

# Rapid Decision Support

A product of the Contextualized Health Research Synthesis Program  
Newfoundland & Labrador Centre for Applied Health Research



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## Rapid Decision Support for Family Care Teams: Effective Scheduling and Appointment Length

**Search focus:** For this *Rapid Decision Support* report, CHRSP researchers sought evidence that examined effective scheduling and appropriate appointment length for family care teams. We included articles with a focus on both family care team settings and on other primary care settings that are potentially generalizable to family care teams. We also included articles on improving primary care access/ reducing wait times for primary care if the authors mentioned appointments/ scheduling in their analysis.

**What we found:** The research evidence presented in this report includes articles published between 2015 and 2023.<sup>1</sup> References are listed alphabetically, by article type. For each reference, we have highlighted quotations that address appointment length, scheduling approaches, access to care, or continuity of care. In total, we found six systematic reviews, two reviews, three guidance documents, 17 primary studies, and five related articles. Please note, we have highlighted in yellow articles specific to family care teams/ collaborative primary care teams. We have also included findings on access management in primary care as these may be relevant for decision makers looking at this topic.

**Content Summary:** The research we found was more concerned with scheduling than with appointment length. Overall, the research tends to focus on uncovering the best approaches to scheduling appointments for reducing wait times, improving access to primary care or improving efficiency rather than outlining the appropriate length of appointment times for primary care or family care teams.

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<sup>1</sup> We did include one systematic review by Rose et al. published in 2011 that we came across through a related citation search that we thought was relevant to include.

## Systematic Review Articles

Ansell et al. **Interventions to reduce wait times for primary care appointments: a systematic review.** BMC Health Serv Res. 2017 Apr 20. ([LINK](#))

- Systematic Review (11 articles), open access scheduling, findings suggest team based care
- “The primary objective of our study was to systematically review the literature to identify **interventions designed to reduce wait times for primary care appointments**. Secondary objectives were to assess patient satisfaction and reduction of no-show rates.”
- “open access scheduling is the most commonly used intervention to reduce wait times for primary care appointments. **Additionally, included studies demonstrated that dedicated telephone calls for follow-up consultation, presence of nurse practitioners on staff, nurse and general practitioner triage, and email consultations were effective at reducing wait times.**”
- “**Conclusions:** To our knowledge, this is the first study to systematically review and identify interventions designed to reduce wait times for primary care appointments. **Our findings suggest that open access scheduling and other patient-centred interventions may reduce wait times for primary care appointments.** Our review may inform policy makers and family healthcare providers about interventions that are effective in offering timely access to primary healthcare.”

Irving et al. **International variations in primary care physician consultation time: a systematic review of 67 countries.** BMJ Open. 2017 Nov 8. ([LINK](#))

- Systematic review (111 Articles), primary care focused not specific to Family Care Teams  
“**Objective:** To describe the average primary care physician consultation length in economically developed and low-income/middle-income countries, and to examine the relationship between consultation length and organisational-level economic, and health outcomes.”
- **Results:** “Average consultation length differed across the world, ranging from 48 s in Bangladesh to 22.5 min in Sweden. **We found that 18 countries representing about 50% of the global population spend 5 min or less with their primary care physicians. We also found significant associations between consultation length and healthcare spending per capita, admissions to hospital with ambulatory sensitive conditions such as diabetes, primary care physician density, physician efficiency and physician satisfaction.**”
- “**Many of the studies included in this review also found that short consultation length was responsible for driving polypharmacy, overuse of antibiotics and poor communication with patients. This supports the argument that there is a practical limit to how short a consultation can be for routine appointments.** Little can be achieved in less than 5 min unless the focus is largely on the detection and management of gross disease. An average of 5 min may be the limit below which consultations amount to little more than triage and the issue of prescriptions. A lack of time in the consultation is a key constraint to delivering expert generalist care. The finding of the association between shorter consultations and physician burnout due to a lack of personal accomplishment may indicate that doctors feel less productive and competent at managing complex multimorbid patients in those settings with short consultation lengths.

Addressing this limitation is necessary if patients with complex needs and multimorbidity are to be effectively managed within primary care.”

- “There were considerable differences in the trends of consultation length over time between the USA, Australia and the UK. In USA the average consultation length has increased steadily to over 20 min—this despite the countries having a relatively stable proportion of primary care physicians per 1000 population. Consultation length in the UK has also increased steadily over time, although the methods used in the included studies were heterogeneous. Changes here predate the introduction of the quality standard of 10 min for routine booked appointments and reflect the low starting point of consultation length and a steady increase in the density of primary care physicians over time. It is also interesting to note that at the current rate of change, the consultation length in the UK would only reach 15 min in 2086. Consultation length in Australia was stable at just under 15 min, reflecting the popular book length of 15 min, which avoids the increased charge for 20 min appointments.”
- **“The absence of a statistically significant relationship between consultation length and consultation rate per patient per year suggests that if the consultation length increases, it does not necessarily follow that the number of visits per year will decrease.** The number of consultations per patient per year can vary widely from country to country, and the total time a patient spends with their primary care physician is also likely to vary widely.”
- **“Conclusion:** There are international variations in consultation length, and it is concerning that a large proportion of the global population have only a few minutes with their primary care physicians. Such a short consultation length is likely to adversely affect patient healthcare and physician workload and stress.”

Miake-Lye et al. Access Management Improvement: A Systematic Review [Internet]. Washington (DC): Department of Veterans Affairs (US); 2017 May. ([LINK](#))

- Focuses on primary care access management strategies including advanced access with some reference to patient aligned care teams
- See Hempel et al. 2021 under “other articles” section below that follows up on this systematic review with evidence from a stakeholder panel that aimed to “establish definitions of access and access management”.
- **Aim:** “VA requested this systematic review regarding the evidence about primary care access management strategies to better understand what populations and interventions are being studied and what are the measures used of definitions of intervention success.”
- “.key questions asked were:
  - 1) What definitions and measures of intervention success are used, and what evidence supports use of these definitions and measures?
  - 2) What samples or populations of patients are studied, including eligibility criteria?
  - 3) What are the salient characteristics of local and organizational contexts studied?

- 4) **What are the key features of successful (and unsuccessful) interventions for organizational management of access?**
- 5) Are relevant, tested tools, toolkits, or other detailed material available from successful organizational interventions?
- **“Conclusions/Discussion:** A key finding of this review is that evidence about primary care access management is essentially limited to implementation of Advanced/Open Access, with all but 3 publications coming in a ten-year period of time from 2001-2010. Most studies reported dramatic improvements in access. **The most commonly used intervention components were reducing the backlog, using fewer appointment types, and setting goals, but whether these are key features of success cannot be determined from the data.** Some studies of longer duration reported more mixed results, with rising wait times and the need for modifications to the access management strategy reported in 2 large and long-term studies. Patient populations and contexts have been described at only a basic level. Five toolkits were identified, most coming from settings described in implementation studies.”

Rivas J. **Advanced Access Scheduling in Primary Care: A Synthesis of Evidence.** J Healthc Manag. 2020 May-Jun. ([LINK](#))

- SR (18 studies) without critical appraisal, general to primary care rather than family care teams
- “The primary objective of this article is to provide a review and analysis of the evidence **comparing AA [advanced access] scheduling in primary care with traditional scheduling.**”
- “Findings suggest that AA scheduling may reduce appointment scheduling wait time (83%) and no-show rates (67%), increase patient volume (50%) and productivity of providers (83%), and decrease emergency and urgent care visits (75%). Patient and staff satisfaction, continuity of care, revenue, and quality of care outcomes were mixed in terms of improvement. This author investigated definition controversies, implication to stakeholders, differences in scheduling implementation, and measures and outcomes of AA in primary care. **The analysis found that AA scheduling promises to improve access in primary care. Further research must be conducted to better inform healthcare stakeholders on how, where, and with whom AA scheduling systems can be best implemented.**”

Rose et al. **Advanced access scheduling outcomes: a systematic review.** Arch Intern Med. 2011 Jul 11. ([LINK](#))

- Systematic Review (28 articles), primary care, patient centred care
- **“Advanced (“open”) access scheduling,** which promotes patient-driven scheduling in lieu of prearranged appointments, has been proposed as a more patient-centred appointment method and has been widely adopted throughout the United Kingdom, within the US Veterans Health Administration, and among US private practices.”

- **Sections on:** Wait time for appointment, Physician and Practice Outcomes, Patient Satisfaction, Continuity of care and loss to follow-up, Clinical outcomes, Effect of success of AA implementation on outcomes
- “All 8 studies evaluating time to third-next-available appointment showed reductions (range of decrease, 1.1-32 days), but only 2 achieved a third-next-available appointment in less than 48 hours (25%). No-show rates improved only in practices with baseline no-show rates higher than 15%. Effects on patient satisfaction were variable. Limited data addressed clinical outcomes and loss to follow-up.”
- **“Overall, advanced access yielded neutral to small positive improvements in no-show rates, continuity and patient satisfaction, while effects on clinical outcomes were mixed.** It is worth noting that these studies report outcomes of advanced access as it has been applied in the “real world.” The limited benefits we found may therefore not be attributable to a failure of the advanced access concept itself so much as imperfect implementation (as evidenced by the limited number of studies that were able to achieve same day access).”

Wilson et al. **Interventions to increase or decrease the length of primary care physicians' consultation.** Cochrane Database Syst Rev. 2016 Aug 25. ([LINK](#))

- Cochrane Review (5 articles), primary care but not specific to family care teams
- **“Objectives:** To assess the effects of interventions to alter the length of primary care physicians' consultations.”
- **Main results** “Overall, our confidence in the results was very low; most studies had a high risk of bias, particularly due to non-random allocation of participants and the absence of data on participants' characteristics and small sample sizes. **We are uncertain whether altering appointment length increases primary care consultation length, number of referrals and investigations, prescriptions, or patient satisfaction based on very low-certainty evidence.** None of the studies reported on the effects of altering the length of consultation on resources used.
- **“Authors' conclusions: We did not find sufficient evidence to support or refute a policy of altering the lengths of primary care physicians' consultations.** It is possible that these findings may change if high-quality trials are reported in the future. Further trials are needed that focus on health outcomes and cost-effectiveness.”

## Review Articles

Darvesh & McGill. **Improving Access to Primary Care.** (CADTH Environmental Scan). Ottawa: CADTH; 2022 Jun ([LINK](#))

- CADTH Health Technology Review of 34 articles that reported on interventions conducted in Canada to improve access to primary care
- “A limited literature search was conducted to identify interventions to improve access to primary health care in Canada”

- **Research Question:** “What health system–level models and practices exist in Canada that can improve access to primary care (particularly in rural and remote settings)?”
- **Practices identified included:**• **advanced access models**• **open-access scheduling**• incentives for rostering patients and offering after-hours care• providing equity-oriented care• including nurse practitioners or physician assistants in care• **better tracking and maintenance of patient appointment schedules**• centralized waiting lists and prioritization• **offering navigation help for patients to attend appointments**• provider networks• digital tools and virtual care• serving high-risk or underserved populations• rural clinics

**Matulis JC & McCoy R. Patient-Centered Appointment Scheduling: a Call for Autonomy, Continuity, and Creativity. J Gen Intern Med. Epub 2020 Sep 3. ([LINK](#))**

- Called “Perspective” as a header in the online Journal Article, part Review part opinion
- Does mention Patient Care Team, but not exclusively specific to it
- “Neither patient nor clinician expectations can be adequately managed through standardized scheduling templates, which assign a fixed appointment length based on a single stated reason for the visit. As such, **standardized appointment scheduling may contribute to inefficient use of valuable face-to-face time, patient and clinician dissatisfaction, and low-value care. Herein, we suggest several potential mechanisms for improving the scheduling process, including (1) entrusting scheduling to the primary care team; (2) advance visit planning; (3) pro-active engagement of ancillary team members including behavioral health, nursing, social work, and pharmacy; and (4) application of innovative, technologically advanced solutions such as telehealth and artificial intelligence to the scheduling process.** These changes have the potential to improve efficiency, patient and clinician satisfaction, and health outcomes, while decreasing low-value testing and return visits for unaddressed concerns.”
- Sections on:
  - Shared agenda setting is not enough
  - The status quo: What happens when a patient asks for an appointment?
  - Potential impacts of current scheduling practices on patient experience, clinician burn-out and down-stream utilization
  - A New Conceptual Framework for optimized patient scheduling
  - Potential Impact
- “In Table 1, we describe several commonly employed templates used in primary care scheduling. **There are no guidelines or best practices for patient appointment lengths** and there can, and should, be variation in scheduling templates across different settings, populations, and care delivery models. Appointment scheduling should be sufficiently flexible to accommodate the needs of the populations served and the resources available to the clinicians serving them. This flexibility, dependent on accurate recognition of patient needs and matching those needs to the primary care team’s resources and work-flow, is a significant challenge.”
- See **Table 1 Commonly used Primary Care scheduling Templates**, includes Pros and Cons
  - **Stream scheduling, Wave scheduling, Advanced access, Open hours, Cluster scheduling**



## Guidance Documents

College of Family Physicians of Canada. **A new vision for Canada: Family Practice—The Patient's Medical Home 2019**. Mississauga, ON: College of Family Physicians of Canada; 2019. ([LINK](#))

- Report, lists various family care team models across Canada
- **Section on Pillar 4: Accessible Care**
  - “Because visits occur for different reasons it is not useful to define appropriate wait times for each type of visit unlike in other areas of health care, such as surgery. Therefore, the focus in family practice should be on enhancing access to ensure patients can access care when they feel it is necessary. This is not to say that family physicians in a PMH must be on call 24/7/365, but that methods for patients to access care through the design of practice operations and scheduling should be given more attention. On the other hand, as patients are offered more choice (e.g., by phone or e-communication), they should also expect practices to establish realistic parameters for what is reasonable. Practices should communicate clearly about what kind of provider availability and response time is reasonable to expect depending on access method and availability of resources.”
  - “**Same-day scheduling** has been introduced in many PMH practices to better accommodate patient needs... advanced access offers the vast majority of patients the opportunity to book their appointments on the day they call regardless of the reason for the visit. Read more about same day scheduling in the Best Advice guide: Timely Access to Appointments in Family Practice.”
  - “Whenever possible, patients should have clear reasons for the appointment at the time of booking. This ensures that adequate time is planned for each patient visit.”
  - “It is not always possible for patients to book appointments with their most responsible family physician. To ensure continuity, appointments can be made with other physicians or health care professionals in the team. The decision about who provides care in these cases is based on the patient’s needs, the availability of team members, and the scope of practice for each team member. In these cases, any relevant information from the appointment is communicated to the most responsible provider and taken into account in the long-term care of the patient.”
  - “PMH practices can further meet patients’ needs through extended office hours, in which the responsibilities for coverage and care are shared by family physicians in one or more practices, as well as by increased involvement of other team members. PMH practices also provide their patients with email, after-hours telephone, and virtual services to guide them to the right place at the right time for the care they need. Appropriately directing patients to the next available appointment, or to a hospital or another emergency service, is critical to the effective management and sustainability of our health care system. A PMH can help ensure that patients are aware of where they can go to access care and health information 24 hours a day, 365 days a year by

providing this information to patients in person or via other systems (website, voice mail messages, etc.).”

College of Family Physicians Canada. **Best Advice Team-Based Care in the Patient’s Medical Home.** July, 2017. ([LINK](#))

- Guidance, good resource for other parts of Canada with established family care type teams
- “Team-based care is an integral part of the Patient’s Medical Home (PMH) model. The continuous, comprehensive, patient-centred care provided by these family practices is made even more effective by building a strong, well-connected team that strives for the same goal. **This guide examines the benefits of team-based care for both practice efficiency and patients’ health outcomes.**”

College of Family Physicians Canada. **Best Advice– Timely Access to Appointments in Family Practice.** September 2012. ([LINK](#))

- Guidance
- **“Same Day Advanced Access Scheduling .... To achieve timely access to appointments, different appointment booking models are being employed by family practices (see Appendix A).** One of the strategies currently being implemented by many is same-day/**advanced access scheduling.** Same-day scheduling, also known as advanced access and open access, typically requires that practices do “today’s work today” by offering the vast majority of patients the opportunity to book their appointments on the day they call regardless of the reason for the visit. Some practices, particularly larger practices with many chronically ill and elderly patients requiring regularly scheduled follow-ups, have found the introduction of pure advanced access or same-day scheduling to be challenging and have preferred modifications of the “carve-out” model (see Appendix A ), which can offer both same-day and scheduled appointments. The goal of every practice should be to implement a system that assures appropriate timely access to appointments for all patients.
- **“The objective of this paper is to provide guidance to Canadian family physicians with respect to strategies that support timely access to appointments in family practice settings. Although there are other systems that can be introduced, this guide focuses on providing information about newer same-day/advanced access scheduling, its benefits and limitations, and tips for family physicians on how to implement same-day scheduling in their practices.** While this paper is presented for the consideration of those in all types of family practices, strategies for timely access to appointments are a core element that has been recommended for newer models of practice, in keeping with the CFPC’s Patient’s Medical Home at [www.cfpc.ca/uploadedFiles/Resources/Resource Items/PMH A Vision for Canada.pdf](http://www.cfpc.ca/uploadedFiles/Resources/Resource%20Items/PMH%20A%20Vision%20for%20Canada.pdf)



## Primary Articles

Abou et al. **Changing nursing practice within primary health care innovations: the case of advanced access model.** BMC Nurs. 2020 Dec. ([LINK](#))

- Advanced access model, nurses and collaborative primary care
- “used a longitudinal qualitative approach, nested within a multiple case study conducted in four university family medicine groups in Quebec that were early adopters of AA”
- “This study explores the experience of nurse practitioners and registered nurses with implementation of the AA model, and identifies factors that facilitate or impede change.”
- **“Results:** Over time, RNs were not able to review the appointment system according to the AA philosophy. **Half of NPs managed to operate according to AA. Regarding collaborative practice, RNs were still struggling to participate in team-based care.** NPs were providing independent and collaborative patient care in both consultative and joint practice, and were assuming leadership in managing patients with acute and chronic diseases. **Thematic analysis revealed influential factors at the institutional, organizational, professional, individual and patient level, which acted mainly as facilitators for NPs and barriers for RNs. These factors were: 1) policy and legislation; 2) organizational policy support (leadership and strategies to support nurses' practice change); facility and employment arrangements (supply and availability of human resources); Inter-professional collegiality; 3) professional boundaries; 4) knowledge and capabilities; and 5) patient perceptions.”**
- **“Conclusions:** Our findings suggest that healthcare decision-makers and organizations need to redefine the boundaries of each category of nursing practice within AA, and create an optimal professional and organizational context that supports practice transformation. **They highlight the need to structure teamwork efficiently, and integrate and maximize nurses' capacities within the team throughout AA implementation in order to reduce waiting times.”**

Breton et al. **Ten years later: A portrait of the implementation of the advanced access model in Quebec.** Healthc Manage Forum. 2023 Sep. ([LINK](#))

- Cross-sectional study, **advanced access scheduling in primary care, Canada**
- “The main objective of this article is to present a portrait of the implementation of strategies rooted in the principles of the advanced access model by family physicians and nurse practitioners 10 years after its wide-spread introduction across the province of Quebec.”
- **“This article demonstrates that few advanced access strategies have been successfully implemented.** More initiatives are needed to achieve a sufficiently high rate of implementation of advanced access strategies to have an impact on the healthcare system. However, **some recent quality improvement initiatives have shown very encouraging results at the clinic level.”**

[\(LINK\)](#)

- Acknowledges interdisciplinary clinical teams, advanced access
- “Multimethod sequential study... informed by a literature review and an expert panel of provincial and local decision-makers, primary health care clinic members (family physicians, nurses and administrative staff), patients and researchers from the province of Quebec”
- **Aim:** “... to revise and operationalize the pillars and subpillars of the advanced access model based on its contemporary practice by professionals in primary health care.”
- **Background:** “Over the last 2 decades, primary health care practice has evolved to increase interdisciplinarity in clinical teams. Thus, the need for a model that incorporates new practices and professionals has necessitated development of an updated advanced access model. Furthermore, advanced access was originally developed in a context that prioritized implementing a new way of doing, with less emphasis on the ongoing practice and sustainability of the model. However, changes in primary health care practice require revisions to the advanced access model to adapt it to the contemporary context.
- **Results:** The revised advanced access model is defined by 5 pillars, of which 2 were updated from the original model ("Appointment system" and "Interprofessional practice"), 1 was merged with a revised pillar ("Develop contingency plans" with "Planning of needs and supply") and 1 underwent major transformations ("Backlog reduction" to "Continuous adjustment"). A new pillar concerning communication emerged from the consultation process. Subsequent steps for operationalizing definitions of sub-pillars confirmed the nature of the revised advanced access pillars and stabilized their content.”
- **Interpretation:**
  - “The involvement of advanced access experts from different backgrounds and health professions ensured that the model reflected the current context of primary health care practice and was not restricted to a family physician perspective. Considerations such as the importance of involving not only primary health care professionals, but also managers, decision-makers and patients helped redefine the pillar “Integration and optimization of collaborative practice,” making it more inclusive and extending advanced access practice to all clinic professionals, an important contribution of this study. Additional attention is now given to the importance of professional and patient satisfaction with advanced access, in line with 2 of the Quadruple Aim goals.”
  - “Continuity was deemed as important as accessibility by patients, depending on the urgency of their need. Although continuity is not an intuitive element of an access model, several scholars interested in advanced access underline its importance in patient management as well as in limiting demand for appointments and contributing to better overall quality of care. Indeed, a patient who meets with their usual professional, with whom a relationship of trust has developed over time, is less likely to make another confirmation appointment. Thus, at the end of our consultation process, this

concept was an integral aspect of referring patients to the appropriate professional. **Patients emphasized the importance of relational continuity and said they would prefer to wait for an appointment with a known professional, especially those dealing with complex needs. By increasing timely access to patients' own providers, advanced access improves relational continuity as a consequence of increased availability of the professional while avoiding the need to consult another professional or visit another setting to access timely care."**

Cassou et al. **General Practitioners activity patterns: the medium-term impacts of Primary Care Teams in France.** Health Policy. 2023 Oct. ([LINK](#))

- Quasi-experimental design, multi-professional primary care groups
- "We study the impact of practicing in MPCGs [multi-professional primary care groups] for general practitioners (GPs) in terms of the supply of care, practice patterns and income. Based on this quasi experimental framework with a panel dataset covering the period 2005-2017, we account for the selection into MPCGs by combining a difference-in-differences design with propensity score matching to pre-balance samples."
- "We show, based on our quasi-experimental design, that GPs who enrolled in accredited MPCGs increased the size of their patient list more rapidly than the other GPs over the 2008-2017 period. **Most interestingly, the availability of the GPs in MPCGs to see a higher number of patients was not found to be associated with a faster increase in the volume of medical services delivered, either in terms of visits or prescriptions (drugs, others including examinations and referrals), but instead with achieving a faster reduction in their rate of visits per patient. In addition, although the drug prescriptions per patient of all GPs decreased over the 2008-2017 period, the decrease was higher for MPCG GPs than their counterparts.** These findings suggest that joining an MPCG had a significant structuring impact on GP practice patterns across the period. Moreover, the findings are in accordance with the hypotheses that one could make in connection with improved coordination and collaboration being in favour of task reallocation, while the maintenance of the volume of service delivered suggests that if time has been freed up, it has essentially been reinvested as medical time. Furthermore, the faster increase in technical procedures activity corroborates the hypotheses of scale and scope economies regarding technical platform acquisition."
- "We show that GPs in MPCGs increased their patient list more rapidly than control GPs (+10% increase of encountered patients) without increasing their provision of services (number of visits and drug prescriptions) more rapidly. Instead, compared to control GPs, **MPCG GPs had a significantly faster reduction in the average number of visits (+5.5% reduction) and the euro-amounts of drug prescriptions per patient (+7.2% reduction) and other prescriptions.** The growth of these effects between the short and medium term moreover suggests that the properties of multi-professional coordination and cooperation need time to develop."

Davis et al. **Clinician Staffing, Scheduling, and Engagement Strategies Among Primary Care Practices Delivering Integrated Care.** J Am Board Fam Med. 2015 Sep-Oct. ([LINK](#))

- Integrating behavioral health clinicians with primary care practice
- **“Purpose:** To examine the interrelationship among behavioral health clinician (BHC) staffing, scheduling, and a primary care practice's approach to delivering integrated care.”
- **“Methods:** Observational cross-case comparative analysis of 17 primary care practices in the United States focused on implementation of integrated care. Practices varied in size, ownership, geographic location, and integrated care experience. A multidisciplinary team analyzed documents, practice surveys, field notes from observation visits, implementation diaries, and semi-structured interviews using a grounded theory approach.”
- **“Results:** Across the 17 practices, staffing ratios ranged from 1 BHC covering 0.3 to 36.5 primary care clinicians (PCCs). **BHC scheduling varied from 50-minute prescheduled appointments to open, flexible schedules slotted in 15-minute increments. However, staffing and scheduling patterns generally clustered in 2 ways and enabled BHCs to be engaged by referral or warm handoff.** Five practices predominantly used warm handoffs to engage BHCs and had higher BHC-to-PCC staffing ratios; multiple BHCs on staff; and shorter, more flexible BHC appointment schedules. Staffing and scheduling structures that enabled warm handoffs supported BHC engagement with patients concurrent with the identification of behavioral health needs. Twelve practices primarily used referrals to engage BHCs and had lower BHC-to-PCC staffing ratios and BHC schedules prefilled with visits. This enabled some BHCs to bill for services, but also made them less accessible to PCCs in when patients presented with behavioral health needs during a clinical encounter. Three of these practices were experimenting with open scheduling and briefer BHC visits to enable real-time access while managing resources.”
- **“Conclusion: Practices' approaches to PCC-BHC staffing, scheduling, and delivery of integrated care mutually influenced each other and were shaped by the local context.** Practice leaders, educators, clinicians, funders, researchers, and policy makers must consider these factors as they seek to optimize integrated systems of care.”

Ehman et al. **How Preferences for Continuity and Access Differ Between Multimorbidity and Healthy Patients in a Team Care Setting.** J Prim Care Community Health. 2017 Oct. Epub 2017 Apr 22. ([LINK](#))

- Cross-sectional study, team care setting, indirect evidence for patient preference for access/continuity
- **“Introduction:** Team-based care has become an essential part of modern medical practice. Patient-centered medical homes often struggle to balance the dual competing goals of acute access and continuity of care. Multimorbidity patients may value continuity more than healthy patients, and thus may prefer to wait to see their primary care physician (PCP).”
- **Results:** In all, 770 responses were obtained. All respondents preferred to be seen 2.5 days sooner for acute appointments. Multimorbidity patients preferred to wait 0.28 days longer for acute issues to see their PCP. Patients who were not satisfied with their care team preferred to

wait 0.75 days to see their PCP. Those not satisfied with their PCP choose to be seen 0.38 days sooner by their care team or any physician.

- **Conclusions:** All patients prefer continuity of care with their PCP for chronic disease management and value quick access to care for acute problems. For acute visits, multimorbidity patients prefer to wait longer to see their PCP than healthy adults. Satisfaction also plays an important role in patients' willingness to wait for an appointment with their PCP.

Elmore et al. **Investigating the relationship between consultation length and patient experience: a cross-sectional study in primary care.** Br J Gen Pract. 2016 Dec. ([LINK](#))

- Primary care, record info on consultation lengths
- **“Aim:** To examine the relationship between consultation length and patient-reported communication, trust and confidence in the doctor, and overall satisfaction.”
- **“Design and setting:** Analysis of 440 video recorded consultations and associated patient experience questionnaires from 13 primary care practices in England.”
- **“The shortest consultation was 2 minutes 15 seconds and the longest >30 minutes. The distribution of consultation length was skewed (Figure 2) with a greater number of shorter consultations (mean length 10 minutes 22 seconds, standard deviation [SD] 4 minutes 45 seconds)”**
- **“Conclusion:** The authors found no association between patient experience measures of communication and consultation length, and patients may sometimes report good experiences from very short consultations. However, **longer consultations may be required to achieve clinical effectiveness and patient safety: aspects also important for achieving high quality of care.** Future research should continue to study the benefits of longer consultations, particularly for patients with complex multiple conditions.”

Grot et al. **Small Changes in Patient Arrival and Consultation Times Have Large Effects on Patients' Waiting Times: Simulation Analyses for Primary Care.** Int J Environ Res Public Health. 2023 Jan. ([LINK](#))

- Simulation model, primary care/family medicine
- **“This study uses an operational research approach to illustrate the general effects of patient arrival and consultation times on waiting times”.... “This paper aims to support the interdisciplinary transfer of knowledge from the appointment scheduling and queuing literature to **family medicine.** Using data from the literature and appropriate assumptions, we present two scenarios to illustrate the general effects of patient arrival and consultation times on waiting times. To reflect a frequent scenario in general practices, a single busy morning is analyzed while using two additional actions that demonstrate the benefits of responding quickly to strongly increasing waiting times.”**
- **“Methods:** Stochastic simulations were used to model complex daily workflows of general practice. Following classical queuing models, patient arrivals, queuing discipline, and physician consultation times are three key factors influencing work processes.”
- **Summary:**

- **3.1. Scenario 1: Fixed Patient Arrivals** (patients arriving every 7.6 min and random consultation times)
  - “Take-Home Message 1. Less variation in consultation times during a day, e.g., by categorizing appointment types and lengths, reduces waiting times. For example, patients with known higher needs can be booked in two (or more) standard slots rather than one slot.”
- **3.2. Scenario 2: Random Patients’ Arrival** (and random consultation times)
  - “Take-Home Message 2. Influencing patient arrival behavior, e.g., by scheduling appointments in combination with the respective information of patients, reduces patients’ waiting times.
- **3.3. Detailed Half-Day Consideration: Effects of Consultation Time Strategies on Patients’ Waiting Times**
  - “Take-Home Message 3. The sooner a delay in consultation time is detected and the sooner the physician is able to intervene with shorter and less variable consultation times for as many patients as possible, the greater the potential reduction of waiting times for all subsequent patients will be. In practice, this can be achieved, e.g., by focusing on the most clinically important patient need(s) with rescheduling of the patients for a different day to address other needs.”
- **“Conclusions:** Aiming to improve family physicians' awareness of strategies for improving workflows, this simulation study illustrates the effects of strategies that address consultation times and patient arrivals.”

Loussouarn et al. **Can General Practitioners Be More Productive? The Impact of Teamwork and Cooperation with Nurses on GP Activities.** Health Econ. 2021 Mar. ([LINK](#))

- Pilot experiment, some indirect info on scheduling
- “In France, a pilot experiment promoted the vertical integration of and teamwork between GPs and nurses. **This pilot experiment relied on the staffing and training of nurses; skill mixing, including the authorization to shift tasks from GPs to nurses; and new remuneration schemes. This article evaluates the overall impact of this pilot experiment over the period 2010-2017 on GP activities based on the following indicators: number of working days, patients seen at least once, patients registered, and visits delivered.** We control for endogeneity and reduce selection bias by using a case-control design combining coarsened exact matching and difference-in-differences estimates on panel data. **We find a small positive impact on the number of GP working days (+1.2%) following enrolment and a more pronounced effect on the number of patients seen (+7.55%) or registered (+6.87%). However, we find no effect on the number of office and home visits. In this context, cooperation and teamwork between GPs and nurses seem to improve access to care for patients.**”

Milford et al. **TEAM approach reduced wait time, improved "face" time.** J Fam Pract. 2018 Aug. ([LINK](#))

- “An experimental care delivery model shows how staffing and role adjustments can enrich the health care experience for patients, staff, and physicians.”
- **“Purpose:** In 2013-14, 2 clinics in the Watertown Regional Medical Center (WRMC; in southern Wisconsin) launched a new delivery model, “TEAM (Together Each person Achieves More) Primary Care,” as part of a quality improvement project to enhance the delivery experience for



the patient, physician, and **medical assistant (MA)**. New work flows, roles, and responsibilities were designed to reduce cycle time, increase patient time with physicians and staff, and reduce patient wait times.”

- **“Methods:** The new model increased the ratio of MAs to physicians from a baseline MA:MD ratio of 1:1 to 3:2, and trained MAs to assume expanded roles during exam-room entry and discharge, including assisting with documentation during the patient visit. A process engineer timed patient visits. The process engineer and a human resources associate conducted surveys to assess the level of satisfaction for patients, physicians, and MAs.”
- **“Results Cycle:** time decreased by a mean of 6 minutes, from 44 to 38 minutes per patient; time with staff increased a mean of 2 minutes, from 24 to 26 minutes per patient; and waiting time decreased from 9 to 2 minutes per patient. Qualitative interviews with patients, physicians, and MAs identified a high level of satisfaction with the new model.”
- **“Conclusion: The higher staffing ratios and expanded roles for MAs in the new model improved workflow, increased the face time between patients and their physician and MA, and decreased patient wait times.** The TEAM model also appeared to improve patient, physician, and MA satisfaction. We faced many challenges while implementing the new model, which could be further evaluated during wide adoption.”

Mukhtar et al. **Factors associated with consultation rates in general practice in England, 2013-2014: a cross-sectional study.** Br J Gen Pract. 2018 May. ([LINK](#))

- Cross-sectional study, general practice including GPs, NPs or GPs and NPs
- **“Aim:** To examine factors associated with consultation rates in general practice.”
- **“Design and setting:** A cross-sectional study examining a sample of 304 937 patients registered at 316 English practices between 2013 and 2014, drawn from the Clinical Practice Research Datalink.”
- **“Summary**
  - Multivariate analyses were performed with three types of consultations: all (GP or nurse), **GP, and nurse consultations.** Analyses for all three consultation types showed similar, robust trends in factors associated with consultation rates in general practice.
  - For all three consultation types, **consultation rates increased with age, females consulted more than males, and Asian patients consulted more, and Chinese patients less, than white patients.**
  - **Consultation rates also increased with level of deprivation:** consultation rates for those with scores in the most deprived quintile were between 13% and 18% higher than for those with scores in the least deprived quintile. Practices with more GPs or nurses had higher consultation rates than those with fewer GPs or nurses, which probably reflects greater availability of appointments in surgeries with higher staff to patient ratios.”
  - “These findings can also be used to help identify practices in particular areas that may need to be targeted for additional support, including infrastructure such as consultation space, because of their predicted higher workload. For example, **the findings show that practices in areas that have more older patients living in deprived areas (as in some seaside towns), or a higher proportion of patients from Asian ethnic groups, are likely to experience high workload, and this should be accounted for in workforce planning.**”

Paré et al. **Assimilation of Medical Appointment Scheduling Systems and Their Impact on the Accessibility of Primary Care: Mixed Methods Study.** JMIR Med Inform. 2021 Nov 16. ([LINK](#))

- Mixed methods study, Family Care Clinics
- **“Objective:** This study aimed to fill this gap and provide answers to the following questions: (1) to what extent have primary care practices assimilated MAS [Medical Appointment Scheduling] systems into their daily operations? (2) what are the impacts of assimilating MAS systems on the accessibility and availability of primary care? and (3) what are the organizational and managerial factors associated with greater assimilation of MAS systems in family medicine clinics?”
- **“Methods:** A survey study targeting all family medicine clinics in Quebec, Canada, was conducted. The questionnaire was addressed to the individual responsible for managing medical schedules and appointments at these clinics.”
- **“Results:** A total of 70 valid questionnaires were collected and analyzed. A large majority of the surveyed clinics had implemented MAS systems, with an average use of 1 or 2 functionalities, mainly "automated appointment confirmation and reminders" and "online appointment confirmation, modification, or cancellation by the patient." **More extensive use of MAS systems appears to contribute to improved availability of medical care in these clinics, notwithstanding the effect of their application of advanced access principles.** Also, greater integration of MAS systems into the clinic's electronic medical record system led to more extensive use. Our study further indicated that smaller clinics were less likely to undertake such integration and therefore showed less availability of medical care for their patients. Finally, **our findings indicated that those clinics that showed a greater adoption rate and that used the provincial MAS system tended to be the highest-performing ones in terms of accessibility and availability of care.**”
- **“Conclusions:** The main contribution of this study lies in the empirical demonstration that **greater integration and assimilation of MAS systems in family medicine clinics lead to greater accessibility and availability of care for their patients and the general population.** Valuable insight has also been provided on how to identify the clinics that would benefit most from such digital health solutions.”

Robinson et al. **Losing the wait: improving patient cycle time in primary care.** BMJ Open Qual. 2020 May. ([LINK](#))

- **Context:** “Our family medicine clinic is located on the campus of Keck Medical Centre of University of Southern California (USC), a large health system affiliated with the Keck School of Medicine at the University of Southern California in Los Angeles.” .....“ The **family medicine clinic is part of a multispecialty group practice.** Our **family medicine team consists of physicians, physician assistants, nursing staff and registration and discharge staff** who see approximately 15 000 patient visits per year. The clinic is managed through a partnership between hospital administration and family medicine faculty leadership and has experienced significant growth with an average of 20% new patients per year, which has put pressure on the system to improve its efficiency”
- “Our aim was to improve cycle time for the whole visit to less than 60 min within 1 year by engaging our team in brainstorming solutions, presenting regular measurements to our team for review and holding regular meetings to plan rapid improvement cycles. **Over the course of 1 year (2017), we were able to reduce cycle time by 12% from 71 to 65 min and to improve patient satisfaction with care.** Despite the reduction in cycle time, we maintained high

satisfaction scores from patients who felt that the doctor spent enough time with them. We learnt the value of engaging our team, frequent measurement for reporting, adequate staffing at the beginning of clinic, and the value of MA staff acting in a flow coordinator role. We have not only maintained this improvement but also made further small gains over the subsequent 2 years, and by April 2019, our cycle time is at 60 min, despite a marked increase in patient volume. Additional work on the time after the patient is roomed and waiting for a doctor, and further analysis of the physician workflow would be important next steps to drive further improvement.”

Rodrigues & Authier. Are Family Medicine Clinics Improving Access to Care through Organizational Changes Driven by Healthcare Reform? Healthc Policy. 2022 Aug. ([LINK](#))

- **“Purpose:** This observational descriptive study reports organizational changes after the last reform in **18 family medicine units (FMUs)** affiliated with the University of Montreal in Québec.”
- **“Method:** Two self-administered surveys on access to care were administered to FMU directors between December 2016 and January 2017, and in August 2018.”
- **“Results:** Between surveys, the number of registered patients increased substantially. All clinics recruited new patients, and most offered walk-in services (89%) and moved toward an advanced access scheduling model (83%). For licensed practical nurses, there was a median increase from 0 to 3 and for nurse clinicians, from 2 to 3, that helped the development of collaborative teamwork.”
- **“Conclusion:** Despite the added teaching mission, the response of the FMU network has been dynamic, has adapted to the major changes and has continued to actively improve access to care for their communities. Challenges still remain regarding work on key priorities for improving access management.”

Rodriguez et al. **The Use of Enhanced Appointment Access Strategies by Medical Practices.** Med Care. 2016 Jun. ([LINK](#)).

- **“Objectives:** We examine practice use of **open access scheduling and after-hours care.**”
- **“Research design:** Data were analyzed from the Third National Study of Physician Organizations (NSPO3) to examine which enhanced appointment access strategies are more likely to be used by practices with more robust PCMH capabilities and with greater external incentives. Logistic regression estimated the effect of PCMH capabilities and external incentives on practice use of open access scheduling and after-hours care.”
- **“Subjects:** Physician organizations with >20% primary care physicians (n=1106).”
- **“Measures:** PCMH capabilities included team-based care, health information technology capabilities, quality improvement orientation, and patient experience orientation. External incentives included public reporting, pay-for-performance (P4P), and accountable care organization participation.”

- **“Results:** A low percentage of practices (19.8%) used same-day open access scheduling, while after-hours care (56.1%) was more common. In adjusted analyses, system-owned practices and practices with greater use of team-based care, health information technology capabilities, and public reporting were more likely to use open access scheduling. Accountable care organization-affiliated practices and practices with greater use of public reporting and P4P were more likely to provide after-hours care.”
- **“Conclusions: Open access scheduling may be most effectively implemented by practices with robust PCMH capabilities.** External incentives appear to influence practice adoption of after-hours care. Expanding open access scheduling and after-hours care will require distinct policies and supports.”

Stevens et al. **Patient-level and practice-level factors associated with consultation duration: a cross-sectional analysis of over one million consultations in English primary care.** *BMJ Open.* 2017 Nov 16.

[\(LINK\)](#)

- Cross sectional data, GP and nurse consultations
- **“Objectives:** ...We aimed to determine the patient-level and practice-level factors associated with duration of GP and nurse consultations in UK primary care.”
- **“Design and setting:** Cross-sectional data were obtained from English general practices contributing to the Clinical Practice Research Datalink (CPRD) linked to data on patient deprivation and practice staffing, rurality and Quality and Outcomes Framework (QOF) achievement.”
- **“Participants:** 218 304 patients, from 316 English general practices, consulting from 1 April 2013 to 31 March 2014.”
- **“Analysis:** Multilevel mixed-effects models described the association between **consultation duration** and patient-level and practice-level factors (patient age, gender, smoking status, ethnic group, deprivation and practice rurality, number of full-time equivalent GPs/nurses, list size, consultation rate, quintile of overall QOF achievement and training status).”
- **“Results: Mean duration of face-to-face GP consultations was 9.24 min and 5.32 min for telephone consultations. Nurse face-to-face and telephone consultations lasted 9.70 and 5.73 min on average, respectively.** Longer GP consultation duration was associated with female patient gender, practice training status and older patient age. Shorter duration was associated with higher deprivation and consultation rate. **Longer nurse consultation duration was associated with male patient gender, older patient age and ever smoking; and shorter duration with higher consultation rate.** Observed differences in duration were small (eg, GP consultations with female patients compared with male patients were 8 s longer on average).”
- **“Conclusions:** Small observed differences in consultation duration indicate that patients are treated similarly regardless of background. **Increased consultation duration may be beneficial for older or comorbid patients, but the benefits and costs of increased consultation duration require further study.**”

Zhao T, Meacock R, Sutton M. **Population, workforce, and organizational characteristics affecting appointment rates: a retrospective cross-sectional analysis in primary care.** Br J Gen Pract. 2023 Aug.

[\(LINK\)](#)

- Retrospective cross-sectional analysis, primary care, appointment rates
- **“Aim:** To identify population, workforce, and organizational predictors of practice variations in appointment volume.”
- **“Design and setting:** A multivariable cross-sectional regression analysis of 6284 general practices in England was undertaken using data from August–October 2022.”
- **“Method:** Multivariable regression analyses was conducted. It related population age and deprivation, numbers of GPs, nurses, and other care professionals, and organization characteristics to numbers of appointments by staff type and to proportions of appointments on the same or next day after booking.”
- **Summary:**
  - “Newly available data were analyzed to investigate the population, workforce, and organizational factors associated with appointment volumes. **The study found that patients registered with practices with more staff per 1000 population have more appointments. It also found that the variations between practices follow expected patterns in terms of appointments by staff type, with more GPs associated with more GP appointments and more other staff associated with more appointments with other staff.** The study found substitution between staff types in appointment volumes, because numbers of appointments delivered by other staff groups was lower in practices with higher numbers of FTE GPs per 1000 patients (and vice versa).”
  - “In terms of additional appointment volumes per FTE, the study found **that nurses were associated with the highest number of additional appointments, followed by other direct patient care professionals.** Grossing up to annual figures would suggest one additional FTE GP would be associated with 1193 additional appointments with GPs or a net of 700 total additional appointments per year, after accounting for staff substitution in the provision of appointments. One additional FTE nurse or other care practitioner would be associated with a net of 1468 and 874 additional appointments per year, respectively.”
- **Implications for research and practice:** “Relieving pressure on GPs is often presented as the main policy goal for skill-mix expansions. The results on substitution between staff types suggest this is possible, but prior research suggests GPs’ job satisfaction and ability to delegate work were not associated with higher levels of other staff. In addition, while higher numbers of staff other than GPs are associated with higher appointment volumes and therefore improved access, previous research has suggested they are negatively associated with patient-reported access and satisfaction. **While access is an important dimension of healthcare quality, the safety and effectiveness of care delivered must also be considered. Increasing appointment volumes has**

come at the cost of reduced continuity. Together these findings mean that caution is needed when pursuing increased access through skill-mix expansion, as this may come at the price of lower quality.”

- **“Conclusion: Higher staffing levels are associated with more appointment provision, but not speed of appointment availability.** New information on activity levels has shown evidence of substitution between GPs and other care professionals in appointment provision and demonstrated additional workload for practices serving deprived and rural areas.”

## Other

Hempel et al. **Defining Access Management in Health Care Delivery Organizations.** J Ambul Care Manage. 2021 Jul-Sep. ([LINK](#))

- “Our workgroup convened an access management expert panel informed by research evidence to establish recommendations for improving access management in primary care. We describe here the process and results to understand the conceptual dimensions of access management and to establish relevant definitions for access management and optimal access.”
- See Miake-Lye et al. 2017 in the “systematic review articles” section that informed the proceedings of the working group
- **Access management definition results:** “Anonymous voting and transparent “live editing” resulted in the following agreed definitions:
  - **Access management** encompasses the set of goals, evaluations, actions, and resources needed to achieve patient-centered health care services that maximize access for defined eligible populations of patients.
  - **Optimal access management** engages patients, providers, and teams in continuously improving care design and delivery to achieve optimal access.
  - **Optimal access balances** considerations of equity, patient preferences, patient needs, provider and staff needs, and value.”
- **Discussion:**
  - “...existing access research often does not define access and studies do not address access management as a comprehensive organizational management process. When attempts were made to operationalize the concept of access, empirical studies often narrowly focused on face-to-face appointments, failing to represent the bandwidth of currently defined access considerations. Many publications used “time to third next available appointment” as a measure of access as a reliable metric because it is not affected by chance cancellations. However, studies varied by whether they counted all appointments or addressed only routine care. **A key result of stakeholder discussions was that access and access management need to be conceptually addressed from a broader perspective.**”
  - “Our study also showed that **stakeholders strongly emphasize patient perspectives and highlighted that a patient-centered definition of access is critical**”... “An important



finding was that **reducing access management to objective temporal aspects may lose important facets of the patient experience of access that ultimately may not result in access management improvement.**"

- **"panel deliberations indicated that definitions of access to care and access management need to be patient-centered, while incorporating an understanding of realistic trade-offs and constraints faced by managers.** However, the format of the definitions varied across subpanels, indicating the complexity of access management and need for consensus."
- "The established definitions of access, optimal access management, and optimal access aim to advance our understanding of access, specifically in an era of increasing non-face-to-face visit modalities and newer primary care team models such as patient-centred medical homes. They emphasize the need for a patient-centred view and the need to simultaneously optimize multiple worthy management approaches."

Linzer et al. **The End of the 15-20 Minute Primary Care Visit.** J Gen Intern Med. 2015 Nov. ([LINK](#))

- Editorial, primary care in general
- Sections on:
  - **Consequences for Patients:** "Increased work during short (<20 min) visits means appointments in which fewer health care issues are addressed and the depth of understanding is diminished. Time-consuming psychosocial determinants of health are left unaddressed. These consequences translate to decreased patient satisfaction, excess emergency room usage and non-adherence to treatment plans.<sup>3</sup>"
  - **Suggestions for broad system change:** "Having flexible encounter times in primary care to meet patient needs will require shifts in both workflow and compensation. **We recommend that the routine care of complex primary care patients requires a visit time to meet patient needs, and may be 30 min or longer.** Models should include fees for care management and provide resources for team-based care by nurses, medical assistants, and pharmacists. While alternative payment models are emerging in both public and private sectors,<sup>5</sup> what is lacking is a systematic approach for providers to respond to these new incentives with strategies that improve outcomes with lower spending. These strategies should include the means to allow sufficient time for patients to feel heard and for providers to deliver high-quality care."

Kaplan et al. **Transforming Health Care Scheduling and Access: Getting to Now.** National Academies Press. 2015 Aug 24. ([LINK](#))

- Book chapter, Older but has a few interesting sections, one on team-based scheduling
- **Section on Scheduling Strategy models**
  - Open access/same day scheduling
  - Smoothing flow schedule model

- **Section on Team-based workforce optimization strategies**
  - “Box 4-5 describes how Group Health in the Northwestern United States implemented team-based care using a patient-centred medical home model (which broadened the role of registered nurses and clinical pharmacists) to improve scheduling in primary care and in chronic care management in particular.”
  - “BOX 4-6 Example of a Team-Based Approach to Scheduling in Mental Health Care. Because long wait times for mental health care are associated with higher rates of missed appointments and less usage of mental health services overall, Thunder Bay Regional Health.”

Konrad et al. **A Decision-Support Approach for Provider Scheduling in a Patient-Centered Medical Home.** *J Healthc Manag.* 2017 Jan/Feb. ([LINK](#))

- Model/tool
- **Aim:** “This article discusses important practical considerations in **the design of a decision-support tool to accompany point-of-care changes in the PCMH model.** It details an operations research approach to generating a provider schedule and evaluating the impact of alternative workforce configurations on patient throughput.....describes a decision-support approach to accompany provider scheduling at a VA [U.S., Veterans Health Administration] outpatient clinic transitioning to a PCMH. The approach provides a recommended schedule, which offers clinics an optimal way to assign their providers to shifts given a set of operational constraints. **A scheduling tool was implemented in a user-friendly front-end interface. A discrete-event simulation model was created to perform scenario analysis. At the time of writing, the clinic is transitioning to this new delivery model and testing the scheduling tool.**”
- **Conclusions:** “Although the clinic managers were satisfied with the outcome of this project, particularly an automated way to schedule providers, opportunities for improvement exist. Most important, **this study did not consider how patient throughput could be improved through quality improvement techniques such as Lean.** In addition, **the authors assumed that provider productivity is constant.** Regarding the tool itself, management at the CBOC under study would like to see alternative feasible schedules generated, which would enable some scheduling flexibility. Once a schedule was presented, users commented that they would like to have several schedules to choose from and select the most appropriate on the basis of their expertise. Second, users would like to see the interface more personalized, for example, by listing individual providers by name and perhaps assigning them to a particular examination room for a shift. With this feedback in mind, the authors are extending the model to provide two new capabilities: a redesigned scheduling tool as a fractional programming model to ensure feasibility and offer alternative high-quality, yet diverse, schedules, and a modified set of input requirements and files to make the user interface even easier to use. Such enhancements will provide a more usable scheduling tool for enabling PCMH implementation.”

Rubenstein et al. **Eight Priorities for Improving Primary Care Access Management in Healthcare Organizations: Results of a Modified Delphi Stakeholder Panel.** J Gen Intern Med. 2020 Feb. ([LINK](#))

- Conducted a modified Delphi stakeholder panel anchored by a systematic review.
- See related references: Hempel et al. 2021 & Miake-Lye et al. 2017
- **“Objective: To identify priorities for improving healthcare organization management of patient access to primary care based on prior evidence and a stakeholder panel.”**
- **“Background:** Studies on healthcare access show its importance for ensuring population health. Few studies show how healthcare organizations can improve access.”
- **“Results:** The panel achieved consensus on definitions of optimal access and access management on eight urgent and important priorities for guiding access management improvement, and on 1-3 recommendations per priority. Each recommendation is supported by referenced, panel-approved suggestions for implementation. **Priorities address two organizational structure targets (interdisciplinary primary care site leadership; clearly identified group practice management structure); four process improvements (patient telephone access management; contingency staffing; nurse management of demand through care coordination; proactive demand management by optimizing provider visit schedules), and two outcomes (quality of patients' experiences of access; provider and staff morale).** Recommendations and suggestions for implementation, including literature references, are summarized in a panelist-approved, ready-to-use tool.”
- **Discussion:**
  - “All eight top priorities resulting from the panel met our criterion of endorsement by more than half of the panelists as both important and urgent. The exact level of agreement, however, varied. Interestingly, **the most agreed-upon priority (100% agreement) was one that receives scant mention in access literature—i.e., the need for “routine evaluation of the degree to which patient telephone calls are (a) answered promptly and (b) routed accurately and appropriately, as judged in terms of patients’ clinical needs and preferences.”** The high level of panelist agreement in the absence of available research strongly suggests a need for additional investigation.”
  - “As structure improvement targets, **the panel identified interdisciplinary leadership at the local practice site level, with shared governance across physician, nurse, and administrative lines, and achievement of a clear group practice management structure originating at an executive level as top priorities.** These targets reflected approaches for achieving the level of boundary spanning communication and decision-making across disciplines and programs required for optimal access management.”
  - **“Our findings imply that the current healthcare organization focus on timeliness of access and on achieving open access goals is too narrow to succeed.** Because it is often the factor upon which achievement of all others may depend, we recommend establishing cross-cutting access management (see structure-related priorities) as a starting point. We then recommend a formal process of assessing current accomplishments in each priority area and engaging stakeholders in addressing one or two (Online Appendix 2).”