**Topic Brief:** Scheduling to Improve Access to Care

**Date:** 01/10/2020  
**Nomination Number:** 0886

**Purpose:** This document summarizes the information addressing a nomination submitted on October 16, 2019 through the Effective Health Care Website. This information was used to inform the Evidence-based Practice Center (EPC) Program decisions about whether to produce an evidence report on the topic, and if so, what type of evidence report would be most suitable.

**Issue:** Providing timely and patient-centered access to healthcare is an ongoing challenge for health systems. Care providers are faced with the challenge of balancing supply and demand to meet their patients’ needs. Scheduling strategies, such as advanced or open access scheduling have been used to improve patient access, but it is not clear which interventions are effective nor which contextual and organizational factors impact on the successful implementation of access improvement efforts.

**Program Decision:** The EPC Program will not develop a new evidence review because existing systematic reviews cover much of the scope of the nomination and we found an insufficient number of additional studies addressing the concerns of this nomination.

**Key Findings**
- Two systematic reviews were identified which partially covered the scope of this topic. Only 8 primary studies were identified which focused on different interventions and outcomes. A new evidence synthesis would not be feasible at this time.
- One systematic review addressed access management in primary care. The other systematic review assessed telehealth consultations for acute and chronic care, including intermediate outcomes such as access to care.
- Three primary studies were identified for key question 1 regarding patient access to primary care. Five studies were identified for key question 2 regarding patient access to specialty care. These studies included Advanced Access interventions and same day scheduling. Outcomes also varied and included healthcare utilization, costs and patient satisfaction.

**Background**

Providing timely access to care is a fundamental function of a healthcare system and is considered a key marker of a high-quality healthcare system. Access to care has been linked to patient satisfaction and continuity of care1,2. Lack of timely access to primary care can contribute to inappropriate use of emergency departments.3

Improving patient access to care is a challenge for many health systems. According to a 2015 Institute of Medicine report: “Progress has been slow on many dimensions including programs to design, implement, and share innovative scheduling and wait time practices in order to
advance the evidence base and create standards and accountability. The culture, technology, and financial incentives at work in health care have only recently begun to heighten awareness and attention to the issue that delays are often not the result of resource limitations but more commonly are the product of flawed approaches to the scheduling process and poor use of the full range of available resources.  

Specific scheduling approaches that have been successful include the advanced access model, also known as open access or same-day scheduling, in which a sizeable share of the day’s appointments are reserved for patients desiring a same-day appointment. Other strategies include team-based workforce optimization, delegating certain tasks to non-clinician team members, and electronic consultations.

Scope

1. Which patient access management interventions are effective in improving primary care access?
   a. What are the key features of successful access management interventions?
   b. What are the contextual and organizational factors that influence the successful implementation of access management interventions?
2. Which patient access management interventions are effective in improving specialty care access?
   a. What are the key features of successful access management interventions?
   b. What are the contextual and organizational factors that influence the successful implementation of access management interventions?

Table 1. Questions and PICOTS (population, intervention, comparator, outcome, timing and setting)

<table>
<thead>
<tr>
<th>Questions</th>
<th>1. Primary care access management</th>
<th>2. Specialty care access management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>Primary care patients</td>
<td>Specialty care patients</td>
</tr>
<tr>
<td>Interventions</td>
<td>Patient access management to primary care (e.g. Advanced/Open access; same day scheduling; freeze and thaw)</td>
<td>Patient access management to specialty care (e.g. Advanced/Open access; same day scheduling; care pathway management; queue/referral management; e-consult/e-referral)</td>
</tr>
<tr>
<td>Comparators</td>
<td>Usual care</td>
<td>Usual care</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Access to care (e.g. time to third next available appointment); No-show rate; Continuity of care; Patient satisfaction/experience with access to care; Provider satisfaction; Healthcare utilization; Fiscal outcomes</td>
<td>Access to care (e.g. time to third next available appointment); No-show rate; Continuity of care; Patient satisfaction/experience with access to care; Provider satisfaction; Healthcare utilization; Fiscal outcomes</td>
</tr>
<tr>
<td>Timing</td>
<td>Any</td>
<td>Any</td>
</tr>
<tr>
<td>Setting</td>
<td>Primary care</td>
<td>Specialty care</td>
</tr>
</tbody>
</table>

Assessment Methods
See Appendix A.
Summary of Literature Findings

Two systematic evidence reviews were found which partially covered this topic. One review covered key question 1 about patient access in primary care, the other review covered one intervention (e-consultations) for key question 2 of patient access to specialty care. There were few primary studies identified from our sample of the available literature which covered the remainder of the topic.

Question 1: A 2017 review by the VA Evidence Synthesis Program assessed the evidence regarding primary care access management strategies. All included studies were about Advanced or Open Access and all but three were published between 2001 and 2010. After studies that had been included in the ESP review were excluded from this feasibility search, only three primary studies (from four articles) were identified. One study described a quality improvement initiative designed to improve continuity and access in a U.S. academic family medicine center. Two Canadian qualitative studies described 1) the experiences and implementation issues of family physicians who had transitioned to Advanced Access, and 2) the factors which influence the implementation of Advanced Access principles.

Question 2: One recent AHRQ EPC review “Telehealth for acute and chronic care consultations” assessed the effectiveness of telehealth consultations and explored supplemental decision analysis. The review included any technology and any comparative study of telehealth to facilitate collaboration between providers. Outcomes included clinical and cost-effectiveness outcomes, access to care, patient and provider satisfaction, behavior, and decisions (e.g., patient completion of treatment, provider antibiotic stewardship); volume of services; and healthcare processes (e.g., time to diagnosis or treatment). No further primary studies of telehealth consultations were identified from the feasibility search.

Five primary studies of other interventions relevant to KQ2 were found, assessing a range of interventions to increase access to specialty care. One study described the costs and visit duration of providing same-day appointments in an ophthalmology clinic compared with urgent eye care delivered in the emergency department (ED). The initiation of same-day access was also examined in a pediatric clinic. This study assessed changes in healthcare utilization in terms of pediatric ED visits pre- and post-initiation of the same-day walk-in clinic. One study described the implementation of a series of interventions to reduce the backlog of patients, implement scheduling guidelines, and use nurse practitioners to improve practice efficiencies in a vascular surgery clinic. The study reported the rate of new patients seen by the physician within 7 days of referral and patient satisfaction. One study utilized a prospective overbooking system at a VA outpatient endoscopy clinic and reported service utilization improved during the intervention duration. One Dutch study described the sustainability of improvements from implementing Advanced Access in outpatient specialist clinics. The qualitative case studies presented the factors that influenced the clinics ability to sustain the reductions in delayed access.
See Appendix B for detailed assessments of all EPC selection criteria.

Summary of Selection Criteria Assessment
Improving patient access to care is an important topic. Timely access to care is a key marker of high-quality care and there is no specific guidance about which patient access management strategies are effective and which factors influence the successful implementation of interventions. There were two systematic reviews which partially covered each of the key questions. One evidence review covered patient access management in primary care (KQ1). Three further primary studies were identified in the feasibility search, including two qualitative interview studies about the implementation of Advanced Access. For key question 2, an existing AHRQ evidence review covered telehealth consultations for acute and chronic care, including the outcome of patient access. Only five studies were identified for KQ2 which covered different interventions and outcomes in different health specialties for improving patient access to specialty care.

Please see Appendix B for detailed assessments of individual EPC Program selection criteria.

Related Resources
We identified additional information in the course of our assessment that might be useful to the nominator.

- A report from the National Academy of Medicine about innovation and best practices in health care scheduling health care scheduling
- A report from the Institute of Medicine; Committee on Optimizing Scheduling in Health Care
- The Institute for Healthcare Improvement (IHI) Resources for Primary Care Access website contains resources such as backlog reduction worksheets and measures to guide improvement in patients access to care
- Publications relating to the VA initiative to improve access to care, including the priority recommendations from an expert panel and a description of the evidence based approach for managing access to care
- Articles that describe the implementation of patient scheduling/access initiatives include the implementation of advanced access in an academic family medicine network and the provision of same day access and continuity in a primary care clinic
References


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Conflict of Interest: None of the investigators have any affiliations or financial involvement that conflicts with the material presented in this report.

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Appendix A: Methods

We assessed nomination for priority for a systematic review or other AHRQ Effective Health Care report with a hierarchical process using established selection criteria. Assessment of each criteria determined the need to evaluate the next one. See Appendix B for detailed description of the criteria.

Appropriateness and Importance
We assessed the nomination for appropriateness and importance.

Desirability of New Review/Absence of Duplication
We searched for high-quality, completed or in-process evidence reviews published in the last three years (2016-2019) on the questions of the nomination from these sources:

- AHRQ: Evidence reports and technology assessments
  - EHC Program https://effectivehealthcare.ahrq.gov/
  - AHRQ Technology Assessment Program https://www.ahrq.gov/research/findings/ta/index.html
- US Department of Veterans Affairs Products publications
  - Evidence Synthesis Program https://www.hsrd.research.va.gov/publications/esp/
  - VA/Department of Defense Evidence-Based Clinical Practice Guideline Program https://www.healthquality.va.gov/
- Cochrane Systematic Reviews https://www.cochranelibrary.com/
- University of York Centre for Reviews and Dissemination database https://www.crd.york.ac.uk/CRDWeb/
- PROSPERO Database (international prospective register of systematic reviews and protocols) http://www.crd.york.ac.uk/prospero/
- McMaster Health System Evidence https://www.healthsystemsevidence.org/
- https://clinicaltrials.gov
- Patient-Centered Outcomes Research Institute https://pcori.org

Impact of a New Evidence Review
The impact of a new evidence review was qualitatively assessed by analyzing the current standard of care, the existence of potential knowledge gaps, and practice variation. We considered whether it was possible for this review to influence the current state of practice through various dissemination pathways (practice recommendation, clinical guidelines, etc.).

Feasibility of New Evidence Review
We conducted a limited literature search in PubMed for the last five years from December 11, 2014 to December 11, 2019. We reviewed all studies identified titles and abstracts for inclusion. We classified identified studies by question and study design to estimate the size and scope of a potential evidence review.
Search strategy

MEDLINE ALL (Ovid)
Date searched: December 11, 2019
1 General Practice/ or General Practitioners/ or Family Practice/ or Physicians, Family/ or exp
Group Practice/ or Primary Health Care/ or Practice Management/ (180604)
2 ((primary adj2 care) or practice management or ((famil* or general) adj2 (practice* or
practitioner* or physician*)) or practitioner*).ti,ab,kf. (310105)
3 or/1-2 (382860)
4 "Appointments and Schedules"/ (4516)
5 (scheduling or appointment or appointments or access management).ti. (4941)
6 (((Third or next) adj3 appointment*) or (priorit* adj2 score*) or access-management).ti,ab,kf.
(835)
7 ((advance or advanced or open* or same-day or single-entry) adj2 (access* or availability or
appointment* or schedul*)).ti,ab,kf. (9318)
8 ((carve-out or access) adj2 model).ti,ab,kf. (668)
9 or/4-8 (18218)
10 3 and 9 (1927)
11 limit 10 to english language (1836)
12 11 and ((meta-analysis or review or systematic review).pt. or "(evidence or systematic) adj3
(review or synthesis)" or meta-anal* or metaanal*).ti,ab,kf.) (113)
13 limit 12 to yr="2016 -Current" (36)
14 randomized controlled trials as topic/ or exp clinical trial as topic/ (333938)
15 ("randomized controlled trial" or "controlled clinical trial" or "clinical trial").pt. (822468)
16 (trial or control or controlled or random*).ti,ab. (3834050)
17 or/14-16 (4267205)
18 17 not (exp animals/ not humans/) (3502738)
19 11 and 18 (396)
20 limit 19 to yr="2014 -Current" (159)
21 Remote Consultation/ or Telemedicine/ or Telephone/ or Cell-phone/ (41870)
22 (E-consult* or ((remote or virtual) adj3 consult*) or teleconsult* or tele-consult* or telemed*
or tele-medic*).ti,ab,kf. (13083)
23 or/21-22 (46394)
24 9 and 23 (394)
25 limit 24 to english language (377)
26 25 and ((meta-analysis or review or systematic review).pt. or "(evidence or systematic) adj3
(review or synthesis)" or meta-anal* or metaanal*).ti,ab,kf.) (25)
27 limit 26 to yr="2016 -Current" (8)
28 25 and 18 (128)
29 limit 28 to yr="2014 -Current" (56)
30 10 not (13 or 20) (1748)

EBM Reviews (Ovid) - Cochrane Database of Systematic Reviews
Date searched: December 11, 2019
1 ((primary adj2 care) or practice management or ((famil* or general) adj2 (practice* or
practitioner* or physician*)) or practitioner*).ti,ab. (262)
2 (scheduling or appointment or appointments or access management).ti. (6)
3 (((Third or next) adj3 appointment*) or (priorit* adj2 score*) or access-management).ti,ab. (1)
4 ((advance or advanced or open* or same-day or single-entry) adj2 (access* or availability or
appointment* or schedul*)).ti,ab. (4)
5 ((carve-out or access) adj2 model).ti,ab. (0)
6 or/2-5 (11)
7 and/1,6 (2)
8 limit 7 to last 3 years (0)
9 (E-consult* or ((remote or virtual) adj3 consult*) or teleconsult* or tele-consult* or telemed* or tele-medic*).ti,ab. (11)
10 and/6,9 (0)
11 limit 10 to last 3 years (0)

EBM Reviews (Ovid) - Cochrane Central Register of Controlled Trials November 2019
Date searched: December 11, 2019
1 ((primary adj2 care) or practice management or ((famil* or general) adj2 (practice* or practitioner* or physician*))) or practitioner*.ti,ab. (33742)
2 (scheduling or appointment or appointments or access management).ti. (417)
3 (((Third or next) adj3 appointment*) or (priorit* adj2 score*) or access-management).ti,ab. (224)
4 ((advance or advanced or open* or same-day or single-entry) adj2 (access* or availability or appointment* or schedul*)).ti,ab. (3723)
5 ((carve-out or access) adj2 model).ti,ab. (67)
6 or/2-5 (4356)
7 and/1,6 (312)
8 limit 7 to yr="2014 -Current" (215)
9 (E-consult* or ((remote or virtual) adj3 consult*) or teleconsult* or tele-consult* or telemed* or tele-medic*).ti,ab. (1611)
10 and/6,9 (14)
11 Limit 10 to yr="2014 -Current" (12)
# Appendix B. Selection Criteria Assessment

<table>
<thead>
<tr>
<th>Selection Criteria</th>
<th>Assessment</th>
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| 1. Appropriateness                                                                 | Yes, the nomination relates to scheduling strategies to improve access to care in the U.S. healthcare system.                                                                                                                                                                                                                                                                                                                                 |}
| 1a. Does the nomination represent a health care drug, intervention, device, technology, or health care system/setting available (or soon to be available) in the U.S.? |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1b. Is the nomination a request for an evidence report?                              | Yes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1c. Is the focus on effectiveness or comparative effectiveness?                      | Yes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1d. Is the nomination focus supported by a logic model or biologic plausibility? Is it consistent or coherent with what is known about the topic? | Yes, previous research has been conducted in the U.S. in an attempt to improve patient access to care.                                                                                                                                                                                                                                                                                                                                 |}
| 2. Importance                                                                       | Yes, a significant proportion of the U.S. population access health care. The scope of this topic covers both primary and specialty care.                                                                                                                                                                                                                                                                                                                                 |}
| 2a. Represents a significant disease burden; large proportion of the population     | Yes, access to care and timeliness of appointments impacts patient health outcomes and patient satisfaction. One of the most important dimensions of high-quality care is timely access for patients.                                                                                                                                                                                                                                                                                               |}
| 2b. Is of high public interest; affects health care decision making, outcomes, or costs for a large proportion of the US population or for a vulnerable population | Yes, missed appointments and untimely access to care creates costs to health systems and patients.                                                                                                                                                                                                                                                                                                                                                                           |
| 2c. Incorporates issues around both clinical benefits and potential clinical harms   | Yes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 2d. Represents high costs due to common use, high unit costs, or high associated costs to consumers, to patients, to health care systems, or to payers | Yes. A 2017 VA ESP review was found which partially covers KQ1. This review included studies if they assessed primary care patients, an intervention to manage access, and reported an access outcome. 53 publications were included. Of these, 29 publications assessed 19 implementations of interventions to manage primary care access. All were about Advanced or Open Access. For KQ2 a recent AHRQ EPC review “Telehealth for acute and chronic care consultations” covered the intervention of ‘e-consult’. An in-process VA ESP review will assess the benefits and harms of tele-urgent care for low acuity conditions (although it may not include access to care as an outcome). |
| 3. Desirability of a New Evidence Review/Absence of Duplication                    | Yes. A 2017 VA ESP review was found which partially covers KQ1. This review included studies if they assessed primary care patients, an intervention to manage access, and reported an access outcome. 53 publications were included. Of these, 29 publications assessed 19 implementations of interventions to manage primary care access. All were about Advanced or Open Access. For KQ2 a recent AHRQ EPC review “Telehealth for acute and chronic care consultations” covered the intervention of ‘e-consult’. An in-process VA ESP review will assess the benefits and harms of tele-urgent care for low acuity conditions (although it may not include access to care as an outcome). |
| 3. A recent high-quality systematic review or other evidence review is not available on this topic | Yes, there is a lack of evidence-based guidance on which scheduling interventions are effective in improving access to care and which factors can impact the successful implementation of strategies to improve access to care. Yes, many health systems struggle to provide timely access to care and there is variation in the models of access implemented across health systems (e.g. advanced or open access models). |
| 4. Impact of a New Evidence Review                                                 | Yes, there is a lack of evidence-based guidance on which scheduling interventions are effective in improving access to care and which factors can impact the successful implementation of strategies to improve access to care. Yes, many health systems struggle to provide timely access to care and there is variation in the models of access implemented across health systems (e.g. advanced or open access models). |
| 4a. Is the standard of care unclear (guidelines not available or guidelines inconsistent, indicating an information gap that may be addressed by a new evidence review)? |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4b. Is there practice variation (guideline inconsistent with current practice, indicating a potential implementation gap and not best addressed by a new evidence review)? |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
## Selection Criteria

### 5. Primary Research

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Assessment</th>
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<tbody>
<tr>
<td>5. Effectively utilizes existing research and knowledge by considering:</td>
<td>There is insufficient primary evidence for a new evidence review on this topic.</td>
</tr>
<tr>
<td>- Adequacy (type and volume) of research for conducting a systematic review</td>
<td>Size/scope of review: After excluding studies that were included in the existing VA ESP report on access management in primary care, 3 studies were identified for KQ1, including 2 qualitative interview studies exploring the implementation issues encountered with Advanced Access in primary care. Five primary studies were identified for KQ2 addressing different interventions such as Advanced Access, same-day access, and predictive overbooking. Outcomes included healthcare utilization, costs, and patient satisfaction.</td>
</tr>
<tr>
<td>- Newly available evidence (particularly for updates or new technologies)</td>
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</table>

**Abbreviations:** AHRQ = Agency for Healthcare Research and Quality;