Successful Change Management Strategies for Improving Diabetes Care Delivery Among High-Performing Practices

Kevin A. Peterson, MD, MPH⁴ Leif I. Solberg, MD² Caroline S. Carlin, PbD⁴ Helen N. Fu, RN, PbD³ Rachel Jacobsen, MPH, RD⁴

Milton Eder, PbD¹

'Department of Family Medicine and Community Health, UMN Medical School, University of Minnesota, Minneapolis, Minnesota

²HealthPartners Institute, Minneapolis, Minnesota

³Public & Population Health Informatics, Regenstrief Institute, Center for Biomedical Informatics, Indiana University Richard M. Fairbanks School of Public Health, Indianapolis, Indiana



AC Annals Journal Club selection

Conflicts of interest: authors report none.

CORRESPONDING AUTHOR

Kevin A. Peterson Center of Excellence in Primary Care Department of Family Medicine and Community Health University of Minnesota Medical School MMC381 420 Delaware Street SE Minneapolis, MN 55455 Peter223@umn.edu

ABSTRACT

PURPOSE To learn how the highest-performing primary care practices manage change when implementing improvements to diabetes care delivery.

METHODS We ranked a total of 330 primary care practices submitting practice management assessments and diabetes reports to the Understanding Infrastructure Transformation Effects on Diabetes study in 2017 and 2019 by Optimal Diabetes Care performance. We ranked practices from the top quartile by greatest annual improvement to capture dynamic change. Starting with the top performers, we interviewed practice leaders to identify their most effective strategies for managing change. Interview transcripts were qualitatively analyzed to identify change management strategies. Saturation occurred when no new strategies were identified over 2 consecutive interviews.

RESULTS Ten of the top 13 practices agreed to interviews. We identified 199 key comments representing 48 key care management concepts. We also categorized concepts into 6 care management themes and 37 strategic approaches. We categorized strategic approaches into 13 distinct change management strategies. The most common strategies identified were (1) standardizing the care process, (2) performance awareness, (3) enhancing care teams, (4) health care organization participation, (5) improving reporting systems, (6) engaging staff and clinicians, (7) accountability for tasks, (8) engaging leadership, and (9) tracking change. Care management themes identified by most practices included proactive care, improving patient relationships, and previsit planning.

CONCLUSIONS Top-performing primary care practices identify a similar group of strategies as important for managing change during quality improvement activities. Practices involved in diabetes improvement activities, and perhaps other chronic conditions, should consider adopting these change management strategies.

Ann Fam Med 2023;21:424-431. https://doi.org/10.1370/afm.3017

INTRODUCTION

A lthough the need to improve diabetes outcomes in primary care is evident, exactly how a practice successfully manages change in care delivery in the midst of a busy clinical environment is much less clear.^{1,2} Conceptual models for improving care delivery often identify foundational principles and highlight thematic and strategic approaches based on those principles.³⁻⁵ The National Demonstration Project organizes change around core principles of primary care, whereas the National Committee for Quality Assurance structures strategic guidelines around 6 transformational themes supporting team-based care.^{6,7} Changing existing care management processes is essential for successful quality improvement, however, introducing new processes into a busy practice environment can often be disruptive. Many local factors, such as problems with clinician engagement, staff education, or leadership, can contribute to incomplete or ineffective adoption of care management change and compromise anticipated improvements in clinical outcomes.⁸⁻¹²

Improving diabetes care delivery is a common focus of quality improvement activities in primary care.¹³ As a model for chronic disease management, successful strategies for diabetes care delivery can inform on how to best implement effective care management processes (CMPs) across a variety of chronic diseases in primary care settings.¹⁴ A CMP is a specific activity performed in a clinical practice with the goal of providing high-quality care.¹⁵ Quantitative improvement in diabetes performance has been associated with multiple CMPs.¹⁵⁻¹⁸ We previously reported



that CMPs used by high-performing practices differ from those used by low-performing practices.¹⁷ The ability to effectively adopt a CMP and manage potentially disruptive change in a demanding care setting might be another differentiating characteristic of high-performing practices. The 7-year Understanding Infrastructure Transformation Effects on Diabetes (UNITED) study combined the efforts of experienced investigators from the University of Minnesota Center of Excellence in Primary Care and HealthPartners Institute to identify the CMPs most effectively improving primary diabetes care across Minnesota and surrounding regions.¹⁹ In this qualitative study, we explored strategies used by the highest-performing primary care practices to determine how they managed change.

METHODS

Practice Selection

We surveyed practices participating in the Physician Practice Connections Readiness Survey (PPC-RS) to determine the presence of CMPs from all 585 primary care practices reporting to the Minnesota Statewide Quality Reporting and Measurement System in 2017 and 626 practices reporting in 2019. Response rates were 71% in 2017 and 72% in 2019. Respondents and nonrespondents were comparable in rurality and health system size. Details about the survey process can be found elsewhere.15 A total of 477 practices completed the PPC-RS survey in either 2017 or 2019. For this study, we selected practices for interviews from the 330 practices completing the PPC-RS survey and submitting annual diabetes performance data in both 2017 and 2019. Submission of performance data is mandatory for Minnesota practices seeing >30 patients aged 18 to 75 years with diabetes per year. A patient is considered to have received optimal care if they achieve concurrent blood glucose control and blood pressure control, have guideline-based use of a statin and an antiplatelet drug, and are a nonsmoker. These participating practices provide care to 191,513 patients with type 1 or type 2 diabetes. To control for variation in practice populations and settings, we matched performance data with American Community Survey data to capture zip code-level descriptors of each patient's neighborhood including measures of racial distribution, income/education, and wealth. The wealth and income/ education measures were computed from a factor analysis of income, housing, education, and family composition measures retrieved from 5-year American Community Survey data for 2015. We measured practice performance using the National Quality Forum (NQF)-Endorsed Maintenance Standard Optimal Diabetes Care (ODC) (NQF#0729). The methods used to determine the measurement of practice performance by population characteristics have been described in more detail previously.¹⁴ Average Optimal Diabetes Care (ODC) performance in Minnesota increased from 12% to 45% during the period 2004 to 2017. The national average was 23% during the period 2013 to 2016.²⁰

We identified practices in the upper quartile of ODC performance in both 2017 and 2019 and then ranked the practices by annual percentage improvement in ODC score to capture those that are continuing to improve. Beginning with the highest-performing practice, we contacted practice leaders by telephone and e-mail and explained why they were selected. We asked practices to identify the individual(s) completing the PPC-RS survey to participate in a 20-minute onsite interview with study investigators.

Qualitative analysis of interviews was performed by 5 investigators (K.A.P., L.I.S., M.E., R.J., H.N.F.) after every set of 2 interviews.^{21,22} The investigators determined saturation to occur when 2 practices were interviewed sequentially with no new identified strategies.

Qualitative Interview

Semistructured interviews were conducted by the study investigators (K.A.P., L.I.S., M.E.) in 2020. Nine interviews were conducted onsite. One interview was conducted by videoconference, owing to concerns regarding the coronavirus disease 2019 pandemic. The number of practice participants in each interview ranged from 1 to 5. We used a grounded theory approach for the interviews, which focused on the management of diabetes care improvements in the practice over the prior 3 years.²³ Interviews began with brief unscripted personal introductions and a recognition of each practice's achievement of high-quality diabetes outcomes. After obtaining oral consent for audio recording, interviewers read the following script using scripted probes to promote further discussion:

- 1. What changes do you think contributed most to that improvement in ODC scores?
 - a. (Probe if this is unclear.) Consider changes in structure or process of care. For example, some clinics have implemented reminders or outreach to patients.
 - b. (Continue to ask the question until they have identified everything that might have contributed.) Is there anything else you'd like to add?
- 2. How did you implement those changes? Did you use any particular strategies?
 - a. Was there a change in personnel or resources that made the changes possible?
 - b. What aspects of your clinic or its relationship with the larger medical group contributed to making the change possible?
- 3. Were there any other factors that contributed to your improvement?

Interviews were transcribed by an external professional transcription service and evaluated qualitatively using conventional content analysis. Practices did not review transcripts. All practice comments identifying a specific CMP, or a specific method of change implementation, were identified using NVivo 12 software (QSR International). Comments were derived directly from the text data. We constructed an initial coding framework as a directed content analysis after review and discussion of the first 2 interviews by all 5

investigators.²¹ During subsequent review, we coded comments into distinct concepts. The framework and individual concept codes were modified by consensus as we discussed each interview. We used a combination of individual reviews followed by group discussion to clarify and standardize concept codes across all interviews. Any changes in the coding that resulted from subsequent reviews resulted in rereview of previous interviews and recoding to reflect the change. This was followed by assigning concepts into 1 of 3 distinct categories: (1) process of care (what was being implemented), (2) strategy for managing change (how a process was implemented), and (3) obstacles to care delivery. Data saturation was determined to occur when no additional strategies were identified in the 9th or 10th interviews. We then conducted a summative analysis of themes, combining frequency counts with observations in a constant-comparative approach.²²

All interviews were performed with informed consent. The study, all data handling procedures, and all study processes were approved and overseen by the University of Minnesota Institutional Review Board.

RESULTS

The UNITED study measured ODC in 330 primary care practices in 2019. Thirteen practices were approached, and 10 were interviewed and analyzed before saturation occurred. The selected practices belonged to different health care organizations. Each practice was managed by an administrative clinic manager and a clinician leader. None of the practices had worked together on a common quality improvement initiative. Selected practices included small rural, large rural, and urban settings. All practices belonged to health care systems

of \geq 2 practices. The average ODC performance of the 330 practices participating in the UNITED study was 48.4% in 2019.¹⁹ The average ODC performance for the 10 high-performing practices interviewed in the present study was 56%. This included any patient aged 18 to 75 years with type 1 or type 2 diabetes seen over the course of the year. The selected practices had increased ODC performance by an average of 2.9 percentage points (range, 1.6-4.0 percentage points) per year from 2017 to 2019, showing that dynamic active improvement was still occurring in the practice at the time of the interview. Practice characteristics are listed in Table 1.

The investigators wrote notes on 199 key comments over the course of the 10 interviews. Analysis of comments identified 48 distinct concepts (Supplemental Table 1). Using interpretive analysis, we categorized the concepts into 6 care management themes, 37 strategic approaches, and 4 obstacles. Five investigators (K.A.P., L.I.S., H.N.F., R.J., M.E.) categorized the strategic approaches into 13 distinct change management strategies.

Change Management Strategies

Change management strategies are shown in Table 2. Selected quotes are shown in <u>Supplemental Table 2</u>. (All strategic approaches are available in <u>supplemental</u> information.) Nine change management strategies from a total of 13 identified were recognized as important by ≥ 5 practices and are presented below.

1. Standardizing the Care Process

Every practice identified the principles of change management during quality improvement activities using descriptors such as standardization, individualization of standardization, clear priorities, keeping it simple, and providing consistent messages. Developing a standard process for diabetes care simplified the complexity of diabetes care management. Some practice leaders considered standardizing roles and responsibilities to be important for accountability of the care team. Standardized tasks also simplified covering for staff absences by clarifying expectations for replacement staff.

2. Performance Awareness

Nine of the 10 practices identified the importance of performance awareness and commitment to quality that was regularly nurtured across the entire clinic staff. Beginning with the hiring and onboarding process, and included as a part of staff meetings, leaders emphasized the importance of delivering high-quality care as reflected by performance measures. Some practices encouraged a feeling of competition between providers or with other practices. Several made a point of celebrating good scores or improvement in scores with recognition or awards for high-performing teams.

Table 1. Performance Characteristics of Selected Practices Average Average Total

Clinic	Health Care System Size (>12 Practices)	Average Annual Increase in ODC, %	Average Annual Increase in ODC	ODC Measure in 2019	Total Diabetes Population in 2019
А	No	3.1	0.062	0.579	302
В	Yes	4.0	0.079	0.553	215
C	Yes	2.3	0.045	0.571	631
D	No	3.2	0.064	0.516	273
E	Yes	2.5	0.050	0.660	259
F	Yes	0.3	0.007	0.529	1,432
G	Yes	1.6	0.032	0.530	1,250
Н	Yes	2.2	0.044	0.517	286
1	Yes	2.2	0.044	0.593	351
J	Yes	3.8	0.076	0.585	1,129
ODC = op	timal diabetes care.				

426

Improving Diabetes Care							5	5			5 .	
		No. of	No. of									
Change Management Strategy	А	В	с	D	E	F	G	н	I	J	Comments	Clinics
Clinician and staff engagement		2	2			4	6	1	4	4	23	7
Accountability	5	4			1		2	2	2	1	17	7
Performance awareness	1	2		1	2	3	1	1	1	4	16	9
Staff education		3		1					2	1	7	4
Reminders		1		1		1					3	3
Effective care teams		1	6	2	4	2	1	2	2	2	22	9
Engaged leadership	2	2				1			3	1	9	5
Quality-improvement activities	1	1					5		1	1	9	5
Standardization as a QI strategy	9	3	5	3	2	4	5	4	1	4	40	10
Documentation		1		1					1		3	3
Patient expectations	1	1				1				1	4	4
Health care organization support	3	1		2	1	1	4	3	3		18	8
Population-based reporting	1	2		1	1	3		1	1	3	13	8
QI = quality improvement.												

Table 2. Code Counts Extracted During Interviews That Identified Change Management Strategies Important for

3. Care Teams

Nine of the 10 practices reported expanded roles for care team members or increased size of the teams as key to improving diabetes performance. Expansion of the teams provided capacity for additional support for patient outreach and enhanced patient relationships. Three practices had care teams comprising clinician-medical assistant pairs, whereas 6 practices described expanded care teams beyond those roles. Some practices modified physical space to improve care team interactions.

4. Support From Health Care Organization

Participation with the health care organization (HCO) was identified by 8 practices as important in contributing to better performance. The 2 practices that did not identify this support belonged to 2 different large HCOs. Practices used the HCO for additional information and expertise. Support included improving patient registries, expanding quality improvement meetings, improving access to expert opinion, assisting with standardizing workflow, and enhancing staff training.

5. Population-Based Reporting

Eight practices identified the importance of better reporting systems for improving diabetes care. Six practices identified the need for reliable, up-to-date reports, whereas 5 practices additionally identified the need to dedicate time for actively working on those reports. Reports needed to be easy to

use and focused on actionable information that supported outreach and previsit care. One practice hired an assistant (shared between 3 clinics) with the sole responsibility of evaluating reports.

6. Engagement

Seven practices identified clinician engagement, and 5 identified staff engagement in the improvement process as important for success. Practices engaged clinicians and staff in multiple ways including competition and celebration of success. Leaders promoted clinician and staff engagement by emphasizing shared goals regarding improved clinical outcomes.

7. Accountability

Seven practices identified management of staff accountability for completing processes as important. Five practices required staff to meet process targets. Four practices monitored staff performance of processes. Accountable processes included evaluation of registry reports, monitoring clinical performance scores, and checking that patient behavior change was sustained over time.

8. Leadership

Five practices identified local and/or organizational leadership or diabetes champions as important. Leadership was noted to play an important role in enhancing clinician and staff engagement, setting priorities, and promoting awareness and accountability.

Table 3. Code Counts Extracted During Interviews That Identified Care Management Themes Considered Most Important for Improving Diabetes Care

		Practice										No. of
Care Management Theme	А	В	c	D	E	F	G	н	I	J	Quotes	Clinics
Proactive approach to care	2	2	4	1	4	4	2	1	2	3	25	10
Patient relationship/interaction	1	3	8	3		3	3	3		3	27	8
Previsit planning				2	2	2	3		1	3	13	6
Patient education			2	1						1	4	3
Intensifying activities	1										1	1
Priority				1							1	1

Table 4. Code Counts Extracted During Interviews That Identified Barriers to Improving Diabetes Care												
	Practice											No. of
Code Label	Α	В	c	D	Е	F	G	н	I	J	Quotes	Clinics
Health care organization					1				1		2	2
Social determinants of health		1	1							1	3	3
Community resources			1					2			3	2
Turnover		1		1	1		1				4	4

9. Quality-improvement activities

Five practices identified organizational structures responsible for managing the change process. Three practices relied on quality improvement meetings to track change, whereas others used huddles or small teams.

Care Management Themes

All care management themes identified as important for improving diabetes care are shown in Table 3. Selected quotes are shown in <u>Supplemental Table 3</u>. The 3 themes recognized by more than half of the practices are described below.

1. Proactive Outreach

Proactive outreach was defined as any approach initiating care outside of a diabetes care visit. Proactive care was identified by 10/10 high-performing practices as important for improving diabetes care delivery. It was mentioned more often than any other CMP and was commented on an average of 2 to 3 times during each interview. Proactive outreach included actively contacting patients who needed testing, medication changes, or appointments. Most practices (8/10) reported evaluating diabetes registry reports to identify when to reach out and inform patients of care needs and/or deficiencies in current targets. Outreach included contact by telephone, mail, e-mail, and web-portal messages to individual patients who were missing a targeted diabetes performance goal.

2. Enhancing the Patient Relationship

Eight practices focused on enhancing the patient relationship primarily by increasing the frequency and quality of interactions using telephone calls, letters, or electronic communication. Practices characterized the practice relationship with patients as particularly involving the clinicians (2/8), the care team (4/8), or both the clinician and the care team (2/8). A better relationship with the patient was perceived as essential in establishing the patient trust necessary to promote adherence to behavioral change recommendations. Long-standing relationships with patients were seen as particularly important for improving diabetes performance measures.

3. Previsit Planning

Six practices identified previsit planning as important. A form of proactive care, previsit planning was defined as planning to use an upcoming appointment as an opportunity to address needed diabetes care. Previsit planning usually involved generation of a physician or staff reminder to ensure that diabetes care requirements were addressed during a patient visit for another reason.

Barriers to Performance Improvement

Barriers were infrequently identified by these high-performing practices. No single barrier was noted by >4 practices. The identified barriers are shown in Table 4. Four practices identified staff and clinician turnover as a barrier by diminishing the relationship with patients and compromising the experience and training of the care team. This ultimately decreased the practice's ability to provide outreach and motivate behavioral change. Three practices identified the challenge of providing high-quality care to patients with economic or social barriers. These practices identified the value of integrating community resources, but no practice reported having a good system for systematically identifying social or economic needs or integrating community resources.

DISCUSSION

This qualitative study provides evidence that high-performing primary care practices share a similar perception of the change management strategies that are important for success during performance-improvement activities for diabetes. All selected practices shared outstanding performance. Despite never working together, 9 change management strategies were independently identified by more than half of the practices as important for successful implementation of practice change. Although the same strategies were commonly identified, no single practice identified all 9 strategies.

The strategies represent methods of managing core elements of a practice as described in the National Demonstration Project.²⁴ This includes the management of resources, organizational structure, and functional processes. Other strategies identified provide methods of managing leadership and engagement and more closely address constructs defining adaptive reserve.²⁵

Variation in the core elements of practice could be expected to contribute to implementation differences. Change management strategies that address core practices around resources, organizational structure, functional processes, and adaptive reserve offer a plausible pathway for enhancing adoption of practice improvement initiatives. Because the strategies identified by these practices were not developed from a particular approach to improvement, they suggest an approach to change management that potentially has broader applicability beyond diabetes improvement. The strategies highlighted by the practices were successful across a variety of improvement approaches.

The identified change management strategies are not goals to accomplish and do not lend themselves to establishment of simple metrics; however, together they provide a perspective for how successful practices manage change during performance improvement. A review of these perspectives might help practices identify strengths and weaknesses in their own approach to change management during practice improvement activities. Quality improvement initiatives might consider further evaluation of change management strategies that are commonly considered important for successful performance improvement.

Standardization of diabetes care management processes was the only strategy identified by all practices. All practices defined a uniform process to address the challenges of managing complex disease in a busy clinical setting. Standardization has been credited with providing a pathway for quality care improvement.^{26,27} Standardized work was noted to clarify roles and simplify interactions between staff. It also provided greater flexibility and efficiency in staffing a group practice. Staff absences were noted to be more easily managed when roles and tasks were well defined and accountability was clarified. Performance awareness, staff and clinician engagement, and accountability are 3 themes that have been recognized in the Harvard Business Review as counteracting a disconnection between personal and organizational performance.²⁸ Most practices identified each of these as important for supporting practice performance improvement. Quality improvement activities were identified as providing an organizational approach to track implementation of change. Although quality improvement teams were not always identified, most practices implemented organizational activities to manage the change process.

Additional important strategies provided direct support for providing proactive care. Providing an expanded care team and the creation of better reporting systems were seen by practices as important for expanding the capability of the practice to reach out to patients who needed additional support. Expanding the care team might include task delegation or increasing personel.^{29,30} A 2020 study in 4 states (24 health care systems) demonstrated the necessity of using health information technology to improve performance.³¹ In the present study, practices described using reports to implement a review of systematically collected data that resulted in targeted telephone calls, e-mails, web-portal notifications, or letters to patients. Nearly all practices used reporting systems to support previsit planning, ensuring that recommended care was offered when a patient visited the practice for another reason. Although a better reporting system was seen as necessary for care delivery, it was not considered sufficient. Good reporting systems still required someone on the care team to spend time working with the reports to initiate proactive care activities. Expanded care teams were used to review reports, and organizational improvement teams tracked performance. Engaged leadership and the health care organization were identified as providing valuable administrative direction. Leadership contributed primarily by increasing awareness of performance measures, promoting engagement, providing accountability, supporting education, and engaging additional organizational resources and expertise.

In addition to similar perspectives on how to manage change, the practices shared perspectives on what processes should be targeted. Three main care management themes were identified, suggesting a similar focus between the practices on what was necessary. The delivery of proactive care was identified by all practices as essential for improving diabetes care. Proactive patient outreach has previously been identified as the most important approach for achieving and maintaining high-quality diabetes outcomes by highperforming practices.¹⁷ Previsit planning is a form of proactive

429

care that allows for opportunistic care to be provided when the patient visits the practice for another reason. Practices implemented previsit planning by reviewing upcoming appointments to flag care that might otherwise be missed during the visit. The importance of proactive care is consistent with previously published work identifying care management processes that distinguish high- from low-performing practices.^{15,17} Improving the patient relationship was the third care management theme identified by most practices. A strong patient relationship has previously been identified as important for patient-centric diabetes care.^{32,33} The common focus on improving patient relationships underscores the perception in the practices that good patient relationships contribute directly to better diabetes outcomes. Establishing a strong relationship was acknowledged as important for enhancing patient adherence to recommendations and promoting behavioral change. The identification of the above themes supports the findings of previous work identifying differences between high- and low-performing primary care practices in the provision of diabetes care.17

This qualitative study has several limitations. Although high-performing practices report change management strategies as important, whether the strategies identified are necessary or sufficient in any particular practice was not addressed by the analysis. All practices wanted to increase proactive care, and interpretation should be limited to practices with this goal. Although the sample was geographically limited to practices serving Minnesota, substantial variation in performance exists across Minnesota. Minnesota practices use the same delivery models adopted across the county. Given that practice performance was statistically controlled for race, ethnicity, and income, it is unlikely that these known barriers would be identified during the analysis. Because only high-performing practices were selected, common barriers to care delivery that influence performance were unlikely to be identified.

CONCLUSIONS

High-performing primary care practices share a common perspective regarding the change management strategies they consider important for successful implementation of change during diabetes performance improvement activities. These strategies focus on the management of core elements of the practice including resources, organizational structure, functional processes, and adaptive reserve. Implementing a standardized process of care during patient-initiated encounters helped to address the complexity of diabetes care, whereas staff engagement, performance awareness, and accountability promoted alignment of personal and organizational performance. Engaged leadership and organizational support increased awareness, engagement, and accountability. Highperforming practices also shared a similar approach to diabetes care delivery, focusing on proactive outreach to patients not in clinic and opportunistic care delivery for patients in

clinic, to deliver recommended clinical services. Finally, highperforming practices focused on improving patient relationships to improve adherence to recommendations and promote behavioral change.

Read or post commentaries in response to this article.

Key words: quality of health care; quality of health care; diabetes mellitus, type 2; delivery of health care; primary health care; organizational culture

Submitted December 3, 2022; submitted, revised, May 7, 2023; accepted May 31, 2023.

Funding support: Research reported in this publication was supported by the National Institute of Diabetes, Digestive, and Kidney Diseases of the National Institutes of Health (R18DK110732). Helen N. Fu is presently funded as a postdoctoral research fellow in Public and Population Health Informatics at the Fairbanks School of Public Health and the Regenstrief Institute, supported by the National Library of Medicine of the National Institutes of Health (T15LM012502).

Disclaimer: This content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Supplemental materials

References

- Lieberthal RD, Karagiannis T, Bilheimer E, et al. Exploring variation in transformation of primary care practices to patient-centered medical homes: a mixed methods approach. *Popul Health Manag.* 2017;20(5):411-418. <u>10.1089/pop.</u> <u>2016.0132</u>
- Wagner EH, Coleman K, Reid RJ, Phillips K, Sugarman JR. Guiding transformation: how medical practices can become patient-centered medical homes. The Commonwealth Fund. Published Feb 2012. Accessed Jun 21, 2023. https:// www.commonwealthfund.org/sites/default/files/documents/___media_files_ publications_fund_report_2012_feb_1582_wagner_guiding_transformation_ patientcentered_med_home_v2.pdf
- 3. Martsolf GR, Alexander JA, Shi Y, et al. The patient-centered medical home and patient experience. *Health Serv Res.* 2012;47(6):2273-2295. 10.1111/ j.1475-6773.2012.01429.x
- Reid RJ, Fishman PA, Yu O, et al. Patient-centered medical home demonstration: a prospective, quasi-experimental, before and after evaluation. Am J Manag Care. 2009;15(9):e71-e87.
- Bilello LA, Hall A, Harman J, et al. Key attributes of patient centered medical homes associated with patient activation of diabetes patients. *BMC Fam Pract.* 2018;19(1):4. 10.1186/s12875-017-0704-3
- Miller WL, Crabtree BF, Nutting PA, Stange KC, Jaén CR. Primary care practice development: a relationship-centered approach. Ann Fam Med. 2010;8(Suppl 1):S68-S79. 10.1370/afm.1089
- National Committee for Quality Assurance. NCQA Patient-Centered Medical Home (PCMH) standards and guidelines (version 8.1). Updated Jan 1, 2023. Accessed Jun 21, 2023. <u>https://store.ncqa.org/index.php/catalog/product/view/</u> id/2776/s/2017-pcmh-standards-and-guidelines-epub/
- Change management in healthcare the biggest challenges and how to overcome them. Capacity for Health. Published 2019. Accessed Jun 21, 2023. https://capacity4health.org/change-management-healthcare-biggestchallenges-overcome/
- Hollingsworth JM, Saint S, Sakshaug JW, Hayward RA, Zhang L, Miller DC. Physician practices and readiness for medical home reforms: policy, pitfalls, and possibilities. *Health Serv Res.* 2012;47(1 Pt 2):486-508. <u>10.1111/j.1475-6773.2011.01332.x</u>
- Timbie JW, Setodji CM, Kress A, et al. Implementation of medical homes in federally qualified health centers. N Engl J Med. 2017;377(3):246-256. 10.1056/NEJMsa1616041
- Kuzel AJ, Skoch EM. Achieving a patient-centered medical home as determined by the NCQA—at what cost, and to what purpose? Ann Fam Med. 2009;7(1):85-86. 10.1370/afm.956

ANNALS OF FAMILY MEDICINE * WWW.ANNFAMMED.ORG * VOL. 21, NO. 5 * SEPTEMBER/OCTOBER 2023

- Nelson KM, Helfrich C, Sun H, et al. Implementation of the patient-centered medical home in the Veterans Health Administration: associations with patient satisfaction, quality of care, staff burnout, and hospital and emergency department use. JAMA Intern Med. 2014;174(8):1350-1358. 10.1001/jamainternmed. 2014.2488
- Bitton A, Martin C, Landon BE. A nationwide survey of patient centered medical home demonstration projects. J Gen Intern Med. 2010;25(6):584-592. 10.1007/s11606-010-1262-8
- Carlin CS, Peterson K, Solberg LI. The impact of patient-centered medical home certification on quality of care for patients with diabetes. *Health Serv Res.* 2021;56(3):352-362. 10.1111/1475-6773.13588
- Peterson KA, Carlin C, Solberg LI, Jacobsen R, Kriel T, Eder M. Redesigning primary care to improve diabetes outcomes (the UNITED Study). *Diabetes Care*. 2020;43(3):549-555. <u>10.2337/dc19-1140</u>
- Solberg LI, Carlin C, Peterson KA, Eder M. Differences in diabetes care with and without certification as a medical home. *Ann Fam Med.* 2020;18(1): 66-72. 10.1370/afm.2492
- 17. Solberg LI, Peterson KA, Fu H, Eder M, Jacobsen R, Carlin CS. Strategies and factors associated with top performance in primary care for diabetes: insights from a mixed methods study. *Ann Fam Med.* 2021;19(2):110-116. 10.1370/ afm.2646
- Fu HNC, Skolnick VG, Carlin CS, Solberg L, Raiter AM, Peterson KA. The effect of depression and rurality on diabetes control. J Am Board Fam Med. 2020; 33(6):913-922. 10.3122/jabfm.2020.06.200041
- Peterson KA, Carlin CS, Solberg LI, Normington J, Lock EF. Care management processes important for high-quality diabetes care. *Diabetes Care*. 2023 May 31. Online ahead of print. 10.2337/dc22-2372
- Kazemian P, Shebl FM, McCann N, Walensky RP, Wexler DJ. Evaluation of the cascade of diabetes care in the United States, 2005-2016. JAMA Intern Med. 2019;179(10):1376-1385. <u>10.1001/jamainternmed.2019.2396</u>
- 21. Hsieh H-F, Shannon SE. Three approaches to qualitative content analysis. Qual Health Res. 2005;15(9):1277-1288. 10.1177/1049732305276687
- Miles MB, Huberman AM, Saldaña J. Qualitative Data Analysis: A Methods Sourcebook. 3rd ed. SAGE Publications, Inc; 2014.

- Glaser BG. Strauss A. The Discovery of Grounded Theory: Strategies for Qualitative Research. 1st ed. Routledge; 2017.
- 24. Crabtree BF, Nutting PA, Miller WL, Stange KC, Stewart EE, Jaén CR. Summary of the National Demonstration Project and recommendations for the patientcentered medical home. Ann Fam Med. 2010;8(Suppl 1):S80-S90. <u>10.1370/</u> <u>afm.1107</u>
- Hung D, Chung S, Martinez M, Tai-Seale M. Effect of organizational culture on patient access, care continuity, and experience of primary care. J Ambul Care Manage. 2016;39(3):242-252. 10.1097/JAC.000000000000116
- Lavelle J, Schast A, Keren R. Standardizing care processes and improving quality using pathways and continuous quality improvement. *Currrent Treatment Options in Pediatrics*. 2015;1:347-358. 10.1007/s40746-015-0026-4
- Rusjan B, Kiauta M. Improving healthcare through process standardization: a general hospital case study. Int J Health Care Qual Assur. 2019;32(2):459-469. 10.1108/IJHCQA-06-2018-0142
- 28. Brickman J. How to get health care employees onboard with change. Harv Bus Rev. Published Nov 23, 2016. Accessed Jun 21, 2023. <u>https://hbr.org/2016/</u> 11/how-to-get-health-care-employees-onboard-with-change
- 29. Gallegos-Macias A, Pino MD. A team-based approach to electronic in-basket optimization. *Fam Pract Manag.* 2022;29(6):10-13.
- Hopkins K, Sinsky CA. Taking team-based care to the next level. Fam Pract Manag. 2022;29(3):25-31.
- Rudin RS, Fischer SH, Damberg CL, et al. Optimizing health IT to improve health system performance: a work in progress. *Healthc (Amst)*. 2020;8(4): 100483. <u>10.1016/j.hjdsi.2020.100483</u>
- Moore LG, Wasson JH. The ideal medical practice model: improving efficiency, quality and the doctor-patient relationship. *Fam Pract Manag.* 2007; 14(8):20-24.
- Dambha-Miller H, Griffin SJ, Kinmonth AL, Burt J. Provision of services in primary care for type 2 diabetes: a qualitative study with patients, GPs, and nurses in the East of England. Br J Gen Pract. 2020;70(698):e668-e675. 10.3399/bjgp20X710945

ANNALS OF FAMILY MEDICINE * WWW.ANNFAMMED.ORG * VOL. 21, NO. 5 * SEPTEMBER/OCTOBER 2023

431