The Patient-Centered Medical Home Pilot: Transforming Health Care in Maine - 2010-2012

Final Evaluation Report

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October 2016

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This report was prepared for the Maine Quality Forum as a deliverable under the PCMH pilot evaluation project under Contract # 20120514*04906. Additional funding for the evaluation was provided by The Davis Family Foundation, The Bingham Program, The Betterment Fund, The Sam L. Cohen Foundation, and the Office of MaineCare Services, Maine Department of Health and Human Services.

Acknowledgments

We are indebted to many who have contributed to this study including the PCMH Pilot conveners – the Maine Quality Forum, Maine Quality Counts, the Maine Department of Health and Human Services (DHHS) and the Maine Health Management Coalition – who were the initial supporters of the PCMH pilot and provided direction to the evaluation and insight and input on findings presented in this report. In particular, we would like to thank Lisa Letourneau, MD, MPH, Executive Director of Maine Quality Counts, who led the implementation of the Maine PCMH Pilot and who was instrumental in securing funding for the evaluation and has tirelessly though patiently provided critical insights along the way. We also want to thank the Maine Quality Forum and the Maine Health Data Organization, for providing funding support for the evaluation including the preparation of this final report, facilitating access to all-payer claims data used for our analyses, and providing substantial technical data support to the evaluation team. We also appreciate the substantial help many staff from the Office of MaineCare Services, DHHS provided in the course of the evaluation.

This evaluation would not have been possible without multi-year funding from multiple organizations and agencies, including:

The Davis Family Foundation
The Bingham Program
The Betterment Fund
The Sam L. Cohen Foundation
Office of MaineCare Services, Maine Department of Health and Human Services
Maine Quality Forum

The PCMH Pilot Evaluation Sub-group, representing diverse organizations and individuals with interest in the PCMH Pilot and this evaluation contributed to the study design and has provided helpful feedback and suggestions on our results. Dr. Derek DeLia, Associate Research Professor, State Health Policy Research Center, Rutgers University provided expert econometrics consultation. Kimberley Fox provided assistance in the analysis of patient experience data. Anne Conners provided invaluable editorial assistance.

The information, conclusions and opinions expressed in this report are those of the authors and no endorsement by our funders is intended or should be inferred.

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Executive Summary

The patient centered medical home (PCMH) model is widely recognized as the foundation of current strategies for transitioning to a more accountable, performance-based healthcare system. In January 2010, the Maine Quality Forum, Maine Quality Counts, the Maine Health Management Coalition, and the Maine Department of Health and Human Service's Office of MaineCare Services (Maine's Medicaid program) launched a pilot of the PCMH model in Maine. Based on a statewide recruitment, 25 primary care practices were selected to participate — 21 serving adults and 4 serving children.*

Through the Pilot, practices participated in a Learning Collaborative, had access to practice coaches, and received enhanced payments. The Pilot has been a multi-payer initiative with MaineCare, Aetna, Anthem, Harvard Pilgrim Health Care, and several large, self-insured employer groups all participating with enhanced payments to PCMH Pilot practices.

In 2009-2010 the Muskie School and Quality Counts secured support from multiple sources to fund an independent, formal evaluation of the impact of the PCMH Pilot, focusing on the first three years: 2010-12. The evaluation of Maine's PCMH Pilot addressed three key questions:

(1) For PCMH Pilot practices, what was their experience in implementing the core expectations of the PCMH Pilot?

(2) What impact did the transition to the PCMH model have on practice culture, workplace stress, and other dimensions of practice capacity? and

(3) Did the PCMH Pilot practices achieve better cost-efficiency and quality outcomes compared with primary care practices that were not recognized as PCMH model practices and did not receive the practice transformation support of the PCMH Pilot?

In addition to a largely qualitative study of the implementation experience and impact on practices, the evaluation team undertook a formally designed, quantitative evaluation of the impact of the Pilot on healthcare costs, use, and quality using Maine's all-payer claims data. This component of the evaluation compared the performance of 21 adult-serving PCMH Pilot practices with a matched group of 38 primary care practices that had not received NCQA recognition as PCMH practices as of October 2011 and did not participate in the PCMH Pilot's practice transformation support activities (Comparison). The evaluation team evaluated the cost, use, and quality outcomes in the PCMH Pilot and Comparison practices from a baseline year (2008) to 2012, the third and final year of the original PCMH Pilot. Separate analyses were conducted for commercial, MaineCare, and Medicare patients in the PCMH Pilot and Comparison practices. This Final Report presents the results of our evaluation of the impact of the PCMH Pilot on the commercial population.

* One of the original 22 PCMH Pilot adult practices closed in 2012 and left the Pilot.

Summary of Findings

Consistent with other evaluation studies of similar PCMH initiatives around the country, the evaluation of Maine's PCMH Pilot showed mixed results.

Cost and Use

Comparing the performance of PCMH Pilot and Comparison practices in 2012, we found:

- PCMH Pilot practices had lower Total Costs (-7.5%).
- Primary care costs were also lower in Pilot versus Comparison practices in 2012 (-5.8%).
- PCMH Pilot and Comparison practices did not differ significantly in any of the other cost categories.
- Emergency department visit rates were significantly lower for PCMH Pilot practices than Comparison practices in 2012 (-6.1%).
- Inpatient admission visit rates were significantly higher for PCMH Pilot practices than Comparison practices in 2012 although the difference was small (0.02%).
- In 2012, there were no significant differences in other utilization measures between PCMH Pilot and Comparison practices.

Comparing changes in costs from baseline (2008) to 2012:

- Both PCMH Pilot and Comparison practices had significantly higher primary care and specialty care costs; increases in these costs were lower, however, in PCMH Pilot versus Comparison practices (for example, specialty care costs: 11.4% versus 16.6% respectively).
- Inpatient costs declined significantly in Pilot practices (-15.1%); there was no significant change in inpatient costs in Comparison practices.
- Emergency department costs were unchanged in PCMH Pilot practices; in Comparison practices, emergency department and preventable emergency department costs declined significantly (-9.1% and -11.4% respectively).
- Both lab and imaging costs declined significantly in PCMH Pilot and Comparison practices; declines were greater in Comparison practices.
- Costs for procedures were significantly higher in both PCMH Pilot and Comparison practices (11.7% and 14.7% respectively).

Comparing changes in utilization from baseline (2008) to 2012:

- PCMH Pilot practices had significantly fewer preventable emergency room visits (-0.3%) and inpatient admissions (-1.3%).

- Although PCMH Pilot practices had fewer ambulatory care sensitive inpatient admissions (-0.06%) and emergency room visits (-3.5%) in 2012 than in 2008, differences were not statistically significant.

- Comparison practices experienced a significant increase in primary care (44.1%) and specialist visits (18.7%).

- Comparison practices experienced a significant decrease in emergency room visits (-10.9%), preventable emergency room visits (-0.3%), and inpatient admissions (-1.5%).

Quality

- In 2012, PCMH Pilot practices had a significantly lower cervical cancer screening rate than Comparison practices (-3.3%).

- There were no other significant differences in quality measures between the PCMH Pilot and Comparison practices in 2012.

- Comparing changes from baseline (2008) to 2012, the only significant change for the PCMH Pilot practices was for cervical cancer screening, which declined by 4.9% from 76% in 2008 to 71% in 2012.

- Diabetes HbA1c testing increased significantly in Comparison practices between 2008 and 2012.

- Rates of breast cancer and cervical cancer screening declined in Comparison practices over this period.

- Neither the PCMH Pilot nor the Comparison practices showed any significant changes in performance on diabetes nephropathy, eye exams, or LDL screening between 2008 and 2012.

Limitations

There are a number of important limitations to this evaluation. First, the evaluation is based on a small number of practices and patients, which may have affected our ability to detect differences between the PCMH Pilot and Comparison practices, especially in such areas as inpatient costs and admissions which occur infrequently. Second, the three-year time period is short. Most studies have shown that the changes associated with becoming a PCMH practice take considerable time to fully implement and that performance of PCMH practices improves over time. And finally, methodological challenges may have affected our results. For example, the methods used to attribute patients to practices, although commonly used, are not perfect and could affect practice-level results.

Conclusions and Implications

The accumulated evidence to date suggests that practice transformation is a difficult process requiring complex changes in the organization, culture, and processes of care. As such, it takes time to see the true effects of changes on patient costs and quality. The fact that this evaluation detected differences in some cost and use rates is therefore significant.

Putting this study in the context of other PCMH evaluations, it is important to note that as one of the early PCMH pilots, the payment model in Maine's Pilot did not include performance features, contributing potentially to the model's impact. In addition, this evaluation was conducted during a period when Maine's Community Care Teams, a significant element of many pilots, were not fully operational. Studies suggest that the care management features and functions in the PCMH model may be critical to its effectiveness in reducing costs and improving quality.[1]

With growing evidence of the effectiveness and impact of primary care, the question of how to organize and pay for primary care remains critical. The promising though incomplete evidence offered by this early evaluation of the Maine PCMH Pilot represents a first step in understanding the full story and impact of the Pilot. Results of our evaluation of the impact of the PCMH Pilot on the MaineCare and Medicare populations are in the Appendix.

Final Report

Introduction

The patient centered medical home (PCMH) model of primary care is widely recognized as the foundation of current strategies for transitioning to a more accountable, performance-based healthcare system. The core elements of the model focus on transforming practices to be more patient-centered and team-based with greater capacity for care management. National Committee for Quality Assurance (NCQA) recognition[2] of PCMH practices, technical assistance, special payments and incentives to assist practices with practice re-design, and performance reporting have been standard elements of efforts to move practices to this new model of care. The expectation is that patient centered, coordinated, and cost and quality performance-focused primary care can contribute to achieving a more cost efficient and higher quality healthcare system.

In January 2010, the Maine Quality Forum, Maine Quality Counts, the Maine Health Management Coalition, and the Maine Department of Health and Human Service's Office of MaineCare Services (Maine's Medicaid program) launched a pilot of the PCMH model in Maine. The conveners of the PCMH Pilot conducted a statewide recruitment and selected 25 primary care practices to participate — 21 serving adults and 4 serving children.† The goal of the PCMH Pilot was to support the transformation of primary care to improve the quality and cost efficiency of primary care practices and to enhance the patient experience of care. Through the Pilot, practices participated in a Learning Collaborative, had access to practice coaches, and received enhanced Per Member, Per Month (PMPM) payments. Participating payers included MaineCare, Aetna, Anthem, Harvard Pilgrim Health Care, and several large, self-insured employer groups.

The conveners of Maine's PCMH Pilot have been committed to rigorous monitoring and evaluation of the results of the Pilot. In addition to collecting clinical quality monitoring data from the participating practices that was used in producing feedback reports, the conveners and the Muskie School of Public Service collaborated to obtain public and private funding to undertake a formal, independent evaluation of the three-year Pilot. This evaluation has focused on both the experience of the practices in implementing the PCMH model and the impact of the model on cost-efficiency and quality of care outcomes. This final report summarizes key findings of the formal evaluation of the Maine PCMH Pilot's first three years, 2010-12, focusing on the results for commercial populations. MaineCare and Medicare results are presented in Appendix 2 and 3. The report also presents highlights from two additional reports on the Maine PCMH Pilot that summarize clinical quality and patient experience trends among Pilot practices.

† One of the original 22 PCMH Pilot adult practices closed in 2012 and left the Pilot.

Background

The Patient Centered Medical Home (PCMH) Pilot in Maine

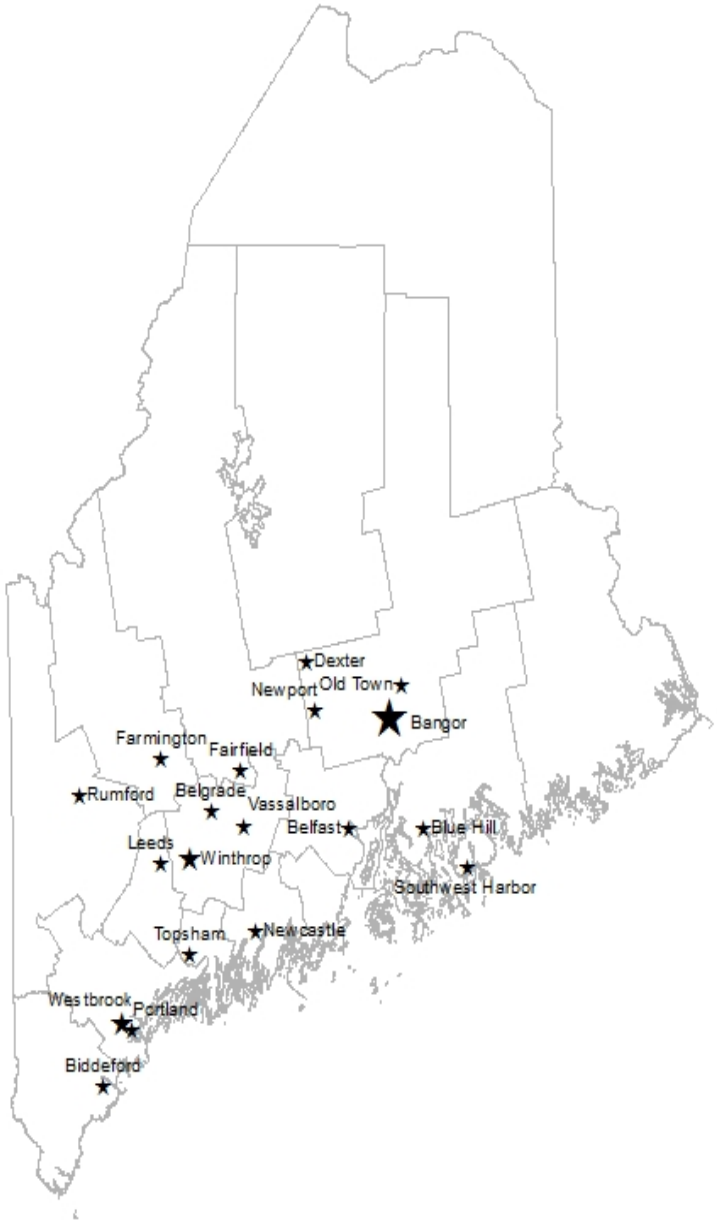
Maine's PCMH Pilot is one of the most important payment and delivery system reform initiatives launched in Maine to enhance patient experience of care, decrease costs, and improve overall health outcomes for Mainers. These reform initiatives have evolved in Maine's unique collaborative fashion with partnerships between state agencies, large health care systems, primary care practices of all sizes, community-based mental health agencies, non-profit quality improvement organizations, commercial and public insurance payers, and private foundations. Nearly every corner of the state has been touched by these efforts and a majority of the state's population has participated as patients in systems that are transforming the way care is paid for and delivered. Currently, more than a quarter of Maine's population are estimated to be receiving care in a primary care practice that has received formal recognition as a Patient Centered Medical Home.

The groundwork for Maine PCMH Pilot was laid in 2007 by the Maine Legislature's Commission to Study Primary Care which examined options for stabilizing and supporting primary care in Maine. In 2008, the Commission's recommendations were officially adopted in Maine's State Health Plan which endorsed the medical home model and proposed the state undertake a collaborative pilot demonstration. In 2009-10, the Maine Quality Forum, Maine Quality Counts, the Maine Health Management Coalition, and the Maine Department of Health and Human Services' Office of MaineCare Services all came together to design and launch the Maine PCMH Pilot and convened a multi-stakeholder group of consumers, providers, employers, payers, and state government representatives, to direct its efforts.

Practice Selection

In 2009, the conveners of the Pilot conducted a statewide recruitment of primary care practices interested in participating in the Pilot. In doing so, they communicated a set of 10 core expectations that practices would have to meet (Appendix 1). A total of 51 practices indicated interest. Using a set of criteria designed to ensure that practices in the Pilot would be representative of the diversity of practices in Maine (e.g. rural-urban location, size, system affiliation, and Rural Health Clinic or Federally Qualified Health Center), the conveners chose 26 practices, including four pediatric practices. One practice closed in 2012 and dropped out of the Pilot, leaving a total of 21 adult and 4 pediatric practices. Figure 1 illustrates the locations of the PCMH Pilot practices.

Figure A. Location of PCMH Pilot Practices (n=25)



Core Expectations of Original Pilot Practices

In addition to becoming or being recognized by the National Committee for Quality Assurance (NCQA) as PCMH practices, all Pilot practices committed to implementing 10 practice changes, including demonstrated physician leadership, team-based care, and behavioral-physical health integration, among others (see Appendix 1). Commercial payers and the state's Medicaid program agreed to pay PCMH Pilot practices an approximate $4.00 PMPM fee on top of existing fee-for-service payments. Within six months of selection, all PCMH Pilot practices had

achieved national (NCQA) medical home recognition, with eight Pilot practices achieving Level 3 recognition. As a group, practices had made progress in 9 of the 10 Pilot core expectations by the end of Year 1.

Characteristics of the Pilot Practices

By definition, all of the practices in the PCMH Pilot shared a characteristic of being early adopters who were willing to engage in a new initiative in order to improve primary care for their patients and themselves. As intended by the conveners, the 26 practices selected to participate in the PCMH Pilot represented the diversity of the state's primary care practices as defined by practice size, system affiliation, location, and practice type (e.g. Federally Qualified Health Center or Rural Health Clinic). About half of the practices were located in urban settings; a quarter were in small towns/rural areas; and a quarter were in large towns or suburbs. Most practices (85%) were affiliated with a physician hospital organization (PHO) or provider network and 80% had implemented an Electronic Medical Record. At baseline, 68% had a care manager working with patients. Most practices were medium sized (e.g. seven physicians seeing 80 patients per day). While there was a wide variation in the payer mix among the practices, the top three payers were generally commercial insurance, MaineCare, and Medicare.

Support for Practice Transformation

Practices in the PCMH Pilot received quality improvement assistance to meet system transformation goals through Maine Quality Counts (QC), a multi-stakeholder led quality improvement organization. QC offered a Learning Collaborative structure based on the "Breakthrough Series Collaborative" (BTS) model developed by the Institute for Healthcare Improvement. As part of the PCMH application process, practices agreed to participate in the Collaborative with a "leadership team" made up of clinical and administrative leaders. QC provided quality improvement coaches to the practices, monthly conference calls, and in-person learning sessions featuring state and national experts on practice transformation topics, and a focus on achieving Pilot goals. Peer learning and sharing was a core feature of the Learning Collaborative design.

Pilot Expansions Since Original Pilot

There have been two significant expansions of the Maine PCMH Pilot since it was launched in 2010. In 2012, the final year of the original PCMH Pilot, Maine joined the Medicare Multi-payer Advanced Primary Care Practice (MAPCP) Demonstration. To participate, the PCMH Pilot expanded to include 50 additional practices and developed regional Community Care Teams (CCT) to support Pilot practices in the management of complex patients. A Medicare $7.00 PMPM payment was apportioned to practices and to support the $3.00 PMPM to CCTs.

In 2013, the PCMH Pilot was further expanded with the implementation of Maine's Medicaid Health Homes (HH) initiative. An additional 100 practices were selected to join the HH initiative, in addition to original and expanded PCMH Pilot practices. Maine rolled out its Health Home programs in two stages. Launched in 2013, Stage A Health Homes are a partnership between an enhanced Health Home primary care practice and one of the

10 regional CCTs. All PCMH Pilot and MAPCP practices were designated HH practices in addition to other practices that applied for the HH Stage A initiative. Launched in 2014, Stage B Behavioral Health Homes are a partnership between a licensed community mental health provider and one or more Health Home practices to manage the physical and behavioral health needs of eligible adults and children. Behavioral Health Homes build on the existing care coordination and behavioral health expertise of community mental health providers.[3]

As of 2015, there were approximately 47,000 Mainecare beneficiaries enrolled in Health Homes and 2,300 enrolled in 22 Behavioral Health Homes.

The Evaluation of Maine's PCMH Pilot

With the broad adoption of the PCMH model, researchers have endeavored to evaluate the impact of the model on cost, quality, and patient experience measures. The Muskie School's formal evaluation of the impact of the PCMH Pilot focused on the first three years of the PCMH Pilot (2010-12) addressing several questions:

1. For PCMH Pilot practices, what was their experience in implementing the core expectations of the PCMH Pilot?

2. What impact did the transition to the PCMH model have on practice culture, workplace stress, and other dimensions of practice capacity? and

3. Did the PCMH Pilot practices achieve better cost-efficiency and quality outcomes compared with primary care practices that were not recognized as PCMH model practices and did not receive the practice transformation support of the PCMH Pilot?

In August 2010, in the first year of the PCMH Pilot, and soon after the end of the Pilot (in February 2013), the evaluation team conducted surveys in the PCMH Pilot practices to measure two key aspects of the practices' capacity to engage in the transformation into PCMHs: practice culture and workplace stress.[4] In addition, this component of the evaluation assessed the practices' broader experiences in implementing the core components and expectations of the PCMH model.[5]

This largely qualitative study was augmented with a formally designed, quantitative evaluation of the impact of the PCMH Pilot on healthcare costs, use, and quality. The quantitative evaluation used Maine's all-payer claims database maintained by the Maine Health Data Organization to compare the performance of the 21 adult-serving PCMH Pilot practices with a matched group of 38 primary care practices that had not received NCQA recognition as PCMH practices as of October 2011 and did not participate in the PCMH Pilot's practice transformation support activities (Comparison). This component evaluated the cost, use, and quality outcomes in the PCMH Pilot and Comparison practices comparing a baseline year (2008) to 2012. We conducted separate analyses for commercial, MaineCare, and Medicare patients in the PCMH Pilot and Comparison practices. This report focuses on the commercial population; summaries of the MaineCare and Medicare findings are included in Appendix 2 and 3.

The quantitative evaluation employs standard cost, utilization, and quality measures used in other evaluation studies of PCMH initiatives.[1,6] Cost and use measures include total costs, as well as costs and utilization of primary and specialty care, total and avoidable inpatient admissions, total and avoidable emergency department (ED) visits, lab services, imaging, and procedures. Cost data used in the commercial claims analysis are standardized to eliminate price differences among commercial payers. The evaluation assesses quality performance using the claims-based Healthcare Effectiveness Data and Information Set (HEDIS) measures related to diabetes and breast and cervical cancer screening.‡ Data were also risk adjusted using the Johns Hopkins ACG Grouper to reduce variations attributable to differences in patient health status.

Other Pilot Monitoring Data and Reports

Over the course of the PCMH Pilot, clinical quality and patient experience data were collected from participating practices. As part of the participating agreement, the Pilot required all adult practices to report on a set of clinical quality measures at baseline and then quarterly throughout the life of the PCMH Pilot. These included clinical quality measures focusing on diabetes, cardiovascular disease, preventive and behavioral health and Meaningful Use core measures on hypertension and risk behaviors. These clinical quality measures were collected only by the PCMH Pilot practices. The data were used to construct feedback reports to practices and were used in the Learning Collaborative. PCMH Pilot practices also participated in two surveys of patient experience of care, first in 2010 and again in 2012. Not part of the formal evaluation, these surveys nevertheless yielded data which were analyzed. Data reported on clinical quality measures and patient experience were summarized in separate reports.[7,8]

In addition to these reports, other evaluations of Maine's PCMH/HH initiatives are underway. The Muskie School is currently monitoring and evaluating the Health Homes Stage A initiative. In addition, Research Triangle International is conducting a national evaluation of the MAPCP demonstration that includes practices and patients in Maine's PCMH Pilot. And finally, the Lewin Group, Inc. is evaluating Stage A and Stage B Health Homes under the Maine State Innovation Model initiative and issued its first annual report in December of 2015.[9]

Setting the Context: What Has Been Learned From Other PCMH Evaluations?

Since 2008, there have been many formal evaluations of PCMH initiatives around the country. The Patient-Centered Primary Care Collaborative, a not-for-profit membership organization dedicated to advancing primary care reform and PCMH models of care, has produced the most comprehensive synthesis of evaluation findings from studies conducted between 2010 and 2015. Although results vary significantly across studies, their report concludes that the preponderance of evidence to date indicates that the longer a PCMH model of care has been in place, the greater the cost savings and improvement in utilization outcomes. In its review of 30 studies released between October 2014 and November 2015, the Collaborative found improvements in cost and utilization.[1] The 2015 annual report which focused on studies between September 2013 and November 2014 also found improvements in population health, prevention, access to care, and patient satisfaction.[6]

‡ The HEDIS cardiovascular measure could not be reported due to small sample size; the colorectal cancer screening measure could not be reported due to lack of data required for the look-back period.

In the last two years, there have been several key peer-reviewed studies of PCMH initiatives in Colorado, Pennsylvania, and Rochester, New York. The following highlights some of the key evaluation findings:

Colorado

A total of 15 small and medium-sized PCMH practices were compared to a non-PCMH comparison group not participating in a PCMH model. At the end of two years, emergency department visits in the PCMH group declined significantly (7.9%) relative to comparison practices. Emergency department costs were also lower in the PCMH group (13.9% reduction). Results on preventive screening were mixed, with increases in cervical cancer screening in the PCMH practices but lower rates of colon cancer screening and HbA1c testing in patients with diabetes.[10]

Pennsylvania

The Pennsylvania Chronic Care Initiative began in 2009 and included two commercial health plans and 27 volunteer small primary care practice sites. Practices received a shared savings incentive and were provided with learning collaboratives, disease registries, and practice coaching in order to achieve quality aims. The three-year pilot showed better performance on four process measures of diabetes care and breast cancer screening as well as lower rates of emergency department, hospital, and specialty care use.[11]

Rochester, NY

Seven practices participated in the Rochester Medical Home Initiative (RMHI), a three-year pilot that included a pay-for-performance component focused on quality and cost. Researchers reported that after three years, the RMHI led to modest improvements in quality of care and no significant cost savings. Patterns of utilization shifted with decreased emergency department visits and imaging screenings and increased primary care visits and laboratory tests. PCMH practices performed better on breast cancer screening and LDL testing for diabetes, and were less likely to have an avoidable hospitalization.[12]

MAINE PCMH PILOT EVALUATION RESULTS

This section presents the results of the evaluation of Maine's original, three-year PCMH Pilot, focusing on: (1) an assessment of practice transformation and culture in the participating PCMH Pilot practices, and (2) an evaluation of the cost, use, and quality performance of PCMH Pilot practices compared with a matched set of non-PCMH practices that were not part of the PCMH Pilot.

PCMH Practice Transformation and Culture: 2010-13

To address questions of workplace culture and resilience and how they affected a practice's ability to transform itself into a medical home, the evaluation team conducted surveys of the PCMH Pilot practices in the first year of the Pilot in 2010 and again soon after the Pilot ended (February 2013) to assess (1) the extent to which PCMH Pilot practices had implemented changes to meet the core expectations of the Pilot in the first year and (2) the practices' perspectives on practice change elements, including teamwork, use of HIT, knowledge and use of community resources, adaptive reserve, patient safety culture, and practice culture. Key findings include:

In the first year of the PCMH Pilot (2010):

- PCMH Pilot practices demonstrated high levels for several measures indicating strengths in practice culture.
- Measures capturing dimensions of the practice culture, including adaptive reserve, community knowledge, HIT, and patient safety demonstrated the most room for improvement among the culture domains.
- Scores for emotional exhaustion showed the greatest potential vulnerability among the stress measures.

After three years of PCMH Pilot participation,

- The practice culture and workplace stress scores in the participating PCMH Pilot practices were essentially unchanged.
- Changes in other measures related to stress, though significant, were still indicative of low practice stress.

These findings suggest that at the start of the PCMH Pilot in 2010, Pilot practices were relatively high functioning on measures critical to the capacity to implement the PCMH model. The fact that practices started the Pilot with strengths and, on average, ended up at about the same level suggests the challenge of detecting improvements in already high scores. It is important to note, however, that there was considerable variability among the Pilot practices on these measures.[4]

What Worked for PCMH Pilot Practices?

The evaluation team also conducted focus groups in the first year of the PCMH Pilot with members of the participating PCMH Pilot practices and fielded a resource survey to learn about their experiences with the implementation and support of the PCMH Pilot. Practices reported positive changes and benefits from Pilot participation, especially in terms of teamwork and communication. Of the available support to practices, participants reported that the Learning Sessions and data received as PCMH Pilot participants were most helpful. About half said that coaching and monthly conference calls had an impact.

Finally, the evaluation team also held a feedback session with participants in the October 2010 PCMH Pilot Learning Session. There, participants noted the following helped them achieve their Pilot objectives:

- Having a functional Electronic Medical Record (EMR)
- Affiliation with a PHO
- Buy-in from senior leadership
- Having a champion on site, whether it be a physician or practice manager
- Having one person to manage the work on the Pilot
- Access to coaching support
- Having an opportunity to share successes with other practices
- Access to patient and practice survey results to focus practice transformation work
- Having an open and flexible attitude.

Evaluation Results: The Cost, Use, and Quality Performance of PCMH Pilot and Comparison Practices

As noted, to assess the impact of the PCMH Pilot, the evaluation team compared the performance of the 21 adult-serving PCMH Pilot practices with a matched group of 38 primary care comparison practices that (1) had not received NCQA recognition as PCMH practices as of October 2011 and (2) did not participate in the PCMH Pilot's practice transformation support activities. We specifically compared PCMH Pilot and Comparison practices on measures of Total Costs, as well as costs and utilization involving Primary and Specialty Care, Total and Avoidable Inpatient Admissions, Total and Avoidable Emergency Department (ED) Visits, Lab Imaging, and Procedures. These metrics were examined at baseline (2008) and in 2012, the final year of the initial phase of the PCMH Pilot. The following sections focus on the results for the commercial population. Summaries of the MaineCare and Medicare results are contained in Appendix 2 and 3.

Costs

Table 1 compares the cost of care in PCMH Pilot and Comparison practices in 2008 and 2012. As indicated earlier, all costs have been price standardized and risk adjusted. As shown, total costs and primary care costs for commercial patients in PCMH Pilot practices were significantly lower in 2012 compared with those in Comparison practices. Although specialty care, hospital inpatient, lab, imaging, and procedure costs were all lower in PCMH Pilot practices in 2012, differences did not achieve statistical significance. Emergency department and preventable emergency department costs were higher in 2012 in the PCMH Pilot practices, but again, these were not statistically significant.

Table 1: Costs, PCMH Pilot and Comparison Practices, 2008 and 2012, Commercial

	2008 Baseline			2012		
Costs [a]	***PCMH Pilot***	***Comparison***	***Percent Difference***	***PCMH Pilot***	***Comparison***	***Percent Difference***
Total	$284.40	$305.04	-6.8%	$279.35	$302.11	-7.5%*
Primary Care	$28.99	$29.74	-2.6%	$29.87	$31.72	-5.8%*
Specialist	$8.53	$8.79	-3.0%	$9.50	$10.25	-7.3%
ED	$6.96	$6.81	2.2%	$6.95	$6.19	12.3%
Preventable ED	$3.28	$3.25	0.9%	$3.27	$2.87	13.9%
Inpatient	$48.01	$42.29	13.6%	$40.77	$41.22	-1.1%
ACS‡ Inpatient	$2.41	$2.56	-5.9%	$2.13	$1.97	7.6%
Lab	$24.07	$25.91	-7.1%	$23.11	$23.82	-2.9%
Imaging	$31.05	$34.24	-9.3%	$23.83	$25.81	-7.7%
Procedure	$68.10	$72.22	-5.7%	$76.09	$82.79	-8.1%

Data source: Maine all-payer claims database

[a] Costs are standardized and risk adjusted

*p< 0.05

‡ACS refers to Ambulatory Care Sensitive conditions

We also examined changes in costs between 2008 and 2012 in the PCMH Pilot and Comparison practices (Table 2). Both PCMH Pilot and Comparison practices had significantly higher primary care and specialty care costs in 2012 compared with baseline (2008); increases in primary care and specialty costs were lower, however, in PCMH Pilot versus Comparison practices.

Emergency department costs were unchanged in PCMH Pilot practices in 2012 compared with baseline. In Comparison practices, emergency department and preventable emergency

department costs declined significantly (9.1% and 11.4% respectively) in 2012 compared with baseline.

Inpatient costs declined significantly in Pilot practices from baseline to 2012 (-15.1%); there was no significant change in inpatient costs in Comparison practices. Both lab and imaging costs declined significantly in PCMH Pilot and Comparison practices in 2012 compared to baseline; declines were greater in Comparison practices. Costs for procedures were significantly higher in 2012 compared with baseline in both PCMH Pilot and Comparison practices (11.7% and 14.7% respectively).

Table 2: Cost Changes: 2008 and 2012, PCMH Pilot and Comparison Practices, Commercial

	PCMH Pilot			Comparison		
Costs[a]	***2008***	***2012***	***Percent Change***	***2008***	***2012***	***Percent Change***
Total	$284.40	$279.35	-1.9%	$305.00	$302.11	-1.0%
Primary Care	$28.99	$29.87	3.0%*	$29.74	$31.72	6.6%*
Specialist	$8.53	$9.50	11.4%*	$8.79	$10.25	16.6%*
ED	$6.96	$6.95	-0.1%	$6.81	$6.19	-9.1%*
Preventable ED	$3.28	$3.27	-0.1%	$3.25	$2.87	-11.4%*
Inpatient	$48.01	$40.77	-15.1%*	$42.29	$41.22	-2.5%
ACS‡ Inpatient	$2.41	$2.13	-11.6%	$2.56	$1.97	-22.3%
Lab	$24.07	$23.11	-3.9%*	$25.91	$23.82	-8.1%*
Imaging	$31.05	$23.83	-23.3%*	$34.24	$25.81	-24.6%*
Procedure	$68.10	$76.09	11.7%*	$72.22	$82.79	14.7%*

Data source: Maine all-payer claims database

[a] Costs are standardized and risk adjusted

*p< 0.05

‡ACS refers to Ambulatory Care Sensitive conditions

Healthcare Use

The study also examined differences in utilization at baseline (2008) and in 2012 in PCMH Pilot and Comparison practices (Table 3). Primary care visits for commercial patients in PCMH Pilot practices were higher at baseline (2008) compared with Comparison practices; there were no significant differences between the practice groups in visit rates in 2012. At baseline, emergency department visits and inpatient admissions did not differ between PCMH Pilot

and Comparison practices, but in 2012 the PCMH Pilot practices had lower ED visit rates compared with Comparison practices (-6.1%) and somewhat higher inpatient admission rates (0.02%). Both findings were significant.

Differences between practice groups in use rates of other services such as specialist visits, preventable emergency department visits, and ambulatory care sensitive inpatient admissions did not achieve statistical significance.

PCMH Pilot practices had significantly fewer preventable emergency room visits (-0.3%) and inpatient admissions (-1.3%) in 2012 compared to 2008. Although PCMH Pilot practices had fewer ambulatory care sensitive inpatient admissions (-0.06%) and emergency room visits (-3.5%) in 2012 than in 2008, the differences were not statistically significant.

Comparison practices experienced a significant increase in primary care (44.1%) and specialist visits (18.7%) between 2008 and 2012 and a significant decrease in emergency room visits (-10.9%), preventable emergency room visits (-0.3%), and inpatient admissions (-1.5%).

Table 3: Healthcare Use Rates, PCMH Pilot and Comparison Practices, 2008 and 2012, Commercial

	Pilot vs Comparison (% Difference)		2012 vs 2008 (Baseline) (% Difference)	
Services [a]	***2008***	***2012***	***Pilot***	***Comparison***
Primary Care Visits	26.6%*	-8.9%	8.6%	44.1%*
Specialist Visits	-2.2%	-13.9%	7.1%	18.7%*
ED Visits	-13.5%	-6.1%*	-3.5%	-10.9%*
Preventable ED Visits	-0.2%	-0.2%	-0.3%*	-0.3%*
Inpatient Admissions	-0.2%	0.02%*	-1.3%*	-1.5%*
ACS‡ Inpatient admissions	-0.02%	0.06%	-0.06%	-0.1%

Data source: Maine all-payer claims

[a] Risk adjusted

*p< 0.05

‡ACS refers to Ambulatory Care Sensitive conditions

Quality

Table 4 compares PCMH Pilot and Comparison practices' performance on the HEDIS quality measures for diabetes, breast cancer screening, and cervical cancer screening. As indicated, the only significant difference between the practice groups was on cervical cancer screening rates which were lower in PCMH Pilot practices in 2012 compared with Comparison practices. Differences on other measures were not statistically significant.

Table 4: Quality Performance, PCMH Pilot and Comparison Practices, 2008 and 2012, Commercial

HEDIS Quality Measures [a]	2008 Baseline			2012		
	Pilot	*Comparison*	*Percent Difference*	*Pilot*	*Comparison*	*Percent Difference*
Diabetes HbA1c	81%	79%	2.0%	86%	87%	-0.4%
Diabetes Nephropathy	76%	76%	0.7%	76%	77%	-1.8%
Diabetes Eye Exam	57%	55%	2.4%	56%	49%	7.0%
Diabetes LDL	75%	72%	3.3%	74%	77%	-3.0%
Breast Cancer Screening	84%	85%	-1.2%	82%	82%	-0.1%
Cervical Cancer Screening	76%	76%	-0.4%	71%	74%	-3.3%*

Data source: Maine all-payer claims

[a] Risk adjusted

*p< 0.05

Comparing changes over time (Table 5), the only significant change for the PCMH Pilot practices was for cervical cancer screening, which declined from 76% in 2008 to 71% in 2012. Diabetes HbA1c testing increased significantly in Comparison practices between 2008 and 2012; rates of breast cancer and cervical cancer screening declined, however, in Comparison practices over this period. Neither the PCMH Pilot nor the Comparison practices showed any significant changes in performance on diabetes nephropathy, eye exams, and LDL screening between 2008 and 2012.

Table 5: Changes in Quality Performance, PCMH Pilot and Comparison Practices, 2008 and 2012, Commercial

HEDIS Quality Measures[a]	Pilot			Comparison		
	2008	*2012*	*Percent Change*	*2008*	*2012*	*Percent Change*
Diabetes HbA1c	81%	86%	5.2%	79%	87%	7.6%*
Diabetes Nephropathy	76%	76%	-0.7%	76%	77%	1.8%
Diabetes Eye Exam	57%	56%	-0.8%	55%	49%	-5.4%
Diabetes LDL	75%	74%	-1.1%	72%	77%	5.2%
Breast Cancer Screening	84%	82%	-1.8%	85%	82%	-3.0%*
Cervical Cancer Screening	76%	71%	-4.9%*	76%	74%	-2.0%*

Data source: Maine all-payer claims

[a] Risk adjusted

*p< 0.05

Additional Analyses

Several other studies have investigated the impact of the PCMH model of primary care on specific sub-populations of patients such as those with chronic conditions. The rationale for these analyses has been that the impact of the functionality that distinguishes the medical home model (e.g. patient centered, team based care, enhanced care management) is most likely to be detected in these sub-populations.

To test this hypothesis the evaluation team identified a population of commercial patients with a chronic condition (COPD, congestive heart failure, diabetes, hypertension, ischemic heart disease, or asthma). The results of these analyses were nearly identical to those reported above for the full study population. The team also analyzed results for a population with a depression or bipolar behavior health diagnosis. Those results were also similar and are, therefore, not reported here.

Limitations

There are a number of important limitations to this evaluation. First, the evaluation is based on a small number of practices, which may have affected our ability to detect differences between the Pilot and Comparison practices, especially in such areas as inpatient costs and utilization which often occur infrequently. Second, the time period of this study, three years, is short. Most studies have shown that the changes associated with becoming a PCMH practice take considerable time and that performance of PCMH practices generally improves over time as these changes are more fully implemented. And finally, methodological challenges may have affected our results. For example, the methods used to attribute patients to practices, although commonly used, are not perfect and could affect practice-level results.

ADDITIONAL MAINE PCMH PILOT REPORTS: CLINICAL QUALITY MONITORING AND PATIENT EXPERIENCE

As noted earlier, PCMH Pilot practices reported quarterly clinical quality data obtained from Electronic Medical Records and/or chart review. These quarterly reports have been analyzed and summarized in a separate report.[8] No comparable data were collected on the Comparison practices included in the formal evaluation.

The summary of the clinical quality data reports indicates that on average, PCMH Pilot practices showed improvement over the three years of the Pilot on 29 out of 32 measures. By 2012, performance on nearly two-thirds of the measures (60%) had met or exceeded the target goals set by the PCMH Pilot. Practices met the target goal on 12 of the measures at baseline and continued to meet them in 2012; 7 measures were under the target at baseline but were met or exceeded in 2012.

Highlights of the analysis summarized in Table 6 include significant improvements in several diabetes, cardiovascular, prevention, and hypertension measures.

Table 6: Clinical Quality Measures Showing Significant Improvement, PCMH Pilot Practices, 2008 and 2012

Condition	*Measure*	*2008*	*2012*	*Percent change*
Diabetes	Smoking status assessed/ treatment offered	77%	89%	12%
Diabetes	Foot Exams	63%	72%	9%
Diabetes	LDL less than 100	47%	53%	6%
Cardiovascular	LDL less than 100	49%	58%	9%
Prevention	Pneumococcal Immunization	56%	71%	15%
Prevention	Colon cancer screening	43%	64%	21%
Hypertension	Blood pressure test	93%†	98%	5%

Source: Quarterly clinical quality reports submitted to Quality Counts, 2008-12.

†Baseline is 2011 due to the Meaningful Use core measures added after the outset of the Pilot.

Patient Experience Survey Results: PCMH Practices

The Maine Quality Forum (MQF) supported two patient experience surveys in 2010 and 2012. The 2010 survey targeted only PCMH Pilot practices; in 2012 the MQF provided subsidies to primary care practices throughout the state to participate in the patient experience survey. The 2012 survey was supported by the MQF, the Maine Department of Health and Human Services, Maine Quality Counts, and the Maine Health Management Coalition. Unfortunately it is not possible to compare the results of the two surveys because of differences in the patient experience survey instruments.

2010 Patient Experience of Care Survey Results (PCMH Pilot Practices)

The 2010 survey results for the PCMH Pilot practices were very similar to national benchmarks on questions related to access to care, provider and patient communications, and helpfulness and respect of the staff. Almost all patients in PCMH Pilot practices reported someone from their practice followed up to give them their results from a test (i.e., blood test, x-ray) that was ordered in the past year. However, less than half (45%) of the PCMH Pilot practice patients stated that a healthcare team member contacted them between visits to see how things were going or to remind them about recommended care. Additional survey results are summarized in the report by Gray and Coburn.[7]

2012 Patient Experience of Care Survey Results

The PCMH Pilot practices demonstrated similar results to other participating practices on topics of access to care, provider patient communication, follow up reminders, experience with front office staff, attention to mental health needs, and being informed about care received by specialists. More survey results are in the report by Gray and Coburn.[7]

DISCUSSION AND IMPLICATIONS

Initiated in 2010 and still continuing, Maine's multi-payer PCMH Pilot is among the first and longest test of the PCMH model in the country. Between 2010 and 2012, the PCMH Pilot engaged 21 adult practices in an intensive practice transformation process with significant learning and coaching support. In addition, payers, including MaineCare, health plans, and large employer groups, provided participating PCMH Pilot practices an additional per member per month payment to support their enhanced care management and other functions as PCMH practices.

Like other studies, the early results reported here were mixed. Comparing PCMH Pilot and Comparison practices in 2012 we found that PCMH Pilot practices has lower total and primary costs. In 2012, specialist and ED visits were lower among PCMH Pilot versus Comparison practices. On the other hand, inpatient admissions in 2012 were higher in PCMH Pilot practices, although the difference was small.

Looking at changes in costs and use from baseline (2008) to 2012, inpatient costs declined significantly in Pilot practices (-15.1%) with no significant change in Comparison practices. Inpatient admissions declined in both practice groups. Both PCMH Pilot and Comparison practices had significantly higher primary care and specialty costs in 2012 compared with baseline. ED visits and Preventable ED visits declined in both PCMH Pilot and Comparison practices, although the declines in ED visits in the PCMH Pilot group did not achieve statistical significance.

Although the evaluation results show no clear impact of the PCMH model on quality performance, quality monitoring data indicate that, on average, Pilot practices improved their performance on most of the clinical quality measures from baseline to 2012.

It is very important to put these results in context. This is among hundreds of completed and on-going evaluations of the early results from PCMH initiatives. The accumulated evidence from these studies suggests several key points. First, practice transformation is a difficult process requiring complex changes in the organization and culture of practices, and the

processes of care. As such, it takes time to discern the true effects of changes on patient costs and quality. The fact that this evaluation detected differences in some costs and use rates is therefore significant. The short timeframe of this study no doubt contributed to the mixed and inconclusive findings reported here. As noted earlier, there is some evidence indicating that performance of PCMH practices improves over time as practice transformation changes are more fully implemented.[1, 6]

Second, as we learn more about the impact of the PCMH model, it is becoming clear that the features of the model matter. Not surprisingly, studies are suggesting that payment methods and incentives employed in PCMH initiatives affect practice performance. For example, a recent study has shown that performance incentives, such as bonuses or shared savings, on top of per member per month payments, produced a greater impact of the PCMH model on costs and quality.[1] As one of the early PCMH pilots, Maine's PCMH Pilot payment model did not include performance features, potentially contributing to the model's equivocal impact.

PCMH studies also indicate that the care management features and functions in the PCMH model may be critical to its effectiveness in reducing costs and improving quality.[1] The organization and deployment of these care management functions vary considerably across PCMH models and initiatives. As in other PCMH initiatives, the Maine PCMH Pilot included a core expectation that participating practices enhance their care management capacity to better manage the needs of chronic care patients. In 2012, as a result of requirements for participation in the Medicare Advanced Primary Care Practice (MAPCP) demonstration, Maine's PCMH Pilot developed eight regional, multi-disciplinary Community Care Teams (CCTs) to support the PCMH practices in their care management functions. The CCTs were initially supported using a portion ($3.00 PMPM) of the Medicare payment to practices in the MAPCP demonstration. The CCTs were subsequently expanded to a total of ten CCTs with additional payments under the MaineCare Health Homes initiative. A key unanswered question is whether and to what extent the addition of CCTs to the Maine Pilot has affected the cost and quality performance of the PCMH and Health Home practices.

Despite important, positive findings, the results of this evaluation of the Maine PCMH Pilot will no doubt be disappointing for some, especially payers, who are looking for unequivocal evidence on whether the additional payments provided to PCMH practices were justified by cost savings and/or quality improvement results. Such "return on investment" (ROI) calculations will be forthcoming in larger studies underway of the MAPCP demonstration.

As the PCMH movement has progressed and matured, questions about the ROI associated with PCMH and other models has shifted somewhat with the growing interest and attention to Accountable Care (ACO) models. While questions about the impact of PCMH models remain important, payers and providers are focusing their attention on ACO payment models which move away from fee-for-service primary care payment approaches to more global forms of payment encompassing a broad array of services beyond just primary care. With this shift, the PCMH model is assumed to be fundamental to the cost and quality performance of the ACO, but is no longer a stand-alone component of the delivery system.

With growing evidence of the effectiveness and impact of primary care, the question of how to organize and pay for primary care remains critical to understanding the impact of ACOs. The promising though incomplete evidence offered by this early evaluation of the Maine PCMH

Pilot represents a first step in understanding the full story and impact of the Maine PCMH Pilot. This story will become clearer as we learn more from the on-going evaluations of the Medicare MAPCP and MaineCare's Health Homes initiatives.

Appendix 1

PCMH Pilot Core Expectations

Core Expectation
1. Demonstrated Leadership
The practice had identified at least one primary care physician or nurse practitioner as a leader within the practice who visibly champions a commitment to improve care and implement the PCMH model.
The primary care leader(s) takes an active role in working with other providers and staff in the practice to build a team-based approach to care, continually examine processes and structures to improve care, and review data on the performance of the practice.
The primary care leader participates as a member of the practice Leadership Team and participates in all aspects of the PCMH Learning Collaborative.
2. Team Based Approach to Care
The practice uses a team-based approach to care delivery that includes expanding the roles of non-physician providers (e.g. nurse practitioners, physician assistants, nurses, medical assistants) to improve clinical workflows.
The practice has committed redesigning primary care practice in a way that utilizes non-physician staff to improve access and efficiency of the practice team in specific ways, such as through greater use of planned visits, integrating care management into clinical practice, delegating some types of patient testing or exams (e.g., ordering of routine screening tests, diabetic foot exams) to non-physicians; expanding patient education; and providing greater data support to physicians to enhance the quality and cost-effectiveness of their clinical work.
Members of the practice team identify themselves as part of the practice team, and can identify their specific role and responsibilities within the team.
3. Population Risk Stratification and Management
The practice has adopted a process for proactively identifying and stratifying patients across their population who are at risk for adverse outcomes, and direct resources or care processes to help reduce those risks. “Adverse outcomes” is intended to mean adverse clinical outcomes and/or avoidable use of healthcare services such as hospital admissions, emergency department visits, or non-evidence based use of diagnostic testing or procedures.
4. Enhanced Access
The practice commits to preserving access to their population of patients.
The practice has a system in place that ensures patients have same-day access to their healthcare provider using some form of care that meets their needs – e.g. open-access scheduling for same-day appointments, telephonic support, and/or secure messaging.
Time to 3rd next available appointment is consistently tracked and measured at zero.
5. Practice Integrated Care Management
Care management staff have clear roles and responsibilities, are integrated into the practice team, and receive explicit training to provide care management services.
The practice has a clear process for providing care management services, and has identified specific individuals to work closely with the practice team to provide care management for patients at high risk for experiencing adverse outcomes, including patients with chronic illness who are complex or fail to meet multiple treatment goals; patients identified at risk for avoidable hospitalization or emergency department use; and patients at risk for developing avoidable conditions or complications of illness.

Core Expectation
Care management staff have defined methods for tracking outcomes for patients receiving care management services.
6. Behavioral Physical Health Integration
With the assistance of PCMH Pilot staff and consultants, practice participates in a baseline assessment of their current behavioral-physical health integration capacity.
Using results from this baseline assessment, practice has taken steps to make one or more specific improvements to integrate behavioral and physical health care– e.g. implement a system to routinely conduct a standard assessment for depression (e.g. PHQ-9) in patients with chronic illness; Incorporate a behavioralist into the practice to assist with chronic condition management; Co-locate behavioral health services within in the practice.
7. Inclusion of Patients and Families
With the assistance of PCMH Pilot staff and consultants, practice has identified at least two patients or family members to be part of the practice Leadership Team.
Practice is using one or more mechanisms for routinely soliciting input from patients and families on how well the practice is meeting their needs.
8. Connection to Community—Health Maine Partnership
With assistance from PCMH Pilot staff, practice connects with their local Healthy Maine Partnership (HMP) to better understand community resources available to their patients • Practice can identify their local Healthy Maine Partnership. • Practice leadership meets at least once with HMP staff.
9. Commitment to Reducing Waste, unnecessary healthcare spending, reducing waste, and improving cost-effective use of healthcare services
The practice makes a clear and firm commitment to reduce wasteful spending of healthcare resources and improving the cost-effective use of healthcare services by targeting at least 1-3 specific waste reduction initiatives – i.e. practice commits specific resources or processes in the practice towards… (e.g.) • Reducing avoidable hospitalizations. • Reducing avoidable emergency department visits. • Reducing non-evidence-based use of expensive imaging – e.g. MRI for low back pain or headache. • Working with specialists to develop new models of specialty consultation that improve patient experience and quality of care, while reducing unnecessary use of services. • Directing referrals to specialists who consistently demonstrate high quality and cost efficient use of resources.
10. Integration of Health Information Technology
Practice is working towards use of integrated HIT (e.g. registry, electronic medical record, personal health records, health information exchange, provider-patient secure messaging) to support improved communication with and for patients, and to assure patients get care when and where they need and want it in a culturally and linguistically appropriate manner.

Appendix 2

Maine Patient Centered Medical Home (PCMH) Pilot Evaluation: MaineCare

Introduction

With funding from multiple sources, including the Office of MaineCare Services, Maine Department of Health and Human Services, the Muskie School has conducted an independent, formal evaluation of the impact of Maine's PCMH Pilot, focusing on the first three years: 2010-12. The evaluation compared the cost efficiency and quality performance of the adult primary care practices in the PCMH Pilot (n=21) with a set of matched comparison practices (n=38) that were not NCQA recognized as PCMH practices as of October 2011 and did not participate in Pilot learning and practice transformation activities. The evaluation team evaluated the cost, use, and quality outcomes in the PCMH Pilot and Comparison practices at baseline (2008), prior to the implementation of the PCMH Pilot, and 2012, the third and final year of the original PCMH Pilot. Separate analyses were conducted for commercial, MaineCare, and Medicare patients in the PCMH Pilot and Comparison practices.

This appendix summarizes the MaineCare-related cost-efficiency results of the PCMH Pilot evaluation. Although the methods employed in these analyses are nearly identical to those described earlier in this report, there are several important differences:

- Over the course of the PCMH Pilot, the MaineCare program undertook significant changes in its claims processing and provider (hospital) payment systems that make it impossible to accurately compare MaineCare-related costs across years, 2008 to 2012. Therefore, our MaineCare analyses compare PCMH Pilot and Comparison practices in the baseline year (2008) and in 2012.

- The MaineCare program serves diverse populations, from children to older and disabled adults. Many MaineCare beneficiaries with disabilities are eligible for both MaineCare and Medicare (the so-called dually eligible). Individuals dually eligible for Medicaid and Medicare are excluded from this analysis.

Results

Costs

As indicated in Table 1, total costs at baseline (2008) were significantly lower (-5.3%) in PCMH Pilot versus Comparison practices. In 2012, total costs were slightly lower (-1.3%) in Pilot versus Comparison practices, but this difference was not statistically significant. Imaging costs at baseline were 11.9% lower in PCMH Pilot versus Comparison practices. There were no other cost differences at baseline between PCMH Pilot and Comparison practices.

In 2012, PCMH Pilot practices had significantly higher primary care costs (5.4%) than Comparison practices. In 2012, emergency department (ED) and preventable ED costs were significantly lower (-22.8% and -24.1% respectively) in PCMH Pilot versus Comparison

practices. There were no other significant cost differences in 2012 between PCMH Pilot and Comparison practices.

Table 1: Costs, PCMH Pilot and Comparison Practices, 2008 and 2012, MaineCare

	Pilot vs. Comparison in 2008 (Baseline)		Pilot vs Comparison in 2012	
Costs [a]	***Cost Difference***	***Percent Difference***	***Cost Difference***	***Percent Difference***
Total	($20.36)	-5.3%*	($2.43)	-1.3%
Primary Care	$0.71	2.0%	$1.83	5.4%*
Specialist	$0.17	2.8%	$0.49	5.3%
ED	$1.03	5.3%	($1.11)	-22.8%*
Preventable ED	$0.58	6.3%	(0.54)	-24.1%*
Inpatient	$12.03	11.0%	$5.40	12.3%
Lab	$0.66	5.0%	($0.39)	-4.2%
Imaging	($1.97)	-11.9%*	($0.33)	-5.2%
Procedures	($1.26)	-4.7%	($2.14)	-7.8%

Data source: Maine all-payer claims database

[a] Costs risk adjusted

*p< 0.05

Utilization

As shown in Table 2, despite a significantly lower primary care visit rate (-39.1%) among PCMH Pilot versus Comparison practices in 2008, there was no significant difference in primary care utilization in 2012.

There were no other significant differences in utilization between PCMH Pilot and Comparison practices in 2012.

Table 2: Healthcare Use Rates, PCMH Pilot and Comparison Practices, 2008 and 2012, MaineCare

	PCMH Pilot vs Comparison (Percent Difference)	
Services[a]	***2008***	***2012***
Primary Care Visits	-39.1%*	15.3%
Specialist Visits	-105.4%	-136.3
ED Visits	-5.6%	-21.1%
Preventable ED Visits	-5.1%	-12.2%
Inpatient Admissions	-1.3%	-0.9%

Data source: Maine all-payer claims database

[a] Risk adjusted

*p< 0.05

Quality Performance

As indicated in Table 3, there were no significant differences in quality performance between PCMH Pilot and Comparison practices in 2008 or in 2012.

Table 3: Quality Performance, PCMH Pilot and Comparison Practices, 2008 and 2012, MaineCare

	2008 Baseline			2012		
Quality Measures[a]	***Pilot***	***Comparison***	***Percent Difference***	***Pilot***	***Comparison***	***Percent Difference***
Diabetes HbA1c	77%	86%	-9.0%	85%	85%	0.3%
Diabetes Nephropathy	73%	78%	-4.5%	77%	78%	-0.9%
Diabetes Eye Exam	52%	50%	1.9%	52%	42%	10.2%
Diabetes LDL	73%	77%	-4.2%	71%	72%	-1.5%
Breast Cancer Screening	63%	64%	-1.1%	61%	66%	-5.7%
Cervical Cancer Screening	75%	73%	2.0%	69%	70%	-1.1%

Data source: Maine all-payer claims

[a] Risk adjusted

*p< 0.05

Appendix 3

Maine Patient Centered Medical Home (PCMH) Pilot Evaluation: Medicare

Introduction

With funding from multiple sources, the Muskie School has conducted an independent, formal evaluation of the impact of Maine's PCMH Pilot, focusing on the first three years: 2010-12. The evaluation compared the cost efficiency and quality performance of the adult primary care practices in the PCMH Pilot (n=21) with a set of matched comparison practices (n=38) that were not NCQA recognized as PCMH practices as of October 2011 and did not participate in Pilot learning and practice transformation activities. The evaluation team evaluated the cost, use, and quality outcomes in the PCMH Pilot and Comparison practices at baseline (2008), prior to the implementation of the PCMH Pilot, and 2012, the third and final year of the original PCMH Pilot. Separate analyses were conducted for commercial, MaineCare, and Medicare patients in the PCMH Pilot and Comparison practices.

This summary presents the Medicare-related cost-efficiency results of the PCMH Pilot evaluation. The methods employed in these analyses are identical to those described earlier in this report.

Results

Costs

As indicated in Table 1, there were significant differences at baseline (2008) between PCMH Pilot and Comparison practices in a number of cost categories. These differences include:

- PCMH Pilot practices had significantly lower Emergency Department (ED) (-18%), Preventable ED (-12.4%), Imaging (-8.1%), and Procedures (-5.9%).

- PCMH Pilot practices had significantly higher Primary Care (7.8%), Specialist (26.3%), and Ambulatory Care Sensitive Inpatient (28.4%) costs compared with Comparison practices.

In 2012, PCMH Pilot practices had lower ED and Preventable ED costs (-8.9% and -9.1%) as well as lower Lab (-3.9%) and Imaging (-9.1%) costs. In contrast, PCMH Pilot practices had higher Total (6.7%), Primary Care (11.2%), and Specialist (19.3%) costs relative to Comparison practices in 2012.

Table 1: Costs, PCMH Pilot and Comparison Practices, 2008 and 2012, Medicare

Costs[a]	2008 Baseline			2012		
	Pilot	***Comparison***	***Percent Difference***	***Pilot***	***Comparison***	***Percent Difference***
Total	$826.48	$798.25	3.5%	$772.63	$724.37	6.7%*
Primary Care	$58.44	$54.20	7.8%*	$72.06	$64.80	11.2%*
Specialist	$29.87	$24.17	26.3%*	$48.45	$40.62	19.3%*
ED	$5.70	$6.95	-18.0%*	$6.16	$6.76	-8.9%*
Preventable ED	$2.83	$3.23	-12.4%*	$2.91	$3.20	-9.1%*
Inpatient	$305.11	$292.44	4.3%	$226.23	$213.51	6.0%
ACS‡ Inpatient	$43.44	$33.82	28.4%*	$30.68	$26.11	17.5%
Lab	$29.18	$29.47	-1.0%	$27.38	$28.49	-3.9%*
Imaging	$40.96	$44.57	-8.1%*	$27.61	$30.36	-9.1%*
Procedure	$92.30	$98.05	-5.9%*	$92.39	$94.56	-2.3%

Data source: Maine all-payer claims

[a] Costs are standardized and risk adjusted

*p< 0.05

‡ACS refers to Ambulatory Care Sensitive conditions

Comparing changes in Medicare costs from baseline to 2012, both PCMH Pilot and Comparison practices had lower Total, Inpatient, ACS Inpatient, Lab, and Imaging costs in 2012.

Compared with baseline (2008), PCMH Pilot practices had higher Primary Care, Specialist, and ED costs in 2012. Comparison practices also demonstrated higher Primary Care and Specialist costs in 2012.

Table 2: Cost Changes: 2008-2012, PCMH Pilot and Comparison Practices, Medicare

	Pilot			Comparison		
Costs[a]	***2008***	***2012***	***Percent Change***	***2008***	***2012***	***Percent Change***
Total	$826.48	$772.63	-6.5%*	$798.25	$724.37	-9.3%*
Primary Care	$58.44	$72.06	23.3%*	$54.20	$64.80	19.6%*
Specialist	$29.87	$48.45	62.2%*	$24.17	$40.62	68.1%*
ED	$5.70	$6.16	8.1%*	$6.95	$6.76	-2.7%
Preventable ED	$2.83	$2.91	2.8%	$3.23	$3.20	-0.9%
Inpatient	$305.11	$226.23	-25.9%*	$292.44	$213.51	-27.0%*
ACS‡ Inpatient	$43.44	$30.68	-29.4%*	$33.82	$26.11	-22.8%*
Lab	$29.18	$27.38	-6.2%*	$29.47	$28.49	-3.3%*
Imaging	$40.96	$27.61	-32.6%*	$44.57	$30.36	-31.9%*
Procedure	$92.30	$92.39	0.1%	$98.05	$94.56	-3.6%

Data source: Maine all-payer claims

[a] Costs standardized and risk adjusted

*p< 0.05

‡ACS refers to Ambulatory Care Sensitive conditions

Utilization

As shown in Table 3, PCMH Pilot practices had lower Primary Care (-25.6%) and Preventable ED (-3.5%) use rates compared with Comparison practices in 2008. In 2012, Pilot practices had lower Preventable ED visits (-3.0%) compared with Comparison practices. No other utilization measures showed differences in 2012.

Primary care visit rates were significantly higher in both PCMH Pilot (163.7%) and Comparison (93%) practices in 2012 compared with 2008. Both PCMH Pilot and Comparison practices had significantly higher specialist visit rates in 2012 compared with 2008 (254.5% and 265.1% respectively). Between 2008 and 2012 ACS inpatient admissions declined by 1.3% for Pilot practices and by 0.9% for Comparison practices.

Table 3: Healthcare Use Rates, PCMH Pilot and Comparison Practices, 2008-2012, Medicare

	Pilot vs Comparison (% Difference)		2012 vs 2008 (Baseline) (% Difference)	
Services [a]	***2008***	***2012***	***Pilot***	***Comparison***
Primary Care Visits	-25.6%*	-45.1%	163.7%*	93.0%*
Specialist Visits	29.2%	18.7%	254.5%*	265.1%*
ED Visits	-9.3%	-6.6%	-1.2%	-3.9%
Preventable ED Visits	-3.5%*	-3.0%*	-1.1%	-1.7%
Inpatient Admissions	1.0%	1.4%	-7.1%	-7.6%
ACS‡ Inpatient Admissions	1.0%	0.7%	-1.3%*	-0.9%*

Data source: Maine all-payer claims

[a] Risk adjusted

*p< 0.05

‡ACS refers to Ambulatory Care Sensitive conditions

Quality Performance

As indicated in Table 4, there were no significant differences in quality performance between PCMH Pilot and Comparison practices in 2008 or in 2012. There were, however, significant changes in performance between 2008 and 2012 with PCMH Pilot practices showing a decline (-7.2%) in Diabetes LDL screening and with Comparison practices showing a 6.8% decline in Diabetic Eye Exams (Table 5).

Table 4: Quality Performance, PCMH Pilot and Comparison Practices, 2008 and 2012, Medicare

Quality Measures[a]	2008 Baseline			2012		
	Pilot	*Comparison*	*Percent Difference*	*Pilot*	*Comparison*	*Percent Difference*
Diabetes HbA1c	89%	88%	0.5%	87%	87%	-0.2%
Diabetes Nephropathy	76%	75%	1.7%	77%	77%	0.5%
Diabetes Eye Exam	65%	63%	2.3%	59%	56%	3.1%
Diabetes LDL	86%	84%	2.5%	79%	81%	-2.0%
Breast Cancer Screening	73%	76%	-3.3%	71%	76%	-4.4%
Cervical Cancer Screening	56%	58%	-2.3%	52%	55%	-3.3%

Data source: Maine all-payer claims

[a] Risk adjusted

*p< 0.05

Table 5: Changes in Quality Performance, PCMH Pilot and Comparison Practices, 2008 and 2012, Medicare

Quality Measures[a]	Pilot			Comparison		
	2008	*2012*	*Percent Change*	*2008*	*2012*	*Percent Change*
Diabetes HbA1c	89%	87%	-1.9%	88%	87%	-1.1%
Diabetes Nephropathy	76%	77%	1.0%	75%	77%	2.2%
Diabetes Eye Exam	65%	59%	-6.1%	63%	56%	-6.8%*
Diabetes LDL	86%	79%	-7.2%*	84%	81%	-2.7%
Breast Cancer Screening	73%	71%	-1.7%	76%	76%	-0.6%
Cervical Cancer Screening	56%	52%	-4.0%	58%	55%	-3.3%

Data source: Maine all-payer claims

[a] Risk adjusted

*p< 0.05

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