “Congestion” refers to longer waiting times across a wide variety of services, not among new enrollees. At best, these studies suggest that chronically ill, frail, elderly patients may have worse outcomes in VA facilities that are generally more congested across primary and specialty care clinics. This association could have many causes, from differences in access to or the quality of specialty services to differences in how well telephone care and related programs are implemented. It is impossible to say whether the association has any relevance to the effect of longer wait times on outcomes of patients waiting for a first primary care visit.



Table 1. Results of a comprehensive review of wait-time policies in 23 countries‡ (adapted from Siciliani, 2013)¹³

Policy	Examples	Conclusions
Setting waiting time targets and holding providers to account for achieving them (i.e., penalties or performance pay)	UK, Finland	<ol style="list-style-type: none"> 1. Effective, but unpopular with health professionals and difficult to sustain over time. 2. Penalties may incentivize “crowding-out,” that is, prioritizing lower-risk patients at the expense of sicker and higher-priority patient groups—in particular, follow-up visits and check-ups may be given lower priority than first-time visitors.
Setting waiting time targets and allowing patients to choose out-of-system providers if patients have to wait beyond the maximum time (“Choice” or “Vouchers”)	Portugal, Netherlands, Denmark, UK	<ol style="list-style-type: none"> 1. Most effective approach if accompanied by activity-based financing 2. Requires a unified information system on waiting times for all providers (public and private.)
Provide increased funding to providers to decrease waiting times (“Supply-side”)	Ireland, Spain, Australia, Portugal	Generally ineffective. “There is a short-term burst of funding that initially reduces waiting times, but then waiting times increase....”
Activity-based financing (i.e., capitation or payment per patient using some form case mix adjustment, e.g., DRGs)	Netherlands, Norway	May increase hospital productivity, but doesn’t necessarily change waiting times.
Shift demand to the private sector (for elective treatments)	Australia, Denmark	Ineffective.
Tools for prioritization (triage) for elective treatments.	New Zealand, Norway, Australia	<ol style="list-style-type: none"> 1. Somewhat effective, but requires evidence to support a clear clinical threshold in a valid and reliable manner. 2. May make little difference if triage is already occurring informally. 3. Politically infeasible in some countries as it is viewed as an explicit form of rationing.

Detailed Analysis

One of the VA studies measured the association between a facility’s average next available appointment for 51 different appointment types and outcomes of *established* (not new) patients

‡ Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain, Sweden, the United Kingdom (divided into England, Scotland, Wales and Northern Ireland), Norway, Australia, Canada, New Zealand and the United States.



seen in geriatrics clinics.^{16,17} The data were collected in the years 2000-2001. Most patients were age 65 and over and 98% were male. Seventy-two percent had at least one medical comorbidity, such as hypertension, heart failure, peripheral vascular disease, or chronic pulmonary disease.

The main findings were (1) frail, elderly patients seen in facilities with an average wait time > 30 days were 21% more likely to die in a six month follow-up period.¹⁶ and (2) average wait times > 29 days were weakly associated with an increased risk of ambulatory care sensitive condition (ACSC) hospitalizations.¹⁷ However, the relationship with hospitalizations was inconsistent: for example, waiting times between 34.5 and 37.5 days were associated with 24 more hospitalizations per 10,000 patients, but longer wait times than that were associated with smaller risks and some were not statistically significant.

The next study focused on a narrower group of *established* primary care patients—those with diabetes. Longer wait times in primary care had no significant effect on health outcomes. Patients seen at facilities that had shorter vs. longer waits for primary care had similar risks of mortality (1.01; $P=0.52$), acute myocardial infarction (1.02; $P=0.31$), stroke (1.01; $P=0.47$), and ACSC hospitalization (1.00; $P=0.88$).¹² A variety of subgroup analyses provided weak evidence that longer wait times were associated with higher mortality in diabetes patients older than 70 years who had complications such as coronary disease, heart failure, or nephropathy.

STUDIES OF THE EFFECT OF DELAYS IN MENTAL HEALTH

For mental health, the VHA standard has been that Veterans seeking mental health care should have a full evaluation within 14 days. A 2012 OIG report found that the VHA's Create Date metric for first-time patient access, developed in 2007, did not measure wait times accurately. The VHA reported that 95% of patients met the standard, but the OIG's audit found that the VA provided approximately 49% (184,000) of the evaluations within 14 days. For the remaining patients, time to appointment averaged 50 days. The OIG report did not come to a conclusion regarding the best measure going forward.²³ There are no VA studies of the effect of wait time for a first mental health appointment on patient outcomes.

Outside the VA, a delay in scheduling a first treatment session for mental health²⁴ or for drug and alcohol treatment²⁵ was associated with a higher risk of patient no-show. Disregarding whether a no-show is an indicator of harm to the individual patient, higher rates of no-shows reduce the efficiency of clinical services, in effect making the wait longer for other patients.

A 2005 study conducted at Johns Hopkins University found a 12 percent increase in the odds of a patient canceling or not showing up to an appointment for every additional day between initial contact with an intake specialist and an appointment (OR=1.12; 95% CI: 1.09, 1.15) after adjusting for sex, program (adult or adolescent and child), and age.²⁴ The effect was most marked in the first week after a patient requested enrollment. There were no data on whether the patients eventually sought other sources of care or suffered adverse health outcomes from longer delays or from the no-show.



CHOICE OF MEASURE FOR WAIT TIMES

Currently, there is no universally accepted definition of wait time.²⁶ Measuring wait time is complex. Individual health status, facility case-mix and quality, national seasonal or time trends, and susceptibility to gaming can influence the reliability of wait time measures.

It is desirable to set a performance target in a way that, if the target is met, outcomes are expected to be better. This aim is difficult to achieve because there are so few data relating wait times to outcomes. For new enrollees, the most straightforward measure is the actual time from a patient's first contact with the VA to his or her first appointment. However, as mentioned above, because sicker patients are given priority, shorter individual wait times may be associated with *worse* outcomes and lower patient satisfaction. Also, this approach does not take account of the preferences of patients who do not want the FNA appointment, or the needs of those who need to be seen sooner than the FNA. Finally, the effect of new patient wait times on outcomes should not be studied in isolation because of "crowding out" (scheduling new patients at the expense of access for established patients.) Studies validating a measure of wait times for new patients must take account of the possible adverse effects on established patients. A strength of the previous VA studies is that they focus on the outcomes of the most vulnerable established patients.

Table 2 summarizes VA wait time measures.²² As shown in the "Calculations" column, wait times measures give different answers. For example, while the average for FNA was 20 days, the average using the retrospective desired date method was only 5 days. A patient's "wait time" can vary depending on whether it is based on self-reported responses of patients or physicians or administrative data; whether it uses individual or facility-level data; whether it uses the mean or median; when the wait time counting begins; whether it counts weekends and holidays, how it accounts for triaging and patient preferences for specific providers or desired dates;^{21,22} and what appointment types meet the measure.

In their studies of primary care, Prentice and Pizer used the *facility-level lagged 3-month average number of days that new patients spent waiting until the first next available appointment with a VA primary care doctor (FNA)*. In a more recent study using survey data, they found that, for new patients, the FNA measure and the retrospective and prospective Create Date-based measures were associated with patient satisfaction²² Based on these findings and those of their other studies using the FNA, they recommend using the facility-level average FNA and facility-level measures based on the date the appointment was created, which are automatically captured by the scheduling system and do not rely on scheduler entry.

The FNA may overestimate availability in some cases. For example, if a patient cancels, the FNA might be a few days, even though the 2nd next available appointment is several weeks or months. This problem can be minimized if the facility-level 2nd and 3rd next available appointments are also measured, and if the scheduling system clearly documents whether the patient was offered the FNA and, if that is declined, the second available appointment.



Table 2: VHA wait time measures (adapted from Prentice, 2014)²²

Measure	Calculation*	Strengths and Weaknesses
First next available appointment (FNA)	FNA – appointment request date 20 days (17.24-22.14)	<ul style="list-style-type: none"> • Captured by scheduling system • Associated with some health outcomes and patient satisfaction • Does not measure how long patients actually wait • May overestimate availability
Create date (CD), retrospective	Completed appointment date – date appointment was created 18 days (16-20)	<ul style="list-style-type: none"> • Captured by scheduling system • Facility-level measure is associated with some health outcomes and patient satisfaction • Does not take patient preference into account • Individual-level measure is confounded by severity
Create date (CD), prospective	Scheduled appointment date – date appointment was created 31 days (27-35)	<ul style="list-style-type: none"> • Captured by scheduling system • Facility-level measure is associated with some health outcomes and patient satisfaction • Includes all scheduled appointments rather than only completed appointments • Individual-level measure is confounded by severity
Desired date (DD), retrospective	Completed appointment date – date desired by the patient 5 days (3-6)	<ul style="list-style-type: none"> • Not automatically captured by scheduling system; subject to clerk interpretation • If the patient cancels and does not reschedule, the appointment is never included in calculations
Desired date (DD), prospective	Scheduled appointment date – DD 16 days (12-19)	<ul style="list-style-type: none"> • Not automatically captured by scheduling system; subject to clerk interpretation • Includes all scheduled appointments rather than only completed appointments

* This column shows the formula to calculate the measure, and the mean (1st-3rd quartiles) in a large VA sample.²² Another publication had similar findings for new patients.²¹

SELECTION OF APPOINTMENT TYPE FOR A WAIT TIME MEASURE

A wait time target is based on a definition of what types of appointment or encounter constitute a new patient visit. Currently, only a face-to-face visit with a primary care provider—typically 30 to 60 minutes long—constitutes establishment of primary care.

As mentioned above, the 2001 IOM report encouraged health systems to challenge their assumptions about what types of encounters are needed to meet patients' needs. Alternatives include a shorter face-to-face initial visit; a pre-appointment interview with a physician or advanced practice nurse to assess the degree of urgency for primary care and for prescription renewals; and designation of a specialist as primary for certain categories of patients.



Other patients plan to continue their continuity care outside the VHA but want to get VHA pharmacy benefits; have one or no known medical problems; or have comorbid mental health problems. Others have a condition requiring specialty care or specialty drugs (for example, rheumatoid arthritis on biologic therapy; cancer; transplant patients) that primary care providers cannot prescribe and for which interruption of therapy would be dangerous. It is not clear how well establishing primary care meets these patients' needs, particularly if waiting for a primary care appointment lengthens the time until they see the appropriate specialist.

The lack of evidence about the reasons for applying and the kind of appointment patients enrolling in VA care want or need is a critical information gap. A survey of patients on the waiting list could help VA decide whether a variety of initial visit services should be offered to new patients and count as initiation of primary care.

OUTSIDE POLICIES ON WAIT TIMES

We found targets for wait times for primary care and mental health services from outside organizations (Tables 3 and 4, respectively), but it was unclear on what evidence the targets were based. Also, none of the organizations differentiated between wait time targets for established patients versus targets for patients without a primary care provider looking to initiate care. These two distinct populations may have very different needs.

Advanced access is a widespread policy for reducing wait times for established patients. The Wait Time Alliance (representing Canadian professional organizations)²⁷ and the Institute for Healthcare Improvement promote same-day access for established primary care patients.²⁸ A 2011 systematic review of 24 studies found that advanced access improved wait times, but effects on patient satisfaction were unclear, and data about clinical outcomes were lacking.²⁹

Table 3: Primary Care Wait Time Targets or Guarantees

Country	Organization	Setting	Target/Guarantee
UK	National Institute for Health and Care Excellence (NICE)	Primary Care	None stated
UK	National Health Service (NHS)	Primary Care	None stated
Canada	Wait Time Alliance (WTA)	Primary Care (Family Doctors)	Same-day access
US	Institute for Healthcare Improvement (IHI)	Primary Care	Number of days to third next available appointment to zero days (same day)
Sweden	Federation of City Councils	Primary Care	Within seven days



Examples of wait time targets for mental health or psychiatric care come from NICE and the WTA (Table 4). NICE sets a benchmark of 3 weeks between referral and a face-to-face appointment while the WTA subdivides their standard by the urgency of the appointment and the provider being seen. For a family practitioner, urgent psychiatric care should take place within 24 hours while a scheduled appointment can take place within one week. For a referral to a psychiatrist, urgent psychiatric care should take place within one to two weeks while a scheduled appointment can take place within two to four weeks.

Table 4: Mental Health/Psychiatric Care Wait Time Standards

Country	Organization	Setting	Standard/Benchmark
UK	National Institute for Health and Care Excellence (NICE)	Mental Health	“...people with a non-acute referral to mental health services have a face-to-face appointment that takes places within 3 weeks of referral (or within 2 weeks of any change of date).”
Canada	Wait Time Alliance (WTA)	Psychiatric Care	Family Practitioner: as appropriate (emergency), within 24 hrs (urgent), within 1 wk (scheduled) Referral to psychiatrist: within 24 hrs (emergency), within 1-2 wks (urgent), within 2-4 wks (scheduled)

Like the VA, the British, Canadian, New Zealand, and Australian national health services publish audits of wait times that indicate whether practices are meeting the target, but to our knowledge they have not attempted to link achievement of performance targets to patient outcomes.

OPTIONS FOR SELECTING A WAIT TIME TARGET

We found no clear support for broad use of any specific wait time standard for new patients in accessing their first primary care or mental health appointment. Consequently, the evidence does not “rule out” any of the following options:

1. Select a threshold based on statistical outliers in the current distribution of wait times (for example, select the 90th or 95th percentile as the target). This is the most commonly used approach. The rationale is to start with an ambitious but achievable target; employ quality improvement methods to reach it; assess the effects on outcomes; and adjust the target over time. As noted above, in 2010, the 90th percentile was 25 days.⁷
2. Choose a 30-day FNA target for primary care on the basis of the VA studies in established patients with frailty. The rationale is that it would be safe to generalize this target because it was validated in the most vulnerable patients. The weakness of this rationale is that there is no evidence that this target would prevent adverse outcomes of patients waiting for primary care. The underlying studies did not evaluate the outcomes of patients who are actually waiting for a first primary or mental health care visit.
3. Develop a set of targets for the medical conditions that are associated with adverse effects in some waiting time studies or in studies of ambulatory care sensitive conditions. For example, a lower target could apply to patients who have no current ongoing source of care; are frail; or have a history of or symptoms of cardiovascular disease.



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