

# Ten Common Structures and Processes of High-Performing Primary Care Practices

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## ABSTRACT

Structures (context of care delivery) and processes (actions aimed at delivery care) are posited to drive patient outcomes. Despite decades of primary care research, there remains a lack of evidence connecting specific structures/processes to patient outcomes to determine which of the numerous recommended structures/processes to prioritize for implementation. The objective of this study was to identify structures/processes most commonly present in high-performing primary care practices for chronic care management and prevention. We conducted key informant interviews with a national sample of 22 high-performing primary care practices. We identified the 10 most commonly present structures/processes in these practices, which largely enable 2 core functions: mobilizing staff to conduct patient outreach and helping practices avoid gaps in care. Given the costs of implementing and maintaining numerous structures/processes, our study provides a starting list for providers to prioritize and for researchers to investigate further for specific effects on patient outcomes.

**KEY WORDS:** health services, practice-based research, primary care

Primary care is the backbone of the health care system, as it promotes wellness and prevention of disease; therefore, it is important to understand and invest in the drivers of high-quality

primary care. The Donabedian<sup>1</sup> model, which is a framework for examining health services and care quality, posits that structures and processes drive patient outcomes. Structures describe the context in which care is delivered, such as the facility, equipment, and human resources. Processes are the actions aimed at delivering health care, such as patient education and panel management. For example, a primary care practice may use a tobacco screening tool (structure) to identify and refer patients to tobacco cessation counseling (process), which may improve patient outcomes.

Decades of primary care research has aimed to test and evaluate the implementation of practice changes, resulting in a wealth of knowledge about structures and processes that may lead to improved patient outcomes.<sup>2,3</sup> Yet, there remains a lack of empirical evidence connecting *specific* structures and processes to outcomes that is needed to determine which to prioritize among the many for implementation and/or optimization. This brief report aims to provide a starting point for future primary care and health services research by addressing the following research question: What structures and processes related to chronic disease management and prevention are present in high-performing primary care practices? Through a qualitative approach, the study team identified the most common structures and processes present in a sample of high-performing practices across the United States.

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This work was supported by the National Center for Advancing Translational Science (NCATS) (grant no. 5U01TR002008). The content is solely the responsibility of the authors and does not necessarily represent the official views of NCATS.

The authors thank Michael Barry and Rachel Thornton, for their support in collecting survey data and arranging interviews; Shannon Williams, for conducting interviews; Kayla Fennelly, for cleaning transcripts; and our partner networks, for their efforts in recruiting study sites.

**Conflicting and Competing Interests:** None.

Supplemental digital content is available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal's Web site (<http://www.JPHMP.com>).

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DOI: 10.1097/PHH.0000000000001451

## Methods

### Design

This report draws from key informant qualitative data collected as part of a larger study to develop a tool to identify gaps in structures and processes that are associated with high performance on primary care quality indicators.<sup>4</sup> Although the study team interviewed multiple people from each practice, the unit of analysis was the practice, which enhances comprehensiveness of the findings. This study was approved by the NYU Grossman School of Medicine Institutional Review Board.

### Sample

The study team partnered with 4 primary care practice networks to identify and recruit high-performing primary care practices serving adults across the United States: OCHIN [not an acronym]; the Distributed Ambulatory Research in Therapeutics Network (DARTNet); the NYC Department of Health and Mental Hygiene's Bureau of Equitable Health Systems; and the NYU Faculty Group Practice. Recruitment took place in 2019. High performance was defined as meeting at least 2 of the following in 2018: among eligible patients, 70% prescribed aspirin use, 70% with controlled blood pressure (<140/90 mm Hg), 70% prescribed statin therapy, and 90% with controlled diabetes ( $HBA_{1c} < 9$ ).<sup>5</sup> These measures come from the Centers for Disease Control and Prevention's Million Hearts benchmarks<sup>5</sup> and represent priority areas likely to be captured by many primary care practices. See Supplemental Digital Content A (available at <http://links.lww.com/JPHMP/A880>) for specifications. The team used purposive sampling to attain geographic and practice characteristic variations.<sup>6</sup> The team requested interviews with the medical director and the quality improvement director. Each individual was offered a \$150 honorarium. Twenty-nine practices were recruited, and 22 (78.6%) participated (44 individuals). One practice only gave an interview with the medical director; the practice did not have a quality improvement director. Another practice gave 3 interviews: 1 with medical director and 2 with quality improvement directors.

### Data collection

Prior to the interviews, the study team collected practice characteristics from practice members via a survey: number of full-time equivalent providers and

staff; practice ownership; Patient-Centered Medical Home recognition; participation in an accountable care organization; and estimated percentages of non-White, Medicaid, and Medicare patients. Rurality was determined using rural-urban commuting area codes.<sup>7</sup>

The study team conducted semistructured, qualitative interviews to identify, from the perspective of the practice participants, how they organized and delivered care and what they believed was linked to high-quality chronic disease management and prevention. The interview guide (see Supplemental Digital Content B, available at <http://links.lww.com/JPHMP/A881>) was piloted in 5 practices not included in the study, updated, and then finalized for use in the study. Interviews were conducted from February to May 2020. The first 6 practices were completed in February, in person. Because of COVID-19, the remaining interviews were conducted virtually. Interviews consisted of 2 trained interviewers with no prior relationship to the practices—one serving as lead and the other asking clarifying questions. Interviews lasted 45 to 60 minutes and were audio-recorded with consent. Recordings were stored on a secure server and sent to a transcription service. The full team met monthly and a subteam weekly for debriefing and quality control.

### Data analysis

The study team used a coding template (deductive approach), comprising a list of 258 structures and processes identified in the larger study's scoping review of articles published in 2009-2019 on practice-level interventions designed to impact care quality and outcomes related to chronic and preventive care.<sup>4</sup> A team member coded the transcripts using this list and created new codes as needed to identify content not reflected on that list. Codes were applied only if the interviewee described the structure/process as being actively used in the practice. A subset of transcripts (10%) were double-coded by another researcher to assess accuracy; the interrater reliability Cohen's  $\kappa$  score was 0.83, suggesting strong agreement.<sup>8</sup> Questions were discussed in monthly team meetings. Coding was done using Dedoose.<sup>9</sup>

The team exported data on the frequency of each code into an Excel sheet. A practice was "counted" if the code was mentioned at least once by either interviewee from the same practice. For example, if the medical director mentioned "patient registry" but the quality improvement director from the same practice did not, the practice was counted as having a "patient registry." The study team chose to examine

the counts at the practice level rather than the individual level, as we were interested in the presence of the structure/process in the practice, not whether it was consistently described by both interviewees. The full team reviewed the topmost common structures/processes and revisited transcripts to examine quotes.

## Results

Our study included 22 practices, with characteristics shown in Supplemental Digital Content C (available at <http://links.lww.com/JPHMP/A882>). On average, the practices had 5 to 6 full-time equivalent providers and 15 to 16 staff members. Almost half were Federally Qualified Health Centers or look-alikes, 32% were part of an accountable care organization, and 86% were located in a metropolitan area. Practices varied in their geographic location, types of patients served, and payer mix.

The 10 most commonly reported structures/processes related to chronic disease management and prevention were, in order of frequency, as follows: patient registry (structure); templates with alerts for health maintenance and preventive care (structure); contacting patients with unmet chronic care needs (process); referring patients to self-management resources provided by the community (process); Web-based patient portal (structure); routine generation of reports (process); electronic health record-based clinical decision support tool (structure); standardized mental health screening tool (structure); contacting patients with unmet preventive care needs (process); and utilization of medical assistants to perform a wide range of patient care and education activities (process). See the Table for descriptions and representative quotes. The most common structure/process was present in 20 of the 22 practices and the 10th most common in 14 practices.

## Discussion

High-performing practices described a set of common structures and processes that they perceived drive high-quality care. Each of the 10 identified structures/processes was present in almost two-thirds of the practices. The 10 structures/processes largely support practices with avoiding gaps in care and mobilizing staff to conduct patient outreach.

Primary care practices need more reliable, useful data on which structures/processes are associated with improvements in health outcomes. Given the cost of implementing and maintaining the numerous

recommended structures/processes, it is critical to identify those that clearly result in return on investment. Our study suggests a starting point for determining which practice changes to prioritize to optimize patient care.

The list also serves as a starting point for researchers to empirically investigate the *individual* effects of structures/processes on patients' outcomes. Findings from studies on the links between individual structures/processes and health outcomes are inconsistent.<sup>2,3</sup> This may be, in part, because structures/processes are most often evaluated as part of a larger intervention bundle (eg, Patient-Centered Medical Home<sup>10,11</sup>), making it difficult to isolate their specific effects. Designs such as the Multiphase Optimization Strategy and other adaptive designs offer innovative approaches to more efficiently define the individual effects of structures/processes.<sup>12</sup> These study designs and other pragmatic research are needed to provide practices and health systems with data that can inform decisions about what infrastructure is needed to organize and deliver high-quality care in a range of real-world settings.

## Limitations

There were several limitations. The criterion for high performance was limited to optimize recruitment efforts; the study team acknowledges that performance can be measured in many other ways. While environment and team characteristics are known to contribute to performance,<sup>13</sup> they were out of scope of the research question. Because of COVID-19, protocols were transitioned from in person to virtual, which did not allow for the observation and confirmation of structures/processes. Furthermore, most practices had to pause in-person visits, which changed routine care delivery. The study team adjusted protocols to guide participants to focus on prepandemic care. To minimize investigator bias, we used a multidisciplinary team (medicine, health services, policy, and program evaluation, all trained in qualitative research), conducted interviewer quality control, and checked interpretation across team members. Finally, our sample included high-performing practices from primary care networks, mostly located in metropolitan areas, and does not examine any barriers to using a structure/process. Findings thus may not be generalizable; however, the goal of the study was to identify characteristics of high-performing practices. Our findings suggest that the structures/processes found in our high-performing practices are ones that are implementable beyond, in a range of primary care practices.

**TABLE**  
**Ten Most Commonly Reported Structures and Processes From 22 High-Performing Primary Care Practices in the United States (2020)**

Structure and Process	# of Practices Reporting (N = 22)	Description	Representative Quote
Patient registry (Structure)	20	A patient registry is a system to evaluate a patient population by a specified disease, condition, or exposure. The functionality needed to create a report can be programmed as part of an EHR system but is more often maintained by an insurer or ACO.	“Our ACO support person comes about every week or every other week, depending on her schedule, and sits down with our clinical quality nurse. [ . . . ] They go through the list of all of our Medicare patients [ . . . ] and see where the gaps in care are. They identify those, and then that becomes our work list.” (Mississippi)
Templates with alerts for health maintenance and preventive care (Structure)	19	Many EHR systems developed the knowledge and capacity to use and create templates and alerts to ensure that evidence-based guidelines for health maintenance and preventive care are met for all patients. Practices can use the default templates provided by their EHR system or customized and create their own.	“I use the Health Maintenance tab in Epic. It gives you a big red flag of when patients are due for their mammogram, their pap, their colon cancer, and then it gives you the option to adjust those. If they have a breast lump that needs a repeat ultrasound in six months, you can go in and change the frequency on that. I basically make the Health Maintenance in Epic do that heavy lifting for me.” (Washington)
Contacting patients with unmet chronic care needs (Process)	18	Reactive outreach to patients is contacting patients who missed appointments. Proactive outreach, such as conducting check-in calls with patients in between scheduled visits, ensures patients adhered to their care plans.	“Every week, I give the medical assistants a new list of patients who have A <sub>1c</sub> ’s greater than 9 because our goal is to have A <sub>1c</sub> ’s less than 9. Every week, we generate that, we hand it out, and they do outreach for those patients. [ . . . ] I think having the data-driven tool [to generate reports] and having outreach workflow that medical assistants do is key.” (Massachusetts)
Referring patients to self-management resources provided by the community (Process)	17	Self-management resources include programs that help patients with chronic conditions learn behavioral strategies and acquire tools for improving their health. Such programs may not be available within the practice.	“We partner with another community organization all throughout the year—actually, a few of them. [Organization Name] is one of our inner-city organizations that puts on a farmer’s market in the summer. We work with them to have vouchers for our patients with chronic illness so that they can get fresh vegetables. [ . . . ] Then, we have the cooking class. We have nutritional classes. We also, at one-point last year, got people connected with a walking club.” (Minnesota)
Web-based patient portal (Structure)	17	A patient portal is a Web-based interface (eg, MyChart in Epic) that complements patient-provider communication outside of office, phone, and video visits. Web-based patient portals are used to schedule appointments, send test results, review remote monitoring data, and answer patient questions (ie, e-visits), which can facilitate continuous care management.	“With new patients, I just tell them, ‘I will send your results through MyChart, and you can always contact me.’ Even my established patients, ‘If you have a question you can’t get through the office, just send me a message. It’s much quicker for me to address it on MyChart than playing phone tag for two hours to try to contact you.’ They’ve seen my responsiveness, so they keep it up. If they haven’t been on it, and I get them to sign up, they’re like, ‘Wow, this is great!’” (New York)

(continues)

**TABLE****Ten Most Commonly Reported Structures and Processes From 22 High-Performing Primary Care Practices in the United States (2020) (Continued)**

Structure and Process	# of Practices Reporting (N = 22)	Description	Representative Quote
Routine generation of reports (Process)	17	Care quality reports may be generated through an EHR system or by an external organization (eg, insurer, ACO) to view aggregate patient data and track performance.	"We're in the data all the time. We run quarterly reports. That data is analyzed by our medical leadership team. It's given back to our providers. It's given to the team to say, 'Hey, do we think there's some things going on?' We take on quality improvement initiatives in response to the reports." (Ohio)
EHR-based clinical decision support tool with best practice alerts (Structure)	15	Clinical decision support tools are computer-based programs that use EHR data to provide alerts and reminders to assist in implementation of evidence-based guidelines at the point of care.	"Our EHR system is on top of its game. When the patient is diagnosed with diabetes, it will give us a list of stuff that they are required to do. So, if they haven't had an A <sub>1c</sub> within three months, or if their A <sub>1c</sub> is not at goal, it will alert us every visit. So, we go through a little tab called PopHealth, and everything's read in—we stress, every visit—that you have to check it." (Texas)
Standardized mental health screening tool (Structure)	14	Mental health screening tools, namely, the standardized PHQ-2 and PHQ-9, can be embedded into routine use. The PHQ-2 is a valid, quick depression screening instrument, and the PHQ-9 is often used as a follow-up to a positive PHQ-2 result and to monitor treatment response.	"We have that yearly to do the PHQ-2. The medical assistant would know when she needs to run the PHQ-9. And then we'd know they if there is a clear mental health need. We have also direct access to the behavioral health specialist that is going to be ready to assess this patient." (Georgia)
Contacting patients with unmet preventive care needs (Process)	14	Outreach to patients for preventive health is typically a practice-wide initiatives to identify and contact patients for needs such as colorectal cancer screening and influenza vaccinations.	"Then we have colonoscopies, which are near impossible to get patients to be compliant with. But we do use Cologuard [at-home colon cancer screening kit]. We have the Cologuard website, so I can always look at that report and see who's done their Cologuard and who hasn't, and call and give them a little nudge, and say, 'You're due, and you have the kit. All you gotta do is send it back.'" (Arizona)
Utilization of medical assistants to perform a wide range of patient care and education activities (Process)	14	Medical assistants are working "at the top of their license," which includes activities such as triaging, taking vitals, providing patient education, and following up postvisit.	"We did lots of kinds of [things] like education with the MAs, even things like tobacco screening, BMI documentation, and allowing them to do some of the counseling for BMI and obesity. Just really giving them [the MAs] the encouragement and allowing them to work at the top of their licensing scope." (Georgia)

Abbreviations: ACO, accountable care organization; BMI, body mass index; EHR, electronic health record; MA, medical assistant; PHQ, Patient Health Questionnaire, standardized depression screening tool.

## Implications for Policy & Practice

- Primary care providers are often faced with a long list of costly, recommended structures/processes to implement into their practices. Yet, there is very little evidence connecting *specific* structures/processes to patient outcomes—making it difficult for them to determine which to prioritize to implement and optimize into their real-world settings.
- This study provides a list of the 10 most commonly reported structures/processes in high-performing practices, which aims to be useful to primary care practice leaders as a starting point to prioritize for implementation and/or optimization.
- The list may also be useful to researchers as a starting point to conduct studies that isolate the specific empirical effects of structures/processes on patient outcomes.

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