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REPORT

Evaluation of the Comprehensive Primary Care Initiative: First Annual Report

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EXECUTIVE SUMMARY

In October 2012, the Center for Medicare & Medicaid Innovation (CMMI) of the Centers for Medicare & Medicaid Services (CMS), in a unique collaboration between public and private health care payers, launched the Comprehensive Primary Care (CPC) initiative to improve primary care delivery in seven regions across the United States. CPC requires that practices meet annual Milestones that help them build the capability to deliver CPC's five functions: (1) access and continuity, (2) planned chronic and preventive care, (3) risk-stratified care management, (4) patient and caregiver engagement, and (5) coordination of care across the medical neighborhood (Figure ES.1). To help participating practices achieve these functions, CPC offers three main supports: enhanced payment, data feedback, and learning activities and technical assistance (TA). The substantial transformation involved in achieving these functions is expected to achieve better health care, better health outcomes, and lower costs. This first annual report to CMS describes the implementation and impacts of CPC over its first year.

Figure ES.1. The five functions of Comprehensive Primary Care

The initiative began with CMMI selecting seven regions based on the extent of payer interest and geographic diversity. Within those regions, CMMI selected 502 practices from about 1,000 applicants, based on a number of criteria—which favored practices that were meaningful users of electronic health records (EHRs), had patient-centered medical home (PCMH) recognition, and were experienced in quality improvement initiatives—designed to maximize the chances of achieving substantive practice transformation under the initiative. CMS did not select practices based on their outcomes or other aspects of their functioning. Most practices in CPC, like primary care practices nationwide, have substantial opportunities to improve the way they deliver care, based on CPC practices' self-reported approaches to delivering care and how their patients reported their experience of care when the initiative began. In addition, CMS successfully convened 31 unique other payers (3 to 9 per region) and together with them provides non-visit based monthly care management fees in addition to traditional payments for practices to invest in redesigning and transforming care. (For the median practice, this funding was equivalent to 19 percent of total [non-CPC] practice revenue, or about $70,045 per clinician, in CPC's first program year.[1]) In addition to this funding, CPC also provides practices with learning activities as well as data feedback on cost, service use, quality of care, and patient, provider, and staff experience, to assist in their transformation. Although areas for improvement remain in the learning activities and data feedback, both are being continually refined. Moreover, most practices met the required Milestones at the end of CPC's first year; less than 10 percent were placed on corrective action plans (38 practices) or terminated from the initiative (4 practices). To date, practice participation has been remarkably stable, especially given the amount of work required to meet CPC's annual Milestones. Similarly, payer participation has also been quite stable, with just a few payers leaving the initiative—and each with relatively small numbers of attributed patients in CPC.

[1] CMS defines CPC's first program year (PY2013) as October 2012 through December 2013.

Our findings on the early effects of CPC on service utilization and costs for attributed Medicare fee-for-service (FFS) beneficiaries through September 2013 are promising and more favorable than might be expected for the first 12 months of the initiative. Across all seven regions in the first year, early results suggest that CPC has generated enough savings in Medicare health care expenditures to nearly cover the CPC care management fees paid by CMS for attributed Medicare FFS beneficiaries, although not enough to generate net savings. CPC also generated reductions in hospitalizations, outpatient ED visits, primary care physician visits, and specialist visits. However, because of possible unobserved differences between CPC and comparison practices at baseline, the concentration of favorable findings in several regions and their early timing, and some unintended adverse results in other regions, we recommend that these findings be interpreted with caution at this time.

As for effects on quality, there was a sizable (4 percent) CPC-wide decline (that was not quite statistically significant) in unplanned 30-day readmissions, but there were few other sizeable or statistically significant effects on other claims-based quality-of-care outcomes or process measures examined that reflect quality of care provided by all the patients' providers. We will continue to track claims-based effects on cost, use, and quality on a quarterly basis throughout the initiative to assess whether these initial differences persist or grow. We will be able to assess the effects of CPC on patient experience among attributed Medicare FFS beneficiaries in each of the next three years, and on clinician experience between 2013 and 2016—when we can compare changes over time between CPC practices and their comparison group.

The rest of this executive summary provides a more detailed overview.

Who participates in CPC?

In its first program year, CPC maintained a high level of participation among stakeholders (Table ES.1). Currently, 29 of the original 31 distinct payers participate along with CMS. Of the 502 practices that were selected for and joined CPC at its start, 492 were still participating as of December 2013; these practices include more than 2,100 primary care clinicians (physicians, nurse practitioners, and physician assistants).

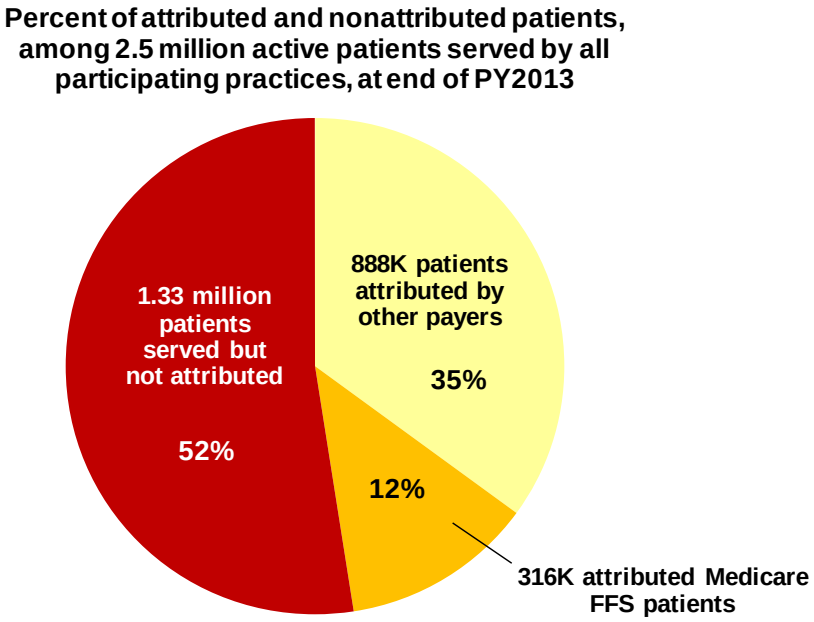
Table ES.1. Who participates in CPC?

Participant	Start of CPC Initiative (Fall 2012)	End of CPC PY2013 (December 2013)
Regions	7	7
Unique payers (in addition to CMS)	31	29
Practices	502	492
Clinicians	2,172	2,158

Participating practices report having served more than 2.5 million patients in the first year. Participating payers paid these practices care management fees (in addition to regular payments) for 1.2 million of these patients that were "attributed" to them as receiving their care primarily at the practices according to the different participating payers' methodologies—including more than

315,000 Medicare FFS beneficiaries (Figure ES.2).[2] This translates into practices receiving CPC care management fees for almost half their patients.

Figure ES.2. CPC attributed and nonattributed patients across all participating practices, at the end of PY2013



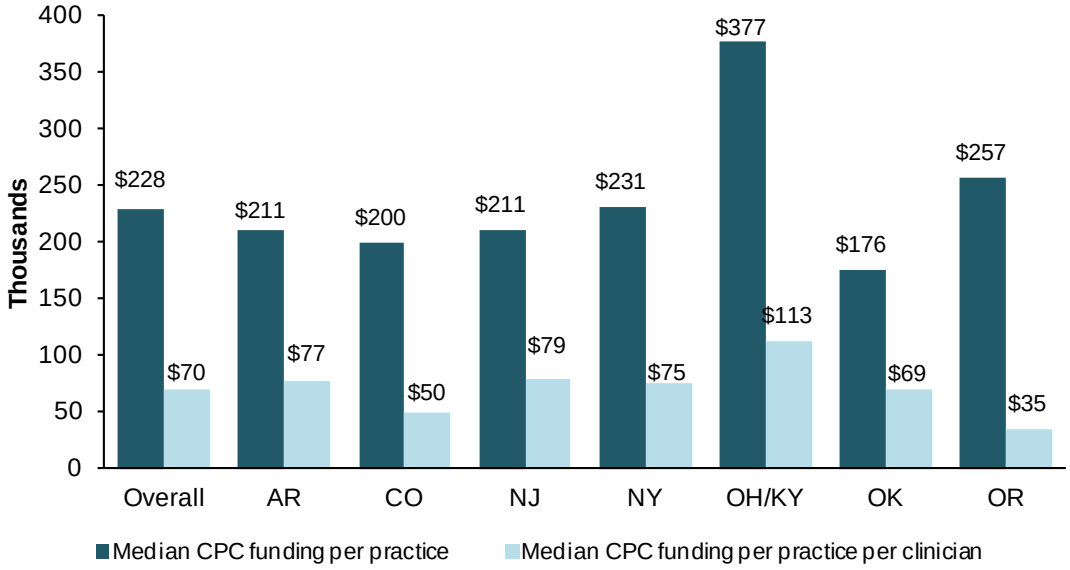
On average, participating practices have 4.4 clinicians, 640 attributed Medicare FFS patients, and 1,784 attributed patients covered by other participating payers. (Practices vary in the proportion of their patients who are attributed to CPC, and are expected to provide the CPC functions to all patients regardless of whether they are attributed.) However, the averages are skewed by a few very large practices: while half the practices have 3 or fewer clinicians, just over one-fourth have 6 or more. Although CMS selected about half the practices that applied to CPC, CMS did not do so on the basis of functioning or outcomes. Most practices in CPC, like primary care practices nationwide, have substantial opportunities to improve the way they deliver care, based on their self-reported approaches to delivering care when the initiative began and how their patients reported their experience of care early in CPC.

[2] Payers' methods for attributing patients to practices vary somewhat, but patients are generally assigned to practices where they had the most primary care visits according to that payer's claims data. Some patients that were seen by a CPC practice would be not be attributed to a CPC practice if, for example, they visited the non-CPC practice more frequently than the CPC practice.

What payment and data feedback do practices receive for CPC, and what technical assistance is offered?

CPC has successfully leveraged enhanced payments from participating payers, and given practices a large infusion of money for investments in redesigning and transforming care. The median practice received $227,849 in total CPC care management fees in addition to traditional revenues, or $70,045 per clinician, in CPC's first program year (Figure ES.3).[3] (This represents an increase of 19 percent of 2012 total [non-CPC] practice revenue for the median practice). The 25th and 75th percentiles of annual CPC funding per clinician were $45,570 and $100,780. In the aggregate, participating payers combined provided practices with $141.3 million in care management fees.

Figure ES.3. CPC provided substantial funding to participating practices in PY2013



Source: Medicare payments for CPC are based on information from Telligen/ARC on total Medicare payouts to participating practices. CPC payments from other participating payers are based on PY2013 budget reconciliation data reported by CPC practices in April 2014.

CMS paid a large share of the total care management fees: while about 26 percent of all attributed patients in CPC are Medicare FFS, a sizable proportion (64 percent) of the total CPC funding came from Medicare FFS. The percentage, however, varies considerably by region. Most CPC payers offer practices the opportunity for shared savings later in the initiative; specifically, if there are net savings in health care costs in the second, third, and fourth years of the initiative, practices may be eligible to receive a portion of the savings.

Regular data feedback is another major component of the CPC initiative. Beginning in April 2013, CMS began providing to each CPC practice quarterly feedback reports with cost and use data on the practice's attributed Medicare FFS beneficiaries, along with feedback (when available) from annual patient and practice surveys, and two rounds of surveys of clinicians and staff. Beginning in July 2013, CMS provided a data file on patient-level cost and use to accompany the

[3] CMS began making CPC care management payments in October 2012 for Arkansas and Oklahoma's Greater Tulsa region, and in November 2012 for all other regions. Other participating payers began making such payments on or before February 1, 2013.

feedback report. After initially low levels of use, participating practices increasingly downloaded Medicare FFS quarterly feedback during CPC's first year—though there is still room for improvement. Many practices, however, still need help interpreting and using this information. CMS and its contractors are actively working to improve the Medicare FFS reports and help practices use them. CMS also provides region-level feedback reports, to support the delivery of TA to practices. Moreover, CMS receives quarterly feedback on CPC-wide implementation and outcomes to monitor progress of the initiative and make refinements as needed.

Practices also receive data feedback from the majority of non-CMS payers participating in CPC (two-thirds of payers as of fall 2013). The amount and format of feedback provided in other payers' reports varied widely within regions. The majority of payers providing feedback reports said they supplied feedback to practices prior to CPC and did not adjust their reports to align with CMS reports. To provide clearer signals to practices, payers in each region are working on either aggregating data and producing one report or aligning reports across payers. Data aggregation has proven challenging. Currently, the majority of payers suggested they have little to no data on how many practices are using their data feedback.

In addition to financial support and data feedback, CPC offers a learning system and TA to help practices build the capacity to make transformative changes. CMS has supported the delivery of practice-to-practice support and TA through CPC's national and regional learning activities, which include national webinars on relevant topics and tools, as well as support and assistance for practices provided by Regional Learning Faculty (RLF). In addition to the faculty support, these activities offer an opportunity for practices to learn from one another and share best practices. Learning activities include webinars, collaborative meetings, and virtual office hours. In addition, in the last quarter of 2013, almost two-thirds of practices received one-on-one TA or coaching (either via telephone or in person) from RLF. The amount and type of CPC learning activities varied substantially by region during CPC's first program year, with RLF in a few regions providing intensive in-person TA to large numbers of participating practices. (This variation in assistance reflects, at least in part, differences in the ability of RLF organizations to leverage other funding or in-kind support.) Perspectives on the usefulness of learning also varied, which suggests that there is room for improvement. In the small number of "deep dive" practices (21) selected for evaluation site visits, practice staff strongly preferred one-on-one, in-person assistance that was tailored to their needs.

In addition to CMS-sponsored national and regional learning support for CPC, some other participating payers are actively supporting practice change by offering their own supports, although the level of assistance they provide appears to vary considerably by payer and by region.

How have practices transformed care?

CPC requires that for continued participation in the initiative, practices meet annual Milestones that are considered steps toward being able to deliver CPC's five functions. Early in PY2014, participating practices reported on PY2013 Milestones, and RLF rated their progress. While a few practices were flagged as having major deficiencies on specific Milestones, the vast majority successfully met the Milestones. Based on each practice's overall Milestone progress,

CMS placed 38 participating practices on corrective action (with remediation required by August 2014) and terminated 4 practices.[4]

A major focus of PY2013 activities was implementing risk-stratified care management. Practices reported spending considerable time risk-stratifying their patients, and a substantial portion of CPC enhanced payments on care managers. According to practice-reported data, the number of care manager full-time equivalents more than doubled in the first year of the initiative, from 980 to 2,100. In some cases, these care managers are not all necessarily new hires, but rather existing staff newly tasked with providing care management.

Our in-depth study of 21 deep-dive practices (3 per CPC region) suggests that practices vary considerably in their progress on implementing the components of CPC. Findings to date suggest that:

- Prior experience with quality improvement or practice transformation initiatives contributed to a more conducive climate for implementing CPC.
- Practice-specific assistance from RLF was perceived as a key contributor to practice-level improvement efforts.
- System-affiliated and independent practices tended to have different implementation approaches: independent practices were often able to make more rapid change, whereas system-owned or -affiliated practices tended to have greater access to management resources and health information technology (HIT) expertise that help to support CPC implementation.
- Practices that shared new mental models and approaches to care most widely among staff made more rapid and substantial progress on implementing CPC. Examples of these new approaches include moving away from episodic and clinician-centric care to focus on proactively identifying and addressing patients' needs.
- Practice-level HIT often lacked the functionality required to support shared decision-making work processes, the documentation of risk stratification information, or sharing information across the care team for care management.
- Practices' participation in the Medicare EHR meaningful use incentive program—which encouraged practices to implement and use patient portals to support meeting meaningful use requirements—provided important external support for implementation of patient portals for CPC.
- Many practices lacked direct access to EHRs from providers in other care settings (such as hospitals and specialists) and therefore had to use inefficient workarounds to obtain information needed for care coordination and care management.
- Practice staff's perceptions that making certain improvements is complex and difficult pose a substantial barrier to implementing change. This barrier was particularly evident for enhancing patient education, giving patients more self-management support, and

[4] Among the 38 practices placed on corrective action, several are part of the same corporate entity. Often the corporate entity provided identical Milestone submissions for all participating practices. In cases where CMS deemed the submission adequate, CMS placed all practices from the larger entity on a corrective plan.

using risk stratification. Staff were less concerned about the complexity of achieving other Milestones.

What implementation challenges have arisen?

Not surprisingly, given the boldness of the initiative, there have been some challenges in its first year. These include forging collaboration between payers and CMS, implementing learning activities, and getting practices to access and use performance data feedback. In general, many payers felt that communication issues and a lack of transparency in their interactions with CMS made for a challenging first year. For example, issues with attempting data aggregation—whereby payers would aggregate data to support multipayer practice-level feedback reports—and CMS's evolving role in that process over time frustrated many payers, and progress has been slow in many regions. Even in regions where prospects for data aggregation appear most promising, it will not occur for some time. Implementing learning activities has also been challenging; for example, a contractor change in the summer of 2013 resulted in a hiatus in assistance and support to practices for a couple of months. In addition, the quality, intensity, and practice-specific tailoring of the learning activities provided appear to vary across regions. Moreover, only a small proportion of practices accessed the quarterly data feedback on Medicare FFS patients in the first half of the year (though this has improved over time), and the connection between feedback reports and Milestone work was not clear to many practices.

CMS and its contractors and partners are working to address these issues. For example, CMS has made considerable effort to improve communications. It created a CPC Weekly Roundup email through which it regularly apprises practices and payers of upcoming deadlines and events. Partially in response to payers' requests for more frequent information on practices' Milestone progress, and also to ensure that practices spread their work throughout the program year, CMS is requiring that practices submit Milestone information quarterly in CPC's second year, and plans to share this information directly with other payers. In addition, CMS and the TMF Health Quality Institute (a quality improvement organization that serves as the national Learning & Diffusion [L&D] contractor for CPC) have begun to provide practices with lists of specific resources and tools that could be useful in working on the Milestones, and reorganized the CPC collaboration website to improve its accessibility and usefulness. Moreover, CMS has promoted practices' use of data feedback in several ways. First, CMS has encouraged RLF to use the feedback reports in their work with practices. Second, in PY2014, CMS made clearer the connections between data feedback and the Milestones (especially Milestone 5, on using data for improvement). Third, the release of CMS's shared savings methodology has likely piqued practices' interest in the data feedback. Reflecting these efforts, the proportion of practices using feedback reports has increased to almost two-thirds in recent quarters.

What are CPC's impacts on cost, service use, and quality for attributed Medicare FFS beneficiaries?

CPC is intended to reduce Medicare FFS expenditures by reducing patients' need for high-cost services such as hospitalizations and emergency department (ED) visits. It is also intended to improve the quality of care. Based on earlier literature on initiatives that transform primary care practices, we anticipated it may take 18 months to three years for practices to transform and to see effects on cost, service use, and quality, if CPC is effective (Nutting et al. 2011; McNellis et al. 2013; Solberg et al. 2013; Sugarman et al. 2014).

As noted above, results from all seven regions combined—measured over the first 12 months of CPC—suggest that the initiative has generated enough savings in Medicare Part A and B health care expenditures to nearly cover the CPC care management fees paid by CMS for attributed Medicare FFS beneficiaries (Table ES.2). However, because of the possible unobserved CPC-comparison differences at baseline, the concentration of favorable findings in several regions and their early timing, as well as some unexpected adverse results in other regions, we recommend that these findings be interpreted with caution at this time.

During the first year, across all attributed Medicare FFS beneficiaries, CPC appears to have reduced total monthly Medicare Part A and B expenditures per beneficiary (compared to what they would have been absent the CPC intervention) by $14, or 2 percent (not including care management fees paid). The reductions appear to be due to the favorable initiative-wide impacts on hospitalizations and ED visits (total and outpatient). Impacts were nearly large enough to offset CMS's monthly care management fees, which average $20 per attributed beneficiary at participating practices. The reductions in expenditures for Medicare services render the initiative close to cost neutral for Medicare FFS as a whole, but suggest that CPC has not generated *net* savings during this first year. The expenditure and service use impact estimates differ significantly across regions, with the favorable initiative-wide results driven mainly by Oklahoma, where CPC generated favorable impacts on the key expenditures and service utilization outcomes (including Medicare expenditures, hospitalizations, and ED visits), and to a lesser extent by New Jersey (for Medicare expenditures), New York (for hospitalizations), and Oregon (for outpatient ED visits).

Turning to claims-based quality-of-care measures in Table ES.3, although there was a sizable (but not quite statistically significant) 4 percent CPC-wide decline in unplanned 30-day readmissions, there were few statistically significant effects on other claims-based quality-of-care outcomes (the likelihood of a 30-day unplanned hospital readmission and the rate of hospitalizations for ambulatory care sensitive conditions) or process measures (delivery of evidence-based care for diabetes care and ischemic vascular disease, transitional care, and continuity of care) during the first year of CPC. The few statistically significant findings showed no clear pattern. For example, there were unfavorable effects for some of the diabetes quality-of-care measures in Oklahoma, but favorable effects on some of the diabetes measures in Oregon and New York. There was also a favorable effect on a measure of the delivery of transitional care (the proportion of patients with a 14-day follow-up visit after a hospital discharge) in New York.

We also checked for (1) variation in impacts for Medicare FFS beneficiaries who were in the top risk quartile when they were first attributed, and (2) variation by key practice features. For the subset of high-risk beneficiaries, the reductions in Medicare FFS expenditures and service use generally followed the same pattern as for all patients, and were generally comparable in percentage terms but slightly larger in magnitude. However, some statistically significant effects on claims-based quality-of-care process measures were observed only for high-risk beneficiaries. Specifically, the likelihood of a beneficiary receiving all four diabetes services (tests of HbA1c, lipid, and urine protein and an eye exam) increased by 3 percentage points (10 percent) for the high-risk group. Effects on this measure for high-risk beneficiaries were favorable, large (20 to 22 percent), and statistically significant in Oregon and New York, and favorable but not statistically significant in all other regions except Oklahoma; in Oklahoma, the effect was statistically significant, but unfavorable (15 percent). We did not find any statistically significant evidence for systematic variation in impacts by either medical home status or practice size/organizational affiliation status before CPC began.

Table ES.2. Early CPC outcomes on Medicare FFS health care cost and service use show promise in first 12 months of CPC (October 2012–September 2013)

	All	AR	CO	NJ	NY	OH/KY	OK	OR
Medicare expenditures and service use								
Expenditures without fees	-2%**	0%	1%	-5%***	-2%	4%*	-7%***	-2%
Expenditures with fees	1%	3%*	4%	-3%	0%	6%***	-5%***	1%
Hospitalizations	-2%*	2%	3%	-5%*	-6%**	4%	-7%***	-5%
Outpatient ED visits	-3%***	-3%	-1%	-4%	2%	-1%	-7%***	-6%*

Note: Negative, statistically significant estimates (in green) are favorable, implying reductions in service use and/or costs, while positive, statistically significant estimates (in red) are unfavorable, implying increases in service use and costs. Impact estimates are based on a difference-in-differences analysis that adjusts for baseline patient characteristics (including HCC scores) and baseline practice characteristics.

*/**/***Statistically significant at the 10%/5%/1% level, two-tailed test.

Table ES.3. Very few early changes in CPC outcomes on Medicare FFS claims-based quality of care in first 12 months of CPC (October 2012–September 2013)

	All	AR	CO	NJ	NY	OH/KY	OK	OR
Quality-of-care process measures								
Compliance with all 4 diabetes measures	3%	12%	8%	4%	5%	4%	-21%***	11%*
Continuity of care:								
Percentage of primary care visits at attributed practice	1%	4%	2%	2%	-1%	-1%	2%	-2%
Transitional care								
14-day follow-up to hospitalization	0%	-4%	3%	0%	4%**	-2%	-2%	2%
Quality-of-care outcome measures								
ACSC admissions	1%	7%	-4%	-1%	-6%	8%	-5%	3%
Readmissions	-4%	1%	-2%	-6%	-1%	-8%	-7%	5%

Note: Positive, statistically significant, estimates (in green) are favorable, implying improvement in care quality, and negative, statistically significant estimates (in red) are unfavorable, implying a deterioration in care quality. Impact estimates are based on a difference-in-differences analysis that adjusts for baseline patient characteristics (including HCC scores) and baseline practice characteristics.

*/**/***Statistically significant at the 10%/5%/1% level, two-tailed test.

Some of the early results on Medicare FFS health care expenditures and use are promising, but they must be interpreted cautiously, for two reasons. First, although the study used a careful and thorough method to match CPC practices to comparison practices, there could still be differences in unobserved characteristics between the two groups of practices before CPC began that led to differences in outcomes that are not caused by CPC. Second, the findings were not consistent across all regions, and started earlier than expected, so it is unclear whether the favorable impacts were truly caused by CPC.

Next steps

Over the coming years, we will continue to monitor both the implementation and the impacts of CPC to see whether these early favorable results on expenditures and service use persist or grow, as expected, as the practices gain experience and meet increasingly more ambitious annual Milestones for improvement.

- The *implementation analysis* will focus on understanding the payment, data feedback, and learning supports the payers provide to practices, and how participating practices implement the Milestones and change primary care functioning.
- The *impact analysis* will continue to track claims-based effects quarterly throughout the initiative, and will rigorously evaluate CPC's impacts annually. We will examine effects on patients, practices, and clinicians and staff. We will look for effects that persist and grow over time and across related outcomes to provide greater confidence in these early estimates of CPC's impacts. In addition, we will assess whether practices that made the most substantial improvements tended to be the ones that had the best patient outcomes and reductions in costs and utilization relative to their matched comparison practices. We will also add more sensitivity tests to our analyses, including a test to estimate impacts using a regression discontinuity design that relies exclusively on practices that applied to but were not selected for CPC as the comparison group.
- A formal *synthesis* will look for links between implementation findings and impacts on health care cost, use, and quality, as well as patient and clinician experience. Throughout, we will focus on identifying the nature and extent of practice changes and the efforts that seem to produce the greatest improvements in quality of care, cost, and the experiences of patients and providers. We will also identify factors that appear to create barriers to practice improvements, and effective efforts to remove such barriers.

CHAPTER 1. INTRODUCTION

1.1. Overview of the Comprehensive Primary Care Initiative

The Center for Medicare & Medicaid Innovation (CMMI) of the Centers for Medicare & Medicaid Services (CMS) launched the Comprehensive Primary Care (CPC) initiative in October 2012. This unique collaboration between public and private health care payers aims to improve primary care delivery and achieve better health care, better health outcomes, and lower total cost of care. It may also enhance provider experience. CMMI views CPC as a test of a new model of care delivery for a group of primary care practices that were motivated to transform care and more likely to have attained EHR meaningful use and patient-centered medical home (PCMH) recognition. CPC focuses on helping practices implement five key functions in their delivery of care: (1) access and continuity, (2) planned chronic and preventive care, (3) risk-stratified care management, (4) patient and caregiver engagement, and (5) coordination of care across the medical neighborhood. For each year of the CPC initiative, CMS specifies a series of Milestones designed to help move practices along the path of implementing these functions (based on their progress in the prior year). CMS assesses how the practices are delivering care and requires that practices meet the Milestones to remain in the program.

To help participating practices change care delivery and accomplish the goals of CPC, the initiative provides them with multipayer **financial support** in the form of an enhanced, non-visit-based payment from participating payers (as well as the opportunity for shared savings later in the initiative) and **data feedback** on their progress in improving patient outcomes and controlling costs, provided quarterly by CMS for Medicare fee-for-service (FFS) patients, and with varying periodicity by many of the other participating payers. CPC also offers **learning activities and technical assistance (TA)** to help practices build capacity for the transformative changes required to provide comprehensive primary care and provide a venue for practice-to-practice support. In the case of Medicare FFS, the financial support from CMS includes a care management fee: a fixed monthly payment (in addition to regular FFS payments) for each Medicare beneficiary in the FFS program attributed to the practice. The monthly payment, which currently ranges from $8 for low-risk patients to $40 for the highest-risk, averages $20 per patient per month. In addition, the participation of other payers in each region—including commercial insurers and Medicaid managed care plans—ensures that enhanced payment is available for a sizable proportion of participating practices' patients. Enhanced payment from other payers varies but for most business lines (such as commercial) is much lower than those provided by CMS. During the last three years of the program, most payers are offering participating practices the opportunity to receive a share of any net savings in health care costs beyond the amount required to cover the care management fees.

The **multipayer approach** to supporting primary care improvements is a critical element of CPC. Specifically, the participation of multiple payers who collectively represent a substantial market share in each region ensures adequate CPC financial and other supports for participating practices. Multipayer collaboration also aligns the incentives faced by practices across a large share of their payers.

In addition, the increasing involvement of other stakeholders—such as practice representatives, employers, patients, and consumer groups—in CPC meetings over time appears useful in creating and improving relationships, building trust, and ensuring that a variety of perspectives are incorporated into improvements in care delivery.

Selected regions, payers, and practices. CMS used a three-step process to select participating regions, payers, and practices.

Selected regions from payer applications. First, CMS identified seven regions where enough payers were interested in aligning around the CPC model to ensure that participating practices would receive enhanced payments for a sizable proportion of their patients. To identify these regions, they invited public and private payers to apply separately to participate in CPC between September 28, 2011, and January 17, 2012.[5] (Some payers collaborated with other payers in the early planning stages, but each payer prepared a separate application and negotiated bilaterally with CMS after CMS selected the regions.) CMS identified potential CPC regions based on overlapping market area of payers. Then they used a scoring system to select regions in which payers who applied to participate were highly aligned with the CPC initiative and accounted for a large market share.

In April 2012, CMS selected seven regions, including four states (Arkansas, Colorado, New Jersey, and Oregon) and portions of three states (New York's Capital District Hudson Valley region, Ohio/Kentucky's Cincinnati-Dayton region, and Oklahoma's Greater Tulsa region).

Selected payers within the selected regions. After CMS selected the regions, their second step was to invite payers to participate in the initiative. CMS invited payers within the selected regions who were highly aligned around the initiative or willing to refine their application to increase alignment. Across all regions, 31 distinct payers started participating in the initiative (in addition to CMS) in the fall of 2012, ranging from 3 in Oklahoma's Greater Tulsa region to 9 in Ohio/Kentucky's Cincinnati-Dayton region.

CMS and payers entered into memoranda of understanding (MOUs) that outline their respective roles and indicate how they would work together as part of the CPC initiative.[6] As part of each MOU, participating payers agreed to provide participating practices with (1) enhanced, non-visit-based payments; (2) attribution reports at the beginning of each attribution period; (3) periodic data feedback on the health care cost and utilization of attributed patients (or members); and (4) sharing of possible savings in total health care costs. The payers also agreed to consider common approaches to data sharing (such as data aggregation) and to engage in collaborative meetings with other participating payers.

*Selected practices within the selected regions***.** In the third step, after the 7 regions and 31 distinct payers had been selected, CMS invited primary care practices (where a practice is defined as a specific physical location or site) from those regions to apply to participate in the initiative. (Because practice participation in CPC occurs at the site level, a multisite practice organization may have more than one practice participating in CPC.) CMS accepted applications between June 13 and July 20, 2012, and announced the selected practices on August 22, 2012.[7] CMS selected a diverse group of practices that it felt had the best opportunity to transform and

[5] To apply, payers completed an online application in the CPC payer solicitation [http://innovation.cms.gov/Files/x/Comprehensive-Primary-Care-Initiative-Solicitation.pdf].

[6] The terms of the MOUs are high-level and general, and details of each payer's participation (such as its shared savings methodology) will evolve over time. Because of antitrust considerations, certain details of each payer's agreement with CMS cannot be shared.

[7] To apply, practices completed an online application in the CPC practice solicitation [http://innovation.cms.gov/Files/x/CPC_PracticeSolicitation.pdf].

meet the goals of the CPC initiative based largely on practices' prior experience using health information technology; their previous experience with practice transformation or the PCMH model; and the proportion of their patients covered by participating payers. CMS did not select the practices based on their baseline outcomes.

From about 1,000 applicants, CMS selected 502 practices to participate in CPC. Five practices withdrew from the initiative by March 2013, leaving 497 in CPC. The number of practices per region varies from a low of 67 in Oregon to a high of 75 in the Ohio/Kentucky region. In the first program year of CPC, these practices reported having served over 2.5 million patients combined. Of these, 1.2 million were "attributed" to practices across all the participating payers (meaning that payers provided care management fees to practices for these patients because the patients received most of their primary care at the practice). These include more than 315,000 attributed Medicare FFS beneficiaries.

CPC's key components. The CPC model uses payment redesign across multiple payers to support practices to provide the five functions of comprehensive primary care, with annual Milestones guiding the changes in care delivery. To support these changes, practices receive enhanced payment and feedback on performance from participating payers. They are also offered learning activities and TA to help them make changes.

Enhanced payment. CMS and other payers are providing practices with an enhanced, non-visit-based payment to supplement their usual practice revenues and support the hiring of additional primary care staff, infrastructure, and care management.

Since October or November 2012 (depending on the CPC region), CMS has paid CPC practices a quarterly care management fee for each Medicare FFS beneficiary attributed to the practice—in addition to regular Medicare FFS payments. Medicare has four care management fee levels, depending on the risk of the beneficiary for high costs and utilization. The first time a patient is attributed to the practice (based on CMMI's examination of their prior Medicare claims), he or she is placed into one of four risk quartiles based on his or her Medicare hierarchical condition category (HCC) score. The HCC score represents the beneficiary's risk in the next year; it is calculated based on the medical conditions for which the beneficiary was treated in the two years prior, whether the beneficiary is enrolled in Medicaid, and various demographic characteristics. A beneficiary remains in his or her original risk quartile during CPC unless his or her HCC score changes enough to place the beneficiary into a different quartile when the scores are updated annually. These risk score updates are not expected to affect the average care management payment a practice receives. In the first two years of CPC, the Medicare risk-adjusted per member per month (PMPM) payment rates are $8, $11, $21, and $40, depending on the HCC score of the patient; the average rate is $20 per beneficiary per month.

If there are net savings in Medicare Part A and B health care costs in the second, third, and fourth years of the initiative, practices may be eligible to receive a portion of the savings. In the third and fourth years of the initiative, CMS will reduce its PMPM payments for Medicare FFS beneficiaries to an average of $15. Relative to the third and fourth years, the higher PMPM payments in the first two years of the initiative reflect the high startup costs for practices to adopt comprehensive primary care. Moreover, by design, the reductions in PMPM payments in the last two years occur at the same time that shared savings become a component of the initiative (provided that savings in health care costs are realized).

Other participating payers also provide enhanced payments for each of their members attributed to a practice, almost always in the form of a PMPM care management payment. These payments vary by company (for example, Aetna and Cigna) and line of business (for example, Medicare Advantage Plans, commercial plans, administratively self-insured plans, and Medicaid managed care plans). Payments vary across payers but are generally substantially less than what Medicare provides, which reflects, in part, differences in the average risk status of patients. Given the multipayer nature of the initiative, a practice therefore receives enhanced payments for a sizable portion of its patients, and the cumulative additional revenue provided to support practice transformation is, by design, considerable. In fact, the median of practices' reported combined revenue from these enhanced payments from Medicare and others payers in CPC during the first year of the initiative were about $227,849, or $70,045 per clinician, which is equivalent to about 19 percent of total (non-CPC) 2012 practice revenue for the median practice.[8] Other payers are, like CMS, committed to providing shared savings opportunities in later years of the initiative.

Feedback on performance. As CPC's independent evaluator, Mathematica Policy Research provides three types of quarterly feedback reports: (1) practice-level reports; (2) region-level reports; and (3) a CMS quarterly report, which provides initiative-wide findings (see Appendix A for the current templates). The reports focus on costs and service use for attributed Medicare FFS beneficiaries; practice, clinician, and staff survey data; and patient experience data for a sample of all patients served by each practice. These reports provide participating practices, TMF Health Quality Institute (TMF), Regional Learning Faculty (RLF), multistakeholder faculty, and CMS with data feedback on cost, quality, and utilization indicators relative to benchmarks. While the region-level feedback reports were initially provided only to TMF and RLF, in May 2014, CMS began to make them available to participating payers and practices. The CMS quarterly report, which provides initiative-wide feedback, is currently delivered only to CMS.

Practice feedback reports. Practices receive both aggregate practice-level feedback and patient-level data files. The reports and data aim to guide practices' quality improvement efforts by providing interim feedback on the service use, cost, and quality of care of their patients, and the extent to which their outcomes are improving. The patient-level data file provides practices with action-oriented data to assist with management of care. Telligen, a quality-improvement organization, is under contract with CMS to provide practices with program infrastructure support, which includes distributing Mathematica's feedback reports and files.

Region-level feedback reports. CMS receives quarterly region-level reports on descriptive trends and implementation findings, and practice-level data that can be used to identify practices with different outcomes. Outcomes are shown relative to all CPC practices. CMS shares these reports with the L&D contractor and its RLF as well as with participating payers and practices.

CMS quarterly reports. CMS also receives quarterly reports that provide information on CPC's implementation and impacts initiative-wide. These reports contain key implementation findings and trends in outcomes at the regional level and overall. They are intended to track how the initiative is proceeding, the factors that help or impede effective implementation, and the types and intensity of changes that appear to be associated with improved outcomes. So that CMS can see the impact of CPC over time, outcomes are shown relative to the comparison group for the evaluation.

[8] These figures are based on practices' reporting of CPC funds in the initiative's first program year.

To ensure that the three sets of quarterly reports are effective, Mathematica regularly solicits information on their usefulness from CMS, practices, payers, the L&D contractor and its RLF, and other stakeholders, and refines the reports over time.

Other payers vary in the type and frequency of data feedback they provide to participating practices. In CPC's first year, the vast majority provided lists of CPC-attributed patients, and many provided feedback data on these patients' service use and cost, lists of patients recently discharged from the hospital or seen in the emergency department, and "gap lists" of patients not receiving certain types of care (typically based on HEDIS measures). Typically, these reports are produced quarterly, but some payers provide them more frequently. For example, in some cases, payers provide hospital discharge lists weekly or even more often.

The multipayer aspect of CPC is a critical feature in providing enhanced payment and data feedback to practices. Bringing payers together to provide these supports ensures substantial investment and data feedback that covers a majority of each practice's patients. To support collaboration across the payers, five organizations serve as "payer conveners," which bring CMS and other participating payers in each region together to work on various CPC tasks (such as the data aggregation process and selection of clinical quality measures) and, more generally, to collaborate with and learn from each other.[9]

Learning activities and TA. A national Learning & Diffusion (L&D) contractor, TMF, is providing participating practices with support and TA via shared learning activities. TMF oversees national and regional learning communities that include practice participation in face-to-face and web-based meetings with various RLF organizations, which are contractors to TMF who provide L&D at the region level. In addition, TMF and RLF share materials with practices through a CPC collaboration website that provides a forum for practices to provide each other with peer support, including best practices and ways to address common challenges. In some cases, RLF also provide individualized support to practices in the form of coaching or other assistance. In general, the learning activities and TA are focused on topics related to helping practices meet the annual Milestones required as part of CPC. Some of the non-CMS payers also provide assistance to practices (especially in Oklahoma and to a lesser degree in New Jersey and Colorado), but such support is generally limited.

CPC's expected outcomes. Through its requirement that practices meet specific Milestones each year, CPC provides practices with specific care delivery goals, with the aim of improving primary care in five functional areas. However, CMS also affords the practices flexibility in determining how best to achieve these Milestones. By improving primary care and making the quality improvements identified through program feedback and rapid learning activities, the transformations are expected (1) to reduce unnecessary and costly hospitalizations and emergency room use; (2) to improve uptake of evidence-based preventive care with proactive outreach; (3) to reduce service redundancy; and (4) to improve patient experience of care (Lapin 2011; Baron 2012; Goroll et al. 2007; Berenson and Rich 2010b; Merrell and Berenson 2010). While not an explicit goal of CPC, for a successful model to be scalable, CPC is also expected to improve provider

[9] Some regions have evolved from holding multipayer meetings to holding multistakeholder meetings for CPC (with the latter including payers, practice representatives, and consumer representatives). In these regions, the payer convener is referred to as *multistakeholder faculty*.

(clinician and staff) experience in delivering care. In short, CPC is expected to produce better outcomes at a lower cost.

1.2. Design of the CPC evaluation

Mathematica and its main subcontractor, Group Health Research Institute, are conducting a five-year, mixed-methods, rapid-cycle evaluation that provides CMS, practices, and regions with regular, formative feedback (see Peikes et al. 2014 for more information). The evaluation is conducting impact and implementation studies to answer the following research questions:

1. Which regions, payers, practices, and patients participated in CPC? Why? What characteristics distinguish them?
2. What payment, data feedback, and learning activities did CMS and the other payers provide? How did practices use these supports?
3. How did practices change the way they delivered care, and what facilitated or impeded progress?
4. What were the effects on patient experience; quality, service use, and costs for attributed Medicare and Medicaid FFS beneficiaries; and clinician and staff experience?
5. How do the results differ across regions and across subgroups of practices and patients?
6. What factors account for the varying degrees of success in achieving the goals of the initiative, or the speed at which participants reached these goals?

What are the implications and findings for the replication and spread of CPC?

The evaluation relies on a variety of survey data (practice, clinician, staff, and patient), practice- and payer-level qualitative data (collected in site visits, interviews, and observations), and Medicare and Medicaid claims data. To assess the initiative's effects on costs and quality for Medicare and Medicaid FFS patients, and on stakeholder experience, we compare outcomes for CPC practices with a set of comparison practices that were similar before the start of CPC. To promote ongoing learning, we provide frequent feedback to CMS, providers, participating payers, and other stakeholders. This feedback helps guide continuous improvement of practice operations and target programmatic, administrative, geographic, and organizational factors to maximize intervention effectiveness.

1.3. This report

This annual report to CMMI contains recent findings from our study of CPC's implementation to date and details (1) who participates in CPC and their baseline characteristics and context (for example, the primary care functioning of participating practices at the start of the initiative); (2) the supports provided to participating practices, including the payments received from Medicare and other participating payers, the learning activities and TA offered nationally and by RLF, and the data feedback; (3) successes and areas for improvement with CPC's multipayer approach; (4) practices' progress on CPC Milestones; and (5) the ways practices changed their delivery of care, as well as the barriers to and facilitators of the changes.

The report also provides estimates of the impact of CPC on key outcomes for attributed Medicare FFS beneficiaries. These include effects on a wide array of claims-based outcomes,

including measures related to Medicare costs, utilization, quality of care, process of care, transitional care, and continuity of care during the first four demonstration quarters (October 2012 through September 2013). Along with the quarterly estimates reported in the quarterly reports to CMS, this report includes annual estimates, which allow more reliable estimates than the highly variable quarterly estimates. Nonetheless, we caution that these annual estimates are preliminary, because this is early in the initiative.

Future annual reports will update the findings from claims data for Medicare FFS and add analyses of effects on Medicaid FFS outcomes. They will also provide (1) updated information and trends over time from the practice survey, as well as (2) findings from the clinician and staff surveys and trends over time from the survey of patients, when data are available. Finally, future annual reports will also report the synthesis of implementation and impact findings, to distill lessons learned for how to improve outcomes by improving care in five functional areas and delivering comprehensive primary care.

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CHAPTER 2. WHO PARTICIPATES IN CPC?

CPC is a bold undertaking that relies on a public-private partnership to support robust investment in primary care redesign, with the goals of better health care, better health outcomes, and lower costs. Selecting, organizing, and convening participants for an initiative of this scale and scope—and keeping them engaged and committed over time—requires tremendous operational capacity. In this chapter, we present information on who participates in CPC, including characteristics of the initiative's participating regions, payers, practices, and patients, and how participation has changed over the initiative's first year. We also describe why payers and practices chose to participate.

2.1. Key takeaways on CPC participation

- CMS and 31 other distinct payers came together for CPC to make a substantial investment of public and private resources to redesign primary care in CPC's seven regions. Payer participation has remained steady, and payers generally are engaged and committed to the initiative, with only a few small payers leaving CPC since it began (Table 2.1).
- While participating payers generally have included many of their lines of business in CPC, inclusion of self-insured products has been a challenge in CPC's first year.
- 502 practices were selected for and joined CPC at its start, and 497 were still participating in March 2013 and are used as the sample for the impact estimates. Given the amount of work required of practices for CPC, their participation has remained remarkably stable in the first program year, with less than 2 percent withdrawing from the initiative. As of December 31, 2013 (the end of the first program year), 492 of the 502 selected practices were still participating.
- While practices receive care management fees only for attributed patients of participating payers, changes made as part of CPC are expected to serve all their patients. The number of both total and attributed patients was substantial during CPC's first program year. Participating practices report having over 2.5 million active patients combined in the first year. Of these, 1.2 million were attributed to practices (including more than 315,000 Medicare FFS beneficiaries), across all the participating payers. This translates into care management fees for 48 percent of patients served by the practices.
- Payers were motivated to participate in CPC because of its fit with their organizational business strategy and its alignment with prior or concurrent investments in PCMH or related initiatives.
- Practices were motivated to participate because CPC aligned with existing practice goals to improve quality, offered enhanced payment and other supports for investing in transformation, and provided a relatively coordinated approach across payers (leading to fewer competing demands).
- While regions varied substantially in the level of community collaboration prior to CPC, each region now appears to be functioning fairly cohesively.

Table 2.1. Number of CPC participants at the start of the initiative and the end of Program Year 1

CPC participant	Start of CPC Initiative (Fall 2012)	End of CPC program year 1 (December 2013)
Regions	7	7
Payers[a]	31	29
Practices	502	492
Clinicians	2,172	2,158
Attributed Medicare FFS patients[b]	313,950	316,334
Attributed patients of other payers[c]	~1,300,000	887,846
Other, nonattributed patients served by practices[c]	Not known at start of initiative	~1,330,326

[a]Reflects participating payers other than CMS. Payers participating in multiple markets are counted once.

[b]Source: ARC provides lists of attributed Medicare beneficiaries each quarter; these lists were de-duplicated to determine the number of patients ever attributed, which is reported in the last column. This number differs somewhat from those that practices report (see Table 2.4).

[c]Source: CPC Milestone Data submissions from participating practices for PY2013. Note that the last column for this row reflects the number of patients ever attributed.

2.2. Overview of CPC participation

Participating regions and payers. In April 2012, CMS selected seven regions for participation in CPC. Selection occurred through a competitive application process in which public and private payers from each region submitted letters of intent and applications.[10] Eligible payers included commercial insurers, Medicare Advantage plans, states (through Medicaid, the state employees' program, or other insurance purchasing), Medicaid managed care plans, state or federal high-risk pools, and self-insured businesses or administrators of a self-insured group (i.e., third-party administrator/administrative-service-only plans). CMS scored individual payer applications up to a total of 15 points (see text box for scoring criteria).

Because a multipayer approach is a cornerstone of this initiative, CMS selected regions based on a preponderance of payer participation in the region, with a goal of diverse geographic

Scoring payer applications

CMS scored individual payer applications up to a total of 15 points, based on payers:

- Degree of alignment with the CPC approach
- Commitment to enter into compensation contracts with participating practices that (1) enable the practices' primary care functions to be delivered at the point of care and integrated into practice workflow; and (2) include the opportunity for practices to qualify for shared savings
- Agreement to share with CMS their methodologies for attributing patients to a specific practice
- Willingness to provide participating practices with aggregate and member-level data about patients' service use and cost
- Willingness to align quality, practice improvement, and patient experience measures with those of CMS and other regional payers to monitor participating practices' implementation of Milestones, and efforts toward quality improvement and patient experience
- Provision of information on the geographic areas in which they wanted to participate
- Previous community collaborations on quality and related topics, and multistakeholder efforts

After selecting regions, CMS invited payers scoring 11 or more points on their applications to participate in CPC. Payers scoring 6 to 10 points were required to further refine their applications before they could participate. CMS considered inadequate those payers that scored only 1 to 5 points.

[10] Payers completed an online application in the Solicitation for the Comprehensive Primary Care Initiative, available at [http://innovation.cms.gov/Files/x/Comprehensive-Primary-Care-Initiative-Solicitation.pdf].

representation across selected regions (see text box for market scoring criteria). Once it selected the regions, CMS invited high-scoring payers within those regions to participate in CPC.

Within the seven regions, CMS leveraged the support of 31 distinct payers—including national and regional private payers as well as public payers. (When payers in multiple regions are counted for each region in which they participate, there were 39 payers at the start of CPC; see Table 2.2.) At the start of CPC, national payers participating in the initiative included Humana (3 regions), United Healthcare (3 regions), Aetna (2 regions), Anthem (3 regions),[11] Cigna (1 region), and Amerigroup (2 regions). In addition, payers affiliated with independent Blue Cross Blue Shield plans also joined the initiative (4 regions).

The number of payers participating in CPC has changed only slightly during the initiative's first program year, with 29 distinct payers currently participating. The following payers have withdrawn from CPC regions since the start of the initiative (Table 2.2):

- In September 2013, MVP of the New York region acquired Hudson Health Plan. While both participated in CPC, Hudson Health Plan had not paid any care management fees under CPC prior to the acquisition. We count this acquisition as a withdrawal by Hudson Health Plan.
- In July 2013, Amerigroup, a national payer originally participating in multiple regions, lost its Ohio contract for Medicaid managed care and therefore withdrew from that region. Amerigroup now participates only in New Jersey.
- In December 2013, HealthSpan, a small payer participating in Ohio/Kentucky for their self-insured line of business, withdrew from the initiative because employers did not agree to contribute the enhanced payment required for the initiative.[12]

Selecting CPC regions from payer applications

CMS used a multistep market scoring system to select CPC regions. CMS:

Step 1. Weighted individual payer scores based on the payer's penetration in the region
Step 2. Assigned each region an impact score between 1 and 10, based on the combined market penetration of all the payers in the region who submitted an application
Step 3. Added together the weighted payer scores and the impact score to determine the region's market score
Step 4. Grouped regions by the 10 U.S. Department of Health and Human Services (HHS) administrative units
Step 5. Considered regions with the highest and second highest market scores in each HHS region as finalists
Step 6. Added two additional points to finalist regions with state participation for Medicaid or public employee benefits
Step 7. Added two additional points to the five finalist regions with the highest proportion of meaningful users of electronic health records (EHRs)
Step 8. Selected the regions with the highest final market scores, with no more than two regions selected in a given HHS area to ensure geographic diversity

[11] This includes Anthem plans in Colorado and Ohio/Kentucky, and Empire Blue Cross Blue Shield in New York.

[12] *Self-insured* refers to administrative-services-only/third-party-administrator (ASO/TPA) products.

Table 2.2. Number of practices, clinicians, payers, and patients participating in CPC

	All regions	Arkansas	Colorado	New Jersey	New York: Capital District Hudson Valley Region	Ohio/ Kentucky: Cincinnati-Dayton Region	Oklahoma: Greater Tulsa Region	Oregon
Payers[a]								
At start (fall 2012)	39	4	8	4	5	10	3	5
Added[b]	1	0	1	0	0	0	0	0
Withdrawn[c]	3	0	0	0	1	2	0	0
In December 2013	**37**	**4**	**9**	**4**	**4**	**8**	**3**	**5**
Practices								
In October 2012	502	69	74	72	75	75	68	69
In March 2013 (analysis sample)	497	69	74	70	74	75	68	67
In December 2013	**492**	**65**	**74**	**70**	**75**	**75**	**66**	**67**
Specific changes in practice counts between October 2012 and December 2013								
Practice withdrew	10	4	0	2	1	0	1	2
Practice split into two practices (adding a practice to total count)	1	0	0	0	1	0	0	0
Practice merged with another CPC practice (subtracting a practice from total count)	1	0	0	0	0	0	1	0
Clinicians (physicians, nurse practitioners, physician assistants)								
In October 2012	2,172	262	332	254	286	264	265	509
In March 2013	2,183	261	351	252	290	268	264	497
In December 2013	**2,158**	**248**	**359**	**246**	**300**	**265**	**236**	**504**
Patients								
Attributed Medicare FFS beneficiaries								
Quarter 1	313,950	54,661	41,890	41,643	39,171	44,486	43,740	48,359
Quarter 2	321,712	56,432	43,028	42,731	39,794	45,094	45,475	49,158
Quarter 3	319,066	55,845	43,350	42,331	39,438	43,675	45,381	49,046
Quarter 4	326,100	56,947	44,875	42,999	40,316	44,385	46,401	50,177
In annual research sample (those ever attributed by Q4)	**345,137**	**60,735**	**47,430**	**54,922**	**42,189**	**46,163**	**50,046**	**52,652**
Other attributed patients								
Quarter 1[d]	**1,285,253**	**64,529**	**132,363**	**111,893**	**110,851**	**681,019**	**93,020**	**91,578**

Source: The counts in this table are derived from the following sources: payer information comes from Mathematica's tracking of payer participation; practice and clinician information comes from Telligen's tracking database; *attributed Medicare FFS beneficiaries* are based on information from ARC; *other attributed patients* (from other payers) are identified based on information supplied by payers before or during our summer/early fall 2013 site visits or, if that information was not available, the payer applications.

[a]Some payers are participating in multiple regions, so there are fewer unique payers than reported in this table.

[b]Aetna joined the Colorado region on October 1, 2013.

[c]In the New York region, MVP acquired Hudson Health Plan in September 2013; although both participated in CPC prior to the acquisition, we count this change as a withdrawal by Hudson Health Plan, leaving 4 unique payers in the NY region. In the Ohio/Kentucky region, Amerigroup lost its Medicaid managed care contract in Ohio as of July 1, 2013. In the fourth quarter of 2013, HealthSpan, a payer in the Ohio/Kentucky region, withdrew from CPC, leaving 8 payers in the region.

[d]Because of the varied sources of this information, and the fact that one source—the payer applications—is likely to overstate the number of attributed lives (given that this was a criterion for selection), these data should be considered only rough estimates of attributed non-Medicare patients.

One payer has expanded its participation in CPC:

- Aetna, a national payer participating in multiple regions, joined the initiative in Colorado in October 2013. Aetna now participates in three regions: Colorado, New York, and Ohio/Kentucky.

Participating practices. After selecting the seven regions, CMS invited primary care practices—defined as specific physical locations—from those regions to apply to participate in the initiative. [13], [14] About three-fourths of practice applicants met all the eligibility criteria to participate in CPC (see text box eligibility criteria). [15] CMS considered selecting practices for the CPC program at random from applicants that met the eligibility criteria. However, because it felt that even the best practices had substantial room for improvement in both their structure and their operations, CMS decided to select practices that were best positioned to succeed in CPC. It selected participating practices based on information contained in their application forms and in Medicare claims data (see text box for selection criteria). CMS in August 2012 selected 502 practices to participate (about 75 per region) from about 1,000 that applied.[16]

CPC practice eligibility criteria:

- ✓ Provided mostly primary care services (as opposed to specialty care)
- ✓ Served at least 120 Medicare FFS beneficiaries during the two years prior to the initiative
- ✓ Had a minimum revenue of $200,000 annually per practitioner (including physicians with a primary specialty designation of family medicine, internal medicine, general practice, or geriatric medicine; nurse practitioners; clinical nurse specialists; and physician assistants)
- ✓ Received at least 40 to 50 percent of their revenue from payers participating in the initiative (depending on the region)
- ✓ Excluded federally qualified health centers, rural health clinics, and practices that participate in a Medicare shared savings accountable care organization or other CMS program that includes shared savings

Practice selection for CPC favored practices that:

- ✓ Used health information technology (specifically, attest-ation to Stage 1 meaningful use of certified EHRs in the Medicare or Medicaid EHR incentive programs)
- ✓ Were recognized as a PCMH by accreditation bodies or a state or insurer
- ✓ Had a high proportion of their revenue coming from participating payers (at least 60 percent)
- ✓ Had previously engaged in practice transformation or improvement activities
- ✓ Represented diverse geographic locations, practice sizes, and ownership structures
- ✓ Note that the criteria did not include practice functioning or outcomes

During the first program year, which began in October or November 2012 depending on the region, practice participation remained remarkably stable. Five practices withdrew within the first 6 months, which left 497 practices in CPC by March 2013. (At that time, we selected comparison practices for the 497 participating practices. For purposes of the evaluation, these 497 will serve as the

[13] Because CPC participation occurs at the practice site level, a multisite practice organization may have more than one "practice" participating in CPC. Hereafter, we will use the term *practice* interchangeably with *practice site.*

[14] About 63 percent of the 497 practices that were participating in early 2013 share at least one tax identification number (TIN) with another participating practice.

[15] A few practices were selected that did not meet one of the eligibility criteria (for example a few practices reported having less than $200,000 annual revenue per practitioner), but were selected for other reasons, such as geographic diversity.

[16] To apply, practices completed an online application in the Primary Care Practice Solicitation, available at [http://innovation.cms.gov/Files/x/CPC_PracticeSolicitation.pdf]. For more information on practice selection, see Peikes et al. (2014).

"treatment group" throughout the evaluation period, regardless of whether they stay or leave CPC.) Another 6 practices withdrew over the next three quarters, and 1 practice was added (when a participating practice split into two practices), which resulted in 492 participating practices as of December 2013. Table 2.3 provides information on the reasons that practices left CPC in its first program year.

Table 2.3. Reasons for participating practices leaving CPC in its first program year

Reason for practice leaving CPC	Number of practices
Early withdrawals from CPC (after practices assessed the terms and conditions of CPC participation just after its start)	5
Voluntary withdrawals	5
Practice closed/solo practitioner retired	3
Left CPC to join another CMS demonstration	2

Source: Information from CMS, Telligen, and, when possible, Mathematica exit interviews.

Participating clinicians. In March 2013, 2,183 primary care clinicians (physicians, nurse practitioners, and physician assistants) were providing care at the 497 participating practices (Table 2.2). While the majority of regions had 240 to 290 participating clinicians, Oregon and, to a lesser extent, Colorado had considerably more. This reflects large differences in average practice size across regions. In particular, Oregon's average practice size of more than 7 clinicians means its practices are much larger than those of other CPC regions (which had an average of about 3.6 to 5.0 physicians per practice). As of December 2013, the 492 CPC practices included 2,158 participating clinicians (4.4 per practice on average).[17]

To understand any changes in the total number of clinicians over time among the same group of practices, we examined the number of clinicians over time in the 492 practices that remained active participants (data not shown). Among practices participating in CPC in both March and December 2013, the number of clinicians in the initiative remained stable (2,152 in March and 2,154 in December). However, changes in the number of clinicians over this time varied by region: Oklahoma saw a decrease of 8 percent, while Colorado and New York saw increases of just over 2 percent.

Participating patients. Participating practices reported having more than 2.5 million active patients in the first program year, including both attributed and nonattributed patients (Table 2.4). For patients attributed by Medicare FFS and other participating payers, practices receive enhanced care management fees, as discussed in detail in Chapter 4. Regardless of patient attribution, however, participating practices are required to implement changes in CPC functions for all the patients they serve.

Attributed Medicare FFS beneficiaries numbered about 313,950 (about 12 percent of all active patients) across all participating practices in the first quarter of CPC (Table 2.2). Given Medicare's attribution approach, this means that these beneficiaries obtained the largest share of their primary care from these practices. In the fourth quarter of 2013, this number grew slightly, to 326,100, across all participating practices. By September 2013, there were 345,137 beneficiaries

[17] Although we report that 492 practices were participating in CPC as of December 2013, 2 of them formed a single practice in March 2013.

ever attributed to a practice, and during the course of the first program year (by December 2013), 391,912 patients had ever been attributed to a CPC practice.

Table 2.4. Number of active and attributed patients reported by participating practices during CPC's first program year

	Approximate number of patients
Active patients across all CPC practices	2,535,000
Attributed patients (across all payers)	1,204,000
Attributed Medicare FFS patients	316,000
Attributed patients of all other payers (including Medicaid FFS)	888,000
Patients served by CPC practices but not attributed as part of CPC	1,330,000

Source: CPC Milestone Data Submissions from Participating Practices for PY2013.

Note: This information represents self-reported data from 487 practices that reported data for Milestone 1 (including reconciled budget data for PY2013) in April 2014. The numbers of patients are approximate. Number of active patients is the total number actively served by practices (with practices having discretion about how to define active). Number of empanelled patients reflects those that are linked directly to a provider or care team, and for whom that provider/care team has been assigned responsibility for the patient. Numbers of attributed patients reported by practices differ somewhat from numbers reported by Medicare and other payers. We calculated the number of patients served by CPC practices but not attributed as the difference between the number of active patients and the number of attributed patients.

Attributed patients from other participating payers numbered 888,000 million across all participating practices in CPC's first program year. This includes attributed patients from commercial, Medicare Advantage, Medicaid FFS, and Medicaid managed care products, as well as a few smaller lines of business.

Overall, attributed patients made up almost half of participating practices' active patients. The portion of a practice's patient panel attributed to CPC, however, varies substantially from practice to practice.

Nonattributed patients. Practices serve patients that are not attributed to them by CPC. Nonattributed patients may include:

- Patients who are covered by participating payers but are attributed to another practice (a patient is attributed to a practice only if the patient received most of his/her primary care at that practice according to the payer's claims data [see Appendix B for details on attribution methodologies])
- Patients who are covered by nonparticipating payers
- Uninsured patients

We plan to ask practices in the future about the relative proportions of patients they serve that are not attributed.

2.3. Details of payer participation in CPC

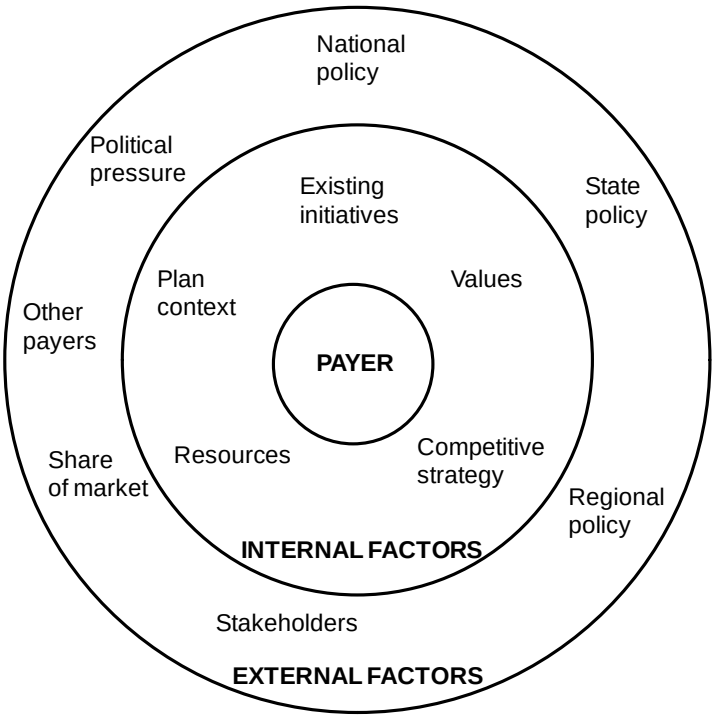
A. Payer motivation to participate in CPC

In deciding whether to participate in CPC, payers reported weighing a range of considerations. These included internal factors, such as their organization's prior initiatives, business strategy, and

available resources, and external factors, such as state or federal policies and market dynamics (Figure 2.1).

The factors that most influenced payers' decision to participate in CPC depended on their particular context. However, payers of similar types (e.g., large payers, or regional payers) often shared the same considerations when deciding whether to participate. Generally, smaller payers were motivated by the opportunity to supplement resources they were already investing in transformation. Larger or more dominant payers voiced considerations about competitive strategies, particularly considering their competitive edge. In terms of payer geographic scope, for some national payers, the decision to participate was made in view of national initiatives and the degree of alignment between their national strategies and local-level initiatives.

Figure 2.1. Payer decision-making context for CPC participation



Specific reasons payers wanted to participate in CPC include the following:

- **CPC fit with payer business strategy.** Almost all payers indicated that many elements of CPC fit well with their organizational values and business strategy. For example, many payers indicated that CPC would support their efforts to strengthen primary care, increase patient-centeredness, and/or shift from FFS toward value-based payment.
- **CPC is aligned with previous and concurrent payer investment.** Almost all payers indicated that CPC was an opportunity to expand their care delivery or payment reforms. Most payers with existing medical home pilots (23 of the 29 distinct payers participating as of the end of 2013) felt CPC was a natural next step. (While the goals of CPC are much more comprehensive than those of the PCMH, payers recognized the similarities and synergies between CPC and their prior PCMH work.) Some payers viewed CPC as an opportunity to expand successful programs. For example, several payers in New York felt that CPC was an opportunity to improve on foundational

PCMH programs, including the Hudson Valley Medical Home Project. Similarly, payers in Oregon felt that CPC provided an opportunity for additional alignment around their Patient-Centered Primary Care Home model. Other payers, however, viewed CPC as an opportunity to revamp limited or unsuccessful prior efforts. Payers in regions such as New Jersey and Oklahoma, with limited prior initiatives, noted that CPC could help "jump start" medical home efforts in their states.

Specific examples of payers' thinking on CPC's potential alignment with existing state policy initiatives include the following:

- In Arkansas, payers felt that CPC would enable them to leverage resources and existing work accomplished through the Arkansas Payment Improvement Initiative. Payers noted that collaborative relationships had been established between payers, and that discussions had begun on the medical home concept prior to the introduction of CPC.
- In New York, payers felt motivated to continue with work on their State Innovation Model grant. They also did not want to lose momentum on work done on data aggregation through the NY Quality Alliance and the THINC health information exchange (HIE), and believed CPC tied in well with this work.
- In Ohio/Kentucky, payers noted that CPC was compatible with initiatives disseminated at the state level through the Ohio Governor's Office of Health Information initiative that sought to teach practices to become PCMHs. A public payer felt that the next step of this work was to partner with private-sector payers, and the opportunity to collaborate with private payers in CPC aligned well with this state-level strategy.

CPC's multipayer approach brings substantial value. Payers also indicated that the opportunity to collaborate with other payers motivated their participation. Many payers noted that the impact of prior single- and multipayer initiatives was limited since enhanced payments and/or feedback reports covered only a small portion of any given practice's patients. Payers—particularly small ones with limited market leverage—felt that additional payments and aligned reporting would accelerate practice transformation. Many payers suggested that collaborating with Medicare was important because Medicare covers a substantial portion of the typical primary care practice's patient panel. In particular, payers in regions with extensive prior collaborative efforts felt that Medicare FFS was a crucial missing partner in these prior efforts and valued the opportunity to work with CMS. Several payers with extensive prior efforts also noted that multipayer participation reduced "freeriding," in which competitors without transformation efforts benefit from the work of other payers. In addition, payers—including those with substantial experience with medical homes—indicated that CPC provided an opportunity to learn from other payers and gain a perspective beyond their own plan context (for example, public or private sector).

Competitive pressure also played a role in payer participation. Competitive payer dynamics contributed to some payers' participation decisions. For example, one national payer feared a loss of its status as a thought leader in health care transformation if it did not participate in CPC. Another national payer that already had its own PCMH initiative decided to participate in a certain region after recognizing CPC's prominence and importance among the local business community. In contrast, several payers with established prior initiatives expressed reservations about participating in CPC, because it could reduce their relative competitive edge in the region (that is, they felt their individual efforts with practices distinguished them from other payers and

were a selling point to employers). Payers with these concerns indicated that a commitment to improving the health of the local community and the chance to learn about a multipayer collaborative approach eventually took precedence over these concerns, and led them to participate in CPC.

B. Lines of business included in CPC by participating payers

Participating payers differ in terms of the lines of business in which they operate. (For example, some participating payers are Medicaid managed care plans and offer products only in that line of business.) Payers also vary by which of their lines they decided to include in CPC. As shown in Table 2.5, outside Medicare FFS, the most common lines of business in CPC are commercial[18] (26 payers across all regions) and Medicare Advantage (19 payers across all regions). Medicaid managed care lines of business (11 payers) are also key in CPC, with representation in all regions except Arkansas and Oklahoma (which do not have Medicaid managed care contracts). Medicaid FFS participates—with CMS paying the CPC care management fees—in all regions except New York (which is transitioning almost all remaining Medicaid FFS patients into Medicaid managed care), New Jersey, and Oklahoma.[19]

Table 2.5. Number of CPC payers, by participating line of business, as of December 2013

	All regions	Arkansas	Colorado	New Jersey	New York: Capital District Hudson Valley Region	Ohio-Kentucky: Cincinnati-Dayton Region	Oklahoma: Greater Tulsa Region	Oregon
Commercial	26	3	7	3	4	5	2	2
Medicare Advantage	19	1	4	3	4	3	1	3
Medicaid Managed Care	11	0	1	3	2	2	0	3
Federal employees	7	2	1	0	2	1	1	0
Medicaid FFS	5	1	1	0	0	1	1	1
Children's Health Insurance Program	6	0	3	0	2	1	0	0

Sources: Payer pre-interview worksheets, payer interviews, and payer MOUs.

Notes: The Medicaid Managed Care line of business includes Children's Health Insurance Program for several of the payers, including three in Colorado, two in New York, and one in the Ohio/Kentucky region. Reliable information on payer participation in their ASO/TPA products is not available.

Excluding ASO/TPA lines of business, roughly half the total number of payers across CPC regions (20 of 39[20]) indicated they had included in CPC *all* lines of business in which they operate in that region. Payers provided the following reasons for excluding certain lines of business from CPC:

- *Lines of business were not contractually compatible with CPC.* A small number of participating payers noted that because of contractual reasons, they were not including their Medicare or Medicaid managed care lines of business in CPC (for example, the

[18] We define *commercial* lines of business as employer-sponsored and other group products as well as individual products. We categorize ASO/TPA products separately.

[19] In Oklahoma, Medicaid collaborates in CPC and is counted as a participating payer, but does not provide care management fees to participating practices.

[20] This figure does not reflect the number of distinct payers across all regions but rather the number of all participating payers in each region summed across regions.

payer had a cost contract in which it was reimbursed for all costs, or the payer reported essentially lending its PPO network for the business line, but claims were being paid by another entity, such as Medicaid). These payers did not feel they had control over these lines of business and therefore elected not to include them in CPC.

- *Lack of system capabilities.* A couple of payers reported that they excluded specific lines of business because of a lack of system capabilities. Specifically, one payer excluded a self-insured account whose older claims system made attribution highly challenging. Similarly, another payer excluded a few lines of business that lacked a standardized claims platform.
- *Participating in a risk-based payment model.* Two participating payers indicated that they chose not to include their Medicare Advantage lines, because participating practices were receiving risk-based payment for patients enrolled in these plans. Thus, the practices already had incentives to serve those patients in a cost-effective manner.

Self-insured participation. Most payers—and especially those that are regional rather than national—have given their self-insured clients the option of whether to participate in CPC. In these cases, participating payers have generally found it challenging to persuade self-insured clients (employers) to participate. A number of payers have indicated that it is "a hard sell" to ask employers to provide PMPM payments without having results to indicate successful outcomes and a positive return on investment. Timing may also have influenced levels of participation, as payers observed that some groups are preoccupied with responding to health care reform changes or concerned with the uncertainty of future reforms. Other barriers to self-insured participation in CPC reported by some payers include existing features of their contracts that already provided some of the services covered by CPC, previous experience with an unsuccessful PCMH initiative, the bureaucratic challenges of interacting with national employers' corporate structures, or some employers' belief that the payer (and not the self-insured group) should be financially responsible for restructuring the plan's payment model. Some self-insured entities were initially interested in participating in the initiative, but once practices were selected, they realized that the practices served too few of their patients to make their participation worthwhile.

> "I would say with [CPC], like most of the initiatives that we bring to self-insured, they're cautious. All employers are cautious about expending additional dollars to fund without really knowing what the return is going to be. . . . At the concept level, they're very interested. When the 'rubber hits the road,' they tend to maybe put some brakes on."

Some employer groups, however, have been eager to join the initiative. In Arkansas and Oregon, state employee benefit groups have begun to participate, likely because of the initiative's alignment with related state reform efforts already under way. One Ohio/Kentucky payer noted that self-insured participation appeared to have been facilitated in the region by previous employer experience with health reform initiatives. More broadly, several payers suggested that some employers were encouraged to join CPC because of recent articles and other press about the PCMH model.

Most payers that have made CPC participation optional for their self-insured clients have proactively invited their participation, most commonly by holding individual discussions with each group. To encourage self-insured groups to join, payers have provided education on the PCMH model, highlighted the region's plans for data aggregation, explained CPC's expected outcomes, and tried to position the initiative within other payer initiatives in which groups are already participating.

In addition to payers having individual discussions with employers and other organizations that self-insure, payers in some regions—including Ohio/Kentucky and Arkansas—have been more proactive and collaborative in pursuing these groups. Ohio/Kentucky has formed an employer committee, which has planned educational opportunities for employers, including scheduled tours of CPC practices. Arkansas, building on existing regional collaboration formed around the Arkansas Payment Improvement Initiative, has held joint payer and stakeholder discussions with several employer groups, which has led some employers, including Walmart, to agree to participate.

While most payers invited self-insured clients to participate in CPC, several payers—most commonly in New York and Ohio/Kentucky—have automatically enrolled their self-insured clients into CPC, with some of these payers providing an opportunity for their clients to "opt out." For example, one national payer, which participates in multiple CPC regions, has required that its self-insured clients join CPC. Another national payer has similarly mandated self-insured participation across regions, but offered the choice to opt out. A number of payers who required that self-insured clients participate in CPC have experienced some backlash from employer groups about paying the PMPM, but none remarked that they have lost accounts as a result. In one case, a payer was concerned that requiring these groups to participate might place the plan at a disadvantage relative to other payers in the market, but noted that it could also provide a strategic advantage among those employers who are interested in CPC.

Among those payers with participating self-insured lines in CPC, in almost all cases, the self-insured clients are paying the enhanced PMPM payment for their employees, as opposed to the payer (acting as a third-party administrator) covering those payments.

C. Negotiations between CMS and participating payers

After selecting the CPC regions, CMMI staff and each participating payer entered into a period of negotiation culminating in an MOU between CMS and each payer. The content and tenor of negotiations varied across payers. Some payers stated they did not negotiate on any points of their application, while others reported substantial negotiations with CMMI. A range of payers across regions reported negotiating on a number of topics:

- *PMPM level and structure.* Some payers reported negotiating with CMMI on the amount of payment. In addition, at least two payers said they had initially wanted alternative payment structures (such as paying for patient calls and emails), but CMMI negotiated for PMPM payment amounts rather than other approaches.
- *Limiting the practices to which payers send feedback reports.* A few payers indicated that they wanted to send reports to only those participating practices to which they had attributed a minimum number of members. Often CMMI negotiated the minimum number to 100, down from as high as 350. These payers noted that sending reports to practices with low numbers of attributed members reduces the statistical validity and adds costs. CMS sends its feedback reports to practices regardless of the number of Medicare patients, but cautions practices to exercise care when interpreting reports with small samples.

- *Start date of the initiative.* CMMI negotiated start dates of October or November 2012 (depending on region). Several payers indicated that they had wanted to start a few months later.
- *Inclusion of self-insured lines of business.* Several payers either stated up front that they would not try to bring in their self-insured clients or cautioned that while they would try, they could not guarantee self-insured participation. While this was not something that CMS negotiated with the payers, it was a central topic of discussion.
- *Caps on total spending.* One payer negotiated a cap on aggregate PMPM payments that it would make across all participating practices.

Medicaid. In general, participating Medicaid FFS programs tended to report the most involved negotiation process. For two regions, the issues centered on how much CMS would pay of the PMPM payment, particularly if the state already had a medical home initiative in place, given that CMS will pay for new services or newly covered patients only as part of CPC.[21] In another region, negotiations centered on whether PMPM payments could be made for children as well as adults (ultimately, CMS agreed to make payments for children).

National payers. National payers also negotiated with CMMI on the CPC regions in which they would participate. In some cases, CMMI asked national payers to consider other regions to which they hadn't applied, and this overture appears to have had some influence in changing national payers' decisions on which regions to join. One national payer indicated that its decision on which regions to participate in was based on the volume of patients and other payers participating in the region. That said, national payers did not participate in all regions in which they had significant presence (see next section for further discussion).

Tenor of negotiations. Impressions about the tenor of the negotiations also reflected a spectrum. Some felt that the negotiations were an expected part of the process and perceived that both sides were happy with the results. Others felt that differences in opinion or approach were resolved by CMMI dictating the terms rather than truly negotiating.

D. Nonparticipating payers and reasons for nonparticipation

In most regions, the vast majority of payers with sizable market share are participating in CPC. The extent of market concentration among payers varies considerably by region, and the proportion of all payers who are participating in CPC is the more relevant indicator of participation than is the number of participating payers. For example, while the Oklahoma region has only 3 participating payers, it nonetheless includes all major payers in the market.

One large payer noticeably absent from CPC is Kaiser Permanente, which did not apply to participate in any of the regions (but operates in three of the selected CPC regions: Colorado, Ohio/Kentucky, and Oregon). CMMI did not expect Kaiser Permanente to participate, because the

[21] As indicated in the Solicitation for CPC, "CMS . . . will make funding available for enhancements to primary care, such as newly initiated or enhanced PCCM services under this agreement. States with existing [Medicaid and CHIP] programs supporting primary care must maintain their current level of funding and use Innovation Center funding only for purposes of providing more services to current beneficiaries or increasing the number of beneficiaries served by such programs."

plan employs its physicians and has implemented its own initiatives to support primary care transformation. Participating payers and other stakeholders rarely mentioned Kaiser Permanente's absence in the initiative.

In other regions, however, payers indicated that some key payers were not participating in CPC, particularly commercial insurers. Perhaps most notably, in Oregon, a number of local plans opted not to participate, as did several national payers (Cigna, United, and Aetna); however, their lack of participation was not viewed negatively, because payers felt there was a good dynamic among those who *were* participating. In Arkansas and New York, payers noted that United was not participating; in New Jersey, payers identified Cigna, Aetna, and QualChoice as nonparticipants, although each of these payers has a relatively small market share. While state Medicaid programs participated in 5 states (Ohio/Kentucky, Oklahoma, Colorado, Arkansas, Oregon), they did not participate in New York and New Jersey.

Reasons for nonparticipation. The interviews with payers and other stakeholders suggested several reasons that national payers did not want to participate in some regions. Some payers speculated that large national plans may have declined because they had significant books of business with self-insured clients and did not want to ask them to make the PMPM and shared savings payments involved with CPC. Others noted the difficulty for national plans that have existing national efforts that support practice transformation to adapt to initiatives like CPC, which would require deviation from their national initiatives.

Involvement in other initiatives, such as accountable care organizations (ACOs), is another explanation for nonparticipation among both national and regional payers. In the New Jersey region, for example, stakeholders noted that a couple of national payers were working with a number of CPC practices, but only in the context of ACOs. In an interview with a nonparticipating local payer in another region, the payer noted that it had other initiatives requiring its attention; while the organization was initially interested in CPC, it ultimately decided it did not have the resources to spread across multiple initiatives.

Practice selection is another factor that may have influenced payers' decisions on CPC participation. Payers had to indicate their interest and apply for CPC prior to the selection of practices. Some stakeholders suggested that the relative value of participating could be influenced by the volume of their covered patients who are attributed to the selected practices.

For the two Medicaid FFS programs that choose not to participate in CPC, New York's decision was driven by the fact that the state is in the process of moving most of its members into managed care plans. Given the lack of Medicaid FFS beneficiaries, the New York state Medicaid program therefore felt it had little role—though it does attend CPC meetings periodically in a show of support for the initiative. The underlying reason for New Jersey Medicaid's decision not to participate is unclear. Despite repeated attempts, the Medicaid office would not schedule an interview with us, and other stakeholders in the state had no insight on this.

Limited concern about freeriders. When payers were asked if they were concerned that nonparticipating payers were benefiting from the investments that participating payers were making through CPC, most expressed limited if any concern. Some were resigned to the possibility of freeriders and reiterated their belief that the investment is the right thing to do. Several noted

that the larger concern was missing lines of business—specifically, the self-insured clients—rather than missing payers (as discussed above).

2.4. Details of practice selection and participation

A. Practice recruitment for CPC

Following the April 2012 selection of the seven regions, CMS invited primary care practices from those regions to apply to participate in the initiative.[22] CMS accepted these applications from June 13 to July 20, 2012, and announced the selected practices on August 22, 2012.[23] CMS had an initial target of 75 practices per region, or 525 practices in total. It received applications from about 1,000 practices across the seven selected regions, ranging from 112 practices in Oklahoma to 178 in New Jersey.

Stakeholders in a few regions reported encouraging practices to apply for CPC. For example, in both Arkansas and Oregon, statewide chapters of the American Academy of Family Physicians contacted their members to encourage them to submit an application. In a small number of regions, other stakeholders were also engaged in practice recruitment (for example, the New Jersey Health Information Technology Extension Center in the New Jersey region). Although one Oregon payer indicated having tried to recruit CPC practices by contacting participants in its medical home program to alert them to the opportunity, most payers had limited involvement in encouraging practices to apply for CPC.

Stakeholders in Oklahoma and Oregon noted that practices were initially slow to apply for CPC. In Oklahoma, practices may have been hesitant to apply given limited information about the requirements of the program or, as one payer suggested, negative regional attitudes toward government-led initiatives. In Oregon, one stakeholder suggested that practice concern around having a sufficient number of attributed lives among participating payers may have played a part in slow recruitment. Nonetheless, 145 and 112 practices applied in Oregon and Oklahoma, respectively, with Oregon's number of applicants exceeding the regional average of 142.

CMS generally did not consult payers when selecting practices from the set of applicants, partially because of constraints dictated by anti-trust regulations. In our discussions with payers, few shared perspectives on CMMI's practice selection process. Among those who did, a small number expressed concerns related to CMMI's not having enough information to select appropriate practices for the initiative, and suggested that this resulted in the selection of practices that were not the most advanced or that did not deserve to be chosen. (One payer also noted that a lack of involvement in practice selection meant that it had no ability to control the number of attributed members, and the resulting size of its overall PMPM budget.) A few payers, however, thought that CMS had selected practices well, choosing those that were engaged or experienced with primary care transformation. Some Oregon payers drew opposite conclusions about the

[22] Because CPC participation occurs at the practice site level, a multisite practice organization may have more than one "practice" participating in CPC. Hereafter, we will use the term *practice* interchangeably with *practice site.*

[23] To apply, practices completed an online application in the Primary Care Practice Solicitation [http://innovation.cms.gov/Files/x/CPC_PracticeSolicitation.pdf].

practice selection, believing that advanced practices were chosen but that weaker practices could have benefited the most from CPC.

B. Practice motivation to participate in CPC

To understand what motivated practices to participate in CPC, we look to information from the three practices purposively selected for in-depth examination in each of CPC's seven regions. In these 21 "deep-dive" practices, practice leaders reported that they chose to apply for and participate in CPC because the initiative was seen as broadly consistent with their own goals for practice improvement and with their aspirations toward providing more patient-centered care. Many practice leaders within deep-dive practices saw CPC as offering both financial and technical support for meeting their own goals. In addition, the multipayer collaborative nature of CPC offered practices the opportunity to operate in an environment where payer goals and financial incentives are relatively aligned across both public and private payment sources.

In many cases, CPC participation was aligned with existing practice goals. Some practices reported preexisting efforts to innovate and improve quality. One such practice reportedly sought out opportunities such as CPC to support and strengthen its work to improve care delivery. Some of the deep-dive practice leaders felt that the alignment of CPC goals with their own values would allow them to be seen by other practice leaders as on the leading edge of primary care practice change. Participating in CPC allowed them to be part of the learning process that could lead to support for new models of primary care practice, while also being part of the standard-setting process for these future changes. In many other practices, leaders were already working toward implementing a medical home model, either with the support of a local health plan or as part of a deliberate approach to positioning the practice for value-based payment approaches. While CPC practices are not required to meet the criteria for being a recognized or certified PCMH, participation in CPC requires that practices work toward many of the same requirements.

While some practices noted that they were already in the process of implementing changes that aligned with the CPC initiative, one practice noted that CPC provided the catalyst to make changes that leadership had wanted to make for some time, such as moving toward a more quality-focused approach and providing care coordination.

Deep-dive practice leaders reported that revenues from CPC participation were an important incentive. For many practices, CPC's PMPM care management fees were an important motivation for participation. This funding stream was seen as essential for supporting the staffing changes (such as hiring care managers) needed to support the CPC model. As one medical director put it:

> "So now you want to implement a care program that is definitely beneficial for the patients. It keeps people out of the hospital. It's just the way to go, but it's not without expense. To have a nurse that can do pre-visit planning, when they're already maximized with [what they already have to do] . . . [and] to have case managers . . . those things cost money. . . . Nobody has the money for that. So the only way this works is if we have enough income to be able to support these extra resources."

Practices that had begun participation in a local or regional PCMH initiative prior to CPC viewed the additional revenues as less important (but nonetheless useful in spreading services to

more patients). This is perhaps because some initial investments had already been made and the CPC resources were seen as available for enhancing care rather than for meeting the basic standards of the CPC model.

Deep-dive practice leaders reported that CPC provided the opportunity to receive guidance and assistance on their quality improvement efforts. Participating in CPC offered practices the opportunity to get support for and guidance on implementing a PCMH-like model. As one practice administrator pointed out:

> "You have to have someone kind of help you and lead you; it's kind of hard to just come up with your plan on your own. Where do you begin, and how much time is it going to take away from the patients you already see? So signing up for CPC was a no-brainer, because doing [something like] the patient-centered medical home was something [we] had looked at for years."

The aligned multipayer environment provided an opportunity to support practice change. Prior to participation in CPC, most practices experienced multiple, and sometimes conflicting, demands from payers regarding practice improvement efforts. The collaborative involvement of both public and private payers was thus a motivation for practice participation in CPC. One practice noted that prior to CPC, payers were operating separately, but CPC offered a coordinated approach:

> "By bringing [the payers] all under one program [with CPC], it's nice because we get all these extra reports such as daily ER and hospital discharges and quarterly gap lists, and we get information that we weren't receiving before. And we don't have to be in [each payer's program]; it's just one program to do it."

Having multiple payers involved in the initiative was also seen as bringing more enhanced revenue needed to support substantial practice change.

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CHAPTER 3. WHAT WERE THE CHARACTERISTICS AND CONTEXT OF CPC REGIONS, PAYERS, PRACTICES, AND PATIENTS AT THE START OF CPC?

The characteristics and context of CPC's participating regions, payers, practices, and patients at the start of the initiative (that is, at "baseline") are likely to have important implications for the way CPC is implemented, whether and how CPC implementation translates to improvements in outcomes, and how both implementation and outcomes vary by subgroups of regions, practices, and patients. In this chapter, we characterize participating regions and the payers and practices that operate in them, as well as the patients they serve. CMS intentionally selected diverse regions and practices to provide greater generalizability from CPC.

As a result, there is substantial variation across regions, across practices within each region, and across patients within each practice. To account for this, the impact analysis will explore impacts on subgroups of regions, practices, and patients.

3.1. Key takeaways on characteristics and context at baseline

- Regions varied substantially at baseline in characteristics that might affect how CPC is implemented. Perhaps most notably, the percentage of practices in each region with medical home certification, six or more clinicians, and ownership by a larger organization varies considerably.
- Practices' self-reports of their primary care functioning at the start of the initiative, and patient ratings of care, vary substantially across the seven regions but indicate that most CPC practices—like practices nationwide—face opportunities to improve care. CPC regions differ widely in the characteristics of the local areas that participating practices serve.
- The level of prior community collaboration—whether on PCMH efforts or other initiatives—likewise differed substantially across regions at the start of CPC. (As discussed in later chapters, this meant that some regions required more relationship building and start-up activities in CPC's first year. Now that CPC has been operating for more than a year, key players in all regions now appear to be functioning fairly cohesively.)
- CPC practices also varied substantially *within* each region. While the distribution varied across regions, each region had practices of various sizes, ownership status, meaningful use status, medical home status, primary care functioning, patient ratings of care, and socioeconomic status of patients.
- Within practices and regions, patients were also heterogeneous, with different ages, conditions, health status, race, socioeconomic status, and risk scores, among other characteristics.
- In addition to individual characteristics, variation in combinations of baseline characteristics may be important. For example, regions whose practices already have relatively high levels of PCMH recognition and primary care function, combined with relatively low Medicare per capita costs at baseline, may find it more difficult to show improvements in care delivery and patient outcomes over time.
- Accounting for baseline characteristics in our evaluation of CPC's implementation and impact will be critical to understanding how such characteristics affect how CPC is

implemented, and facilitate or challenge CPC's efforts to improve care in different regions and practices, and for different patients.

3.2 Characteristics of CPC regions

At the start of CPC, the initiative's seven regions varied along several key dimensions that might affect or interact with CPC's implementation and outcomes. These dimensions—described below—include state or county context (such as geography and the socioeconomics of the population), health care marketplace (such as overall physician supply, managed care penetration, and per capita health care costs), and extent of prior experience with PCMH and related initiatives, which may have positioned the region and its practices for an easier or smoother start to CPC. (See Table 3.1 for detailed information on characteristics by region. Note that some characteristics are readily available only at the state level, which may differ from the CPC region for the three regions that do not cover the entire state. In addition, participating practices in any region may be clustered in certain areas of that region, and baseline characteristics and features for the overall geographic area, as presented in Table 3.1, could differ somewhat from those of the areas where participating practices are located.) We describe these baseline differences here, along with hypotheses about their importance, so that during the evaluation we can examine how they might affect practice transformation and patient outcomes. This information was also helpful in selecting a comparison group for the impact analysis:

State or county context. State and county contextual factors may influence how the intervention is implemented (for example, TA may be harder to provide in large, rural regions) and the impact of the initiative.

- *Geographic scope.* Four of CPC's regions are statewide (Arkansas, Colorado, New Jersey, and Oregon) and three are focused on smaller areas (the Capital District Hudson Valley region in New York, the Cincinnati-Dayton region in Ohio/Kentucky, and the Greater Tulsa region in Oklahoma). Participating payers and practices are not evenly distributed across any given geographic area, however, and several regions include key submarkets. For example, Colorado's participating practices are divided between the "Front Range" and the much more rural "Western Front," two distinct submarkets in the Colorado region.
- *Physical characteristics.* CPC's regions include both rural regions (Arkansas and the Greater Tulsa region) and one of the most urban states in the country (New Jersey). Accordingly, the population living in rural areas ranges from 5 percent in New Jersey to 44 percent in Arkansas. Some regions that are focused on metropolitan areas (Cincinnati-Dayton and Greater Tulsa) still have significant rural populations in the area covered by CPC (15 percent and 36 percent, respectively).
- *Population characteristics.* Population demographics and health status differ substantially across regions. For example, the percentage of the population living below poverty level ranges from 9 percent in New Jersey to 18 percent in Arkansas. The percentage of the population that is non-white ranges from 11 percent in Oregon to 27 percent in the Greater Tulsa region. Furthermore, the infant mortality rate per 1,000 live births—a commonly accepted measure of overall population health—ranges from 8.5 deaths per 1,000 live births in Oklahoma to 5.2 in New Jersey.

Table 3.1. Background information on CPC regions

Background market information	CPC region (Data reported by state or weighted average by population in each county, where indicated)						
	Arkansas	Colorado	New Jersey	New York: Capital District Hudson Valley Region	Ohio-Kentucky: Cincinnati-Dayton Region	Oklahoma: Greater Tulsa Region	Oregon
Demographics:							
Total population (2012 estimate)[a]	2,949,828	5,189,458	8,867,749	3,040,226	3,168,902	1,534,872	3,899,801
Percentage rural (2010)[b]*	43.8%	13.9%	5.3%	17.4%	15.0%	35.7%	19.0%
Socioeconomics:							
Median household income (2008-2012)[c]*	$40,531	$58,244	$71,637	$72,047	$52,403	$44,555	$50,036
Percentage below poverty, state-level (2008-2012)[a]	18.7%	12.9%	9.9%	14.9%	17.0%	16.6%	15.5%
Percentage non-white (2012 estimate)[a]*	20.0%	11.9%	26.2%	19.3%	17.0%	27.2%	11.7%
Health status:							
Infant mortality (per 1,000 live births) (2007)[d]	7.7	6.1	5.2	5.6	7.2	8.5	5.8
HCC score (ratio relative to national average) (2011)[e]	0.96	0.90	1.09	1.11	1.04	0.96	0.88
Medicare utilization and costs:							
Per capita costs (2011)[e]	$8,371	$7,652	$9,632	$8,888	$9,270	$9,283	$6,509
Inpatient covered stays (per 1,000 beneficiaries) (2011)[e]	317	248	333	335	359	324	222
ER visits (per 1,000 beneficiaries) (2011)[e]	649	573	614	590	758	700	556
Avoidable hospitalizations (per 100,000 beneficiaries) (2009)[f]	7,727	4,917	7,350	7,269	8,092	7,256	3,862
Providers:							
Number of primary care practices in state[g]	549	760	2,289	4,307	1,332	739	540
Number of practicing physicians (per 10,000 population) (2010)[h]	18.6	24.6	29.4	35.8	21.3	18.5	26.0
Number of physicians in primary care specialties (per 10,000 population) (2010)[i]	6.2	7.7	8.5	9.2	6.0	6.6	8.7
Inpatient beds (per 1,000 resident population)[j]	3.3	2.1	2.4	3.1	3.1	3.1	1.7
Hospital occupancy rates (2011)[j]	58%	58%	72%	80%	60%	55%	59%
Managed care penetration rates (2011)[k]	3.4%	16.6%	22.1%	31.3%	15.2%	6.7%	31.3%
Medicare Advantage penetration rates (2012)[l]	16.3%	34.7%	14.5%	21.4%	38.1%	19.8%	41.7%

*County data = weighted average by population in each county, for the following regions (which are not statewide): Capital District Hudson Valley, Cincinnati-Dayton, and Greater Tulsa regions.

[a]U.S. Census Bureau, Quick Facts, 2012 Estimate; County-level estimates from 2012 Census Bureau Population Estimates Program

[b]U.S. Census Bureau, 2010 Percent Urban and Rural by State/County

[c]2008-2012 American Community Survey 5-Year Estimates, Economic Characteristics

[d]U.S. Census Bureau, 2007 data. Cincinnati-Dayton region data reflect an average of Kentucky and Ohio data.

[e]IOM website, CCW data 2011 statewide data. Cincinnati-Dayton region data reflect an average of Kentucky and Ohio data. Per capita costs are standardized so that the reader can essentially compare the volume of services delivered geographically; that is, standardized costs remove DSH and IME payments and other geographic adjustments in Medicare payments.

[f]Commonwealth State Scorecard, 2009 data. Avoidable hospitalizations are admissions of fee-for-service Medicare beneficiaries aged 65 and older for one of 11 ambulatory care sensitive conditions (AHRQ Indicators). Cincinnati-Dayton region data reflect an average of Kentucky and Ohio data.

[g]SK&A Data, 2010. For Ohio/Kentucky, we calculate the number of practices as the average number of the two states.

[**]AMA Primary Care Specialties include Family Medicine, General Medicine, Internal Medicine, Obstetrics and Gynecology, and Pediatrics.

[h]Constructed for each region from Number of Practicing Physicians divided by Total Population, then multiplied by 10,000.

[i]Constructed for each region from Number of Physicians in Primary Care Specialties divided by Total Population, then multiplied by 10,000.

[j]2011 data from CDC based on American Hospital Association data, available at [http://www.cdc.gov/nchs/data/hus/2013/109.pdf].

[k]2011 data from Kaiser state health facts at [http://www.statehealthfacts.org] (statewide data). Cincinnati-Dayton region data reflect an average of Kentucky and Ohio data.

[l]Kaiser state health facts, http://kff.org/other/state-indicator/medicare-advantage-penetration/ (statewide data). Mathematica constructed these figures from CMS MA/State County Penetration files of the number of Medicare eligible beneficiaries and enrollees in Medicare Advantage (county-wide data for Capital District Hudson Valley; Cincinnati-Dayton; and Greater Tulsa areas).

Health care marketplace. The structure of the local health care market may have important influences on the quantity and quality of health care provided in that locale. This context is also likely to affect the way in which CPC is implemented in each region. A few characteristics of the broader health care marketplace that might affect CPC implementation and outcomes (even after controlling for specific characteristics of participating practices) include:

- *Physician supply.* The supply of physicians varies considerably across CPC regions. In 2010, the Capital District Hudson Valley region had 9.2 practicing primary care physicians per 10,000 people, whereas the Cincinnati-Dayton region had 6.0.
- *Health care utilization and cost patterns.*[24] A preliminary analysis of baseline utilization and cost patterns at the region level can provide an initial understanding of baseline primary care practice performance and insight into opportunities for improvement in key outcome areas. We report readily available Medicare data here. Medicare cost of care for the year 2011 varies substantially across regions: per capita annual costs per beneficiary range from $6,509 in Oregon to $9,632 in New Jersey. The hospitalization rate per 1,000 beneficiaries ranges from 222 hospitalizations per year (Oregon) to 359 (Cincinnati-Dayton). The number of ED visits per 1,000 Medicare beneficiaries varies from a low of 556 (Oregon) to a high of 758 (Cincinnati-Dayton). The annual rate of avoidable hospitalization rates per 100,000 varies from 3,862 (Oregon) to 8,092 (Cincinnati-Dayton). Oregon consistently has the lowest levels of utilization and cost across indicators, whereas the highest levels appear in the New Jersey, Cincinnati-Dayton, and Greater Tulsa regions.

Relevant experience. Prior delivery system and payment reform efforts in a region can influence the implementation of CPC, practices' readiness to transform, and the ability of payers and providers to work together on the initiative (Table 3.2). Regional differences in relevant experience include:

- *Prior PCMH initiatives.* While CPC is not a medical home certification initiative, it shares many of the goals of improving primary care performance, and practices that are recognized as medical homes would be expected to face an easier transformation to meet the CPC Milestones and goals. Most of the distinct participating payers (23 of the 29 currently participating) have experience implementing medical home initiatives, and single-payer initiatives have been implemented in each region. However, the reach and intensity of these initiatives varies widely. One payer in the Capital District Hudson Valley region, for example, has been providing funding and practice facilitation to over 200 practices. In contrast, payers in Tulsa and Arkansas noted that their strategies are still developing and that prior efforts have targeted relatively few practices. In addition to advanced single-payer initiatives, the Colorado, Capital District Hudson Valley, Cincinnati-Dayton, and Oregon regions also have experience implementing multipayer medical home initiatives. For example, all CPC payers in Oregon previously developed a state standard for medical homes.

[24] Medicare spending and use data in this section is based on our analysis of 2011 CCW data that were standardized across geographic areas accessed on January 14, 2012 [http://iom.edu/Activities/HealthServices/GeographicVariation/Data-Resources]. The rate of avoidable hospitalizations is from the Commonwealth Fund. See notes to Table 3.1 for more information.

- *Collaborative history.* Payers in six of the seven regions have collaborated on prior multipayer initiatives. Oregon and Cincinnati-Dayton appear to have the most extensive collaborative history. Both regions have an Aligning Forces for Quality Collaborative, and payers have worked together on medical homes, data aggregation, and other quality improvement initiatives. Although not as comprehensive, the Colorado and Capital District Hudson Valley regions have prior experience collaborating on medical home efforts. While payers in Arkansas have less collaborative history, three CPC payers started providing aligned episode-based payments in 2012 and plan to continue working closely on other aspects of their State Innovation Model award from CMS. Payers in Tulsa are also new to collaboration and have started to work together on health IT issues under the Beacon Community Program sponsored by the Office of the National Coordinator for Health IT. Payers in New Jersey have no prior experience with multipayer collaborations.

Table 3.2. Existing initiatives relevant to CPC, by CPC region[a]

	AR	CO	NJ	NY	OH/ KY	OK	OR
Number of CPC payers	4	9	4	4	8	3	5
Prior PCMH activities							
Number of CPC payers participating in single-payer PCMH initiatives	2	9	2	4	8	2	4
Number of CPC payers participating in multipayer PCMH initiatives	0	6	0	4	4	0	5
Other collaborative initiatives[a]							
Payment reforms	✓[b]						
Beacon Community		✓			✓	✓	
Aligning Forces for Quality					✓		✓

Sources: Payer applications and interviews with payers and other stakeholders.

[a]Table includes initiatives that respondents indicated influenced practice transformation, market cohesion, or CPC design. The table is not intended to provide a comprehensive list of existing initiatives.

[b]Episode-based, bundled payment.

3.3. Characteristics of participating practices

In addition to regional characteristics and context, the characteristics of participating practices also may influence the implementation and impact of CPC. A number of practice characteristics varied both within and across regions at baseline (Table 3.3). We discuss several of these characteristics below.

Practice size and affiliation. Participating practices in the CPC regions vary in size and in the extent to which they are part of a larger multidisciplinary group practice or health system. Practice size may affect CPC implementation; in particular, very small practices of one to two clinicians may find it difficult to take on the large number of activities required by CPC. Practice affiliation with a larger system, however, may have at least as strong an influence on CPC implementation as practice size. For example, affiliated practices may have more or better health

Table 3.3. Baseline characteristics of practices participating in CPC

	All regions	Arkansas	Colorado	New Jersey	New York: Capital District Hudson Valley Region	Ohio/ Kentucky: Cincinnati-Dayton Region	Oklahoma: Greater Tulsa Region	Oregon
Practice characteristics, 2012								
Median number of participating clinicians per practice	3	3	4	2	3	3	3	6
Number of participating clinicians per practice (%)								
1 clinician	17	26	11	31	18	11	19	3
2 to 3 clinicians	32	32	31	30	39	39	31	18
4 to 5 clinicians	24	16	27	19	15	33	32	28
6 or more clinicians	27	26	31	20	28	17	18	51
Multispecialty practice (%)	18	14	14	13	18	11	32	25
Practice is owned by a larger organization (%)	55	35	61	40	43	57	74	76
Has at least 1 clinician who is a Medicare Meaningful EHR User (%)	79	64	92	90	81	100	50	72
NCQA or state-certified medical home (%)[b]	39	9	28	39	35	57	47	61
Characteristics of practices' counties, 2009								
Median household income ($)	54,580	39,716	59,811	74,523	61,911	50,687	43,326	50,957
In medically underserved area (%)	11	43	4	4	7	0	15	9
Primary care function averaged across practices, 2012 (maximum is 12)								
Access and continuity	8.4	8.3	8.3	8.4	8.6	8.8	7.8	8.5
Planned care for chronic conditions and preventive care	8.0	8.2	8.3	7.9	7.8	8.3	7.6	8.1
Risk-stratified care management	4.6	4.4	4.9	4.6	4.5	4.8	3.6	5.7
Patient and caregiver engagement	6.6	6.9	6.5	6.4	6.7	7.2	6.0	6.8
Coordination of care across the medical neighborhood	6.6	6.8	6.6	6.3	6.8	6.7	6.0	6.8
Continuous improvement driven by data	5.5	5.4	5.9	4.7	5.5	6.1	4.4	6.2

Sources: Medicare meaningful use data provided by CMS; medical home certification data draw from NCQA and from practices' applications. Other practice characteristics come from a file from SK&A (a commercial vendor). County characteristics come from the Health Resource Services Administration. Primary care function comes from practices' self-reported data in practice baseline survey.

[a]Primary care function scores reflect composite measures of six dimensions of self-reported primary care function, based on practices' responses to multiple questions on a modified version of the Patient-Centered Medical Home Assessment (PCMH-A) survey between October and December 2012. Individual questions are scored on a 1-to-12 scale; the composite score is the average across individual questions in the domain.

[b]Only Oklahoma and Oregon had available data on state-certified medical homes. Practices that received medical home certification through organizations other than NCQA or their state, such as the Utilization Review Accreditation Commission, are not included in this table.

IT and QI infrastructure in place (relative to independent practices), but as a result of more established protocols and centralized control of processes, they also may find it harder to make changes to individual practice sites. While the median number of participating clinicians per practice is 3 for CPC overall, the median per practice varies substantially by region, from 2 in New Jersey to 6 in Oregon. Moreover, many practices in the Cincinnati-Dayton region, Colorado, the Greater Tulsa region, and Oregon are owned by a larger practice or system (with a high of 76 percent among Oregon's participating practices). In contrast, fewer than half of practices in Arkansas, the Capital District Hudson Valley region, and New Jersey are owned by a larger system. In addition to this variation across regions, there is a diversity of practices within each region, which will require learning faculty to tailor their approaches within each region.

Sociodemographics of the practice's county. The median household income of the county in which participating practices operate may be related to the needs of patients in the county and perhaps the comprehensiveness of their insurance coverage, and hence may affect practices' resources. Similarly, whether the practice is located in a county that is designated a medically underserved area may be a rough proxy for financial, staff, and other resources available to the practices for implementing CPC. Median household income ranges from just under $40,000 (Arkansas) to almost $75,000 (New Jersey) (Table 3.3). Similarly, the percentage of CPC participating practices located in a county that is designated a medically underserved area ranges from zero (Ohio/Kentucky) to 43 percent in Arkansas. Practices also vary along these dimensions within a region.

Practice experience with electronic health records [EHRs] and primary care transformation. CPC practices range in terms of medical home recognition and their use of EHRs both across and within regions. At the start of CPC, the percentage of practices with NCQA PCMH recognition or state medical home certification ranged from 9 percent in Arkansas to 61 percent in Oregon. Similarly, there was wide variation in the percentage of practices with a Medicare Meaningful EHR User, ranging from 50 percent in the Oklahoma region to 100 percent in Ohio/Kentucky (Table 3.3). While CPC doesn't require practices to become medical homes or to have started out as meaningful users, practices that had already become medical homes or satisfied meaningful use requirements may have fewer changes to make for CPC. In addition, early adoption of these approaches may be driven by factors—including leadership, risk-taking, and adaptive reserve—that may also help practices transform for CPC.

Primary care functioning. While CMS selected about half the practices that applied to CPC, CMS did not do so on the basis of functioning or outcomes. The CPC practices, like primary care practices nationwide, face substantial opportunities to improve care.

Care delivery. Practices' average level of functioning in how they delivered care at the start of CPC—as measured through self-reported survey data collected via a modified version of the PCMH-A scale—varied across the regions in some of the dimensions. Based on self-reports, practices in Oklahoma on average had the greatest opportunity for improvement in all areas prior to the start of CPC, from an average of 3.6 (on a 12-point scale, with 12 being the highest functioning) in risk-stratified care management to an average of 7.8 in access to and continuity of care. Self-reports by practices in Ohio/Kentucky suggest they on average were the most advanced across the regions in terms of access and continuity (8.8), and patient and caregiver engagement (7.2), and were tied with Colorado in planned care for chronic conditions and preventive care (8.3). The most advanced practices on average in terms of self-reported approaches to care coordination were in Arkansas, the Capital District Hudson Valley region in New York, and Oregon, each with

average scores of 6.8. Practices in Oregon reported being the most advanced in the areas of risk-stratified care management (5.7) and continuous data-driven improvement (6.2). While regions' practices varied in their average scores, all showed substantial opportunities to improve. Again, within each region, practices ranged widely in their baseline functioning (not shown).

Patient experience of care. We also collected information on patient perspectives on care. We collected feedback on experience with care from a sample of all patients served by CPC practices regardless of whether they are attributed to the practice for CPC by Medicare or other payers, insured by nonparticipating payers, or even have insurance coverage at any time in the prior year. We also surveyed a sample of attributed Medicare FFS beneficiaries from CPC and comparison practices so we can compare experience over the course of the initiative with a benchmark.[25] We conducted the survey of patients between June and November of 2013, about 8 to 13 months into the initiative. We asked about patients' experiences with care in the past year, relatively early in the initiative. Patients generally rated their providers at the CPC practices highly, with over 70 percent rating their provider a 9 or a 10 out of 10 (Table 3.4). Over 80 percent of patients reported that their providers always explained things clearly and listened carefully to them, and nearly 70 percent said their provider seems informed and up to date about the care they received from other providers.

Table 3.4. Patient experience: summary measures of patient experience with care in the past year, among a sample of all patients seen in CPC practices in the prior year (Percentage)

Measure	All regions	AR	CO	NJ	NY	OH/ KY	OK	OR
Access to care[a]								
Patient always got appointment as soon as needed when s/he phoned provider's office to get an appointment for care needed right away	63.7	66.8	61.8	70.1	68.7	66.5	55.6	55.6
Patient always got appointment as soon as needed when s/he made appointment for routine care	67.0	69.7	65.7	64.8	68.4	71.4	64.6	63.8
When patient phoned provider's office during regular office hours, s/he received an answer to his/her medical question on same day	54.9	59.5	50.5	59.5	57.9	60.7	45.3	50.0
When patient phoned provider's office after regular office hours, s/he always received an answer to his/her medical question as soon as needed	53.3	48.2	52.5	54.5	57.3	55.6	52.9	51.4
If patient had an appointment, s/he always saw provider within 15 minutes of appointment time	29.4	21.3	37.2	27.6	30.0	28.8	26.0	34.7
Patient usually got an appointment on same day for care needed right away	45.6	47.0	42.8	57.3	56.0	46.2	34.4	34.4
Provider's office gave patient information about what to do if care was needed during evenings, weekends, or holidays	72.0	68.9	72.3	73.8	69.4	76.0	71.0	72.1
Patient was always able to get the needed care from provider's office during evenings, weekends, or holidays	31.0	26.9	30.6	38.5	33.7	30.0	26.7	30.4

[25] We identified the sampling frame of *all patients* from patient rosters provided by CPC practices and *attributed Medicare beneficiaries* from CPC and comparison practices from claims data. It was not feasible to burden comparison practices with a request for a list of patients. As a result, during the course of the evaluation, we will compare changes over time among all patients, and changes over time relative to the comparison group for attributed Medicare beneficiaries.

Measure	All regions	AR	CO	NJ	NY	OH/ KY	OK	OR
Communication								
Providers always explained things to patient in a way that was easy to understand	81.2	80.1	81.6	81.4	80.8	84.6	79.5	79.8
Provider always listened carefully to patient	81.2	81.2	80.6	81.9	82.3	83.7	78.1	80.3
Provider always gave patient easy-to-understand information about health questions or concerns	78.4	79.3	77.0	77.7	79.1	82.1	75.0	78.1
Provider always seemed to know the important information about patient's medical history	69.9	69.0	67.6	72.0	72.0	72.9	66.9	68.1
Provider always showed respect for what patient had to say	85.6	85.0	84.3	85.2	87.2	89.0	82.5	85.5
Provider always spent enough time with patient	74.2	75.0	73.8	73.7	76.0	75.9	72.2	72.7
Patient always felt provider really cared about patient as a person	72.8	73.1	71.5	70.4	73.4	77.2	70.2	73.6
If patient emailed provider's office, patient always received an answer to a medical question as soon as needed	62.9	40.6	64.5	67.3	64.3	67.0	67.3	62.2
Between visits, patient always received reminders about tests, treatment, or appointments from provider's office	62.6	61.4	64.5	55.8	62.0	61.0	62.8	71.0
If provider ordered a test, provider's office always followed up to provide patient with test results	72.5	73.9	74.9	70.3	69.1	75.0	68.8	75.3
Practice staff spoke with patient at each visit about feeling depressed	40.7	40.6	47.7	34.7	39.2	37.5	39.7	45.5
Practice staff spoke with patient about things in life that cause stress	44.6	41.9	49.7	43.0	46.1	41.1	42.9	47.4
Practice staff spoke with patient about a personal, family, mental, emotional, or substance abuse problem	31.9	31.5	32.3	30.1	34.4	28.9	30.4	35.8
Clerks and receptionists at provider's office always were as helpful as patient thought they should be	61.0	62.9	62.0	57.3	58.1	61.9	60.3	64.9
Clerks and receptionists at provider's office always treated patient with respect	77.0	78.7	78.6	74.2	75.6	77.2	74.4	80.5
Attention to care from other providers								
Provider always seemed informed and up to date about the care patient received from specialists	53.6	53.4	54.8	49.6	52.1	56.4	53.4	55.5
Practice staff spoke with patient about all prescription medications the patient was taking	86.6	85.4	86.7	85.9	85.0	87.8	87.1	88.0
Patient always easily got referral from provider to a specialist the patient needed to see	72.7	75.1	71.7	69.1	74.1	76.5	70.4	71.7
Patient always easily got appointments with specialists	52.4	56.2	51.7	47.4	51.9	49.3	54.6	55.9
Provider talked with patient about the cost of seeing a specialist	10.2	11.7	11.4	8.7	7.8	8.6	10.4	13.1
Patient was worried or concerned about the cost of seeing a specialist	30.3	26.9	34.3	24.7	24.5	36.2	33.1	32.3
Specialist always knew the important information about patient's medical history	53.1	55.4	50.5	51.7	52.0	52.0	55.8	55.0
Patient saw doctor, nurse practitioner, or physician assistant in provider's office within two weeks after most recent hospital stay	62.7	66.4	62.2	57.8	62.2	61.2	64.1	65.5
When patient saw provider within two weeks of most recent hospital stay, provider seemed informed and up to date about patient's hospital stay	93.0	90.7	95.4	93.9	93.1	89.7	94.1	94.2

Measure	All regions	AR	CO	NJ	NY	OH/ KY	OK	OR
Support for patient in taking care of health								
Someone in provider's office discussed with patient specific goals for his/her health	56.5	55.7	58.6	56.5	58.1	56.6	52.7	57.3
Someone in provider's office discussed with patient whether there are things that make it hard for patient to take care of his/her health	32.6	31.6	34.6	32.2	31.4	31.0	33.4	34.2
"Shared decision making" about prescriptions								
If patient talked about starting/stopping a prescription medicine, provider talked a lot about the reasons patient might want to take the medicine	61.9	59.9	63.4	63.5	64.0	61.8	58.1	62.3
If patient talked about starting/stopping a prescription medicine, provider talked a lot about the reasons patient might not want to take a medicine	42.8	41.9	44.0	45.5	43.7	40.2	40.7	43.3
If patient talked about starting/stopping a prescription medicine, provider asked what patient thought was best	77.1	73.1	80.1	76.7	79.6	76.8	74.0	79.1
Patient rating of provider								
0-6	7.4	7.7	7.4	8.3	6.5	5.4	8.8	7.7
7-8	22.1	22.8	22.3	21.2	21.4	21.0	22.7	23.4
9-10	70.5	69.5	70.2	70.6	72.1	73.7	68.5	68.9
Total number of patients	**40,139**	**5,023**	**6,571**	**6,048**	**4,819**	**5,829**	**5,114**	**6,735**

Source: CPC patient survey, administered between June and November 2013.

Notes: Means reported in this table are weighted to reflect the mix of all patients in CPC practices—regardless of insurance coverage or attribution status. In this table, the access-to-care percentages exclude those patients who skipped a question because they did not receive the specific type of care asked about in the question.

Despite these positive ratings of their CPC providers, CPC practices across all regions face substantial opportunities to improve patient experience, as we would expect as the initiative began. Patients rated their providers and practices most poorly on their provision of timely care, shared decision making on whether or not to take a prescription medication, and provision of adequate support for patients to take care of their own health:

- Patients reported problems accessing care in a timely fashion. Almost two-thirds of patients reported that when they phoned their provider's office to get an appointment for care they needed right away, they could get an appointment as soon as they needed it, and 29 percent said they always saw their provider within 15 minutes of their appointment time. In addition, among those who called their provider's office after regular hours, about half of patients reported that they received an answer to a question as soon as needed.
- Many patients report that providers do not discuss with them the reasons to take or not take a prescription medication—which both reflects an absence of patient engagement and may lead to lower adherence to medication regimens. Among those patients who reported that they talked with their provider about starting or stopping a prescription medication, less than two-thirds said their provider talked a lot with them about prescription medication decisions, and only 43 percent reported that their provider talked to them a lot about the reasons they might not want to take a medicine.

- Another set of responses indicates room to improve patient engagement in taking care of their own health. Fifty-seven percent of patients reported that someone in the provider's office discussed with them specific health-related goals, and one-third reported that someone in the provider's office discussed with the patient whether there are things that make it hard for the patient to take care of his/her health.

CPC is ultimately intended to improve patients' care experience. We will be able to assess the effects of CPC on attributed Medicare FFS beneficiaries in each of the next three years—when we can compare changes over time between the CPC and comparison groups that control for any preexisting differences between the two groups (since we did not have any patient experience data when selecting the comparison group).

3.4. Characteristics of participating patients

CMS provides enhanced payments for attributed patients covered by Medicare FFS, and other participating payers provide such payments for attributed patients from commercial, Medicare Advantage, Medicaid FFS, Medicaid managed care, and other lines of business. In addition, participating practice changes should alter care for all patients served by the practice, which includes participating payers' patients who are not attributed to the practice, patients covered by payers who do not participate, and uninsured patients. This section presents Medicare enrollment, cost, and service use data only for attributed Medicare FFS patients and demographic and health status data for a sample of all patients seen by practices (from the patient experience survey). (Some data will be available later for attributed Medicaid FFS patients, although with a substantial delay.)

Table 3.5 describes the characteristics of Medicare FFS patients attributed to the CPC practices during any of the first four quarters of the initiative. These Medicare patients are fairly typical of the Medicare population nationally: nearly 60 percent are women, 13 percent are also on Medicaid, and the average age is 72. Their average HCC (risk) score (1.05) is just above the national average of 1.

There are some notable differences in average characteristics of patients across regions. For example, 6 percent of attributed Medicare FFS beneficiaries in New Jersey are dually eligible for Medicaid, compared to 18 percent in Arkansas. The percentage of attributed beneficiaries with disability as the original reason for Medicare entitlement ranged from 14 percent in New Jersey to 29 percent in Arkansas. HCC scores ranged from 0.95 in Colorado to 1.10 in New York. Oklahoma was unique in its racial distribution, as 11 percent of its attributed Medicare beneficiaries are American Indians. Quarterly practice-level reports also show substantial variation in patients both within a practice and across practices (data not shown).

The patient survey collected some basic demographic and functional status information about the sample of *all patients* seen by the practice in the prior year. Like the sample of Medicare FFS patients, about 60 percent of all patients are women. Forty-two percent of all patients are over age 65, and the majority (93 percent) received at least a high school education or GED (Table 3.6). As was true of the Medicare FFS population in Oklahoma, there is a relatively large American Indian population (24 percent of all Oklahoma patients). Almost all patients (94 percent) report that they have health insurance; 36 percent of all patients report that they have Medicare. Over half (58 percent) of patients reported that they had gone to their primary care provider for at least five

Table 3.5. Selected characteristics of Medicare FFS patients ever attributed to CPC practices by end of Quarter 4 (September 2013)

	All regions	Arkansas	Colorado	New Jersey	New York: Capital District Hudson Valley Region	Ohio/ Kentucky: Cincinnati-Dayton Region	Oklahoma: Greater Tulsa Region	Oregon
Number of attributed Medicare FFS patients	365,076	64,361	49,670	48,055	44,643	49,844	52,592	55,911
Medicaid status								
Medicare patients enrolled in Medicaid	12.6	17.7	8.8	6.4	11.0	11.5	15.6	15.0
Age (years)								
18 to 50	5.7	7.6	3.9	3.0	6.0	6.2	6.9	5.4
51 to 64	9.0	11.5	6.5	5.5	8.2	9.2	10.7	10.0
65 to 74	44.1	42.1	49.9	44.5	40.3	44.2	43.9	44.1
75 to 84	27.9	27.9	27.6	29.8	29.4	28.0	27.0	25.9
85 or older	13.4	11.0	12.1	17.1	16.2	12.5	11.5	14.6
Average age	*72.0*	*70.7*	*72.4*	*74.2*	*72.8*	*71.6*	*71.0*	*72.1*
Gender								
Male	41.7	40.8	43.7	39.4	41.5	42.2	40.9	43.2
Female	58.3	59.2	56.3	60.6	58.5	57.8	59.1	56.8
Race/ethnicity								
White	91.3	90.8	94.9	91.0	92.1	93.1	83.5	94.0
Black	4.3	7.6	1.5	4.4	4.7	5.3	4.5	1.6
American Indian/Alaskan Native	1.7	0.4	0.2	0.0	0.0	0.0	10.5	0.6
Hispanic	0.7	0.4	1.3	1.5	0.6	0.1	0.4	0.7
Asian or Pacific Islander	0.6	0.2	0.5	0.9	0.6	0.3	0.4	1.2
Other or unknown	1.4	0.6	1.7	2.2	2.0	1.2	0.7	1.9
Original reason for Medicare entitlement								
Age	78.6	71.3	85.0	86.3	79.3	78.5	74.8	77.9
Disability	21.3	28.5	14.9	13.6	20.6	21.4	25.1	21.9
ESRD	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
HCC score								
Average HCC score	1.05	1.04	0.95	1.09	1.1	1.07	1.04	1.04

Source: Medicare claims and enrollment data.

years. Fifteen percent of patients visited their provider frequently—five or more times—in the last year. Among patients who made an appointment to see a specialist in the last year, almost two-thirds (64 percent) reported that they saw at least one specialist. Over 90 percent of patients are either "confident" (35 percent) or "very confident" (56 percent) that they can identify when medical care is necessary.

Patients generally rated their overall health highly, with 12 percent rating their health "excellent," 35 percent" very good," and 34 percent "good." Only 19 percent of patients said their overall health was "fair" or "poor," and only 12 percent rated their mental or emotional health as "fair" or "poor." However, a sizable percentage of patients reported depression, with nearly 19 percent of patients saying they felt down, depressed, or hopeless for several days in the past month, and another 9 percent saying they were depressed more than half of days or every day in the past month.

Table 3.6. Patient demographic and health characteristics for a sample of all patients seen by CPC practices

	All regions	AR	CO	NJ	NY	OH/KY	OK	OR
Patient's age								
18 to 24	2.1%	3.3%	2.1%	3.4%	1.5%	1.5%	1.9%	1.4%
25 to 34	5.5%	6.7%	5.4%	5.2%	4.8%	4.6%	6.6%	5.3%
35 to 44	7.7%	8.3%	8.1%	8.1%	6.4%	7.6%	8.0%	7.2%
45 to 54	15.9%	15.6%	15.8%	18.7%	18.9%	17.3%	13.5%	12.3%
55 to 64	27.3%	26.2%	26.1%	29.9%	26.2%	28.9%	28.4%	25.1%
65 to 74	24.2%	23.6%	26.1%	21.2%	24.4%	23.2%	24.1%	26.6%
75 or older	17.4%	16.3%	16.4%	13.6%	17.8%	17.0%	17.4%	22.2%
Patient's gender								
Male	37.0%	37.8%	39.9%	35.1%	37.8%	38.0%	32.3%	38.0%
Female	63.0%	62.2%	60.1%	64.9%	62.2%	62.0%	67.7%	62.0%
Highest grade or level of school completed by patient								
8th grade or less	2.3%	4.7%	1.2%	2.5%	1.7%	2.4%	1.9%	2.2%
Some high school, but did not graduate	5.0%	7.5%	2.1%	4.1%	4.6%	6.5%	6.1%	4.4%
High school graduate or GED	24.7%	30.5%	18.2%	22.7%	24.5%	28.3%	31.8%	18.7%
Some college or 2-year degree	29.6%	25.5%	30.3%	26.1%	27.5%	29.2%	32.6%	33.7%
4-year college graduate	17.4%	15.6%	21.5%	20.4%	15.9%	16.1%	14.6%	17.9%
More than 4-year college degree	20.9%	16.2%	26.7%	24.1%	25.8%	17.5%	13.0%	23.2%
Patient is of Hispanic or Latino origin or descent	4.5%	1.8%	7.0%	13.8%	2.5%	1.4%	1.8%	3.5%
Patient's race (one or more reported)								
White	88.7%	87.4%	94.2%	87.2%	90.7%	91.7%	75.6%	92.8%
Black or African American	4.7%	10.0%	1.5%	4.9%	5.6%	6.7%	4.1%	1.4%
Asian	2.0%	1.1%	1.7%	4.0%	1.9%	1.1%	0.9%	3.0%
Native Hawaiian or other Pacific Islander	0.4%	0.4%	0.4%	0.1%	0.2%	0.1%	0.8%	0.6%
American Indian or Alaskan Native	4.6%	2.6%	1.2%	0.3%	1.1%	0.8%	23.7%	1.8%
Other	2.4%	1.6%	3.4%	4.7%	2.0%	0.6%	1.4%	3.0%
Patient has health insurance coverage for medical care	93.6%	92.6%	95.6%	91.1%	97.1%	95.0%	88.6%	95.1%
Patient's source of health coverage (one or more reported)								
Current or former employer, union, or school	43.6%	38.6%	41.2%	50.9%	49.4%	47.5%	42.2%	36.9%
Directly from an insurance company or through a professional association	14.3%	15.5%	16.3%	9.7%	10.9%	11.2%	14.9%	20.0%
Parent or spouse/partner	18.0%	14.5%	18.0%	22.4%	22.5%	18.8%	14.2%	16.0%
Medicare	36.2%	39.6%	36.3%	28.8%	33.6%	33.7%	38.5%	42.1%
Medicaid	7.3%	11.2%	5.6%	5.6%	6.6%	5.0%	9.5%	8.3%
Military	3.6%	6.3%	4.9%	1.4%	2.4%	2.3%	3.7%	4.5%
Indian health service	1.2%	0.3%	0.1%	0.0%	0.0%	0.0%	8.4%	0.1%
Other	2.1%	2.4%	1.6%	1.8%	1.8%	2.2%	2.6%	2.4%
Patient has gone to provider for…								
Less than 3 years	27.2%	25.3%	30.2%	23.4%	20.8%	19.2%	37.4%	32.7%
At least 3 years but less than 5 years	14.9%	14.8%	16.3%	13.4%	15.0%	12.8%	15.8%	16.4%
5 years or more	57.9%	59.9%	53.5%	63.1%	64.2%	68.1%	46.9%	50.9%

	All regions	AR	CO	NJ	NY	OH/KY	OK	OR
Number of visits to provider in past year								
1 or 2	50.5%	40.0%	59.0%	53.2%	48.2%	48.8%	47.1%	54.4%
3 or 4	34.6%	36.1%	29.6%	35.7%	38.5%	37.5%	35.7%	30.6%
5 or more	14.9%	24.0%	11.4%	11.1%	13.3%	13.7%	17.2%	15.0%
Number of specialists seen by patient								
0 specialists	35.8%	40.4%	40.7%	33.9%	27.7%	32.6%	40.9%	35.1%
1-2 specialists	46.9%	43.7%	47.1%	43.5%	49.2%	50.1%	44.4%	49.0%
3 or more specialists	17.3%	15.9%	12.2%	22.7%	23.1%	17.3%	14.6%	15.9%
Patient's rating of overall health								
Excellent	12.2%	8.4%	18.5%	14.4%	12.8%	9.4%	8.9%	13.0%
Very good	35.4%	30.1%	39.3%	37.1%	41.4%	37.1%	28.2%	34.4%
Good	33.9%	35.1%	30.0%	30.9%	32.9%	37.6%	36.6%	33.7%
Fair	15.2%	19.8%	9.9%	16.4%	10.6%	12.9%	21.5%	15.4%
Poor	3.3%	6.6%	2.4%	1.2%	2.3%	2.9%	4.9%	3.5%
Patient's rating of mental/emotional health								
Excellent	27.4%	23.9%	30.8%	29.4%	31.0%	25.4%	24.6%	26.8%
Very good	34.9%	33.5%	36.6%	33.4%	37.0%	37.7%	31.4%	34.3%
Good	25.8%	26.1%	23.7%	27.8%	22.3%	25.2%	27.7%	27.0%
Fair	9.8%	13.0%	7.4%	7.2%	8.4%	9.5%	13.8%	9.6%
Poor	2.2%	3.5%	1.4%	2.2%	1.3%	2.2%	2.5%	2.3%
Patient can identify when medical care is necessary								
Very confident	56.1%	55.9%	57.8%	53.8%	57.8%	58.1%	54.4%	54.9%
Confident	34.9%	34.7%	34.9%	36.1%	34.4%	34.0%	34.5%	35.8%
Somewhat confident/Not at all confident	9.0%	9.4%	7.3%	10.1%	7.8%	7.9%	11.1%	9.3%
Patient brings a list of questions/concerns to provider visits…								
Always	23.1%	19.4%	27.7%	19.8%	24.7%	20.1%	20.7%	28.4%
Usually	28.6%	25.1%	30.0%	32.0%	27.2%	24.6%	28.1%	31.9%
Sometimes/Never	48.3%	55.5%	42.3%	48.2%	48.1%	55.3%	51.2%	39.7%
Patient will do just about anything to avoid going to provider								
Strongly disagree	40.6%	32.0%	38.7%	45.0%	48.5%	39.4%	36.4%	42.9%
Somewhat disagree	24.2%	23.8%	26.0%	26.6%	20.0%	24.3%	21.9%	25.7%
Somewhat agree/Strongly agree	35.3%	44.2%	35.3%	28.3%	31.5%	36.3%	41.7%	31.4%
Patient was worried or concerned about the cost of seeing a specialist	30.1%	30.2%	33.2%	23.3%	22.9%	35.8%	33.6%	31.0%
In the last two weeks, patient was bothered by feeling down, depressed, or hopeless…								
Not at all	72.5%	67.5%	76.1%	74.5%	77.2%	71.8%	68.7%	71.9%
Several days	18.5%	19.8%	18.6%	17.6%	15.9%	18.7%	19.4%	19.3%
More than half of the days/Nearly every day	9.0%	12.7%	5.3%	7.8%	6.9%	9.5%	12.0%	8.7%
Number of respondents	**40,139**	**5,023**	**6,571**	**4,819**	**5,829**	**6,048**	**5,114**	**6,735**

Source: CPC Patient Survey, administered between June and November 2013.

3.5. Implications for CPC's implementation and outcomes

As shown through the data presented in this chapter, CPC regions, practices, and patients on average varied substantially at baseline in a number of key characteristics. Given the wide variation in pre-CPC characteristics (along with differences in the level and quality of enhanced payments, data feedback, and TA provided to practices in each region), we expect that differences in both implementation and impacts across regions, types of practices, and types of patients may be substantial.

This chapter also shows that while CMS selected only about half the practices that had applied to CPC (and favored those that were meaningful users of EHRs and PCMHs), the practices nonetheless faced substantial opportunities to improve their functioning, based on their own self-reports and patient ratings of care.

Accounting for baseline characteristics and context in our impact analyses. Because we expect that CPC's impacts are likely to be different for different types of patients, practices, and regions, we will estimate the effects of the program and of particular program features on *subsets of patients* for whom CPC is likely to have especially large effects, such as chronically ill, dual-eligible, and other complex patients (Brown et al. 2012; Rich et al. 2012) and for populations that might be underserved, such as racial minorities.

We will also examine effects for different *types of practices*, such as those that were meaningful users of EHRs at baseline, had larger practices, had NCQA or state medical-home certification at baseline, were in urban locations, were in rural locations, were part of a multispecialty practice, and were part of a larger organization.

Finally, we will examine effects in *each region separately*, and in different *types of regions*. We will examine groups of regions defined by baseline contextual features, such as whether the region has many areas in which there is medical overuse or underuse based on the Dartmouth Atlas. We will also examine outcomes based on implementation features at the region level, such as the number of CPC learning activities offered, the number of practices that received one-on-one TA from RLF, and the usefulness of these activities and supports as reported by practices.

In addition to studying the CPC impacts separately for different subgroups of patients, practices, and regions, we will also examine how baseline characteristics and context *combin*e to affect success in both implementation and outcomes of CPC. Given that many baseline characteristics and features are likely to be interrelated, we will employ statistical methods to allow us to understand multiple associations between these characteristics and the outcomes of interest. Our design report (Peikes et al. 2014) describes how we will identify combinations of characteristics that may account for differences across regions, practices, and patients in CPC's effects.

CHAPTER 4. WHAT PAYMENTS, DATA FEEDBACK, AND LEARNING DID CMS AND OTHER PAYERS PROVIDE TO CPC PRACTICES?

Through CPC's unique public-private partnership, CMS and participating payers provide CPC practices with payments, data feedback, and learning supports. The intensity of these supports varies by region and practice, but as a whole, they represent a robust intervention. In this chapter, we describe the level of support that CMS and other payers provided to practices in PY2013, discuss relevant barriers and facilitators to providing those supports, and highlight practice perspectives on the usefulness of supports they receive.

4.1. Key takeaways on CPC supports to practices

- In PY2013, CPC practices received sizable enhanced payments from CMS and other participating payers: total CPC care management fees for the median practice were about $227,849 ($70,045 per clinician), which is equivalent to 19 percent of 2012 total practice revenue for the median practice. This translates to $137 annually per attributed patient, or $57 per active patient.
- Medicare care management fees for patients attributed to CPC practices are typically higher than fees paid by other payers, which reflects in part the greater needs of Medicare patients. Medicare accounted for about 26 percent of the attributed lives but 64 percent of the enhanced payments.
- Practices used CPC payments to support transformation and, on average, invested 24 percent of their budget on care managers, 18 percent on proactive population management, and 14 percent on health information technology (HIT) resources—the three largest areas. Our selected "deep-dive" practices typically viewed CPC payments as a significant increase in practice revenue.
- Some practices expressed early concerns about their ability to sustain practice change when Medicare's enhanced payments decrease from an average PMPM of $20 to $15 in PY2015 (when the potential for shared savings begins) and after the initiative ends.
- Practices increasingly downloaded Medicare FFS quarterly data feedback over the first year. However, 19 percent of participating practices did not download the January 2014 reports, and many practices still need help interpreting and using them. CMS and their contractors are actively working to improve the Medicare FFS reports and help practices use them. In addition, practices receive data feedback from about two-thirds of non-CMS payers participating in CPC.
- While payers report that progress on aligning data feedback across payers for practices has been frustratingly slow, they continue to work toward the goal of aggregating data across payers to produce reports that cover all patients, or producing separate but uniform (or standardized) reports by payers.
- CMS and its contractors offered CPC practices a wide range of learning supports in PY2013, including all-day meetings, web-based sessions, one-on-one facilitation, and a project website. In addition, some practices receive supplemental support from payers or other stakeholders in their region through other programs. (In addition, some payers provide support to non-CPC practices.)

- The amount and type of CPC learning activities varied by region. Colorado and Oklahoma appear to have provided the most intense learning support by delivering more tailored, in-person assistance and more supplemental supports, including care manager trainings and affinity or user groups. Variation in the amount of one-on-one assistance may be the result of a variety of factors, including differences in the extent to which practices proactively seek this assistance, how willing the systems in which practices operate are to have RLF support the practice, the degree to which payers other than CMS may be supporting the RLF's work (financially or otherwise), and the extent to which RLF can leverage in-kind resources from other projects or initiatives.
- Deep-dive practices reported a strong preference for one-on-one, in-person contact with RLF over other learning activities. Staff in deep-dive practices especially appreciated faculty input on (1) specific information about best practices gleaned from successes of other practices in the initiative; and (2) advice customized to fit their job roles, the size or type of ownership of the practice they work in, and the EHR system and other HIT used in their practice.

4.2. Payments to CPC practices

CMS and other payers are making substantial enhanced payments to CPC practices for investment in primary care transformation, in addition to their usual payments for services. Practices will receive these payments over the course of the four-year initiative to allow them to "invest in the infrastructure, staffing, education, and training necessary for delivery of the five comprehensive primary care functions."[26] Practices may also share in any savings in total health care costs incurred by CMS and some other payers in the second, third, and fourth years of the initiative, provided there are savings.

A. Payers discussed attribution methodologies with practices to help clarify initial confusion over attribution lists

Each quarter, CPC practices receive lists of attributed patients from Medicare and other payers. Rather than develop an attribution methodology specifically for CPC, most payers applied an algorithm already used for their existing PCMH or care coordination programs. Medicare FFS and non-CMS payers with open access products (for example, commercial indemnity, PPO plans, and Medicaid FFS) use claims data to attribute members to practices. Non-CMS payers often use a methodology similar to that of Medicare FFS, with some variation in look-back periods and use of evaluation and management codes (see Table B.1 in Appendix B for a comparison of claims-based attribution methodologies).

In contrast, most CPC payers attribute members in managed products (for example, commercial HMO, Medicaid managed care, and Medicare Advantage) to the primary care provider (PCP) they selected as part of their regular insurance enrollment. If members did not select a PCP, some payers (most commonly for their Medicaid managed care line of business) assign beneficiaries a PCP, and the patient is attributed to that provider for CPC. Plans that do not assign a PCP to members use claims experience to attribute beneficiaries if they did not select a provider.

[26] MOUs between CMMI and each of the CPC participating payers.

Several deep-dive practices indicated that fewer patients were attributed to their practice than initially anticipated, which resulted in lower-than-expected CPC revenues for investing in primary care redesign. In several cases, practice leaders initially based patient panel estimates on practice-level data on how many patients from a specific payer had *visited* the practice during a given period. Multiple payers indicated that practices called them during the first quarter of PY2013 to discuss their concerns with the attribution lists. To help alleviate these concerns, payers (1) shared data with practices showing that patients whom they had seen in the past had visited PCPs in other practices either more frequently or more recently; and (2) explained that many self-insured employers were not participating in CPC, so their patients were not included in the attribution lists. Payers noted a steep dropoff in attribution questions and complaints from practices a few months after they first circulated attribution lists.

B. CPC provided substantial funding to participating practices for investing in primary care transformation

According to data from Medicare and information on other payers as reported by participating practices, CPC's enhanced payments to practices totaled $141.3 million through December 2013, with payments ranging from $15.1 million in Oklahoma to $29.2 million in Ohio/Kentucky (Figure 4.1).

CPC provided substantial financial support to practices in PY2013

The median practice reported receiving $227,849 in CPC enhanced payments across all payers in PY2013, which is equivalent to about 19 percent of their total practice revenue in 2012.

CPC enhanced payments per clinician were $70,045.

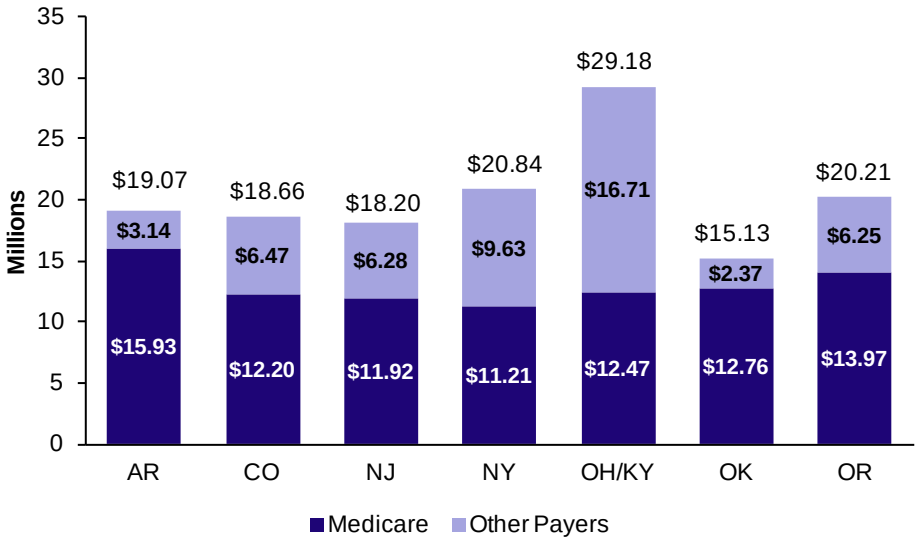
Practices indicated that they received a total of $90.5 million in CPC enhanced payments for Medicare FFS beneficiaries, accounting for 64 percent of total CPC payments.

These payments represent a substantial infusion of revenue. CPC payments to the median practice were about $227,849 ($70,045 per clinician) in PY2013 (Figure 4.2), which is equivalent to 19 percent of practices' total revenues in 2012. The 25th and 75th percentiles of annual CPC funding per clinician were approximately $45,570 and $100,780. The median funding was $137 per attributed patient and, when averaged across all patients (whether attributed or not) $57 per active patient.

Median CPC payments per practice ranged from $175,764 in Oklahoma to $377,082 in Ohio/Kentucky; median payments per clinician ranged from about $35,000 in Oregon to $113,000 in Ohio/Kentucky (Figure 4.2).

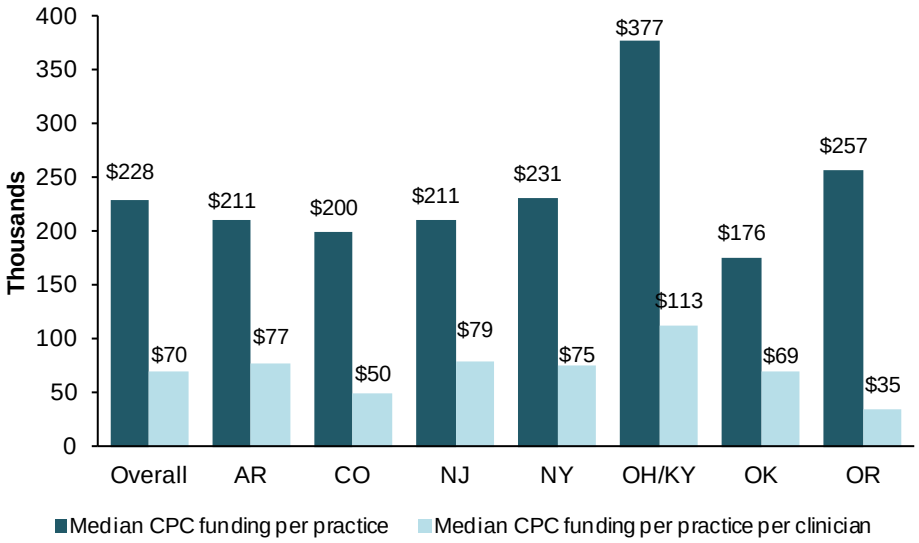
CMS paid practices $90.5 million in CPC enhanced payments for Medicare FFS patients in PY2013, comprising 64 percent of total CPC funds to practices (Figure 4.3). As part of CPC, CMS currently pays participating practices an average of $20 per member per month (PMPM) for each attributed Medicare FFS beneficiary—in addition to FFS payments for regular services and CPC enhanced payments for Medicaid FFS beneficiaries in five regions. CMS risk-adjusts the PMPM payments for Medicare FFS beneficiaries; by design, half the payments in each region are for attributed beneficiaries in the highest HCC risk quartile (Figure 4.4). With the advent of shared savings in PY2015, CMS plans to decrease the average care management fee to $15 PMPM.

Figure 4.1. Total CPC payments from Medicare and other payers by region through December 31, 2013



Source: Medicare payments for CPC are based on information from Telligen/ARC on total Medicare payouts to participating practices. CPC payments from other participating payers are based on Program Year 2013 budget reconciliation data reported by CPC practices in April 2014.

Figure 4.2. Median CPC funding per practice and per clinician overall and by region through December 31, 2013



Source: Medicare payments for CPC are based on information from Telligen/ARC on total Medicare payouts to participating practices. CPC payments from other participating payers are based on Program Year 2013 budget reconciliation data reported by CPC practices in April 2014.

Figure 4.3. Medicare FFS accounts for a large share of total CPC funding in PY2013

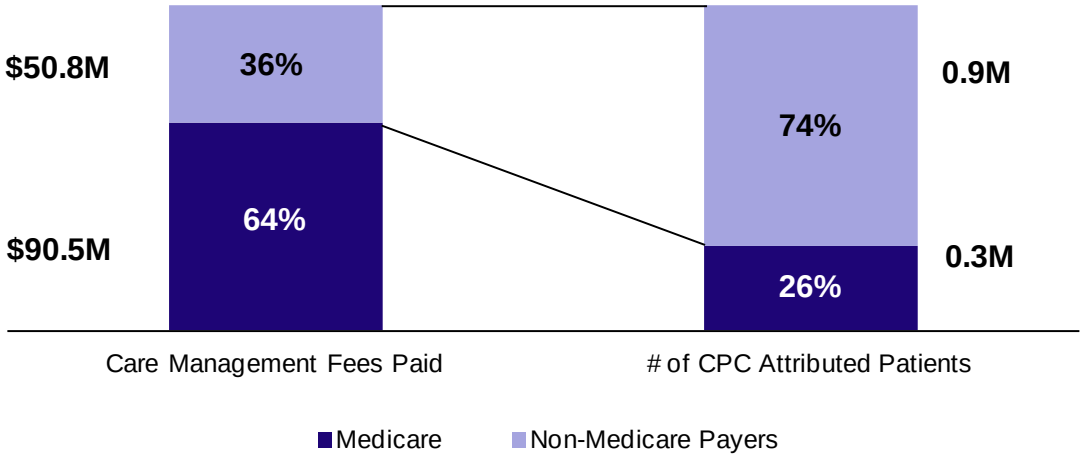
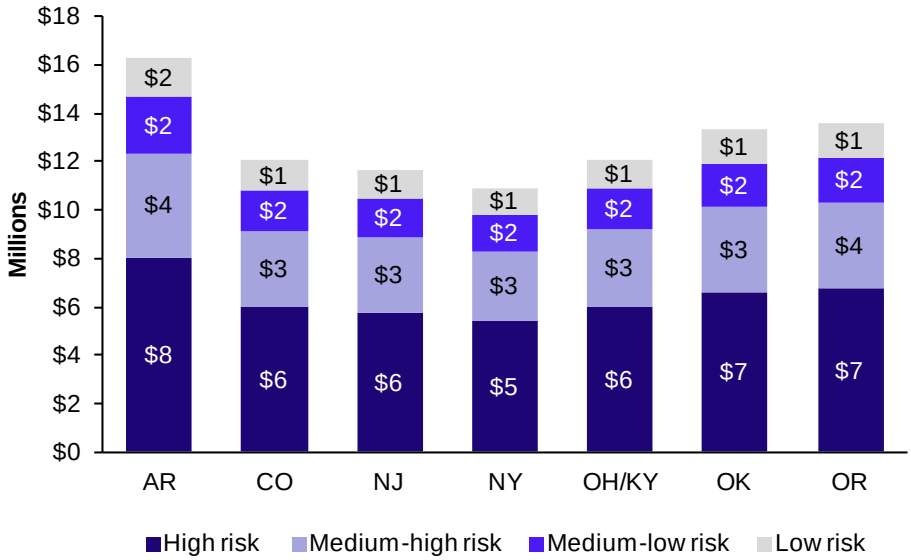


Figure 4.4. Total CPC payments from Medicare for attributed Medicare FFS patients by region and risk quartile through December 31, 2013



Source: ARC, subcontractor to the implementation contractor Telligen, provided data on the payment risk quartile for each beneficiary. We multiplied the payment for that risk quartile by the number of beneficiary-months in that risk quartile to determine total payments. The total of the calculated Medicare payments differs slightly from the totals reported by practices in their PY2013 budget reconciliation data.

Notes: For payment purposes, CMS placed beneficiaries into risk quartiles based on their HCC scores. Beneficiaries dually eligible for Medicaid and ESRD were automatically placed into the highest risk quartile.

In PY2013, Medicare FFS CPC payments totaled $90.5 million across the seven regions. Cumulative payments ranged from $11.2 million in New York to $15.9 million in Arkansas. Providers in Arkansas and Oklahoma started receiving payments in October 2012, one month ahead of providers in other regions, and the Arkansas and Oregon regions have more attributed Medicare FFS patients than other regions, which contributes to their higher total Medicare FFS payments for CPC.

Non-CMS payers paid practices $50.8 million in CPC enhanced payments, or about 36 percent of total CPC funds. [27] According to data reported by practices, total payments from non-CMS payers ranged from $2.4 million in Oklahoma to $16.7 million in Ohio/Kentucky. The percentage of total CPC payments contributed by non-CMS payers varies substantially, from 16 percent in Oklahoma to 57 percent in Ohio/Kentucky. Variation in the total non-CMS payments can be explained by differences in the number of participating payers in a region, their market penetration, and their PMPM payment levels.

Enhanced payments from non-CMS payers

Other payers' enhanced payments to practices totaled $50.8 million.

PMPM payments for non-CPC payers ranged from $2 to $20.

Reflecting their sicker patients, Medicare Advantage plans paid the highest PMPMs among the non-CMS payers.

All but one of the non-CMS payers use PMPM payments for their enhanced CPC payments to practices; rates vary considerably by line of business (Table 4.1). [28] Reflecting an older population with substantially higher expected health needs, Medicare Advantage plans pay the highest PMPMs of the non-CMS payers—often about three times the PMPM paid for commercial members, and three to five times the PMPM paid for Medicaid beneficiaries. However, Medicaid plans covering special populations (for example, aged, blind, and disabled beneficiaries) make PMPM contributions on a par with Medicare Advantage levels.

Table 4.1. Range of participating payers' PMPM payments

Payer type	PMPM range in year 1	Most common PMPM in year 1
Medicare FFS	$8-$40	One-fourth of practices in each region receive each of the following payment levels: $8/$11/$21/$40
Medicare Advantage	$4-$20	$15
Commercial, third-party administrator, administrative services only	$2-$8	$5
Medicaid Managed Care	$2.52-$15	$3, $5
Medicaid FFS	$3-$15	$3, $4

Source: Payer provided pre-interview worksheets, MOUs, and payer interviews.

Generally, non-CMS PMPM payments are lower than Medicare FFS payments. Many payers indicated that their lower PMPM payments reflect the lower risk profile of their patients and indicated that the aggregate PMPM across all payers was substantial enough to allow practices to build infrastructure to transform care delivery. Still, some deep-dive practices were disappointed by non-CMS enhanced payment rates and, as a result, a few practices chose not to contract with some payers for CPC.

Noteworthy findings on non-CMS payers' PMPM payments include:

- National payers participating in multiple CPC regions often standardize PMPM payments across regions.

[27] We include CPC enhanced payments for attributed Medicaid FFS patients here, even though CMS is paying for all or most of these payments.

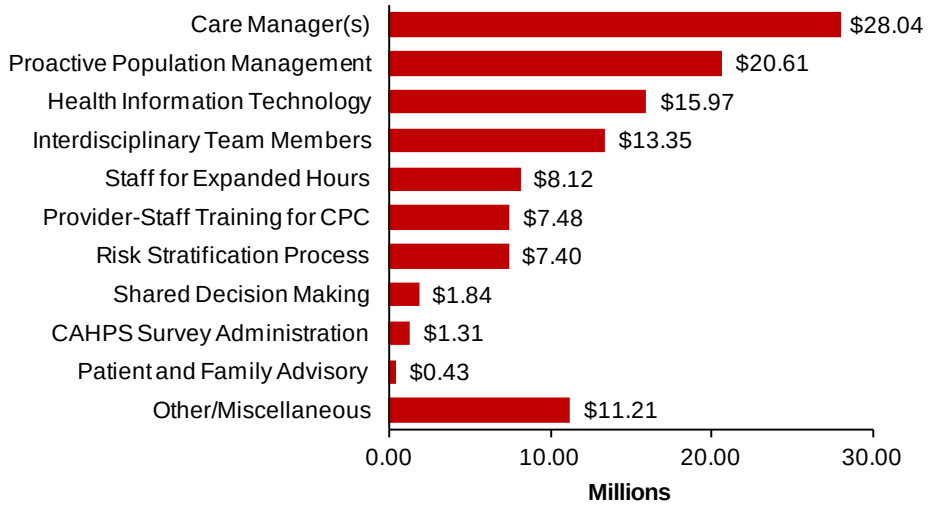
[28] One payer uses an at-risk capitation model.

- As of summer 2013, self-insured employers participating in CPC had the same PMPM contribution levels used by their third-party administrator for their commercial line of business.
- Most non-CMS payers are not risk-adjusting the enhanced payments they make to practices. Only 9 of the 29 distinct payers participating at the end of PY2013 risk-adjust based on patient health status, although others vary their payments by line of business. Payers who risk-adjust use a variety of methodologies, including the Verisk's DxCG system, the HCC model, and their own methods. Payers not using risk adjustment are split among those who cite complexity and data limitations as barriers to such adjustment, and those who question the appropriateness of risk adjustment in the context of practice transformation.
- Most non-CMS payers are still deciding whether they will reduce PMPM payments in later years of the initiative and, if so, by how much. Payers cited two main reasons for reducing PMPM payments: (1) the front-loaded nature of practice investments in infrastructure and other transformation activities, and (2) the opportunity for practices to take part in shared savings in PY2015, reflecting PY2014 performance.

C. Practices invested the highest proportion of CPC revenues in care managers, proactive population management, and HIT

Practices reported spending the majority of CPC funding to cover new staff or to reallocate existing staff time to provide expanded services (Figure 4.5). CPC practices reported spending the most on care managers (nearly 25 percent of total CPC payments) and also investing heavily to offer proactive population management, interdisciplinary team care teams, and expanded hours. HIT was also a large reported expense for practices, accounting for 14 percent of total CPC funds.

Figure 4.5. How CPC practices reported spending CPC payments during PY2013



Source: PY2013 budget reconciliation data reported by CPC practices in April 2014.

Deep-dive practices typically viewed CPC payments as a significant increase to practice revenue. Physician-owners, practice administrators, or, in some larger practices or practice systems, organizational executives were responsible for deciding how to invest CPC funds. Practices reported using the largest percentage of CPC revenue on care management and

coordination services for higher-risk patients and on HIT, including improving EHR capabilities. For example, one of the deep-dive practices hired four new care managers, updated HIT software, and hired a data analyst to support new CPC requirements and work. As a leader in the practice put it, "None of this would have happened without dollars and cents from government and private insurers."

> "It's a deep concern of mine. . . . There's a lot of money on the front end of this particular program. . . . You get the infrastructure that you need . . . but in four, five years . . . the technology is obsolete, so you're looking at investment again by that time."
>
> *—CPC provider*

Practices expressed early concerns about sustaining investments when Medicare FFS (and perhaps other payers') PMPM payments decrease in PY2015 and stop when the initiative ends. As noted above, many practices used CPC payments to hire new staff or purchase new equipment. Some deep-dive practices are concerned that when CPC enhanced payments decrease (and eventually stop), they will be unable to update new HIT systems or will need to fire newly hired staff. Some practices were less concerned about sustainability and reported that they were using CPC funds for infrastructure improvements that would have long-term usefulness, such as acquiring a risk stratification tool.

D. CMS and most other payers started planning for shared savings

CMS released their plans for shared savings at the end of program year 2013; stakeholders expressed some concerns. Starting in the third program year (i.e., calendar year 2015), practices may share in savings in total health care costs incurred by CMS and other payers. Each payer will use its own approach to sharing savings. CMS released its shared savings methodology for Medicare FFS at the end of PY2013, providing an overview to participating practices and payers during webinars held in November and December 2013. The core components of CMS's CPC methodology are based on the Medicare Accountable Care Organization shared savings methodology (see Table 4.2 and text box below). CMS released additional details on its methodology in fall 2014.

Table 4.2. CMS shared savings methodology: percentage of savings shared with CPC practices

Net savings achieved	Proportion of savings shared with region
1.0%–2.3% above Minimum Savings Rate (MSR)	10% of net savings above the MSR
2.3%–3.5% above MSR	30% of net savings above the MSR
3.5% or higher above MSR	50% of net savings above projected expenditures

Source: CMS Shared Savings Methodology

Note: MSR represents the point at which the existence of net savings is considered to be statistically reliable.

Practices and payers raised some concerns about the CMS shared savings approach during CMS office hour sessions held with practices after the webinars and in monthly meetings with payers and other stakeholders. For example, some payers in Arkansas are concerned that the quality thresholds practices must meet to receive savings are too low. In Oklahoma, payers are concerned that in system-owned practices, shared savings payments may not trickle down from the health-system level to individual practices. In addition, practice representatives in New York expressed frustration that savings are calculated at the region level (information that was included in the practice solicitation for CPC), yet practice leaders interested in mentoring others do not have a way to identify and help struggling practices. (RLF, however, do have access to this information, and make efforts to connect practices accordingly.) Moreover, some practices are concerned that

shared shavings might not materialize and that they will be unable to maintain practice investments; other practices are less concerned.

Plans for CPC shared savings

For PY2014, in regions that save above the minimal savings rate, CMS will share savings for attributed Medicare FFS beneficiaries with practices that meet quality thresholds on CAHPS and claims-based measures and report CQM quality measures. For PY2015, CMS will phase the CQM measures into performance measurement.

CMS decided that Medicaid will not share savings.

Other payers are working on their approaches, often guided by past approaches or CMS's approach.

Despite the possibility of shared savings, many practices do not anticipate receiving shared savings, and some are concerned that they will be unable to maintain practice changes if savings do not materialize.

Other participating payers are drawing on approaches they used for prior programs, CMS's CPC approach, or both as the foundation for their shared savings approaches. All non-CMS payers interviewed plan to share savings with practices, except three state Medicaid FFS programs and one Medicaid managed care plan.[29] At the time of our site visits in summer and fall 2013, most other payers had started to think through their plans for shared savings.[30] Thirteen payers had developed or nearly developed their plans, and an additional 13 were actively considering their options. Only 6 had not yet started the planning process.

CMS's approach to shared savings for attributed Medicare FFS beneficiaries

- **Calculating savings at the regional level.** Savings are calculated at the CPC region level, as opposed to the practice level, to ensure reliable expenditure estimates and to encourage practices within each region to collaborate.
- **Determining baseline expenditures at the regional level.** CMS will use historic claims experience to determine baseline expenditures for the region. They will include all Medicare Part A and Part B expenditures with the exception of Disproportionate Share Hospital Payments and Indirect Medical Education payments. To account for demographic differences, CMS will analyze beneficiaries in separate entitlement categories. So that more savings opportunities are generated, outliers will not be excluded from baseline expenditure calculations. CMS will not rebase expenditures over time but rather will use the historical claims experience as the base throughout the CPC initiative.
- **Estimating savings.** The baseline expenditures will be trended forward to determine the projected expenditures for 2014, 2015, and 2016. Projected expenditures will be compared with actual expenditures to determine net savings. Actual expenditures will include the PMPM payments made for CPC, in addition to other Medicare Part A and B expenditures. CMS will share savings with participating practices that qualify only if the net difference between projected and actual expenditures exceeds a minimum savings rate (MSR), which represents the point at which savings are considered reliable. The amount CMS shares with practices depends on the level of savings in the region.
- **Distributing savings across practices within a region.** For a region that has savings, practices that meet the eligibility criteria for shared savings will receive an amount that is determined solely by the number and acuity of attributed Medicare FFS beneficiaries. Eligible practices will *not* compete with each other to earn their portion of the region's savings.

[29] In their MOUs with CMS, most payers agreed to participate in shared savings. CMS did not require that Medicaid FFS plans participate in shared savings and excused one Medicaid managed care plan from this requirement. The Medicaid managed care plan is still considering the option of shared savings, depending on the structure of larger payment reforms in the state.

[30] One payer did not participate in an interview, and their plans for shared savings are unknown.

In general, payers with experience implementing shared savings programs—particularly those in New York and New Jersey—appear to be farther along in their planning than payers without such experience. About half of participating payers planning to share savings are basing their methodology for CPC on a model developed for prior or concurrent programs, and some aspects of these approaches differ from CMS's methodology. For example, several payers suggested at the time of our site visits that they will calculate savings at the practice or health system level as opposed to the regional level. Some national plans were planning to use the same shared savings approaches across regions, whereas others indicated that they might adapt their approach to fit the local context. For example, one plan indicated that the procedures for pooling practices might differ across regions.

Still others are new to shared savings and are thinking through shared savings approaches for the first time. Many of the payers new to the concept, particularly in Arkansas and Oklahoma, expressed interest in modeling their approaches on CMS's methodology. Following its release, payers in some regions are actively discussing ways to align shared savings methodologies so they are easier for practices to understand and provide clear incentives. Some payers in Arkansas and Oregon, for example, are considering using the same quality threshold calculations as CMS.

A few large regional payers using approaches from prior programs for CPC have already included a description of their approaches in their agreements with practices. Other payers, particularly in those regions farther along in their thinking on shared savings, may start to share more detail on their approaches over the coming months. In future reports, we will track (1) the release and details of regional payer shared savings approaches; (2) the alignment among the approaches used by CMS and other payers; and (3) practices' reactions to the shared savings component of the demonstration.

4.3. Data feedback provided to CPC practices

Data feedback provided to CPC practices

CMS started providing data feedback reports to CPC practices in April 2013.

Practices increased downloads of Medicare feedback reports and data files over time, but not all are downloading them, and those that do still need help interpreting and using the reports.

At least two-thirds of other payers provided practices with feedback reports in 2013.

In addition to payment, CPC practices receive regular data feedback from CMS (reports with practice-level metrics and patient-level data files) and some other payers. Practices can use the feedback reports and data files (1) to understand how their practice compares to other practices, (2) to identify the cost drivers of their patients, and (3) to identify patients that are high cost or heavy users of hospital and emergency room services, along with their diagnoses and which hospitals they tend to use. The feedback reports and data files are meant to fit into the larger universe of data available to practices (including their own EHR data).

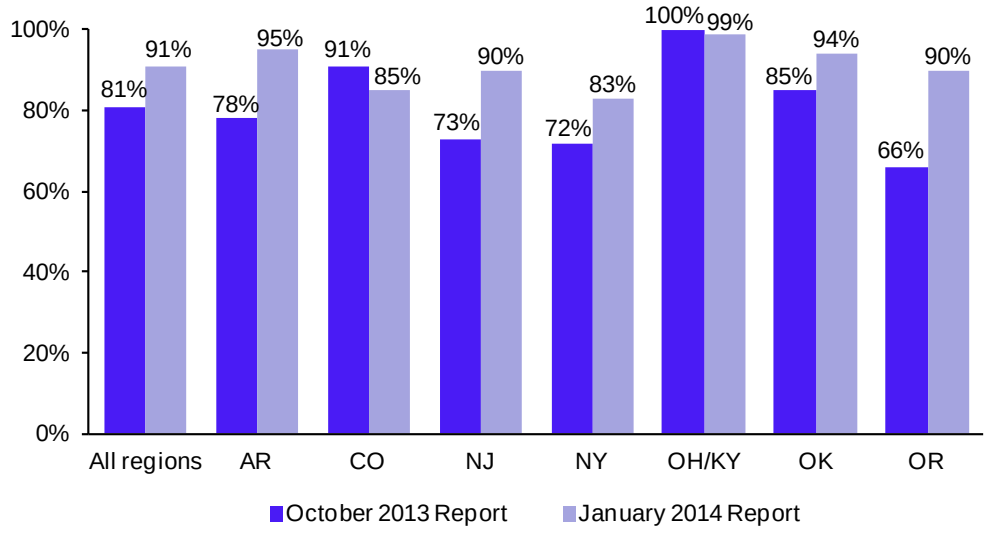
A. Practices increased their use of Medicare FFS reports and data files over time, but there is room for improvement

In April 2013, CMS released the first CPC quarterly feedback reports for practices (covering June-November 2012). The Medicare FFS feedback provides practices both practice-level metrics

and patient-level data files on attributed Medicare FFS patients (see text box).[31] The CPC data feedback reports represent one of the first times CMS has shared data feedback with practices; CMS is looking for opportunities to improve the reports and help practices use them.[32]

Practices are increasingly downloading the Medicare FFS quarterly feedback reports and data files. Based on available data, about 40 percent of practices downloaded the April and July 2013 quarterly reports, respectively, which suggests relatively low levels of initial use. (However, data on downloads of these first two reports were not as accurate and complete as data available beginning with the October 2013 report, and therefore may undercount use.) The October 2013 report, in contrast, has been downloaded by more than 80 percent of practices, as of mid-May 2014 (Figure 4.6). Continuing the upward trend, more than 90 percent of practices have downloaded the January 2014 report.

Figure 4.6. Percentage of practices that have ever downloaded the October 2013 and January 2014 Medicare FFS practice feedback reports



Source: CPC web application use data, provided by Telligen.

Notes: We do not report data on downloads of the first and second quarterly practice feedback reports, because those data are not as accurate as the data available beginning with the third quarterly report. Percentages of practices accessing October 2013 and January 2014 reports are based on the number of practices participating in CPC as of the end of the third quarter of 2013 and the end of the fourth quarter of 2014, respectively. Note that the information presented in the figure reflects practice downloads of these reports at any point between their release and May 15, 2014.

[31] All attributed beneficiaries are offered the option to actively decline to have their patient-level information shared with the practice with whom they are attributed. In addition, the patient-level data exclude information about service use for sensitive conditions (mental health and HIV treatment).

[32] CMS began sharing data feedback with practices participating in two initiatives that began shortly before CPC: the Multi-Payer Advance Primary Care Practice demonstration and the Federally Qualified Health Center Advanced Primary Care Practice demonstration.

CMS feedback at the practice and patient level for CPC

The CMS quarterly practice feedback reports provide practice-level information on:

- Characteristics of attributed Medicare FFS patients and how these patients compare to those of other CPC practices
- Risk-adjusted Medicare expenditures PMPM, including average total expenditures and expenditures by type of service:
  - Compared to those of other CPC practices in the region, overall and for high-risk patients
  - Compared over time to their own experience and to that of other CPC practices in the same region with a similar risk profile
- The practice's use of Medicare services and selected outcomes, including all-cause hospitalizations, hospitalizations for ambulatory care sensitive conditions, overall and outpatient emergency department visits, and unplanned 30-day hospital readmissions
  - Compared to those of other CPC practices in the region and practices with a similar risk profile, overall and for high-risk patients
  - Compared over time to their own experience and to that of other CPC practices in the region with a similar risk profile
- Responses from surveys of CPC practices about primary care functioning and practice demographics; of patients about their experience with care; and of clinicians and staff about their experiences delivering care

Patient-level data files accompanying the feedback reports provide the following patient-level information for beneficiaries attributed to each practice in the current quarter:

- Beneficiary identifiers (patient identification number, last name, first name, age, gender, Medicaid enrollment, or dual eligibility status)
- CPC HCC-risk category
- Total Medicare expenditures and percentage breakdown by service category
- Hospital admissions (including for ambulatory care sensitive conditions)
- Unplanned 30-day readmissions
- Emergency department visits

Several factors could explain the upward trend in practice downloads of Medicare FFS feedback reports. First, CMS fully transitioned from releasing the reports on Quality Net to releasing them on the CPC Web Application in October 2013. RLF, who provide TA to practices, and a number of deep-dive practices reported having difficulty accessing the Quality Net site or downloading the reports from it, which likely contributed to the low downloads of the April and July reports.

Second, CMS and Mathematica, the contractor that produces the Medicare FFS reports and data files, have revised them based on practice input, potentially increasing their usefulness over time. Deep-dive practices and other practices interviewed specifically about the feedback reports indicated that the initial reports were long and overwhelming and that the tables and text were sometimes unclear. In response, Mathematica shortened the report, revised the narrative, tables, and graphic displays for clarity, and included more data in the patient-level data files. Mathematica plans to continue to gather feedback on the reports during PY2014 and will make improvements to them when possible.

Several deep-dive practices are using Medicare FFS feedback reports to improve quality. While most deep-dive practices had not used the Medicare FFS feedback, several reported that they enjoyed seeing how they compare to other practices on use and costs measures and are using feedback reports to focus their quality improvement efforts. For example, one practice identified that they had high hospital readmission rates and have since implemented a process for tracking hospital follow-up care after discharge. Other practices are using the patient-level data to

help guide care. For example, one practice is using the data files to identify patients with emergency room visits and is following up accordingly. Another practice is following up with patients ranked as high-risk to help ensure that they receive needed services.

B. Most non-CMS payers are providing practices feedback reports; content and format of reports varies widely across payers

As part of their MOUs with CMS, payers agreed to provide participating practices with data on use and costs for attributed patients. At the time of our site visits in summer and early fall 2013, about two-thirds of the 29 unique payers were providing some form of feedback to practices. Often, large regional payers are providing the most comprehensive reports in a given region, and these payers commonly have TA teams that help practices understand and use the reports.

Feedback reports from non-CMS payers

At the time of our site visits in summer/fall 2013, half of non-CMS payers were providing practice-level reports with cost or quality indicators.

Payers designed most of these reports for prior programs and generally had not changed them for CPC.

About half of payers were providing practice-level cost and use data to participating practices, with about half of these also including quality measures. In some of these reports, practice performance was compared with regional or national benchmarks. A few deep-dive practices indicated that some non-CMS payer reports were at the health system level (as opposed to the practice level) and were therefore less useful than the Medicare FFS reports.

Several payers provided practices "hot-spotter" or "care gap" lists that identified patients with missing preventive services, recent or frequent emergency room visits or inpatient admissions, high pharmacy costs, or referrals for case management services. Several deep-dive practices reported they actively use these lists to identify patients that need preventive services or follow-up visits.

Most payers that provided feedback reports said they provided feedback to practices prior to CPC and had not adjusted their reports to align with quality and use measures selected by the region to track for CPC. For example, most national payers providing cost or quality data indicated that they provide CPC practices with the same standardized reports that practices receive in all their markets. Some payers indicated they were not creating CPC-specific practice-level reports, because they anticipated that data aggregation would move forward in their region and later support a comprehensive all-payer report to each practice. Since our site visits, payers in Oregon decided to pursue, and payers in Arkansas are pursuing, aligned individual payer reports (that is, each payer would continue to produce its own report, but all payers would report similar measures in a similar format), given delays in and concerns about data aggregation (such as cost, sustainability, data security, vendor selection, and other issues).

In general, payers had little information on the extent to which practices use payers' data feedback. A few payers express concern that at least some practices do not have staff with the time or background to thoroughly study the reports and use the information. However, a number of payers suggested that practices find the hot-spotter and care gap lists—which provide information at the patient level (the most actionable of the data provided)—and often have a staff person "work the list" to reduce gaps in care or offer care management services to patients who are high utilizers of care.

C. Payers in most regions continue to work toward report alignment or data aggregation, but progress is difficult

Data aggregation has been a challenging aspect of CPC to date, as discussed in detail below. Payers have mixed perspectives on its value and some regions are opting for aligning individual payer reports rather than aggregating data into a single report.

CMS and the other payers had also reached agreement in their MOU before CPC began to develop a "common approach" to providing data feedback to practices. One of the stated goals in the MOU is improving the flow of cost and utilization data to primary care practices to support them in their efforts to improve care outcomes through care coordination and quality improvement. Section III of the MOU described a collaboration by which each regional group of payers—with CMS's input—would produce a written plan "that outlines how participating practices will transition to a common approach for sharing data with participating primary care practices." The goal in the MOU was to identify a core set of measures, develop an approach for sharing aligned feedback, and start sharing that feedback with practices by January 1, 2014.

Developing a common approach to data feedback in CPC

Most regions made progress toward developing a "common approach" to data feedback.

Payers in regions with stronger existing capacity for data sharing expressed greater enthusiasm for achieving CPC data aggregation.

Payers are concerned about the cost of and governance structure for data aggregation.

After execution of the MOU, payers began to discuss how they would transition to this common approach. Payers discussed different approaches, ranging from aligning the content and timing of data feedback to the aggregation of claims and clinical data across payers, so that practices could track common metrics across most of their patient population rather than analyze different metrics separately for patients of different payers. Initially, several regions were moving forward with regional Requests for Proposals (RFPs) for data aggregation. Then, in early 2013, CMS announced that Telligen would release a national RFP for regions that had not yet released a regional RFP.[33] (See Figure 4.7 for a timeline of data aggregation activities.) In summer 2013, however, CMS announced that Telligen would no longer be coordinating CMS's involvement in data aggregation. At this point, CMS was concerned about its ability to participate in data aggregation, and felt that in order to overcome the legal and contracting challenges necessary to participate, as well as to allow data aggregation to be sustainable, regions had to have local leadership and governance structures in place to manage data aggregation efforts. CMS would then join these regional collaboratives as another participating payer. This change in CMS's role from leader to participant was perceived as a major shift and took many payers by surprise. In all regions, changes in the procurement process, contracting challenges, or both delayed the data aggregation process, and no regions were sharing aligned feedback with CPC practices at the start of 2014. Still, only payers in New Jersey have decided not to pursue a "common approach" to data feedback. Other regions made progress in PY2013:

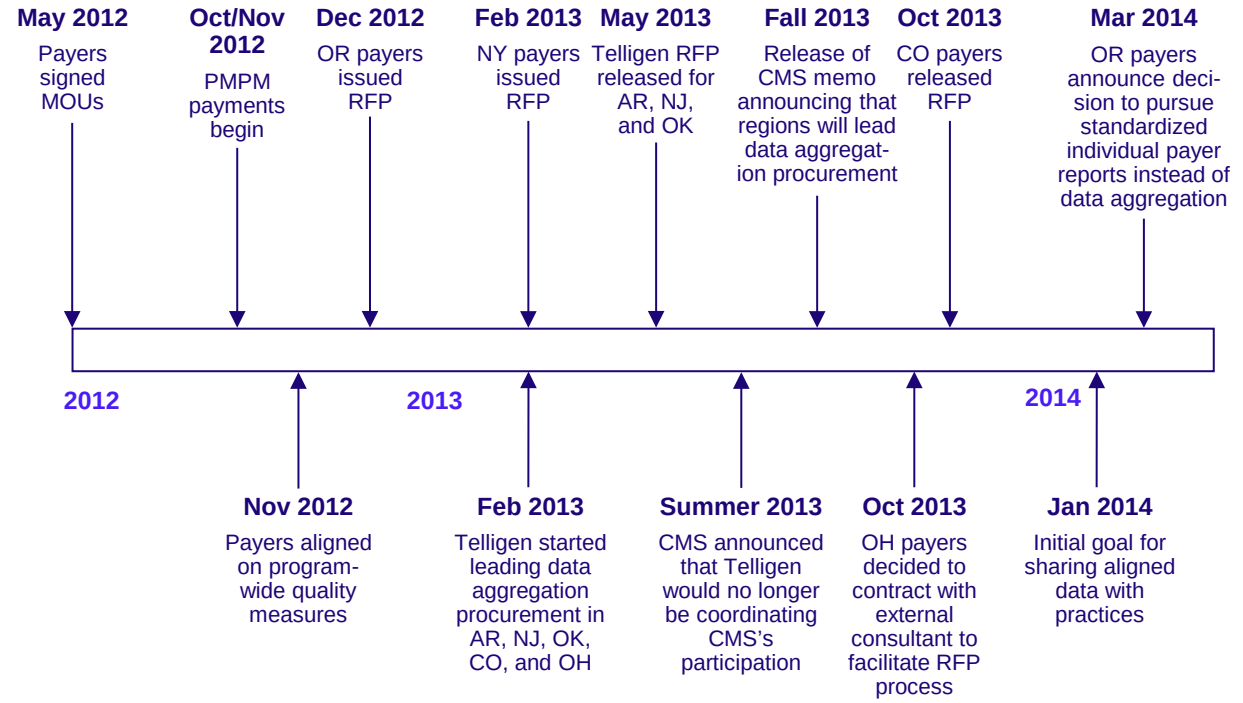
[33] Telligen released national RFPs for data aggregation in the following regions: Arkansas, New Jersey, and Oklahoma.

- Each region agreed on an aligned set of quality measures by November 2012.
- Oregon, New York, and Colorado released regional RFPs for data aggregation, and Ohio/Kentucky was developing an RFP.[34]
- Payers in Arkansas and Oregon started to discuss aligning individual payer feedback reports instead of aggregating data, or while they contract for data aggregation.
- Oklahoma payers are considering contracting with MyHealth, Tulsa's local HIE, for data aggregation.

Some payers view data aggregation as valuable; others are less enthusiastic about it, especially given the cost. Some payers, most commonly those in Oregon, Oklahoma, and Ohio/Kentucky, indicated that data aggregation is important to help practices transform. Payers reported that reviewing multiple reports from different payers, with each focused on different measures, is burdensome for practices. Moreover, a few payers indicated that aggregating data across payers increases measure reliability because measures are calculated for a larger pool of patients.

> "The problem with taking that next step forward into either issuing an RFP or sole sourcing through a vendor that we worked with in the past, etc., is that if CMMI comes back and says, 'These are the guiderails to which we will agree to participate,' and if we are now coloring outside those lines, we've now gone down a path they cannot follow. . . . We have to wait for that guidance to be issued to us and align to it."
>
> *—Participating payer*

Figure 4.7. Timeline for CPC data aggregation



[34] Oregon payers later decided not to pursue data aggregation, after CMS changed its involvement with data aggregation and announced that Telligen would no longer be coordinating CMS's participation.

On the other hand, some payers were less excited about data aggregation. A few were concerned that practices would not use the reports, and others questioned whether the potential benefits of data aggregation were worth the cost. Even payers strongly supportive of data aggregation in principle raised concerns about the level of investment (in funding, staff time, and other resources) required. In many cases, payers had not originally budgeted for data aggregation when they applied for CPC, and a few, citing high costs, do not plan to participate in regional data aggregation efforts.

> "I think all the payers are worried about the cost of participating in this and are having trouble committing without a firm price tag. . . . I think a lot of the payers are concerned that just aggregating data and producing a single report doesn't really advance the ball much from 'send 'em a report in the mail.' So they're hesitant to put the dollars on the table."
>
> *—Participating payer*

In general, payers in regions with stronger existing capacity for data sharing expressed greater enthusiasm for achieving CPC data aggregation. One multistakeholder faculty explained the two-fold nature of this dynamic: (1) the region was able to achieve multipayer data collaboration in the first place, prior to CPC, precisely because so many key players believed in and supported the effort; and (2) having already attained a certain level of regional data collaboration, payers saw the incremental effort required for CPC data aggregation as more doable than payers in regions with no such existing initiatives.

Payers in Arkansas and Oregon are pursuing standardized individual payer reports as a substitute for data aggregation. While payers acknowledged that aligned reports might not be as useful as a single integrated report, they noted key advantages to the aligned-report approach: feasibility, timeliness, and the ability to insulate payers from an open-ended commitment to uncertain data aggregation costs.

Payers were frustrated with and confused by delays in the data aggregation procurement process and with the costs for it. In many cases, they felt that their data aggregation efforts were constrained by CMS's procurement process. For example, payers in several regions (Oklahoma, Ohio/Kentucky, and Oregon) wanted to build on prior data aggregation initiatives and were surprised or disappointed that CMS required an official RFP process. Further, payers were frustrated and confused by CMS's evolving role in the process.

Many payers reviewing responses to their data aggregation RFP indicated that selecting a data aggregator is challenging. For many payers, choosing a vendor and finalizing the contract was more complex and time consuming than initially anticipated. In particular, payers in New York and Oregon reported that determining the governance structure and how to split the costs among payers was difficult.

Strong regional leadership or experience with data aggregation facilitated progress in some regions. Some regional features have facilitated progress on data aggregation. In Colorado, some payers cited the commitment of one payer leader to data aggregation efforts as key to their progress. Payers in regions with existing HIT exchange efforts (such as the Beacon Community grants in Ohio/Kentucky and Oklahoma) may face fewer administrative and legal barriers because some participating payers already contribute data to an existing HIE.

4.4. Learning activities provided to CPC practices

CPC's learning activities and other TA to practices took several different forms in the initiative's first program year, and varied in both content and frequency across regions as well as across practices within a given region. Support tailored to practice needs and context was generally considered by practices and payers to be the most valuable of the activities provided.

CMS designed a CPC learning community to provide shared learning activities and TA to CPC practices, and offer an opportunity for practices to learn from one another and share best practices. CMS and its contractors offered CPC practices a wide range of national and regional learning activities, including all-day learning sessions, webinars, office hour sessions, and one-on-one TA (Table 4.3). CMS and its prime learning contractor, TMF, host national learning activities to educate providers on CPC requirements (for example, Milestone reporting process) and share information on how to meet Milestones that are challenging across regions. CMS initially contracted with the American Institutes for Research (AIR) as the prime learning contractor, but after CMS rebid the contract, TMF took over this role in July 2013 (see Side Bar for changes that occurred as a result). RLF, which are subcontractors to TMF, host regional learning activities that are tailored to practice needs and regional context. RLF responsible for each region remained unchanged from the AIR contract.

Changes in CPC regional learning over time

- Temporary decrease in regional learning opportunities occurred during transition to new prime contractor.
- All-day learning sessions moved from in-person meetings to virtual or hybrid virtual/in-person meetings under new prime contract. (This change was the result of a new federal government-wide policy that restricts travel.)
- RLF are required to introduce a "leadership track" that aims to engage more physician leaders and health system administrators in learning sessions.
- RLF are required to provide one-on-one practice facilitation under new contract, but the amount is not specified.

Table 4.3. Goals for CPC learning activities

Learning activity	Description	Goal
All-day learning sessions	RLF host meetings in each region using an in-person, virtual, or hybrid virtual/in-person format.	• Provide training on CPC Milestones that is tailored to regional needs and context • Highlight Milestone strategies used by practices • Encourage peer-to-peer learning and networking between practices
Web-based learning sessions		
National webinars	CMS and TMF host webinars for all CPC practices	• Educate providers on CPC requirements • Share information on CPC Milestones that are challenging across regions • Highlight exemplar practices to encourage cross-region learning
Regional webinars	RLF host webinars for practices in their region	• Share information on CPC Milestones that is tailored to regional needs and context • Highlight Milestone strategies used by practices in the region
Office hour sessions (national and regional)	CMS and RLF host virtual office hour sessions for all CPC practices or practices in their region, respectively	• Answer practice questions on CPC requirements or Milestones
One-on-one facilitation	RLF provide one-on-one assistance to practices as needed	• Provide practices with tailored TA on Milestones
Electronic support	CMS, TMF, and RLF monitor the collaboration site	• Provide practices with access to training and TA documents • Answer practice questions on CPC requirements and Milestones • Encourage peer-to-peer learning and networking between practices

RLF organizations structured learning activities differently based on their prior experience providing practice transformation assistance or to account for regional variation in practice characteristics (for example, average practice size, degree of system affiliation) and regional context (for example, rural/urban, HIT infrastructure). In PY2013, learning activities across regions varied in terms of the type offered (for example, webinars or office hours) and the number (Table 4.4). In PY2013, RLF in Colorado and Oklahoma report providing more learning support compared to other regions, which they accomplished by leveraging other resources. RLF in these regions delivered more tailored, in-person assistance from July to December 2013 and offered practices more supplemental supports, including care manager trainings and affinity or user groups. In future reports, we will use CPC practice survey data to assess the practices' perceptions about the adequacy and usefulness of regional learning supports across the regions.

Most practices actively participated in CPC learning activities. Based on RLF assessments, most practices across the initiative met CPC requirements for participating in national and regional learning activities. To satisfy Milestone 8 for PY2013, practices were required (1) to attend each all-day learning session; (2) to regularly attend national and regional web-based learning activities; and (3) to use the CPC Collaboration Site.[35] Practices that failed to satisfy the requirements for the learning Milestone (or any other CPC Milestone) could be placed on corrective action or terminated from the program by CMS. As described in Chapter 6, 100 percent of participating practices met the requirements of the Milestone 8.

Table 4.4. Features of regional CPC learning activities

	All-day learning sessions		Web-based learning	One-on-one facilitation from July to December 2013			Supplemental supports available to practices[a]						
	Non-CMS payers actively involved in planning learning session	Last learning session used hybrid virtual and in-person format as opposed to only virtual)	Offered relatively frequent office hour sessions	Conducted site visits to at least 80% of practices	Conducted site visits to no more than 35% of practices	Continued providing assistance while CMS rebid prime contract	Offered affinity or user groups	Offered care manager training	Provided facilitation of practice mentorship	Provided regional newsletter	Held meetings among system practices	Included payer-led facilitation and learning sessions
AR	✓	✓			✓		✓					
CO		✓		✓		✓	✓	✓	✓	✓		
NJ			✓		✓							
NY												
OH/KY			✓				✓			✓	✓	
OK				✓			✓	✓				✓
OR		✓			✓							-

Source: TMF Health Quality Institute, CPC Quarterly Report: Learning Activities, July-December 2013 (report dated January 10, 2014) and interviews with RLF.

[a]RLF did not provide consistent information on supplemental learning activities; that is, learning opportunities other than the webinars/office hours, learning-collaborative meetings, and one-on-one support that RLF are required to provide. Other supplemental activities may have been provided, additional regions may have offered listed activities, or both.

[35] Practices could use the Collaboration Site to engage faculty, share resources, or participate in forum discussions.

A. All-day learning sessions were well attended and well received by practices

RLF in Colorado (on the Western Slope) and New Jersey hosted three all-day learning sessions; faculty in all other regions (including the Front Range of Colorado) hosted two.[36] During the sessions, RLF used a variety of strategies, including didactic modules on key Milestones, presentations by practices, and practice networking, including break-out groups of practices with the same EHR systems. Under their new contracts with TMF, RLF also introduced, in each region, a "leadership track" that holds breakout sessions or separate meetings for clinician leaders and health system administrators in learning sessions.

CPC all-day learning sessions

- RLF held 2 to 3 all-day learning sessions in each region.
- Practice attendance at the final all-day learning session ranged from 72 percent in New York to 100 percent in Ohio/Kentucky and Oregon.
- Practices valued all-day learning meetings, in particular, sessions in which RLF encouraged practice networking or shared specific best practices.

The first all-day learning sessions were held in person in each region. However, because of government travel restrictions, CMS required that the final sessions be held virtually unless other arrangements were approved. Most RLF organizations and some payers expressed concern that virtual meetings can invite multitasking, often do not motivate practices, and limit opportunities for practice-to-practice communication. In one region, RLF worried about practices becoming disengaged from the initiative without "positive experiences" such as in-person learning sessions. Payers or other stakeholders in three regions (Arkansas, Colorado, and Oregon) negotiated a hybrid virtual and in-person format for their final PY2013 learning session; the final sessions in the other regions were held virtually. Looking forward to PY2014, CMS, TMF, and RLF are looking for ways to host more meetings in-person or using a hybrid virtual and in-person format—which is difficult in light of current travel restrictions on federal government projects.

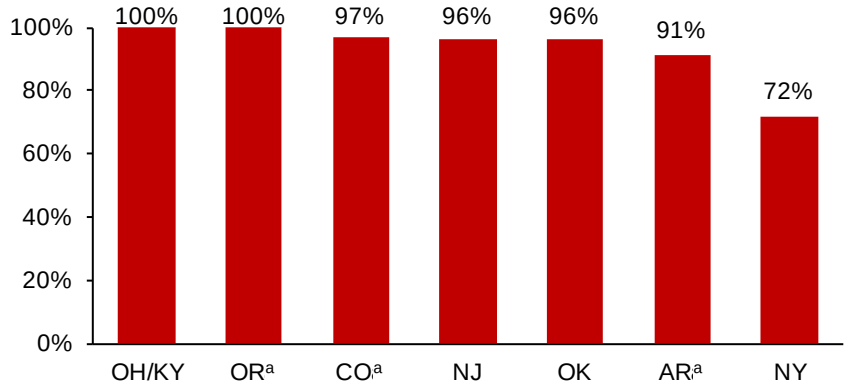
All-day learning sessions were well attended. Almost all practices had representatives attend their regional all-day learning sessions, as required under the CPC terms and conditions (Figure 4.8). Participation in the final session, conducted virtually or in a hybrid virtual/in-person format, was 91 percent or higher in all regions except New York (72 percent). Deep-dive practices typically had practice or system leaders attend the meetings and then disseminate information back to practice champions or other practice members.

Deep-dive practices appreciated the first in-person learning meetings, in particular, practices enjoyed hearing about best practices and participating in breakout groups.[37] Deep-dive practices generally appreciated in-person learning collaboratives and the opportunity that these meetings provided for sharing ideas and experiences with other practices. Practice members found in-person meetings helpful for sharing implementation experiences, working with others focused on the same issues, group problem-solving, and collaborating with similar practices. In particular, practices enjoyed attending breakout groups focused on users of a specific type of EHR, specific staff (care coordinators and managers), or practices of similar size and ownership. One practice struggling to report quality measures from their EHR indicated that they used these sessions

[36] CMS initially required RLF to host three learning sessions in each region. However, as a result of the change in the prime learning contract, few learning sessions were scheduled during the second and third quarters of PY2013.

[37] The site visits to the deep-dive practices took place before the shift from in-person to virtual all-day meetings.

Figure 4.8. CPC practice participation in the final all-day learning session



Source: TMF Health Quality Institute, CPC Quarterly Report: Learning Activities, July-December 2013 (report dated January 10, 2014).

[a]The all-day learning session was a hybrid in-person and virtual meeting. In all other regions, all-day learning sessions were held virtually.

to learn from other practices how to better document care in their EHR. RLF in most regions increased opportunities for practice-to-practice learning in later learning sessions, recognizing that practices enjoy this aspect of learning-collaborative meetings.

Practices found all-day learning sessions most useful when RLF shared best practices for specific implementation challenges relevant to their practice. At one session, deep-dive practice staff reported that RLF trained staff to use motivational interviewing with high-risk patients, and the practice is using those new skills to encourage changes in patient behavior.

In four of CPC's seven regions, one of the three deep-dive practices indicated that its staff did not find these meetings useful (but there were no clear patterns within region on perceived usefulness of the learning sessions). These practices reported that the meetings often lacked specifics, focused on practices dissimilar to their own, or did not provide sufficient opportunities to interact with colleagues from other practices.

B. Regional learning faculty, payers, and deep-dive practices view webinars as useful for disseminating general information but less effective at facilitating practice change

Practices were typically offered two or more web-based learning sessions hosted by CMS, TMF, or RLF each month in PY2013.[38] Web-based learning activities included:

- **Webinars.** Webinars were hosted by CMS and TMF at the national level and by RLF at the regional level.
  - CMS hosted 11 "essential national webinars" in which staff or technical experts presented information on critical topics, including the CPC shared savings methodology, CPC clinical quality measures, the CPC web application, and Milestones viewed as challenging across the regions. CMS also hosted (1) miniseries on "improve-ment basics" (for example, Plan-Do-Study-Act cycles, run charts, and process mapping) and patient and family advisory councils; and (2) four virtual site visits in which exemplar practices shared their

[38] See Appendix C for information on the number of webinars and office hour sessions held by CMS and RLF.

strategies for shared decision making, care coordination, clinical quality measures, and improving the patient experience.

- RLF hosted webinars on Milestones that practices in their region found challenging, most commonly risk stratification and care management, patient engagement, using data to guide improvement, and shared decision making. Initially, RLF used webinars primarily to educate practices on the goals and intent of the Milestones.

CPC's web-based learning

CMS, TMF, and RLF offered numerous webinars and office hour sessions at the national and regional level

Practices were able to choose the web-based learning sessions most relevant to their practice; most often practices attended regional webinars or essential national webinars.

Practices and RLF felt that webinars were good for sharing general information on CPC but less useful at helping practices make implement changes.

Common critiques of webinars:

- Lack specific directions for implementation
- Not tailored to specific practice needs
- Focused on already-completed tasks

- **Office hours.** CMS and RLF in most regions also hosted office hour sessions for practices. Such sessions are intended to be more interactive and allow practices to directly engage with CMS staff or their RLF.

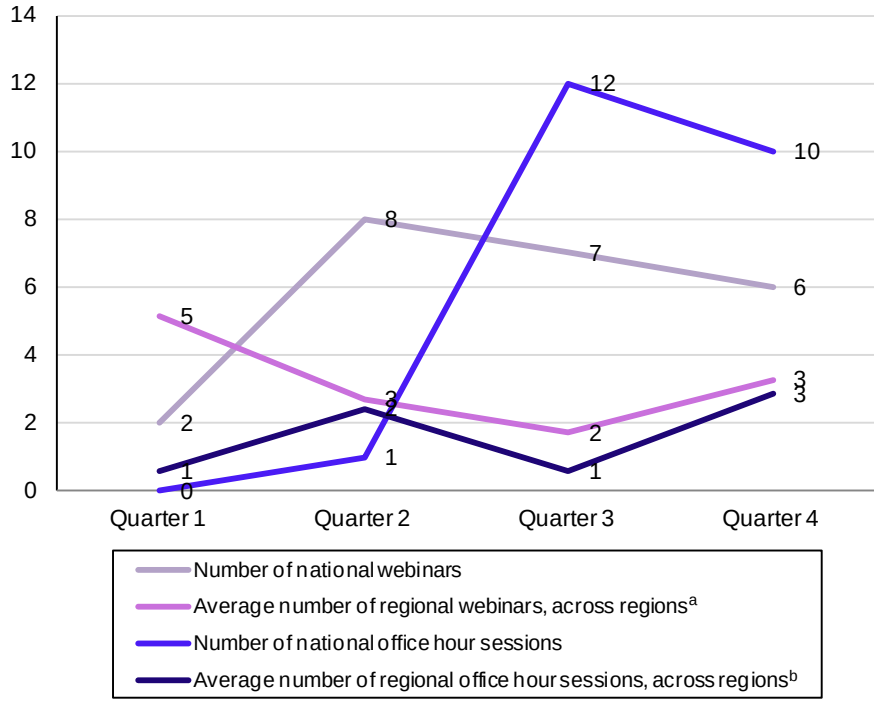
Initially, CMS and RLF relied primarily on webinars, likely so they could efficiently share broadly relevant information on CPC and specific Milestones with all practices in CPC or their region, respectively. CMS and RLF in most regions increased office hour sessions over the course of PY2013, possibly in response to practices' growing needs for more tailored information as they started making changes in their practices (Figure 4.9).

Over the course of PY2013, RLF in some regions relied evenly on webinars and office hours, whereas other regions preferred one form of web-based learning over the other (Figure 4.10). The Health Collaborative in Ohio/Kentucky, for example, has typically alternated webinars with office hours, using each office hour session to engage with practices on the content of the previous webinar. Colorado, in contrast, held more webinars than other regions but did not host office hour sessions (likely because RLF in this region do so much one-on-one TA to practices).

CMS increased national web-based learning while they rebid the prime learning contract; RLF felt that national and regional activities could be better coordinated. Initially, RLF provided the majority of web-based learning sessions (Figure 4.11). While CMS rebid the prime L&D contract, RLF greatly reduced the number of web-based learning opportunities provided at the regional level.[39] In response, CMS started to host more webinars and introduced office hour sessions and virtual site visits so practices would keep receiving support. RLF and payers in several regions, particularly New Jersey and Oklahoma, reported that the hiatus in regional learning caused RLF to lose the momentum they had gained with practices.

[39] Rocky Mountain Health Plans used non-CPC funding to continue activities in western Colorado while CMS rebid the prime learning contract; HealthTeamWorks did not continue to offer activities in eastern Colorado during this time.

Figure 4.9. Change in number and modality of national and regional web-based learning during January through December 2013



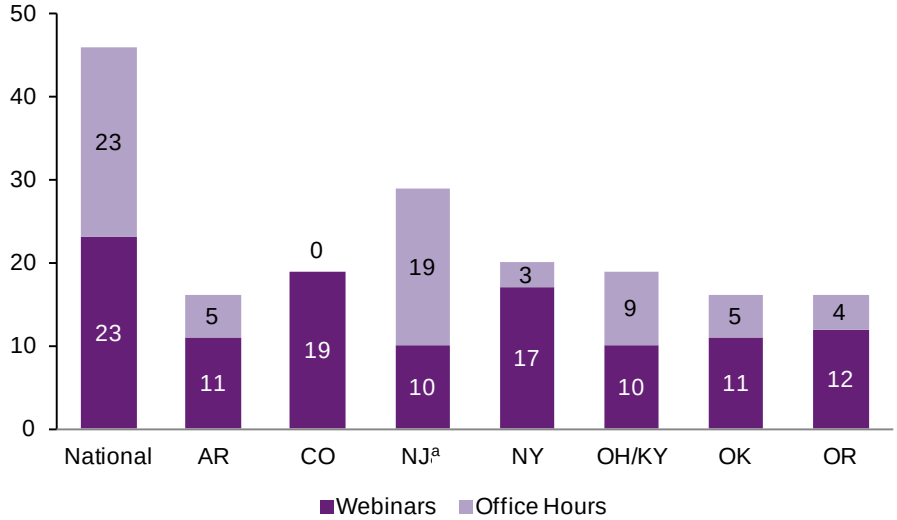
Source: TMF Health Quality Institute, CPC Quarterly Report: Learning Activities, July-December 2013 (report dated January 10, 2014), RLF reports, and CPC Collaboration site.

Note: Number of RLF-hosted webinars are averaged across the seven regions. Only unique national webinar topics are included in this total. The topics covered and the structure of web-based learning varied. The number of activities does not indicate the quality of learning opportunities in a region.

[a]New Jersey's orientation to the third learning session, which was held as a webinar in the fourth quarter of 2013, is excluded from these counts.

[b]The office hours for New Jersey are an estimate based on the May 2013 RLF report in which faculty reported hosting office hours once or twice a week.

Figure 4.10. Number of webinars and office hours nationally and by region for July-December 2013

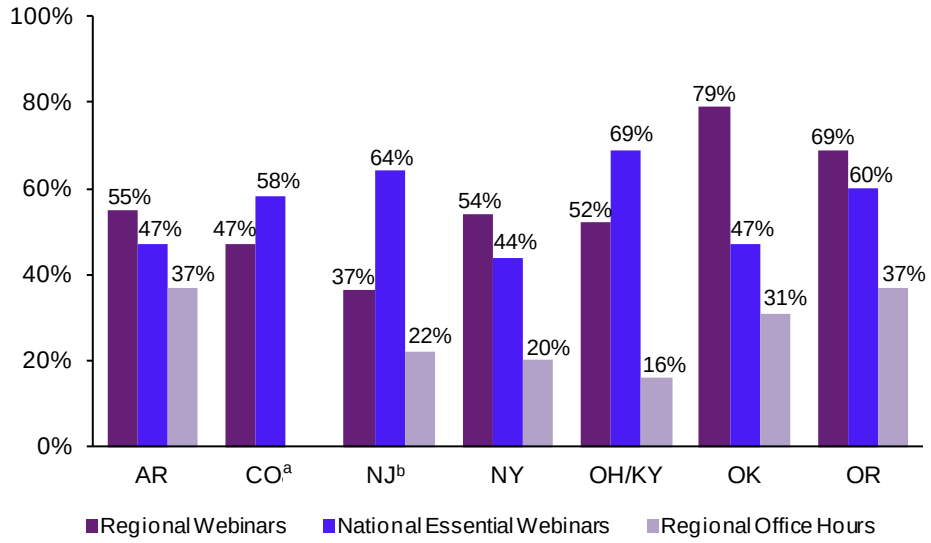


Source: TMF Health Quality Institute, CPC Quarterly Report: Learning Activities, July-December 2013 (report dated January 10, 2014), RLF reports, and CPC Collaboration site.

Note: Only unique national webinar topics are included in this total. The topics covered and the structure of web-based learning varied. The number of activities does not indicate the quality of learning opportunities in a region.

[a]New Jersey's orientation to the third learning session, held as a webinar, is excluded from these counts. The office hours for New Jersey are an estimate based on the May 2013 RLF report in which faculty reported hosting office hours once or twice a week.

Figure 4.11. Average percentage of practices that participated in essential national webinars, regional webinars, and office hour sessions, July-December 2013



Source: TMF Health Quality Institute, CPC Quarterly Report: Learning Activities, July–December 2013 (report dated January 10, 2014).

Note: The number of webinars and office hours offered by RLF varied by region; therefore, differences in average participation rates in webinars and office hours across regions may reflect differences in both the number of practices participating in activities as well as the number and mixture of offered activities. Also, the topics covered during the webinars/office hours and the structure of the webinars varied. The average participation rate in L&D activities does not necessarily correlate with L&D quality in a region. Percentages, rather than numbers of practices, were provided by TMF.

[a]RLF in Colorado did not provide office hours.

[b]Participation in New Jersey's orientation to the third learning session, held as a webinar, is excluded from these participation averages (given that it was simply an orientation to how to use the technology, held in advance of the learning session itself).

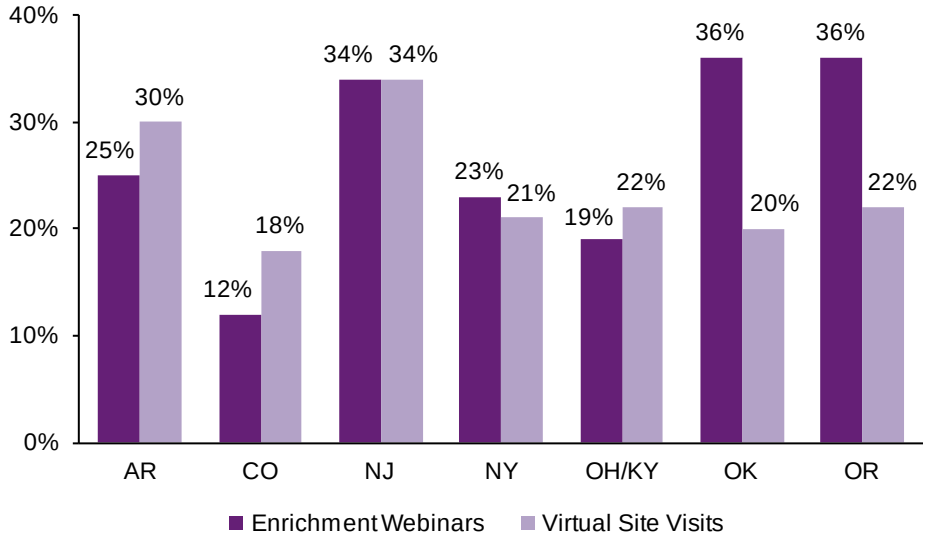
In the fourth quarter of PY2013, RLF resumed regional webinars and office hours, and CMS worked with TMF to continue to provide national opportunities. In some regions, RLF felt that national and regional learning could be better coordinated on timing and content. In some cases, RLF indicated that they struggled to plan regional webinars because they were uncertain about the material being covered in national webinars or else, after planning a webinar, they found that the chosen topic or session conflicted with a scheduled national webinar. In one region, a respondent suggested that TA would be improved if the national curriculum provided virtual learning and RLF offered primarily individualized coaching.

Practices were more likely to attend national essential webinars and regional webinars than other forms of web-based learning activities. CMS required that practices participate in at least web-based learning session each month in PY2013. Since CMS and RLF typically offered practices two or more of these activities between them monthly in each region, practices were often able to select the activities that most fit their needs. Practices in Colorado, New Jersey, and Ohio/Kentucky were most likely to attend national essential webinars; whereas practices in

Arkansas, New York, Oklahoma, and Oregon favored regional webinars (Figure 4.11).[40] CMS-hosted miniseries and virtual site visits had the lowest practice participation rates (Figure 4.12).

In many deep-dive practices, practice leaders attended the webinars and then disseminated information back to practice members. However, in practices that were owned by a health system, staff at the system level often attended the webinars and then disseminated information to key staff at participating practices. RLF in some regions suggested that engaging site staff in system-affiliated practices can be difficult, and some systems control implementation decisions at the practice level. To help overcome this barrier, RLF introduced, in each region, a "leadership track" that engages practice leaders as well as health system leadership and educates them on facilitating and spreading change.

Figure 4.12. Average percentage of practices that participated in optional enrichment webinars and virtual site visits, July-December 2013



Source: TMF Health Quality Institute, CPC Quarterly Report: Learning Activities, July-December 2013 (report dated January 10, 2014). Percentages, rather than numbers of practices, were provided by TMF.

Both RLF and deep-dive practices reported that while webinars are an efficient way to share information, they are less useful than other learning activities. RLF and diverse staff at deep-dive practices, including clinicians, administrators, and clinical support staff, indicated that webinars are not always valuable to practices. Both groups generally agreed that webinars were effective in communicating general information (such as introducing Milestones) to practices but were less useful at helping practices identify strategies and implement changes.

> "[Regional learning faculty] are our go-to people . . . helping us along the way as we meet bumps in the road."
>
> *—CPC practice*

RLF in multiple regions indicated that designing webinars that are useful to all practices is challenging because CPC practices vary widely in their experience with EHRs and practice transformation. Reflecting this challenge, deep-dive practices indicated that webinars often lacked specific directions, were not tailored to the specific needs of the practice, or were not timely because they

[40] See Appendix C for the percentage of practices that participated in national webinars held between July and December 2013.

focused on tasks already completed. Two of the three deep-dive practices in New York also reported that webinars were disorganized, or that office hour sessions were not useful because they were dominated by the same practices every time.

CMS and RLF are working to make web-based learning activities more useful for practices. Over the course of PY2013, RLF in most regions moved to give fewer didactic presentations in favor of highlighting more practice success stories. In addition, CMS and TMF developed implementation guides that provide concrete guidance on PY2014 Milestones to address practices' desire for more specific guidance. Moving forward, based on the feedback we obtained from practices and payers, CMS and RLF could also consider (1) providing more webinars at the national as opposed to the regional level, especially for topics that are of broad interest to practices; (2) hosting different webinars for practices at different levels of sophistication; and (3) focusing webinars on specific topics (such as selecting shared decision-making tools or details of the care management process) so that practices can identify the webinars most applicable to their practice.

C. Practices highly value in-person, one-on-one assistance provided by RLF; practice access to that assistance varies widely across regions

RLF also provide CPC practices with one-on-one assistance through site visits, telephone calls, and emails. Individualized assistance ranges from answering targeted questions about CPC programmatic requirements to providing intensive coaching on a given Milestone to helping practices interpret and use Medicare FFS quarterly feedback reports.

One-on-one practice facilitation

RLF provided one-on-one practice facilitation in person to 50 percent of practices and over the phone to 80 percent of practices from July to December 2013.

Most RLF and practices agree that in-person, one-on-one practice facilitation is often more effective than other forms of assistance.

From July to December 2013, the percentage of practices receiving in-person individual support from RLF varied widely, from 4 percent in Oregon to 100 percent in Colorado.

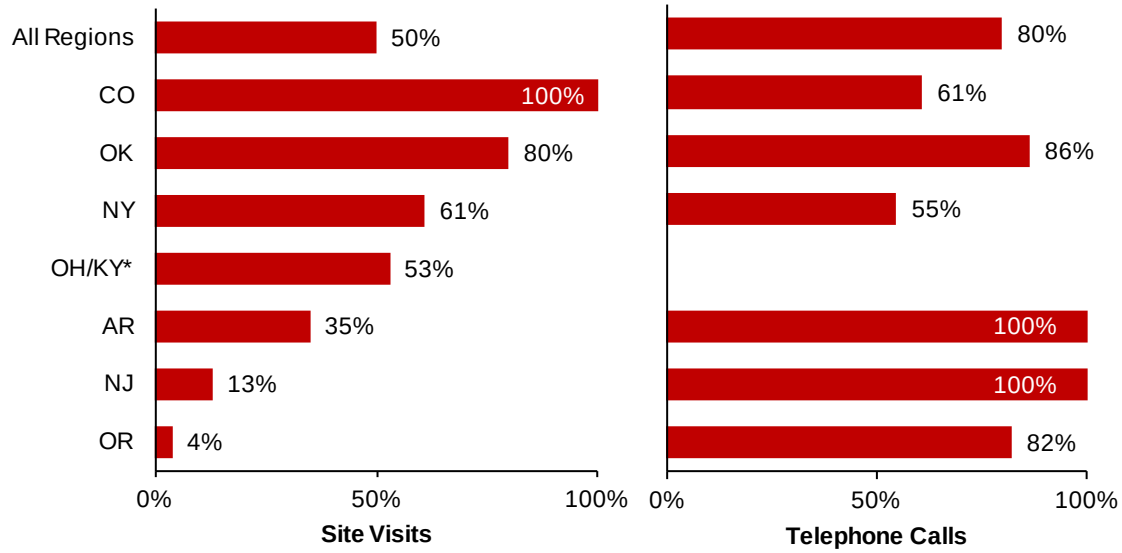
RLF and payers indicated that in-person, intensive coaching is often the most effective form of assistance, and deep-dive practices reported that they highly valued one-on-one interactions with RLF. Some deep-dive practices reported that RLF encouraged them to convene regular practice team meetings focused on CPC and helped practices tailor strategies for their practice context. For example, RLF helped one practice struggling with risk stratification identify indicators to use in their stratification methodology and select services to offer to high-risk patients. Another practice shared multiple drafts of their risk stratification methodology and care management workflows with their RLF and received what they described as useful guidance to improve the documents.

Because of resource constraints, RLF are generally focusing their one-on-one assistance on practices they believe to be at highest risk for not completing their Milestones. In risk-stratifying practices, RLF weigh their assessment and the practice's self-assessment of Milestone progress and the practice's engagement with CPC. Often, RLF actively reach out to assist practices that the faculty identify as high-risk. All RLF also provide assistance to practices when the practices request it.

From July through December 2013, 50 percent of practices received site visits and 80 percent received telephone assistance from RLF, although this pattern varied widely by region

(Figure 4.13).[41,42] Typically, RLF conducted site visits in person with practice staff, system leadership, or both. In Oklahoma, staff from the RLF and field service team (whose role is described more below) also conducted some virtual site visits with practices. During these two quarters, RLF conducted site visits to the highest percentage of practices in Colorado (100 percent) and Oklahoma (80 percent). Just over half the practices in New York and Ohio/Kentucky received a site visit, and 35 percent or less of practices in Arkansas, New Jersey, and Oregon were visited by faculty during that time frame.

Figure 4.13. Percentage of CPC practices receiving site visits or telephone calls from Regional Learning Faculty, July-December 2013



Source: TMF Health Quality Institute, CPC Quarterly Report: Learning Activities, July-December 2013 (report dated January 10, 2014).

Note: The number of interactions is based on self-reported data by the Regional Learning Faculty. Data are reported from the second half of 2013, as faculty reports on practice interactions are incomplete in some regions prior to July 2013. Phone calls may include a discussion of a Milestone, a group teleconference, or a status check-in. The intensity and content of each interaction vary by practice and RLF. Some practices in Arkansas, Colorado, Ohio/Kentucky, and Oklahoma received coaching from RLF in a group setting (small groups of practices or practice affinity groups), and this figure does not capture this type of coaching. Moreover, RLF may have coached some practices more than once during the quarter. Percentages were calculated based on the number of participating practices as of December 2013. The overall share of practices that received a telephone call from RLF does not include Ohio/Kentucky, because faculty in this region did not report their telephone interactions with practices.

*RLF in Ohio/Kentucky did not report the number of telephone calls they conducted with practices.

RLF in regions with high levels of site visits to practices leveraged non-CMS resources to help fund their learning activities. For example, faculty in Western Colorado were in frequent contact with practices in their region prior to CPC and are using funding from other, non-CMS payers to finance some of its work with practices. In Oklahoma, non-CPC payers were initially concerned about the level of individualized support provided to practices, so they developed a field service team to provide additional support to practices. Each payer has provided a "point of

[41] TMF Health Quality Institute, CPC Quarterly Report: Learning Activities, July-December 2013 (report dated January 10, 2014).

[42] While most RLF provided some individualized assistance since the beginning of the initiative, CMS did not formally require them to do so until July 2013.

contact" who, supported by TransforMED, provides one-on-one support to practices. In at least one case, the payer point of contact works full-time on CPC.

Arkansas and Oregon—regions with relatively few site visits to practices—are geographically diverse, and RLF indicated that visiting practices is time and resource intensive. These regions are working on strategies to overcome this challenge. For example, the RLF organization in New Jersey selected practice facilitators that are based in two separate areas of the state so the organization can visit more practices. RLF are also considering using their headquarters to meet with practices in an effort to reduce learning faculty travel time and increase the number of practices they can serve each day.

Variation in the level of one-on-one assistance across the regions suggests that practices in Colorado and Oklahoma have greater access to this type of help—which is highly valued by practices—than practices in other regions. Several payers expressed concern that the number of CPC practice facilitators and the intensity of their interactions might not be sufficient for the needs of some practices. In some regions, deep-dive practices echoed these concerns, reporting that tailoring to specific practice settings was limited when RLF relied on phone and email contact with practices.

D. CMS is working to improve electronic communication with practices

CMS and their contractors use electronic platforms to share information with CPC practices and encourage them to work together.

- The **CPC Friday Roundup** is an email that CMS began sending to participating practices and payers every Friday afternoon starting in late June 2013. It provides new resources (such as FAQs on Milestones and the Program Year 2014 Milestone implementation guide) and highlights the work of a particular CPC practice through a practice "spotlight" every two weeks.
- The **CPC Collaboration Site** is an interactive web site run by CMS. Practices can use it to ask CMS, their contractors, and other CPC practices questions about CPC requirements and Milestones. In PY2013, practices, RLF, and CMS used the site most commonly to discuss patient engagement, especially the development of patient surveys; the appropriateness of certain shared decision-making tools; and the acceptable use of CPC funds. While some deep-dive practices checked the website for notifications and updates, most practices and RLF reported that navigating the site and locating files was difficult. In an effort to improve usability, CMS made changes to the CPC Collaboration Site in early PY2014.

> "I don't feel like [the CPC Collaboration Site] is very organized or [makes it] easy to find things. . . . I just never found it that friendly, so I just stopped going to it unless I needed to register for a webinar or something."
>
> *—Care manager at a CPC practice*

E. Practices in some regions receive supplemental support implementing CPC from RLF and payers

In addition to the formal CPC learning activities, some RLF offer supplemental supports to practices beyond what is required in their contracts with CMS. This is a result of RLF leveraging related work on other initiatives and regional stakeholders providing supplemental funds to further

support CPC practices and increase their likelihood of success in changing care delivery.[43,44] Supports offered by RLF include:

- Care manager trainings (Colorado)
- Meetings among system or independent practices (Ohio/Kentucky)
- Organized affinity or user groups in which a subset of practices within the region meet to discuss either a specific Milestone-related topic or a particular EHR (Arkansas, Colorado, Ohio/Kentucky, Oklahoma)
- Facilitation of mentorship arrangements between advanced and struggling practices (Colorado)
- Newsletters that cover CPC updates and highlights from the CPC Collaboration Site (Colorado, Ohio/Kentucky)

In addition, in Oklahoma, non-CMS payers collaborated with RLF to develop a "field service team." As noted above, a representative from each payer supports a full-time or part-time practice point of contact that works with RLF to expand one-on-one support for practices. The field team has also hosted a half-day care manager training, which was attended by Oklahoma practices and joined virtually by some practices in Colorado, Oregon, and Arkansas. In addition, some community stakeholders work with the field team to offer CPC practices free educational and networking sessions on practice transformation, Meaningful Use, care management, shared decision making, the local HIE, and available community resources.

F. Some payers and other stakeholders provide additional support to practices through other programs

In addition to CPC-related supports, several non-CMS payers and other stakeholders are offering additional support through other programs. This additional support is often limited to helping practices interpret their feedback reports from that payer or offering practices access to specialized data tools. There are, however, a few notable exceptions. For example:

- One New Jersey payer hosts monthly webinars and calls among small practices to facilitate peer-to-peer sharing; connects each practice with a payer representative for ongoing communication and TA related to that payer's practice feedback reports; and suggests strategies to improve quality of care.
- Oregon practices have access to resources provided by the Patient-Centered Primary Care Institute, which provides TA to providers, including webinars and training sessions. In addition, one Oregon payer that contracts with a small number of CPC practices holds quarterly trainings or knowledge-sharing sessions for office managers in those practices.

[43] RLF did not provide consistent information on supplemental learning activities (that is, learning opportunities other than the webinars/office hours, learning-collaborative meetings, and one-on-one support that RLF are required to provide). Other supplemental activities may have been provided, additional regions may have offered listed activities, or both.

[44] In Oregon, RLF offered care management training to CPC practices for a fee (given that this type of training was outside the scope of its CPC contract with TMF).

- The Arkansas Foundation of Medical Care, Arkansas's Quality Improvement Organization, reports providing CPC practices with in-person TA on quality improvement techniques and on their EHR systems.

In contrast, a few payers indicated that they thought providing extra learning resources to practices is duplicative or counterproductive, as learning supports are already in place as part of CPC. For instance, one payer noted, "I mean, [we] do have mechanisms in place at the national [level] to help practices transform, but you know, those resources haven't been engaged in CPC, because of . . . the local community activities that are going on. It would be redundant for our national office to come in and do some of the stuff that's being done at the community level."

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CHAPTER 5. HOW DID CPC'S MULTIPAYER APPROACH WORK?

For the CPC Initiative, CMS is collaborating with other payers to provide enhanced payment and coordinate data feedback for participating practices. CPC represents one of the largest multipayer initiatives ever tested. Before the initiative started, non-CMS payers collaborated on their applications to CMS to demonstrate regional alignment around the initiative. After selecting regions, CMS conducted bilateral negotiations with individual payers. Chapter 2 describes payer negotiations and early collaboration with CMS. In this chapter, we describe payer and other stakeholder collaboration from the beginning of the initiative.

5.1. Key takeaways on CPC's multipayer approach

- CMS and other participating payers met frequently to discuss CPC. In PY2013, payers focused most on developing a common approach to sharing data feedback with practices and engaging providers, consumers, and other stakeholders in payer meetings.
- Payers value the opportunity to collaborate with other payers and, in general, are satisfied with the collaborative dynamic at payer meetings.
- Payers in several regions engaged providers, consumers, or both in payer meetings or work groups. Engagement of stakeholders was most effective when they understood their role. For example, payers in Arkansas indicated that they had not clearly outlined how stakeholders could contribute to meetings, and as a result, stakeholders were minimally engaged.
- Most payers view CMS as a critical partner in efforts to transform primary care, because it encourages practice participation in transformation efforts and brings additional financial and technical support to the region.
- Many payers also indicated that working with a federal agency can create challenges. Payers suggested that, in future years of CPC, CMS improve communication and transparency with other payers and draw on the regional experience and knowledge of payers and other stakeholders.
- In response to payer concerns, CMS is starting to improve its collaboration with other payers by, for example, sharing additional information with payers on Milestone progress and outcomes. CMS indicated that it will continue to work to address payer concerns in PY2014.

5.2. Multipayer and multistakeholder collaboration

In each region, CMS and the other participating payers held a combination of in-person and virtual meetings, at least monthly in PY2013, to discuss CPC (Table 5.1). In all regions except Colorado and Oregon, payers initially met more frequently with CMS. Payers decreased their meetings over the course of PY2013, because they had less to discuss as the initiative progressed and because they wanted to accommodate CMS's inability to join more frequent meetings given CMS's resource constraints.

Table 5.1. Frequency of CPC payer meetings and work groups as of March 2014, by region

	General payer meeting frequency			Approximate work group frequency[b]		
	Initial	Current	When frequency changed	Data sharing	Employer	Learning field team[c]
AR	Weekly	Weekly unless work group meeting scheduled; CMS joins once a month[a]	Quarter 4, 2013	Monthly	None	None
CO	Monthly	Monthly	n/a	Every two weeks	None	None
NJ	Bimonthly	Monthly	Quarter 4, 2013	None	None	None
NY	Every two weeks	Monthly	Quarter 3, 2013	None	None	None
OH/KY	Every three weeks	Monthly	Quarter 2, 2013	Weekly	At least monthly	None
OK	Every two weeks	Monthly	Quarter 1, 2014	Weekly	None	Weekly
OR	Monthly	Monthly	n/a	Weekly	None	None

Source: Agendas and notes from payer and multistakeholder meetings, information provided by multistakeholder faculty and CMS staff.

Note: n/a = not applicable.

[a]CMS joins one general payer meeting and one data-sharing work group meeting each month.

[b]Work groups may have met more frequently during periods of intense activity (for example, when the region was selecting measures or reviewing RFPs for data aggregation) or may have been temporarily paused during periods of inactivity. The Oklahoma field team meetings started in Quarter 2 of 2013. All other work groups started in Quarter 1.

[c]In Oklahoma, non-CMS payers collaborate with RLF on a "field team" to provide additional learning support to CPC practices.

During CPC meetings, payers primarily discussed CPC program updates; practice learning activities; engaging providers, consumers, and other stakeholders in payer meetings; and developing a common payer approach to data sharing (early conversations focused on selecting measures, later ones on data aggregation or standardized templates for individual payer reports). Toward the end of PY2013, RLF also started to join payer meetings to share their perspectives on CPC Milestone progress.

In addition to general payer meetings, payers in most regions also started work groups focused on specific topics (Table 5.1). Most commonly, payers started data-sharing work groups because they found procuring a data aggregator or developing aligned reports took more time than was available in regular payer meetings. In Ohio/Kentucky, payers and self-insured employers also formed an employer work group that focuses on engaging insurance brokers, employers, and the business community in CPC. In Oklahoma, the payer-led field team, which collaborates with RLF to provide TA to practices, also meets regularly.

In each region, payer meetings are convened by multistakeholder faculty, which are funded by CMS through subcontracts with the prime learning contractor. Having multistakeholder faculty serve as conveners and facilitators of payer meetings allows CMS to participate in these meetings as a fellow payer collaborator rather than as the "leader" of the initiative. Multistakeholder faculty also help to set boundaries on payer discussions to ensure compliance with anti-trust regulations. When possible, the prime learning contractor subcontracted with experienced and neutral regional organizations to convene CPC meetings. For example, THINC was selected as the multistakeholder faculty in New York because it had previously convened multipayer HIE and

medical home initiatives in New York. In regions where the prime learning contractor could not identify an appropriate local convener, it selected the Center for Evidence-Based Policy at the Oregon Health and Science University to serve as the convener. Most payers, especially those in regions with limited experience collaborating, value the multistakeholder faculty and see them as playing an important role in fostering payer relationships and moving the initiative forward. While CMS rebid the prime learning contract, multistakeholder faculty did not receive CMS support to convene CPC meetings.[45] Multistakeholder faculty continued to convene meetings in Colorado and New York (funded by the other participating CPC payers) and in Ohio/Kentucky (using other grant funding); other regions held meetings without a convener. In September 2013, CMS resumed funding of multistakeholder faculty in all regions.

Most payers value the opportunity to collaborate with other payers and are satisfied with the dynamics at CPC payer meetings. Most payers reported that regional collaboration for CPC is strong and that they enjoy the opportunity to talk to and learn from other payers. Initially, regions with prior experience collaborating on similar initiatives (for example, Arkansas and Oregon) reported stronger collaborative relationships than payers in other regions. Over the course of PY2013, however, payers in regions with less collaborative experience reportedly came together as a community, and by the end of the year, prior collaborative experience did not appear to be affecting payer discussions.

In general, payers are satisfied with their colleagues' contributions to payer meetings, in terms of both intellectual contributions and financial resources provided for hosting meetings. Payers and payer conveners made several observations regarding payer participation:

- In most regions, **payers with a larger market share** participate more actively in meetings than other payers and can sometimes drive decision-making. For the most part, other payers felt this dynamic was fair because they had more "skin in the game" and smaller payers were willing to let them take the lead.
- **National payers and regional payers** often contributed different perspectives in payer meetings. In general, and not surprisingly, regional payers were more knowledgeable about the region and more likely to be involved in non-CPC initiatives in the region than national payers. As a result, regional payers were often more engaged in discussions about specific practices and more invested in data aggregation and aligning CPC with other regional initiatives than national payers, who often took a back seat during the discussions. National payers, in contrast, were often interested in standardizing their CPC approach across the regions. As a result, some national payers pushed for aligning measures across all CPC regions (as opposed to tailoring them for a region) and were less interested in participating in regional data aggregation efforts. While a few payers were concerned with this dynamic, most payers understood their colleagues' perspectives and did not feel the dynamic negatively affected CPC.

Payers in several regions engaged providers and consumers in payer meetings. By the end of PY2013, all regions had started to engage stakeholders (such as providers, consumers, and employers) in payer meetings or developed a plan for engaging them early in the next program year (Table 5.2). The history of collaboration between payers and other stakeholders in a region influenced when payers engaged stakeholders in different ways. In Ohio/Kentucky, for example,

[45] CMS rebid the prime learning contract, initially held by AIR, and TMF took over the role in July 2013.

payers, providers, and employers have worked closely on health care quality improvement initiatives for years; they indicated that this foundation helped payers quickly establish a sustainable stakeholder group for CPC. In contrast, payers in Oregon and Oklahoma were reluctant to engage providers and consumers for CPC, as there are numerous other stakeholder engagement efforts under way in the region, and they did not want to duplicate those efforts or overburden stakeholders. Payers in New Jersey, a region with fewer provider-payer collaborative initiatives, decided not to engage stakeholders in PY2013; instead, they wanted time to develop trust among themselves and identify how stakeholders could be useful before involving them.

Table 5.2. Stakeholder involvement in CPC payer meetings and work groups

	When meetings began	Frequency	Structure for multistakeholder meetings	Stakeholders involved			
				CPC providers	Consumers[a]	Employers	Other stakeholders
AR	November 2012; on hold from September 2013 until April 2014	Quarterly	Multistakeholder meetings are separate from payer meetings	✓	✓	✓	Department of Health Health foundations Universities Pharmacists
CO	Providers involved in data work group meetings in PY2013 Multistakeholder meetings started May 2014	Periodic data work group meetings Multistakeholder frequency to be determined	Multistakeholder meetings are separate from payer meetings; stakeholders also attend data-sharing work group meetings	✓			
NJ	February 2014	Two meetings held; no more planned	Payers held focus groups with stakeholders; no regular scheduled meetings	✓			
NY	January 2013	Monthly	Stakeholders attend all payer and work group meetings	✓	✓		Medicaid (not a participating payer)
OH/KY	October 2012	Monthly multi-stakeholder meetings Periodic work group meetings	Multistakeholder meetings are separate from payer meetings; stakeholders also attend relevant work group meetings	✓	✓	✓	
OK	February 2014	Quarterly	Multistakeholder meetings are separate from payer meetings	✓	✓		
OR	May 2014	To be determined	Payers engaged providers during CPC all-day learning meeting; no regularly scheduled meetings	✓			

Source: Agendas and notes from payer and multistakeholder meetings, and information provided by multistakeholder faculty and CMS staff.

[a]Consumers include patient representatives and consumer advocacy groups.

Regions that established CPC stakeholder groups used different models to engage stakeholders. In Ohio/Kentucky and Colorado, payers are engaging stakeholders in work groups that are most relevant to their area of expertise (for example, employers participate in a group that aims to encourage other employers to participate in CPC in Ohio/Kentucky; providers participate in a work group on data aggregation in Ohio/Kentucky and Colorado). Payers in these regions, and in others considering this approach, feel that this model is an efficient use of stakeholders' time because it minimizes the time stakeholders spend discussing topics that they do not fully understand or are not directly relevant to them. Some payers also wanted to maintain payer-only meetings so they could privately discuss a topic if needed. In addition to the work group meetings, Ohio/Kentucky payers have a monthly multistakeholder meeting that representatives from all stakeholder groups (employers, practices, and consumers) attend so they can remain informed about work completed by different groups.

In contrast, payers in New York decided to integrate providers and consumers into their payer meetings, replacing all payer-only meetings with multistakeholder meetings. Payers and stakeholders indicated that this approach helped to break down silos, created a cohesive group, and encouraged active participation. Some did note, however, that involving stakeholders in every aspect of payer meetings can slow the decision-making process, and some stakeholders indicated that they find it difficult to follow some technical conversations (for example, consumers did not always understand discussions on data aggregation).

Stakeholder engagement appeared most effective when payers and stakeholders understood and agreed on stakeholders' roles in CPC. For example, in New York and Ohio/Kentucky, some consumer representatives, who in general participate less actively than providers, indicated that they needed more clarity on the goals of the stakeholder group and on how they could contribute to the initiative. Payers in Arkansas dissolved their initial stakeholder group because of low stakeholder engagement. Payers there indicated that they should have defined the goals of their stakeholder group more clearly and engaged members more actively in discussions instead of using the meetings as a venue for relaying information on the initiative. The payers established more-specific goals for the initiative and plan to launch a new stakeholder group in early 2014.

5.3. CMS as convener of the initiative

Most payers viewed CMS as an important driving force for the CPC initiative. Payers often indicated that CMS encouraged broad payer and practice participation in CPC because Medicare covers a substantial portion of the patient panel for many primary care practices. Multiple payers also indicated that CMS's participation brings additional financial and technical support to the region, potentially boosting the effectiveness of regional efforts.

While payers generally valued CMS participation, many also indicated that their relationship with CMS was "bumpy." Payers recognized that some of their frustrations were caused by bureaucratic or contracting limitations and were out of the control of CMS staff, whom they generally regarded as knowledgeable and dedicated. Some payers indicated that CMS initiatives always come with "overhead" and are less flexible than initiatives led by private payers. Still, others said that while frustrations remain, CMS has been more responsive and adaptable with CPC than prior CMS initiatives. In refining their approach to multipayer collaboration in PY2014, payers suggested that CMS:

- **Clearly indicate when collaboration is possible.** Multiple payers indicated that CMS should be clear about when they are acting as the leader of CPC and when they are acting as an equal collaborative partner. Based on the MOU and early signals from CMS, many payers anticipated that CPC would be more collaborative and were surprised by CMS's "top-down directives" on frequency and structure of payer meetings, measurement, data aggregation, and learning and diffusion activities. For example, payers indicated that CMS initially signaled that regional payers would collaboratively select common measures to track but later clarified that the region could add only a few measures to those already selected by CMS for the national initiative. Many payers understood the tension created by CMS's dual roles of convener and collaborator and indicated that more initial clarity on the level of collaboration possible in general and on a given issue could reduce frustration and the feeling that payers are "spinning their wheels" on aspects of CPC that CMS cannot alter.

> "Some days [CMS] leads, and some days they want to just be part of the team. You never know whether they're in their lead, or 'be part of the team' mode."
>
> *—Participating payer*

- **Capitalize on regional strengths.** Many payers felt that CPC could be improved if CMS capitalized on local experience and priorities. In some regions, payers felt that aligning CPC with regional initiatives would improve sustainability and reduce complications for practices. For example, payers in Ohio/Kentucky and Oklahoma felt that data aggregation efforts would be more efficient if they built on prior Beacon Community activities and were frustrated that CMS initially required payers to hold an open procurement process.[46] Similarly, payers in Oregon felt that aligning CPC with their state medical home program would have avoided confusion by practices. Furthermore, regional payers felt that CMS did not always value their expertise on their region. For example, many payers felt that CMS should have consulted them before selecting CPC practices so they could benefit from their prior knowledge on low and high performers.

- **Continue building trust.** In many regions, especially those with strong prior regional collaborations, CMS was viewed as "the new kid on the block" at the start of CPC. Payer conveners and payers indicated that the relationship between CMS and other payers has improved over time but was hindered by (1) turnover in CMS personnel; (2) CMS's lack of physical presence in meetings, viewed as particularly imperative by local payers in Arkansas and Oklahoma; (3) delayed or unclear communication between CMS and payers; and (4) the starting and stopping of CMS's contracts with CPC learning faculty and multistakeholder faculty.

[46] Since our site visits, CMS has changed their data aggregation contracting policy, and payers in Oklahoma are moving forward with a process aligned with their Beacon Community grant.

- **Share information with payers.** Some payers expressed frustration with the amount of information they received from CMS. Specifically, payers indicated that delays in the release of CMS's shared savings methodology, changes to the data aggregation contracting process, and the lack of information on practices' progress and learning activities made it difficult for payers to plan for future years of CPC, wasted time, or both. In some cases, however, CMS was constrained in its ability to share information with payers due to anti-trust issues, contracting limitations (namely around data aggregation), or other legal concerns.

> "CMS participates by phone, so it's tough to get to know a new partner. . . . It is like you have all these high schoolers that have gone to elementary school, middle school, and high school together, now, you've got a new high school student that's just joined."
>
> *—Participating payer*

Over the course of PY2013, CMS took steps to address payer concerns and collaborate more effectively with regional payers. For example, RLF started to join payer meetings to share information on Milestone progress and provide updates on regional learning activities, and despite restrictions on government travel, CPC staff gained approval from CMS to travel to some regions to meet with payers in person. In late May of PY2014, CMS also started sharing quarterly regional feedback reports with payers. The reports provide an overview of performance in each CPC region and include aggregate performance data on expenditures and utilization for Medicare FFS beneficiaries, aggregated measures from patient, practice, clinician, and staff surveys with CPC practices, and operational updates on CPC implementation. In general, payers appreciated these steps and hope to develop an increasingly collaborative relationship with CMS.

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CHAPTER 6. HOW DID CPC PRACTICES PERFORM ON ANNUAL MILESTONES AND REPORTING OF CLINICAL QUALITY MEASURES?

Having described the payment, data, and learning supports provided to practices, we turn in this and the next chapter to how CPC practices are transforming the way they deliver care. In this chapter, we discuss how all participating practices performed on CPC's annual Milestones and reporting of EHR-based clinical quality measures (CQMs) in PY2013. Then, in Chapter 7, we provide rich detail on the transformation activities in a small number of participating practices, based on site visits to 21 deep-dive practices (3 in each CPC region).

CPC requires that participating practices make significant changes in the way they deliver care to their patients. To promote progress toward the goal of *whole practice transformation*, CMS specified a series of annual Milestones that provide guideposts or stepping stones to achieve the five CPC functions (Table 6.1). While the Milestones themselves are not evidence based, they are rooted in strong conceptual thinking about what activities a practice needs to pursue to achieve comprehensive primary care. CMS determines the components of each Milestone at the start of each of the four years of the intervention, with each year's Milestones building on the prior year's work for CPC and encouraging practices to strive for progressively more challenging transformation activities. CMS requires that practices report information periodically on how they are meeting the requirements of each Milestone. For PY2013 Milestones, practices reported data after the end of the program year (except for Milestone 1, on which practices had to provide preliminary data in spring 2013). In PY2014, however, practices must report on Milestone progress at the end of each quarter.

In this chapter, we report information on practices' PY2013 Milestone achievement, overall and by region. When data are available, we also describe the proportion of practices using different approaches to meeting these Milestones. Finally, we discuss practice progress on the CQMs—the EHR-based quality measures that CMS requires practices to report at the practice level. (In each region, participating payers and CMS have selected the measures that practices are required to report.) While CQM reporting is not a component of the CPC Milestones per se, it is nonetheless a requirement of practice participation and a requirement for eligibility for shared savings.

There are a few caveats about the information presented here. First, the information we present on Milestone achievement is based on assessments by RLF and CMS of practices' self-reported data on their work in each of the Milestones. Although CMS and TMF established specific criteria for assessing Milestone achievement, it is possible that staff who rated the practices may each have approached the assessment slightly differently, and some subjectivity is likely involved. Moreover, the fact that practices self-reported the data on Milestones also introduces some potential bias. Second, we assess only 7 Milestones in the analysis presented here. Since practices were not required to submit their data on Milestones 1 (budgeting) and 9 (meaningful use attestation) until April 2014, we do not provide information on these Milestones or include them in our calculations of Milestone achievement.[47]

[47] Moreover, information on Milestone 9 is reported at the clinician (NPI) rather than the practice level.

It is worth noting that a number of participating practices that are part of the same larger group practice provided identical Milestone submissions, even though practices participated at the practice level and were required to submit at that level. Therefore, in cases where the Milestone submission was judged unsuccessful, it affected several practices in the region. This was most common in Oregon and Colorado, where relatively large numbers of practices were placed on corrective action because the Milestone submission by their larger organization or corporate entity was not adequate. These practices are currently remediating any deficiencies and will be submitting information on their remediation activities in August 2014.

Table 6.1. CPC Milestones for PY2013[a]

1	Estimate CPC revenues and develop a plan for their reinvestment in the practice.
2	Stratify patients by risk status and provide care management to high-risk patients.
3	Ensure 24/7 access to the medical record for the practice's providers.
4	Assess and improve patient experience with care by conducting a patient survey or forming a patient and family advisory council (PFAC) that meets quarterly.
5	Use data to guide care improvement by selecting one quality and one utilization measure on which to focus.
6	Improve care coordination in the medical neighborhood by selecting one area for focus.
7	Improve patient shared decision-making capacity by selecting one decision aid.
8	Participate in the regional learning community.
9	Attest to Stage 1 meaningful use.

Note: Since practices were not required to submit their data on Milestones 1 and 9 until April 2014, we do not analyze these Milestones or include them our calculations of Milestone achievement.

[a]For a more detailed list of CPC Milestone requirements, see [http://innovation.cms.gov/Files/x/CPCI-Milestones.pdf].

6.1. Key takeaways on practice progress with CPC Milestones and CQMs

- Almost all participating practices (about 99 percent) successfully reported their progress on PY2013 Milestones.
- The vast majority of practices were successful in meeting the requirements for most Milestones. Notably, for Milestones 4, 5, 7, and 8, 100 percent of participating practices successfully met the requirements; for Milestone 3, more than 99 percent of practices met the requirements.
- Risk-stratified care management (Milestone 2) proved to be a challenging Milestone for participating practices. About 7 percent of practices overall were flagged as having major deficiencies in meeting this Milestone, with Colorado and Oregon having the highest proportion.
- Improving care coordination in the medical neighborhood (Milestone 6) was also challenging for practices, with more than 9 percent overall having major deficiencies in meeting this Milestone. Oregon and New York had the highest proportion of practices with major deficiencies.
- Practices struggled to submit the required CQMs at the practice level. Regional variation in this area was striking, with only 9 percent of Oklahoma practices reporting an ability to submit these measures. While many of those practices that struggled indicated that their EHR would be able to report these measures in PY2014, 20 and 15 percent of practices in Oregon and Oklahoma, respectively, indicated that their vendor would be unable to report at the practice level in the future.

A. Practice progress on CPC Milestones

Milestone reporting. Practices were required to complete PY2013 Milestones and report to CMS on their work in Milestones 2 through 8 by January 31, 2014, via the CPC web application.[48] Ninety-eight percent of practices submitted their Milestone data by the due date. Regions with the highest proportion of practices that failed to submit Milestones included Arkansas (almost 9 percent of practices) and New Jersey (almost 6 percent); however, several of these practices—on a case-by-case basis—had received permission to submit the Milestones after the due date. By February 10, 2014, only 3 percent of Arkansas practices had not submitted their Milestones, but New Jersey's rate remained unchanged.

Milestone components and reporting. Each CPC Milestone includes several components. For example, in PY2013, Milestone 3 included three components in which a practice had to attest to whether (1) its clinicians use the EHR to guide care after hours, (2) its EHR is usually available, and (3) covering clinicians can access the EHR. While each Milestone had several components (which essentially provided suggested activities that might help practices achieve the Milestone overall), practices did not necessarily have to address or meet all components to achieve the Milestone.

Reporting requirements for each of the Milestones varied somewhat. For example, some Milestones required simply that practices attest to certain activities (as described with Milestone 3 above). Other Milestones, such as risk-stratified care management (Milestone 2), required that practices provide details of their work, including uploading the risk-stratified tool or protocol used by the practice.

Milestone achievement overall. Most practices achieved most of the PY2013 Milestones (Table 6.2). For the CPC practices as a whole, Milestone achievement—which we define as having no major deficiencies in meeting the Milestone—was 100 percent for many of the Milestones. The two Milestones that proved more challenging for practices were risk-stratified care management (Milestone 2), which 93 percent of practices achieved, and improving care coordination in the medical neighborhood (Milestone 6), which almost 91 percent of practices achieved.

With some exceptions, the pattern of overall high achievement on meeting Milestones was seen at the regional level as well. Colorado and Oregon had a smaller proportion of practices achieving risk-stratified care management (Milestone 2), and Oregon and New York had a smaller proportion achieving the coordination of care across the medical neighborhood (Milestone 6). Nonetheless, the proportion of practices completing each Milestone was high.

[48] The CPC web application is the system through which participating practices report Milestone data to CMS and RLF, and retrieve their quarterly Medicare FFS practice data feedback reports and data files.

Table 6.2. Percentage of participating practices achieving PY2013 Milestones (defined as no major deficiencies), overall and by region

PY2013 Milestones	All regions	AR	CO	NJ	NY	OH/KY	OK	OR
2 Risk-stratified care management	93.2	92.8	81.1[a]	97.1	98.7	100.0	97.0	85.1[a]
3 24/7 access to medical record	99.4	97.1	100.0	100.0	100.0	100.0	98.5	100.0
4 Assess/improve patient experience with care	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
5 Use data to guide care improvement	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
6 Improve care coordination in the medical neighborhood	90.5	97.1	97.3	100.0	76.0[a]	97.3	95.5	70.1[a]
7 Improve patient shared decision making capacity	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
8 Participate in regional learning community	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Analysis of CPC Program PY2013 Milestone Report, February 28, 2014.

Notes: We define *Milestone achievement* as the practice having no major (i.e., red flag) deficiencies, as identified by RLF and CMS.

Milestone 1. (CPC revenue plan) not included in calculations since practices were not required to report on this Milestone until April 2014.

Milestone 9. (Attest to Stage 1 meaningful use) not included in calculations since practices received an extension for this Milestone until April 2014 and information is reported for NPIs rather than the practice level.

[a] Region whose proportion of practices achieving the Milestone was at least 5 percent lower than the CPC-wide average

Achievement on each Milestone and its specific components. Below we provide more detail on practice progress for Milestones 2 through 8, including their various components.

Providing risk-stratified care management (Milestone 2). The practices reported in the Milestone data that the number of care manager FTEs more than doubled in the first year of the initiative, from 980 to 2,100. These additional FTEs were distributed fairly evenly across three groups of staff providing care management: physicians (34 percent), APRN/NP/RN/PA (29 percent), and medical assistants and other staff (37 percent). In some cases, these FTEs are not all necessarily new hires, but rather existing staff tasked with providing care management; for example, few new physicians were hired for CPC, but a substantial number of physician FTEs were devoted to care management.

Practices used a variety of approaches to risk-stratify their patient panels. Half the practices (50 percent) used existing risk stratification tools such as the American Academy of Family Physicians' risk stratification algorithm, which assigns patients to one of six risk strata based on their prevention and other health needs (ranging from "primary prevention" to "catastrophic" health needs) or EHR-based tools. Thirty-four percent of practices developed their own algorithm based on input from their providers; for example, some practices used factors such as the patient's number of chronic conditions, age, and hospitalizations in the past year, and then scored and stratified patients into categories based on these factors. The rest of the practices tried an array of approaches, including clinical judgment (6 percent), some other type of clinical algorithm (6 percent), claims data to identify high users (3 percent), or a mix of a clinical algorithm and clinical judgment (1 percent). Only 1 percent of practices did not use any approach to risk-stratifying their patients (data presented by CMS at the CPC annual meeting on April 7, 2014).

Ensuring 24/7 access to medical records (Milestone 3). This Milestone, which required the use of EHRs to ensure access to medical records, was achieved by almost all participating practices. This perhaps reflects the fact that substantial numbers of practices may already have had these capabilities in place prior to CPC. Almost all practices reported that they usually had access to EHRs, were able to use them to guide care provided after office hours, and offered covering clinicians access to the EHR. Modes of access to these records varied, with 62 percent of practices using a Virtual Private Network for remote access and 35 percent using web-based or cloud computing solutions.

Assessing and improving patient experience with care (Milestone 4). CPC practices are required to take steps to assess patient experience with care. In PY2013, practices could meet this Milestone either by administering surveys to their patients for at least two quarters (which 80 percent chose) or by organizing a PFAC and convening it quarterly (used by the other 20 percent).

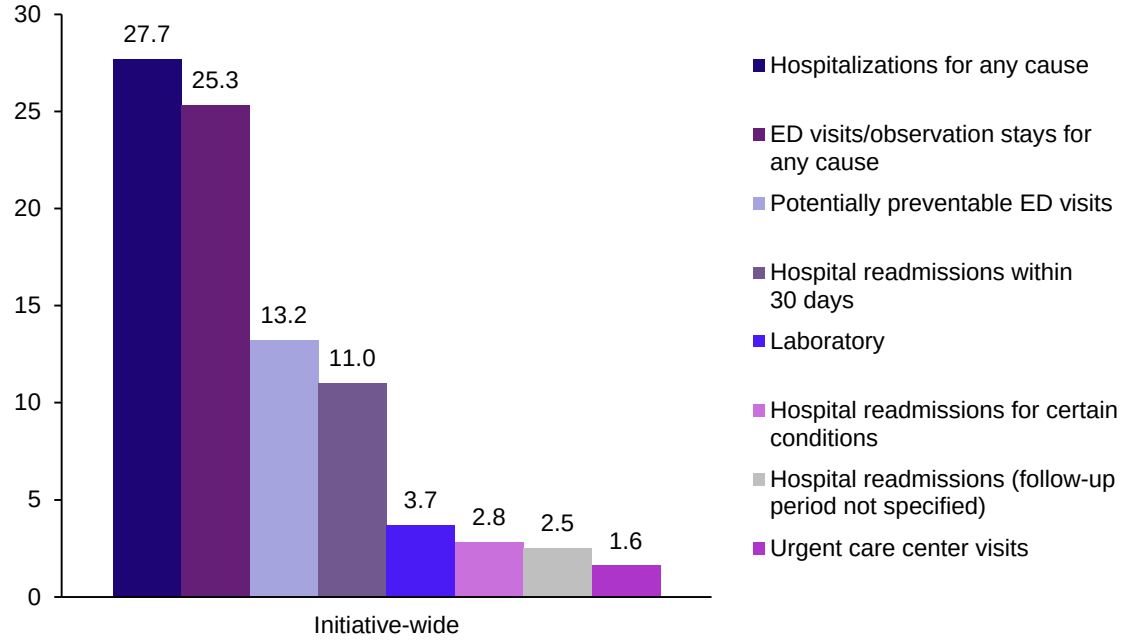
Among the 397 practices that chose to field patient surveys, nearly all (98 percent) reported using results to identify areas in which they could improve, and 94 percent reported using an improvement plan to guide changes at the practice, as required by the Milestone.

Among the 100 practices that choose to form a PFAC to help assess and improve patient experience with care, all reported having more than one patient on the PFAC, and most reported following a clear process for forming the council (98 percent) and clearly identifying areas of focus (97 percent). The most common area of focus—communication—was chosen by 59 percent of practices, and the least common area, self-management support and shared decision making, was chosen by only 16 percent (data not shown). Ninety-two percent of the practices who formed a PFAC created action plans based on input and feedback from the PFAC, as required by the Milestone.

Using data to guide quality improvement (Milestone 5). Milestone 5 focused on selecting measures to improve quality of care. Practices chose what measures to track. Across all regions, the largest proportion of practices chose controlling diabetes (41 percent) as their clinical quality measure, and just over half chose either hospitalizations for any cause (28 percent) or ED visits/observation stays (25 percent) as their utilization measure (Figure 6.1). Potentially preventable ED visits (13 percent) and hospital readmissions within 30 days of discharge (11 percent) were also commonly selected.

Improving care coordination across the medical neighborhood (Milestone 6). At the end of PY2013, practices were well on their way to creating plans to improve care coordination in at least one area. Almost all practices (99 percent) had targeted an area in which to improve care coordination across the medical neighborhood and, within that area, had identified a specific opportunity for improvement. The selected area for improvement varied by region, with the largest share of practices in Colorado (50 percent), New Jersey (41 percent), and Oregon (51 percent) focused on improving their ED follow-up through phone calls or visits. The largest share of practices in Arkansas (52 percent), New York (55 percent), Ohio/Kentucky (48 percent), and Oklahoma (58 percent) chose to focus on improving post-hospital discharge care.

Figure 6.1. Most common categories of utilization measure selected by participating practices for Milestone 5 (percentage of practices choosing measure)



Source: CPC Program PY2013 Milestone Report, February 28, 2014.

Note: We collapsed similar responses into a single category; for example, responses of "hospital readmission 30 days," "hospital readmissions less than 30 days," "hospital readmissions within 30 days of discharge," and "30-day rehospitalization" were all included in category of hospital readmissions within 30 days in the figure.

Improving patient shared decision-making capacity (Milestone 7). As part of this Milestone, practices selected priority areas in which to work with patients to make decisions on their health care. The top three areas chosen were prostate cancer screening (20 percent), managing diabetes medications (10 percent), and managing acute low-back pain (7 percent). In addition, practices also selected an appropriate decision aid to use for shared decision making with patients.[49,50] The most common sources of decision aids were the Mayo Clinic (14 percent of practices) and Healthwise Decision Points (13 percent).

Participating in local learning community (Milestone 8). CPC practices embraced participation in regional and national learning collaboratives. As shown in Table 6.3, nearly all practices attended the three-day-long CPC regional learning sessions (99 percent), regularly attended national and regional webinars (99 percent), and engaged with learning faculty and other practices in discussions and on the CPC collaboration site (97 percent).

[49] Although some practices selected aids that were more akin to educational materials than those that provide information for patients as they make preference-sensitive decisions about their treatment, RLF and CMS did not consider this distinction in assessing whether practices chose an *appropriate* decision aid (since there was some confusion among practices about how CMS defined *appropriate* aids).

[50] Despite practices' success in achieving this Milestone, CMS asked a number of practices to revisit their choice of decision aid (i.e., to an aid focused on preference-sensitive decisions) and make sure to track use of the aid.

Table 6.3. Percentage of practices participating in CPC learning activities (Milestone 8)

Components	All regions	AR	CO	NJ	NY	OH/KY	OK	OR
Attended all the day-long learning sessions	99.2	100.0	100.0	98.6	97.3	100.0	98.5	100.0
Regularly attended national and regional webinars	98.6	98.6	100.0	95.7	97.3	100.0	98.5	100.0
Engaged with faculty, shared resources on the collaboration site, engaged in forum discussions, and shared expertise with other practices	97.2	95.7	98.6	94.3	94.7	100.0	97.0	100.0
Number of practices	**497**	**69**	**74**	**70**	**75**	**75**	**67**	**67**

Source: CPC Program PY2013 Milestone Report, February 28, 2014.

6.2. The number of practices terminated or placed on corrective action status based on Milestone assessment

After the assessment process in which CMS and RLF staff reviewed and rated participating practices on their Year 1 Milestone achievement, CMS terminated 4 practices that had several major deficiencies in meeting the Milestones and placed on corrective action 38 additional practices with deficiencies (Table 6.4). The Oregon and Colorado regions had the most practices placed on corrective action. In both these regions, a number of participating practices that are part of the same larger corporate entity provided identical Milestone submissions. In cases where CMS deemed the submission adequate, CMS placed all practices from the larger entity on a corrective plan. All 38 practices that were placed on corrective action are required to perform the required remediation by August 2014.

Table 6.4. Number of practices terminated or placed on corrective action based on limited Milestone progress in PY2013, overall and by region

Status	All regions	AR	CO	NJ	NY	OH/KY	OK	OR
Terminated	4	1	0	1[a]	1	0	1	0
Placed on corrective action for 2013	38	2	11	1	4	2	4	14

Source: CMS correspondence and CPC practice roster.

[a]CMS planned to terminate another NJ practice, but the practice withdrew from CPC before it was terminated.

To understand whether practices that were terminated or placed on corrective action differed from other participating practices, we compared these two groups on a number of characteristics (Table 6.5). Relative to all other practices, those terminated or placed on corrective action were more likely to have had no clinicians who were certified meaningful EHR users at baseline (36 percent, versus 21 percent for all other practices) and had significantly lower CPC funding overall ($181,900 versus $234,700), and per clinician ($44,100 versus $72,800). While the number of Medicare beneficiaries was not statistically significant, it is nonetheless a large difference (with 64 percent of corrective action or terminated practices having below the median number of beneficiaries, versus 49 percent for all other practices—which also translates to differences in CPC funding). We found no statistically significant differences between the two groups of practices on ownership, number of clinicians, or baseline PCMH status.

Table 6.5. Characteristics of practices terminated or placed on corrective action for PY2013, compared with those of all other practices

	Practices terminated or placed on corrective action (N=42)		All other practices (N=448)	
Baseline characteristic	N	Percentage	N	Percentage
Practice ownership				
Practice is independent/not owned by a larger organization/other	26	61.9	244	54.5
Practice is owned by a larger organization	16	38.1	204	45.5
Number of providers				
1 clinician	7	16.7	74	16.5
2-3 clinicians	13	31.0	157	35.0
4-5 clinicians	9	21.4	103	23.0
6 or more clinicians	13	31.0	114	25.5
Number of beneficiaries				
1st quartile	15	35.7	109	24.3
2nd quartile	12	28.6	110	24.6
3rd quartile	6	14.3	116	25.9
4th quartile	9	21.4	113	25.2
PCMH status				
Certified by any organization as a medical home	20	47.6	265	59.2
Not certified as a medical home	22	52.4	183	40.9
Practice part of multispecialty group				
No	35	83.3	396	88.4
Yes	7	16.7	52	11.6
Meaningful use providers[a]				
Practice had no clinician who was a Medicare meaningful EHR user	15	35.7	96	21.4
Practice had at least one clinician who was a Medicare meaningful EHR user	27	64.3	352	78.6
Median annual CPC funding (all payers)[b]	**$181,900**		**$234,700**	
Median annual CPC funding per clinician[c]	**$44,100**		**$72,800**	

Source: Baseline characteristics of practices come from CPC application data; CPC funding data come from practices' PY2013 Milestone submissions for Milestone 1.

Note: Descriptive statistics for CPC funding are based on preliminary analyses and may be updated. Also, two practices from the category of "terminated or placed on corrective action" and two from the category of "all other practices" had missing data on CPC funding and therefore were not included in these calculations.

[a] x^2=0.0344 for difference in whether practice had meaningful EHR user between practices that were terminated or placed on corrective action and all other practices.

[b] p-value = 0.034 for difference in annual CPC funding between practices that were terminated or placed on corrective action and all other practices.

[c] p-value = 0.0002 for difference in annual CPC funding between practices that were terminated or placed on corrective action and all other practices.

6.3. Reporting on EHR-based clinical quality measures

In addition to completing the Milestones, CMS required that practices report in PY2013 the EHR-based CQMs selected by CMS and the payers in their region. PY2013 was considered a foundational year for CQM reporting. Practices were actively engaged in obtaining the CPC set of CQM measures and working with their EHR vendors to adapt the functionality of their EHR products to report measures at a practice level rather than at the individual provider level or "eligible professional" level. In PY2014, CMS will require practices to *report* CQMs for all patients who had one or more visits to the CPC practice during the measurement year and met the initial patient population inclusion criteria for the measure (not just those patients from Medicare or other participating payers who are attributed to CPC) to be eligible for shared savings from Medicare. Actual PY2014 quality *performance* on these measures, however, will not affect whether a practice receives its portion of any savings earned at the regional level. Instead, for PY2014, practices are eligible for any shared savings if they meet all the CQM reporting requirements; the actual performance rate for the measures will not be assessed.

Across the seven regions, payers agreed to 10 common CQM measures. In addition, payers in each region except Arkansas opted to include additional measures. The measures, shown in Table 6.6, are all used in the meaningful use program. Unlike meaningful use measures, however, CPC required that practices report measures at the practice level rather than at the eligible professional level. Practices had to use their EHR to calculate CQM numerators, denominators, and, if applicable, exclusions and performance rates. Practices then recorded and attested to their CQM results in the CPC web application. Many participating practices' EHRs reportedly did not have the ability to aggregate these results up to the practice level, because the current certification requirement for EHR technologies did not include this functionality.

Table 6.6. PY2013 CPC clinical quality measures, by region

Measures required in all regions	Additional measures required in CO, NJ, NY, OH/KY, OK, and OR	Additional measures required in CO, OK, and OR
Controlling High Blood Pressure (NQF 0018) Preventive Care and Screening: Tobacco Use: Screening and Cessation Intervention (NQF 0028) Breast Cancer Screening (NQF 0031) Colorectal Cancer Screening (NQF 0034) Preventive Care and Screening: Influenza Immunization (NQF 0041) Diabetes: Hemoglobin A1c Poor Control (NQF 0059) Diabetes: Blood Pressure Management[a] (NQF 0061) Diabetes: Low Density Lipoprotein (LDL) Management (NQF 0064) Ischemic Vascular Disease (IVD): Complete Lipid Panel and LDL Control (NQF 0075) Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD) (NQF 0083)	Use of appropriate medications for asthma (NQF 0036)	Weight assessment and counseling for nutrition and physical activity for children and adolescents (NQF 0024)

[a]Optional measure. CPC required that practices submit this measure if it was available in their EHR.

In many cases, practices were not able to submit the required CQMs in PY2013 (Table 6.7): just over half of participating practices (54 percent) reported all measures at the practice level. The regional variation in the ability to report is striking. While 85 percent of Ohio/Kentucky and 69 percent of Oregon practices reported all measures at the practice level, only 9 percent of Oklahoma practices managed to do so. In Oklahoma, this result may be driven by the high concentration of practices that are system-owned or have multiple sites, as these practices were typically unable to report disaggregated CQMs for any of their sites (perhaps because of the EHR version being used by the system). In all regions, however, a large share of practices currently unable to report the required CQMs expect to be able to report them in the future. One-third or more of practices in Arkansas, New York, and Oklahoma indicated that although their EHR vendor was unable to report CQMs at the practice level for PY2013, it would be able to handle such reporting in PY2014. Nine other practices reported having purchased an EHR system that, once fully operational, would be capable of reporting at the practice level. A sizable share of practices in some regions, however, may continue to face challenges with CQM reporting in 2014. While this issue is infrequent across regions, in Oklahoma and Oregon, 19 and 15 percent of practices, respectively, indicated that their vendor will be unable to report at the practice level in the future. Further, a few practices noted that although their ONC-certified EHR is capable of reporting at the practice level, their EHR is not currently certified to report each of the required CPC CQM measures.[51]

Table 6.7. Percentage of participating practices reporting CQMs, overall and by region

	All regions	AR	CO	NJ	NY	OH/KY	OK	OR
Reported all measures at practice level	54%	45%	55%	59%	52%	85%	9%	69%
EHR can do reporting at the practice level, but CQMs are not certified	1%	0%	1%	0%	0%	0%	4%	0%
Purchased a new EHR system that is not fully implemented yet but will include CPC practice-level data for reporting	2%	1%	7%	3%	1%	0%	0%	0%
EHR vendor could not produce a CPC practice-level report, but will be able to produce one for CPC CQMs for PY2014	20%	38%	14%	13%	33%	0%	34%	7%
EHR vendor could not produce a CPC practice-level report and has indicated that it will not be able to produce one in the future	6%	4%	5%	3%	0%	0%	19%	15%
Unspecified reason for not reporting all CQMs	12%	4%	15%	16%	12%	3%	28%	6%

Source: Mathematica analysis of PY2013 CQM Submission Results, provided by CMMI.

Note: Percentages for all regions are based on 497 practices.

[51] CMS staff worked with EHR vendors and practices on these issues throughout PY2013. While CMS continues to consult on such issues, it recognizes that a few practices might need to consider a new EHR.

CHAPTER 7. HOW DID "DEEP-DIVE" PRACTICES CHANGE THE WAY THEY DELIVER CARE?

As the previous chapter describes, CPC requires that participating practices make many complex, interconnected changes to how care is delivered. To gain a rich understanding of the progress of this multifaceted implementation beyond what we can determine from practices' Milestone submissions, we conducted one- to two-day "deep-dive" site visits in each of 21 CPC practices between June and October 2013.[52] These visits focused on collecting detailed information on how practices were implementing CPC and how this implementation was progressing, as well as facilitators, challenges, and barriers to implementation.

We selected the 21 practices purposefully from across the seven regions to ensure roughly equal numbers of small, medium, and large practices, while seeking balance across the sample on key organizational features such as ownership, rural/urban location, and medical home certification status.[53] (See Table 7.1 for information on the characteristics of deep-dive practices relative to those of CPC practices overall.) Practices were selected at random from within the set that met our sampling criteria. Practices were *not* selected based on how well or poorly we thought they were performing in CPC. Our findings from these practices complement the information from the Milestone submissions and qualitative impressions provided by payers, and RLF, to provide insights on how implementation is likely to be unfolding across the CPC practices initiative-wide.

7.1. Key takeaways on practice transformation among the deep-dive practices

The key findings on how the 21 deep-dive practices changed the way they deliver care as part of CPC, and the facilitators and barriers to these changes, include the following:

- Prior experience with quality improvement or practice transformation initiatives contributed to a more conducive climate for implementing CPC.
- Tailored practice-specific assistance from RLF was perceived as a key contributor to practice-level improvement efforts.
- System-affiliated and independent practices tended to have different implementation approaches, with independent practices typically able to make more rapid change and system-owned and affiliated practices often having greater access to management resources and HIT expertise that help support CPC implementation.
- Practices in which new mental models and approaches to care (for example, moving away from episodic and clinician-centric care to approaches that focus on proactively identifying and addressing patient needs across a defined panel of patients) were most widely shared among staff members made more rapid and substantial progress on implementing CPC.

[52] The information in the previous chapter contains more recent data than does this chapter. This chapter is based on site visits to practices, which occurred in summer and fall 2013. The previous chapter is based on January 2014 Milestone submissions from CPC practices.

[53] For detailed information on how we selected these deep-dive practices, see Appendix C of the CPC design report (Peikes et al. 2014).

- Practice-level HIT often lacked the functionality required to support shared decision-making work processes, the documentation of risk stratification information, and sharing information across the care team for care management.
- The requirements for participating in the Medicare EHR meaningful use incentive program provided an important external support for implementation of patient portals for CPC. As part of participation in the meaningful use program, practices were encouraged to implement and use patient portals to support meeting Stage 2 requirements for secure electronic messaging and providing clinical summaries to patients.
- Many practices lacked direct access to electronic health information from providers in other care settings (such as hospitals and specialists), thus necessitating inefficient workarounds to obtain information needed for care coordination and care management.
- Practice staff's perceptions that making certain improvements are complex and difficult pose a substantial barrier to implementing change. This barrier was particularly evident for enhancing patient education, giving patients more self-management support, and using risk stratification. Staff were less concerned about the complexity of achieving other Milestones.

Table 7.1. Selected characteristics of all CPC practices and deep-dive practices

	All CPC practices	Practices selected for deep dive
Number of practices	497	21
Average number of Medicare FFS beneficiaries per practice	635	809
Practice size		
One to two physicians	36%	33%
Three to four physicians	30%	33%
Five or more physicians	35%	33%
Practice ownership		
Physician-owned	53%	52%
Owned by a hospital, academic institution, or health system	44%	48%
Other	3%	0%
Urban/rural status		
Urban	81%	81%
Rural	14%	14%
Super rural	5%	5%
Medical-home status		
Certified as medical home by any organization	43%	38%
Mean PCMH-A score (maximum is 24)	14	14
Medicare expenditures and use		
Average annualized hospital admissions per 1,000 beneficiaries	257	279
Average Medicare expenditures per beneficiary per month	$603	$631

Source: CPC design report.

Notes: Because of rounding, percentages may not add to 100 percent.

PCMH-A scores were modified by converting each dimension score from a 16-point to a 4-point range and then summing these scores across all six domains. Thus PCMH-A scores reported here could potentially range from 6 to 24, with higher scores indicating better primary care functioning.

In this chapter, we first describe how the deep-dive practices made general decisions on how they would implement CPC. We then examine approaches and common facilitators and barriers to improvement across the five CPC functions (patient and caregiver engagement, risk-stratified care management, access and continuity, planned care for chronic illness and prevention, and

coordination of care). Finally, we offer some emerging hypotheses about how and why change might vary across different types of practices and suggest how our findings can inform the ongoing progress of the initiative.

We report here on the facilitators and barriers to implementation by CPC function and Milestone. However, frontline practice staff members commonly reported their experiences in implementing CPC more generally, focusing on issues that spanned multiple functions and Milestones. Moreover, some of the distinctions that CMS staff had in mind, such as a distinction between "preference-sensitive conditions" (the intended focus of the shared decision-making Milestone) and a broader focus on behavioral aspects of treatment adherence, were not how practice staff talked or thought about these issues.

7.2. Making decisions about changing care

Deep-dive practices commonly used formal planning or quality improvement teams to determine specific approaches to meeting the CPC Milestones. In some cases, assistance from RLF provided key support to these practice teams. Among deep-dive practices, system affiliation or independent ownership appeared to be more important than practice size in influencing how decisions were made and how implementation proceeded. In some of these practices, information about the goals and objectives of CPC participation was unevenly shared across members of the care team, thus potentially limiting innovative input from staff and weakening common effort toward CPC's goals. This issue was particularly acute in some system-affiliated practices, where central management often made implementation decisions without consulting with the practice.

A. Practices used planning teams and regular meetings for making decisions about CPC.

Practices reported varying levels of experience with team-based quality improvement approaches prior to CPC participation. In some practices, existing quality improvement teams took the lead on making decisions about how the practice would make changes in care for CPC. This **prior experience with quality improvement or practice transformation was an important facilitator of implementation efforts**. In other practices, newly formed improvement groups took on this decision-making process. Team composition varied; some teams were made up of clinicians only, and others included representatives from all levels of staff, including directors, administrators, clinicians, and support staff. For example, one practice described convening several teams, each focusing on planning for implementation of one Milestone; their tasks included developing tools and identifying training needs. Another practice formed a single CPC implementation team responsible for overseeing CPC implementation whose membership included a mix of clinicians, support staff, and quality improvement staff. At the time of our site visits, some of these new teams were in the early stages of formation, and others had been meeting regularly for several months in anticipation of the formal start of CPC.

B. Tailored technical support from RLF supported implementation.

In some cases, on-the-ground, **practice-specific assistance from RLF was perceived as a key contributor** to practice-level improvement efforts. In these practices, RLF provided personalized guidance, including answering questions, sharing best practices, helping develop or identify effective tools, and providing in-person feedback on implementation progress. This assistance ranged from connecting the practice with similar CPC practices to exchange implementation information, to regular attendance by RLF at practice quality improvement

meetings. In one practice, for example, the tailored assistance involved helping practice staff streamline an existing care plan template that was too long for patients with diabetes to complete. In this case, the RLF shared sample care plans from other practices, and the practice used one of those examples to revise its existing care plan template. As one of the care managers in this practice reported, this made the care plans "much simpler, much more user friendly, much easier to get in and out with the patients, and we're still accomplishing the same goal."

In several other practices, RLF provided frequent personalized assistance and communication to improve understanding and achievement of specific Milestones or met regularly with the practice's quality improvement team.

> RLF served as "a quality improvement resource that's kind of external to the practice . . . [to give] us ideas and [let] us know what other practices are doing."
>
> *—Lead clinician, independent practice participating in CPC*

C. System-affiliated and independent practices had different implementation approaches.

Regardless of prior experience or access to RLF assistance, **practice-level decision making about CPC-related care transformation efforts proceeded differently for independent, physician-owned practices than for those owned by health systems or closely affiliated with them.**

In independent practices, practice owners or a designated implementation team managed changes in care delivery, and we saw wide variation in the progress and extent of change in these practices. In these practices, local champions (typically a clinician) or formal practice leaders (for example, a solo practitioner owner) made key decisions about CPC implementation either alone or in consultation with other physician-owners. In many cases, these local leaders played a critical role in championing the implementation process and making sure that practice processes were changed to meet the demands of the CPC model, either through their participation in quality improvement teams or through informal processes.

> The first I heard about CPC was from the president of the system who "basically told us . . . that we've already applied for it, we already expect to be accepted by it, and here's what it means."
>
> *—Lead clinician, system-affiliated practice participating in CPC*

System-affiliated practices typically had less practice-level decision-making authority, but also had access to centralized management, HIT support, and other resources. In these practices, a common decision-making pattern was that representatives from each CPC practice affiliated with a specific system would meet centrally, determine a standardized process for implementation (or be told what that process would be), and help roll out these changes at the practice level with centralized coordination. Some practice leaders noted that even the decision to apply to participate in CPC was handled at the system level, sometimes with little transparency. In one system-affiliated practice, the physician lead brings standardized processes discussed at system-level meetings back to the practice, where a group that includes the clinicians, nurses, and office manager then discuss ideas for implementation. System-level meetings also offered the opportunity to share lessons learned from other affiliated practices participating in CPC or for staff members in similar positions (such as care managers) to meet and exchange information, solve problems, and ensure consistent approaches. (This also suggests that some nonparticipating practices in the same system may implement CPC or CPC-like activities.)

Despite these differences, both independent and system-affiliated practices were **pilot-testing potential changes to make decisions about improvements to care processes** or analyzing their own data to identify needed improvements. For example, one system-affiliated practice reported that use of a care manager was pilot-tested in two other affiliated practices and time-motion studies were done before implementation across the system. Several independent practices also used pilot-testing, often involving a single clinician or focusing on specific areas, before practice-wide implementation. For example, one practice piloted the use of shared decision-making tools for patients with hypertension and then used this experience to plan implementation of a similar tool for patients with diabetes. This allowed for feedback and suggestions for refinement before the practice standardized its processes and rolled them out more widely.

> Pilot-testing of new processes for CPC was used to "work out the bugs [at one practice] . . . before [new processes go] out to the rest of the practices."
>
> *—Medical director of a five-site practice group*

D. Knowledge of CPC changes was unevenly shared within practices.

In both independent and system-affiliated practices, clinician and nonclinician staff involvement in the CPC implementation process varied widely. In some practices, staff members reported attending CPC webinars and meetings or receiving training to support changes in their work. In other practices, however, staff members relied on practice leaders to present information learned through CPC meetings or received only broad guidance on objectives, without specific instructions on how to modify existing work processes. Staff members in some practices reported opportunities to provide input into implementation decisions, and staff members in other practices were directly engaged in quality improvement efforts by choosing some of the goals or participating in planning. In many practices, information about initiative requirements relating to care management or changes in work roles and tasks, or how the CPC initiative related to broader health system changes, was often unclear to staff members.

Because a key aspect of providing comprehensive primary care is ensuring that all members of the practice team are working together to provide improved care, staff knowledge of CPC objectives could prove an important issue for successful implementation of the CPC model. This is because development of new shared mental models of primary care (moving away from episodic care to approaches that focus on proactively identifying and addressing patient needs across a defined panel of patients) is an important step in a practice's development along the pathway to improved and more comprehensive care, because changing how clinicians and other members of the team see their work and their responsibilities is necessary for gaining buy-in for changing what they do (Cronholm et. al. 2013; McNellis et. al. 2013; Nutting et. al. 2010). Without clear communication of goals and objectives throughout the organizations, the changes in organizational culture expected as part of CPC participation may be delayed or undermined. **Practices in which these new mental models and approaches to care were widely held among the staff members appeared to make more rapid and substantial progress in meeting implementation Milestones.**[54]

[54] Effectively communicating the goals and objectives of a desired change throughout a practice is a key part of a developing a learning organization. This approach may build on what Miller (2010) and others have identified as the "adaptive reserve" of a practice, or the features of a practice that enhance its ability to be resilient in the face of challenging requirements. Key aspects of this concept are measured through CPC's clinician and staff survey.

7.3. Changes and facilitators and barriers to change across the five CPC functions

The Consolidated Framework for Implementation Research (CFIR) (Damschroder et al. 2009) guides our data collection and identification of the facilitators and barriers to CPC implementation across each of five CPC functions. This conceptual model provides a taxonomy of potential facilitators and barriers to implementation identified from a review of conceptual models developed over more than 40 years of implementation studies across multiple fields. CFIR groups these barriers and facilitators into five conceptual domains. For this evaluation, the five domains equate to the following:

1. **The characteristics of the CPC initiative** (such as the resources provided to support implementation)
2. **The internal context and setting** of the practice (such as how care teams are organized)
3. **External environment and context** in which the practice operates, such as the HIE environment and the policy context
4. **The characteristics and attitudes of the practice staff** and clinicians toward CPC implementation
5. **The processes used for CPC implementation** and how these affected implementation progress in each of the five CPC functions

For each of the five CPC functions that practices were expected to implement, we report on what the deep-dive practices were able to accomplish as well as what factors facilitated or served as a barrier to implementation.

Table 7.2 summarizes the key findings from the deep-dive site visits, arranged by the five CFIR domains detailed above. We organized these findings by domains rather than the CPC functions, because many barriers and facilitators cross-cut the CPC functions. At the end of this chapter, we summarize these key findings across all the CPC functions to identify barriers and facilitators within each of the five CFIR domains.

A. Patient and caregiver engagement

Patient and caregiver engagement activities occurring in participating practices in CPC's first program year included Milestone 4, which required practices to assess patient perspectives on care and use them to guide quality improvement, and Milestone 7, which required practices to incorporate shared decision-making tools and processes into clinical care. At the time of our visits, deep-dive practices exhibited:

- Significant progress in assessing patient perspectives
- Uneven success in using patient perspectives to guide quality improvement efforts
- Limited success in identifying and incorporating shared decision-making tools and processes into care

1. Assessing and incorporating patient perspectives for quality improvement

During the first year of the initiative, most of the deep-dive practices chose the option of conducting patient surveys for Milestone 4 (rather than the option of creating and convening patient and family advisory councils) to learn patients' perspectives and improve patients' experiences with care. Many of these practices had experience conducting patient surveys and using results for practice-wide improvement before CPC. For example, one practice administrator described how, before CPC, the practice had been using the CAHPS survey to focus on improving coordination of care. Because of findings from these surveys, combined with continued work in this area as part of CPC, the practice now has a nurse who calls patients to communicate all lab results, positive or negative. This **prior experience in patient engagement efforts contributed to an implementation climate conducive to new work in this area.** Only a few of the deep-dive practices had not conducted patient satisfaction surveys before CPC. At the same time, some practices faced difficulties and delays in accessing information collected from patient surveys that were analyzed by outside groups, and this presented a barrier to using this feedback for quality improvement in some practices we visited.

Among deep-dive practices, establishment of patient and family advisory councils to provide a patient voice in quality improvement efforts was not common. In the few practices that were implementing advisory councils, practice members spoke positively about recruiting potential members and establishing an advisory council, and hearing firsthand from patients about their experiences in the practice. However, in some practices not implementing advisory councils, practice members **viewed concerns about the time and other resources needed to ensure the successful operation of an advisory council as barriers.** For example, one practice in the past had a patient advisory council that the physicians found useful, and through which it had implemented a number of improvements based on the council's feedback. The practice decided to use a patient survey instead, however, because it did not feel it had the resources needed to recruit new members and keep the council going. These concerns—even among practices that did not pursue patient and family advisory councils—have important implications for CMS's efforts to encourage widespread use of this approach in the second program year of the initiative.

2. Shared decision making

Shared decision making involves collaboration between patients and their providers in making decisions about patient care so that the decisions take into account evidence-based guidelines and patient values and preferences. Specifically, as noted above, Milestone 7 in CPC's first program year required practices to incorporate shared decision-making tools and processes into clinical care.

> When implementing a shared decision-making approach, "What I've found is that if you start with where [the patients] want to work, you have a lot more success, when it comes to the outcomes."
>
> *—Care manager from participating practice*

At the time of our site visits, **many deep-dive practices were planning to incorporate shared decision-making tools and approaches** into care processes. Progress toward implementation of these tools and approaches varied across the practices. Some were determining the clinical area in which to focus their efforts and identifying a shared decision-making tool appropriate for their practice. Others had already identified an area of focus and a tool and were planning how to integrate the tool into practice processes. Where planning for use

was already under way, this included determining how the tool would be distributed to patients, tracking use of the tool, and gaining buy-in from clinicians on use of the tool in patient interactions. In one practice, a member of the RLF participated in a planning meeting on shared decision making and directed practice members to specific resources targeted to the clinical area they were working on. This assistance helped the meeting move quickly to planning implementation of the tools.

Practices' prior experience with using shared decision-making tools facilitated early success. One practice had developed an infrastructure for incorporating the use of shared decision-making tools into practice processes. In this practice, a registry was used to automatically prompt medical assistants to give eligible patients colon cancer screening information during intake.[55] Patients then had time to review the information before they saw the clinician, who would then discuss the screening decision with the patient. After the clinical encounter, the clinician used a template in the EHR either to order a colonoscopy or to indicate that the patient declined screening. Practice members reported that this process had increased the number of colonoscopies ordered and improved documentation of colon cancer screening. Given the rapidly changing nature of medical evidence in this area and other areas of preventive health screening, maintaining up-to-date guides and identifying appropriate performance targets will likely be a challenge for practices.

Challenges identified across deep-dive practices in implementing shared decision-making tools include the following:

- **Some clinicians are skeptical about using shared decision-making tools and other approaches to promoting patient engagement.** In these cases, a more paternalistic model of care delivery was dominant and was a barrier to more rapid implementation.
- **Finding appropriate tools and incorporating their use into existing EHR technology is challenging.** This was an issue even in practices committed to using shared decision-making approaches.
- As suggested with the colon cancer screening example above, **some practices conflated the idea of shared decision-making tools with tools and approaches to engage and educate patients.** In particular, many deep-dive practices did not focus on decision-making tools for making *preference-sensitive treatment decisions* in their work on the shared decision-making Milestone.[56]

In practices using shared decision-making tools, **a key facilitating factor was having at least one member of the care team committed to working with patients on self-management and developing manageable goals,** which practice staff felt led to greater overall patient engagement in care. Practice staff saw these skills as supporting the kind of work needed for implementing shared decision-making tools. The extent to which the use of such tools was formalized across the practice or dependent on the commitment of key individuals varied across practices.

[55] As discussed more below, this is not a decision-making tool for a preference-sensitive condition.

[56] CMS is planning to have a portion of practices select new decision aids because their current selection of aids are more akin to patient education materials than aids that help in making preference-sensitive treatment decisions.

B. Risk stratification and care management

In the first year of the initiative, CPC Milestone 2 required that practices risk-stratify their patient panels to identify high-risk patients in need of care management services and implement new care management processes for them. **Integration of risk stratification approaches and associated care management processes into regular practice work varied widely.** To implement care management processes, many practices hired additional staff, primarily registered nurses, and some practices made changes to existing staff roles. The practices we observed were at widely differing points in implementing care management. Some practices were still in an early planning phase and were focusing on risk-stratifying patient panels. Others were using ad hoc physician referral of patients they considered high-risk to practice-based care managers for additional support and follow-up. In the most advanced practices, care managers used automated reporting of patient risk status from patient registries and other clinical data sources to proactively identify patients in need of their services. Practices that were farthest along this developmental continuum typically had robust HIT resources (such as EHRs with structured data entry and electronic access to health information from other care settings), well-developed care teams of clinicians and support staff, and care management services integrated into regular work processes.

1. Risk stratification

Practices were expected to risk-stratify their patient panels in order to direct limited care management resources to those patients who need these services the most. All the deep-dive practices had identified and used risk stratification approaches, and in most practices, the clinicians were assigning risk status to their empanelled patients. Some were assigning risk status as patients came in for their visits, and others were using reports to organize empanelled patients by various criteria, such as diagnosis or payer-assigned risk status, and then assigning risk status.

Approaches to risk stratification varied across practices on the following dimensions:

- Number of risk levels
- Source of information and models used to assign risk status
- Practice members responsible for assigning risk status
- Extent to which reliable criteria were developed to assign risk status
- Extent to which risk stratification indicators were integrated into the EHR

Most practices reported that risk stratification was more complex and more time- and resource-intensive than anticipated. Some practices struggled with complex risk stratification algorithms that required integration of data from the practice EHR (including diagnosis codes, demographics, and measures of disease control) and from other health care providers such as local hospitals (including hospitalizations and ED visits). A few practices using the AAFP guidelines for risk stratification, however, found the initial process to be straightforward. The AAFP guidelines recommend a "simple" method for creating six levels of risk within three existing public health prevention categories to determine a patient's risk status: Primary Prevention (Levels 1 and 2), Secondary Prevention (Levels 3 and 4), Tertiary Prevention (Level 5), and Catastrophic (Level 6) [American Academy of Family Physicians 2014]. In placing patients into these risk categories, practices typically use a combination of clinical diagnoses and utilization data, clinical judgment, and, in some cases, a health risk assessment questionnaire or other patient-reported information on health status.

A common struggle across the practices—regardless of the risk stratification approach selected—was determining how to record risk status in the EHR so that it would be easily accessible to care managers and for tracking and reporting. Although the struggles we observed were primarily related to initial setup of recording of risk status, it is too early to tell if similar struggles will continue during ongoing use of patient risk status information in care management processes.

2. Care management

Integration of new care management functions into regular practice processes varied substantially across the deep-dive practices. Care management functions that practices were implementing as part of CPC included developing patient care plans, supporting patients in self-management of chronic conditions, providing patient education, and reconciling medications. Across practices, care managers worked with patients during office visits, by telephone, and, in a few cases, in the patient's home. Some care managers identified previously hidden problems (such as access to affordable medications) and supported the care teams by ensuring that patients were appropriately prepared for office visits and had access to self-management supports after their office visit. Many practices took a broad view of care management activities, but a few defined their care management activities narrowly, focusing primarily on patient education.

Practices that exhibited the most success in incorporating care management tended to have staff who shared perceptions that care management improves patient care, makes office visits more efficient, and reduces overall health care costs.

> "I think [care management] is a good way to improve primary care . . . [and] decrease the cost of these high-risk patients."
>
> *—Participating physician*

Across practices, helping patients self-manage chronic illness and make health-related lifestyle changes was identified as a common challenge for care management. A few practices perceived that a patient's willingness to engage in care planning and self-management was up to the patient rather than something in which the care manager really works to encourage and engage the patient. Other practices perceived that helping patients engage in care planning and self-management was a challenge and would take time, but noted that CPC provides tools and resources to support them in meeting patient needs. Some practices described how, with care management, they succeeded in improving treatment adherence for particularly difficult patients. Some practice staff identified care plans as being helpful, particularly when the practice could provide the patient with a summary of information after the visit that spells out such items as the patient's condition, recommended lifestyle changes, the patient's goals, and the next appointment. A few practices also were implementing processes to gather information from high-risk patients to better understand their needs and resources.

> "I think the patients need to be educated more. I'm not blaming everything on the patients; it's our part, too, to make that happen. That I will say is the main challenge. Now we have [care manager's name]. We didn't used to have a care manager before so that was a big problem. Now, we're kind of barely starting this process . . . so it's a work in progress. It's going to take some time."
>
> *—Participating physician*

In many practices, staff believed risk-stratified care management was improving patient care. Practice members reported that care improvements were coming from implementing a new approach that proactively managed patient populations, so they can target care to high-risk patients rather than merely react to individual patient needs, and better understand how resources are being used to meet the needs of high-risk patients. In many practices, care managers reportedly

supplemented the care that clinicians provided by giving the patients they worked with an opportunity to talk about their specific needs and to address previously unmet needs. In some practices, care managers also helped support efforts to track and monitor gaps in care. In a few practices, care managers were actively involved in connecting patients with community resources such as Meals on Wheels, food banks, transportation services, caregiver support groups, and affordable medical supplies to enhance the care the practice provided.

> "[E]verything was sitting there ready for me when [the patient] came in. I didn't have to hunt for anything. We weren't missing anything. All of the consult notes were there, so [the previsit planning done by the care manager] was helpful."
>
> *—Participating physician*

Risk-stratified care management activities facilitate improved communication among care team members and practice staff in general. As practices organized work processes to meet the needs of high-risk patients, practice staff members reported development of a shared understanding of high-risk patient needs that facilitated problem solving related to providing care to these patients. Those practices with well-developed care teams often instituted team huddles to regularize communication between the care manager and other team members. These huddles helped prepare the team for patient visits, review high-risk patient needs, and determine appropriate follow-up between visits. Practices perceived risk-stratified care management as a team effort, and the personalities of the care team members, particularly care managers, were key to cohesive care teams.

Clinicians in some practices expressed appreciation for the pre-visit planning and patient preparation that care managers offered. In these instances, care managers reportedly improve visit efficiency by making sure the clinician has all the information necessary in advance with a high-risk patient (by reconciling patient medications, ordering standard diagnostic testing, having lab test results available, and generally ensuring that the clinician has all the information necessary for a productive patient visit). In a few practices, clinicians expressed resistance to providing care management services to selected high-risk patients and remained committed to an acute care model. For example, one physician stated that he felt he had enough contact with his patients to serve their needs when they came into the office and did not perceive a benefit from care managers working separately with patients. The general perception from staff members in other practices—particularly the care managers—regarding clinician resistance to care managers was that they would eventually develop an appreciation for the care manager's role.

Although care management was typically seen as a valuable addition to these practices, many found that providing these new services was time- and resource-intensive. Care managers in particular noted the complexity of their work preparing high-risk patients for productive encounters, reconciling medications after care transitions, connecting patients to needed resources, and documenting these sometimes extensive care management encounters in the patient record. Care managers also reported challenges with introducing their new role to established patients. In a few of the practices in which care managers treated patients by telephone, care managers expressed frustration with trying to get a sense of patients' needs by telephone rather than in person. Furthermore, when treating patients by telephone, they found that patients can be difficult to connect with, particularly when the care manager is juggling many responsibilities in the practice.[57]

[57] We do not have enough information to discern whether this response varied by the source of care management (that is, whether it was being provided by a clinician, registered nurse, or other staff).

Practices had varying capacities to help high-risk patients manage their medical, social, and mental health conditions; therefore, some practices perceived more challenges than others in implementing care management. For example, one practice had health coaches on staff, in addition to care managers. The physician lead perceived this as one of the biggest advantages related to CPC: having the extra support in providing care to the most difficult patients—"patients who are kind of lost"—and helping them stay out of the ED. When asked to describe the resources that care managers made available to patients needing care management, practice members referred primarily to patient education supports, including hosting education classes for patients with chronic illness, hiring diabetes educators, and partnering with local facilities, such as hospitals, to refer patients for education related to their chronic illness.

Developing tools in the EHR to align with care management tasks and facilitate care management related communication about high-risk patients in the practice was challenging. Some practices did not have such functions before CPC, so they had to develop tools within the EHR to accommodate documentation of new care management tasks carried out by different care team members. **A few practices struggled with the challenge of working with an EHR designed to support episodic care, rather than care management and care planning.** This required practices to implement workarounds within their current systems, or even work across two systems (the EHR in which clinicians documented patient encounters and the care management system in which care team members documented day-to-day interactions with patients) to accommodate care management functions.

C. Access and continuity

At the time of our site visits, **most of the deep-dive practices had made changes to improve patient access and continuity of care.** Practices used CPC funds to add or increase access to same-day appointments, implement or improve patient portals and secure email systems, improve on-call coverage, and purchase mobile technology to ensure 24/7 access to the EHR. In one practice, the on-call coverage was provided by forwarding calls to a cell phone carried by a clinician who has a computer with access to the EHR. This practice also established a secure email system for contacting patients. In another practice, new nursing staff reported adding limited home visit capabilities for high-risk patients who needed this service.

Meaningful use incentives were an important external policy support for practice efforts to implement patient portals, and adoption was widespread. In most practices, however, reported use of this technology by patients was limited. One practice that had struggled with getting patients to use the portal created a pamphlet to explain the registration and log-in process. Exploring patient perspectives on barriers and facilitators to use of portals will likely be important for expanding use of this technology to improve access to the care team.

As with other areas of CPC implementation, **prior experience in trying to improve access and continuity through participation in PCMH certification or other quality improvement projects was an important facilitator of improvement.** For example, one practice expanded existing same-day appointment availability from a service offered by specific clinicians to a service that each clinician offered to their patients during set hours on days they were in the office; before this change, practice leaders used reports generated in the planning process for PCMH certification to identify the best times to add appointment spaces. Another practice shifted a preexisting system of general walk-in clinic hours designed to meet same-day visit demands to a

process in which each care team offered same-day access to improve continuity of care with a patient's given clinician.

D. Planned care for chronic conditions and preventive health

At the time of our deep-dive practice site visits, **we observed a wide variety of efforts to improve planned care for patients with chronic conditions and preventive health screening,** including hiring new staff, pilot-testing new approaches to care, and implementing new technologies to support efforts to improve care in these areas. A few practices had already made substantial changes to improve planned care and preventive health screening by integrating new staff into existing work (by creating processes to integrate care managers into existing clinical care teams), redesigning staff roles (one practice engaged front desk staff in initiating a discussion of breast cancer screening), developing new work processes (such as a daily review of scheduled patients to identify gaps in care before the visit), and implementing and beginning use of new technologies (such as portals for identifying hospitalizations and discharges for care management follow-up). Several other practices either had not begun work on changing care in these areas or were in the early planning stages, with little observable progress at the time of the site visits.

Practices that had made the most progress by the time of our visits exhibited one or more of the following characteristics:

- A practice-wide commitment to preventive health and population health goals
- Successful integration of EHR technology with other health information technologies, such as disease registries and automated patient reminder systems
- Effective information exchange with other clinicians and laboratory systems
- A history of quality improvement efforts involving multiple practice staff members

To identify specific patient needs or order screening tests before scheduled office visits, several practices had begun to extend the office-visit-driven model of care to include pre-visit planning; in the practices we saw, care coordinators did this. In one such practice, formal physician-medical assistant teams, guided by newly hired care managers, plan care for scheduled patients before each day in the practice, and care managers and medical assistants follow up with patients between visits. Identifying gaps in care for these teams to address was well integrated into practice work processes and included key work by reception staff who ran reports each day to identify gaps in care for patients scheduled the next day. For some preventive health objectives, such as breast cancer screening, the reception staff offered patients pre-printed materials when they checked in for their appointment to initiate a shared decision-making process. The lead physician pointed out that this meant that **receptionists "aren't just scheduling appointments, they are talking to patients about preventive care." With this new approach, "It's not just a model any more, where the doctor does all the health care delivery in the practice."** In another practice, which is part of a larger health system, the lead clinician reported that CPC has led them to "change our focus" to preventive health screening, and the practice was now pilot-testing giving medical assistants dedicated time to "clean up our records and get to people that aren't getting the test done."

Access to technical expertise or already developed internal capacities were key elements in effective use of EHR technology to support planned care and preventive health efforts. For example, in one practice, the care coordinator relied on EHR-based reports to monitor and plan care for patients with chronic illness, and HIT support staff within the practice had created customized reports for this purpose. Another practice had on-site technical expertise to be able to create EHR-based reports of patients by condition and identify lab values that indicated the need for additional care; it then had work processes to ensure that these patients were followed up with. Even in this technically savvy practice, however, lab values were handled inconsistently—some were imported as scanned documents, and others were entered in structured data fields—thus limiting the usefulness of the EHR-based reports. In another practice, patient records from other care settings and lab results were entered into the EHR electronically through a robust community-wide HIE. The practice administrator could then use the EHR to create reports and check quality-of-care measures. In this practice, the lead clinician is a longtime and sophisticated user of EHR technology and leads the practice in using the HIE.

Some practices that were successfully making changes to plan care had a long history of involvement in using data to drive quality improvement efforts. In a few cases, quality improvement teams included representatives from all the functional areas of the practice.

Practices that struggled to make changes exhibited one or both of the following characteristics:

- Clinicians and other staff committed to continued reliance on a traditional office-visit-driven model of care for preventive health and chronic illness care.
- EHRs in which the data needed to support preventive health and chronic illness care improvements were unstructured or inconsistently entered.

Practices that maintained a commitment to an office-visit-driven model of care made limited efforts toward improvements in planned care for patients with chronic conditions or preventive health screening. Among the practices that either had not started work or were in the early stages of contemplating and planning change, we observed reliance on regularly scheduled office visits and medication refill intervals as the mechanism for identifying and addressing preventive health and chronic illness care needs. In one practice, a physician said that active outreach is not needed when patients are past due for preventive health screening because "If they have an appointment, we catch what they need." In another practice, clinicians reported relying on personal knowledge of patients with chronic conditions to plan their care; use medication refill intervals to drive in-person office visits where preventive health or gaps in chronic illness care could be discussed; and schedule relatively long office visits to do this work with patients. A physician assistant in this practice reported that this was a sufficient approach because "We don't have a lot of people who don't come in" and "Most people are in the loop." In another practice, the care coordinator reportedly could generate lists of patients who needed services but stated that ensuring that patients take preventive health measures, like quitting smoking, is not something members of the practice can "control."

Visit planning and proactive population-based preventive health outreach requires that practices have access to timely and accurate patient information. In several practices, limitations in documentation processes and EHR capabilities meant that this information often was lacking or had to be manually entered into the EHR. In one practice, an EHR-based tool for planned care was being pilot-tested; however, the EHR preventive health reminders did not function

properly because the data used to drive them were not entered consistently. In another practice, the physician-owner stated that the EHR "doesn't do everything we need," noting that the product was chosen for price rather than features. Specifically, it did not include reminder systems for preventive health. Another practice reported using the EHR to store scanned images of handwritten visit notes, which meant that built-in preventive health reminders that relied on structured data entry did not have the data they needed to function. In several practices, we observed "workaround" efforts—in which practice staff manually entered information into the EHR—to better support planned care activities. For example, in one practice, a staff member developed lists of patients with gaps in care around prevention or chronic illness management and was manually entering lab values into the EHR to support this work. In another practice, staff members were engaged in a "reconciling" effort in which they entered preventive health information from handwritten visit notes into the EHR to activate built-in reminder systems.

E. Coordination of care

At the time of our site visits, deep-dive practices were developing processes for CPC Milestone 6, tracking and monitoring care transitions after hospitalizations or ED use, and exchanging information with specialists. Despite efforts in many practices to standardize processes for monitoring and tracking care transitions for their patients, **many practices faced information exchange barriers to effective coordination—especially when coordinating care across providers in health systems external to the practice.** Even in regions with relatively high-functioning HIE capacities, practices continued to receive some key information through paper-based delivery or fax transmission. **These technological hurdles led to delays in communication and limited practices' ability to follow up with patients promptly or to effectively coordinate care across multiple settings.** Next, we discuss care transitions after ED visits and hospitalization, then describe coordination with specialists and other providers.

1. Care transitions after hospitalizations and follow-up after ED visits

Care transitions after hospitalizations and follow-up after ED visits commonly involved a practice member making a telephone call to the patient, often within 48 hours of the patient's discharge. Practice staff noted that **a common benefit of telephone calls to patients was the opportunity for a care manager to prepare both the patient and the clinician for a follow-up visit** (if warranted), thus minimizing clinician involvement in resolving care coordination issues (such as those related to medication reconciliation).

Across practices, practice staff noted the importance of the care manager in understanding and addressing the needs of high-risk patients when they are discharged from the hospital. Staff noted that patients sometimes have limited understanding of the hospital care they received or confusion about their medications. Care managers reportedly played an important role in addressing this issue by helping patients reconcile medications between the two care settings and arranging follow-up care. In setting up follow-up visits, some care managers also obtained information about the patient's condition to inform the clinician or worked to provide care management services, including connecting patients to needed resources and supports (such as programs providing affordable medications). Practices did not report care managers using established models of transitional care.

Although practice staff perceived benefits in standardizing tracking and monitoring care transitions, technological and communication-related barriers limited patient follow-up. Most deep-dive practices had in place, or had recently attempted to standardize, a process for tracking and monitoring patient transitions in care upon hospital discharge or after an ED visit. However, we observed considerable variation across these practices with respect to:

- Source of the discharge information (in-network hospitals only, out-of-network hospitals, payers)
- Consistency and timeliness of discharge notification
- Mechanism used to notify practices of the discharge (electronic, fax, telephone)
- Level of automation in notifying practices of the discharge (automatic receipt of information or manual look-up by practices)
- Level of detail in the discharge notification

Because of these variations, staff in some practices spent considerable time and resources coordinating the exchange of information between the practice and hospitals. These **practices perceived making improvements to care coordination as being difficult, because obtaining information from different sources and through various mechanisms required the efforts of multiple staff members.** Staff in practices receiving automated discharge information described a standardized process, often involving one staff member responsible for managing the process for the entire practice, and effectively contacting patients upon discharge. A few care managers described plans to visit their local hospitals to build relationships to try to improve communication about transition care.

> "We figured out a way to go into [the hospital system] and pull [patient discharge] information out. [The practice's nurse] goes in every day and searches for our patients, and then sends a telephone encounter to the nursing team. . . . I would still describe it as labor-intensive . . . because of a lack of communication across the systems, but at least we're able to get the information."
>
> *—Practice administrator from practice participating in CPC*

From the practice perspective, the care transition process can vary considerably, depending on whether the hospital is in the system or out of the system (sometimes referred to as "in network" or "out of network"). **In many practices, the transition in care process for discharges from hospitals within their system is automated and standardized.** In these practices, care managers or office staff typically are responsible for reviewing the discharge information and contacting patients. **Practices working with hospitals not in their system and those that lacked access to hospital EHR data faced challenges for standardizing the transition in care process.** In some practices, care managers reported access to out-of-system hospital EHRs to obtain patient discharge information; in at least one practice, access was limited to a physician. In other practices, staff members relied on personal relationships with hospital staff for information exchange. One practice exemplifies this issue: the practice receives notification of ED visits and hospital discharges from two hospital systems. For one of these systems, it receives notifications through the local HIE, and for the other system, it receives discharge summaries from hospitalists. The discharge summaries sent by the hospitalists are often described as being incomplete and are usually received 72 hours to one week after patient discharge, limiting the ability of the practice to meet its stated goal of follow-up with patients within 48 hours of discharge. (In PY2014,

Milestone 6 requires practices to follow up with at least 75 percent of their patients with 72 hours of discharge.)

2. Care coordination with specialists and laboratory services

Use of care managers facilitated scheduling and tracking of referrals and exchanging information with specialists, despite technological barriers. Coordinating care with specialists and other providers is another important element of CPC's care coordination function. As part of this work, a number of deep-dive practices had in place or had recently implemented formal systems to schedule and track patient referrals, send patient information to specialists before appointments, and collect follow-up patient information after the appointment. A few of these **practices indicated that they had improved the referral tracking process and their sharing of patient information with specialists since participating in CPC.**

Similar to the challenge of practices' dependence on various sources of hospital discharge information, **the main challenge to coordinating patient care with specialists was dependence on specialists for obtaining information after referrals about the visit and any testing delivered.** Practices that are part of a health system and can refer patients to in-network specialists generally described uncomplicated processes for sharing patient information to coordinate care before and after a specialist visit, as information can be accessed through a shared EHR. Practices that are not part of a health system and practices whose patients receive care from out-of-system specialists generally described the process for sharing patient information as complicated and time-consuming, involving following up with specialists, dealing with incompatible EHRs, faxing information back and forth, and scanning it into the patient record. This process also depended on the willingness of the individual specialist to cooperate with efforts to coordinate patient care and were often, as one physician described it, "a little bit hit-or-miss."

At the time of our site visits, a few practices were attempting to establish an electronic interface to receive results from diagnostic studies. Some practices noted having an electronic interface in place with lab facilities through which diagnostic results were sent to the practice. However, **practices commonly manually entered at least some diagnostic results received from lab facilities into patient records.** A few practices described major challenges because of not having an electronic interface to receive results in the practice.

Deep-dive practices in several regions are using the local HIE to facilitate information exchange with other providers, both hospitals and specialists. These practices described complexities in using HIE as a way to coordinate care, including dependence on other providers to share their information, lack of notifications (thus requiring a search for patient information), lack of national HIE standards, and alignment of data systems between providers and systems.

7.4. Summary of barriers and facilitators to change

In examining the barriers and facilitators to making change across the five CPC functions, we found that CPC characteristics, practice setting, external context, characteristics and attitudes of practice staff, and the processes used for implementation within the deep-dive practices all affected how practices implemented the CPC model. In this section, we summarize the key findings from each of these areas (also summarized in Table 7.2).

CPC characteristics. Several aspects of the design of the CPC initiative affected practice-level implementation of the model. The financial support offered to practices as part of CPC participation was widely seen as an important facilitator of practice-level change. For example, the availability (and expected availability) of substantial funding for CPC services enabled practices to enhance their capacities for care coordination, improve access to the practice, and efficiently organize the delivery of more comprehensive care. One area in which practices perceived these resources to be insufficient was in the formation and support of patient and family advisory councils as a way to engage patients and caregivers in practice improvement efforts. (Moreover, given the choice between a patient survey and an advisory council, practices felt the advisory council would require considerably more time and effort.) Practices also reported that risk stratifying their patients, consistently recording this information in EHRs, and developing new work processes for risk-stratified care management was more complex and more time- and resource-intensive than they had initially expected.

External context and policy environment. The external environment shaped implementation. First, some of the deep-dive practices had previously participated in PCMH programs or other quality improvement initiatives sponsored by health plans in their region. This prior participation helped prepare these practices for the requirements of CPC participation by building relationships with external organizations that focused on improving primary care practice. When meeting the requirements of CPC implementation, some practices then used these relationships to support change efforts. Second, some practices participated in the federal incentive programs for the meaningful use of HIT, which were aligned with the goals and objectives of CPC, thus lending key support to the initiative. For example, meaningful use requirements that practices provide patients with timely electronic access to their health information, and the incentives associated with meeting this requirement, spurred the adoption of patient portals in the deep-dive practices to expand patient access to the practice. Third, in a few of the deep-dive practices, access to electronic HIE supported care coordination by improving communication between the practice and other care settings. This exchange of information also facilitated better tracking of preventive health services and laboratory results used to monitor chronic illness care. More commonly, practices lacked access to effective HIE, and this proved to be a barrier to sharing information with hospitals, specialists, and lab and testing facilities, as well as to practice-level efforts to coordinate care for their patients. In the practices without access to HIE, discharge information and follow-up information from specialists was inconsistently shared with the practice and was often not timely. Without HIE, gaining access to multiple external data sources using a variety of electronic and telephone communication approaches required considerable staff time and development of new work processes. Fourth, several practices reported that delays in accessing patient survey information collected by outside organizations limited their ability to use these data for quality improvement. Across the deep-dive practices, locating appropriate shared decision-making tools was particularly challenging.

Practice setting and organizational characteristics. Some of the deep-dive practices showed high levels of readiness for implementing the requirements of the CPC initiative. In these practices, we found preexisting care management capacity and work processes, staff members with patient engagement experience and skills, well-developed team-based care approaches, prior experience with using shared decision-making tools and integrating these into clinical workflow, and HIT that integrated disease registries, reminder systems, and shared decision-making tools into the practice EHR. Many of these same practices reported prior experience with team-based quality improvement approaches and used existing quality improvement meetings to integrate CPC

requirements into practice work processes. A shared commitment to prevention and population health goals also was an important part of ensuring practice-wide efforts to implement CPC requirements. The management, quality improvement, and HIT support that some system-affiliated practices received were important supports for their change efforts. Nonetheless, these practices typically required approval from system leaders before changes could be implemented at the practice level. Practices that made slower progress toward implementing CPC requirements reported difficulties with integrating shared decision-making tools into practice EHRs, an unclear understanding of the distinctions between shared decision making and self-management support, and the need to modify existing EHR systems to document risk status and care management activities. In some practices, EHR data were inconsistently entered and important information relating to prevention and chronic illness care was entered in unstructured text fields, limiting efforts to assess and improve performance in these areas.

Characteristics of individuals in the practice. Shared perceptions that care management improves the quality and efficiency of patient care and the team-promoting approaches of some care managers were important supports for CPC implementation. In some cases, clinician and staff commitment to an office-visit-driven model of care and skepticism about the value of care management, shared decision making, and patient engagement were barriers to effective implementation of CPC requirements. A narrow view of care management as focusing on patient education was also a barrier to effective integration of these services into some practices.

Implementation processes. The tailored technical assistance that RLF and EHR vendor staff offered supported effective implementation processes in some of the deep-dive practices. In others, practice staff had technological expertise that facilitated making changes and modifications to EHR systems in support of CPC requirements. Pilot-testing and other quality improvement approaches, either disseminated by outside personnel or as part of existing organizational practices, were important supports for meeting CPC objectives in some of the deep-dive practices.

7.5. Emerging hypotheses and areas for consideration

Our analysis of data collected from these practices has (1) informed revision of the follow-up practice survey to ensure systematic documentation of practice-level experience with specific learning and diffusion activities and perceptions of their usefulness, and (2) identified practices' system affiliation (versus independence) as an important issue for future analysis in the implementation and impact analyses. In addition, issues that will likely be important for the next phase of CPC implementation include practice staff's existing skills to support shared decision making, patient education, and self-management—especially as they pursue more challenging Milestones in the coming year (such as integrating behavioral health into primary care).

Some of the issues identified above affect multiple CPC functions and could affect Milestone progress and CPC implementation going forward. Key issues include the importance of:

- An organizational commitment to integrating population health into primary care by proactively identifying and addressing patient needs across a defined panel of patients
- EHR-based tools to support care planning, care coordination, communication with patients, and shared decision making, in addition to the episodic care needs currently supported

- A comprehensive and effective EHR and HIE infrastructure to support risk stratification, care management, care coordination, and planning care
- A practice-level quality improvement infrastructure that supports pilot-testing and implementation of new work processes and that includes dedicated CPC implementation meetings

Through our ongoing data collection in the deep-dive practices, we will track the changing importance of these issues for CPC implementation. Where possible, we will assess the relationship between these common implementation issues and improved quality; patient, clinician, and staff experience; and health care costs.

Table 7.2. Facilitators and barriers to implementation across the five CPC functions, as commonly reported and/or observed in deep-dive practice interviews and visits

	CPC Function				
	Patient and caregiver engagement	Risk-stratified care management	Access and continuity	Planned care for chronic conditions and preventive health	Coordination of care
Characteristics of the CPC initiative					
Facilitators					
Adequate resources for new capacities (both financial and time)	✓	✓	✓	✓	✓
Compatibility with care improvement objectives		✓			
Barriers					
Insufficient resources for new capacities (tools, financial, time)	×	×			
Complex or unclear requirements	×	×			
External environment and contex					
Facilitators					
Effective local electronic HIE		✓		✓	✓
HIT "meaningful use" incentives			✓		
Regional history of PCMH programs	✓	✓	✓	✓	✓
Barriers					
Lack of direct electronic access to health information from other care settings		×		×	×
Delays in access to patient survey results	×				
Gaps in electronic information available through HIE		×		×	×
Complexity of needs in patient population		×			
Internal context and setting of the practice					
Facilitators					
Prior experience with quality improvement efforts	✓	✓	✓	✓	✓
Organizational commitment to population health approaches to care		✓		✓	
Independent practices could make rapid change	✓	✓	✓	✓	✓
System-affiliated practices had support for management, HIT, quality improvement		✓		✓	✓
Integration of new work with existing work processes		✓			
EHR technology integrated with disease registries and patient reminder systems		✓		✓	
Prior use of shared decision-making tools	✓			✓	

	CPC Function				
	Patient and caregiver engagement	Risk-stratified care management	Access and continuity	Planned care for chronic conditions and preventive health	Coordination of care
Existing staff trained in patient self-management approaches	✓				
Barriers					
Organizational commitment to traditional office-visit-driven model of care		×		×	
Independent practices lacked support for management, HIT, quality improvement		×			
System-affiliated practices had limited local authority to make change	×	×	×	×	×
Lack of a practice-level quality improvement infrastructure	×	×	×	×	×
Lack of population management systems and sufficient care management staffing		×			
Lack of knowledge of available shared decision-making tools	×			×	
Preventive health and chronic illness-related data entered into EHRs as unstructured data		×		×	
EHRs had to be modified to integrate new work	×	×			
Characteristics and attitudes of practice staff and clinicians					
Facilitators					
Shared staff and clinician commitment to population health approaches to care		✓		✓	
Barriers					
Clinician skepticism of the value of CPC requirements	×	×			
Shared staff and clinician commitment to office-visit-driven model of care				×	
CPC implementation process within the practice					
Facilitators					
Use of established quality improvement processes	✓	✓	✓	✓	✓
Use of pilot-testing before making practice-wide changes	✓	✓	✓	✓	✓
Tailored assistance from RLF	✓				
Standardization of implementation processes across system-affiliated practices	✓	✓	✓	✓	✓
Dedicated CPC implementation meetings	✓	✓	✓	✓	✓
Barriers					
Implementation limited to some (not all) clinicians or care teams, creating multiple workflows for the same processes	×	×		×	×
Knowledge of CPC requirements unevenly shared across practice members	×	×		×	×

Note: For each function where they apply, facilitators are indicated with a green checkmark and barriers are indicated with a red x.

CHAPTER 8. WHAT IS CPC'S IMPACT ON COST, SERVICE USE, AND QUALITY FOR ATTRIBUTED MEDICARE FFS BENEFICIARIES?

8.1. Overview of findings

CPC is expected to reduce Medicare FFS expenditures by reducing the use of high-cost services such as hospitalizations and ED visits. It is also expected to improve the quality of care. Based on earlier literature on initiatives that transform primary care practices, we anticipated it would take 18 months to three years for practices to transform and to see effects on cost, service use, and quality, if CPC is effective (Nutting et al. 2011; McNellis et al. 2013; Solberg et al. 2013). As McNellis et al. (2013) state, "[T]he process of transforming is complex, challenging, and ambitious. It takes time and is constantly evolving… Observing that transformation is hard and challenging … helps policy makers develop realistic expectations as to the timing and resources required for practices to become PCMHs."

Across all seven regions combined over the first year of the CPC initiative, the results suggest that CPC has generated enough savings in Medicare health care expenditures to cover most of the CPC care management fees paid by CMS for attributed Medicare FFS beneficiaries.[58] However, because of possible unobserved CPC-comparison differences at baseline not controlled for by matching, the concentration of favorable findings in several regions, and their early timing, as well as some unexpected adverse results in other regions, we recommend that these findings be interpreted with caution at this time.

During the first year, across all attributed beneficiaries, CPC appears to have reduced total monthly Medicare expenditures without care management fees compared to what they would have been absent the CPC intervention by $14 per beneficiary, or 2 percent. These reductions appear to be due to the favorable initiative-wide impacts on hospitalizations, outpatient ED visits (ED visits that did not result in a hospitalization), and total ED visits (including visits that did and did not result in a hospitalization). Impacts were large enough to offset most of CPC's monthly care management fees, which average $20 per attributed beneficiary per month among participating CPC practices. Therefore, the impacts render the initiative close to cost neutral as a whole.

The expenditure impact estimates differ across the seven regions. The favorable initiative-wide results are driven mainly by New Jersey and Oklahoma, where CPC generated favorable impacts on several key expenditures and service utilization outcomes (Table 8.1) and, to a lesser extent, by New York (for hospitalizations) and Oregon (for outpatient ED visits). On the other hand, there was one region with unfavorable impacts on Medicare expenditures without care management fees (Ohio/Kentucky), and there were two regions with unfavorable impacts on Medicare expenditures with fees (Arkansas and Ohio/Kentucky).

[58] Earlier chapters examined implementation over the first program year, which covers October 2012 through December 2013. Due to claims data lags, this chapter reports impacts during the first year, which covers October 2012 through September 2013.

Table 8.1. Summary of impact estimates on key outcomes for the first year of CPC (October 2012 – September 2013), CPC-wide and by region

	All	AR	CO	NJ	NY	OH/KY	OK	OR
Full sample								
Medicare expenditures and service use								
Expenditures without fees	-2%**	0%	1%	-5%***	-2%	4%*	-7%***	-2%
Expenditures with fees	1%	3%*	4%	-3%	0%	6%***	-5%***	1%
Hospitalizations	-2%*	2%	3%	-5%*	-6%**	4%	-7%***	-5%
Outpatient ED visits	-3%***	-3%	-1%	-4%	2%	-1%	-7%***	-6%*
Quality-of-care process measures								
Compliance with all 4 diabetes measures	3%	12%	8%	4%	5%	4%	-21%***	11%*
Continuity of care:								
Percentage of primary care visits at attributed practice	1%	4%	2%	2%	-1%	-1%	2%	-2%
Transitional care:								
14-day follow-up to hospitalization	0%	-4%	3%	0%	4%**	-2%	-2%	2%
Quality-of-care outcome measures								
ACSC admissions	1%	7%	-4%	-1%	-6%	8%	-5%	3%
Readmissions	-4%	1%	-2%	-6%	-1%	-8%	-7%	5%
High-risk subgroup								
Medicare expenditures and service use								
Expenditures without fees	-2%	-2%	1%	-4%	-4%	7%***	-10%***	0%
Expenditures with fees	0%	-1%	3%	-2%	-2%	9%***	-9%***	2%
Hospitalizations	-3%	-2%	8%	-5%	-9%*	4%	-8%**	-3%
Outpatient ED visits	-1%	-5%	2%	3%	6%	-3%	-13%*	-3%
Quality-of-care process measures								
Compliance with all 4 diabetes measures	10%***	16%	10%	7%	22%***	9%	-15%*	20%*
Continuity of care:								
Percentage of primary care visits at attributed practice	1%	2%	1%	3%	-1%	1%	3%	-1%
Transitional care:								
14-day follow-up to hospitalization	-1%	-6%*	2%	-1%	6%***	0%	-2%*	2%
Quality-of-care outcome measures								
ACSC admissions	1%	4%	-6%	2%	-6%	13%	-5%	4%
Readmissions	-1%	3%	10%	-4%	1%	-5%	-11%**	9%

Note: For Medicare cost and service use outcomes, negative, statistically significant estimates (in green) are favorable, implying reductions in service use and/or costs, while positive, statistically significant estimates (in red) are unfavorable, implying increases in service use and costs. For quality of care process and outcome measures, positive, statistically significant estimates (in green) are favorable, implying improvement in care quality, and negative, statistically significant estimates (in red) are unfavorable, implying a deterioration in care quality. Impact estimates are based on a difference-in-differences analysis that adjusts for baseline patient characteristics (including HCC scores) and baseline practice characteristics.

*Statistically significant at the 10% level, two-tailed test.
**Statistically significant at the 5% level, two-tailed test.
***Statistically significant at the 1% level, two-tailed test.

Although there was a sizable (4 percent) but not quite statistically significant (p = 0.105) CPC-wide decline in unplanned 30-day readmissions, there were few sizable or statistically significant effects on other claims-based quality-of-care outcomes or process measures (delivery of evidence-based care for diabetes care and IVD, transitional care, and continuity of care), and there was no clear pattern among the few statistically significant findings. For example, there were unfavorable effects for some of the diabetes quality-of-care measures in Oklahoma, but favorable effects on some of the diabetes measures in Oregon and New York. There was also a favorable effect on a measure of the delivery of transitional care (the proportion of patients with a 14-day follow-up visit after a hospital discharge) in New York.

We also checked for whether impacts varied for *patients* who were in the top risk-quartile when they were first attributed, and for whether impacts varied with key *practice* features. In general, for the subset of high-risk beneficiaries, the reductions in Medicare expenditures and service use followed the same pattern as for all patients and were comparable in percentage terms but slightly larger in magnitude. However, some statistically significant effects on quality-of-care process measures were observed only for high-risk beneficiaries, likely because those measures focus on patients with chronic conditions, most of whom fall in the high-risk group. Specifically, the likelihood of a beneficiary receiving all four diabetes services (tests of HbA1c, lipid, and urine protein and an eye exam) increased by 3 percentage points (10 percent) for the high-risk group. The favorable effect on diabetes care may reflect the focus on diabetes CQMs by a large proportion of practices (described in Chapter 6). Effects on this measure were favorable, large (20 to 22 percent), and statistically significant in Oregon and New York, and favorable (but not statistically significant) in all other regions except Oklahoma, where the effect was a statistically significant, unfavorable 15 percent. We did not find any statistically significant evidence for systematic variation in impacts by either medical home status or by whether the practice had greater access to resources for transformation (which we defined as those practices that had six or more physicians or were affiliated with a larger organization according to SK&A data when CPC began).

8.2. Overview of methods

Our analysis compares changes in outcomes between the period before CPC began (baseline) and the period after it began for attributed Medicare FFS patients in CPC practices to changes over the same time period for beneficiaries attributed to similar comparison practices. We use the year before CPC as the baseline period, and examine changes between this period and each of the four quarters after CPC began in mean outcomes per attributed Medicare beneficiary per month.

CPC region	External regions
Arkansas	Tennessee
New York: Capital District Hudson Valley Region	Western and Central New York, New Jersey, and Connecticut
Oregon	Idaho and Washington
Colorado	Utah, Kansas, and selected counties in New Mexico
New Jersey	Western and Central New York and Connecticut
Ohio/Kentucky: Cincinnati-Dayton Region	Remaining counties in Ohio
Oklahoma: Greater Tulsa Region	Remaining counties in Oklahoma

We used propensity score matching to select seven comparison groups—one for each region's CPC practices. Practices in the comparison group for each region were chosen from within the same region, or similar regions, as CPC practices. We list the seven CPC regions and their matched external areas below.

We selected comparison practices from the pool of potential comparison practices using a propensity score model that matched on a wide variety of practice characteristics (such as status as an NCQA- or state-certified medical home, number of clinicians, and whether it had a Medicare meaningful EHR user), market-level characteristics (such as household income of the practice's zip code), and patient-level characteristics of the practice's attributed Medicare beneficiaries (such as their demographic characteristics and Medicare service use before CPC). We then implemented a technique called "full matching" to form matched sets that contain one treatment and multiple comparison practices or one comparison and multiple treatment practices. A "match" for a given treatment practice was identified whenever the propensity score for the potential comparison practice fell within a pre-specified range around the treatment practice's propensity score.

We selected comparison practices from those that had applied to CPC in the same regions as the CPC practices but were not selected, as well as from practices in nearby areas that were not part of the CPC regions, but were considered by experts to be reasonably similar and to have enough practices for matching. We included the first group—nonselected applicants to CPC—in the potential comparison practice pool because they had expressed the same willingness to participate in the initiative as the selected practices and, therefore, were likely to share the same motivation (an unobserved characteristic) to provide enhanced primary care to beneficiaries. In addition, because the nonselected practices are located in the same region as the CPC practices, they are subject to the same regional conditions as the CPC practices and would help account for regional factors that could affect outcomes. A typical evaluation would not choose practices for its comparison group that had applied to CPC but were not selected out of concern that they were not functioning as well as those that were selected. However, CMS did not score practices based on their pre-CPC outcomes when they selected practices; moreover, through the propensity score matching process, we could ensure that the comparison group had similar values for the limited measures that CMS considered from applications that might be related to subsequent performance: meaningful use of EHRs and medical-home designation.

Appendix D shows the similarity between the CPC and comparison practices on a range of market-, practice-, and patient-level characteristics. It also shows the number of comparison practices that come from the same region, as well as external regions.

Outcomes. We estimated impacts for the following claims-based outcomes:

- Medicare Part A and Part B monthly expenditures (both with and without CPC care management fees). Although the primary outcome of interest is net expenditures (with fees), we also examine expenditures without fees. This approach allows us to gather rigorous evidence about whether CPC is cost neutral. Because CPC care management fees are a relatively small portion of Medicare expenditures, we might find that net Medicare expenditures are not significantly different from zero (due to limited statistical power) even if we have no clear evidence that CPC reduces expenditures for service use. Therefore, we first examine whether CPC affected Medicare expenditures for service use and the size of those effects, and then examine whether any savings observed were large enough to cover program fees by examining program effects on

net Medicare expenditures (including care management fees). If impact estimates suggest that CPC reduces gross Medicare expenditures, and net Medicare expenditures are not significantly different from zero, then we have evidence that CPC is cost neutral. If we cannot reject the hypothesis of no effects on gross Medicare expenditures, then it is unlikely that CPC is cost neutral, even if we cannot reject the hypothesis that net effects were zero.

- Medicare Part A and Part B monthly expenditures by type of service (inpatient, physician, outpatient, skilled nursing facility, durable medical equipment [DME], hospice, home health)
- Rates per 1,000 beneficiaries of annual Medicare service use (hospitalizations, outpatient ED visits, total ED visits, physician visits, specialist visits)
- Ten claims-based quality-of-care *process* measures measured over the year:[59]
  - For beneficiaries with diabetes: the likelihood of receiving an HbA1c test, a lipid test, an eye exam, a urine protein test, all four exam/tests, and none of the four exam/tests
  - For beneficiaries with IVD: the likelihood of receiving a lipid test
  - For all beneficiaries: continuity of care (the percentage of primary care office visits with the attributed practice, and the percentage of all office visits with the attributed practice), and transitional care (receipt of a follow-up visit by any clinician from this or another practice within 14 days of a hospital discharge)[60]
- Two claims-based quality-of-care *outcome* measures: (1) the likelihood of a 30-day unplanned hospital readmission, and (2) the rate of hospitalizations for ambulatory care sensitive conditions (ACSC) per 1,000 beneficiaries per year

Difference-in-differences estimation strategy. We estimated the impact of CPC by using difference-in-differences regressions. These regressions compare mean outcomes (per beneficiary per month for Medicare expenditures, rates per 1,000 beneficiaries for service use outcomes, and percentage of beneficiaries receiving appropriate care for quality outcomes) between the CPC and comparison groups during the four quarters before CPC and the four quarters after CPC began, while controlling for patient, practice, and market characteristics. These models net out any remaining preexisting differences in outcomes between the CPC and comparison beneficiaries at baseline that were not accounted for by propensity score matching. We adjust standard errors to account for clustering of patient outcomes at the practice level and for weighting. The observation weights are equal to the product of two separate weights: one reflecting the share of the year for which the beneficiary's data are observed, and one ensuring that the CPC and comparison group samples have similar numbers of beneficiaries.

[59] These claims-based quality-of-care measures span all care received by Medicare beneficiaries; the CQMs that practices report based on their EHRs only include care received from the practice. The four diabetes measures (the likelihood of receiving an HbA1c test, a lipid test, an eye exam, a urine protein test) and the IVD measure (the likelihood of receiving a lipid test) are based on HEDIS specifications.

[60] Claims-based measures of continuity of care do not necessarily reflect patients' perceptions of whether they have a continuous relationship with their provider (Bentler et al. 2014). See Chapter 8 for patients' perceptions of continuity of care based on the patient survey.

For Medicare expenditures with and without care management fees and for the continuity of care measures (described in Appendix F), we estimate a linear regression. For the service utilization outcomes (hospitalizations, ED visits, ACSC admissions, physician visits), that are measured as utilization counts per 1,000 beneficiaries per year, we use maximum likelihood models appropriate for count variables. Specifically, to account for overdispersion in utilization counts, we use negative binomial models for utilization outcomes such as physician visits, and to account for both overdispersion and the large percentage of zeroes (beneficiaries with no utilization during a quarter), we use a zero-inflated negative binomial model for service utilization outcomes that have a large percentage of zeroes, such as hospitalizations and ED visits.[61] For modeling the likelihood of an unplanned readmission within 30 days following a discharge and the likelihood of a follow-up visit within 14 days of a discharge, we use separate logistic regressions. We also use logistic regressions for the binary quality-of-care measures for patients with diabetes and ischemic heart disease included in the annual analysis.

All regressions control for beneficiary characteristics in the pre-intervention period, such as demographics (age categories, race categories, gender), variables capturing Medicare and Medicaid eligibility (original reason for Medicare eligibility, dual status), and HCC score. In addition, in the readmission and follow-up visit equations, we control for certain discharge-level factors—specifically, indicators for 31 condition categories (with one serving as the reference category) identified in inpatient episodes of care during the 12 months prior to the index admission, as well as those present at admission. To avoid introducing endogeneity issues, we do not control for diagnoses that may have occurred as a complication of care during the index admission. We also control for indicators for the specialty cohort to which the principal diagnosis or procedure associated with the index discharge belonged (the six cohorts for which we include indicator variables in the model, with one serving as the reference category, are (1) medicine, (2) surgery, (3) cardiorespiratory, (4) cardiovascular, (5) neurology, and (6) other.

Results are presented both for the full sample and for a subgroup of high-risk beneficiaries, for whom we expect CPC to have larger effects on costs and utilization, because of their greater need for expensive services. This subgroup includes the beneficiaries with the highest quartile of 2012 HCC scores.

Statistical power to detect effects. The number of practices and patients provides reasonable confidence that the analysis will detect modest impacts of CPC on Medicare service use and costs for all beneficiaries and for high-risk beneficiaries, both for the initiative as a whole and by region. For quarterly impact estimates using two-tailed tests at the 5 percent significance level, our estimated standard errors from the regression models imply that the evaluation has 80 percent power to detect impacts on Medicare expenditures that are at least 3.8 percent of the comparison group mean for the full sample pooled across regions. At the region level, we can detect only those impacts that are at least 6 to 10 percent of the comparison group mean, depending on the region. Annual impact estimates have somewhat smaller (better) minimum detectable effects (MDEs); for example, the evaluation has 80 percent power to detect impacts on expenditures of 2 percent for the pooled sample and 4 to 8 percent for the regions. The smaller MDEs for the annual estimates

[61] The zero-inflated negative binomial model relies on the assumption that the excessive zeroes are generated by a separate process from the count values, and that the excessive zeroes can be independently modeled using a binary outcome model, such as a logit model.

are due to the smoothing out (that is, lower variance) of expenditures and utilization that occurs when measured over a longer time span.

Although the MDEs are higher for the high-risk subgroup (for example, MDEs are 3.4 percent for the high-risk group, compared to 2 percent for the full sample), it may be easier to detect effects among this subgroup than among the full sample. If program effects on costs, service use, and quality are concentrated largely or solely among the high-risk subgroup of patients, as often occurs because there is less opportunity to reduce the need for expensive services through improved care for healthier patients, the larger impact among the high-risk group often makes it more detectable, despite the smaller sample size, than the impact for the full sample.

We calculated effects for the entire first program year, and by quarter. We calculated effects over the year because there is better power to detect effects among the yearlong outcome measures; we also calculated impacts quarter by quarter to monitor the time path of effects. We report both the size of the impacts (for example, in dollars for expenditures) and the percentage impacts. To calculate the percentage impacts, we divide the impact estimate by what the CPC group mean is projected to have been in the absence of CPC (that is, the unadjusted CPC group mean minus the CPC impact estimate).

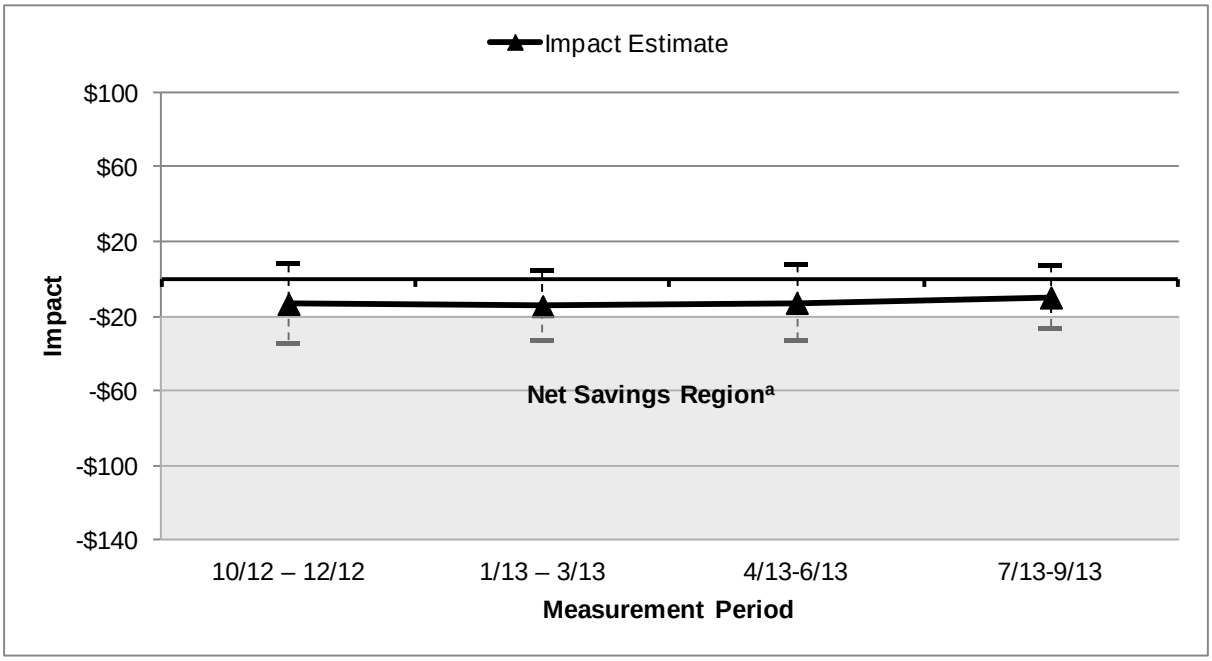
This chapter includes figures that show trends in Medicare expenditures for the CPC-wide sample, as well as impact estimates for the CPC-wide sample and separately for each region. Appendix G includes these same figures by region, as well as for the subgroup of high-risk patients. It also shows figures for additional measures (hospitalizations and ED visits) for all patients and for high-risk patients.

8.3. Results

A. CPC-wide results

Across all seven regions combined, CPC appears to have reduced total monthly Medicare expenditures without care management fees during the first program year by $14, or 2 percent, mainly through reductions in inpatient expenditures, with statistically significant reductions in beneficiaries' use of other, lower-cost, services as well (Tables 8.1 and 8.3). The favorable effects on Medicare expenditures without care management fees were mainly driven by two regions—New Jersey and Oklahoma (Table 8.1); also in addition, although effects on care management fees were not statistically significant in other regions, reductions in hospitalizations in New York and outpatient ED visits in Oregon contributed to small amounts to reductions in total expenditures. These reductions in expenditures offset most of CPC's care management fees, which average $20 per attributed beneficiary per month; this implies that CPC as a whole was close to cost neutral during the first year, although it did not generate savings net of the care management fees. The only exception was for Oklahoma, where there were statistically significant net savings of $41 (or 5 percent) per member per month. There were minimal effects on the claims-based quality-of-care process and outcome measures we examined.

Figure 8.1. Estimated CPC impact on Medicare Part A and Part B expenditures per beneficiary per month, excluding CPC care management fees, CPC-wide sample



Notes: The estimated impact, denoted by a separate triangle for each CPC quarter in the figure, is equal to the difference in mean outcomes between patients in CPC and comparison group practices in any CPC quarter minus the average difference between the two groups over the four pre-CPC quarters. The impacts are regression adjusted to control for pre-CPC differences in patient and practice characteristics between the CPC and comparison groups. The 90% confidence interval is shown by the dashed vertical line through each impact estimate.

[a]Impact estimates that fall in the shaded net savings region imply that there are savings after including the CPC care management fees—that is, that estimated savings in expenditures without CPC care management fees exceed the CPC care management fees.

The difference between the CPC group and comparison group began to emerge as early as the first quarter (Table 8.2 and Figures 8.1 and 8.2), which raises questions about whether these are real effects of CPC or a reflection of the possible unobserved CPC-comparison differences at baseline not controlled for by matching[62] or random variation in the outcomes. We would expect to see impacts emerge this early if practices anticipated participation in CPC and began making changes in care delivery before the first quarter. However, we did not see evidence of this among the 21 deep-dive practices. Instead, practices reported that it was challenging to transform care delivery.

We also checked for whether impacts varied for *patients* who were in the top risk quartile when they were first attributed and for whether impacts varied with key *practice* features. In general, effect sizes were larger in magnitude among high-risk patients than for all patients, but the percentage impact on total Medicare expenditures was similar between high-risk and all patients (Table 8.1). We also checked whether impacts varied for subgroups of *practices* that

[62] Future analyses will include a sensitivity test based on a regression discontinuity design. This design compares outcomes for practices that were above the threshold for selection into CPC with the outcomes for those practices that applied for the initiative but were below the cutoff threshold for being selected to participate. Because some of the comparison practices in this design applied for CPC, regression discontinuity helps alleviate concerns about selection bias.

Table 8.2. Summary table of quarterly percent impact estimates over the first year of CPC, CPC-wide and by region

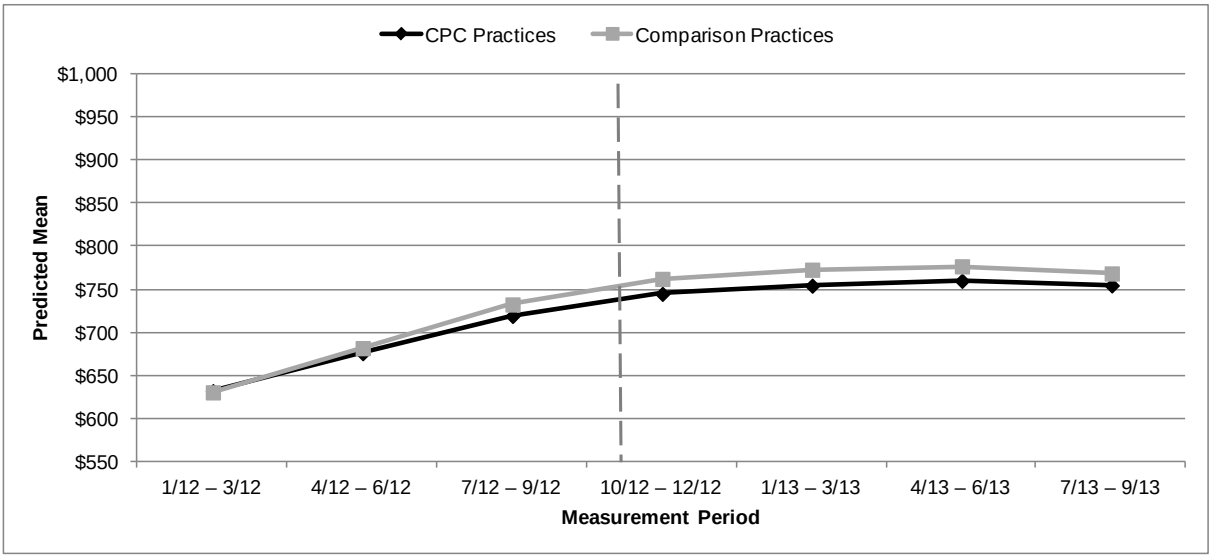
	All	AR	CO	NJ	NY	OH/KY	OK	OR
Excluding CPC care management fees								
Quarter 1	-2%	-3%	2%	-5%	-1%	3%	-6%**	-1%
Quarter 2	-2%	-2%	0%	-4%	-4%	8%***	-8%***	0%
Quarter 3	-2%	4%	6%	-5%**	1%	-1%	-10%***	-3%
Quarter 4	-1%	5%*	-2%	-6%**	-4%	5%**	-5%*	-2%
Including CPC care management fees								
Quarter 1	1%	0%	5%	-3%	2%	6%	-3%	2%
Quarter 2	1%	1%	2%	-2%	-1%	10%***	-6%**	2%
Quarter 3	1%	6%***	9%	-3%	4%	2%	-8%***	-1%
Quarter 4	1%	7%***	1%	-4%	-2%	8%***	-2%	1%
Hospital admissions, per 1,000 patients per year								
Quarter 1	-3%	-3%	2%	-5%	-7%**	3%	-6%*	-1%
Quarter 2	-2%	2%	0%	0%	-9%**	6%	-8%**	-2%
Quarter 3	-1%	5%	10%	-5%	-4%	0%	-8%**	-6%
Quarter 4	-2%	3%	0%	-9%*	-4%	8%**	-6%*	-8%**
ED visits, per 1,000 patients per year								
Quarter 1	-2%*	-5%*	0%	2%	-2%	1%	-7%**	-4%
Quarter 2	0%	-1%	6%	5%	-2%	2%	-7%***	0%
Quarter 3	-1%	1%	2%	0%	6%**	-1%	-5%*	-6%*
Quarter 4	-2%*	0%	-2%	-7%***	-1%	5%*	-3%	-4%
Outpatient ED visits, per 1,000 patients per year								
Quarter 1	-1%	-4%	-3%	7%*	4%	3%	-6%*	-6%
Quarter 2	0%	-2%	9%	3%	2%	0%	-9%***	0%
Quarter 3	0%	0%	1%	3%	11%***	-1%	-5%*	-5%
Quarter 4	-1%	-1%	-2%	-4%	2%	4%	-3%	-2%
Rate of 30-day unplanned hospital readmission (percentage)								
Quarter 1	-6%	-1%	26%	-16%*	-1%	-19%***	-13%*	13%
Quarter 2	0%	3%	-8%	8%	2%	-7%	-9%	15%
Quarter 3	-4%	0%	-10%	-8%	-5%	-6%	-3%	13%
Quarter 4	-4%	6%	-6%	-10%	-3%	-3%	-2%	-10%
Hospital admissions for ACSC, per 1,000 patients per year								
Quarter 1	-2%	-6%	-10%	5%	-8%	5%	-8%	5%
Quarter 2	5%	20%***	-5%	0%	-1%	12%*	-10%	14%
Quarter 3	-3%	6%	-3%	3%	-8%	4%	-11%*	-12%
Quarter 4	3%	7%	3%	-12%	-6%	14%	7%	10%

Source: Medicare claims data for the period October 2011-September 2013.

Note: Percentage impact estimates are based on regressions that adjust for baseline patient characteristics (including HCC scores) and baseline practice characteristics. Each impact estimate is based on a difference-in-differences analysis, and reflects the difference in the regression-adjusted average outcome for beneficiaries in CPC practices for a specific quarter compared with baseline relative to the same difference over time for beneficiaries in matched comparison practices.

*Significantly different from zero at the 0.10 level, two-tailed test.
**Significantly different from zero at the 0.05 level, two-tailed test.
***Significantly different from zero at the 0.01 level, two-tailed test.

Figure 8.2. Predicted mean Medicare Part A and Part B expenditures per beneficiary per month, excluding CPC care management fees, all beneficiaries, CPC-wide sample



Notes: The vertical dashed line indicates the start of the CPC initiative. Predicted means are regression adjusted to control for pre-CPC patient characteristics (including HCC scores) and practice characteristics.

were certified as PCMHs by NCQA or their state[63] or for those that we believed to be more likely on average to have greater access to resources for transformation (defined as those practices that, according to the SK&A data, had six or more physicians or were affiliated with a larger organization when CPC began). We did not find any statistically significant evidence for systematic variation in impacts by either PCMH status or by practice size/organizational affiliation status (not shown).[64]

1. Medicare expenditures without CPC care management fees ("gross Medicare expenditures")

During the first year, average monthly Medicare expenditures without care management fees, or gross Medicare expenditures, declined for the CPC group relative to the comparison group by $14 across all patients (about 2 percent of the CPC mean in the absence of CPC) (Table 8.3). About 70 percent of this decline in total monthly Medicare expenditures was due to a reduction in inpatient expenditures ($10), and the rest was mainly due to a reduction in expenditures on skilled nursing facilities ($4) (Figure 8.3). The effects on outpatient hospital services, physician services, DME, home health, and hospice services were all close to zero and not statistically significant.

The reductions in Medicare expenditures without fees were driven by two regions—New Jersey and Oklahoma—as described in greater detail in the discussion of region-specific results below (Tables 8.5 through 8.18).

[63] Although there are other sources of PCMH recognition, we used only NCQA and state certification because we did not have data from other organizations for both the CPC and the comparison practices. Nearly 40 percent of CPC practices had medical home recognition from their state or from NCQA, and about 80 percent of those with any medical home recognition received it from one of these two sources.

[64] Future analyses will examine whether CPC had greater impacts for those practices that were part of a large health system than for those that were not.

Table 8.3. Regression-adjusted means and estimated difference-in-differences impact of CPC on expenditure and utilization measures during the first year of CPC for all attributed Medicare FFS beneficiaries, CPC-wide sample

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
OVERALL AVERAGE PART A AND PART B EXPENDITURES ($) PER PATIENT PER MONTH										
Total without CPC care management fees										
Baseline	$676	$678	NA	NA	NA	$1,541	$1,529	NA	NA	NA
Year 1	$767	$783	-$14**	-2%**	0.046	$1,481	$1,502	-$34	-2%	0.115
Total with CPC care management fees										
Baseline	$676	$678	NA	NA	NA	$1,541	$1,529	NA	NA	NA
Year 1	$786	$783	$5	1%	0.448	$1,510	$1,502	-$6	0%	0.799
Expenditures per patient per month by type of service ($)										
Inpatient										
Baseline	$241	$234	NA	NA	NA	$601	$578	NA	NA	NA
Year 1	$285	$288	-$10**	-3%**	0.017	$581	$589	-$30**	-5%**	0.019
Physician										
Baseline	$218	$213	NA	NA	NA	$405	$388	NA	NA	NA
Year 1	$226	$221	$0	0%	0.918	$365	$351	-$3	-1%	0.472
Outpatient										
Baseline	$108	$113	NA	NA	NA	$214	$222	NA	NA	NA
Year 1	$114	$121	-$1	-1%	0.504	$196	$202	$2	1%	0.614
Skilled nursing facility										
Baseline	$41	$44	NA	NA	NA	$123	$128	NA	NA	NA
Year 1	$61	$67	-$4*	-5%*	0.065	$145	$156	-$5	-4%	0.344
DME										
Baseline	$27	$27	NA	NA	NA	$72	$72	NA	NA	NA
Year 1	$25	$25	$0	1%	0.326	$54	$53	$1	2%	0.302
Hospice										
Baseline	$5	$6	NA	NA	NA	$19	$22	NA	NA	NA
Year 1	$19	$20	$0	3%	0.631	$49	$50	$2	5%	0.434
Home health										
Baseline	$36	$40	NA	NA	NA	$108	$118	NA	NA	NA
Year 1	$37	$42	$0	-1%	0.719	$91	$101	-$1	-1%	0.779
UTILIZATION (RATE PER 1,000 PATIENTS PER YEAR)										
Hospitalizations										
Baseline	278	278	NA	NA	NA	677	670	NA	NA	NA

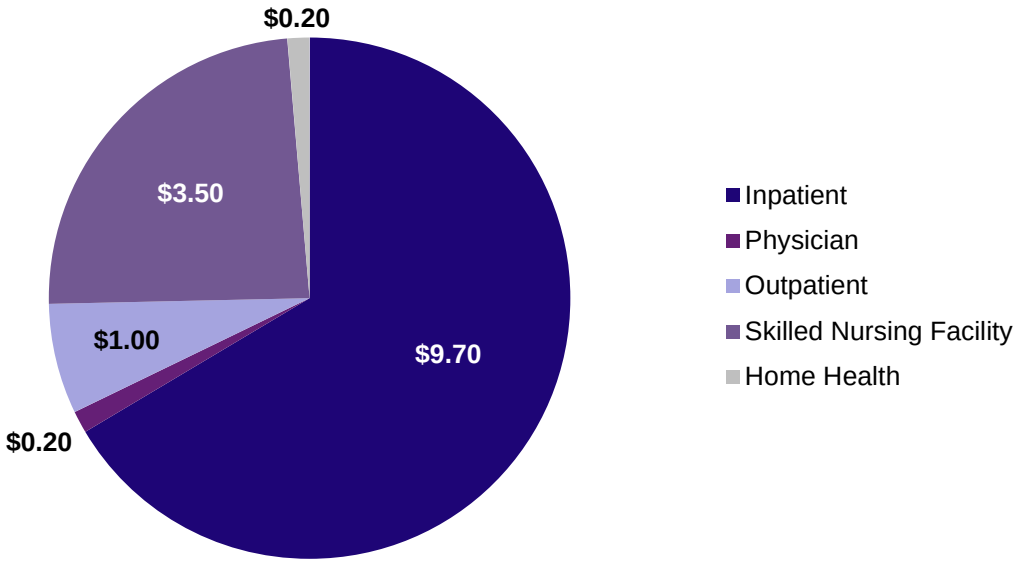
	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
Year 1	308	314	-7*	-2%*	0.082	640	650	-18	-3%	0.105
Outpatient ED visits										
Baseline	445	456	NA	NA	NA	852	863	NA	NA	NA
Year 1	498	522	-14***	-3%***	0.008	851	885	-23*	-3%*	0.085
Total ED visits										
Baseline	624	636	NA	NA	NA	1,330	1,342	NA	NA	NA
Year 1	668	691	-11*	-2%*	0.072	1,278	1,307	-17	-1%	0.324
Observation stays										
Baseline	47	47	NA	NA	NA	99	99	NA	NA	NA
Year 1	55	55	0	0%	0.892	104	103	1	1%	0.802
Primary care visits (all settings)										
Baseline	7,029	7,318	NA	NA	NA	11,553	11,840	NA	NA	NA
Year 1	7,999	8,469	-181***	-2%***	0.006	11,963	12,586	-335**	-3%**	0.012
Specialist visits (all settings)										
Baseline	12,905	12,967	NA	NA	NA	22,985	22,706	NA	NA	NA
Year 1	14,307	14,582	-213**	-2%**	0.018	22,103	22,285	-461**	-2%**	0.016
Number of observations	**2,196,267**					**552,446**				

Source: Medicare claims data for the period October 2011-September 2013.

Note:Impact estimates and predicted means are regression adjusted for baseline patient characteristics (including HCC scores) and baseline practice characteristics. Each impact estimate is based on a difference-in-differences analysis, and reflects the difference in the regression-adjusted average outcome for beneficiaries in CPC practices for a specific quarter compared with baseline relative to the same difference over time for beneficiaries in matched comparison practices. "NA" = not applicable because difference-in-differences estimates are not available at baseline.

*Significantly different from zero at the 0.10 level, two-tailed test.
**Significantly different from zero at the 0.05 level, two-tailed test.
***Significantly different from zero at the 0.01 level, two-tailed test.

Figure 8.3. Contribution (in dollars) of each type of service to reduction in Medicare expenditures per patient per month during the first year of CPC for the CPC-wide sample



Note: Only the reductions in inpatient, and SNF expenditures were statistically significant at the 10% level. The impacts on physician and home health services are zero on Table 8.3 due to rounding. The figure does not show hospice services and DME because they increased by small amounts ($.48 and $.36 respectively) that were not statistically significant.

Quarter-specific impact estimates show that the monthly expenditures without care management fees for the whole initiative fell by 2 percent more for the CPC beneficiaries than for the comparison group during the first three quarters and 1 percent more during the fourth quarter, but none of these estimates was statistically significant (Table 8.2).

For the high-risk patients, the decline in average monthly Medicare expenditures without care management fees relative to the comparison group was larger in magnitude and about the same percentage impact as among all patients, although not statistically significant: $34 (or 2 percent) during the first year. Thirty dollars, close to 90 percent of the total decline, was due to a statistically significant decline in inpatient expenditures (Table 8.3).

2. Medicare expenditures with CPC care fees ("net Medicare expenditures")

CPC nearly achieved cost neutrality, but it did not generate net savings during the first year. After factoring in the appropriate CPC care management fees that pertained to each risk group, the impact estimates for net Medicare expenditures among all patients and high-risk patients were not statistically different from zero for the first year (Table 8.3). The only region with statistically significant net *savings* during the first year was Oklahoma—with average monthly savings of $41 and $143 net of care management fees (5 and 9 percent), respectively, among all patients and among high-risk patients—as discussed below (Table 8.15). In addition, in New Jersey, there was a statistically significant reduction in Medicare expenditures for services (without fees) of $45, enough to fully offset care management fees; therefore, the estimate for Medicare expenditures with fees implied a reduction of $26 that was significantly different from zero (Table 8.9). However, in two CPC regions—Arkansas and Ohio/Kentucky—there were unfavorable statistically significant *increases* in net Medicare expenditures. These increases were $48 (6 percent) among all patients and $137 (9 percent) among high-risk patients in Ohio/Kentucky

(Table 8.13), and $22 (3 percent) in Arkansas among all patients (Table 8.5). (For high-risk patients in Arkansas, the estimate showed a reduction in net expenditures of $10 (1 percent) but was not statistically significant.)

3. Medicare service use

Among all patients, there were statistically significant declines in nearly all Medicare service use outcomes during the first year of the initiative in the CPC practices relative to the comparison practices. These declines in service use, ranging from 1 to 3 percent, are viewed, in general, as favorable effects for most types of services; however, some types of services, such as primary care visits, might be expected to increase under CPC as practices attempted to improve primary care and expand access. As Table 8.3 shows:

- Annual hospitalizations per 1,000 beneficiaries fell by 7 (2 percent).
- Total annual ED visits per 1,000 beneficiaries fell by 11 (2 percent).
- Annual outpatient ED visits per 1,000 beneficiaries fell by 14 (3 percent).
- Annual primary care clinician visits in all settings per 1,000 beneficiaries fell by 181 (2 percent).
- Annual specialist visits in all settings per 1,000 beneficiaries declined by 213 (2 percent).

There were no statistically significant effects on the rates of observation stays (Table 8.3).

Quarter-specific estimates indicate that the effect on total ED visits, as well as some sizable differences in other outcomes between the CPC group and comparison group, emerged in Quarter 1 (Table 8.2). It is unclear whether CPC could have caused these differences so soon after the initiative began.

For high-risk patients, the pattern for utilization was similar to that of expenditures (Table 8.3). The decline in hospitalizations and ED visits for high-risk patients was larger in magnitude than the decline for all patients, although the percentage decline was about the same for the two groups (2 to 3 percent). Specifically, for the CPC patients in the high-risk group, during the first year of CPC, relative to the high-risk patients in the comparison group:

- Annual hospitalizations per 1,000 beneficiaries declined by 18 (3 percent) although this effect was not quite statistically significant ($p = 0.105$).
- Outpatient annual ED visits per 1,000 beneficiaries declined by 23 (3 percent).
- Annual primary care clinician visits per 1,000 beneficiaries declined by 335 (3 percent) in all settings.
- Specialist visits per 1,000 beneficiaries declined by 461 (2 percent) in all settings.

For the high-risk group, there were no statistically significant effects on total ED visits, or observation stays during the first year.

4. Quality of care

There were minimal effects on the quality-of-care process and outcome measures we examined.

There were no statistically significant impacts on any of the 10 quality-of-care *process* measures among all patients (Table 8.4). There were no effects on transitional care (14-day follow-up visit with any clinician after a hospital discharge) among either all patients or high-risk patients during the first year of the initiative (Table 8.4). However, as we discuss in Chapter 7, 5 percentage points more CPC patients than comparison patients reported on the survey that they saw their doctor, nurse practitioner, or physician assistant in the provider's office within two weeks after their most recent hospital stay. It is possible that the contact was by telephone or email, or in person with a care manager or nurse, which would not appear in the claims data.

Among high-risk patients, there were statistically significant improvements in two of these process-of-care measures for patients with diabetes:

- The likelihood of urine protein testing increased by 2 percentage points (3 percent).
- The likelihood of a beneficiary receiving all four tests (HbA1c, lipid, eye exam, and urine protein testing) increased by 3 percentage points (10 percent).

Finally, for the two quality-of-care outcome measures, the likelihood of an all-cause 30-day unplanned readmission declined by a sizable—but not quite statistically significant—0.6 percentage points (4 percent) among hospital discharges for all patients during the first year, although this estimate was smaller and not statistically significant among high-risk patients (Table 8.4). There were no statistically significant effects on ACSC admissions—among either all patients or high-risk patients.

B. Region-specific results

Our statistical tests led to rejection of the hypothesis that the impacts of CPC on expenditures were equal across regions. Therefore, we report on region-specific estimates here. Unlike the CPC-wide results, we describe only statistically significant impact estimates for each of the seven CPC regions. We focus on annual estimates, reporting quarterly estimates only to clarify the timing for when any statistically significant annual impacts began during the year. (See Appendix G for a full set of quarterly estimates by region. In addition, Tables 8.5 through 8.18 report all results, whether or not they are statistically significant.)

Table 8.4. Regression-adjusted means and estimated difference-in-differences impact of CPC on selected quality-of-care process and outcome measures for Medicare FFS beneficiaries during the first year of CPC: CPC-wide sample

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
PROCESS-OF-CARE MEASURES (Percentage)										
Quality of care for diabetes and IVD										
Diabetes: HbA1c test										
Baseline	77.7	79.7	NA	NA	NA	75.4	77.3	NA	NA	NA
Year 1	77.9	79.5	.4	1%	0.636	76.7	77.6	1.1	1%	0.39
Diabetes: lipid test										
Baseline	84.2	84.2	NA	NA	NA	81.5	81.3	NA	NA	NA
Year 1	84.3	84.2	.2	0%	0.714	82.4	81.7	.5	1%	0.468
Diabetes: eye exam										
Baseline	56.0	55.9	NA	NA	NA	56.0	56.0	NA	NA	NA
Year 1	57.5	56.9	.6	1%	0.418	57.9	56.7	1.3	2%	0.245
Diabetes: urine protein test										
Baseline	59.9	61.2	NA	NA	NA	64.9	66.8	NA	NA	NA
Year 1	62.5	63.3	.5	1%	0.544	66.9	66.9	1.9*	3%	0.065
Diabetes: compliance with all 4 tests										
Baseline	31.0	32.7	NA	NA	NA	31.5	34.0	NA	NA	NA
Year 1	33.3	33.9	1.1	3%	0.187	34.5	34.0	3.1***	10%	0.005
Diabetes: compliance with none of the 4 tests										
Baseline	5.5	5.3	NA	NA	NA	5.1	5.4	NA	NA	NA
Year 1	5.1	4.9	.1	1%	0.848	4.7	4.8	.1	2%	0.832
Number of observations	**239,903**					**85,665**				
IVD: received lipid test										
Baseline	81.6	82.4	NA	NA	NA	78.9	79.5	NA	NA	NA
Year 1	80.7	80.5	1.0	1%	0.248	78.5	77.8	1.45	2%	0.258
Number of observations	**226,000**					**109,909**				
Continuity of care										
Percentage of primary care visits at attributed practice										
Baseline	83.1	80.9	NA	NA	NA	80.4	77.7	NA	NA	NA
Year 1	74.8	72.0	.4	1%	0.446	73.0	69.8	.6	1%	0.342
Number of observations	**1,075,342**					**337,535**				

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
Percentage of all office visits at attributed practice										
Baseline	46.1	46.9	NA	NA	NA	40.6	41.2	NA	NA	NA
Year 1	40.6	41.1	.4	1%	0.284	37.1	37.4	.3	1%	0.439
Number of observations	**1,485,942**					**429,234**				
Transitional care (percentage)										
Likelihood of 14-day follow-up visit after hospital discharge										
Baseline	63.8	64.2	NA	NA	NA	68.0	68.5	NA	NA	NA
Year 1	62.9	63.3	0	0%	0.99	66.6	67.5	-.4	-1%	0.597
Number of observations	**538,800**					**298,256**				
QUALITY-OF-CARE OUTCOME MEASURES										
ACSC admissions (rate per 1,000)										
Baseline	57	59	NA	NA	NA	164	168	NA	NA	NA
Year 1	69	71	0	1%	0.787	173	174	2	1%	0.675
Number of observations	**2,196,267**					**552,446**				
Unplanned 30-day readmissions (percentage)										
Baseline	13.1	13.1	NA	NA	NA	16.3	16.6	NA	NA	NA
Year 1	14.5	15.0	-.6	-4%	0.105	18.2	18.8	-.3	-1%	0.59
Number of observations	**539,090**					**298,335**				

Source: Medicare claims data for the period October 2011-September 2013.

Note: Impact estimates and predicted means are regression adjusted for baseline patient characteristics (including HCC scores) and baseline practice characteristics. Each impact estimate is based on a difference-in-differences analysis, and reflects the difference in the regression-adjusted average outcome for beneficiaries in CPC practices for a specific quarter compared with baseline relative to the same difference over time for beneficiaries in matched comparison practices. "NA" = not applicable because difference-in-differences estimates are not available at baseline.

*Significantly different from zero at the 0.10 level, two-tailed test.
**Significantly different from zero at the 0.05 level, two-tailed test.
***Significantly different from zero at the 0.01 level, two-tailed test.

1. Arkansas

The results for Arkansas were different from the overall CPC-wide results, with no statistically significant decline in Medicare expenditures in any of the service categories or overall for CPC patients relative to comparison patients, and an increase in Medicare expenditures with fees.

Medicare expenditures

Statistically significant findings for the CPC group relative to the comparison group during the first year include:

- Average monthly Medicare expenditures with care management fees increased by $22 (3 percent) among all patients in Arkansas (Table 8.5).
- Average monthly Medicare expenditures on hospice services increased by $4 (23 percent).

Medicare service use

Among all patients in Arkansas (Table 8.5), there was one statistically significant, favorable result for the CPC group relative to the comparison group:

- An annual decline of 328 primary care clinician visits per 1,000 patients in all settings (4 percent).

Among high-risk patients, as Table 8.5 shows, there were statistically significant annual declines per 1,000 beneficiaries of:

- 859 primary care clinician visits per 1,000 patients across all settings (6 percent).
- 762 specialist visits across all settings (4 percent).

Quality of care

Among all patients and high-risk patients, there was only one favorable statistically significant impact and one unfavorable statistically significant impact on the claims-based quality-of-care process or outcome measures in Arkansas (Table 8.6):

- The percentage of beneficiaries with IVD who received a lipid test increased by 2 percentage points (3 percent) for all patients.
- The percentage of beneficiaries receiving a 14-day follow-up visit after hospital discharge declined by 4 percentage points (6 percent) for high-risk patients only.

Table 8.5. Regression-adjusted means and estimated difference-in-differences impact of CPC on expenditure and utilization measures for all attributed Medicare FFS beneficiaries: Arkansas

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
OVERALL AVERAGE PART A AND PART B EXPENDITURES ($) PER PATIENT PER MONTH										
Total without CPC care management fees										
Baseline	$663	$691	NA	NA	NA	$1,560	$1,565	NA	NA	NA
Year 1	$742	$767	$3	0%	0.787	$1,451	$1,492	-$36	-2%	0.401
Total with CPC care management fees										
Baseline	$663	$691	NA	NA	NA	$1,560	$1,565	NA	NA	NA
Year 1	$760	$766	$22*	3%*	0.068	$1,478	$1,492	-$10	-1%	0.826
Expenditures by type of service ($)										
Inpatient										
Baseline	$248	$230	NA	NA	NA	$637	$560	NA	NA	NA
Year 1	$287	$270	-$1	0%	0.886	$594	$555	-$38	-6%	0.209
Physician										
Baseline	$202	$211	NA	NA	NA	$384	$384	NA	NA	NA
Year 1	$207	$221	-$4	-2%	0.188	$337	$361	-$24***	-7%***	0.007
Outpatient										
Baseline	$106	$109	NA	NA	NA	$218	$221	NA	NA	NA
Year 1	$111	$112	$2	1%	0.609	$198	$193	$8	4%	0.379
Skilled nursing facility										
Baseline	$35	$52	NA	NA	NA	$109	$146	NA	NA	NA
Year 1	$53	$69	$1	1%	0.817	$126	$161	$1	1%	0.892
DME										
Baseline	$32	$31	NA	NA	NA	$85	$80	NA	NA	NA
Year 1	$29	$28	$1	2%	0.436	$64	$61	-$2	-3%	0.267
Hospice										
Baseline	$5	$6	NA	NA	NA	$15	$20	NA	NA	NA
Year 1	$19	$17	$4*	23%*	0.082	$48	$42	$11*	28%*	0.051
Home health										
Baseline	$35	$53	NA	NA	NA	$111	$154	NA	NA	NA
Year 1	$35	$50	$2	7%	0.123	$84	$119	$8*	10%*	0.071
UTILIZATION (RATE PER 1,000 PATIENTS PER YEAR)										
Hospitalizations										
Baseline	313	304	NA	NA	NA	780	747	NA	NA	NA
Year 1	341	327	5	2%	0.466	711	690	-12	-2%	0.591

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
Outpatient ED visits										
Baseline	513	499	NA	NA	NA	1,008	956	NA	NA	NA
Year 1	573	575	-16	-3%	0.225	986	979	-45	-5%	0.25
Total ED visits										
Baseline	690	689	NA	NA	NA	1,492	1,473	NA	NA	NA
Year 1	728	737	-10	-1%	0.489	1,380	1,392	-30	-2%	0.5
Observation stays										
Baseline	65	69	NA	NA	NA	139	144	NA	NA	NA
Year 1	71	77	-1	-2%	0.779	134	141	-2	-2%	0.877
Primary care visits (all settings)										
Baseline	8,066	8,605	NA	NA	NA	13,120	13,575	NA	NA	NA
Year 1	9,166	10,033	-328**	-4%**	0.037	13,201	14,514	-859***	-6%***	0.002
Specialist visits (all settings)										
Baseline	11,990	12,507	NA	NA	NA	22,006	220,76	NA	NA	NA
Year 1	13,346	13,990	-127	-1%	0.466	20,720	21,552	-762*	-4%*	0.062
Number of observations	**436,602**					111,844				

Source: Medicare claims data for the period October 2011-September 2013.

Note: Impact estimates and predicted means are regression adjusted for baseline patient characteristics (including HCC scores) and baseline practice characteristics. Each impact estimate is based on a difference-in-differences analysis, and reflects the difference in the regression-adjusted average outcome for beneficiaries in CPC practices for a specific quarter compared with baseline relative to the same difference over time for beneficiaries in matched comparison practices. "NA" = not applicable because difference-in-differences estimates are not available at baseline.

*Significantly different from zero at the 0.10 level, two-tailed test.
**Significantly different from zero at the 0.05 level, two-tailed test.
***Significantly different from zero at the 0.01 level, two-tailed test.

Table 8.6. Regression-adjusted means and estimated difference-in-differences impact of CPC on selected quality-of-care process and outcome measures for Medicare FFS beneficiaries during the first year of CPC: Arkansas

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
PROCESS-OF-CARE MEASURES (Percentage)										
Quality of care for diabetes and IVD										
Diabetes: HbA1c test										
Baseline	70.0	76.1	NA	NA	NA	68.6	72.6	NA	NA	NA
Year 1	70.8	73.9	3.0	4%	0.321	69.9	69.9	3.9	6%	0.35
Diabetes: lipid test										
Baseline	82.7	82.9	NA	NA	NA	80.1	78.7	NA	NA	NA
Year 1	83.7	83.8	.1	0%	0.906	81.3	78.6	1.3	2%	0.355
Diabetes: eye exam										
Baseline	53.5	49.8	NA	NA	NA	54.2	50.3	NA	NA	NA
Year 1	56.4	51.0	1.7	3%	0.224	56.9	51.1	1.9	3%	0.351
Diabetes: urine protein test										
Baseline	51.4	53.0	NA	NA	NA	57.7	61.5	NA	NA	NA
Year 1	52.1	55.6	-1.8	-3%	0.314	56.3	61.3	-1.3	-2%	0.565
Diabetes: compliance with all 4 tests										
Baseline	24.5	24.3	NA	NA	NA	26.3	26.9	NA	NA	NA
Year 1	27.5	24.4	2.9	12%	0.213	29.0	25.5	4.1	16%	0.145
Diabetes: compliance with none of the 4 tests										
Baseline	7.0	5.8	NA	NA	NA	6.4	6.1	NA	NA	NA
Year 1	6.4	5.4	-.1	-2%	0.798	5.7	6.3	-.8	-12%	0.432
Number of observations	**51,554**					**18,900**				
IVD: received lipid test										
Baseline	77.9	83.1	NA	NA	NA	74.5	79.5	NA	NA	NA
Year 1	75.7	74.1	2.0*	3%*	0.091	72.5	73.8	3.6	5%	0.469
Number of observations	**48,730**					**23,441**				
Continuity of care										
Percentage of primary care visits at attributed practice										
Baseline	84.0	83.1	NA	NA	NA	80.7	79.4	NA	NA	NA
Year 1	77.0	74.1	3.1	4%	0.415	73.7	70.9	1.6	2%	0.224
Number of observations	**222,559**					**67,582**				

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
Percentage of all office visits at attributed practice										
Baseline	49.7	52.2	NA	NA	NA	43.3	46.3	NA	NA	NA
Year 1	44.6	46.2	1.0	2%	0.22	39.8	42.2	.6	2%	0.484
Number of observations	**289,296**					**82,848**				
Transitional care (percentage)										
Likelihood of 14-day follow-up visit after hospital discharge										
Baseline	56.7	58.5	NA	NA	NA	60.0	61.6	NA	NA	NA
Year 1	54.8	59.0	-2.3	-4%	0.14	57.3	62.5	-3.7*	-6%*	0.061
Number of observations	**116,528**					**65,451**				
QUALITY-OF-CARE OUTCOME MEASURES										
ACSC admissions (rate per 1,000)										
Baseline	69	77	NA	NA	NA	205	224	NA	NA	NA
Year 1	81	84	5	7%	0.121	200	211	7	4%	0.479
Number of observations	**436,602**					**111,844**				
Unplanned 30-day readmissions (percentage)										
Baseline	13.0	13.2	NA	NA	NA	16.1	17.0	NA	NA	NA
Year 1	14.4	14.4	.2	1%	0.763	17.6	18.0	.6	3%	0.573
Number of observations	**116,569**					**65,461**				

Source: Medicare claims data for the period October 2011-September 2013.

Note: Impact estimates and predicted means are regression adjusted for baseline patient characteristics (including HCC scores) and baseline practice characteristics. Each impact estimate is based on a difference-in-differences analysis, and reflects the difference in the regression-adjusted average outcome for beneficiaries in CPC practices for a specific quarter compared with baseline relative to the same difference over time for beneficiaries in matched comparison practices. "NA" = not applicable because difference-in-differences estimates are not available at baseline.

*Significantly different from zero at the 0.10 level, two-tailed test.
**Significantly different from zero at the 0.05 level, two-tailed test.
***Significantly different from zero at the 0.01 level, two-tailed test.

2. Colorado

Unlike results for the full sample, there were few statistically significant effects on Medicare expenditures, service use, or claims-based quality-of-care measures in Colorado.

Medicare expenditures

During the first year, there were no statistically significant effects on Medicare expenditures with or without care management fees among all or high-risk patients in Colorado (Table 8.7).

Medicare service use

Among all patients in Colorado, there were no statistically significant effects for the CPC group relative to the comparison group.

Quality of care

There was only one statistically significant finding for quality-of-care outcomes (Table 8.8). Among all patients, relative to the comparison group, the CPC group:

- Improved one measure of continuity of care, because there was a significant increase in the percentage of *all* office visits with the patients' attributed practice of 2 percentage points (4 percent).

3. New Jersey

In New Jersey, as in the CPC-wide results, there were statistically significant reductions in Medicare expenditures without fees that are driven by reductions in inpatient, outpatient, physician, and home health expenditures.

Medicare expenditures

During the first year, statistically significant findings for the CPC group relative to the comparison group include:

- Average monthly Medicare expenditures without care management fees declined for the treatment group relative to the comparison group by $45 (5 percent) among all patients in New Jersey (Table 8.9). The CPC-comparison difference suggests savings of $26, but was not quite statistically significant ($p = 0.103$) for Medicare expenditures *with* care management fees.
- Sizable differences in Medicare expenditures (of about 5 percent) between CPC and the comparison group began in Quarter 1, and became statistically significant in Medicare expenditures in Quarter 3 and continued to Quarter 4 (Table 8.2).
- About half the decline in Medicare expenditures without fees was due to a reduction in inpatient expenditures ($22), nearly a fifth was due to a reduction in physician expenditures ($8), another fifth due to a reduction in outpatient expenditures ($8), and about 5 percent was due to a reduction in expenditures on home health services ($2) (Table 8.9). (A reduction in expenditures for skilled nursing facility use also contributed to the decline, but was not statistically significant.)

Table 8.7. Regression-adjusted means and estimated difference-in-differences impact of CPC on expenditure and utilization measures for all attributed Medicare FFS beneficiaries: Colorado

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
OVERALL AVERAGE PART A AND PART B EXPENDITURES ($) PER PATIENT PER MONTH										
Total without CPC care management fees										
Baseline	$614	$634	NA	NA	NA	$1,477	$1,518	NA	NA	NA
Year 1	$693	$706	$6	1%	0.803	$1,377	$1,406	$12	1%	0.905
Total with CPC care management fees										
Baseline	$614	$634	NA	NA	NA	$1,477	$1,518	NA	NA	NA
Year 1	$712	$706	$25	4%	0.307	$1,408	$1,406	$43	3%	0.666
Expenditures per patient per month by type of service ($)										
Inpatient										
Baseline	$204	$208	NA	NA	NA	$534	$528	NA	NA	NA
Year 1	$241	$240	$4	2%	0.717	$495	$501	-$12	-2%	0.754
Physician										
Baseline	$202	$197	NA	NA	NA	$375	$367	NA	NA	NA
Year 1	$208	$198	$5	2%	0.312	$330	$314	$8	2%	0.503
Outpatient										
Baseline	$106	$112	NA	NA	NA	$232	$244	NA	NA	NA
Year 1	$112	$122	-$4	-4%	0.41	$201	$223	-$11	-5%	0.479
Skilled nursing facility										
Baseline	$40	$44	NA	NA	NA	$133	$147	NA	NA	NA
Year 1	$57	$63	-$3	-4%	0.751	$152	$150	$16	12%	0.566
DME										
Baseline	$30	$30	NA	NA	NA	$90	$89	NA	NA	NA
Year 1	$28	$29	$0	0%	0.929	$69	$70	-$2	-3%	0.572
Hospice										
Baseline	$6	$12	NA	NA	NA	$24	$44	NA	NA	NA
Year 1	$18	$21	$4	28%	0.309	$56	$62	$13	30%	0.282
Home health										
Baseline	$26	$30	NA	NA	NA	$88	$99	NA	NA	NA
Year 1	$29	$33	$0	0%	0.973	$75	$86	$0	0%	0.992
UTILIZATION (RATE PER 1,000 PATIENTS PER YEAR)										
Hospitalizations										
Baseline	223	250	NA	NA	NA	583	646	NA	NA	NA

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
Year 1	252	273	6	3%	0.634	544	566	41	8%	0.271
Outpatient ED visits										
Baseline	392	408	NA	NA	NA	803	826	NA	NA	NA
Year 1	456	475	-2	-1%	0.892	836	844	14	2%	0.686
Total ED visits										
Baseline	528	564	NA	NA	NA	1,205	1,269	NA	NA	NA
Year 1	574	603	6	1%	0.776	1,174	1,172	66	6%	0.212
Observation stays										
Baseline	38	37	NA	NA	NA	87	79	NA	NA	NA
Year 1	48	45	3	7%	0.412	94	86	-1	-1%	0.922
Primary care visits (all settings)										
Baseline	6,324	6,360	NA	NA	NA	11,329	11,023	NA	NA	NA
Year 1	7,404	7,253	187	3%	0.16	11,830	11,211	313	3%	0.143
Specialist visits (all settings)										
Baseline	10,760	11,069	NA	NA	NA	19,850	20,484	NA	NA	NA
Year 1	11,914	12,368	-145	-1%	0.581	18,640	19,423	-149	-1%	0.799
Number of observations	**326,876**					**72,730**				

Source: Medicare claims data for the period October 2011-September 2013.

Note: Impact estimates and predicted means are regression adjusted for baseline patient characteristics (including HCC scores) and baseline practice characteristics. Each impact estimate is based on a difference-in-differences analysis, and reflects the difference in the regression-adjusted average outcome for beneficiaries in CPC practices for a specific quarter compared with baseline relative to the same difference over time for beneficiaries in matched comparison practices. "NA" = not applicable because difference-in-differences estimates are not available at baseline.

*Significantly different from zero at the 0.10 level, two-tailed test.
**Significantly different from zero at the 0.05 level, two-tailed test.
***Significantly different from zero at the 0.01 level, two-tailed test.

Table 8.8. Regression-adjusted means and estimated difference-in-differences impact of CPC on selected quality-of-care process and outcome measures for Medicare FFS beneficiaries during the first year of CPC: Colorado

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
PROCESS-OF-CARE MEASURES (Percentage)										
Quality of care for diabetes and IVD										
Diabetes: HbA1c test										
Baseline	72.9	73.4	NA	NA	NA	68.7	71.1	NA	NA	NA
Year 1	73.5	76.2	-2.3	-3%	0.324	71.4	77.5	-3.2	-4%	0.479
Diabetes: lipid test										
Baseline	84.0	82.5	NA	NA	NA	80.3	76.7	NA	NA	NA
Year 1	83.1	81.6	-.1	0%	0.941	80.9	80.7	-3.3	-4%	0.253
Diabetes: eye exam										
Baseline	55.3	58.1	NA	NA	NA	53.1	58.3	NA	NA	NA
Year 1	56.2	56.9	2.1	4%	0.435	56.4	57.9	3.7	7%	0.353
Diabetes: urine protein test										
Baseline	61.1	62.2	NA	NA	NA	65.1	65.2	NA	NA	NA
Year 1	62.1	60.0	3.1	5%	0.291	67.8	64.0	3.8	6%	0.156
Diabetes: compliance with all 4 tests										
Baseline	30.0	31.7	NA	NA	NA	28.5	29.8	NA	NA	NA
Year 1	30.6	30.0	2.2	8%	0.304	32.0	30.3	3.0	10%	0.329
Diabetes: compliance with none of the 4 tests										
Baseline	6.3	7.0	NA	NA	NA	6.6	7.0	NA	NA	NA
Year 1	5.0	4.9	.8	18%	0.318	5.2	3.2	2.4	90%	0.251
Number of observations	**29,898**					**9,875**				
IVD: received lipid test										
Baseline	82.5	79.6	NA	NA	NA	77.5	74.6	NA	NA	NA
Year 1	80.8	77.7	.2	0%	0.889	78.7	76.5	-.7	-1%	0.811
Number of observations	**27,708**					**12,412**				
Continuity of care										
Percentage of primary care visits at attributed practice										
Baseline	82.7	80.4	NA	NA	NA	80.9	77.2	NA	NA	NA
Year 1	73.7	70.0	1.3	2%	0.253	73.5	69.1	.7	1%	0.539
Number of observations	**231,300**					**55,863**				

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
Percentage of all office visits at attributed practice										
Baseline	46.2	46.2	NA	NA	NA	43.3	41.0	NA	NA	NA
Year 1	41.4	39.7	1.7**	4%**	0.032	40.6	37.6	.7	2%	0.419
Number of observations	**265,568**					**63,616**				
Transitional care (percentage)										
Likelihood of 14-day follow-up visit after hospital discharge										
Baseline	67.4	67.0	NA	NA	NA	73.8	73.3	NA	NA	NA
Year 1	66.5	64.0	2.0	3%	0.176	72.1	69.9	1.7	2%	0.359
Number of observations	**73,196**					**37,063**				
QUALITY-OF-CARE OUTCOME MEASURES										
ACSC admissions (rate per 1,000)										
Baseline	37	47	NA	NA	NA	124	137	NA	NA	NA
Year 1	45	57	-2	-4%	0.656	124	144	-8	-6%	0.652
Number of observations	**326,876**					**72,730**				
Unplanned 30-day readmissions (percentage)										
Baseline	10.9	11.6	NA	NA	NA	14.4	15.7	NA	NA	NA
Year 1	12.0	12.9	-.3	-2%	0.757	15.5	15.5	1.4	10%	0.347
Number of observations	**73,236**					**37,073**				

Source: Medicare claims data for the period October 2011-September 2013.

Note: Impact estimates and predicted means are regression adjusted for baseline patient characteristics (including HCC scores) and baseline practice characteristics. Each impact estimate is based on a difference-in-differences analysis, and reflects the difference in the regression-adjusted average outcome for beneficiaries in CPC practices for a specific quarter compared with baseline relative to the same difference over time for beneficiaries in matched comparison practices. "NA" = not applicable because difference-in-differences estimates are not available at baseline.

*Significantly different from zero at the 0.10 level, two-tailed test.
**Significantly different from zero at the 0.05 level, two-tailed test.
***Significantly different from zero at the 0.01 level, two-tailed test.

Table 8.9. Regression-adjusted means and estimated difference-in-differences impact of CPC on expenditure and utilization measures for all attributed Medicare FFS beneficiaries: New Jersey

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
OVERALL AVERAGE PART A AND PART B EXPENDITURES ($) PER PATIENT PER MONTH										
Total without CPC care management fees										
Baseline	$767	$770	NA	NA	NA	$1,660	$1,668	NA	NA	NA
Year 1	$883	$932	-$45***	-5%***	0.005	$1,664	$1,738	-$66	-4%	0.156
Total with CPC care management fees										
Baseline	$767	$770	NA	NA	NA	$1,660	$1,668	NA	NA	NA
Year 1	$902	$932	-$26	-3%	0.103	$1,694	$1,738	-$36	-2%	0.437
Expenditures per patient per month by type of service ($)										
Inpatient										
Baseline	$246	$250	NA	NA	NA	$595	$601	NA	NA	NA
Year 1	$304	$330	-$22**	-7%**	0.014	$616	$637	-$16	-2%	0.622
Physician										
Baseline	$308	$295	NA	NA	NA	$537	$505	NA	NA	NA
Year 1	$316	$310	-$8*	-2%*	0.072	$494	$477	-$15	-3%	0.211
Outpatient										
Baseline	$102	$102	NA	NA	NA	$206	$201	NA	NA	NA
Year 1	$108	$116	-$8**	-7%**	0.016	$192	$199	-$12	-6%	0.206
Skilled nursing facility										
Baseline	$59	$64	NA	NA	NA	$174	$188	NA	NA	NA
Year 1	$89	$102	-$7	-7%	0.174	$206	$245	-$24	-10%	0.124
DME										
Baseline	$20	$21	NA	NA	NA	$53	$58	NA	NA	NA
Year 1	$19	$19	$2	10%	0.124	$42	$42	$5*	13%*	0.073
Hospice										
Baseline	$5	$4	NA	NA	NA	$16	$15	NA	NA	NA
Year 1	$17	$17	$0	-1%	0.915	$45	$45	-$2	-3%	0.798
Home health										
Baseline	$27	$33	NA	NA	NA	$79	$100	NA	NA	NA
Year 1	$30	$38	-$2*	-7%*	0.082	$69	$92	-$2	-3%	0.544
UTILIZATION (RATE PER 1,000 PATIENTS PER YEAR)										
Hospitalizations										
Baseline	252	254	NA	NA	NA	601	595	NA	NA	NA

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
Year 1	293	310	-15*	-5%*	0.083	602	631	-35	-5%	0.192
Outpatient ED visits										
Baseline	324	333	NA	NA	NA	588	608	NA	NA	NA
Year 1	353	375	-12	-4%	0.218	594	599	15	3%	0.579
Total ED visits										
Baseline	505	520	NA	NA	NA	1,052	1,077	NA	NA	NA
Year 1	555	576	-5	-1%	0.644	1,063	1,081	7	1%	0.822
Observation stays										
Baseline	35	28	NA	NA	NA	73	53	NA	NA	NA
Year 1	41	33	0	1%	0.924	80	61	0	-1%	0.955
Primary care visits (all settings)										
Baseline	6,367	6,897	NA	NA	NA	10,356	11,378	NA	NA	NA
Year 1	7,490	8,594	-574***	-7%***	0.008	11,562	13,189	-604	-5%	0.105
Specialist visits (all settings)										
Baseline	17,556	16,581	NA	NA	NA	29,767	28,597	NA	NA	NA
Year 1	19,133	19,300	-1,142***	-6%***	<.001	28,974	29,352	-1,548***	-5%***	0.003
Number of observations	**257,391**					**67,698**				

Source: Medicare claims data for the period October 2011-September 2013.

Note: Impact estimates and predicted means are regression adjusted for baseline patient characteristics (including HCC scores) and baseline practice characteristics. Each impact estimate is based on a difference-in-differences analysis, and reflects the difference in the regression-adjusted average outcome for beneficiaries in CPC practices for a specific quarter compared with baseline relative to the same difference over time for beneficiaries in matched comparison practices. "NA" = not applicable because difference-in-differences estimates are not available at baseline.

*Significantly different from zero at the 0.10 level, two-tailed test.
**Significantly different from zero at the 0.05 level, two-tailed test.
***Significantly different from zero at the 0.01 level, two-tailed test.

Medicare service use

Among all patients in New Jersey, there were several favorable impacts on Medicare service use outcomes (Table 8.9):

- Hospitalizations per 1,000 patients per year declined by 15 (5 percent).
- Annual specialist visits in all settings declined by 1,142 per 1,000 patients (6 percent).
- Annual primary care clinician visits in all settings declined by 574 per 1,000 patients (7 percent).

Quality of care

There was a statistically significant unfavorable effect for one of the quality-of-care process measures for diabetes (Table 8.10):

- HbA1c testing declined by 3 percentage points (3 percent) among all patients in New Jersey.

4. New York: Capital District-Hudson Valley Region

In New York, although reductions in Medicare expenditures were not quite statistically significant, there was a sizable, statistically significant reduction in hospitalizations. In addition, there were a number of improvements in claims-based measures of quality of care.

Medicare expenditures

During the first year, there were no statistically significant effects on annual Medicare expenditures, either with or without care management fees, among all attributed patients or high-risk patients in New York (Table 8.11).

Medicare service use

Among all patients in New York, there were two statistically significant impacts for the CPC group relative to the comparison group:

- A decline in annual hospitalizations of 19 per 1,000 patients (6 percent, Table 8.11), beginning in Quarters 1 and 2 (not shown).
- An increase in annual specialist visits in all settings of 455 per 1,000 patients (3 percent) (Table 8.11), with quarterly impacts indicating effects occurring in Quarters 1 and 3 (not shown).

Among high-risk patients in New York, as shown in Table 8.11, there were two statistically significant findings for the CPC group relative to the comparison group during Year 1:

- A decline in annual hospitalizations of 59 per 1,000 patients (9 percent).
- An increase in annual observation stays of 13 per 1,000 patients (21 percent).

Table 8.10. Regression-adjusted means and estimated difference-in-differences impact of CPC on selected quality-of-care process and outcome measures for Medicare FFS beneficiaries during the first year of CPC: New Jersey

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
PROCESS-OF-CARE MEASURES (Percentage)										
Quality of care for diabetes and IVD										
Diabetes: HbA1c test										
Baseline	87.5	83.7	NA	NA	NA	83.6	81.6	NA	NA	NA
Year 1	86.2	85.5	-3.1**	-3%**	0.039	83.3	84.3	-3.1	-4%	0.168
Diabetes: lipid test										
Baseline	88.1	87.7	NA	NA	NA	86.3	89.0	NA	NA	NA
Year 1	88.1	88.4	-.7	-1%	0.543	86.8	88.0	1.5	2%	0.416
Diabetes: eye exam										
Baseline	63.2	58.9	NA	NA	NA	65.1	57.7	NA	NA	NA
Year 1	63.2	58.8	.1	0%	0.942	66.3	60.8	-1.9	-3%	0.564
Diabetes: urine protein test										
Baseline	67.7	66.8	NA	NA	NA	69.8	71.8	NA	NA	NA
Year 1	71.4	67.8	2.6	4%	0.142	73.6	73.1	2.5	3%	0.432
Diabetes: compliance with all 4 tests										
Baseline	41.3	37.8	NA	NA	NA	42.1	40.3	NA	NA	NA
Year 1	43.4	38.3	1.7	4%	0.315	45.8	41.0	3.0	7%	0.202
Diabetes: compliance with none of the 4 tests										
Baseline	3.4	3.6	NA	NA	NA	3.3	3.5	NA	NA	NA
Year 1	3.5	3.2	.5	18%	0.304	3.1	2.9	.3	13%	0.685
Number of observations	**22,727**					**7,959**				
IVD: received lipid test										
Baseline	86.3	82.7	NA	NA	NA	83.8	80.4	NA	NA	NA
Year 1	78.8	73.9	1.3	2%	0.41	77.0	71.2	2.4	3%	0.259
Number of observations	**27,429**					**14,241**				
Continuity of care										
Percentage of primary care visits at attributed practice										
Baseline	86.3	82.7	NA	NA	NA	83.8	80.4	NA	NA	NA
Year 1	78.8	73.9	1.3	2%	0.41	77.0	71.2	2.4	3%	0.259
Number of observations	**128,037**					**41,219**				

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
Percentage of all office visits at attributed practice										
Baseline	39.7	40.5	NA	NA	NA	33.1	34.4	NA	NA	NA
Year 1	35.5	35.8	.6	2%	0.538	31.1	31.4	1.0	3%	0.419
Number of observations	**184,998**					**54,314**				
Transitional care (percentage)										
Likelihood of 14-day follow-up visit after hospital discharge										
Baseline	73.3	74.4	NA	NA	NA	76.1	77.4	NA	NA	NA
Year 1	73.0	73.4	.8	1%	0.537	76.3	78.2	-.5	-1%	0.711
Number of observations	**57,748**					**33,553**				
QUALITY-OF-CARE OUTCOME MEASURES										
ACSC admissions (rate per 1,000)										
Baseline	49	52	NA	NA	NA	135	147	NA	NA	NA
Year 1	67	71	-1	-1%	0.81	163	172	3	2%	0.744
Number of observations	**257,391**					**67,698**				
Unplanned 30-day readmissions (percentage)										
Baseline	13.5	12.9	NA	NA	NA	16.3	15.3	NA	NA	NA
Year 1	15.0	15.4	-1.0	-6%	0.29	19.0	18.7	-.7	-4%	0.583
Number of observations	**57,784**					**33,562**				

Source: Medicare claims data for the period October 2011-September 2013.

Note: Impact estimates and predicted means are regression adjusted for baseline patient characteristics (including HCC scores) and baseline practice characteristics. Each impact estimate is based on a difference-in-differences analysis, and reflects the difference in the regression-adjusted average outcome for beneficiaries in CPC practices for a specific quarter compared with baseline relative to the same difference over time for beneficiaries in matched comparison practices. "NA" = not applicable because difference-in-differences estimates are not available at baseline.

*Significantly different from zero at the 0.10 level, two-tailed test.
**Significantly different from zero at the 0.05 level, two-tailed test.
***Significantly different from zero at the 0.01 level, two-tailed test.

Table 8.11. Regression-adjusted means and estimated difference-in-differences impact of CPC on expenditure and utilization measures for all attributed Medicare FFS beneficiaries: New York, Capital District-Hudson Valley Region

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
OVERALL AVERAGE PART A AND PART B EXPENDITURES ($) PER PATIENT PER MONTH										
Total without CPC care management fees										
Baseline	$684	$685	NA	NA	NA	$1,489	$1,473	NA	NA	NA
Year 1	$785	$802	-$16	-2%	0.424	$1467	$1,514	-$64	-4%	0.211
Total with CPC care management fees										
Baseline	$684	$685	NA	NA	NA	$1,490	$1,473	NA	NA	NA
Year 1	$805	$802	$4	0%	0.849	$1,496	$1,514	-$35	-2%	0.493
Expenditures per patient per month by type of service ($)										
Inpatient										
Baseline	$249	$238	NA	NA	NA	$600	$573	NA	NA	NA
Year 1	$297	$306	-$21	-6%	0.142	$593	$634	-$69*	-10%*	0.072
Physician										
Baseline	$249	$240	NA	NA	NA	$444	$425	NA	NA	NA
Year 1	$262	$248	$5	2%	0.209	$412	$395	-$2	-1%	0.79
Outpatient										
Baseline	$92	$95	NA	NA	NA	$174	$178	NA	NA	NA
Year 1	$99	$101	$2	2%	0.593	$164	$156	$12	8%	0.21
Skilled nursing facility										
Baseline	$44	$51	NA	NA	NA	$126	$133	NA	NA	NA
Year 1	$67	$73	$1	2%	0.808	$155	$159	$3	2%	0.795
DME										
Baseline	$21	$23	NA	NA	NA	$55	$59	NA	NA	NA
Year 1	$19	$22	$0	-1%	0.753	$42	$47	-$2	-4%	0.322
Hospice										
Baseline	$3	$4	NA	NA	NA	$12	$13	NA	NA	NA
Year 1	$12	$15	-$2	-15%	0.533	$31	$38	-$6	-17%	0.53
Home health										
Baseline	$26	$34	NA	NA	NA	$78	$92	NA	NA	NA
Year 1	$29	$37	$0	-1%	0.794	$71	$85	$0	1%	0.906
UTILIZATION (RATE PER 1,000 PATIENTS PER YEAR)										
Hospitalizations										
Baseline	276	258	NA	NA	NA	653	603	NA	NA	NA

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
Year 1	309	309	-19**	-6%**	0.016	634	644	-59***	-9%***	0.007
Outpatient ED visits										
Baseline	391	395	NA	NA	NA	708	702	NA	NA	NA
Year 1	451	438	16	4%	0.196	751	706	39	6%	0.128
Total ED visits										
Baseline	589	587	NA	NA	NA	1,214	1,193	NA	NA	NA
Year 1	652	649	0	0%	0.973	1,231	1,205	4	0%	0.911
Observation stays										
Baseline	30	33	NA	NA	NA	61	72	NA	NA	NA
Year 1	42	45	0	0%	0.948	79	77	13**	21%**	0.05
Primary care visits (all settings)										
Baseline	7,774	7661	NA	NA	NA	12,080	12,215	NA	NA	NA
Year 1	8,675	8,663	-102	-1%	0.469	12,377	12,966	-454	-4%	0.123
Specialist visits (all settings)										
Baseline	16,607	14,936	NA	NA	NA	28,643	24,488	NA	NA	NA
Year 1	18,340	16,214	455**	3%**	0.035	27,826	24,304	-634	-2%	0.135
Number of observations	**208,470**					**56,079**				

Source: Medicare claims data for the period October 2011-September 2013.

Note: Impact estimates and predicted means are regression adjusted for baseline patient characteristics (including HCC scores) and baseline practice characteristics. Each impact estimate is based on a difference-in-differences analysis, and reflects the difference in the regression-adjusted average outcome for beneficiaries in CPC practices for a specific quarter compared with baseline relative to the same difference over time for beneficiaries in matched comparison practices. "NA" = not applicable because difference-in-differences estimates are not available at baseline.

*Significantly different from zero at the 0.10 level, two-tailed test.
**Significantly different from zero at the 0.05 level, two-tailed test.
***Significantly different from zero at the 0.01 level, two-tailed test.

Quality of care

Among all patients in New York, there were several statistically significant improvements for the CPC group relative to the comparison group in the quality-of-care measures during the first year of CPC, as shown in Table 8.12:

- HbA1c testing for patients with diabetes increased by 4 percentage points (5 percent).
- Lipid testing for patients with diabetes increased by 2 percentage points (3 percent).
- The likelihood of not complying with all four diabetes tests/exams declined by 1 percentage point (29 percent).
- Lipid testing among patients with IVD increased by 3 percentage points (4 percent).
- 14-day follow-up visits after a hospital discharge rose by 3 percentage points (4 percent).

Similarly, among high-risk patients in New York, there were also many statistically significant improvements in quality-of-care measures for the CPC group relative to the comparison group, including:

- HbA1c testing among patients with diabetes increased by 7 percentage points (9 percent).
- Lipid testing among patients with diabetes increased by 5 percentage points (6 percent).
- Urine protein testing among patients with diabetes increased by 8 percentage points (14 percent).
- All four tests for patients for diabetes increased by 7 percentage points (22 percent).
- Lipid testing among patients with IVD increased by 4 percentage points (5 percent).
- 14-day follow-up visits after a hospital discharge increased by 4 percentage points (6 percent).

5. Ohio/Kentucky: Cincinnati-Dayton Region

The pattern of results in Ohio/Kentucky differed from that of the regions combined, with *increases* in Medicare expenditures and service use for the CPC group relative to the comparison group.

Medicare expenditures

During the first year of CPC, there were statistically significant effects on Medicare expenditures both with and without care management fees among all patients and high-risk patients in Ohio/Kentucky (Table 8.13). For the CPC group relative to the comparison group:

- Monthly Medicare expenditures without fees increased by $29 (4 percent) for all patients and by $108 (7 percent) for high-risk patients.
- Net monthly Medicare expenditures with fees increased significantly by $48 (6 percent) for all patients and by $137 (9 percent) for high-risk patients.

Table 8.12. Regression-adjusted means and estimated difference-in-differences impact of CPC on selected quality-of-care process and outcome measures for Medicare FFS beneficiaries during the first year of CPC: New York, Capital District-Hudson Valley Region

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
PROCESS-OF-CARE MEASURES (Percentage)										
Quality of care for diabetes and IVD										
Diabetes: HbA1c test										
Baseline	87.1	87.0	NA	NA	NA	85.0	86.3	NA	NA	NA
Year 1	87.0	82.9	3.9**	5%**	0.02	86.3	80.4	7.2**	9%	0.024
Diabetes: lipid test										
Baseline	90.4	89.8	NA	NA	NA	88.2	87.5	NA	NA	NA
Year 1	90.4	87.4	2.4**	3%**	0.049	89.4	83.7	4.9***	6%	0.008
Diabetes: eye exam										
Baseline	60.8	63.8	NA	NA	NA	61.6	67.1	NA	NA	NA
Year 1	61.0	64.6	-.6	-1%	0.64	62.9	68.5	-.2	0%	0.943
Diabetes: urine protein test										
Baseline	59.3	58.0	NA	NA	NA	62.0	64.7	NA	NA	NA
Year 1	61.7	57.8	2.6	4%	0.189	64.6	59.2	8.1**	14%	0.013
Diabetes: compliance with all 4 tests										
Baseline	36.0	36.1	NA	NA	NA	36.3	40.5	NA	NA	NA
Year 1	37.2	35.4	1.9	5%	0.217	38.4	35.8	6.8***	22%	0.007
Diabetes: compliance with none of the 4 tests										
Baseline	3.4	3.1	NA	NA	NA	3.6	3.7	NA	NA	NA
Year 1	3.2	4.3	-1.3*	-29%*	0.095	2.5	4.1	-1.6	-39%	0.246
Number of observations	**20,168**					**7,199**				
IVD: received lipid test										
Baseline	88.0	86.6	NA	NA	NA	86.6	84.7	NA	NA	NA
Year 1	88.8	84.3	3.1***	4%***	0.006	87.5	81.5	4.1**	5%	0.048
Number of observations	**23,592**					**11,909**				
Continuity of care										
Percentage of primary care visits at attributed practice										
Baseline	82.5	79.8	NA	NA	NA	80.2	76.7	NA	NA	NA
Year 1	75.4	73.4	-.7	-1%	0.549	74.1	71.6	-1.1	-1%	0.338
Number of observations	**111,326**					**36,497**				

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
Percentage of all office visits at attributed practice										
Baseline	41.9	45.3	NA	NA	NA	35.8	39.6	NA	NA	NA
Year 1	37.3	41.1	-.3	-1%	0.751	33.0	37.4	-.6	-2%	0.438
Number of observations	**150,583**					**45,634**				
Transitional care (percentage)										
Likelihood of 14-day follow-up visit after hospital discharge										
Baseline	70.1	71.2	NA	NA	NA	74.1	75.6	NA	NA	NA
Year 1	69.5	67.8	2.9**	4%**	0.022	72.6	69.7	4.4***	6%***	0.004
Number of observations	**49,328**					**29,172**				
QUALITY-OF-CARE OUTCOME MEASURES										
ACSC admissions (rate per 1,000)										
Baseline	56	54	NA	NA	NA	153	148	NA	NA	NA
Year 1	69	71	-4	-6%	0.263	167	171	-10	-6%	0.326
Number of observations	**208,470**					**56,079**				
Unplanned 30-day readmissions (percentage)										
Baseline	14.0	13.9	NA	NA	NA	16.9	17.2	NA	NA	NA
Year 1	16.0	16.1	-.2	-1%	0.852	20.1	20.1	.2	1%	0.857
Number of observations	**49,366**					**29,182**				

Source: Medicare claims data for the period October 2011-September 2013.

Note: Impact estimates and predicted means are regression adjusted for baseline patient characteristics (including HCC scores) and baseline practice characteristics. Each impact estimate is based on a difference-in-differences analysis, and reflects the difference in the regression-adjusted average outcome for beneficiaries in CPC practices for a specific quarter compared with baseline relative to the same difference over time for beneficiaries in matched comparison practices. "NA" = not applicable because difference-in-differences estimates are not available at baseline.

*Significantly different from zero at the 0.10 level, two-tailed test.
**Significantly different from zero at the 0.05 level, two-tailed test.
***Significantly different from zero at the 0.01 level, two-tailed test.

Table 8.13. Regression-adjusted means and estimated difference-in-differences impact of CPC on expenditure and utilization measures for all attributed Medicare FFS beneficiaries: Ohio/Kentucky, Cincinnati-Dayton Region

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
OVERALL AVERAGE PART A AND PART B EXPENDITURES ($) PER PATIENT PER MONTH										
Total without CPC care management fees										
Baseline	$686	$724	NA	NA	NA	$1,535	$1,575	NA	NA	NA
Year 1	$829	$838	$29*	4%*	0.093	$1,604	$1,536	$108***	7%***	0.009
Total with CPC care management fees										
Baseline	$686	$724	NA	NA	NA	$1,535	$1,576	NA	NA	NA
Year 1	$849	$838	$48***	6%***	0.005	$1,633	$1,536	$137***	9%***	0.001
Expenditures per patient per month by type of service ($)										
Inpatient										
Baseline	$261	$276	NA	NA	NA	$636	$645	NA	NA	NA
Year 1	$333	$328	$21*	7%*	0.06	$680	$629	$61**	10%**	0.045
Physician										
Baseline	$208	$211	NA	NA	NA	$387	$384	NA	NA	NA
Year 1	$225	$218	$11***	5%***	0.006	$373	$336	$34***	10%***	<.001
Outpatient										
Baseline	$110	$131	NA	NA	NA	$209	$249	NA	NA	NA
Year 1	$118	$135	$4	4%	0.411	$199	$220	$19*	10%*	0.052
Skilled nursing facility										
Baseline	$40	$40	NA	NA	NA	$109	$109	NA	NA	NA
Year 1	$69	$76	-$7*	-10%*	0.086	$157	$168	-$10	-6%	0.379
DME										
Baseline	$24	$27	NA	NA	NA	$65	$74	NA	NA	NA
Year 1	$21	$23	$2	9%	0.132	$45	$47	$8**	23%**	0.028
Hospice										
Baseline	$4	$3	NA	NA	NA	$14	$17	NA	NA	NA
Year 1	$19	$21	-$3	-13%	0.156	$46	$52	-$3	-6%	0.591
Home health										
Baseline	$40	$35	NA	NA	NA	$115	$97	NA	NA	NA
Year 1	$44	$37	$2	5%	0.169	$102	$85	-$1	-1%	0.894
UTILIZATION (RATE PER 1,000 PATIENTS PER YEAR)										
Hospitalizations										
Baseline	311	333	NA	NA	NA	740	763	NA	NA	NA
Year 1	355	361	15	4%	0.156	725	719	30	4%	0.212

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
Outpatient ED visits										
Baseline	481	487	NA	NA	NA	884	848	NA	NA	NA
Year 1	536	549	-7	-1%	0.567	877	869	-28	-3%	0.365
Total ED visits										
Baseline	697	700	NA	NA	NA	1,446	1,385	NA	NA	NA
Year 1	761	751	12	2%	0.398	1,408	1,344	3	0%	0.937
Observation stays										
Baseline	44	57	NA	NA	NA	90	115	NA	NA	NA
Year 1	58	68	4	7%	0.217	110	119	16*	18%*	0.067
Primary care visits (all settings)										
Baseline	6,728	7,105	NA	NA	NA	10,940	11,298	NA	NA	NA
Year 1	7,770	8,200	-53	-1%	0.731	11,902	12,010	250	2%	0.37
Specialist visits (all settings)										
Baseline	13,606	14,082	NA	NA	NA	23,833	24,441	NA	NA	NA
Year 1	15,233	15,726	-18	0%	0.923	23,731	23,716	623	3%	0.121
Number of observations	**283,556**					**75,073**				

Source: Medicare claims data for the period October 2011-September 2013.

Note: Impact estimates and predicted means are regression adjusted for baseline patient characteristics (including HCC scores) and baseline practice characteristics. Each impact estimate is based on a difference-in-differences analysis, and reflects the difference in the regression-adjusted average outcome for beneficiaries in CPC practices for a specific quarter compared with baseline relative to the same difference over time for beneficiaries in matched comparison practices. "NA" = not applicable because difference-in-differences estimates are not available at baseline.

*Significantly different from zero at the 0.10 level, two-tailed test.
**Significantly different from zero at the 0.05 level, two-tailed test.
***Significantly different from zero at the 0.01 level, two-tailed test.

- For all patients, the increase in Medicare expenditures was due to statistically significant increases in inpatient expenditures ($21) and physician expenditures ($11), and small but not statistically significant increases in outpatient expenditures, DME, and home health services. There was also a statistically significant $7 decline in expenditures for skilled nursing facility services.
- For high-risk patients, the increase in Medicare expenditures was due to statistically significant increases in inpatient expenditures ($61), physician expenditures ($34), outpatient expenditures ($19), and DME ($8).

Medicare service use

Among all patients in Ohio/Kentucky, there were no statistically significant impacts on Medicare service use outcomes (Table 8.13). Among high-risk patients, there was one statistically significant finding for the CPC group relative to the comparison group:

- Annual observation stays per 1,000 beneficiaries increased by 16 (18 percent).

Quality of care

There were very few statistically significant effects on the quality-of-care measures among either all or high-risk patients in Ohio/Kentucky during the first year of the initiative (Table 8.14). Specifically, relative to the comparison group:

- The percentage of CPC beneficiaries with diabetes who received a urine protein test increased by 5 percentage points (7 percent) for high-risk patients only.
- ACSC admissions increased by 6 and 23 per 1,000 patients, or by 8 and 13 percent, respectively, among all and high-risk CPC patients.

6. Oklahoma: Greater Tulsa Region

Oklahoma had the largest reductions in Medicare expenditures and service use among the CPC regions. However, Oklahoma also had statistically significant declines in the quality-of-care process measures.

Medicare expenditures

During the first year, as shown in Table 8.15, statistically significant findings in Oklahoma for the CPC full sample relative to the comparison group include:

- A sizable decline in average monthly Medicare expenditures without care management fees of $59 (7 percent) among all patients in Oklahoma, with quarterly impact estimates suggesting that the effects began in Quarter 1 (Table 8.2).
- A still sizable decline in average monthly Medicare expenditures with fees of $41 (5 percent), which suggests that CPC generated savings during the first year.
- A reduction in average monthly expenditures on inpatient services of $36 (12 percent).
- A reduction in average monthly expenditures on skilled nursing facilities of $12 (21 percent).
- A reduction in average monthly expenditures on home health services of $4 (5 percent).

Table 8.14. Regression-adjusted means and estimated difference-in-differences impact of CPC on selected quality-of-care process and outcome measures for Medicare FFS beneficiaries during the first year of CPC: Ohio/Kentucky, Cincinnati-Dayton Region

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
PROCESS-OF-CARE MEASURES (Percentage)										
Quality of care for diabetes and IVD										
Diabetes: HbA1c test										
Baseline	91.2	86.6	NA	NA	NA	89.7	84.3	NA	NA	NA
Year 1	91.6	88.8	-1.7	-2%	0.124	91.2	86.8	-1.1	-1%	0.467
Diabetes: lipid test										
Baseline	93.5	91.0	NA	NA	NA	91.7	89.6	NA	NA	NA
Year 1	92.3	91.3	-1.4	-2%	0.126	91.3	89.8	-.6	-1%	0.652
Diabetes: eye exam										
Baseline	53.3	53.1	NA	NA	NA	54.5	52.2	NA	NA	NA
Year 1	55.2	54.1	.9	2%	0.543	55.6	52.4	.9	2%	0.797
Diabetes: urine protein test										
Baseline	67.1	67.0	NA	NA	NA	71.0	72.1	NA	NA	NA
Year 1	73.8	73.2	.6	1%	0.806	77.5	73.5	5.1*	7%	0.087
Diabetes: compliance with all 4 tests										
Baseline	36.3	36.4	NA	NA	NA	37.5	36.6	NA	NA	NA
Year 1	41.2	39.7	1.6	4%	0.362	43.0	38.3	3.7	9%	0.246
Diabetes: compliance with none of the 4 tests										
Baseline	2.4	3.4	NA	NA	NA	2.4	3.6	NA	NA	NA
Year 1	2.7	2.5	1.1	69%	0.225	2.6	2.9	1.0	65%	0.329
Number of observations	**34,491**					**12,658**				
IVD: received lipid test										
Baseline	83.9	82.1	NA	NA	NA	80.6	78.3	NA	NA	NA
Year 1	83.7	82.8	-.9	-1%	0.399	80.8	77.4	1.1	1%	0.647
Number of observations	**31,380**					**15,918**				
Continuity of care										
Percentage of primary care visits at attributed practice										
Baseline	87.0	83.4	NA	NA	NA	84.6	80.4	NA	NA	NA
Year 1	79.4	76.4	-.6	-1%	0.53	78.1	74.0	-.1	0%	0.934
Number of observations	**153,993**					**506,958**				

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
Percentage of all office visits at attributed practice										
Baseline	46.8	46.5	NA	NA	NA	40.7	39.8	NA	NA	NA
Year 1	42.0	42.0	-.3	-1%	0.644	37.9	36.6	.5	1%	0.385
Number of observations	**207,410**					**62,558**				
Transitional care (percentage)										
Likelihood of 14-day follow-up visit after hospital discharge										
Baseline	63.1	62.0	NA	NA	NA	66.9	66.3	NA	NA	NA
Year 1	65.0	65.0	-1.1	-2%	0.367	68.5	68.0	0	0%	0.998
Number of observations	**79,149**					**45,188**				
QUALITY-OF-CARE OUTCOME MEASURES										
ACSC admissions (rate per 1,000)										
Baseline	66	66	NA	NA	NA	183	183	NA	NA	NA
Year 1	84	77	6**	8%**	0.047	203	180	23**	13%**	0.034
Number of observations	**283,556**					**75,073**				
Unplanned 30-day readmissions (percentage)										
Baseline	13.8	13.7	NA	NA	NA	17.1	17.3	NA	NA	NA
Year 1	15.6	17.0	-1.4	-8%	0.136	19.3	20.6	-1.0	-5%	0.41
Number of observations	**79,190**					**45,198**				

Source: Medicare claims data for the period October 2011-September 2013.

Note: Impact estimates and predicted means are regression adjusted for baseline patient characteristics (including HCC scores) and baseline practice characteristics. Each impact estimate is based on a difference-in-differences analysis, and reflects the difference in the regression-adjusted average outcome for beneficiaries in CPC practices for a specific quarter compared with baseline relative to the same difference over time for beneficiaries in matched comparison practices. "NA" = not applicable because difference-in-differences estimates are not available at baseline.

*Significantly different from zero at the 0.10 level, two-tailed test.
**Significantly different from zero at the 0.05 level, two-tailed test.
***Significantly different from zero at the 0.01 level, two-tailed test.

Table 8.15. Regression-adjusted means and estimated difference-in-differences impact of CPC on expenditure and utilization measures for all attributed Medicare FFS beneficiaries: Oklahoma, Greater Tulsa Region

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
OVERALL AVERAGE PART A AND PART B EXPENDITURES ($) PER PATIENT PER MONTH										
Total without CPC care management fees										
Baseline	$690	$681	NA	NA	NA	$1,623	$1,605	NA	NA	NA
Year 1	$751	$802	-$59***	-7%***	<.001	$1,466	$1,618	-$170***	-10%***	<.001
Total with CPC care management fees										
Baseline	$690	$681	NA	NA	NA	$1,624	$1,605	NA	NA	NA
Year 1	$770	$802	-$41***	-5%***	0.003	$1,494	$1,618	-$143***	-9%***	0.001
Expenditures per patient per month by type of service ($)										
Inpatient										
Baseline	$246	$241	NA	NA	NA	$619	$625	NA	NA	NA
Year 1	$275	$306	-$36***	-12%***	<.001	$564	$664	-$94***	-14%***	0.001
Physician										
Baseline	$186	$181	NA	NA	NA	$358	$338	NA	NA	NA
Year 1	$193	$191	-$4	-2%	0.24	$319	$314	-$16*	-5%*	0.067
Outpatient										
Baseline	$115	$119	NA	NA	NA	$225	$237	NA	NA	NA
Year 1	$123	$128	-$1	-1%	0.819	$198	$219	-$8	-4%	0.348
Skilled nursing facility										
Baseline	$35	$29	NA	NA	NA	$104	$90	NA	NA	NA
Year 1	$44	$50	-$12***	-21%***	0.004	$105	$122	-$30***	-22%***	0.003
DME										
Baseline	$31	$30	NA	NA	NA	$82	$78	NA	NA	NA
Year 1	$28	$28	-$1	-4%	0.151	$60	$60	-$3	-5%	0.327
Hospice										
Baseline	$9	$9	NA	NA	NA	$27	$25	NA	NA	NA
Year 1	$24	$26	-$2	-6%	0.387	$59	$64	-$7	-11%	0.217
Home health										
Baseline	$68	$71	NA	NA	NA	$207	$209	NA	NA	NA
Year 1	$66	$73	-$4*	-5%*	0.092	$162	$175	-$12*	-7%*	0.066
UTILIZATION (RATE PER 1,000 PATIENTS PER YEAR)										
Hospitalizations										
Baseline	319	307	NA	NA	NA	778	765	NA	NA	NA

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
Year 1	341	353	-24***	-7%***	0.004	706	754	-60**	-8%**	0.024
Outpatient ED visits										
Baseline	492	531	NA	NA	NA	951	1,043	NA	NA	NA
Year 1	550	626	-37***	-7%***	0.003	925	1,149	-132***	-13%***	<.001
Total ED visits										
Baseline	691	719	NA	NA	NA	1,483	1,559	NA	NA	NA
Year 1	730	799	-41***	-5%***	0.005	1,385	1,607	-146***	-10%***	0.001
Observation stays										
Baseline	61	54	NA	NA	NA	129	119	NA	NA	NA
Year 1	68	63	-2	-3%	0.615	121	130	-19	-14%	0.102
Primary care visits (all settings)										
Baseline	7,094	6,990	NA	NA	NA	11,945	11,438	NA	NA	NA
Year 1	8,096	8,121	-129	-2%	0.463	12,151	12,113	-469	-4%	0.215
Specialist visits (all settings)										
Baseline	10,770	11,235	NA	NA	NA	18,984	19,664	NA	NA	NA
Year 1	12,149	12,934	-319	-3%	0.128	18,343	20,100	-1,077**	-6%**	0.019
Number of observations	**322,989**					**80,911**				

Source: Medicare claims data for the period October 2011-September 2013.

Note: Impact estimates and predicted means are regression adjusted for baseline patient characteristics (including HCC scores) and baseline practice characteristics. Each impact estimate is based on a difference-in-differences analysis, and reflects the difference in the regression-adjusted average outcome for beneficiaries in CPC practices for a specific quarter compared with baseline relative to the same difference over time for beneficiaries in matched comparison practices. "NA" = not applicable because difference-in-differences estimates are not available at baseline.

*Significantly different from zero at the 0.10 level, two-tailed test.
**Significantly different from zero at the 0.05 level, two-tailed test.
***Significantly different from zero at the 0.01 level, two-tailed test.

For the high-risk patients in Oklahoma, statistically significant findings for the CPC group relative to the comparison group include:

- A sizable decline in average monthly Medicare expenditures without care management fees of $170 (10 percent).
- A sizable decline in average monthly Medicare expenditures with care management fees of $143 (9 percent), which suggests substantial net savings.
- A reduction in average monthly expenditures on inpatient services of $94 (14 percent).
- A reduction in average monthly expenditures on physician services of $16 (5 percent).
- A reduction in average monthly expenditures on skilled nursing facilities of $30 (22 percent).
- A reduction in average monthly expenditures on home health services of $12 (7 percent).

Medicare service use

Among all patients in Oklahoma, there were three statistically significant declines per 1,000 patients in utilization (Table 8.15):

- Annual hospitalizations declined by 24 (7 percent).
- Annual outpatient ED visits declined by 37 (7 percent).
- Total annual ED visits fell by 41 (5 percent).

Among high-risk patients in Oklahoma, for the CPC group relative to the comparison group, there was a statistically significant decline in four measures per 1,000 patients:

- Annual decline in hospitalizations of 60 (8 percent).
- Annual decline in outpatient ED visits of 132 (13 percent).
- Annual decline in total ED visits of 146 (10 percent).
- Annual decline in specialist visits in all settings of 1,077 (6 percent).

Quality of care

Among all patients in Oklahoma, there were several statistically significant findings, and most of them were unfavorable. Specifically, as shown in Table 8.16, for the CPC group relative to the comparison group, the likelihood of:

- Receiving an eye exam for diabetes decreased by 4 percentage points (6 percent).
- Receiving all four tests for diabetes declined by 6 percentage points (21 percent).
- Receiving lipid testing for IVD increased by 2 percentage points (4 percent).

Table 8.16. Regression-adjusted means and estimated difference-in-differences impact of CPC on selected quality-of-care process and outcome measures for Medicare FFS beneficiaries during the first year of CPC: Oklahoma, Greater Tulsa Region

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
PROCESS-OF-CARE MEASURES (Percentage)										
Quality of care for diabetes and IVD										
Diabetes: HbA1c test										
Baseline	58.7	69.8	NA	NA	NA	56.3	68.0	NA	NA	NA
Year 1	58.5	70.6	-1.1	-2%	0.503	56.5	68.7	-.5	-1%	0.767
Diabetes: lipid test										
Baseline	70.3	73.7	NA	NA	NA	66.9	70.2	NA	NA	NA
Year 1	71.3	75.3	-.5	-1%	0.633	67.9	73.9	-2.7	-4%	0.15
Diabetes: eye exam										
Baseline	54.0	53.3	NA	NA	NA	52.2	52.5	NA	NA	NA
Year 1	54.9	57.6	-3.5*	-6%*	0.089	52.9	55.7	-2.5	-5%	0.244
Diabetes: urine protein test										
Baseline	54.3	53.3	NA	NA	NA	62.0	61.3	NA	NA	NA
Year 1	55.3	57.3	-3.0	-5%	0.212	62.0	61.9	-.6	-1%	0.814
Diabetes: compliance with all 4 tests										
Baseline	22.5	24.9	NA	NA	NA	21.7	25.1	NA	NA	NA
Year 1	22.1	30.2	-5.8***	-21%***	0.008	21.6	28.9	-3.8*	-15%	0.062
Diabetes: compliance with none of the 4 tests										
Baseline	9.5	8.5	NA	NA	NA	8.4	7.2	NA	NA	NA
Year 1	8.9	7.2	.6	8%	0.49	8.2	7.2	-.2	-2%	0.918
Number of observations	**41,953**					**14,983**				
IVD: received lipid test										
Baseline	70.7	73.2	NA	NA	NA	66.9	70.2	NA	NA	NA
Year 1	71.7	71.9	2.4**	4%**	0.044	68.9	70.0	2.2	3%	0.19
Number of observations	**39,309**					**18,374**				
Continuity of care										
Percentage of primary care visits at attributed practice										
Baseline	79.2	80.3	NA	NA	NA	74.2	76.9	NA	NA	NA
Year 1	68.7	68.5	1.3	2%	0.387	65.6	66.4	1.8	3%	0.246
Number of observations	**157,004**					**47,662**				

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
Percentage of all office visits at attributed practice										
Baseline	49.2	49.5	NA	NA	NA	43.5	43.6	NA	NA	NA
Year 1	41.8	41.0	1.1	3%	0.255	38.3	37.1	1.3	3%	0.204
Number of observations	**205,939**					**57,987**				
Transitional care (percentage)										
Likelihood of 14-day follow-up visit after hospital discharge										
Baseline	60.5	58.8	NA	NA	NA	64.7	62.5	NA	NA	NA
Year 1	58.4	57.8	-1.1	-2%	0.35	61.9	62.0	-2.3*	-4%*	0.09
Number of observations	**85,530**					**46,536**				
QUALITY-OF-CARE OUTCOME MEASURES										
ACSC admissions (rate per 1,000)										
Baseline	71	67	NA	NA	NA	208	197	NA	NA	NA
Year 1	81	81	-4	-5%	0.221	203	203	-11	-5%	0.336
Number of observations	**322,989**					**80,911**				
Unplanned 30-day readmissions (percentage)										
Baseline	13.7	13.2	NA	NA	NA	17.2	16.6	NA	NA	NA
Year 1	15.3	15.8	-1.1	-7%	0.157	19.0	20.8	-2.4**	-11%**	0.035
Number of observations	**85,573**					**46,548**				

Source: Medicare claims data for the period October 2011-September 2013.

Note: Impact estimates and predicted means are regression adjusted for baseline patient characteristics (including HCC scores) and baseline practice characteristics. Each impact estimate is based on a difference-in-differences analysis, and reflects the difference in the regression-adjusted average outcome for beneficiaries in CPC practices for a specific quarter compared with baseline relative to the same difference over time for beneficiaries in matched comparison practices. "NA" = not applicable because difference-in-differences estimates are not available at baseline.

*Significantly different from zero at the 0.10 level, two-tailed test.
**Significantly different from zero at the 0.05 level, two-tailed test.
***Significantly different from zero at the 0.01 level, two-tailed test.

Among high-risk patients in Oklahoma, for the CPC group relative to the comparison group, the likelihood of:

- Receiving all four tests for diabetes declined by 4 percentage points (15 percent).
- Having a 14-day follow-up visit after a hospitalization declined by 2 percentage points (4 percent).[65]
- Having an unplanned 30-day readmission declined by 2 percentage points (11 percent).

7. Oregon

As in the CPC-wide sample, Medicare expenditures and hospitalizations fell over time in Oregon for CPC practices relative to comparison practices; however, the declines were not statistically significant. There were also large, statistically significant, favorable effects on the diabetes process-of-care measures in Oregon.

Medicare expenditures

During the first year, there was no significant effect on total Medicare expenditures with or without care management fees among all attributed patients or high-risk patients in Oregon (Table 8.17). There was only one statistically significant effect on expenditures by type of service:

- DME increased by $5 (10%) among high-risk patients only.

Medicare service use

Among all patients in Oregon, there was only one statistically significant effect on the Medicare service use outcomes. Specifically, among all patients, for CPC beneficiaries relative to comparison beneficiaries:

- Outpatient ED visits per 1,000 patients declined by 29 (6 percent) for all patients.

Quality of care

There were statistically significant improvements in several quality-of-care process measures (Table 8.18). Specifically, among patients with diabetes, for CPC beneficiaries relative to comparison beneficiaries in Oregon, the likelihood of:

- HbA1c testing increased by 3 percentage points (4 percent) for both all patients and high-risk patients, although it was only statistically significant for all patients.
- An eye exam increased by 8 percentage points (14 percent) for high-risk patients.
- All four tests for diabetes being performed increased by 4 percentage points (11 percent) for all patients and by 7 percentage points (20 percent) for high-risk patients.

[65]This finding is seemingly inconsistent with the survey results for Oklahoma reported in Chapter 8 that indicated a significantly *greater* proportion of CPC patients than comparison patients reported that they saw their doctor, nurse practitioner, or physician assistant in the provider's office within two weeks after their most recent hospital stay. It is possible that the follow-up appointments for CPC patients occurred mainly by telephone or email, or in person with a care manager or nurse, and these appointments would not appear in the claims data.

Table 8.17. Regression-adjusted means and estimated difference-in-differences impact of CPC on expenditure and utilization measures for all attributed Medicare FFS beneficiaries: Oregon

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
OVERALL AVERAGE PART A AND PART B EXPENDITURES ($) PER PATIENT PER MONTH										
Total without CPC care management fees										
Baseline	$634	$625	NA	NA	NA	$1,420	$1,417	NA	NA	NA
Year 1	$703	$706	-$12	-2%	0.402	$1,328	$1,331	-$6	0%	0.901
Total with CPC care management fees										
Baseline	$634	$625	NA	NA	NA	$1,421	$1,417	NA	NA	NA
Year 1	$723	$706	$7	1%	0.622	$1,357	$1,331	$22	2%	0.651
Expenditures per patient per month by type of service ($)										
Inpatient										
Baseline	$230	$222	NA	NA	NA	$559	$556	NA	NA	NA
Year 1	$260	$262	-$10	-4%	0.305	$509	$539	-$31	-6%	0.338
Physician										
Baseline	$186	$189	NA	NA	NA	$347	$354	NA	NA	NA
Year 1	$186	$191	-$3	-2%	0.574	$290	$295	$3	1%	0.851
Outpatient										
Baseline	$120	$112	NA	NA	NA	$235	$218	NA	NA	NA
Year 1	$128	$123	-$3	-2%	0.434	$217	$200	$0	0%	0.96
Skilled nursing facility										
Baseline	$39	$42	NA	NA	NA	$110	$121	NA	NA	NA
Year 1	$52	$53	$2	5%	0.447	$123	$124	$10	8%	0.371
DME										
Baseline	$27	$26	NA	NA	NA	$72	$68	NA	NA	NA
Year 1	$24	$23	$0	2%	0.634	$57	$48	$5*	10%*	0.075
Hospice										
Baseline	$7	$8	NA	NA	NA	$21	$23	NA	NA	NA
Year 1	$25	$26	$1	3%	0.718	$60	$54	$7	13%	0.216
Home health										
Baseline	$26	$26	NA	NA	NA	$77	$76	NA	NA	NA
Year 1	$29	$29	$0	1%	0.882	$73	$72	$0	0%	0.981
UTILIZATION (RATE PER 1,000 PATIENTS PER YEAR)										
Hospitalizations										
Baseline	241	229	NA	NA	NA	571	560	NA	NA	NA
Year 1	259	260	-12	-5%	0.126	535	539	-16	-3%	0.501

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
Outpatient ED visits										
Baseline	492	476	NA	NA	NA	978	974	NA	NA	NA
Year 1	531	544	-29*	-6%*	0.074	945	969	-28	-3%	0.479
Total ED visits										
Baseline	639	616	NA	NA	NA	1,368	1,367	NA	NA	NA
Year 1	655	661	-28	-4%	0.125	1,267	1,274	-8	-1%	0.862
Observation stays										
Baseline	44	41	NA	NA	NA	102	95	NA	NA	NA
Year 1	49	45	0	1%	0.916	99	92	-1	-1%	0.939
Primary care visits (all settings)										
Baseline	6,656	7,594	NA	NA	NA	10,813	12,628	NA	NA	NA
Year 1	7,209	8,408	-261	-4%	0.118	10,467	12,703	-422	-4%	0.219
Specialist visits (all settings)										
Baseline	10,545	10,463	NA	NA	NA	18,264	18,901	NA	NA	NA
Year 1	11,591	11,728	-218	-2%	0.273	17,261	17,675	224	1%	0.634
Number of observations	**360,383**					**88,111**				

Source: Medicare claims data for the period October 2011-September 2013.

Note: Impact estimates and predicted means are regression adjusted for baseline patient characteristics (including HCC scores) and baseline practice characteristics. Each impact estimate is based on a difference-in-differences analysis, and reflects the difference in the regression-adjusted average outcome for beneficiaries in CPC practices for a specific quarter compared with baseline relative to the same difference over time for beneficiaries in matched comparison practices. "NA" = not applicable because difference-in-differences estimates are not available at baseline.

*Significantly different from zero at the 0.10 level, two-tailed test.
**Significantly different from zero at the 0.05 level, two-tailed test.
***Significantly different from zero at the 0.01 level, two-tailed test.

Table 8.18. Regression-adjusted means and estimated difference-in-differences impact of CPC on selected quality-of-care process and outcome measures for Medicare FFS beneficiaries during the first year of CPC: Oregon

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
PROCESS-OF-CARE MEASURES (Percentage)										
Quality of care for diabetes and IVD										
Diabetes: HbA1c test										
Baseline	86.0	83.5	NA	NA	NA	84.6	79.0	NA	NA	NA
Year 1	86.9	81.1	3.2**	4%**	0.039	86.6	78.0	3.0	4%	0.11
Diabetes: lipid test										
Baseline	86.4	86.6	NA	NA	NA	83.8	83.2	NA	NA	NA
Year 1	86.6	85.0	1.7	2%	0.118	85.4	82.7	2.1	3%	0.374
Diabetes: eye exam										
Baseline	56.2	55.2	NA	NA	NA	55.9	55.2	NA	NA	NA
Year 1	58.6	54.7	2.9	5%	0.155	59.6	51.4	7.5**	14%	0.017
Diabetes: urine protein test										
Baseline	64.0	71.8	NA	NA	NA	68.9	72.1	NA	NA	NA
Year 1	67.4	73.3	1.9	3%	0.338	70.9	75.5	-1.3	-2%	0.576
Diabetes: compliance with all 4 tests										
Baseline	33.9	38.1	NA	NA	NA	34.8	38.1	NA	NA	NA
Year 1	38.1	38.5	3.9*	11%*	0.056	39.5	36.1	6.7*	20%	0.069
Diabetes: compliance with none of the 4 tests										
Baseline	4.2	4.9	NA	NA	NA	4.2	6.1	NA	NA	NA
Year 1	4.1	5.9	-1.1	-21%	0.177	3.7	5.9	-.3	-7%	0.845
Number of observations	**38,518**					**13,289**				
IVD: received lipid test										
Baseline	81.8	81.7	NA	NA	NA	77.9	78.8	NA	NA	NA
Year 1	80.4	80.9	-.7	-1%	0.773	77.3	78.2	.1	0%	0.98
Number of observations	**27,848**					**13,606**				
Continuity of care										
Percentage of primary care visits at attributed practice										
Baseline	80.3	76.9	NA	NA	NA	78.6	73.6	NA	NA	NA
Year 1	69.4	67.1	-1.2	-2%	0.374	69.1	64.9	-.8	-1%	0.672
Number of observations	**160,619**					**51,802**				

	Full sample					High-risk subgroup				
	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact	CPC practices' predicted mean	Comparison group practices' predicted mean	Estimated impact (size)	Estimated impact (%)	p-Value for estimated impact
Percentage of all office visits at attributed practice										
Baseline	47.9	48.4	NA	NA	NA	44.9	45.0	NA	NA	NA
Year 1	40.5	41.6	-.6	-1%	0.546	39.4	40.3	-.7	-2%	0.595
Number of observations	**230,354**					**67,527**				
Transitional care (percentage)										
Likelihood of 14-day follow-up visit after hospital discharge										
Baseline	60.4	63.9	NA	NA	NA	65.2	70.0	NA	NA	NA
Year 1	58.5	61.1	.9	2%	0.512	63.0	66.8	1.0	2%	0.555
Number of observations	**77,321**					**41,294**				
QUALITY-OF-CARE OUTCOME MEASURES										
ACSC admissions (rate per 1,000)										
Baseline	46	46	NA	NA	NA	129	129	NA	NA	NA
Year 1	55	54	2	3%	0.663	137	132	5	4%	0.677
Number of observations	**360,383**					**88,111**				
Unplanned 30-day readmissions (percentage)										
Baseline	12.5	12.9	NA	NA	NA	15.4	16.6	NA	NA	NA
Year 1	12.6	12.6	.6	5%	0.575	16.2	16.0	1.4	9%	0.387
Number of observations	**77,372**					**41,306**				

Source: Medicare claims data for the period October 2011-September 2013.

Note: Impact estimates and predicted means are regression adjusted for baseline patient characteristics (including HCC scores) and baseline practice characteristics. Each impact estimate is based on a difference-in-differences analysis, and reflects the difference in the regression-adjusted average outcome for beneficiaries in CPC practices for a specific quarter compared with baseline relative to the same difference over time for beneficiaries in matched comparison practices. "NA" = not applicable because difference-in-differences estimates are not available at baseline.

*Significantly different from zero at the 0.10 level, two-tailed test.
**Significantly different from zero at the 0.05 level, two-tailed test.
***Significantly different from zero at the 0.01 level, two-tailed test.

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CHAPTER 9. CONCLUSIONS

CPC is an ambitious initiative in which CMS has brought together many payers from seven regions across the United States to support and incentivize nearly 500 motivated primary care practices to fundamentally improve the way they deliver care to their patients. The practices are required to meet annual Milestones intended to develop their ability to deliver five primary care functions: (1) access and continuity, (2) planned chronic and preventive care, (3) risk-stratified care management, (4) patient and caregiver engagement, and (5) coordination of care across the medical neighborhood. Given the complexities of implementing an initiative of this size and scope, CPC's implementation proceeded relatively smoothly in the first program year—although several aspects of the initiative are still being refined.

At the start of CPC, CMS convened 31 other payers that collectively provided enhanced, non-visit-based care management fees totaling more than $141.3 million to nearly 500 participating practices in the initiative's first program year (October 2012 through December 2013). This funding was equivalent to approximately 19 percent of total (non-CPC) practice revenue in CPC's first year for the median practice, and it enabled practices to make considerable investments in redesigning and transforming care. In addition to these payments, CPC provides learning activities and data feedback to practices to assist in their transformation. Although areas for improvement remain in the learning activities and data feedback, both are continually being refined. Moreover, most practices met the required Milestones at the end of CPC's first year: less than 1 percent were terminated from the initiative, and less than 10 percent were placed on corrective action. To date, practices' participation has been remarkably stable, especially given the amount of work required of them to meet CPC's annual Milestones.

CPC is intended to improve outcomes for the patients the practices serve—including patient experience and health care costs, use, and quality. It is also expected to improve clinician and staff experiences, which are important outcomes related to the scalability of the model. However, these effects may take time to emerge. Existing literature on the PCMH and related initiatives suggests that improvements in outcomes typically take 18 months to three years to materialize; therefore, we did not expect to see improvements in the first year of CPC. Early findings for attributed Medicare FFS patients indicate modest *favorable* effects on health care expenditures and service use, but few sizable or statistically significant effects on other claims-based quality-of-care outcomes or process measures. However, these results must be interpreted cautiously until more data are available.

Across all seven regions in the first 12 months of the initiative (October 2012 through September 2013), early results suggest that CPC has generated enough savings in Medicare health care expenditures to cover the CPC care management fees paid by CMS for attributed Medicare FFS beneficiaries. Overall, CPC appears to have reduced total monthly Medicare Part A and Part B FFS expenditures per beneficiary for all care compared to what they would have been absent the CPC intervention by $14, or 2 percent (not accounting for CPC care management fees paid by CMS). These reductions in Medicare expenditures appear to be due to favorable initiative-wide impacts on hospitalizations and ED visits. Impacts were large enough to offset most of CMS's monthly care management fees, which average $20 per attributed beneficiary in participating CPC practices. This renders the initiative close to cost neutral for Medicare FFS as a whole in CPC's first year but suggests that CPC has not generated *net* savings during this time.

The expenditure impact estimates differ significantly across regions. The favorable initiative-wide results are mainly driven by Oklahoma, where CPC generated favorable impacts on key expenditures and service utilization outcomes (including Medicare expenditures, hospitalizations, and ED visits) and, to a lesser extent, by New Jersey (for Medicare expenditures and hospitalizations), New York (for hospitalizations), and Oregon (for outpatient ED visits).

At this stage of the evaluation, it is difficult to ascribe the differences in impacts among regions to certain baseline characteristics, context, or variation in implementation intensity. However, Oklahoma currently stands out among the regions for its statistically significant reductions in expenditures, hospitalizations, and ED visits. Our qualitative assessment of the seven regions suggests that, at the start of CPC, Oklahoma was one of the regions with the greatest room for improvement in how primary care practices deliver care. Specifically, at the beginning of CPC, participating Oklahoma practices reported relatively low practice sophistication (as measured through an adapted version of the PCMH-A survey instrument) together with little history of PCMH initiatives, and relatively high health care costs and rates of ACSC hospitalizations. They also had relatively poor continuity of care (measured by the percentage of visits beneficiaries had at their attributed practice). Qualitatively, this baseline context suggests that Oklahoma had considerable opportunity for improving care and reducing costs. CPC funding, supports, and intensive technical assistance appear to have had a substantial effect on practice outcomes in Oklahoma's environment. Nonetheless, given that Oklahoma's impacts were observed as early as the first quarter of CPC—which is earlier than we would expect to observe impacts—and results to date only reflect the first program year, we recommend caution in interpreting these findings.

Although results elsewhere are not as striking as those in Oklahoma, several other regions—including New Jersey, New York, and Oregon—also appear to be moving in the right direction with respect to improving outcomes, with some statistically significant impacts observed. Continued close monitoring of implementation in these and the remaining regions in the coming year, combined with longer follow-up on impacts, will provide a much clearer understanding of CPC's effects.

Although these results are promising, they need to be interpreted cautiously, for two reasons. First, although the study used a careful and thorough method to match CPC practices to comparison practices, different outcomes after CPC began may reflect different baseline values of unobservable characteristics between the two groups of practices, rather than the effects of CPC. Second, the concentration of favorable findings in several regions and their early timing, as well as some unexpected adverse results, suggests that true CPC effects may be overstated for this first program year.

We will continue to monitor both the implementation and impacts of CPC in the coming years, to see whether these early favorable results for expenditures and service use grow, as expected, as the practices gain experience and meet increasingly more ambitious Milestones for improvement. The implementation analysis will focus on understanding how participating practices implement the Milestones and change primary care functioning. We will continue to track claims-based effects quarterly throughout the initiative and will rigorously evaluate CPC's impacts annually. We will follow up on the practice survey and claims-based measures and add results from a survey of patients about their experience receiving care, as well as a survey of clinicians and staff about their experiences delivering care. We will look for effects that persist over time and across related outcomes to provide greater confidence in these early estimates of CPC's impacts. We also will add more sensitivity tests to our analyses, including a test to estimate impacts using a regression

discontinuity design that relies exclusively on practices that applied to, but were not selected for, CPC as the comparison group. Finally, we will undertake a formal synthesis to look for links between implementation findings and impacts on health care cost, use, and quality, as well as patient and provider experience. Throughout, we will focus on identifying the nature and extent of practice changes and the efforts that seem to produce the greatest improvements in quality of care, expenditures, and the experiences of patients and providers. We will also identify factors that appear to create barriers to practice improvements and effective efforts to remove such barriers. We will use these analyses to discuss the implications for the refinement, replication, and spread of the initiative.

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