Accessing Patient-Centered Care Using the Advanced Access Model

Catherine Tantau, BSN, MPA

Abstract: Waits and delays for healthcare are legendary. These delays are not only frustrating and potentially hazardous for patients and providers but also represent significant cost to office practices. The traditional medical model that defines urgent care versus routine care is a vain and futile attempt to sort demand. This approach is at constant odds with patients’ definition of urgency. Trusting patients to determine when and how they want to access care makes sense from a customer service perspective. If approached systematically using the principles of Advanced Access, patient demand patterns can be tracked to forecast demand. These demand patterns become the template for deploying the resources necessary to meet patients’ needs. Although not a simple journey, the transformation to Advanced Access provides an entrée to patient-centered care where patients can say, “I get exactly the care I want and need, when I want and need it.”

Keywords: advanced access, appointment demand and supply, backlog reduction, continuity, high leverage changes, patient-centered care

Waits and delays for service in both primary and specialty care have become legendary (Merritt, Hawkins & Associates, 2004). The cost of these delays falls directly on the practice, both financially and in terms of patient, provider, and staff satisfaction. For example, although conventional wisdom may suggest that appointment schedules that are filled well in advance and far into the future are money in the bank, in reality these delayed, overcrowded schedules choke off new growth and generate higher no-show rates for appointments (Johnson et al., 2007). More importantly, from the patient’s perspective, in these systems it is impossible to respond positively to the question, “I get exactly the care I want and need, when I want and need it.” Delayed systems can be described simply as those practices that cannot reliably deliver patients “exactly the care they want and need, when they want and need it.”

To meet this standard, practices must be in a position to offer patients an appointment today, for any problem, with the provider of choice or another care team member in the absence of the chosen provider. This is the definition of Advanced Access, it is the gold standard for eliminating waits and delays for care. Advanced Access requires that the distinction between urgent and routine appointments be eliminated and patient preference directs when and with whom appointments take place (Murray & Tantau, 2000).

Advanced Access can be viewed as the on-ramp to care. The best clinical care, if inaccessible to patients, is ineffective. Since the creation of Advanced Access 12 years ago (Murray & Tantau, 1998), much has been learned to fully develop this model. This is in large part a credit to the hundreds of clinical teams and organizations that have tested the principles of Advanced Access in their...
practices, both in primary and in specialty care. As this body of work has evolved, the notion that not all care must be provided with face-to-face visits has gained strength. Patients have driven this challenge, questioning the value of an office visit for a routine prescription refill, a normal laboratory result, a recheck for a stable chronic condition, etc.

Meanwhile, as practices began adopting Advanced Access strategies and dramatically reducing waits for appointments, they began to understand that managing their supply of appointments must match true patient demand for appointments. At that point, the notion that not all services require an appointment was put to the test vigorously and successfully. Nevertheless, although the Advanced Access model has broadened the definition of “services,” appointments remain a fundamental building block of the model. The idea that demand and supply for all patient services (advice, phone calls, teaching, registration, message taking, etc.) can be quantified to forecast demand and deploy supply for these services is one of the key developments in the Advanced Access model. It is where efficiency and access merge, simplifying key office processes and recognizing that there is rarely value in delays for any process or service.

WHY IS PATIENT-CENTERED APPOINTMENT ACCESS IMPORTANT?

The inherent struggle between patients’ definition of what requires urgent attention and the medical definition of an urgent clinical need has proven to be a daily frustration for both patients and practices. Putting the decision about when, how, and by whom patients will be seen into patients’ hands was once a radical concept. However, many practices now recognize that putting up barriers to what patients want is futile and wasteful. Furthermore, they have found that letting patients direct the demand for and timing of appointments allows the practice to study the natural demand patterns that emerge from the population they serve. These demand patterns provide insight into how the practice can match supply with demand for services on a daily basis, a critical aspect of sustaining improved access.

Some findings from application of the Advanced Access model include the following:

- When patients have unfettered access and continuity with a provider of choice, demand for services decreases. This delights patients (Consumer Driven Healthcare, 2002) and provides the practice with “breathing space” for growth, improvement work, and redesign efforts (Murray & Tantau, 2002).
- Continuity (ie, consistently matching patients with their primary care provider [PCP] or specialist of record) has long been identified as a satisfier for patients and providers as well as a mechanism to quiet demand (Plauth & Pearson, 1998) and reduce cost (Raddish et al., 1999). However, continuity is possible only when delays are dramatically reduced and patients can see the provider of choice at a time that is convenient for them. Optimal continuity is simply not possible in delayed systems where patients frequently see someone other than their PCP or specialist of record when they are ill and vulnerable because their provider of choice is unavailable. Continuity can become a hallmark of the practice when delays are eliminated.
- Allowing the natural flow of patient demand to guide the deployment of supply significantly reduces the amount of time spent on activities such as phone calls, messages, triage, scheduling, etc. The care team’s skills can then be optimized when clerical support staff can more effectively do their work and clinical staff, including providers, are freed up to concentrate on providing clinical care.
- In a practice where demand for services exceeds supply and delays for services persist, the aggressive testing of high-leverage changes has been shown to be a reliable approach to improving access to care (see the “High-Leverage Changes” section).
Table 1. Foundational elements of patient-centered advanced access

<table>
<thead>
<tr>
<th>Element</th>
<th>Outcome</th>
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<tr>
<td>Capacity</td>
<td>Ensure daily supply meets predicted demand</td>
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<tr>
<td>Continuity</td>
<td>Satisfy for patients, providers, and staff, decreases demand</td>
</tr>
<tr>
<td>Demand and supply</td>
<td>Sustains access, improvement over time</td>
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FOUNDATIONAL ELEMENTS FOR PATIENT-CENTERED ADVANCED ACCESS

There are 3 foundational elements for successful and sustainable Advanced Access improvement (Table 1). These include the following:

- **Capacity**: Simply put, this refers to the availability of appointment slots each day to meet the predicted demand for appointments for each provider and the practice as a whole. These appointments are not “carved out” each day (i.e., saved for same-day appointments) to meet urgent demand; they are open and available for booking and have been for some time (Murray & Tantau, 1999). These appointments are available today because yesterday’s work was done yesterday and last week’s work was done last week.

- **Continuity**: This refers to the consistent matching of patients with their PCP or specialist of record when one is appointed. In the absence of the PCP or specialist, the patient may either opt to see a practice partner today or wait for the provider to return. The patient is free to choose (Murray & Tantau, 2000).

- **Demand and Supply Equilibrium**: This key element has emerged as a critical component for sustained access improvement. Although the need to balance demand and supply at the outset (Tantau, 2008) is well understood, we have more recently begun to understand the need for rigorous and continuous monitoring of these 2 dynamic properties to ensure constant equilibrium over time. Relevant seasonal patterns can be tracked; however, the dynamic nature of market shifts or unexpected losses of supply (providers) can disarm practices that are not habitually monitoring and adapting to these fluctuations.

Beyond the 3 foundational elements noted above, the transition from traditional access models characterized by differential delays for urgent and routine appointments to Advanced Access requires the systematic testing and implementation of 6 high-leverage changes (Murray & Tantau, 2000). These include the following:

1. match demand and supply daily,
2. reduce backlog,
3. simplify appointment types and times,
4. create contingency plans,
5. reduce demand for unnecessary visits, and
6. optimize the care team.

Table 2 provides an overview of these 6 high-leverage changes. A more detailed summary of each follows.

**Match demand and supply daily**

Matching demand and supply requires a rigorous and quantifiable assessment of daily demand patterns for each provider in the practice. Demand measurements are obtained in real time, reflecting current demand patterns of the population served. Demand formulas distinguish between external demand coming from the population and internal demand generated by the practice (Tantau, 2005). This distinction enables the practice to identify streams of demand over which they have control. Once demand patterns are established, supply is deployed to meet that predicted demand. Anecdotally, when practices begin to measure they often discover that supply exceeds demand; it is just hidden in delays in the system. Understandably, providers and staff assume demand outstrips supply given their
Table 2. High-leverage changes for patient-centered advanced access and examples of strategies

<table>
<thead>
<tr>
<th>High-leverage change</th>
<th>Examples of strategies</th>
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<tr>
<td>Match demand and supply daily</td>
<td>Calculate demand and deploy supply commensurately</td>
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<tr>
<td>Reduce backlog</td>
<td>Increase supply temporarily to overcome demand curve</td>
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<td></td>
<td>Use “smart strategies” to quiet demand</td>
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<tr>
<td></td>
<td>Improve continuity</td>
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<tr>
<td></td>
<td>Increase visit intervals</td>
</tr>
<tr>
<td></td>
<td>Do more with some visits</td>
</tr>
<tr>
<td>Simplify appointment types and times</td>
<td>Standardize appointment types and times and limit restrictions</td>
</tr>
<tr>
<td>Create contingency plans</td>
<td>Identify those events likely to interfere with optimal office flow (e.g., flu season, staff vacations)</td>
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<tr>
<td></td>
<td>Develop plans to adjust when those situations occur</td>
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<tr>
<td>Reduce demand for unnecessary visits</td>
<td>Increase visit intervals</td>
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<tr>
<td></td>
<td>Absorb urgent visits into the schedule</td>
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<td></td>
<td>Avoid overflow of patients to urgent care</td>
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<tr>
<td>Optimize the care team</td>
<td>Elevate all members of the care team to the highest level their education and training allows</td>
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<td>Standardize best practices</td>
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daily experience of delays, full schedules, and double-booked appointments. Therefore, objective measurement of both demand and supply is critical to improving access (Table 3).

Reduce backlog

Backlog reduction refers to actively reducing the delay for an appointment, measured as the amount of time in days to the third next available routine appointment. For example, a measure of zero days indicates there is no delay because the third next available appointment is today. There are multiple strategies that teams use to reduce backlog. These include the temporary addition of supply (providers) to overcome the current demand stream, referred to as hard strategies. In addition, “smart strategies” help practices redesign for long-term sustainable results. Examples of smart strategies include extending visit intervals, fully utilizing other care team members to shift some clinical care and most clerical work away from providers, optimizing continuity, “max-packing” visits (doing as much for patients during the visit to reduce future work), and reviewing schedules for duplicate visits (Murray & Tantau, 1998).

Simplify appointment types and times

Complex schedule templates with multiple appointment types and times and intricate restrictions are challenging to support. Matching the right patient with the right problem in the correct slot in a delayed system is virtually impossible. Testing the simplification of appointment types to 1 or 2 types and limiting restrictions can increase supply that may be shrouded (Murray & Tantau, 1998).

Create contingency plans

It is important for practices to identify events, either expected or unexpected, that cause disruptions in supply and demand such as ill staff or providers, a community outbreak, flu season, peak vacation season, a code in the office—virtually anything that can interfere with the normal flow of work and either increase demand or reduce supply. Many of these events can be predicted, for example vacations and flu season. Other situations are less predictable but still occur, for example, an ill provider or a staff member. Identifying these events in advance and preparing contingency plans to address them
Table 3. Calculating daily appointment demand, supply, and activity

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<tr>
<th>Calculation</th>
<th>Definition</th>
<th>Methodology</th>
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<tr>
<td>Demand</td>
<td>The total number of appointment-booking transactions each day of the week for each provider. Include both external (patient-driven) and internal (provider-driven) demand.</td>
<td><strong>External Demand</strong>&lt;br&gt;The total number of appointment requests called in or referred to the practice and booked today, regardless of the day to which the appointment is actually assigned.&lt;br&gt;&lt;br&gt;Plus the total number of walk-in patients requesting an appointment today and booked.&lt;br&gt;&lt;br&gt;Plus the total number of patients deflected to other venues because of lack of appointments.</td>
</tr>
<tr>
<td>Supply</td>
<td>The total number of appointments available each day of the week for each provider and the practice as a whole.</td>
<td>Count the total number of appointments generally available on a blank schedule template for each day.</td>
</tr>
<tr>
<td>Activity</td>
<td>The total number of patients who were actually seen each day of the week by each provider and the practice as a whole.</td>
<td>At the end of each day, count the total number of patients seen by each provider. This is sometimes referred to as the number of encounters or visits.</td>
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can mitigate much of the disruption in the practice.

**Reduce demand for unnecessary visits**

Particularly in instances when demand outstrips supply, or growth of the practice is desired, practices can identify opportunities to reduce demand. These opportunities include, but are not limited to, the following:
- making continuity a hallmark of the practice;
- max-packing visits;
- managing primary care panel size;
- extending visit intervals where clinically indicated (Schwartz et al., 1999); and
- providing group visits, phone visits, e-visits.

**Optimize the care team**

This is another powerful strategy for balancing demand and supply. The basic principle involves moving work away from the provider, who is often the constraint in the system, to other members of the care team. As wasteful delays are eliminated, some of the work associated with tending those delays simply goes away. This frees staff to concentrate on the work they are uniquely qualified to do. Clinical staff are free to focus on clinical work and clerical staff can concentrate on the timely completion of important clerical tasks necessary for an efficient practice. For example, when delays for appointments are eliminated, many practices find that hours of nursing time, formerly spent
on triaging urgent patients versus routine patients, are now available to assist providers and patients in the management of chronic conditions (Grumbach & Bodenheimer, 2004; Bodenheimer, 2004). Similarly, phone staff report that transaction time for booking an appointment shrinks with Advanced Access as they are able to offer patients an appointment at a time that is convenient for the patient, with the provider of choice. This frees phone staff to be more productive, increases the rate of “first call resolves” for patients, and requires fewer interruptions and messages to clinical staff who formerly were called upon to intervene in the appointment-booking process.

The use of these 6 strategies can lead to a dramatic reduction in waits and delays for services in a variety of areas. Some healthcare organizations have incorporated the philosophy that there is rarely value in delays into all their operations. Ministry Medical Group (MMG) in Wausau, Wisconsin, is one example of such an organization. They adopted Advanced Access in primary and specialty care, in mental health, imaging, laboratory, and rehabilitation services. The availability of any service at MMG today, for any patient, streamlines the journey for patients traversing various services. This organizational access standard eliminates constraints that arise when various services have dissimilar delays. Patient needs are met continuously and smoothly.

**Note:** The anchor metric for Advanced Access is delays, measured as the time in days to the third next available routine appointment. The first or second available appointment often reflects “noise” in the system such as a cancellation or random opening of an appointment slot. The third next available appointment more reliably reflects when the schedule actually has substantial capacity.

**TWO CASE STUDIES**

The following case studies explore the experience of 2 distinct and structurally different healthcare organizations that adopted Advanced Access to promote patient-centered care and reduce waits and delays for care. Despite significant differences in patient populations, services offered, size of practices, location and payer profile, the adoption of Advanced Access led to significant reduction in delays for services in both organizations.

The MMG adopted Advanced Access across their system as described above. Providence Community Health Centers at Capitol Hill HC in Providence, Rhode Island, implemented Advanced Access in Internal Medicine, Obstetrics and Gynecology, and Pediatrics. Both systems methodically tested and applied the high-leverage changes for Advanced Access noted above with strikingly similar results. This outcome is not surprising; although the populations served and organizations are quite different, the principles of Advanced Access remain the same and deliver similar results.

**Ministry Medical Group**

The MMG is a traditional multispecialty, mixed-payer model with large and small practices in urban, rural, and suburban areas, spread over a wide geographic area in Wisconsin. They approached implementation of Advanced Access in 2 phases using an Internal Collaborative model and included all major clinical services. The MMG aims to improve access were aggressive. The organization made the decision to establish an enterprise-wide access standard that was consistent with what is often referred to as the “gold standard for access.” Their goals are as follows:

- **Primary Care:** Offer an appointment today for any reason with the PCP or teammate in the absence of the PCP.
- **Specialty Care:** Offer an appointment today with someone in the department and within 5 days with a specific specialist.
- Offer a surgery or procedure date within 5 days of deciding that a surgical or procedural intervention is required.
- **Imaging:** Offer an appointment today for each modality including computed tomography, magnetic resonance imaging, ultrasound, and mammography.
**Mental Health**: Offer an appointment today for any problem with the therapist of record or teammate in the absence of the therapist of record.

The MMG used the 3 foundational elements of Advanced Access (Table 1) as well as all 6 high-leverage changes (Table 2) to achieve their aims. All improvement teams participated in rigorous testing of these changes.

The MMG Advanced Access Initiative resulted in improvement in a variety of clinical areas. Figure 1 is an example of primary care access improvement at the MMG Plover Medical Offices. Delays for routine care at Plover were reduced from an average of 25 days to an average of 8 days with most providers at zero days delay for an appointment when they were in the office.

The MMG affected delays for appointments and procedures in a number of medical and surgical specialties. The results of the work done in ENT are shown in Figure 2 where the delay for ENT surgeries longer than 1 hour was reduced from 58 days to 2 days.

An important factor in successful systemwide implementation of Advanced Access was the reduction in waits and delays for Imaging Services. At 2 sites, Imaging Teams successfully reduced delays in all modalities with differential delays, to a single day for each modality (Figs 3 and 4).

**PROVIDENCE COMMUNITY HEALTH CENTERS AT CAPITOL HILL HC**

Providence Community Health Centers at Capitol Hill HC provides services to an inner city, urban population, including pediatrics, obstetrics and gynecology, and internal medicine. Access improvement was undertaken in all 3 departments simultaneously. The goal was to have a consistent standard for access across all 3 services. In addition to a strong desire to improve access, Capitol Hill was concerned about their consistently high no-show rate that averaged 30%.

With the implementation of Advanced Access the no-show rate dropped to less than 15% (Fig 5). Capitol Hill recognized that long delays in their system were linked to higher no-show rates. They also adopted the "gold standard" for access in all 3 departments. Their goal is to: Offer an appointment today, for any problem, with the PCP or other care team member in the absence of the PCP.
Capitol Hill implemented all 6 Advanced Access high-leverage changes with particular emphasis on matching demand and supply, reducing demand for unnecessary visits, and actively promoting same-day appointments. See Figure 6 for their results.

Comparison

The application of Advanced Access significantly reduced delays for patients at both the MMG and Providence Community Health Centers at Capitol Hill HC, despite considerable differences between the 2 organizations in

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**Figure 2.** Ministry Medical Group reduction in delays for ENT surgery.

**Figure 3.** Ministry Medical Group reduction in delay for imaging services—site A.
Figure 4. Ministry Medical Group reduction in delay for imaging services—site B.

Figure 5. Providence Community Health Centers at Capitol Hill HC no-show rate.
Figure 6. Providence Community Health Centers at Capitol Hill HC delay reduction for appointments.

Figure 7. Office visit demand, supply, and activity for Huron Gastroenterology.

Table 4. Common pitfalls

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<thead>
<tr>
<th>Pitfall</th>
<th>Outcome</th>
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<tr>
<td>Poor continuity</td>
<td>Increases demand</td>
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<tr>
<td>Inadequate backlog reduction</td>
<td>Decreases satisfaction</td>
</tr>
<tr>
<td>Lack of rigorous demand and supply monitoring</td>
<td>Practice is not transformed</td>
</tr>
<tr>
<td>Lack of contingency planning</td>
<td>Difficult to sustain improvement</td>
</tr>
<tr>
<td>Carve-out strategies</td>
<td>Backlog reemerges</td>
</tr>
<tr>
<td></td>
<td>Lapse into imbalance in demand and supply</td>
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<tr>
<td></td>
<td>Lapse into imbalance in demand and supply</td>
</tr>
<tr>
<td></td>
<td>Future supply is limited</td>
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<td>Backlog reemerges</td>
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teams move to Advanced Access (Mehrotra et al., 2008). Common pitfalls include the following (Table 4):

- Poor continuity, which drives up demand.
- Backlog reduction that relies solely on working harder and does not test the "smart strategies" to incorporate fundamental changes in managing demand.
- Lack of contingency planning.
- Failure to rigorously monitor and match demand and supply daily and weekly for each provider.
- Revert to carve-out strategies to reserve future supply rather than address backlog that will reemerge when demand and supply are not balanced.
- Improve delays, but never quite make it to zero days’ delay. One of the keys to sustaining Advanced Access is to actually reach the goal of consistently offering patients an appointment today, for any problem, with the provider of choice or other teammate in the absence of that provider. Reductions in delays are wonderful for patients. However, the experience of coming to work every day with sufficient appointments to meet today’s predicted demand is what transforms practices and the people who work in those practices. This is often the strongest driver for sustainability.

**SUMMARY**

Advanced Access systems are designed to respond to patients’ desire to get an appointment when they choose and with the provider of their choice. By definition, this means appointments must be available today and clinical distinctions between urgent care and routine care are irrelevant. When demand and supply are consistently in equilibrium, future supply remains available for future demand. This makes it possible to optimize continuity between patients and providers and creates opportunities to explore other options for designing the ideal medical office practice.

A systemwide or enterprise-wide standard for access to care provides patients with a familiar and reliable offer of an appointment today, for any problem, with the provider of choice or other teammate in the absence of that provider. In all departments, adoption of a systemwide access standard appears to increase practice accountability and, when spread beyond traditional clinical teams and into departments such as imaging and the laboratory, strengthens long-term sustainability.

Trusting patients to determine when and how they want to access appointments and providers in a practice makes sense from a customer service perspective. It also provides practices with the information they need to appropriately deploy resources (supply). Beyond understanding demand patterns, practices and organizations can use the foundational elements of Advanced Access and tested high-leverage changes to reduce delays and respond to daily demand from both returning and new patients in a variety of services.

**REFERENCES**


