

**Innovation**

# Multipayer Patient-Centered Medical Home Implementation Guided by the Chronic Care Model

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Chronic diseases are responsible for 70% of deaths in the United States, three-quarters of health care costs,<sup>1</sup> and 46% of the global disease burden.<sup>2</sup> Diabetes is one of the most costly of chronic diseases, accounting for \$174 billion in the United States, with the cost of medical care for patients with diabetes averaging 2.3 times higher than similar patients without diabetes. These high costs of diabetes relate primarily to complications in care. A significant quality chasm has been well documented for chronic illness care. Specifically for diabetes, only 7% of patients are at the evidence-based goals for the key predictors of morbidity and mortality: glycated hemoglobin (hemoglobin A1C), blood pressure (BP), and lower density lipoprotein-cholesterol (LDLc).<sup>3</sup>

The Chronic Care Model (CCM) posits that improvement requires a paradigm shift from our current reactive model of health care delivery to one that focuses on avoiding long-term problems, including diabetes complications.<sup>4</sup> The premise of the model is that quality chronic care is delivered by an integrated system involving six essential elements: (1) health system leadership and support, (2) community resources, (3) self-management support, (4) delivery system design, (5) decision support, and (6) clinical information systems. These elements work in concert to create productive interactions between a prepared, proactive practice team and an informed, activated patient. Evidence suggests that high-performing practices do best when they incorporate the multiple elements of the CCM.<sup>5</sup> Efforts to adopt the CCM have typically not involved significant changes in reimbursement, without which there is often a mismatch between who bears the cost of implementation and who receives the financial benefits from care improvement.

The Patient-Centered Medical Home (PCMH), which incorporates the CCM, is being implemented in a number of health care organizations and regions around the United States,<sup>6–11</sup> with widespread enthusiasm and endorsement by many payers, professional societies, and policymakers. Health care settings operating as PCMHs provide comprehensive pri-

## Article-at-a-Glance

**Background:** A unique statewide multipayer initiative in Pennsylvania was undertaken to implement the Patient-Centered Medical Home (PCMH) guided by the Chronic Care Model (CCM) with diabetes as an initial target disease. This project represents the first broad-scale CCM implementation with payment reform across a diverse range of practice organizations and one of the largest PCMH multipayer initiatives.

**Methods:** Practices implemented the CCM and PCMH through regional Breakthrough Series learning collaboratives, supported by Improving Performance in Practice (IPIP) practice coaches, with required monthly quality reporting enhanced by multipayer infrastructure payments. Some 105 practices, representing 382 primary care providers, were engaged in the four regional collaboratives. The practices from the Southeast region of Pennsylvania focused on diabetes patients ( $n = 10,016$ ).

**Results:** During the first intervention year (May 2008–May 2009), all practices achieved at least Level 1 National Committee for Quality Assurance (NCQA) Physician Practice Connections Patient-Centered Medical Home (PPC-PCMH) recognition. There was significant improvement in the percentage of patients who had evidence-based complications screening and who were on therapies to reduce morbidity and mortality (statins, angiotensin-converting enzyme inhibitors). In addition, there were small but statistically significant improvements in key clinical parameters for blood pressure and cholesterol levels, with the greatest absolute improvement in the highest-risk patients.

**Conclusions:** Transforming primary care delivery through implementation of the PCMH and CCM supported by multipayer infrastructure payments holds significant promise to improve diabetes care.

mary care that is coordinated and integrated across all elements of the health care system by a physician-led team of individuals who have an ongoing relationship with the patient and, when appropriate, the patient's family. Providers in PCMHs are responsible for meeting or appropriately arranging care that meets each patient's needs for acute care, chronic care, preventive services, and end of life care. Care is evidence-based, supported by health information technology, and measured for continuous quality improvement and safety. Payments appropriately recognize the added value of enhanced access, coordinated care, and quality.<sup>12</sup>

In 2010 the Affordable Care Act established a Center for Medicare & Medicaid Innovation (<http://innovations.cms.gov/>) within the Centers for Medicare & Medicaid Services (CMS) to "test innovative payment and service delivery models to reduce program expenditures . . . while preserving or enhancing the quality of care."<sup>13</sup> In November 2010 the new Innovation Center announced a MultiPayer Advanced Primary Care Practice Demonstration that will include up to 1,200 PCMHs serving up to one million Medicare beneficiaries.

Despite the plethora of PCMH initiatives, there are limited published data regarding their impact on clinical outcomes. In this article, we describe a major multistakeholder, multipayer initiative to implement the CCM and PCMH across the state of Pennsylvania. We report on the initiative's first-year outcomes from the initial 25 practices targeting diabetes as the initial target disease in the Southeast Pennsylvania (SEPA) collaborative; SEPA consists of the five-county metropolitan Philadelphia region. This project represents the first broad-scale CCM implementation with payment reform across a diverse range of practice organizations and one of the largest PCMH multipayer initiatives.

## Methods

### LINKING IMPLEMENTATION OF THE CHRONIC CARE MODEL AND THE PATIENT-CENTERED MEDICAL HOME

In May 2007 the Pennsylvania Governor's Chronic Care Management, Reimbursement, and Cost Reduction Commission was established by executive order to develop a strategic plan for broad-scale implementation of the CCM, supported by a new primary care reimbursement model. The resulting strategic plan, presented in February 2008,<sup>14</sup> linked CCM and PCMH implementation. The Commission's appointed membership represents governmental agencies, seven of the state's leading insurers, voluntary health care organizations, academic institutions, health systems, professional associations, consumers, employers, and

community representatives. Diabetes was a primary target disease in part because of a successful multistakeholder group that established a statewide Diabetes Action Plan.<sup>15</sup> A subset of the practices in SEPA focused on pediatric asthma; those results are not reported here.

In January 2008 the Governor's Office of Health Care Reform convened multiple insurers and providers to establish incentives for a CCM-driven PCMH implementation and provided the participating insurers and providers with antitrust protection. Payers and provider groups committed to a series of regional rollouts involving 20 to 30 practices in each of four regions during a three-year period.

### PRACTICE RECRUITMENT

In May 2008 SEPA became the first region of the state to participate in the initiative. SEPA practices were recruited by having the participating payers and professional organizations (Pennsylvania Academy of Family Physicians, American College of Physicians, American Board of Internal Medicine, and American Academy of Pediatrics) reach out and encourage practices to apply for participation on a first-come, first-served basis. Selection criteria were developed to ensure balanced representation of different practice types, including items such as practice size, proportional mix of payers (to market share), and affiliation (academic, independent, or community health center). In the SEPA region, 34 practices applied, with 2 later withdrawing for personal reasons before the first Breakthrough Series learning collaborative session. Of the remaining 32 practices, 25 initially focused on diabetes (with results shown herein) and 7 pediatric practices focused on asthma (results not discussed herein). Since the initiation of the SEPA regional rollout, three other payer-supported regional rollouts have been initiated across the state—the Southcentral, Southwest, and Northeast collaboratives. In total, 105 practices representing 382 primary care providers were engaged in the four collaboratives. Three other regional rollouts involving 47 practices and 262 providers did not involve payers and were supported by a small state grant program.

The current intervention was designed to fundamentally transform primary care practices with the PCMH and CCM by using diabetes as the initial target disease and then rapidly generalizing to other populations. A diverse practice mix within the statewide initiative to date includes residency training program practices, large academic health center practices, and small independent practices, with distribution across the state.

### IMPROVEMENT INTERVENTIONS

Implementation of the CCM and PCHM in the participat-

ing practices was facilitated through five integrated interventions, as now described.

**1. Learning Collaborative (Plan-Do-Study-Act).** All practices participated in a Breakthrough Series Learning Collaborative, which began in May 2008.<sup>16</sup> The collaborative brought teams from each practice (minimum of a lead provider and key practice administrator) together with faculty in four intensive two-day learning sessions during the course of the first year of a three-year period. Between learning sessions, practices tested and implemented practice changes using the Model for Improvement's Plan-Do-Study-Act methodology. On-site learning sessions were supported by monthly telephone conferences.

**2. Monthly Reporting of Quality Indicators.** Practices reported registry-generated quality measures monthly to the Improving Performance in Practice (IPIP) national program, along with detailed narratives describing changes made. IPIP is a physician-based, chronic care-focused quality improvement program supported by the American Board of Medical Specialties (ABMS) Research and Education Foundation and funded by the Robert Wood Johnson Foundation (<http://www.ipiprogram.org/>). Practices without disease registries were provided with a Web-based system registry at no cost.

**3. Improving Performance in Practice Coaches.** In the SEPA region, each practice was assigned one of two IPIP practice coaches to facilitate practice change by supporting and ensuring proper use of the registry, implementation of interventions, completion of monthly reports, and proper interpretation of the feedback on the reported measures. IPIP coaches were registered nurses with management experience who trained through the national IPIP program. The IPIP coaches contacted practices at least monthly during the first year through individual site visits, phone consultations, and e-mails to facilitate practice changes, registry use, and National Committee for Quality Assurance (NCQA) recognition.

**4. National Committee for Quality Assurance Physician Practice Connections Patient-Centered Medical Home Recognition.** Payers were particularly keen to align payments with a measure of practice transformation. Incentivized NCQA PPC-PCMH<sup>17</sup> recognition was encouraged for all practices with Level 1 recognition being required in the first year.

**5. Multipayer Financial Reimbursement.** In addition to traditional service reimbursement from insurers and any ongoing pay-for-performance program administered by the individual insurer, the practices received the following:

- a. "Infrastructure" payments in Year 1 to cover the cost of time away at the learning collaborative sessions, miscellaneous administrative expenses such as those related to reg-

istry implementation, and the costs of the NCQA application and submission fee

- b. Supplemental payments based on level of NCQA recognition.

Annualized payments were based on provider full-time equivalents, prorated by carrier and based on each carrier's proportional contribution to the practice's overall revenue. The payments are detailed in Table 1 (page 268).

## SOUTHEAST PENNSYLVANIA PRACTICE AND PATIENT DEMOGRAPHICS

There was significant heterogeneity in the size of the 25 practices (Table 2, page 269). These diabetes-focused practices ranged in size from one to 34 providers. The practices have an average Medicaid enrollment of 35.2% but include seven Federally Qualified Health Centers with significantly higher practice averages. Race and ethnic diversity paralleled that of the Philadelphia area, where a high percentage of blacks and Hispanics receive care in many of the practices. There were 143 full-time providers (physicians in physician-directed practices or nurse practitioners [NPs] in nurse-led community health centers).

## PARTICIPATING PAYERS

Six payer organizations signed agreements to support the SEPA collaborative by providing the practices with supplemental compensation as defined by the terms of the participation agreement drafted by the Governor's Office of Health Care Reform. These six payers represented 99.8% of the private insurers represented by the patient population of Philadelphia: Independence Blue Cross (44.5%), Keystone Mercy (20.1%), Aetna (19.3%), AmeriChoice (6.3%), HealthPartners (8.8%), and CIGNA (0.8%).

## DATA REPORTING AND ANALYSIS

Uniform monthly reporting of IPIP measures was required by participating practice agreements. Data on IPIP diabetes measures include A1C, BP, LDLc, dilated eye examination, foot examination, nephropathy, tobacco use, influenza vaccination, and evidence-based treatments. Each practice reported the percent of all diabetes patients meeting the indicated parameters. Practice-level monthly IPIP data reports were analyzed for results during the first year of the SEPA collaborative.

It took most practices several months to either populate their registries or learn how to reliably enter and extract data for performance reporting purposes. As such, analysis required establishment of a baseline that avoided large fluctuations in numbers of diabetes patients within each clinic. Three members of the re-

Table 1. Southeast Pennsylvania (SEPA) Rollout Practice Payments\*

Year 1 Infrastructure <sup>†</sup>	Total
NCQA Survey Tool (one per practice)	\$80
Registry Assistance (.25 FTE per practice)	\$8,000
NCQA Application Fee (for clinician champion only)	\$360
Recognition of Clinician Champion Participation in Learning Collaborative Sessions (7 days) <sup>‡</sup>	\$11,655
	<b>\$20,095</b>

NCQA PPC-PCMH Recognition <sup>§†</sup> Per FTE Physician or NP <sup>  </sup>	Practice Size:	Practice Size:	Practice Size:	Practice Size:
	1 FTE MD/NP	2–4 FTE MD/NP	5–9 FTE MD/NP	10–20 FTE MD/NP
Level 1 Recognition	\$40,000	\$36,000	\$32,000	\$28,000
Level 2 Recognition	\$60,000	\$54,000	\$48,000	\$42,000
Level 3 Recognition	\$95,000	\$85,500	\$76,000	\$66,500

\* NCQA, National Committee for Quality Assurance; FTE, full-time equivalent; PPC-PCMH, Physician Practice Connections Patient-Centered Medical Home; NP, nurse practitioner; MD, physician.

<sup>†</sup> Prorated by carrier and based on each carrier's proportional contribution to the practice's overall revenue. On average, 70% of practice revenue was paid by one of the six participating payers (that is, on average, practices received 70% of these funds). This 70% average includes the seven pediatric practices that focused on pediatric asthma in the SEPA rollout. The pediatric practices generally had higher covered revenues than the practices focused initially on diabetes, which care for large Medicare populations. Traditional Medicare was not one of the participating payers.

<sup>‡</sup> Paid following each quarterly learning session in Year 1, pending attendance at the learning session by the clinical champion. The other Year 1 infrastructure payments were included in the first quarterly payment.

<sup>§</sup> Paid annually but prorated for recognition obtained after May each year. Fifteen of the 25 practices did not obtain NCQA PPC-PCMH recognition until the end of Year 1 (April 2008–May 2009) and thus received little or no recognition payments in Year 1. No practice obtained NCQA PPC-PCMH before September 2008.

<sup>||</sup> Recognition payments were based on FTE clinicians in each practice, excluding residents in residency practices. Mid-level providers (NPs, physician assistants) were not included in the FTE clinician count in physician practices. FTE NPs were counted for the nurse-managed community health centers.

search team [including R.A.G., D.T.M.] independently identified baseline months for each of the 25 practices and met collectively to reach consensus. Initially, each investigator identified stability in the denominator (total population), representing that the practice had completed entering patients in the registry or was reporting consistently from the electronic medical record. Then we ensured that changes in the performance measures from month to month were not unrealistic (change in any measure of 20 percentage points in a month was deemed close to impossible). After the practice reached stability (that is, a steady denominator and no extreme swings in performance data reported), this was considered its baseline performance. This strategy biases our results toward the null because practices may have had some improvement in the processes before achieving stability in their data.

Descriptive statistics for the IPIP clinic measures, including the mean, standard deviation, median and quartiles, were used to characterize the clinics as a group both at baseline (described above) and after one year of follow-up. Paired t-tests, comparing baseline against follow-up, were used to identify IPIP measures that may reflect improvement in clinical care management. Analyses were carried out using SAS statistical software (SAS Inc., Cary, North Carolina).

## Results

### NATIONAL COMMITTEE FOR QUALITY ASSURANCE PHYSICIAN PRACTICE CONNECTIONS PATIENT-CENTERED MEDICAL HOME RECOGNITION

NCQA PPC-PCMH recognition was embraced by all (25 diabetes-focused and the seven pediatric asthma-focused) practices. By May 2009—the end of the first year—12 SEPA practices achieved recognition Level 1, four at Level 2, and 16 at Level 3. Although NCQA does not typically recognize practices led by NPs, all seven of these practices were reviewed by NCQA and are included in the number reported as achieving recognition.

### GUIDELINE ADHERENCE AND CLINICAL OUTCOMES

During the first year of the intervention, there was significant improvement in both evidence-based care guideline adherence and in clinical outcomes. The percentage of patients who received a yearly foot assessment for neuropathy increased significantly from 50% to 69% (Figure 1, page 270). The percentage of patients receiving yearly screenings for nephropathy and diabetic retinopathy as well as administration of pneumonia and influenza vaccines also improved.

**Table 2. Participating Practice Demographics for the Southeast Pennsylvania Region\***

Number of Participating Practices	25
Number of Participating Providers	143
Percent of Practice Type	
Family Medicine	28%
FQHC	32%
Residency	16%
Internal Medicine	24%
Diabetes Patients per Practice	
Less than 100	8%
100 to 500	76%
More than 500	16%
Number of Providers per Practice	
1 to 3	20%
4 to 10	76%
Greater than 10	4%

\* FQHC, Federally Qualified Health Centers

### USE OF THERAPIES

Use of therapies that have been shown to reduce morbidity and mortality in patients with diabetes improved significantly during the study (Figure 2, page 270). These therapies included angiotensin-converting enzyme inhibitors (ACEIs) or angiotensin receptor blocking (ARB) agents, which have been shown to reduce cardiovascular disease risk,<sup>18,19</sup> and statins, which effectively reduce cardiovascular mortality for individuals with type 2 diabetes and an age greater than 45 years.<sup>20,21</sup> After the start of the SEPA intervention, more patients received statins (57% versus 36% baseline) and ACEIs or ARBs (56% versus 42%). Evidence-based aspirin use also improved.

The importance of self-care in diabetes is integrated within the CCM<sup>22,23</sup> and PCMH and practices were coached on how to establish collaborative self-management goals. As a result, the provider-reported percentage of patients with established self management goals increased to 70% (Figure 2).

### DIABETES MEASURES

There were small but statistically significant improvements in key clinical parameters for BP and cholesterol levels (Figure 3, page 271). In general, the greatest absolute improvement in impact was seen in the highest-risk patients, as follows:

- An 8.5% absolute increase in the percentage of patients with LDLc < 130
- A 4% absolute increase in the percentage of patients with BP < 140/90
- A 2.5% absolute decrease in the percentage of patients with A1C > 9.

In addition, more patients achieved the recommended LDLc target of < 100.

### IMPLEMENTATION OF THE CCM

Assessment of Chronic Illness Care (ACIC) surveys<sup>24</sup> indicated robust implementation of the elements of the CCM, with numerous Plan-Do-Study-Act (PDSA) cycles by all practices. Leading practice changes included reorganizing care toward team-based provision of care, incorporation of self-management support and education, planned visits, and office huddles. Many practices began using registries and examining their data for the first time. Table 3 (page 272) lists the specific changes the SEPA practices described as their single best practice change at the end of Year 1 (May 2009). Table 4 (page 272) lists the range of changes one practice reported at the end of Year 1. Lessons learned by one physician in a mid-size practice were how powerful clinical inertia is and what a large fraction of their population was “in hiding.” In describing how patient care was different one year into the collaborative, the physician said, “Every diabetic follow-up visit has a unique agenda, tailored to the patient. We know our patient population *much* better!”

Interestingly, many practice members and providers who were skeptical at the onset of the learning collaborative reported great satisfaction and enthusiasm for the initiative by the end of the first year. One such physician stated, “I just feel like it’s been a shot in the arm even though I have griped and complained a little bit about the extra commitment, but I really do believe it is the right thing to be doing.”

### Discussion

The PCMH and the CCM are currently being adopted in a variety of practice settings. The intervention in SEPA as described in this article is unique in bringing multiple payers convened by a state body without regulatory oversight to contract with a diverse range of practices for broad-scale CCM/PCMH implementation leveraged by payment reform. Independent external validation of practice transformation was an integral goal of the intervention, and all practices successfully achieved some level of NCQA recognition.

The practices documented tested and implemented changes in their monthly narrative reports. All engaged in registry-based performance improvement reporting on clinical outcomes, a key first step toward population management.<sup>25</sup> In fact, it is possible that some of the assessed performance improvement could be attributed to better data collection, documentation, and reporting. Team-based care and care management have been shown to be among the most potent interventions to improve glycemic

control in patients with diabetes.<sup>26</sup> Practices appeared to uniformly embrace team-based care, and reinvestment of payer premiums from the program were required to focus on care management activities.

Adherence to evidence-based care was noted in terms of both complication screening and appropriate medication use. The improvement seen in complication screening resulted, in many cases, from distributing tasks among the health care team (for example, staff empowered through standing orders to perform foot exams). The Breakthrough Collaborative faculty and practice coaches stressed stratifying clinical populations to focus on high-risk individuals to reduce the number of patients with the poorest diabetes quality measures. There was significant reduction among these highest-risk individuals for the three most critical diabetes clinical parameters: glycemic control, blood pressure, and cholesterol. Reductions for those patients furthest from target (and typically those patients associated with highest cost of care) hold significant promise for reducing overall health care costs. Practice satisfaction was high and attainment of NCQA PPC-PCMH recognition was accomplished by all practices.

The intervention in SEPA was the first step of a statewide multipayer effort. Rollouts followed in the remaining six regions (Southcentral, Southwest, Northeast, Northwest, Northcentral, and Southeast-2), three with payer involvement and three under a small state grant program. Statewide, 152 practices and 644 providers have been involved in similar regional learning collaboratives supported by practice coaching. All the practices were expected to report on performance monthly and to achieve NCQA PPC-PCMH recognition.

This initiative is unique from many occurring in other states in that a large number of payers (17 different payers statewide) have been brought together around a common initiative. The carriers in SEPA together represent 70% of participating practice revenue, on average, with Medicare fee-for-service being the largest source of non-covered revenue. This high level of payer involvement using a common supplemental payment methodology, coupled with the use of a common set of practice support interventions, helps to focus practice attention and reduce potential provider confusion that might be caused by smaller

### Mean Percentages of Patients with Evidence-based Complication Screening and Preventive Measures at Baseline and One Year Later

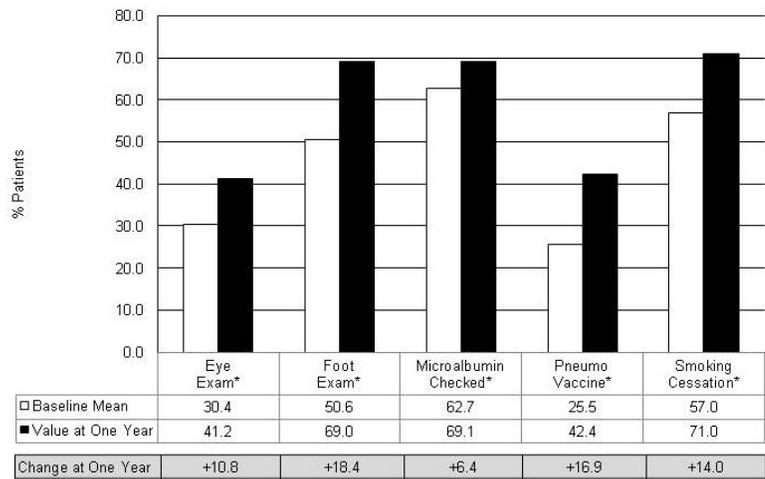


Figure 1. Statistically significant Year 1 improvements were seen across a range of evidence-based complication screening and preventive measures. Asterisk (\*) indicates a significant difference at Year 1 relative to the baseline at  $p < .05$ .

### Mean Percentages of Patients with Evidence-based Treatment at Baseline and One Year Later

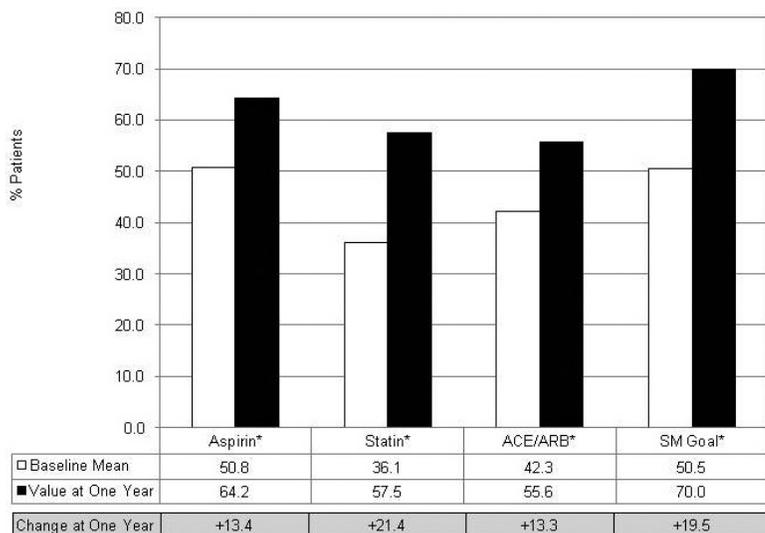
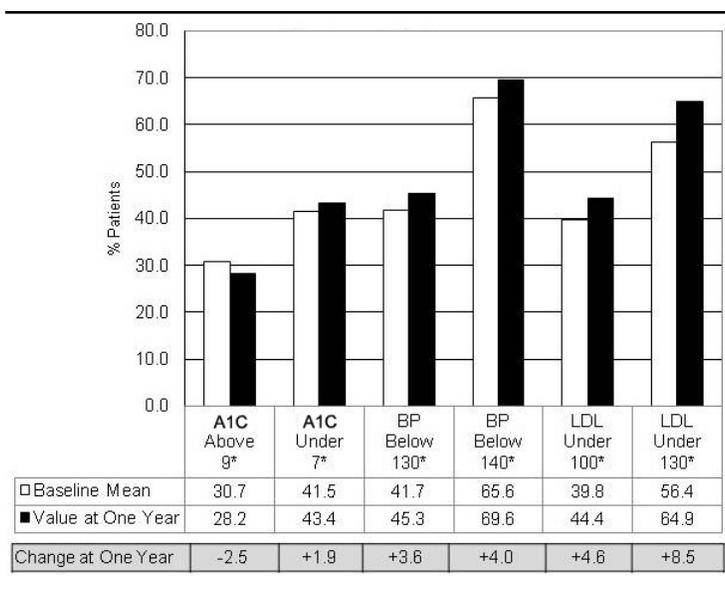


Figure 2. Statistically significant Year 1 improvements were seen across a range of evidence-based medication and self-management therapies known to reduce morbidity and mortality in patients with diabetes. Asterisk (\*) indicates a significant difference at Year 1 when compared with baseline at  $p < .05$  vs. baseline. SM, self-management.

### Mean Percentages of Patients Achieving Clinical Outcomes for A1C, BP, and LDL at Baseline and One Year Later



**Figure 3.** All diabetes clinical outcomes improved at statistically significant rates in Year 1. Asterisk (\*) indicates a significant difference at Year 1 when compared with baseline at  $p < .05$ . A1C, glycated hemoglobin; BP, blood pressure; LDL, lower density lipoprotein-cholesterol (LDLc).

and less aligned initiatives.

The multipayer, multiregion approach in Pennsylvania also has facilitated a greater understanding of dissemination and spread. As the initiative spread across Pennsylvania, three different payment methodologies were used, each building from the previous to better align incentives with key elements of the CCM and PCMH. The Southcentral and Southwest regions, which directly followed the SEPA initiative, allocated specific payments for practice-based care management but delayed incentives for NCQA recognition. The payment methodology in Northeast Pennsylvania provided even earlier payments for care management and established a shared-savings methodology based on explicit improvement expectations.

Several limitations of the current study should be noted. First, the clinic level data was acquired from the practices through self-report. Although this might introduce some bias, it is a commonly employed mechanism for obtaining clinical quality improvement data. Second, the study practices were chosen on the basis of interest in participation and, therefore, may represent a biased sample; however, several of the practices at the initial learning collaborative indicated that they would not have un-

dertaken such an initiative without the financial opportunities present. Thus, while most previous implementations of the CCM and PCMH have focused on large health care organizations, many smaller practices were engaged by the financial incentives available in this implementation.

There are no existing published data on the effectiveness of a PCMH initiative of the scope and complexity of the Pennsylvania Initiative. Several other multipayer medical home initiatives involving both practice redesign and supplemental payment strategies began shortly after the SEPA initiative. Some of these initiatives, including those in Colorado, Rhode Island, and Vermont, have some commonalities with the Pennsylvania design, such as the use of learning collaboratives and practices coaches, an emphasis on the chronic care elements of the CCM, and payment linked with NCQA PPC-PCMH recognition. Other multipayer PCMH initiatives have more fundamental differences. Yet, even among the initiatives with commonality to the Pennsylvania Initiative, there are key design differences. It will be important to understand how these differences affect the effectiveness of the varied PCMH efforts, including their impact on clinical outcomes, patient and practice experience, and cost.

The current intervention is ongoing. The challenge of sustainability is lessened with the selection in November 2010 of Pennsylvania, along with seven other states, for the Medicare Multi-Payer Advanced Primary Care Practice Demonstration (<http://www.cms.gov/demoprojectsevalrpts/md/itemdetail.asp?itemid=cms1230016>). In 2010, the largest payer in SEPA region—Independence Blue Cross—adopted a broad-based PCMH payment methodology on the basis of the current initiative, and it is hoped that even more payers will do likewise. In addition, Pennsylvania’s payers are developing a common set of pay-for-performance measures.

Over time, it will be important to continue to monitor the intervention to fully assess the impact of these improvements in clinical care on costs. Formal evaluations are under way. A Commonwealth Fund-supported team is assessing the differential impact of the payment approaches—which range from per-member per-month care management fees to shared savings—on health care utilization, efficiency, cost, and quality of care.<sup>27</sup> The U.S. Agency for Healthcare Research and Quality is also funding a mixed-methods evaluation by one of the authors [R.A.G.] to identify critical facilitators and barriers of PCMH transformation and to assemble a series of case studies that will be useful for further dissemination.<sup>28</sup> Subsequent years of the current rollout are focusing on better identifying the highest-cost indi-

**Table 3. “One Best Practice Change” Reported by Southeast Pennsylvania Region Practices at Year 1 on Key Components of the Chronic Care Model and Patient-Centered Medical Home**

Access and Communication	<ul style="list-style-type: none"> <li>■ Patient reminder systems for primary care and specialist visits</li> <li>■ Open-access scheduling</li> <li>■ Learning to meld planned visits with open-access scheduling</li> </ul>
Patient Tracking and Registry Functions	<ul style="list-style-type: none"> <li>■ Using a disease registry to track patients individually and as a population</li> <li>■ Implementing an electronic medical record system</li> <li>■ Standardized data collection/input into electronic medical record system</li> <li>■ Using a standardized visit template to address all needed care</li> <li>■ Risk stratification of patients</li> <li>■ Embedding clinical guidelines into work flow</li> </ul>
Care Management/Delivery System Design	<ul style="list-style-type: none"> <li>■ Pre-visit planning and outreach to address gaps in care</li> <li>■ Daily care team huddle to plan care for patients scheduled that day</li> <li>■ Involving medical assistants more in the care of patients (completing flow sheets, doing monofilament tests, medication reconciliation)</li> <li>■ Introduction of care management for high-risk patients</li> <li>■ On-site ophthalmology clinic</li> </ul>
Patient Self-Management Support	<ul style="list-style-type: none"> <li>■ Change in attitude to recognize patient as team member</li> <li>■ Started asking patients how we can help them better manage their conditions</li> <li>■ New health educator to provide enhanced self-management support</li> <li>■ Developed new diabetes self-management tool geared toward low literacy</li> <li>■ Group visits</li> <li>■ Patient progress reports to help patients track their conditions</li> <li>■ More intensive patient education</li> </ul>
Change Management	<ul style="list-style-type: none"> <li>■ Adoption of Plan-Do-Study-Act process as change agent helped focus weekly meetings</li> <li>■ Hiring advanced practice nurses to manage improvement processes and train staff</li> </ul>

**Table 4. Key Changes and Non-Clinical Results Reported by One Southeast Pennsylvania Region Practice at Year 1 Within National Committee for Quality Assurance Patient-Centered Medical Home Standards**

<p><i>Access and Communication</i></p> <ul style="list-style-type: none"> <li>■ Establishing a dedicated visit type for chronic care visits</li> </ul>	<ul style="list-style-type: none"> <li>■ Collaboration with behavioral health colleagues to identify resources and facilitate referrals</li> </ul>
<p><i>Patient Tracking and Registry Functions</i></p> <ul style="list-style-type: none"> <li>■ Enhancements to long-standing electronic medical record, including diabetes database and health maintenance field</li> <li>■ Incorporation of active alerts to promote provider use of patient report cards</li> </ul>	<p><i>Performance Reporting and Improvement</i></p> <ul style="list-style-type: none"> <li>■ Use of provider- and team-specific report cards to promote change</li> <li>■ Monthly performance reporting on standardized measures</li> <li>■ Electronic transmission of standardized measures to collaborative</li> <li>■ Posting of Plan-Do-Study-Acts on practice Web site</li> </ul>
<p><i>Care Management/Delivery System Design</i></p> <ul style="list-style-type: none"> <li>■ Involvement of specialist colleagues in updating practice guidelines</li> <li>■ Creation of small working units (care teams)</li> <li>■ More frequent meetings and huddles</li> </ul>	<p><i>Advanced Electronic Communications</i></p> <ul style="list-style-type: none"> <li>■ Posting of practice guidelines, policies, and resources (for example, patient education materials, drug formularies) on practice Web site</li> </ul>
<p><i>Patient Self-Management Support</i></p> <ul style="list-style-type: none"> <li>■ Incorporation of action plans into patient report cards</li> <li>■ Placement of topic-specific patient education folders in each exam room</li> <li>■ Identification of additional community programs and support groups</li> </ul>	<p><i>Nonclinical Results Reported</i></p> <ul style="list-style-type: none"> <li>■ More enthusiastic team</li> <li>■ Changes were catalyst for additional changes</li> <li>■ Giant strides in improving electronic medical record</li> <li>■ Role expansion of all members of the care team</li> <li>■ More help for patients with prescriptions, transportation, referrals</li> <li>■ Patients love the report cards</li> <li>■ Marked improvement in documentation and performance</li> <li>■ Improved access to care for patients who had fallen out of care</li> </ul>
<p><i>Referral Tracking</i></p> <ul style="list-style-type: none"> <li>■ Streamlining referral processes to improve clinical data transfer and feedback</li> </ul>	

viduals, engaging community resources more effectively, and uniformly incorporating care management into routine clinical flow. **J**

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