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Independent Evaluation of Comprehensive Primary Care Plus (CPC+):

Final Report
December 2023

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Acronyms

ACO	Accountable Care Organization
ACE	angiotensin-converting enzyme
ACP	advance care plan
APM	Alternative Payment Model
ARB	angiotensin receptor blocker
BCF	Bayesian causal forest
CAD	coronary artery disease
CAH	Critical Access Hospital
CAHPS	Consumer Assessment of Healthcare Providers and Systems
CDR	care delivery requirement
CEHRT	Certified Electronic Health Record Technology
CMF	care management fee
CMM	comprehensive medication management
CMS	Centers for Medicare & Medicaid Services
CNS	Clinical Nurse Specialist
COVID-19	coronavirus disease 2019
CPC	Comprehensive Primary Care
CPC+	Comprehensive Primary Care Plus
CPCP	Comprehensive Primary Care Payment
eCQM	electronic Clinical Quality Measure
DC	Global and Professional Direct Contracting Model
DD	difference-in-differences
DDD	difference-in-difference-in-difference (also known as triple-difference)
ED	emergency department
EHR	electronic health record
E&M	evaluation and management
FFS	fee-for-service

FQHC	Federally Qualified Health Center
HCC	hierarchical condition category
HHS	Department of Health and Human Services
HIE	Health Information Exchange
HIPAA	Health Insurance Portability and Accountability Act
IT	information technology
ITT	intent-to-treat
LPN	Licensed Practical Nurse
LVN	Licensed Vocational Nurse
M-2-PCMH-A	modified Patient-Centered Medical Home Assessment
MA	medical assistant
MDM	CMS Master Data Management System
MOU	memorandum of understanding
NLT	National Learning Team
NP	Nurse Practitioner
PA	Physician Assistant
PBIP	Performance-based Incentive Payment
PBPM	per beneficiary per month
PCF	Primary Care First
PCP	primary care practitioner
PFAC	Patient and Family Advisory Council
PMPM	per member per month
PVI	Pandemic Vulnerability Index
PY	Program Year
QI	quality improvement
QPP	Quality Payment Program
RHC	Rural Health Clinic
RING	Regional Implementation Networking Group
RLN	Regional Learning Network
SSP	Medicare Shared Savings Program

SVI	Social Vulnerability Index
UCC	Urgent Care Center
VBP	value-based program

Independent Evaluation of CPC+: **Executive Summary of the Final Report**

The Centers for Medicare & Medicaid Services (CMS) Innovation Center launched the Comprehensive Primary Care Plus (CPC+) model in January 2017 in 14 regions and added 4 more regions in January 2018. In all 18 regions, CPC+ ran through December 2021. Primary care practices participated in one of two tracks, with Track 2 practices having greater advanced primary care transformation requirements and payment supports. Through CPC+, the CMS Innovation Center tested if multipayer payment reform, actionable data feedback, robust learning supports, and health IT vendor support to Track 2 practices would enable primary care practices to transform how they deliver care and positively affect the quality and costliness of care they provide. The CPC+ framework for transformation required CPC+ practices to meet a set of care delivery requirements, which evolved over the five program years. This framework aimed to improve care delivery across five Comprehensive Primary Care Functions: (1) access and continuity, (2) care management, (3) comprehensiveness and coordination, (4) patient and caregiver engagement, and (5) planned care and population health.

This executive summary is based on an independent evaluation and provides key takeaways organized by the goals of CPC+. We then provide more detailed findings on the CPC+ supports to practices, care delivery changes made by practices, impacts on outcomes, and implications for primary care models going forward. The full report contains separate chapters on each of these areas.

Key takeaways

Goal 1: Recruit and engage CPC+ stakeholders. In designing CPC+, CMS hypothesized that practices need to receive robust supports for a critical mass of their patients to effectively change care delivery at the practice for all patients. Therefore, CMS sought to engage broad participation from other public and private payers.

Although most of the big commercial payers partnered in CPC+, many of these payers did not include all their major lines of business. Consequently, the true extent of multipayer participation and engagement in CPC+ fell short of CMS's vision of multipayer support, limiting the number of covered lives, the amount of support practices received, and practices' incentives for care transformation beyond CMS.

- Across the five years of CPC+, stakeholder participation remained fairly stable. And, despite the major disruptions and financial stress caused by the coronavirus 2019 (COVID-19) pandemic, we did not see more practices closing, merging, or exiting CPC+ in 2020 than in prior years.

- CPC+ practices were not broadly representative of primary care practices in their region. Practices that were independent, smaller, in areas of high social vulnerability, or that served more complex patients, were less likely to participate in CPC+.

Goal 2: Provide incentives and supports to practices. CPC+ offered the following supports to participating practices: (1) guidance on how to enhance primary care functions, (2) enhanced and alternatives to fee-for-service (FFS) payments, (3) data feedback, and (4) individualized and group learning supports to practices. It also formalized health IT vendors' roles in supporting health IT implementation among Track 2 practices.

- Although CPC+ provided some of the highest care management fees of primary care models to date, just over half the practices rated CPC+ payments from CMS as adequate or more than adequate for the work CPC+ required. Of the three types of payments, practices found care management fees to be most useful, by far, for investing in staff and resources for care transformation. On the other hand, practices found performance-based payments to be too small, volatile, and delayed to affect care delivery change.
- There was a limited shift from FFS to prospective, population-based alternative payments. Fewer than one in five payer partners met their commitment to provide Track 2 practices with alternative payments, and nearly all these payers were continuing longstanding capitation arrangements that predated CPC+. Among all patients seen by Track 2 CPC+ practices, approximately 13 percent were covered by alternative payments from CMS but only 3 percent were covered by alternative payments from other payer partners. Payer partners cited practices' resistance to accepting capitated payments as a factor in payers' inability to move towards greater population-based payment arrangements.
- Practices selectively engaged with the learning supports they found most helpful—most notably, small group coaching, which is resource intensive to provide, and peer-to-peer learning. Payer partners made modest progress providing aggregated data to practices during CPC+, but the level of engagement with the aggregated data tools was generally low. Health IT vendors primarily enhanced existing functionalities to support CPC+ practices, rather than creating new ones, because CPC+ practices were a small fraction of vendors' customer base.

Goal 3: Encourage practices to use supports to make changes in care delivery to achieve the five Comprehensive Primary Care Functions.

- Practices highlighted the benefits of timely primary care access (such as 24/7 coverage and same-day/next-day appointments) to better meet patients' needs and reduce unnecessary emergency department (ED) visits and acute hospitalizations. We observed a meaningful increase over the course of the model in the proportion of CPC+ practices that provided both types of access.
- Enhanced behavioral health integration and improved access to behavioral health care were also successes of the CPC+ model. Practices increased their reliance on and use of behavioral health staff substantially and we found that they offered behavioral health counseling at a higher rate than comparison practices. However, practices cited the behavioral health workforce shortage as a challenge to further expanding integrated behavioral health care.
- More physicians reported documenting—and more beneficiaries reported being asked about—advance care plans in CPC+ than in comparison practices. We observed small increases in hospice use among beneficiaries in CPC+ practices.
- Yet practices faced a number of challenges. Even with CPC+ enhanced payments, implementation of alternative visits (other than telehealth during the COVID-19 pandemic) was low because

practices were concerned about the cost of providing these types of visits. The rise in telehealth visits was driven by eligibility expansions and payment rate increases that granted telehealth visits parity with face-to-face visits.

- Although the number of care managers across CPC+ practices increased, practices struggled to provide longitudinal care management to their patients at higher risk, citing insufficient care manager time as the main barrier.
- There were limited improvements in coordination between primary care practitioners and specialists and in primary care referrals to specialists. CPC+ practices did not improve important aspects of comprehensiveness of care such as managing a greater depth and breadth of patients' conditions.
- In terms of sustainability, most practices reported that they expect to sustain many of the CPC+ processes but felt they would need ongoing supports outside of FFS payments, especially to fund care managers.

Goal 4: Improve outcomes related to Medicare FFS utilization and expenditures, quality of care, and patient experience.

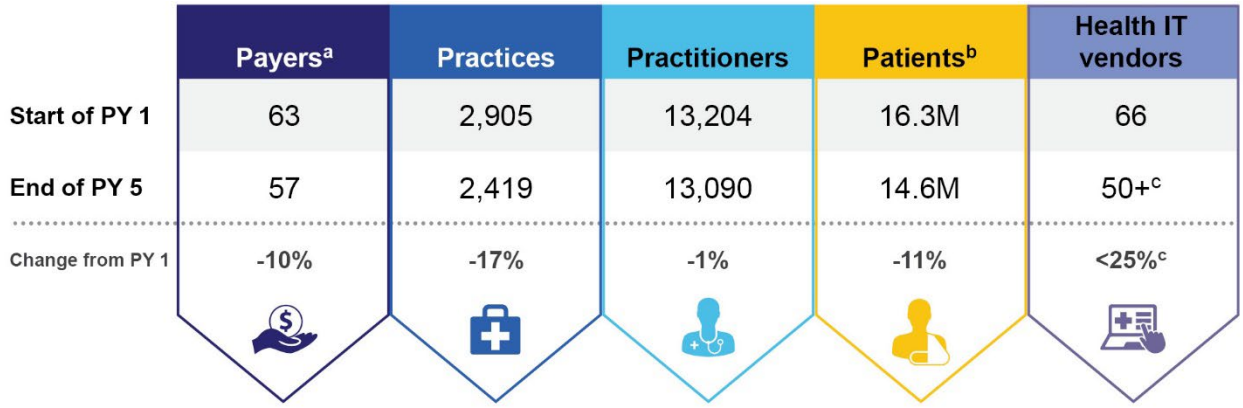
- CPC+ reduced outpatient ED visits, acute inpatient hospitalizations, and acute inpatient expenditures; however, these reductions were not sufficient in either track to reduce total Medicare expenditures or achieve net savings, after accounting for increased expenditures in other areas and enhanced CPC+ payments.
- Reductions in total acute hospitalizations were driven by decreases in lower-acuity acute medical (non-surgical) hospitalizations, with generally no changes in acute surgical hospitalizations.
- Reductions in acute inpatient expenditures were offset by increases in some other types of expenditures, such as physician services, inpatient rehabilitation, and hospice.
- We did not observe any systematic differences in primary outcomes between Track 1 and Track 2 practices despite greater funding and care delivery requirements for Track 2 practices. We did observe that Track 1 practices also made changes in some Track 2-required care delivery requirements.
- CPC+ independent practices successfully reduced hospitalizations as well as expenditures on these hospitalizations, pointing towards the greater challenge of reducing hospitalizations among hospital- and system-owned practices that rely on revenues from hospitals and specialist services.
- We observed a favorable interaction between participation in CPC+ and the Medicare Shared Savings Program (SSP) incentives in terms of reduction in total Medicare expenditures. Consistent with CMS's expectations about possible alignment between incentives and supports offered by CPC+ and SSP, a pattern of more favorable effects was observed across several outcomes for practices that were participating in SSP when CPC+ began, relative to those that were not.
- We observed limited improvements over the course of CPC+ in quality of care measured using Medicare claims (generally, one percentage point or less improvement). However, for many of the claims-based quality measures we examined, CPC+ practices' performance was already high at baseline with limited room for improvement, and the CPC+ model payments did not directly incentivize most of the quality-of-care measures we evaluated.
- Beneficiaries in CPC+ and comparison practices reported comparable experiences of care, with no meaningful differences on any of the 10 composite measures of primary care.

A closer look at CPC+ key takeaways

CPC+ Participation and partnership

CPC+ involved many primary care practices, payers, and health IT vendors, and participation remained relatively steady throughout CPC+. At the end of the model, CMS was still partnering with 57 payers and at least 50 vendors to support 2,419 primary care practices serving 14.6 million patients (Figure ES.1).

Figure ES.1. Stakeholders involved in CPC+ from start through end of CPC+



Source: Mathematica's analysis of CPC+ practice, payer, and health IT tracking data provided by CMS; practice-reported financial data; and CMS Medicare FFS attribution data. These numbers reflect practices and payers that started CPC+ in 2017.

[a] Payer partners that operated in more than one region are counted separately for each region.

[b] Patient counts reflect all patients served by CPC+ practices.

[c] PY 5 vendor counts might be underestimated due to underreporting by practices.

IT = information technology; M = million; PY = Program Year.

Practices that participated in CPC+ were diverse. They ranged from small (one to two primary care practitioners [PCPs]) to large (six or more PCPs); included independent and system-owned practices; were located in rural, urban, and suburban areas; and had varying levels of experience with primary care transformation. Although diverse, practices that participated in CPC+ had notable differences from other primary care practices in their regions. Practices that were independent, were smaller, had no primary care transformation experience at baseline, or served more complex patients were less likely to participate in CPC+. Practices with these characteristics were also more likely to exit CPC+.

Payer and health IT vendor support

To support CPC+ practices in delivering advanced primary care, CPC+ provided enhanced and alternative payments, data feedback, and individualized and group learning supports, and required Track 2 practices to partner with vendors to use advanced health IT functionalities. Throughout CPC+, CMS and payer partners provided robust supports to CPC+ practices.

CPC+ payments

Enhanced payments. All payer partners joined CMS in providing enhanced payments to the CPC+ practices with which they contracted throughout CPC+. Practices received these enhanced payments in addition to the usual FFS payments they received for services. CPC+ payments accounted for a median of 9 percent of total practice revenues in Track 1, and 14 percent in Track 2. Per practitioner, Track 1 practices received median cumulative enhanced payments of $214,538, while Track 2 practices received $325,578, over the five years of CPC+.

Median payments for performance accounted for only a modest share of median enhanced payments (15 percent). However, over the course of CPC+ this proportion increased from 10 percent early in CPC+ to 24 percent in the last year. The increase was driven primarily by robust growth in the shared savings earned by practices belonging to SSP Accountable Care Organizations (ACOs), while care management fees (which accounted for the lion's share of payments for participation) remained stable.

About one-half of payer partners joined CMS in meeting their commitment to provide Track 2 practices with larger enhanced payments than Track 1 practices to reflect the more advanced care delivery activities expected in Track 2. This proportion remained stable over time and fell far short of CMS's goal that all payer partners provide greater financial support for Track 2 practices.

Over the course of CPC+, 62 percent of the total enhanced payments practices received were unique to CPC+. The remaining 38 percent represented funding available to at least some practices participating in payers' other value-based purchasing (VBP) programs outside of CPC+. CMS provided nearly all (96 percent) of the unique funding for CPC+ practices over the course of the model, reflecting that (1) CMS paid substantially larger care management fees for Medicare FFS beneficiaries than other payers paid for their attributed lives, and (2) many payer partners used existing VBPs programs to meet their CPC+ commitment.

Practices' assessments of the adequacy of CPC+ payments were mixed. In the last year of CPC+, across both tracks, 55 percent of practices rated CPC+ payments from CMS adequate or more than adequate for the work CPC+ required, and 45 percent did so for payer partners' payments. In a separate survey the same year, 26 percent of physicians rated CPC+ payments as adequate or more than adequate. Taken together, these results indicate that a substantial proportion of both practices and physicians surveyed had concerns about the adequacy of CPC+ payments.

Throughout CPC+, interviewed practices consistently cited care management fees as the most useful type of CPC+ payment support they received, by far. These large, stable, and prospectively paid payments typically served as the main funding source for compensating care managers, behavioral health providers, and other staff hired to improve care delivery.

Practices not participating in SSP were eligible to receive Performance-based Incentive Payments (PBIPs), prospectively paid bonus payments. Because PBIPs were small relative to care management fees, practices reported that PBIPs alone did not provide strong incentives to change care delivery. However, the aggregate incentives practices faced from all their payers' VBPs programs, including PBIPs, did motivate practices to take concrete steps to improve quality and control utilization.

Alternative to FFS payments. Throughout the model, fewer than one in five payer partners provided Track 2 practices with alternative payments that shifted a portion of payments away from FFS—falling far short of CMS's goal that all payer partners do so by the start of the second year of CPC+. Among the payers using alternative payments, most simply continued their longstanding capitation arrangements that pre-dated CPC+. Most of the payers that opted not to implement alternative payments cited two key barriers: (1) the investment required to upgrade their incompatible data systems and make accounting changes and (2) practices were uncertain about changes needed for alternative types of payment. By the end of CPC+, only one in six patients in Track 2 practices were covered by payers with alternative payment approaches.

Throughout CPC+, most Track 2 practices continued to approach alternative payments with hesitancy. About three-quarters of Track 2 practices elected the minimum Comprehensive Primary Care Payment (CPCP) option available to them (40 percent CPCP) under CMS's hybrid payment model, in each of the model's final three years. Most of the deep-dive Track 2 practices interviewed about payment accepted the premise that they should move away from FFS but made limited, halting progress in doing so. Among the key challenges they cited were lack of provider buy-in and a range of logistical issues, including how to adapt existing budgeting and payment processing systems to handle prospective payments. Despite these challenges, by the end of CPC+, about two-thirds of deep-dive Track 2 practices interviewed about payment credited CMS's hybrid payment model with helping their practices make at least a partial transition from FFS.

The COVID-19 pandemic and CPC+ payments. In early 2020, CMS and other payers, including most CPC+ payer partners, responded to the pandemic's unprecedented disruptions by introducing temporary payment accommodations to reduce financial pressures on providers and access barriers for patients (Swankoski et al. 2022). The changes that deep-dive practices described as most beneficial were coverage expansions and FFS payment rate increases for telehealth. As the pandemic continued into the last year of CPC+, CMS and most payer partners maintained most of the key payment changes they had launched in the previous year. Combined with a strong rebound in office visits, this widespread continuation of payment accommodations resulted in most deep-dive practices reporting by the end of CPC+ that their practice finances had recovered to nearly pre-pandemic levels.

Sustainability of funding for practice transformation beyond CPC+. Many practices planned to maintain the same level of care management, behavioral health, and other services that they had provided under CPC+—at least for the first year after CPC+. However, some practices were concerned that their funding streams would become less stable and predictable after CPC+. Therefore, they were less confident about being able to maintain the same level of services beyond the first post-CPC+ year. By far, the most commonly cited post-CPC+ funding sources by practices were VBPs programs sponsored by non-CMS payers and the Primary Care First (PCF) model sponsored by CMS. Other funding sources cited by fewer practices included Medicare SSP, CMS's Global and Professional Direct Contracting model (now called the Realizing Equity, Access and Community Health [ACO REACH] model), and enhanced FFS billing through the use of Chronic Care Management codes and psychotherapy codes. Practices expressed concern that their overall payments might decline after CPC+ because of two related factors: a lack of sizable care management fees and increased exposure to risk in subsequent advanced primary care models.

Key lessons learned about CPC+ payments. The payment-related aspects of CPC+ that deep-dive practices wished they had better understood earlier in the model included (1) the lack of unique (CPC+-specific) payment supports from most payer partners, and (2) the degree of change their own organizations would have to undergo before they could reap tangible benefits from CPC+ funding.

When asked what they would have done differently to better use their CPC+ funding, half of the deep-dive Track 1 practices said they would have applied to Track 2 instead and used the higher care management fees to support more practice changes. In addition, some practices wished they had trained their staff to conduct more thorough Hierarchical Condition Category (HCC) coding, to qualify for higher risk-adjusted care management fees.

When practices were asked what CMS could have done differently to improve their experiences with CPC+ payments, the most prevalent responses included (1) allowing a broader, more flexible definition of a practice than the single-site definition that CMS used to allow, for example, the practice definition to align with how they did their budgeting and staffing; (2) streamlining annual financial reporting requirements from the start of CPC+; and (3) providing clearer guidance on allowable uses of care management fees from the start of CPC+.

Regarding what payer partners could have done differently, more than half of the deep-dive practices said that receiving larger, CPC+-specific payments from payer partners would have done the most to improve their own experiences with CPC+ payments. Some practices also cited the need for better alignment among payer partners' payment models and performance metrics and for greater transparency in commercial payer partners' performance-based payment models.

Data feedback and aggregation

CMS provided all CPC+ practices with data feedback about Medicare FFS beneficiaries through an interactive web-based tool, and 95 percent of payer partners provided unaggregated data to practices about their CPC+ patients. Practice usage of the CMS tool peaked in the third year of CPC+, with 79 percent of practices accessing the tool at least once each year. By the last year of CPC+, all payer partners that reported providing data to CPC+ practices noted they were also providing data to their non-CPC+ practices that were at least as comprehensive as their CPC+ reports.

Payer partners made modest progress providing aggregated regional reports to practices during CPC+. CMS expected all payers in each region to aggregate their data with CMS's Medicare FFS data into one streamlined tool for CPC+ practices by the second year of CPC+. To address this goal, the payer partners in 4 of 14 regions initiated aggregation efforts during CPC+, and payer partners in 4 additional regions carried over efforts they began before CPC+. Payer partners in four of these eight regions planned to continue offering aggregated tools to practices in their region after CPC+ ended. Payer partners in the other six regions did not aggregate data during CPC+, either because there were not enough payers in the region to make the effort practical, or there was a lack of engagement from key payer partners. CMS provided all CPC+ practices data feedback about Medicare FFS beneficiaries through an interactive web-based tool, and 95 percent of payer partners provided unaggregated data to practices about their CPC+ patients in the region. This was particularly the case if another robust data initiative existed, such as a state health information exchange. Organizations working toward data aggregation offered several lessons that could be relevant to future CMS efforts, including: (1) having an impartial convener to facilitate aggregation

among payers with varied interests is critical, and CMS's investment in a regional convener role is important; (2) it takes time to forge multipayer collaborations and build the necessary data capacity, making this work particularly incremental; and (3) practices will often require a high level of training to effectively use aggregated tools, but regional learning faculty can be successfully leveraged to support practices.

Learning

CPC+ practices generally welcomed the model's learning supports. Practices and practice facilitators appreciated the diverse learning supports—both durable learning products practices could access on their own and tailored supports that could help with unique practice needs. Practices gave high ratings to CPC+ Connect (CMS's web-based collaboration platform for practices) in the Practice Survey, and practice facilitators and practices emphasized the platform's utility as a repository of information.

Learning contractors noted that regional practice facilitator support and small group coaching were essential to providing learning support to practices. Allowing practice facilitators flexibility to tailor the CPC+ learning supports as the CPC+ model evolved (and throughout the COVID-19 pandemic) was crucial to practice engagement. CMS understood that coaching was an effective support but, unfortunately, could not be offered as widely as hoped due to resource limitations.

Practices highly valued opportunities to learn from each other and appeared to grow more comfortable over the course of CPC+ with sharing what did and did not work for them. Early opportunities for in-person meetings also set the stage for successful virtual meetings during the early stages of the COVID-19 pandemic, and for ongoing engagement and networking by some practices as CPC+ ended.

Health IT

Health IT vendors generally had positive overall experiences with CPC+. They noted the benefits of establishing formal partnerships with CMS and Track 2 practices and felt that model partnership was not burdensome because CPC+ health IT requirements generally aligned with their broader development activities. Health IT vendors primarily enhanced existing functionalities to support practices, rather than creating new functionalities for CPC+. These functionalities were also available to non-CPC+ practices as part of vendors' core or standard add-on products.

Nonetheless, vendors faced technical issues enhancing functionalities. They also felt they had limited ability to influence the design of CPC+ model requirements, and to drive meaningful progress in how health IT supported primary care transformation because CPC+ practices were a small proportion of their overall customer base.

Over half of practices perceived health IT vendor support was useful in improving primary care, although this was consistently the lowest rated of all CPC+ supports. Practices' perceptions of the burden of meeting health IT requirements declined steadily, from about half of practices reporting perceptions of burden in the second year to about one-third in the last year of CPC+.

Changes to the way CPC+ practices deliver care

Timeline of Care Delivery Changes. Throughout the course of the CPC+ model, practices and physicians reported that they were satisfied with their decision to join CPC+ and it improved primary care delivery by funding additional staff and providing a roadmap for transformation. Practices and physicians in both tracks engaged in making changes related to the CPC+ care delivery requirements throughout the model but faced challenges making some changes and reaching all patients who would benefit from services (Table ES.1).

Across the five program years, practices made the most changes to care delivery between the first two years, with some additional change in the third program year and then stabilized their efforts in last two years of CPC+; this trajectory was similar to the timing of changes in CPC Classic (Peikes et al. 2018). Practices in both tracks made similar changes for the care delivery requirements that CMS required of both tracks (such as longitudinal care management). For the requirements that pertained only to Track 2 practices (such as comprehensive medication management), Track 2 practices typically reported more advanced activities than Track 1 practices, as expected. Although CMS hypothesized that there may be synergistic effects of the Medicare SSP and CPC+ on quality, cost, and utilization outcomes, there were limited differences in care delivery changes and those differences were in favor of SSP practices.

The COVID-19 pandemic and effects on CPC+ practices. The COVID-19 pandemic challenged primary care practices' CPC+ care delivery activities, but CPC+ enhanced payments helped practices sustain staffing levels during this time. At the height of the pandemic in the fourth program year, practices' CPC+ care delivery activities, particularly longitudinal and episodic care management, took a back seat to the pressing needs of the pandemic. Practice staff focused on COVID-19 screening, symptom management, and vaccinations and focused episodic care management activities on patients hospitalized for COVID-19. Care managers hired as part of CPC+ were key to meeting patients' physical and mental health needs during COVID-19. In the latter part of the fourth program year and the last year of CPC+, in-person office visits resumed, though the use of telehealth continued as well.

Table ES.1. Summary of practices' care delivery changes and challenges, by CPC+ Comprehensive Primary Care Function

Changes CPC+ practices made	Challenges CPC+ practices faced
Access and continuity	
• Practices' workflows for providing high levels of after-hours access often predated CPC+; CPC+ physicians reported higher rates of after-hours access than comparison physicians. • More beneficiaries in Track 2 CPC+ practices than comparison practices reported receiving information about how to access care after hours.	• CPC+ practices did not have better continuity of care for patients' acute care visits than did comparison practices in PY 5. • With the exception of provision of telehealth during the COVID-19 pandemic, practices struggled throughout the model to offer and cover the costs of other types of alternative visits such as home visits and group visits with CPC+ payments.
Care management	
• Practices used care managers, typically hired in PY 1, to provide longitudinal care management for high-risk patients; more physicians in CPC+ than comparison practices reported having designated care managers on site and engaging with care managers at least weekly. • Practices improved information sharing agreements with hospitals and increased use of episodic care management to provide timely follow-up after hospital and ED visits, especially in PYs 1–3. • More beneficiaries in Track 2 CPC+ than comparison practices reported timely follow-up after an ED visit.	• Practices struggled to provide longitudinal care management services to most of their patients at higher risk, citing insufficient care manager staff time, and to a lesser extent difficulty engaging patients and gaining practitioner buy-in, as barriers. • In PYs 4 and 5, system-owned practices reported that previously embedded care managers moved to centralized locations outside the practice.
Comprehensiveness and coordination	
• Practices increased use of behavioral staff substantially; physicians in CPC+ practices reported that their practice offered behavioral health counseling at a higher rate than physicians in comparison practices. • Practices screened a larger proportion of patients for health-related social needs each program year. • Physicians in CPC+ practices documented health-related social needs in EHRs and used designated staff to link patients to community resources to meet their health-related social needs at higher rates than physicians in comparison practices.	• Practices did not take up or value collaborative care agreements or use cost data on specialty providers as CMS expected. Instead, practices used informal referral processes they largely had in place prior to CPC+ to manage specialty care referrals (such as existing relationships with specialists and patient preference). • Practices experienced challenges with behavioral health provider shortages. • The effect of practitioners' limited time to conduct health-related social needs screening was compounded by patients' reluctance to discuss needs.
Patient and caregiver engagement	
• Practices took steps to implement advance care planning; more physicians in CPC+ practices reported documenting advance care plans in EHRs than physicians in comparison practices. • More beneficiaries in Track 2 CPC+ than comparison practices reported being asked about advance care planning.	• Practices experienced challenges with the complicated, sensitive, time-consuming nature of advance care planning (though several found strategies to overcome these barriers as the model progressed).
Planned care and population health	
• Physicians in CPC+ practices received—and made changes to care delivery based on—utilization and cost data at higher rates than physicians in comparison practices.	• Still, fewer physicians in CPC+ practices received and used data on service utilization and total cost of care than received and used data on quality of care.

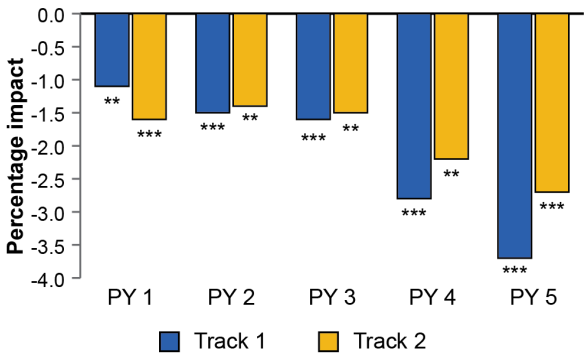
ED = emergency department; EHR = electronic health record; PY = Program Year; QI = quality improvement.

Outcomes for Medicare FFS beneficiaries

Over the five program years, CPC+ reduced key utilization measures (ED visits and acute hospitalizations) over a time-path that was consistent with the model's theory of change.

CPC+ led to reductions in service use over a time path that was generally consistent with the CPC+ theory of change. Reductions in outpatient ED visits emerged early and persisted across the five years (Figure ES.2), with a nearly 2 percent ($p < 0.01$) average annual reduction in both Tracks 1 and 2.

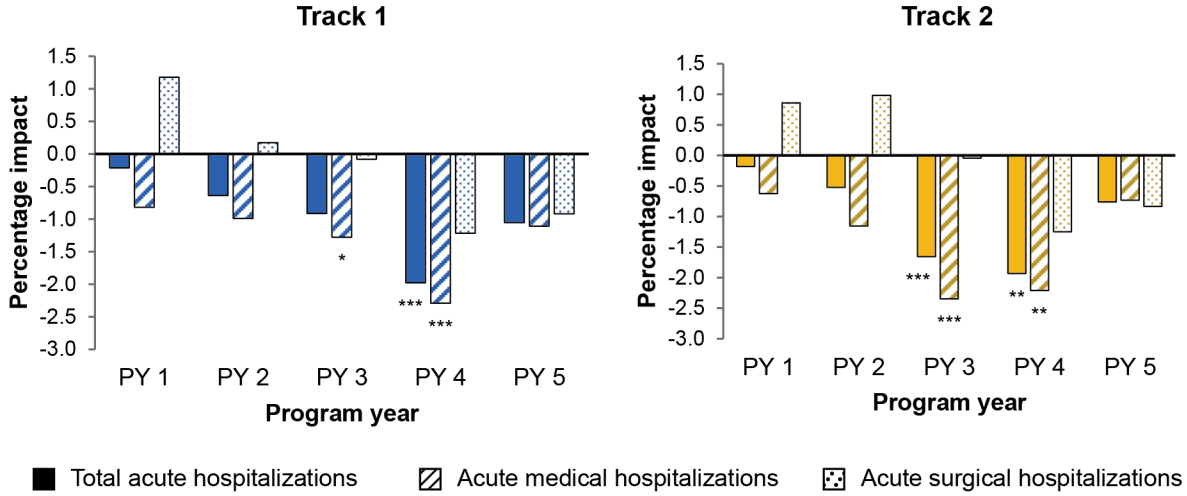
Figure ES.2 CPC+ annual impacts on outpatient emergency department visits, by track



Notes: */**/*** Impact estimates significantly different from zero at .10/.05/.01 level.

Reductions in acute hospitalizations emerged later, starting in Program Year (PY) 3 (with a 1.7 percent reduction, $p < 0.01$) for Track 2 practices and in PY 4 (with a 2 percent reduction, $p < 0.01$) for Track 1 practices, leading to average annual reductions of about 1 percent ($p < 0.1$). Reductions were driven by acute medical hospitalizations, with generally no changes in acute surgical hospitalizations (Figure ES.3).

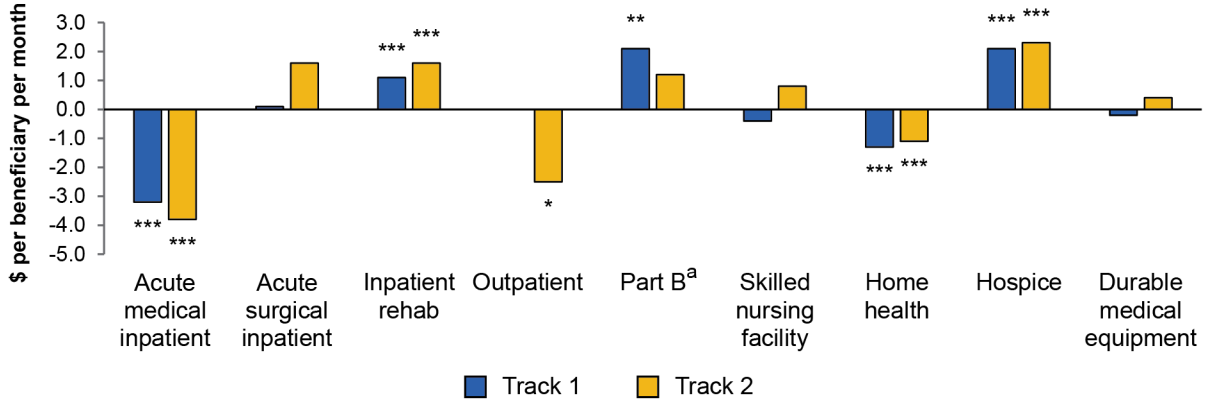
Figure ES.3. CPC+ annual impacts on types of acute hospitalizations, by track



Notes: */**/*** Impact estimates significantly different from zero at .10/.05/.01 level.

CPC+ did not reduce total Medicare expenditures without enhanced payments and it increased expenditures with enhanced payments. Although CPC+ reduced expenditures for acute medical hospitalizations, it increased expenditures for some other services, so that the total effect on Medicare expenditures without enhanced payments was close to zero. In each track, there were average annual reductions in expenditures for acute medical hospitalizations of about 2 percent ($p < 0.01$) (Figure ES.4).

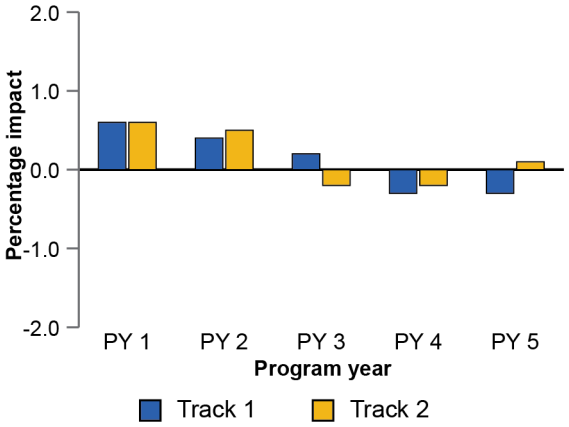
Figure ES.4. CPC+ average annual impacts on Medicare expenditure categories, by track



Notes: */**/*** Impact estimates significantly different from zero at .10/.05/.01 level. Estimates that are not visible are close to zero.

[a] Includes services provided by professional providers and by some organizational providers (for example, independent clinical laboratories).

Figure ES.5. CPC+ average annual impacts on total Medicare expenditures without CMS's enhanced payments, by track

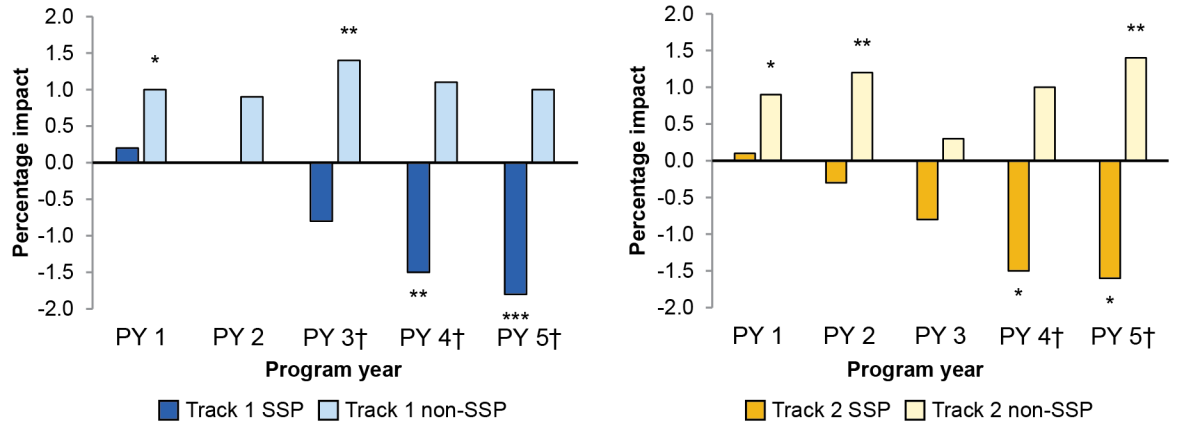


Notes: */**/*** Impact estimates significantly different from zero at .10/.05/.01 level.

However, these reductions were offset by increases in expenditures on other services (inpatient rehabilitation facilities, physician and nonphysician Part B noninstitutional services in any setting, and hospice), yielding estimated effects on total Medicare expenditures without enhanced payments that were small and not statistically significant in either track in any of the five years (Figures ES.4 and ES.5).

Consistent with CMS's expectations about possible alignment between incentives and supports offered by CPC+ and SSP, a pattern emerged in which CPC+ generated more favorable effects for practices that were participating in SSP when CPC+ began relative to those that were not. There was an approximately 1 percent (p = 0.08 in Track 1 and p = 0.18 in Track 2) average annual decrease in expenditures in the SSP group in both tracks and about a 1 percent (p < 0.1) average annual increase in expenditures in the non-SSP group in both tracks. The differential became more prominent in later years (Figure ES.6). Reductions in expenditures for SSP practices were largely driven by reductions (p < 0.1) in acute inpatient expenditures in both tracks. Relatively small increases in a mix of expenditure categories (expenditures on Part B noninstitutional services, inpatient rehabilitation, hospice, and durable medical equipment) contributed to the increases in overall expenditures among non-SSP practices.

Figure ES.6. CPC+ annual impacts on total Medicare expenditures without CMS's enhanced payments, by SSP and track

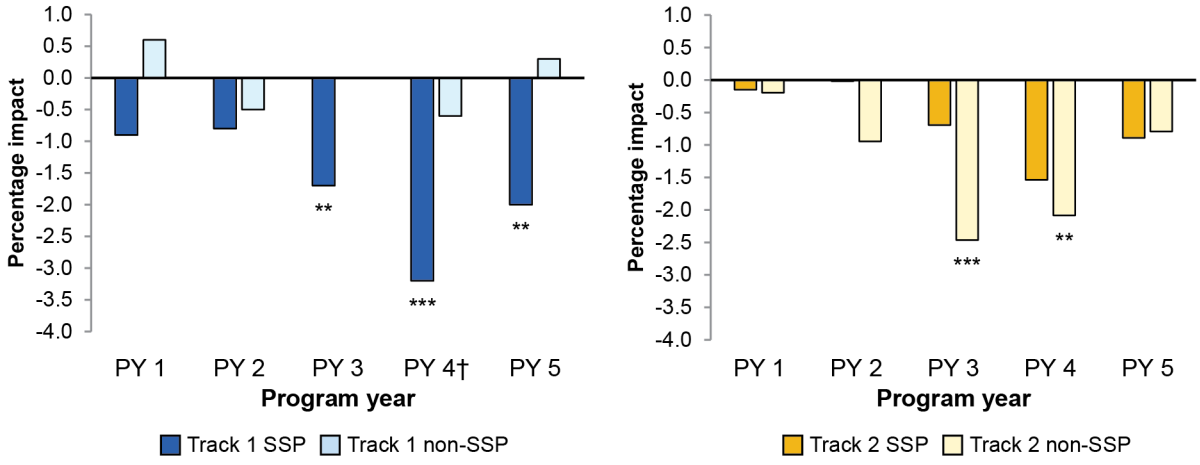


Notes: */**/*** Impact estimates significantly different from zero at .10/.05/.01 level. Impact estimates that are not visible are close to zero.

† Impact estimates for SSP/non-SSP subgroup significantly different from each other at the 0.10 level. SSP = Medicare Shared Savings Program.

A similar, albeit less consistent, pattern emerged for service use outcomes. In Track 1, reductions in acute hospitalizations were concentrated in the SSP group. Track 2 had the opposite pattern, with only non-SSP practices showing statistically significant reductions in acute hospitalizations (Figure ES.7). When looking at types of acute hospitalizations across both tracks, only SSP practices reduced high-cost hospitalizations, including medical hospitalizations with major complications and comorbidities and acute surgical hospitalizations. This effect was particularly pronounced in Track 2 (not displayed).

Figure ES.7. CPC+ annual impacts on acute hospitalizations, by SSP and track



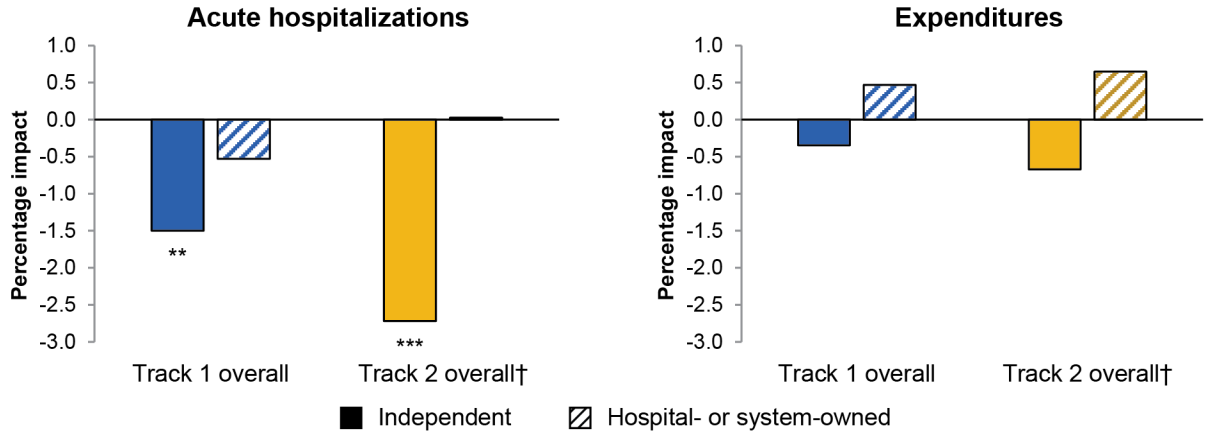
Notes: */**/*** Impact estimates significantly different from zero at .10/.05/.01 level. Impact estimates that are not visible are close to zero.

† Impact estimates for SSP/non-SSP subgroup significantly different from each other at the 0.10 level.

SSP = Medicare Shared Savings Program.

A consistent pattern of differential effects was observed for practice subgroups based on only one other characteristic—ownership status. There was little variation in effects by beneficiary characteristics. In Track 2, there was a statistically significant differential between impact estimates for independent and hospital- or system-owned practices for acute hospitalizations. Specifically, Track 2 independent practices reduced hospitalizations by 3 percent but there was no effect for hospital- or system-owned practices (Figure ES.8). In Track 1, the direction of the estimates followed the same pattern as in Track 2, though the difference in effects between the independent and system-owned practices was not statistically significant. In Track 2, we also observed a statistically significant differential between independent and hospital- or system-owned practices for expenditures, with decreases for independent practices and increases for system-owned practices.

Figure ES.8. CPC+ average annual impacts on acute hospitalizations and expenditures, by ownership and track

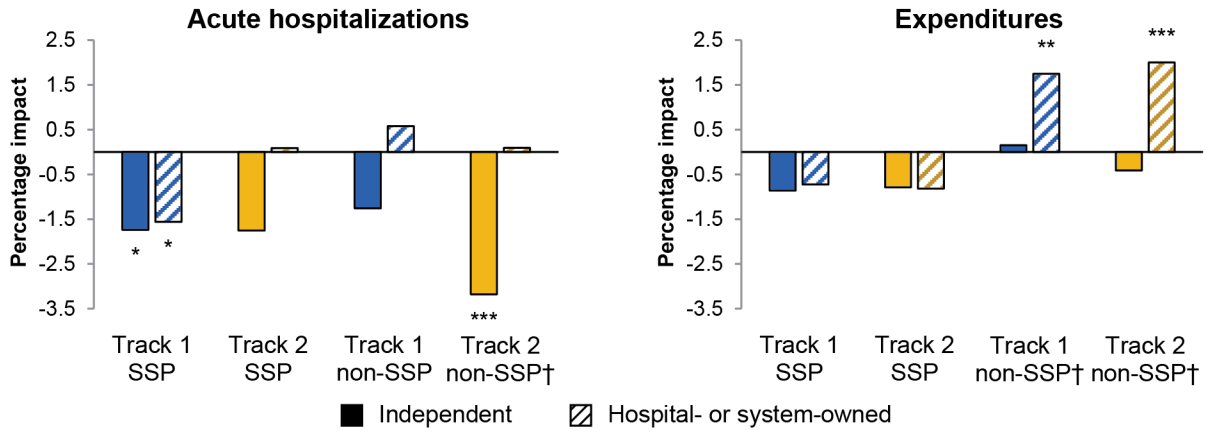


Notes: */**/*** Impact estimates significantly different from zero at .10/.05/.01 level. Impact estimates that are not visible are close to zero.

† Impact estimates for independent/hospital- or system-owned groups significantly different from each other at the 0.10 level.

When stratifying effects by both SSP participation and ownership status, we found that the differential in effects on expenditures and acute hospitalizations between independent and system-owned practices was more pronounced in the non-SSP subgroups in each track, with the least favorable effects generally occurring among hospital- or system-owned practices that were not participating in SSP at the start of CPC+ (Figure ES.9). This is consistent with expectations about ownership structure and incentives: while practices that are system owned or tied to hospitals lose revenue when hospitalizations fall, those disincentives may be mediated by the global incentives to reduce overall costs in SSP.

Figure ES.9. CPC+ average annual impacts on acute hospitalizations and expenditures by ownership, track, and SSP participation



Notes: */**/*** Impact estimates significantly different from zero at .10/.05/.01 level. Impact estimates that are not visible are close to zero.

† Impact estimates for independent/hospital- or system-owned groups significantly different from each other at the 0.10 level.

SSP = Medicare Shared Savings Program.

CPC+ had small favorable effects on some claims-based quality-of-care measures of planned care and population health and patient and caregiver engagement, no meaningful effects on outcomes in other quality domains, and unfavorable effects on a few measures of appropriate use of medications. CPC+ also did not meaningfully alter beneficiaries' experience of care. In both tracks, the percentage of beneficiaries who received all recommended services for diabetes increased by about 1 percentage point (2 percent, $p < 0.01$) and the percentage of females who received breast cancer screening increased by about 1 percentage point (1 percent, $p < 0.01$). Consistent with the emphasis on patient and caregiver engagement in CPC+, hospice use increased by 0.1 percentage point, which translates to a 3 percent increase for Track 1 ($p < 0.01$) and a 4 percent increase for Track 2 ($p < 0.01$). These improvements emerged early and persisted through the end of CPC+. Average annual reductions in the potential overuse of prescription opioids of 0.4 percentage points (3 percent in both tracks, [$p = 0.07$ in Track 1 and $p = 0.13$ in Track 2]) emerged in PY 3 and persisted through PY 5.

CPC+ did not have meaningful effects on incidence of readmissions and unplanned acute care, use of low-value services, appropriate use of recommended medications, continuity, or comprehensiveness of care. Beneficiaries in CPC+ and comparison practices also reported comparable primary care experiences on the survey composite measures during each year the beneficiary survey was fielded (PYs 2, 3, and 5).

We cannot draw definitive conclusions about the impact of CPC+ on quality because the magnitude of estimated improvements is small, and there is some evidence of unfavorable effects on some measures that are not consistent with the model's theory of change. Additionally, the set of claims-based quality measures that we examined is limited, as we could not use electronic clinical quality measures (which are more directly incentivized by the CPC+ model) due to the lack of comparable data between CPC+ and comparison practices.

Implications for future primary care models

These findings have implications for future primary care models. Greater financial stability and flexibilities offered by CPC+ supports and payments allowed health care organizations and providers to develop and expand capabilities to meet patients' care needs in CPC+ and during the COVID-19 pandemic. CPC+ reduced outpatient ED visits, acute inpatient hospitalizations, and acute inpatient expenditures; however, these reductions were not sufficient to reduce total Medicare expenditures or achieve net savings, after accounting for increased expenditures in other areas and enhanced payments in both tracks.

Without direct incentives for specialists and hospitals to reduce costs, primary care practitioners lack control over critical aspects of care that drive large portions of unnecessary utilization and total Medicare expenditures. This phenomenon has been exacerbated by increased hospital consolidation and hospital ownership of physician practices. Early signs from CPC+ of reduction in specialist visits and Medicare expenditures for practices and organizations that received CPC+ support and also faced SSP incentives are promising. Even so, physicians in SSP ACOs are still paid primarily by fee-for-service. Capitalizing on the enthusiasm among providers for alternative payments will require coordinated multipayer efforts and support for shifting more of providers' reimbursement from FFS to value-based payments.

Despite market consolidation, smaller independent practices remain a key component of the nation's primary care infrastructure, and their role in future models requires careful consideration. It is notable that independent practices in CPC+ had greater reductions in acute medical hospitalizations, as well as expenditures on these hospitalizations, compared to system-owned practices. Increasing equitable health care delivery will require health care transformation efforts to include patients with limited access to primary care and practices serving less-resourced communities, including small independent practices in rural areas.

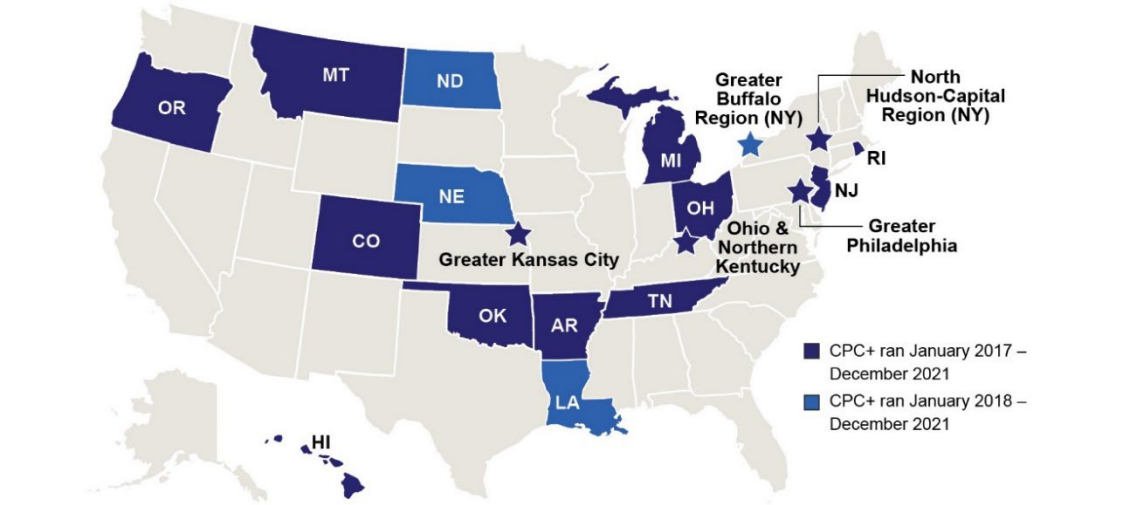
Finally, primary care is critical and central to an organized health care system but may not be sufficient to move the needle on total Medicare expenditures. Achieving health care system transformation will continue to require more support for primary care in parallel with work to right-size payments for low-value services, specialists, and hospitals, and to increase professional and other incentives for primary and specialty care coordination.

1 | Introduction

1.1. Overview of CPC+

Comprehensive Primary Care Plus (CPC+) is the largest and most ambitious primary care payment and delivery reform effort ever tested in the United States. The Center for Medicare and Medicaid Innovation of the Centers for Medicare & Medicaid Services (CMS) launched CPC+ in January 2017 in 14 regions and added 4 more regions in January 2018. Across these 18 regions at the start of CPC+, CMS partnered with 71 payers and 68 health information technology (IT) vendors to support 3,070 primary care practices' efforts to improve the care they provide to more than 17 million patients (Figure 1.1). In all 18 regions, CPC+ ran through December 2021. CPC+ built on experience and lessons from the Comprehensive Primary Care (CPC) initiative (known as "CPC Classic"), which ran from fall 2012 through the end of 2016 (Dale et al. 2016; Peikes et al. 2018a, 2018b, 2018c).[1]

Figure 1.1. CPC+ regions, payer partners, practices, practitioners, and patients



Stakeholders involved at the start of CPC+

2017 regions		2018 regions		Total	
Regions:	14	Regions:	4	Regions:	18
Payer partners:	63[a]	Payer partners:	8[a]	Payer partners:	71[a]
Practices:	2,905	Practices:	165	Practices:	3,070
Practitioners:	13,204	Practitioners:	1,135	Practitioners:	14,339
Patients:	16.3M	Patients:	1.1M	Patients:	17.4M
Health IT vendors:	66	Health IT vendors:	8	Health IT vendors:	68[b]

Source: Mathematica's analysis of PY 1 CPC+ practice and payer partner tracking data provided by CMS.

[a] Payer partners that operate in more than one region were counted separately for each region in which they participate.

[b] The total number of health IT vendors in PY 1 is less than the sum of health IT vendors involved in 2017 and 2018 regions because several vendors partnered with practices in both cohorts of regions.

M = million; PY = Program Year.

[1] Information about CPC Classic and reports from the evaluation of that initiative are available at https://innovation.cms.gov/initiatives/comprehensive-primary-care-initiative/.

The practices joined one of two tracks of CPC+, with approximately the same number of practices in Track 1 and Track 2. Track 2 practices were required to provide more enhanced care delivery approaches to better support patients with complex needs and received additional financial support to help them do so. These payments supported the expanded breadth and depth of services that Track 2 practices were required to provide and gave them the flexibility to deliver care in ways that aimed to better address patients' needs and preferences for care.

Care delivery model. To provide a framework for transformation, CMS required CPC+ practices to meet a set of care delivery requirements that became progressively more advanced over the five program years (PYs), aiming to improve care delivery in five Comprehensive Primary Care Functions:

Access and continuity required practices to ensure the availability of health services when patients needed and wanted them. It also encouraged practices to create long-term, trusting relationships between patients and their primary care practitioner or care team.

Care management involved practices working closely with patients to proactively address their health care needs. Practices provided shorter-term "episodic" care management for patients experiencing acute care events, such as emergency department (ED) visits or hospitalizations, and longer-term care management for patients with complex, ongoing needs. Services included supporting patients transitioning between care settings (such as from a hospital to their home), reviewing and reconciling patients' medications, and educating patients about their conditions and how to manage them.

Comprehensiveness and coordination focused on primary care practices' capacity to address most of their patients' medical, behavioral, and health-related social needs to help all patients meet their health goals. It also focused on the practices' central role in helping patients and caregivers navigate the health care system.

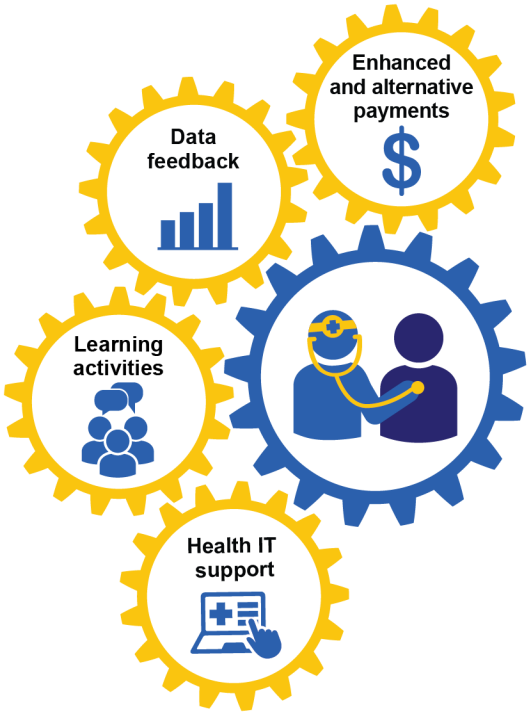
Patient and caregiver engagement required practices to involve patients and caregivers in efforts to guide practice improvement. It also required practices to enhance patients' willingness and ability to manage their own health care and engage patients in advance care planning, which lets patients specify the care they want to receive should they become unable to speak for themselves.

Planned care and population health required practices to organize health care delivery to meet the needs of all of their patients. It called for practices to use data and team-based care to proactively identify the needs of their patients and efficiently manage their care.

CMS required CPC+ practices to implement care delivery changes for all the patients they treated, not just the patients for whom CMS or other payer partners provided supports.[2] Payers provided supports to practices for individual lives (or people) whom they attributed to CPC+ practices.

[2] We use the term "payer partners" to refer to non-CMS payers that partnered with CMS in CPC+. We use the term "payers" to refer to CMS *and* payer partners together.

CPC+ supports. To help practices deliver advanced primary care, CPC+ provided enhanced and alternative payments, data feedback, and individualized and group learning supports, and required Track 2 practices to partner with vendors to meet advanced health IT functionalities (technology to support work on primary care functions).



Enhanced and alternative payments. CMS and payer partners committed to provide practices with enhanced and alternative payments to increase their resources and flexibility to deliver the Comprehensive Primary Care Functions.

Enhanced payments. CMS and payer partners pledged to provide enhanced payments, in addition to their usual payments for services, to Track 1 and Track 2 practices for (1) participating in CPC+ and (2) improving their performance on cost, utilization, and quality measures. CMS and payer partners agreed to provide more financial support to Track 2 practices than Track 1 practices, to reflect the additional care delivery activities Track 2 practices were required to provide to improve care for patients with complex needs.

Alternative payments. For Track 2 practices, CMS and payer partners also committed to use an alternative to the historically common fee-for-service (FFS) payment approach. Under FFS, practices are paid for each visit or service they provide. Under alternative payment approaches, payers provided lump-sum payments to practices in advance of services provided, regardless of the number or type of visits. CMS and payer partners then reduced or eliminated FFS payments. The alternative payments aimed to increase practices' flexibility to deliver services or types of visits (such as group visits) that might benefit patients but are challenging to bill for under most traditional FFS payment arrangements. CMS started providing alternatives to FFS payments in PY 1, and all payer partners committed to doing so by the start of PY 2.

Data feedback. CMS and payer partners committed to providing practices with data feedback on utilization of services and total cost-of-care measures at least quarterly, to help them better manage population health and support continuous quality improvement. Payer partners could provide payer-specific reports—or an aggregated report in which CMS and payer partners in a region submitted their claims data to a third-party vendor to produce a single report or tool—or both. To streamline practices' review and make data more actionable, payer partners agreed in their memorandum of understanding (MOU) to develop a common approach for sharing utilization and total cost-of-care data to an existing data system or develop a plan to share these data as part of CPC+. We refer to this work as "data aggregation" efforts.

Learning supports. CMS provided practices with *a robust learning system* to support their practice transformation work, including information dissemination, group learning activities, and tailored support such as in-person or virtual practice coaching. Payer partners' MOUs did not require them to provide learning supports to CPC+ practices, but some did provide learning supports nonetheless.

Health IT support. To help Track 2 practices meet advanced health IT functions, each partnering health IT vendor signed an MOU with CMS, in which they committed to (1) provide practices advanced health IT functionalities to meet the Comprehensive Primary Care Functions and (2) support practices in using them. Although only Track 2 practices formalized health IT vendor relationships, practices in both tracks could choose to work with health IT vendors through CPC+-sponsored learning supports or other vendor-initiated forums.

Model changes due to COVID-19. In response to the coronavirus disease 2019 (COVID-19) pandemic, CMS changed some program requirements in PY 4 to ease the burden on practices. For the summer 2020 reporting period, practices were not required to report progress on CPC+ care delivery requirements. In addition, CMS offered practices the option of receiving non-claims-based payments in advance and eased the requirements for retaining performance-based incentive payments.

CMS's goals. CMS hypothesized that the CPC+ supports and care delivery model would enable practices to transform the way they deliver care, which was expected to improve access to primary care services and the quality and efficiency of the care patients receive. If CPC+ reduced spending without reducing the quality-of-care patients receive, or improved the quality of care without increasing spending, the Secretary of the Department of Health and Human Services has the authority to extend the duration or expand the scope of CPC+ (Patient Protection and Affordable Care Act 2010).

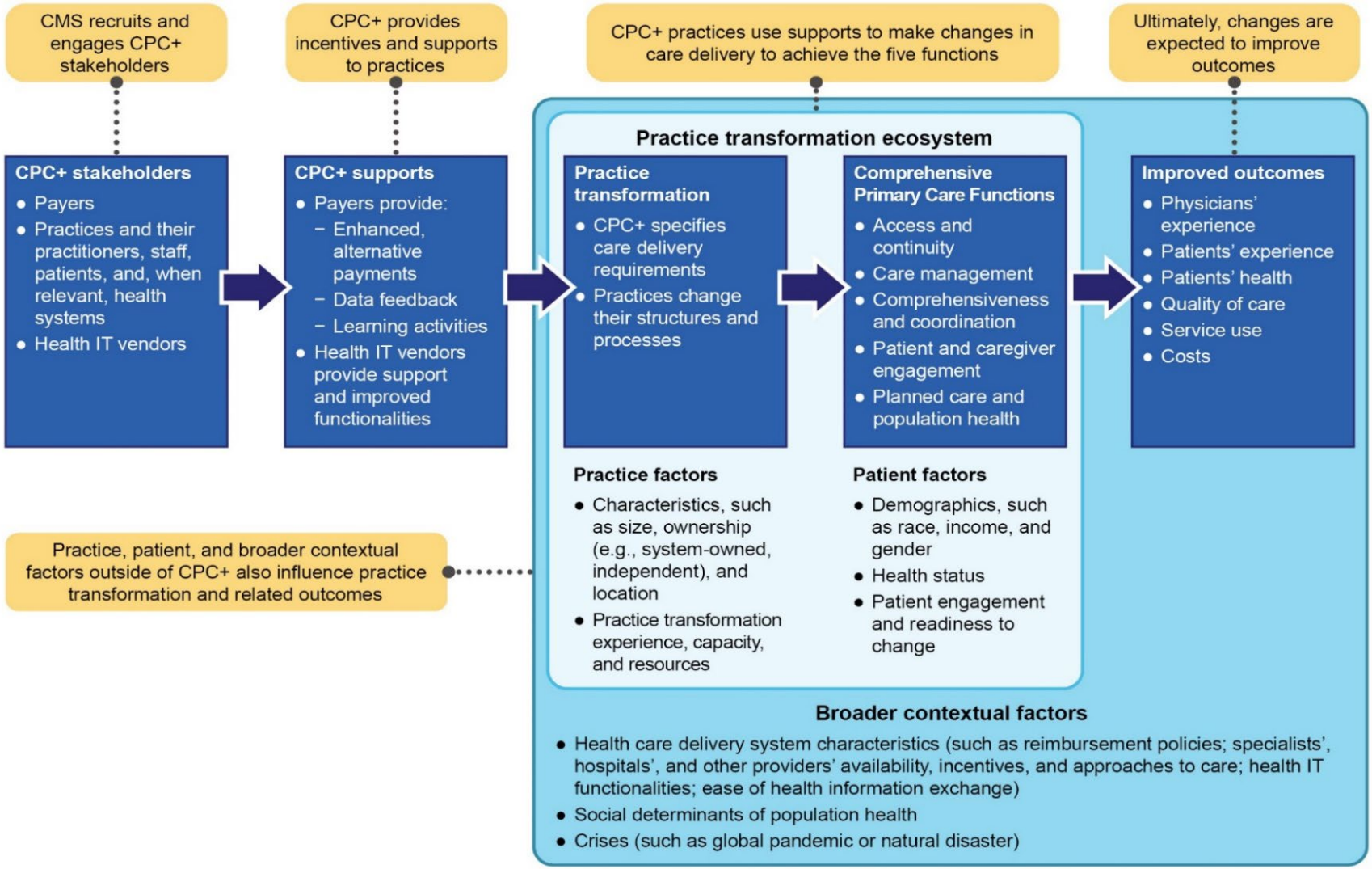
1.2. Overview of the independent evaluation

1.2.1. CPC+ evaluation logic model

Primary care practice transformation is a complex process that takes time to implement (Nutting et al. 2009; Crabtree et al. 2011; McNellis et al. 2013; Peikes et al. 2020, 2021; Burton et al. 2018; Song et al. 2014). Changes in care delivery also take time to manifest themselves in outcomes of interest, such as improving patients' health and reducing health care utilization and spending. The high-level evaluation logic model below depicts CPC+ components and the hypothesized relationships between these components and key outcomes, such as reduced spending and improved quality of care (Figure 1.2). If CPC+ was implemented as intended, we would expect to see improvements in the earlier years in quality-of-care indicators and utilization measures that primary care can affect in the short to medium term (such as ED visits, process-of-care measures for patients with diabetes, or patient-reported access to care). We expected CPC+ to take longer to affect hospitalizations and their associated costs as well as total Medicare expenditures.

Figure 1.2. Logic model for the CPC+ evaluation

This high-level evaluation logic model depicts the components of CPC+ and the hypothesized relationships between program elements and key outcomes. It indicates that the implementation and evaluation of CPC+ occurred within a complex "practice transformation ecosystem" that also had the potential to affect outcomes.



1.2.2. CPC+ evaluation research questions and data sources

We designed our independent evaluation of CPC+ to understand the complex relationships depicted in the evaluation logic model. In this section, we describe the research questions (Table 1.1) and data sources (Table 1.2) we used for the CPC+ evaluation. Throughout this report, we highlight additional details of our methods within callout boxes and provide further details in associated appendices.

Table 1.1. Research questions for the independent evaluation of CPC+

Topic	Research question
Participation and partnership	Which regions, payer partners, practices, and health IT vendors were involved in CPC+? When and why did they join or exit CPC+? What characteristics distinguish them? How and why did involvement change over the course of CPC+?
Supports	What payment, data feedback, learning activities, and health IT support did CMS, CPC+ payer partners, and health IT vendors provide to practices? What were practices' and physicians' perceptions of these CPC+ supports?
Changes in care delivery	How did practices (and their owners, for practices owned by a hospital or health system) change the way they delivered care, and what enabled or impeded progress?
Effects	What were the effects on patients' experience, and on quality, service use, and spending for attributed Medicare FFS beneficiaries? How did CPC+ alter primary care physicians' experience? What factors account for the varying degrees of success in achieving CPC+ goals, or the speed with which participants reached these goals?
Sustainability and spread	To what extent do practices, health systems, payers, and health IT vendors intend to sustain CPC+ after it ends? Did the model spread to entities that were not involved in CPC+?

Table 1.2. Data sources used for the independent evaluation of CPC+

Data source	Purpose	Sample and timing
CMS and payer partners' supports		
CPC+ Payer Partner Survey	To understand the CPC+ supports all payer partners provided to practices, with a focus on details about payment approaches.	Surveyed all payer partners in fall of PYs 1–5. (PY 1: September–November 2017; PY 2: September 2018–January 2019; PY 3: September–December 2019; PY 4: August–December 2020; PY 5: September–December 2021.)
Interviews with CMS, contractors, regional conveners, and payer partners	To understand the CPC+ supports provided to practices, including the challenges and facilitators of providing them in each program year.	Interviewed CMS, contractors, regional conveners, and payer partners in October–December of PYs 1–4, and in January–March of PY 5. Interviewed all payer partners in person in PY 1 and 8 newly joined payer partners by phone in PY 2. In PY 3, interviewed by phone a sample of 21 payer partners, including all large- and medium-sized payers, and a purposive sample of small payers and Medicaid payers representing managed care organizations/coordinated care organizations in their regions. In PY 4, interviewed by phone 8 payer partners: 1 of which was new to CPC+ and 7 of which had planned to implement an alternative payment approach in PY 3 but ultimately did not. In PY 5, interviewed by phone a sample of 17 payer partners, including most large- and medium-sized payers, a purposive sample of small payers and Medicaid payers representing managed care organizations/coordinated care organizations in their regions, and 1 payer that implemented a new alternative payment approach after PY 4.
Data on CPC+ payments provided by CMS	To understand the enhanced and alternative payments CPC+ practices received from CMS.	CMS provided quarterly data on payments to CPC+ practices for Medicare FFS beneficiaries in PYs 1–5.
CPC+ program documentation	To understand how CPC+ supports were implemented and how practices used them, including CPC+ learning and data feedback support.	CMS provided documentation, including CPC+ practice participation agreements in PY 1, CPC+ payment and attribution methodologies for PYs 1–5, and information about practice coaching quarterly and data feedback usage monthly in PYs 1–5.
Interviews with exiting payers and vendors	To understand reasons for exiting CPC+ and alternative plans for supporting primary care practices.	Interviewed a sample of payer partners and health IT vendors that exited CPC+ in PYs 1–4.
Interviews with non-partnering payers	To understand the reasons payers did not participate in CPC+ and their efforts to support primary care transformation.	Interviewed by phone two non-partnering payers in October–November of PY 1.
Health IT vendors' supports		
Interviews with a sample of health IT vendors	To understand health IT vendors' experiences providing support to Track 2 practices.	Interviewed by phone 13 of 66 health IT vendors partnering with Track 2 CPC+ practices in November of PY 1–February of PY 2, 12 of these 13 vendors in September–October of PY 3, and 10 of these 13 vendors in October 2021–February 2022 of PY 5.

Table 1.2. ***(continued)***

Data source	Purpose	Sample and timing
Interviews with a sample of practices that changed health IT vendors	To understand why practices changed health IT vendors between PY 2 and PY 3, the impact of such changes, and lessons learned about working with vendors to make changes in care delivery.	In PY 4, interviewed by phone a sample of 11 Track 2 practices that added or dropped a major EHR vendor or a population health vendor between PY 2 and PY 3.
CPC+ practices' progress, experiences, and perspectives on CPC+		
CPC+ Practice Survey	To understand how CPC+ practices changed care delivery and how they perceived CPC+.	Surveyed all CPC+ practices March–September of PY 1, June–September of PY 2, July–November of PY 3, September–December of PY 4, and July–October of PY 5. Nearly all CPC+ practices responded to the survey each year.
CPC+ Physician Survey	To understand how primary care physicians in CPC+ and comparison practices delivered care and experienced burnout, and how physicians in CPC+ practices perceived CPC+.	Surveyed cross-sectional samples of primary care physicians in CPC+ and comparison practices in August–December of PY 3 and April–August of PY 5. In PY 3, received survey responses from approximately 4,600 physicians, who represented nearly 80 percent of CPC+ practices and 60 percent of comparison practices. In PY 5, received survey responses from 962 physicians, representing 61 percent of CPC+ practices and 47 percent of comparison practices.
Data practices reported to CMS	To provide insight into (1) how CPC+ practices approached the Comprehensive Primary Care Functions and related care delivery requirements, (2) the health IT and financial support practices received for that work, and (3) practice and practitioner participation.	Via the CPC+ Practice Portal, practices reported (1) care delivery requirements quarterly in PYs 1 and 2, twice a year in PY 3, in winter only in PY 4, and twice in PY 5; (2) their health IT vendor relationships and financial support received from payer partners, annually; (3) number of practitioners, monthly; and (4) types and amounts of payments provided and number of lives attributed, by each payer partner, annually, for PYs 1–5.
Interviews with a representative sample of deep-dive practices	To provide insight into how CPC+ practices approached the Comprehensive Primary Care Functions and related care delivery requirements, their experiences with CPC+ payments, and barriers to improvement, and plans for sustaining the care delivery requirements. We refer to these practices as “deep-dive” practices.	For perspectives on care delivery, interviewed a diverse group of 81 CPC+ practices, in person, in March–May of PY 2; 59 practices, by phone, in March–May of PY 3; 40 practices, by phone, in February–April of PY 5; and 23 practices, by phone, in September–December of PY 5. For perspectives on CPC+ payments, we interviewed a separate, longitudinal sample of CPC+ practices by phone: 27 practices in April–June of PY 2 (about PY 1 payments); 24 practices in March–June of PY 3 (about PY 2 payments); 21 practices in March–April of PY 5 (about PY 4 payments); and 20 practices in November–December of PY 5 (about PY 5 payments, key CPC+ payment lessons, and plans for sustaining payment supports after CPC+).
Interviews with practices that exited CPC+	To understand reasons for exiting CPC+.	Interviewed a sample of practices that exited CPC+ in PYs 2–5.

Table 1.2. ***(continued)***

Data source	Purpose	Sample and timing
Medicare FFS beneficiaries' expenditures, service use, quality of care, and experiences with care		
Medicare FFS claims	To select the comparison group and estimate the impacts of CPC+ on expenditures, utilization, and selected measures of quality of care for Medicare FFS beneficiaries.	CMS provided Medicare FFS enrollment and claims data for four years before CPC+ began and all program years of CPC+.
CPC+ Beneficiary Survey	To understand the experiences of beneficiaries receiving care from CPC+ and comparison practices.	Surveyed cross-sectional samples of Medicare FFS beneficiaries who received care from CPC+ and comparison practices in the 6 months before survey administration. Surveyed patients in May–December of PY 2, February–May of PY 3, and June–September of PY 5. Received survey responses from approximately 17,000 beneficiaries in PY 2; 14,000 beneficiaries in PY 3; and 12,000 beneficiaries in PY 5, with response rates of 39 to 43 percent each year. Respondents represented about 80 percent of CPC+ practices and more than 40 percent of comparison practices each year.
Interviews with a sample of patients at deep-dive practices	To understand patients' experiences and perceptions of longitudinal care management.	Interviewed 40 patients receiving longitudinal care management from 12 CPC+ practices, by phone in October–December of PY 3.
Data on practice and provider characteristics purchased from IQVIA[a]	To select the comparison group,[b] support beneficiary attribution, and define practice characteristics.	Purchased six yearly practitioner rosters from IQVIA for 2016 through 2021: SK&A data from October 2016, October 2017, and October 2018, and OneKey data from October 2019, October 2020, and October 2021.

Note: We provide the survey instrument, details about survey administrations, and data tables for the payer survey in Appendix 3.A and the practice survey in Appendix 3.B. Detailed information on the physician and beneficiary surveys is in Appendix 3.C and Appendix 4.E, respectively. Appendix 4.B provides data tables showing practices' self-reported approaches to delivering care based on the data they reported to CMS using the CPC+ Practice Portal. Appendix 4.A details the methodological approach and interview protocols for the deep-dive practice study.

Appendix 5.A provides detailed results over the five program years of CPC+. Appendices 5.B, 5.C, and 5.E provide additional details on the methodological approach for the impact evaluation related to attribution, claims-based measures, and regression analysis. Appendices 5.F, 5.H, 5.E, and 5.D describe supplemental analyses conducted to test the robustness of our main impact findings, including participation in other initiatives by CPC+ and comparison practices, long-term effects of CPC Classic, the triple-differences model, and whether COVID-19 differentially affected CPC+ versus comparison practices. Appendix 5.G examines the change in prescription opioid overuse among CPC+ and comparison beneficiaries over time. Appendix 5.I provides results from a scalability analysis in which we estimate what the impact would be if CMS were to scale up Track 1 of CPC+.

See Laird et al. (2023a) for appendices to Chapters 2-4 and Laird et al. (2023b) for appendices to Chapter 5 of the CPC+ final report.

Sample sizes vary slightly across figures and tables in the report because of survey and item nonresponse for survey data and practice-reported data and other missing data, such as missing practice characteristics for subgroup analyses. We include the relevant sample size in the notes to each exhibit.

[a] IQVIA is a commercial health data and analytics firm that maintains and verifies lists of practitioners who work in practices throughout the country. In 2019, IQVIA discontinued the SK&A database and replaced it with the OneKey database. The purchased yearly rosters were based on SK&A data for the baseline period (2016), PY 1, and PY 2 of CPC+; starting in 2019 (PY 3), the purchased yearly rosters are based on the OneKey database.

[b] As noted under relevant tables, we also used a range of publicly and privately available data sets, such as CMS's master data management data, CMS's Medicare EHR Incentive Program data, CMS's Medicare Geographic Variation data, and the Area Resource File.

EHR = electronic health record; FFS = fee-for-service; IT = information technology; PY = Program Year.

1.2.3. The focus for this report

The findings in this final report reflect a rigorous, independent evaluation of CPC+ across the five-year model testing period, describing the experiences of payers, practices, health IT vendors, and patients in the 14 regions that joined CPC+ in 2017 and the impacts of the model. In selected instances, we focus on PY 5, which coincides with calendar year 2021 and is the final year of CPC+. We also highlight new findings and changes from the previous four program years. In addition, we present findings on how the COVID-19 pandemic continued to affect practices' experiences implementing CPC+ and their ability to provide care to their patients.

In this report, we do not analyze or report on the practices that joined CPC+ in 2018, as these practices account for only 5 percent of the total number of practices participating in CPC+, and the first-year implementation experiences of practices and payers in the regions that joined CPC+ in 2018 were very similar to the first-year experiences of those that joined CPC+ in 2017 (Anglin et al. 2020).

In the chapters that follow, we describe the involvement of payer partners, practices, and health IT vendors (Chapter 2); practice transformation supports (Chapter 3); and changes in care delivery (Chapter 4) over the five years of CPC+. We also track the five-year model impacts of CPC+ on key claims-based outcomes, including Medicare spending, utilization, and quality of care for patients enrolled in Medicare FFS (that is, Medicare FFS beneficiaries) (Chapter 5). We conclude this report (Chapter 6) with a high-level synthesis of the evaluation findings to answer three broad summative research questions:

- Did CPC+ accomplish what it set out to do?
- What worked well and what didn't?
- What lessons does this evaluation provide for future models to bolster primary care, decrease total health care expenditures and utilization, and improve quality and equity?

Want to learn more about CPC+?

Additional reports are available at https://innovation.cms.gov/initiatives/Comprehensive-Primary-Care-Plus.

- Earlier reports cover the first four program years (Peikes et al. 2019a; Anglin et al. 2020; Peikes et al. 2021; Swankoski et al. 2022).
- Supplements and appendices offer more detailed information:
  - For PY 1, see the First Annual Report Supplemental Volume (Anglin et al. 2019) and Appendices to the Supplemental Volume (Peikes et al. 2019b).
  - For PY 2, see the Second Annual Report Supplemental Volume (Petersen et al. 2020) and Appendices to the Supplemental Volume (Ghosh et al. 2020).
  - For PY 3, see the Appendices to the Third Annual Report (Orzol et al. 2021).
  - For PY 4, see the Appendices to the Fourth Annual Report (Laird et al. 2022).

2 | CPC+ Participation and Partnership

Key takeaways

CPC+ involved many primary care practices, payers, and health IT vendors, and participation remained relatively steady among these stakeholders throughout CPC+. In the 14 regions that joined CPC+ in 2017 and are the focus of this report,[3] CMS partnered with a total of 72 private and public payers and 92 health IT vendors to support 3,001 primary care practices in achieving the Comprehensive Primary Care Functions over the course of the model. At the end of the model, CMS was still partnering with 57 payers and at least 50 vendors to support 2,419 primary care practices serving nearly 14.6 million patients (Figure 2.1).

Figure 2.1. Stakeholders involved in CPC+ in PY 1 through PY 5, 2017 Starters

	Payers[a]	Practices	Practitioners	Patients[b]	Health IT vendors[c]
Start of PY 1	63	2,905	13,204	16.3M	66
End of PY 2	64	2,716	13,528	15.8M	52
End of PY 3	60	2,675	13,739	15.6M	54
End of PY 4	57	2,599	13,766	15.3M	60[d]
End of PY 5	57	2,419	13,090	14.6M	50+[d]
Change from PY 1	-10%	-17%	-1%	-11%	<25%[d]

Source: Mathematica's analysis of CPC+ practice, payer, and health IT tracking data provided by CMS; practice-reported financial data; and CMS Medicare FFS attribution data.

[a] Payer partners that operated in more than one region are counted separately for each region in which they partnered. Seventy-two payers ever partnered with CMS in the 14 CPC+ regions. See Table 2.1 for more information.

[b] Patient count for PY 1 reflects the number of patients served by CPC+ practices at the end of the first program year. Patient counts reflect all patients served by CPC+ practices, including those attributed to CPC+ by CMS and payer partners and those not attributed to CPC+.

[c] Health IT vendors include vendors that formed partnerships with Track 2 practices. The health IT vendor count for PY 1 reflects the number of health IT vendors that partnered with Track 2 practices at the end of the first program year.

[d] Practices were instructed to update their health IT vendor partnerships annually in the CPC+ portal. Starting in PY 4, an increasing number of practices did not confirm or update their partnerships. Therefore, 35 percent of partnership data was carried over from PY 3 to support PY 4 analyses. Partnerships that had not been updated in two years were removed from the portal, resulting in missing partnership data for 16 percent of Track 2 practices in PY 5. Partnerships that were updated in PY 4 but not PY 5 were carried over to support analyses. This was the case for 45 percent of PY 5 partnership data. Thus, PY 4 vendor counts might overestimate actual partnerships and PY 5 vendor counts might underestimate them.

FFS = fee-for-service; IT = information technology; M = million; PY = Program Year.

[3] See Laird et al. (2023a, Appendix 2.A) for participation counts among the four regions that joined CPC+ in 2018.

Practices that participated in CPC+ were diverse. They ranged from small (one to two primary care practitioners [PCPs]) to large (six or more PCPs); included independent and system-owned practices; were located in rural, urban, and suburban areas; and had varying levels of experience with primary care transformation. Although diverse, practices that participated in CPC+ had notable differences from other primary care practices in their regions at the start of CPC+, and these differences grew as practices exited CPC+. Practices that were independent, smaller, in areas of high social vulnerability, or that served more complex patients, were less likely to participate in CPC+. Practices with these characteristics were also more likely to exit CPC+.

Methods: Data sources on participation

To describe participation, we used qualitative and quantitative data from Table 1.2. The data we use in this chapter include participation rosters; surveys of payer partners and practices; administrative data on practice characteristics; claims data; and interviews with samples of practices that switched health IT vendors between Program Year (PY) 2 and PY 3, payer partners, and regional conveners.

(Table 1.2 provides full details on all data sources.)

The numbers of payer partners, practices, practitioners, and health IT vendors are those reported as of December 30 of each program year.[a]

[a] *We determine participation at the end of each program year using December 30, rather than December 31, because withdrawals from CPC+ for the next program year are finalized on December 31.*

2.1. Payer partners

Over the course of CPC+, a total of 72 private and public payers partnered with CMS to support practices in the 14 regions that joined CPC+ in 2017. Those regions are the focus of this report. Of these 72 payer partners, 63 joined in January 2017, 8 joined in January 2018, and 1 joined in March 2020.[4]

2.1.1. Payer partnerships over time

Payer partnerships remained stable throughout CPC+, and not many new payers joined after the start of CPC+. At the end of the model, 57 of the 72 payer partners (79 percent) were still partnering in the 14 regions (Table 2.1). Fifty-two of these 57 payer partners (91 percent) had been participating in CPC+ since Program Year (PY) 1. These 52 payer partners accounted for more than 99 percent of all lives (or people) attributed by payer partners to CPC+ practices at the beginning of PY 1. The 15 payers

[4] Payer partners are entities—such as health insurance companies and governments—that pay providers for health care services. We use "payer partners" to refer to non-CMS payers that partnered with CMS in CPC+. The total number of payer partners in this report differs from the number on the CMS CPC+ website; this evaluation counted payers separately for each region in which they partnered, because some payers that partnered in multiple regions varied their CPC+ approach across regions. However, CMS counted multi-region payers only once and reported the number of partnerships to date.

that withdrew from CPC+ were small and had few or no lives attributed to CPC+ practices, and many of them were operating in only one region.[5]

Table 2.1. Number of payer partners, by program year

At the end of the model, 57 payer partners in 2017 regions were still partnering in CPC+. Fifteen small payer partners withdrew from CPC+ over the five program years.

	Partnered at the start of PY 1	Partnered at the end of PY 2	Partnered at the end of PY 3	Partnered at the end of PY 4	Partnered at the end of PY 5
CPC+ payer partners					
Payers that joined CPC+ in PY 1	63[a]	56	55	52	52
Payers that joined CPC+ in PY 2	n.a.	8	5	4	4
Payers that joined CPC+ in PY 3	n.a.	n.a.	0	0	0
Payers that joined CPC+ in PY 4	n.a.	n.a.	n.a.	1	1
Payers that joined CPC+ in PY 5	n.a.	n.a.	n.a.	n.a.	0
Total number of payer partners	**63**	**64**	**60**	**57**	**57**
Single versus multi-regional presence					
Payers that partnered in one region	47	43	43	39	39
Payers that partnered in more than one region	16	21	17	18	18
Number of unique payers that partnered in multiple regions	5	6	5	6	6

Source: Mathematica's analysis of CPC+ payer tracking data provided by CMS.

Note: Differences in the number of payer partners between years are a result of payer partners that joined CPC+ in PYs 2 and 4 or payer partners that withdrew from CPC+ (two payer partners in PY 1, five in PY 2, four in PY 3, four in PY 4, and none in PY 5). Payers that were partnering in more than one 2017 region are counted once for each region in which they partnered. Thus, payers that partnered in multiple regions are included multiple times in these counts.

[a] By the end of PY 1, 61 payers were still partnering in CPC+.

n.a. = not applicable; PY = Program Year.

The payers that chose to partner with CPC+ represented most of the key payers competing in those regions at the start of the model. During PY 1 interviews, CPC+ stakeholders[6] in almost all regions reported that the major payers in their regions had chosen to partner in CPC+. However, in a few regions, stakeholders partnering with CPC+ expressed disappointment that one or more payers they viewed as having an important presence in their regions had declined to join CPC+. Some of those that declined to partner were national payers. In interviews, these payers explained that they chose not to join CPC+ in some or all regions because they did not have enough covered lives in those regions to justify the financial and administrative costs associated with partnering. However, some CPC+ stakeholders argued that key non-partnering payers in their regions *did* have significant numbers of covered lives that could

[5] Payer partners attributed or assigned lives to CPC+ practices (typically to the practice that provided the largest share of the patient's primary care visits) to determine the level of CPC+ payments each practice should receive. Among the 15 payer partners that withdrew, two left in PY 1, five in PY 2, four in PY 3, four in PY 4, and none in PY 5.

[6] Stakeholders interviewed included CMS, contractors, regional conveners, and payer partners.

have been attributed to CPC+ practices. For example, stakeholders in two regions reported that the largest Medicare Advantage payer in those regions declined to partner in CPC+.

2.1.2. Characteristics of the payer partners

Many payer partners did not include a significant portion of their total covered lives in CPC+. According to the CPC+ Payer Survey, around two-thirds of payer partners included more than one line of business in CPC+ in each program year.[7] However, they generally did not offer CPC+ payments for all their lines of business and, in some regions, large payer partners selectively excluded some of their most important lines of business from CPC+. For example, some payer partners with a large—even dominant—presence in the commercial market in certain regions opted not to include their commercial lines of business in CPC+. Instead, these payers only included in CPC+ certain smaller lines of business that they offered, such as Medicare Advantage or Medicaid managed care. In interviews, these payer partners characterized their reasons for not including their commercial lines of business in CPC+ as strategic competitive decisions but declined to elaborate further. However, because of these exclusions, in some regions, a substantial number of lives that could have been attributed to CPC+ practices by payer partners were not included in the model.

A small number of CPC+ payer partners accounted for a large share of the lives attributed to CPC+ practices.[8] In each program year, the 10 largest payer partners collectively accounted for around half to two-thirds of the 3.2 million lives that all payer partners attributed on average each year. Each of the top 10 payer partners attributed more than 100,000 lives to CPC+ practices each year.

2.2. Practices

Of the 4,265 practices that applied to CPC+, a diverse group of 2,905 practices joined the model in 2017, and practice participation remained high through the end of CPC+.

2.2.1. Practice participation over time

CPC+ practice participation remained high throughout the model. At the start of CPC+, 2,905 practices joined the model, and in later years, CMS added 96 practices that had split from existing CPC+ practices, creating a total of 3,001 participating practices.[9] Practice participation remained high over the five years of CPC+, with 19 percent of practices (or 582 of the 3,001 practices that ever participated) leaving before CPC+ ended. About 100 practices left the model annually, but this number almost doubled in the last year as practices left to join other practice transformation programs such as the Global and

[7] Payer partners often refer to lines of business as "market segments" or as their "book of business." Lines of business included in this evaluation are: fully insured commercial insurance, self-insured commercial insurance, health insurance marketplace, Medicare Advantage, Medicaid managed care, Medicaid fee-for-service, and state or federal risk pools.

[8] Lives attributed to CPC+ practices are patients included in the CPC+ model, either by CMS or payer partners. CMS was the payer with the most attributed lives in CPC+. In PY 5, CMS attributed 2 million lives to CPC+ practices. CPC+ practices served other patients who were not attributed to CMS or payer partners; Figure 2.1 counts all patients served by CPC+ practices, regardless of attribution.

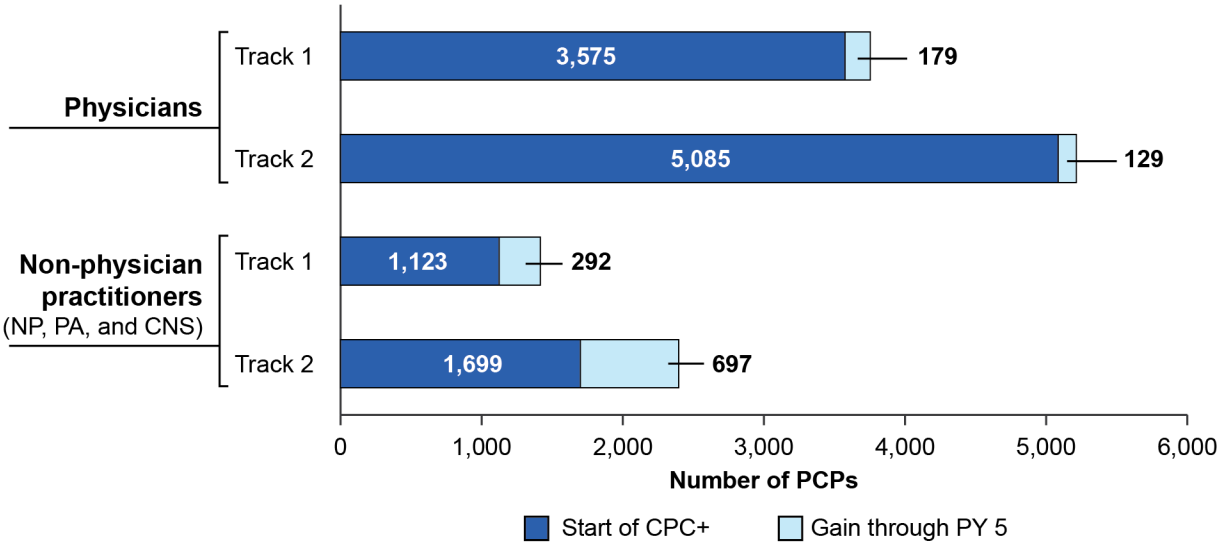
[9] Of the 96 additional practices, 59 were already participating but had mistakenly applied as a single site despite having multiple locations, and 37 practices split from other CPC+ practices to form their own practices.

Professional Direct Contracting Model.[10] Over the course of CPC+, more Track 1 than Track 2 practices left, and of the 2,419 practices participating in CPC+ at the end of the model, 1,103 were in Track 1 and 1,316 in Track 2.

The number of primary care practitioners (PCPs) in CPC+ practices, on average, increased over time, largely from adding non-physician practitioners. More than 13,000 PCPs participated in CPC+ each year of the model. Among the 2,334 practices that participated all five program years, the total number of PCPs increased by 11 percent, from 11,482 at the start of CPC+ to 12,779 at the end of CPC+. Seventy-six percent of this increase was due to practices adding non-physician practitioners (that is, nurse practitioners, physician assistants, and clinical nurse specialists; Figure 2.2). More than half (58 percent) of the increase in non-physician practitioners came from the 42 percent of practices that did not have this type of staff at baseline. Overall, the percentage of practices in CPC+ with non-physician practitioners increased from 58 percent at the start of CPC+ to 77 percent by the end of CPC+.

Figure 2.2. Change in number of PCPs in practices that participated in CPC+ all five program years, by practitioner type and track

Practices in both tracks increased the number of PCPs over the course of CPC+. The largest increases were from Track 2 practices adding non-physician practitioners.



Source: Mathematica's analysis of CPC+ practice tracking data provided by CMS.

Notes: N = 1,065 practices in Track 1 and 1,270 in Track 2 that participated in CPC+ in all five program years.

CNS = clinical nurse specialist; NP = nurse practitioner; PA = physician assistant; PCP = primary care practitioner; PY = Program Year.

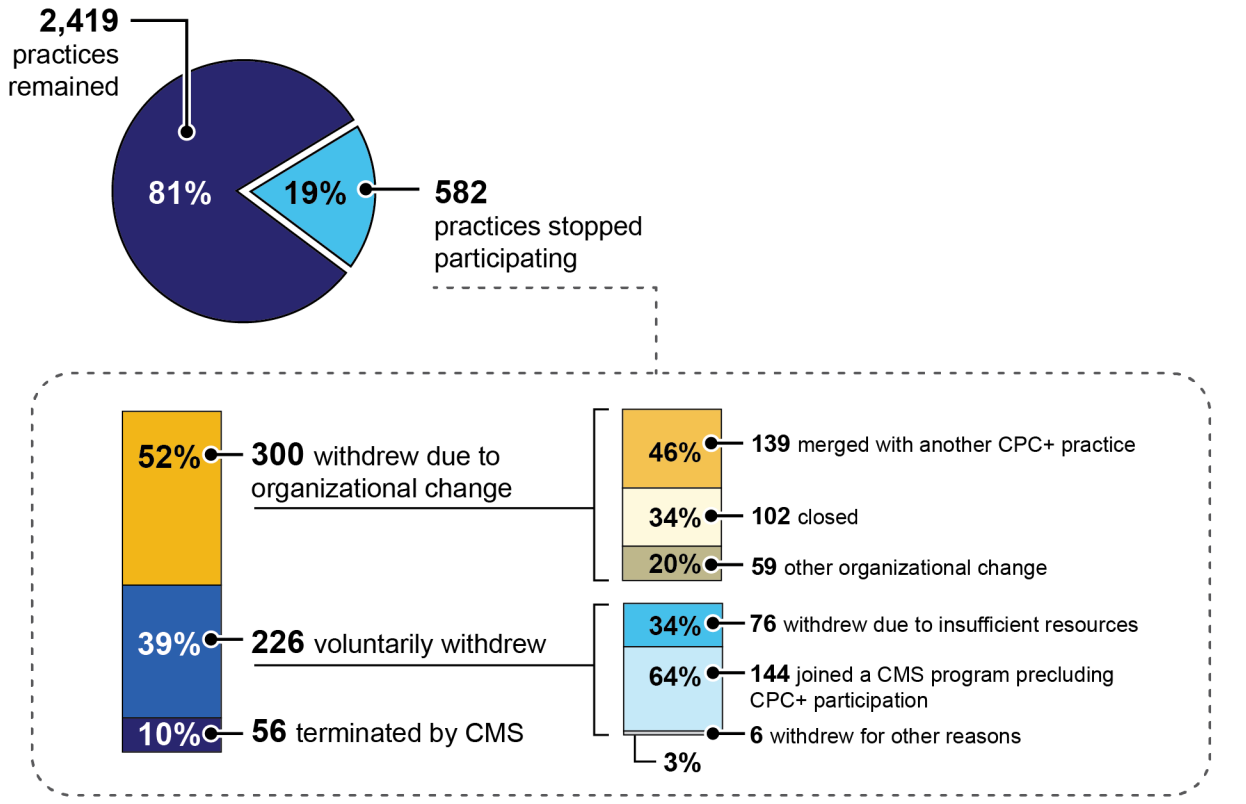
Around half of practices that stopped participating in CPC+ did so because of organizational changes, and of those that voluntarily withdrew, most left to join a CMS program precluding CPC+ participation. Of the 582 practices that stopped participating in CPC+, 300 practices withdrew because of an organizational change, such as closing, merging with another practice, or being acquired by an

[10] Starting in 2023, the Global and Professional Direct Contracting Model is called the ACO Realizing Equity, Access, and Community Health Model.

organization that prohibits them from participating in CPC+. Another 226 practices voluntarily withdrew from CPC+. Before the final year of CPC+, practices that voluntarily withdrew most commonly cited insufficient resources, such as finances, staff, or IT, as the reason for exiting. In the last year of CPC+, however, almost all practices that voluntarily withdrew reported joining another CMS program that precluded CPC+ participation. Many practices that left for this reason said that joining these programs was a way to continue financially supporting the practice transformation work they began under CPC+. CMS terminated the remaining 56 practices over the course of the model for failing to comply with CPC+ requirements (Figure 2.3).

Figure 2.3. Reasons practices stopped participating in CPC+

Around half of the 582 practices that stopped participating in CPC+ did so because of an organizational change, 39 percent of practices voluntarily withdrew, and the remaining 10 percent of practices were terminated by CMS.



Source: Mathematica's analysis of CPC+ practice tracking data provided by CMS.

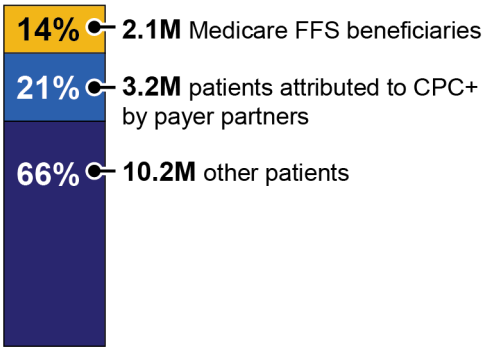
Note: N = 3,001 CPC+ practices that ever participated in CPC+. Percentages might not add to 100 percent because of rounding.

The median number of patients per practice was steady across program years. The median total number of patients served per practice increased slightly from 4,399 in PY 2 to 4,772 at the end of CPC+.[11] The median number of patients per practice attributed to CPC+ by CMS and payer partners, which is a subset of practices' total patient panels, was also fairly steady across program years (1,345 in PY 2 and 1,276 at the end of CPC+).

Only about one-third of the patients in CPC+ practices were attributed by Medicare fee-for-service (FFS) or CPC+ payer partners. CPC+ practices served an average of 15.5 million patients each program year. In each of the five program years, 2.1 million of these were Medicare fee-for-service (FFS) beneficiaries, and 3.2 million patients were attributed to CPC+ practices by payer partners. An average of 10.2 million patients were not included in CPC+ because they were insured by non-partnering payers, insured by partnering payers but either attributed to a non-CPC+ practice or attributed to a CPC+ practice but under a non-covered line of business, or uninsured (Figure 2.4).[12],[13]

Figure 2.4. Average counts of patients served by CPC+ practices in each PY

CPC+ practices served an average of 15.5 million patients each program year, only around a third of which were attributed by Medicare FFS or CPC+ payer partners.



Source: Mathematica's analysis of practice-reported financial data submitted to CMS and CMS payment files.

Note: Individual percentages may not sum to totals due to rounding.

FFS = fee-for-service; M = million; PY = Program Year.

2.2.2. Characteristics of practices participating in CPC+

As a whole, CPC+ included a diverse group of practices that varied by characteristics such as size, ownership, and geographic location. Although diverse, practices participating in CPC+ had notable differences from other primary care practices in their regions and from practices that ultimately withdrew from the model.

CPC+ practices might have had more structure and staff support that facilitated program implementation. Compared with practices that did not apply to CPC+, CPC+ applicants were significantly more likely to participate in the Medicare Shared Savings Program, be owned by a hospital or health system, and have more primary care practitioners. By the end of CPC+, the practices that were still participating were significantly more likely to have these same characteristics than practices that voluntarily withdrew or were terminated by CMS (Figure 2.5). Many deep-dive practices said a health system or large medical group helped them implement CPC+ and meet reporting requirements over the

[11] We do not include data from PY 1, because the methodology used to determine attributed lives changed significantly from PY 1 to PY 2.

[12] Partnering payers might use different rules for patient attribution than CMS.

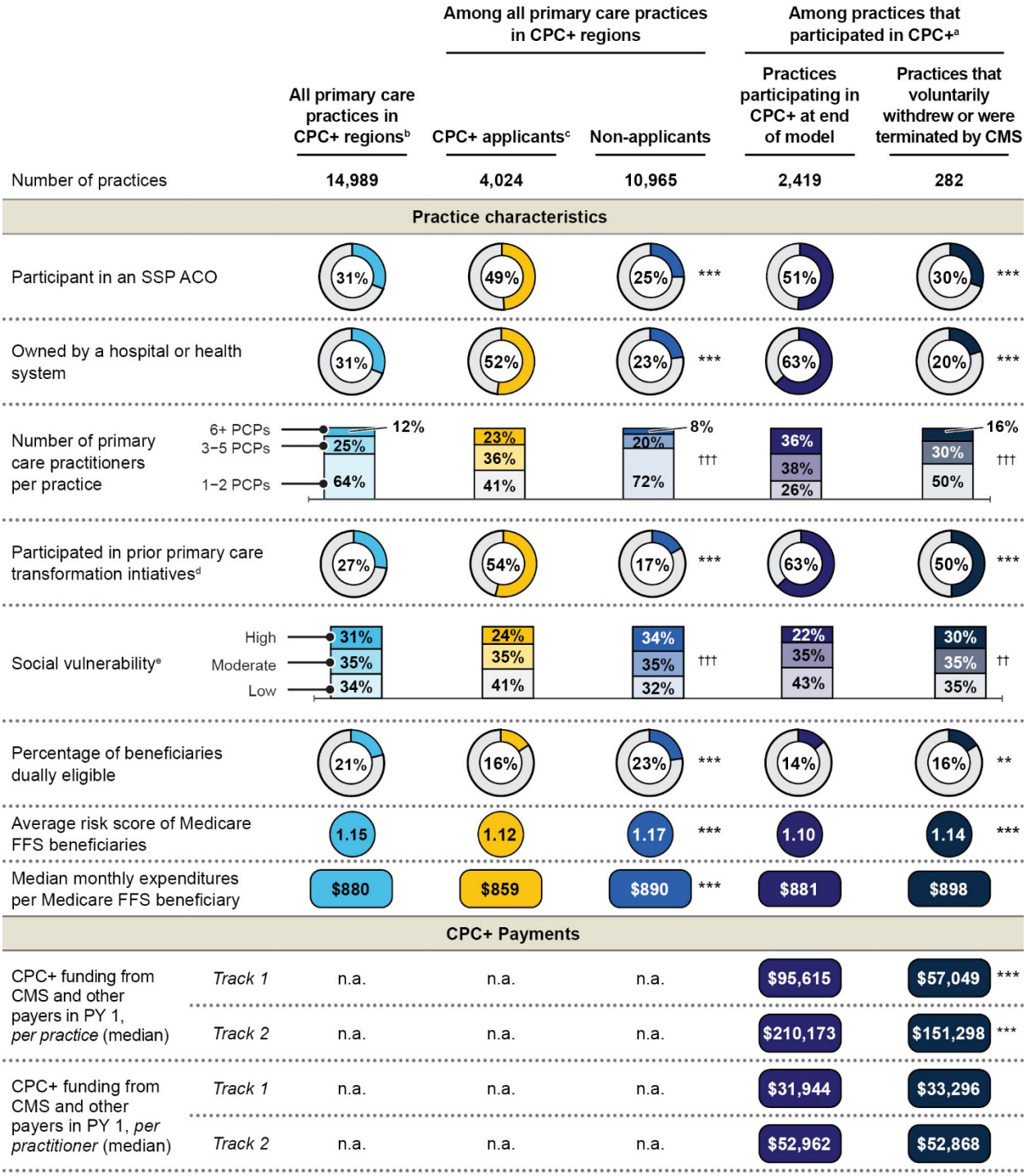
[13] From PY 2 to PY 5, the average proportion of patients in CPC+ practices who were attributed to those practices by Medicare FFS or CPC+ payer partners ranged from 19 percent (in Tennessee) to 56 percent (in Montana). The two regions with the most patients attributed to CPC+ practices—Ohio and Michigan—each had about 40 percent of their patients attributed by CPC+ payers.

years. In addition, several practices that withdrew also said that the amount of work needed to participate in CPC+ was beyond what small practices, with one to two PCPs and limited office staff, could handle.

CPC+ practices served slightly healthier and more advantaged Medicare FFS beneficiaries. Compared with practices that did not apply to CPC+, CPC+ applicants had a lower percentage of dually eligible patients, had lower average risk scores for Medicare FFS beneficiaries, and were in counties with the lowest social vulnerability. By the end of CPC+, practices that were still participating were more likely to have slightly healthier, more advantaged Medicare FFS beneficiaries, and were in counties with the lowest social vulnerability, compared with practices that voluntarily withdrew or were terminated by CMS (Figure 2.5).

Practices that withdrew from CPC+ had similar structural and staffing characteristics to more typical primary care practices in their regions; this finding suggests that these practices would share comparable challenges in practice transformation, namely with payments and structural and staffing supports. Several practices that withdrew reported in PY 2 and PY 3 exit interviews that CPC+ payments were a primary challenge, explaining that funds did not support the time and staff needed to implement care delivery requirements and CPC+ reporting. Two solo-physician practices said that the work of implementing and reporting on CPC+ fell on physicians, and the burden far exceeded the benefit in payment and improvements to quality of care. In addition, in PY 2 exit interviews, several practices identified their small practice size and lack of system affiliation as additional challenges to participation. They said these characteristics limited their access to structural and staff supports they needed to continue participating. These practices' experiences could inform future efforts to engage more typical primary care practices in payment and care delivery transformation.

Figure 2.5. Characteristics of primary care practices in CPC+ regions, comparing practices that applied to CPC+ to those that did not, and practices that stayed in CPC+ to those that voluntarily withdrew or were terminated from CPC+



Source: The data for all primary care practices in CPC+ regions and CPC+ applicants are derived from Mathematica's analysis of (1) SK&A office-based physician database for practice characteristics (2016); (2) data from CMS for percentage of dually eligible patients, risk score for FFS beneficiaries, and monthly expenditure for Medicare FFS beneficiaries at baseline (2016); (3) Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry/Geospatial Research, Analysis, and Services Program 2018 Database US for social vulnerability; (4) data from CMS and organizations that offer medical-home recognition for participation in primary care transformation initiatives before CPC+

Figure 2.5. (*continued*)

(2011–2017) and CPC Classic. Data for practices that participated in CPC+ and those that voluntarily withdrew are derived from sources above and Mathematica's analysis of (1) CMS's CPC+ practice tracking data for time-varying characteristics of practice size, number of PCPs (as of December 2021), and SSP participation status (as of January 2021); (2) OneKey data for ownership status (as of October 2020); (3) PY 1 practice-reported financial data submitted to CMS and PY 1 payment data CMS provided for CPC+ payment; and (4) OneKey data for ownership status (as of October 2020).

Note: Individual percentages might not sum to 100 percent due to missing data. We used t-tests for numeric variables and chi-squared tests for categorical variables to compare two sets of practices: (1) CPC+ applicants with non-applicants and (2) practices participating in CPC+ at the end of the model with those that voluntarily withdrew or were terminated.

[a] A total of 3,001 practices participated in CPC+. This figure excludes the 300 practices that stopped participating in CPC+ due to an organizational change, which had characteristics that were closer to practices that remained in CPC+.

[b] Primary care practices include all practices with ≥1 practitioner (defined as a physician, nurse practitioner, or physician assistant) with a specialty of primary care (defined as family practice, general practice, geriatrics, or internal medicine).

[c] A total of 4,625 practices applied for CPC+. The number of applicants in this figure (4,024) is fewer because some applicants could not be identified in the SK&A data, and some applicants had no attributed Medicare FFS beneficiaries at baseline.

[d] We defined participation in prior primary care transformation initiatives as participation in CPC Classic or the Multi-payer Advanced Primary Care Practice demonstration or having medical home recognition before CPC+ (as recognized by the National Committee for Quality Assurance, The Joint Commission, Accreditation Association for Ambulatory Health Care, Utilization Review Accreditation Commission, or state medical-home recognition status).

[e] Social vulnerability refers to the potential negative effects on communities caused by external stresses on human health, such as poverty, lack of access to transportation, and crowded housing. We divided the social vulnerability index scores from the Centers for Disease Control and Prevention into three tertiles to determine low, moderate, and high social vulnerability.

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

†/††/††† Significantly different from zero at the 0.10/0.05/0.01 level, chi-squared test.

ACO = Accountable Care Organization; PCP = primary care practitioner; PY = Program Year; SSP = Medicare Shared Savings Program.

2.3. Health IT vendors

CMS required Track 2 practices to formally partner with a health IT vendor via a memorandum of understanding. [14] These health IT vendors were required to support Track 2 practices' work on the five Comprehensive Primary Care Functions by providing advanced health IT functions and supporting the practices in using them.

2.3.1. Health IT vendor partnerships over time

Vendors that partnered with CPC+ practices were relatively stable throughout CPC+, with 50 to 66 vendors partnering with Track 2 practices each year.[15] Overall, at least 92 distinct vendors partnered with Track 2 practices at any point in CPC+ with some new vendors partnering with practices and other vendor partnerships discontinuing every year. Interviews with practices that switched vendors between PY 2 and PY 3 suggest that CPC+ rarely motivated these changes.

Health IT vendor partnerships with CPC+ practices were highly and increasingly concentrated among a small number of vendors. Five vendors partnered with 74 percent of CPC+ practices in PY 1, with concentration growing potentially as high as 88 percent in the last year of CPC+.[15]

[14] Track 1 practices were also required to use Certified Electronic Health Record Technology and work with health IT vendors to report electronic clinical quality measures to CMS. However, because CMS did not require these relationships to be formalized among Track 1 practices, we do not discuss them in this report.

[15] In PY 5, practices did not update health IT vendor partnership information reliably in the CPC+ portal, so the lower bound of reported vendors (50), which comes from PY 5 data, might underestimate the actual number of health IT vendors that partnered with practices in PY 5. Likewise, the upper bound of concentration (88 percent), which comes from PY 5 data, might overestimate concentration.

2.3.2. Characteristics of the health IT vendors

Health IT vendor offerings remained stable throughout CPC+. A little more than half of vendor partners offered a full-featured electronic health record; around a third provided population health management, information exchange, and reporting; and the remaining vendors offered narrower IT solutions (for example, software to help practices with regulatory compliance).

3 | Payer and Health IT Vendor Support

Key takeaways

To support CPC+ practices in delivering advanced primary care, CPC+ provided enhanced and alternative payments, data feedback, and individualized and group learning supports, and required Track 2 practices to partner with vendors to use advanced health IT functionalities. Throughout CPC+, CMS and payer partners provided robust supports to CPC+ practices.

CPC+ payments

Enhanced payments. All payer partners joined CMS in providing enhanced payments to the CPC+ practices with which they contracted throughout CPC+. Practices received these enhanced payments in addition to the usual payments they received for services. On a median basis, CPC+ payments accounted for 9 percent of total practice revenues in Track 1, and 14 percent in Track 2. Per practitioner, Track 1 practices received median cumulative enhanced payments of $214,538, while Track 2 practices received $325,578, over the five years of CPC+. Median payments increased by slight to moderate increments in each year from PY 2 (when the data for total enhanced payments first became available) through PY 5.

Although median payments for performance accounted for only a modest share of median enhanced payments (15 percent) over the course of CPC+, this proportion increased over time, from 10 percent early in CPC+ to 24 percent by PY 5. The increase was driven primarily by robust growth in the shared savings earned by practices belonging to Shared Savings Program (SSP) Accountable Care Organizations (ACOs), while care management fees (which accounted for the lion's share of payments for participation) remained stable.

About one-half of payer partners joined CMS in meeting their commitment to provide Track 2 practices with larger enhanced payments than Track 1 practices to reflect the more advanced care delivery activities expected in Track 2. This proportion remained stable over time and fell far short of CMS's goal that all payer partners provide greater financial support for Track 2 practices.

Over the course of CPC+, 62 percent of the total enhanced payments received by practices were unique to CPC+. The remaining 38 percent represented funding available to at least some practices participating in payers' other value-based programs (VBPs) outside of CPC+. CMS provided nearly all (96 percent) of the unique funding for CPC+ practices over the course of the model, reflecting that (1) CMS paid substantially larger care management fees for Medicare fee-for-service (FFS) beneficiaries than other payers paid for their attributed lives, and (2) many payer partners used existing VBPs to meet their CPC+ commitment.

Practices' assessments of the adequacy of CPC+ payments were mixed. In PY 5, across both tracks, fifty-five percent of practices rated CPC+ payments from CMS adequate or more than adequate for the work CPC+ required, and 45 percent did so for payer partners' payments. In a separate survey, twenty-six percent of physicians rated CPC+ payments as adequate or more than adequate in PY 5.

Taken together, these results indicate that a substantial proportion of both practices and physicians surveyed had concerns about the adequacy of CPC+ payments.

Throughout CPC+, deep-dive practices consistently cited care management fees as the most useful type of CPC+ payment support that they received, by far. These large, stable, and prospectively paid payments typically served as the main funding source for compensating care managers, behavioral health providers, and other staff hired to improve care delivery.

Practices not participating in SSP were eligible to receive Performance-Based Incentive Payments (PBIPs), prospectively paid bonus payments. Because PBIPs were small relative to care management fees, practices reported that PBIPs alone did not provide strong incentives to change care delivery. However, the aggregate incentives practices faced from all their payers' VBPs, including PBIPs, did motivate practices to take concrete steps to improve quality and control utilization.

Alternative payments. Throughout the model, fewer than one in five payer partners provided Track 2 practices with alternative payments that shifted a portion of payments away from FFS—falling far short of CMS's goal that all payer partners do so by the start of PY 2. Among the payers using alternative payments, most simply continued their longstanding capitation arrangements that pre-dated CPC+. Among the many payers opting not to implement alternative payments, most cited two key barriers: (1) the investment required to upgrade their incompatible data and accounting systems and (2) practices were uncertain about changes needed for alternative types of payment. By the end of CPC+, only one in six patients in Track 2 practices were covered by payers with alternative payment approaches.

Throughout CPC+, most Track 2 practices continued to approach alternative payments with hesitancy. About three-quarters of Track 2 practices elected the minimum Comprehensive Primary Care Payment (CPCP) option available to them (40 percent CPCP) under CMS's hybrid payment model, in each of the model's final three years. Most of the deep-dive Track 2 practices interviewed about payment accepted the premise that they should move away from FFS but made limited, halting progress in doing so. Among the key challenges they cited were lack of provider buy-in and a range of logistical issues, including how to adapt existing budgeting and payment processing systems to handle prospective payments. Despite these challenges, by the end of PY 5, about two-thirds of deep-dive Track 2 practices interviewed about payment credited CMS's hybrid payment model with helping their practices make at least a partial transition from FFS.

The COVID-19 pandemic and CPC+ payments. As described in the fourth annual report, in early 2020 (PY 4), CMS and other payers, including most CPC+ payer partners, responded to the pandemic's unprecedented disruptions by introducing temporary payment accommodations to reduce financial pressures on providers and access barriers for patients (Swankoski et al. 2022). The changes that deep-dive practices described as most beneficial were coverage expansions and payment rate increases for telehealth. As the pandemic continued in PY 5, CMS and most payer partners maintained most of the key payment changes they had launched in the previous year. Combined with a strong rebound in office visits, this widespread continuation of payment accommodations resulted in most deep-dive practices reporting by the end of PY 5 that their practice finances had recovered to nearly the pre-pandemic levels of PY 3.

Sustainability of funding for practice transformation beyond CPC+. At the end of PY 5, nearly all deep-dive practices interviewed about payment planned to maintain the same level of care management, behavioral health, and other services that they had provided under CPC+—at least for the first year after CPC+. However, many practices were concerned that their funding streams would become less stable and predictable after CPC+. Therefore, they were less confident about being able to maintain the same level of services beyond the first post-CPC+ year.

By far, the most commonly cited post-CPC+ funding sources by practices were VBPs sponsored by non-CMS payers and the Primary Care First (PCF) model sponsored by CMS. Other funding sources cited by fewer practices included SSP, CMS's Global and Professional Direct Contracting model (now called the Realizing Equity, Access and Community Health (ACO REACH) model), and enhanced FFS billing through the use of Chronic Care Management codes and psychotherapy codes. Practices expressed concern that their overall payments might decline after CPC+ because of two related factors: a lack of sizable care management fees and increased exposure to risk.

Key lessons learned about CPC+ payments. The payment-related aspects of CPC+ that deep-dive practices wished they had better understood earlier in the model included (1) the lack of unique (CPC+-specific) payment supports from most payer partners, and (2) the degree of change their own organizations would have to undergo before they could reap tangible benefits from CPC+ funding.

When asked what they would have done differently to better use their CPC+ funding, half of the deep-dive Track 1 practices said they would have applied to Track 2 instead, and used the higher care management fees to support more practice changes. In addition, some practices wished they had trained their staff to conduct more thorough Hierarchical Condition Category (HCC) coding, to qualify for higher risk-adjusted care management fees.

When practices were asked what CMS could have done differently to improve their experiences with CPC+ payments, the most prevalent responses included (1) allowing a broader, more flexible definition of a practice than the single-site definition that CMS used to allow, for example, the practice definition to align with how they did their budgeting and staffing; (2) streamlining annual financial reporting requirements from the start of CPC+, rather than at the start of PY 2; and (3) providing clearer guidance on allowable uses of care management fees from the start of CPC+.

Regarding what payer partners could have done differently, more than half of the deep-dive practices said that receiving larger, CPC+-specific payments from payer partners would have done the most to improve their own experiences with CPC+ payments. Some practices also cited the need for better alignment among payer partners' payment models and performance metrics and for greater transparency in commercial payer partners' performance-based payment models.

Data feedback and aggregation

CMS provided all CPC+ practices data feedback about Medicare FFS through an interactive web-based tool, and 95 percent of payer partners provided unaggregated data to practices about their CPC+ patients. Practice usage of the CMS tool peaked in PY 3, with 79 percent of practices accessing the tool at least once each year. By the last year of CPC+, all payer partners that reported providing data to CPC+ practices noted they were also providing data to their non-CPC+ practices that were at least as comprehensive as their CPC+ reports.

Payer partners made modest progress providing aggregated regional reports to practices during CPC+. CMS expected all payers in each region to aggregate their data with CMS's Medicare FFS data into one streamlined tool for CPC+ practices by PY 2. To address this goal, payer partners in 4 of 14 regions initiated aggregation efforts during CPC+, while payer partners in 4 additional regions carried over efforts they began during CPC Classic (or before CPC+). Payer partners in four of these eight regions planned to continue offering aggregated tools to practices in their region after CPC+ ended.

Payer partners in the other six regions did not aggregate data during CPC+; however, two of these six regions were still exploring the possibility of providing data through their state health information exchange (HIE) as CPC+ ended. Regions that did not offer an aggregated tool described that a relatively low number of payer partners or lack of engagement from key payer partners posed a challenge to their efforts, particularly if another robust data initiative existed, such as a state HIE.

Throughout CPC+, respondents from organizations working toward data aggregation reported several key challenges to their efforts, including: (1) technical challenges producing aggregated data, such as lags in claims data; (2) payer concerns regarding sharing proprietary cost data; (3) low levels of practice engagement with aggregated feedback tools; and (4) variation in payer engagement with data aggregation efforts.

Organizations working toward data aggregation offered several lessons that could be relevant to future CMS efforts, including: (1) the critical role of an impartial convener to facilitate aggregation among payers with varied interests, and the importance of CMS's investment in a regional convener role; (2) the time it takes to forge multipayer collaborations and build the necessary data capacity, making this work particularly incremental; and (3) that practices will often require a high level of training to effectively use aggregated tools, but regional learning faculty can be successfully leveraged to support practices.

Learning

Allowing practice facilitators (coaches) flexibility to tailor the CPC+ learning supports was crucial to practice engagement and learning. Practice facilitators could tailor the learning supports to the needs of the region and to different types of practices within the region.

Learning supports were generally well received by CPC+ practices. Practices and practice facilitators appreciated the diverse set of learning supports—both durable learning products practices could access on their own and tailored supports that could help with unique practice needs. CPC+ Connect (CMS's web-based collaboration platform for practices) was highly rated in the Practice Survey and practice facilitators and practices emphasized its utility as a repository of information. However, both facilitators and practices felt it was less useful as a space for practices to connect and engage with one another, especially as many practices encountered time-consuming difficulties with logging in.

Learning contractors noted that regional practice facilitator support and small group coaching were essential supports, and CMS considered networking opportunities in smaller settings to be very effective. However, CMS also indicated that they knew early on that coaching was a support that, unfortunately, could not be sustained long term because of resource limitations.

Practices highly valued opportunities to learn from each other and appeared to grow more comfortable over the course of CPC+ about sharing what did and did not work for them. Early opportunities for in-person meetings also set the stage for successful virtual meetings as learning

supports shifted to different modalities during the early stages of the COVID-19 pandemic, and for ongoing engagement and networking by some practices as CPC+ ended.

Health IT

Health IT vendors generally had positive reflections on their overall experiences with CPC+. They noted the benefits of establishing formal partnerships with CMS and Track 2 practices and felt that model partnership was not burdensome because CPC+ health IT requirements generally aligned with their broader development activities.

Health IT vendors primarily enhanced existing functionalities to support practices, rather than creating new functionalities for CPC+. These functionalities were also available to non-CPC+ practices as part of vendors' core or standard add-on products.

Despite these overall positive impressions of CPC+, vendors nonetheless experienced some challenges with the model. They faced technical issues enhancing functionalities. They also felt they had limited ability to influence the design of CPC+ model requirements, and to drive meaningful progress in how health IT supported primary care transformation because CPC+ practices were a small proportion of their overall customer base.

Throughout CPC+, over half of practices perceived health IT vendor support was useful in improving primary care, although this was consistently the lowest rated of all CPC+ supports. Practices' perceptions of the burden of meeting health IT requirements declined steadily throughout CPC+, from about half of practices reporting perceptions of burden in PY 2 to about one-third in PY 5.

3.1. Types of support that CMS, payer partners, and health IT vendors agreed to provide CPC+ practices

3.1.1. The supports CMS and payer partners agreed to provide to CPC+ practices

Throughout CPC+, CMS and payer partners agreed to provide:

Enhanced payments (in addition to usual payments for services) to Track 1 and 2 practices for (1) participating in CPC+ and (2) improving their performance on cost, utilization, or quality measures. Payers agreed that the financial support for Track 2 practices would be greater than for Track 1 practices, to reflect additional care delivery requirements for patients with complex needs.

Alternative payments to Track 2 practices. Payer partners agreed to use an alternative to the historically common FFS payment approach. Under FFS, practices are paid for each visit or service they provide. Under alternative payment approaches, payers provide lump-sum payments to practices in advance of services provided, regardless of the number or type of services. Payers then reduce or eliminate FFS payments. These alternative payments aim to increase practices' flexibility to deliver services or alternative types of visits (such as group visits) that might benefit patients, but for which they cannot bill under most traditional FFS payment arrangements. CMS committed to providing alternatives to FFS payments at the start of CPC+, and all payer partners committed to doing so by the start of PY 2 as part of their memorandum of understanding (MOU).

Data feedback on utilization of services or total cost-of-care measures at least quarterly, to practices in both tracks. Payer partners could choose to provide payer-specific reports, an aggregated report in which CMS and payer partners in a region submit their claims data to a third-party vendor to produce a single report or tool, or both. As part of their MOU, payer partners agreed to align measures and develop a common approach for sharing data, which aimed to streamline practices' review and make the data more actionable.

CMS also agreed to provide CPC+ practices with *a robust learning system* to support their practice transformation work. Payers' MOUs did not require them to provide learning supports to CPC+ practices.

3.1.2. The support health IT vendors agreed to provide to CPC+ practices

CPC+ practices are required to meet specific health IT requirements that differ by track. To support Track 2 practices in using additional advanced health IT functionalities, all partnering health IT vendors signed an MOU with CMS, in which they committed to (1) provide practices advanced health IT functionalities to meet the Comprehensive Primary Care Functions and (2) support practices in using them. Although only Track 2 practices formalized a health IT vendor relationship, practices in both tracks chose to work with health IT vendors through CPC+-sponsored learning supports or other vendor-initiated forums.

Methods: Data sources and analysis for understanding CPC+ supports

In addition to analyzing most of the data sources described in Table 1.2, including the payer, practice, and physician surveys, we analyzed data from several other sources to specifically evaluate the supports provided to CPC+ practices:

Interviews with data aggregating organizations. We tracked the progress of data aggregation efforts throughout CPC+ by conducting interviews with any region that indicated potential or active progress in this area during our interviews with conveners in all regions. From this information, we followed a cohort of nine organizations responsible for aggregating payers' data in their region. Across all five program years, we conducted a total of 32 one-hour telephone interviews with these organizations.

Data aggregation worksheet. Prior to each round of interviews, we collected standardized data from aggregating organizations in the nine regions that were pursuing these efforts. (By the end of CPC+, payers in eight of these nine regions delivered aggregated data to practices). These worksheets collected data about aggregation progress, structure and content of data tools, and plans for sustaining aggregation after CPC+.

Methods (continued)

Interviews with learning contractors. In all five program years, we conducted between 13–18 interviews per year with learning contractors and CMS about implementing CPC+ learning activities. In each program year, we interviewed representatives from CMS, the National Learning Team, Regional Learning Network (RLN), and practice facilitators.

Interviews with deep-dive practices. For practices' perspectives on CPC+ payments, we interviewed a longitudinal sample of 27 deep-dive practices about PY 1 payments; 24 practices about PY 2 payments; 21 practices about PY 4 payments; and 20 practices about PY 5 payments, plans to sustain funding post-CPC+, and key payment lessons learned. We oversampled Track 2 practices. We separately interviewed a sample of 40 deep-dive practices in PY 4 and 23 deep-dive practices in PY 5 about their CPC+ experiences with CPC+ supports more broadly (see chapter 4).

Program data about CPC+ supports. In all five program years, we analyzed practice coaching log files that practice facilitators submitted to the RLN to document the coaching CPC+ practices received. In PYs 2 through 5, we analyzed files provided by the CPC+ data feedback contractor monthly that documented which practices accessed the data tool and the frequency of page views.

Data analysis and reporting

Characterizing interview data. For deep-dive interviews about payments, we generally report the number of respondents who indicated a particular finding (numerator) and the overall sample size (denominator), because we asked all respondents the same questions in all interviews. For the larger sample of deep-dive practices, each interview did not cover all topics, so we use "couple" to denote 2 respondents, "few" to denote 3 to 4 respondents, "several" to denote 5 to 10 respondents, "many" to denote more than 10 respondents but fewer than three-fourths of relevant respondents, and "most" to indicate more than three-fourths of respondents.

Reporting survey results. Given the substantial sample sizes of our surveys, and the large number of variables our analysis includes, we are likely to observe many small differences in responses over time and between subgroups that would be statistically significant using traditional statistical testing standards. To avoid overinterpreting those differences, we focus on notable differences, which we define as 10 percentage points or larger.

[a]*Laird et al. (2023a) includes survey instruments and additional analysis tables (where relevant) for the CPC+ Payer Survey (Appendix 3.A), CPC+ Practice Survey (Appendix 3.B), and CPC+ Physician Survey (Appendix 3.C), the payment approaches used by CMS and payer partners (Appendix 3.D), payer partners' responses to the COVID-19 pandemic (Appendix 3.E), PBIP performance throughout CPC+ (Appendix 3.F), and the study of practices' and vendors' perspectives of health IT in CPC+ (Appendix 3.G).*

3.2. CMS and payer partner supports

$ We now turn from discussing how CMS and payer partners intended to provide CPC+ supports to practices to describing how these supports were implemented over the course of CPC+. Throughout the model, CMS provided all CPC+ practices (in both tracks, and regardless of SSP status) payment, learning, and data feedback support. In addition, all Track 2 practices received support meeting advanced health IT functionalities by partnering with health IT vendors.

In designing CPC+, CMS hypothesized that practices needed to receive supports for a critical mass of their patients to effectively change care delivery. Under the implicit assumption that the payers partnering in CPC+ would collectively represent a critical mass of all the payers contracting with CPC+ practices (and therefore would provide supports for a critical mass of those practices' patients), CMS required that CPC+ practices implement care delivery changes *across all patients they served in the practice,* rather than just the patients for whom they received supports.

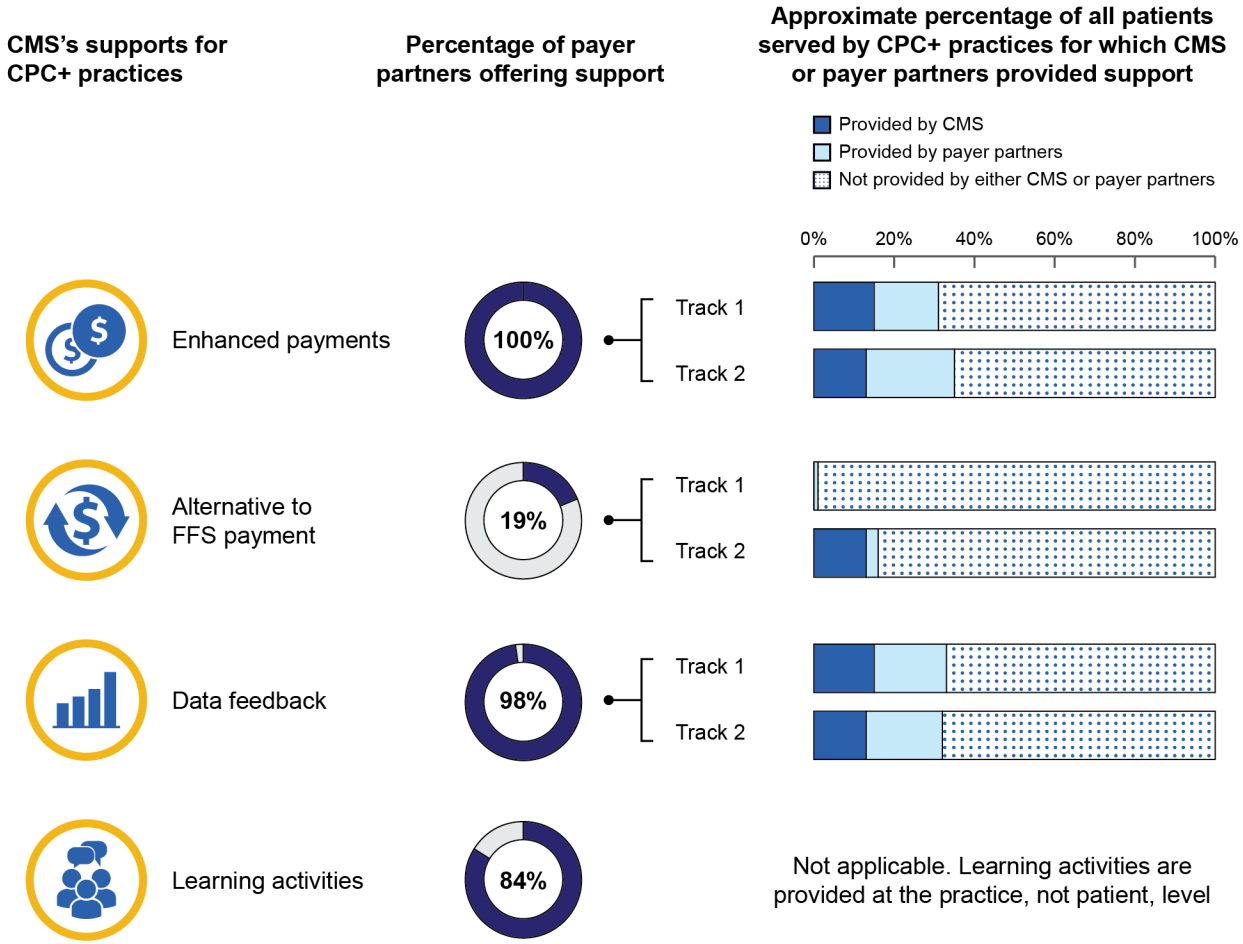
In CPC+, CMS and payer partners provided payments and data feedback for individual patients whom they attributed to CPC+ practices. CMS and most payer partners provided learning support, and health IT vendors provided support at the practice, rather than patient, level. This section provides a broad overview of supports available to CPC+ practices with the intent of driving practice-level changes in the way they delivered care. In subsequent sections of this chapter, we detail each type of support.

Using the CPC+ payer survey (Laird et al. 2023a, Appendix 3.A) and practice-reported financial data, we analyzed the availability of each type of support from payer partners, and the approximate proportion of patients who received each support (Figure 3.1). In PY 5, CPC+ practices received enhanced payments and data feedback for at least one-third of all patients they served. Only 19 percent of payer partners provided alternative payments and, correspondingly, practices received alternative payments for a smaller proportion of their patients (16 percent of all patients served by Track 2 practices). These patterns remained stable over the course of CPC+.

CPC+ practices consistently reported on the annual CPC+ Practice Surveys (Laird et al. 2023a, Appendix 3.B) that the supports they received were useful in improving primary care, but ratings varied widely across the types of supports provided to them. Throughout the model, practices were far more likely to rate payments, learning supports, and data feedback as useful, than to rate health IT supports useful. Over the course of CPC+, 86 percent of all practices surveyed assessed their CPC+ payments to be very or somewhat useful for improving primary care. Similarly, 88 of practices found the learning support they received very or somewhat useful, and 82 percent rated data feedback support as very or somewhat useful. In contrast, a substantially lower proportion of practices—56 percent—found health IT vendor support very or somewhat useful in improving primary care.

Figure 3.1. Availability of CPC+ supports from CMS and payer partners, PY 5

Most or all payer partners provided enhanced payments, data feedback, and learning activities to practices; in contrast, few payer partners had implemented alternative payment approaches by the end of PY 5. As a result, the numbers of patients for whom enhanced payments and data feedback were provided were higher than the number for whom alternative payments were provided. However, even the most common CPC+ supports were provided for no more than one-third of the total patients served by CPC+ practices.



Source: Mathematica's analysis of data from the independent evaluation's PY 5 CPC+ Payer Survey and PY 5 practice-reported financial data submitted to CMS.

Note: This analysis included 47 of the 57 payer partners in PY 5. We excluded 10 payer partners from the analysis; 9 did not complete the PY 5 CPC+ Payer Survey and 1 did not have contracts with any CPC+ practices and, thus, could not provide CPC+ supports. The 47 payer partners included in this analysis covered 98 percent of payer partners' attributed lives in PY 5.

The analysis included 1,103 Track 1 practices and 1,316 Track 2 practices. Track 1 practices reported serving 6,023,509 total patients, and Track 2 practices reported serving 8,643,080 total patients in PY 5.

FFS = fee-for-service; PY = Program Year.

3.2.1. CPC+ payments

Throughout the five years of CPC+, CMS and payer partners collectively provided substantial enhanced payments to participating practices. [16] CMS provided a large share of total enhanced payments overall—and nearly all of the enhanced payments that were unique to CPC+ (that is, payments available only to CPC+ practices). CMS also provided alternative payments to all Track 2 practices from the start of CPC+, in accordance with its goal of moving these practices away from FFS. However, throughout the entire five years of CPC+, the proportion of payer partners that provided alternative payments remained lower than one in five.

A. Enhanced payments

Throughout CPC+, payers made two types of enhanced payments: (1) payments to support practices' *participation* in CPC+ (typically using care management fees) and (2) payments to reward their *performance* on cost, utilization, or quality measures. During the model, 94 percent of payer partners joined CMS in providing both types of enhanced payments.

By design, CMS made substantially larger enhanced payments to Track 2 practices than to Track 1 throughout CPC+—consistent with its goal of providing greater financial support for the more advanced care delivery activities expected in Track 2—but many payer partners did not follow CMS's lead. Nearly half of payer partners provided the same payment supports to practices in both tracks, but two payer partners—in contradiction of CMS's vision and intent for CPC+ payment—considered only Track 1 practices eligible for payments for participation. In interviews, these two payers explained that they considered Track 2 practices advanced enough not to need enhanced payments to support further practice changes.

A.1. Payments for participation offered to CPC+ practices

Care management fees were the dominant form of payments for participation throughout CPC+. During the model, 95 percent of payer partners joined CMS in providing enhanced payments for participation (Figure 3.2). Ninety-two percent of payer partners structured their payments for participation as care management fees, which were paid to practices at regular intervals (most commonly at the beginning of each quarter or month) for each patient a payer attributed to a practice. The remaining payer partners structured payments for participation as enhanced FFS payments, which increased claims payments by a set percentage.[17]

- ***CMS's care management fees.*** From the start of CPC+, CMS paid a risk-adjusted care management fee that was designed to average $15 per beneficiary per month (PBPM) for Track 1 practices and $28 PBPM for Track 2 practices. CMS also added to the CPCP a separate, small enhanced payment, known as the comprehensiveness supplement, for participating in CPC+. This comprehensiveness supplement amounted to an average of an average of $0.61 PBPM in PY 5 (compared to $0.22 in PY 1, $0.46 in PY 2, $0.59 in PY 3, and $0.57 in PY 4).

[16] Laird et al. (2023a, Appendix 3.D) contains more detail about various components of payment approaches used by CMS and payer partners.

[17] Most payer partners using enhanced FFS payments did so in lieu of care management fees, but one payer partner used both enhanced FFS payments and care management fees.

- ***Payer partners' care management fees.*** The median amounts of payer partners' per member per month (PMPM) care management fees remained stable over the course of CPC+. Payer partners' median payments were consistently lower than CMS's average payments (Laird et al. 2023a, Appendix 3.D) compares CMS and payer partner care management fees for each line of business). For example, compared to the $28 PMPM care management fee that CMS paid for Medicare FFS beneficiaries attributed to Track 2 practices, the care management fees contributed by Medicare Advantage payers ranged from $1 to $19 PMPM, with a median of only $5.50 PMPM. Payer partners provided lower care management fees for their commercial and Medicaid lines of business, with medians generally in the $3.00 to $4.00 PMPM range.

  Like CMS, 60 percent of payer partners paid care management fees solely for practice participation, entirely separate from their payments for practice performance. However, 33 percent of payer partners, accounting for 41 percent of payer partners' attributed lives, used practice performance on cost, utilization, or quality metrics to determine care management fee eligibility or amounts. These proportions remained relatively stable over time. Making care management fees contingent on practice performance diverges significantly from CMS's original vision that *all* participating practices would have access to a dedicated revenue stream that did not depend on performance.

A.2. Payments for performance offered to CPC+ practices

Throughout CPC+, CMS used two mutually exclusive strategies to pay for performance, depending upon practices' SSP status, while payer partners used several approaches to reward performance.

- ***For practices not participating in SSP, CMS provided PBIP,*** a prospectively paid, retrospectively reconciled bonus payment. Each practice was eligible to earn a maximum of $2.50 PBPM for Track 1 and $4.00 PBPM for Track 2.
- ***For practices participating in SSP as part of an ACO, CMS provided shared savings opportunities.*** If ACOs achieved savings, CMS paid out a portion of those savings. If ACOs incurred losses, those that accepted downside risk paid back to CMS a portion of those losses. Each ACO decided how much, if any, of the savings (or losses) to share with its members.
- ***Payer partners primarily used retrospective bonus programs and shared savings programs to reward practices for performance.*** Over the course of CPC+, 96 percent of payers provided some form of performance-based payments, with 63 percent of payer partners providing retrospective bonus payments, and 58 percent providing shared savings opportunities to practices.

Figure 3.2. Enhanced and alternative payment approaches used by CMS and payer partners, all five program years

CMS and all payer partners offered CPC+ practices payment supports. Care management fees were the most common type of enhanced payment. With fewer than one in five payer partners offering an alternative to FFS payment approach at any point during CPC+, the model never approached CMS's goal of universal implementation of alternative payments by CPC+ payer partners.

Type of payment support	Used by CMS for Medicare FFS?	Average percentage of payer partners using approach[a] (N=47)
Offer ANY type of payment support	✓	**99%**
***Enhanced* payments for CPC+ participation**	✓	**95%**
Care management fees, not adjusted based on practice performance[b]	✓	60%
Care management fees, adjusted based on practice performance[b,c]		32%
Enhanced FFS payments, adjusted based on practice participation in CPC+ or another program[b]		5%
***Enhanced* payments for performance**		**96%**
Bonus payments for performance, prospectively paid	✓ for non-SSP practices[e]	8%
Bonus payments for performance, retrospectively paid		63%
Retrospective shared savings payments	✓ for SSP practices[e]	58%
Enhanced FFS payments, adjusted based on practice performance[b,e]		5%
***Alternative* to FFS payments[d]**	✓ for Track 2	**18%**

Sources: Mathematica's analysis of CPC+ Payer Survey data and payer interview data for all five program years.

[a] Individual values for each PY have been weighted based on the N of CPC+ Payer Survey respondents for that PY (60 payers in PY 1, 54 payers in PY 2, 53 payers in PY 3, 50 payers in PY 4, and 47 payers in PY 5). These values then represent the averages of those weighted values.

[b] Data for this value did not become available until PY 3. The value in the table reflects the weighted average across PY 3 to PY 5.

[c] We classify all care management fees as payments for participation, even though some payer partners use practice performance metrics to determine eligibility for these payments or adjust the amounts of the payments.

[d] Data for this value did not become available until PY 2. The value in the table reflects the weighted average across PY 2 to PY 5.

[e] For practices not in SSP, CMS uses a prospectively paid, retrospectively reconciled PBIP. For practices in SSP, CMS makes their Accountable Care Organizations eligible for the retrospective shared savings program.

FFS = fee-for-service; PBIP = Performance-Based Incentive Payment; PY = Program Year; SSP = Medicare Shared Savings Program.

A.3. Level of enhanced payments received by CPC+ practices

Throughout CPC+, practices in both tracks received substantial enhanced payments. Median payments for participation accounted for a very large share (85 percent) of median enhanced payments over the course of CPC+ (Figure 3.4). The remaining 15 percent of median enhanced payments came from rewards for practice performance. Although median payments for performance accounted for only a small share of median enhanced payments overall, this proportion increased over time, from 10 percent in PYs 2 and 3 to 15 percent in PY 4 and 24 percent in PY 5. This increase was driven primarily by robust growth in the shared savings earned by practices belonging to SSP ACOs, while care management fees (which accounted for the lion's share of payments for participation) remained stable.

The median cumulative enhanced payments that Track 1 practices received from CMS and payer partners over the five years of CPC+ totaled $698,720 per practice, which represented a median of 9 percent of practice revenue (Figure 3.3). Calculated per primary care practitioner to account for differences in practice size, the median cumulative enhanced payment was $214,538 for Track 1 practices.

By design, Track 2 practices received larger enhanced payments from CMS and payer partners than Track 1 practices. Median cumulative payments received over the five years of CPC+ were $1,402,232 per practice, or 14 percent of total practice revenue, and $325,578 when calculated per primary care practitioner. Median payments were higher for Track 2 practices compared with Track 1 practices, because CMS and one-half of payer partners provided larger payments to Track 2 practices. With a couple of exceptions, the remaining payer partners did not differentiate between payments to Track 1 versus Track 2 practices.[18]

Figure 3.3. Median cumulative enhanced payments from CMS and payer partners, by CPC+ track, all five program years

CPC+ practices received substantial payments from CMS and payer partners over the course of the CPC+ model.

Sources: Mathematica's analysis of practice-reported financial data for the five program years submitted to CMS and payment data for the five program years provided by CMS.

Notes: N = 2,419 CPC+ practices that participated in CPC+ for all five program years.

PY = Program Year.

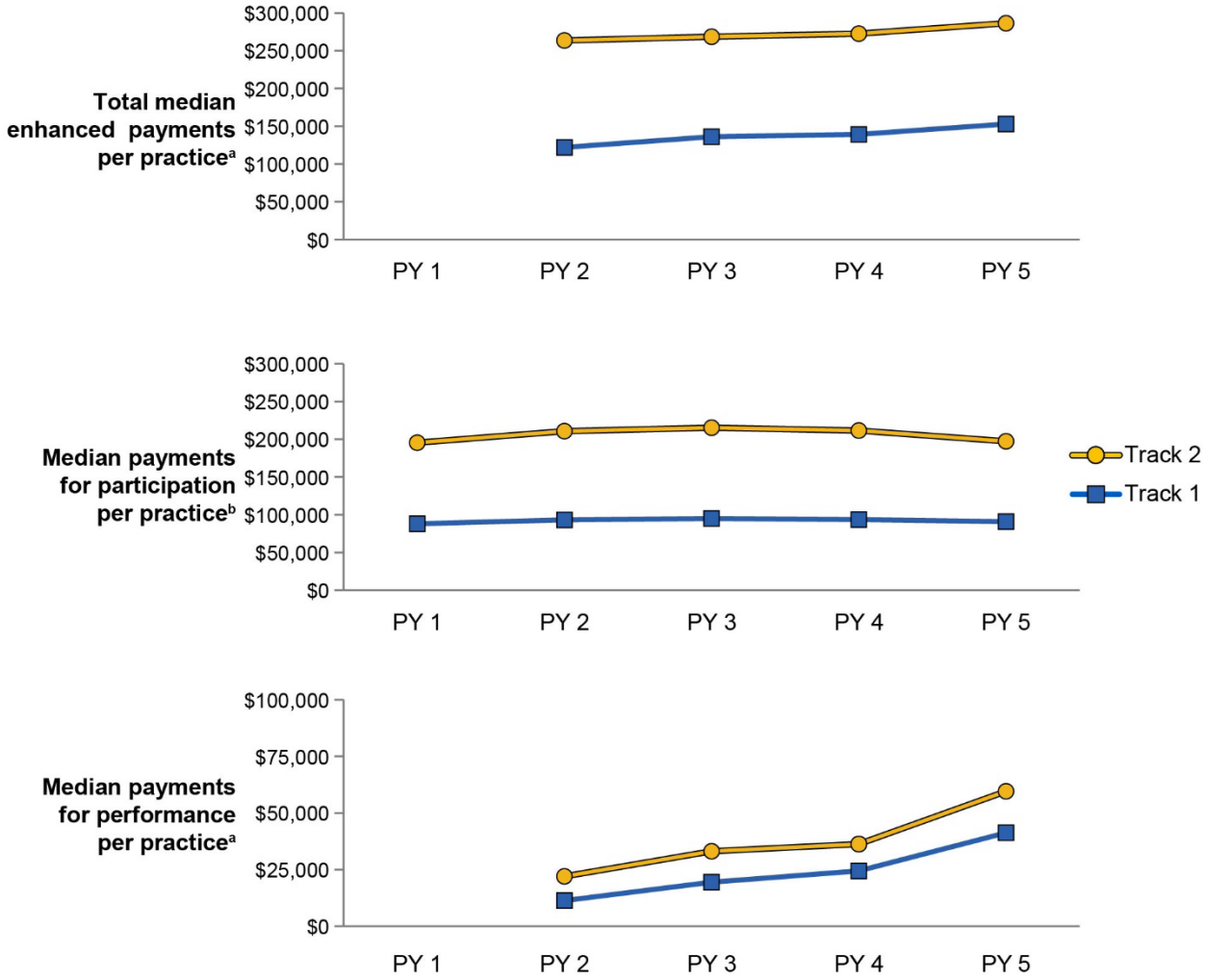
[18] The exceptions consist of two payer partners that provided care management fees only to Track 1 practices.

For both CPC+ tracks, median enhanced payments per practice and per practitioner increased by slight to moderate increments each year since PY 2 (the first year for which data were available) (Figure 3.4).[19] For Track 1, median enhanced payments increased from $122,065 in PY 2 to $152,995 in PY 5; for Track 2, over the same period, these payments increased from $262,606 to $286,407. This upward trend in enhanced payments was driven by a substantial increase in payments for performance, which in turn was driven by robust growth in shared savings earned by practices belonging to SSP ACOs. In contrast, payments for participation—the far larger component of enhanced payments—have changed little since PY 2, reflecting the underlying stability in both the number of patients attributed to CPC+ practices and the care management fees per attributed patient.

[19] Because data on both enhanced FFS payments and payments for performance became available only in PY 2, we were not able to calculate the amount of total enhanced payments paid in PY 1. Data on care management fees (the dominant component of both payments for participation and total enhanced payments), which were available for all five program years, were stable across all five years.

Figure 3.4. Median enhanced payment amounts, all five program years

Practices in both tracks received substantial median enhanced payments that increased over the course of CPC+. This increase resulted from robust growth in payments for performance, which in turn stemmed from growth in shared savings earned by practices belonging to SSP ACOs. Payments for participation—the larger component of enhanced payments—remained largely stable over time.



Sources: Mathematica's analysis of practice-reported financial data submitted to CMS and payment data provided by CMS for all program years.

Notes: N = 2,905; 2,716; 2,675; 2,599; and 2,419 CPC+ practices that were participating at the end of PYs 1, 2, 3, 4, and 5, respectively.

Because this table reports medians, which cannot be summed, the payments for participation and payments for performance values do not sum to the total enhanced payments values. Instead, we calculated the medians for each line separately.

[a] Payments for performance were not available for PY 1 because practices were not asked to report those payments until PY 2. As a result, total enhanced payments (the sum of payments for participation and payments for performance) also were not available for PY 1.

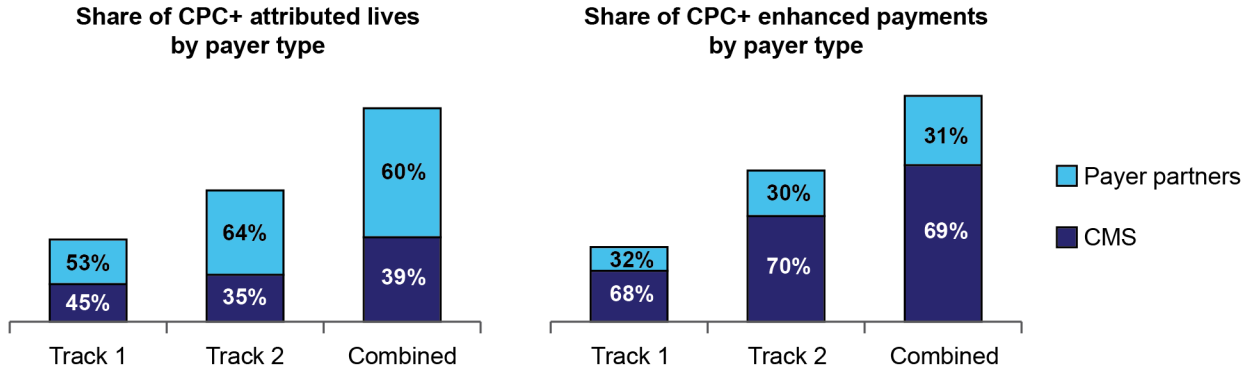
[b] Payments for participation in PY 1 did not include enhanced FFS payments, because practices were asked to report only care management fees in PY 1.

PY = Program Year.

Throughout CPC+, CMS contributed a disproportionate share of total enhanced payments, as a result of the far larger care management fees CMS paid compared to payer partners. Although CMS covered only 39 percent of attributed CPC+ patients over the course of the model, it contributed 69 percent of the total enhanced payments practices received from all payers combined (Figure 3.5). Breaking total enhanced payments into its components, CMS's share of total payments for *performance* (40 percent) aligned closely with its share of attributed lives (39 percent). However, CMS's share of total payments for *participation* (79 percent) was more than double its share of attributed lives (again, 39 percent). This disproportionate share resulted from CMS paying much larger care management fees than those contributed by payer partners.

Figure 3.5. Relative contribution of CMS and payer partners to CPC+ enhanced payments, by CPC+ track, all five program years

Throughout CPC+, CMS's share of CPC+ payments far exceeded its share of CPC+ attributed lives.



Sources: Mathematica's analysis of practice-reported financial data for all five program years submitted to CMS and Medicare FFS beneficiary attribution lists payment data for all five program years provided by CMS.

Notes: N = 2,905; 2,716; 2,675; 2,599; and 2,419 CPC+ practices that were participating at the end of PYs 1, 2, 3, 4, and 5, respectively.

FFS = fee-for-service.

Throughout CPC+, 62 percent of the total enhanced payments received by practices were unique to CPC+ (that is, available only to CPC+ practices). In contrast, the remaining 38 percent of the enhanced payments were available to at least some practices not participating in CPC+. The distinction between unique and non-unique payments is important because the non-unique portion would have been available to practices in the absence of CPC+. It was the unique portion of total enhanced payments that captured the financial contribution CPC+ made toward practices' ability to invest in transforming care delivery. Therefore, it is the portion that we would expect to drive CPC+ impacts.

CMS provided nearly all of the unique funding that CPC+ practices received. Over the course of CPC+, CMS provided 96 percent of the total enhanced payments that were unique to CPC+, while all payer partners collectively contributed only 4 percent of the unique funding.

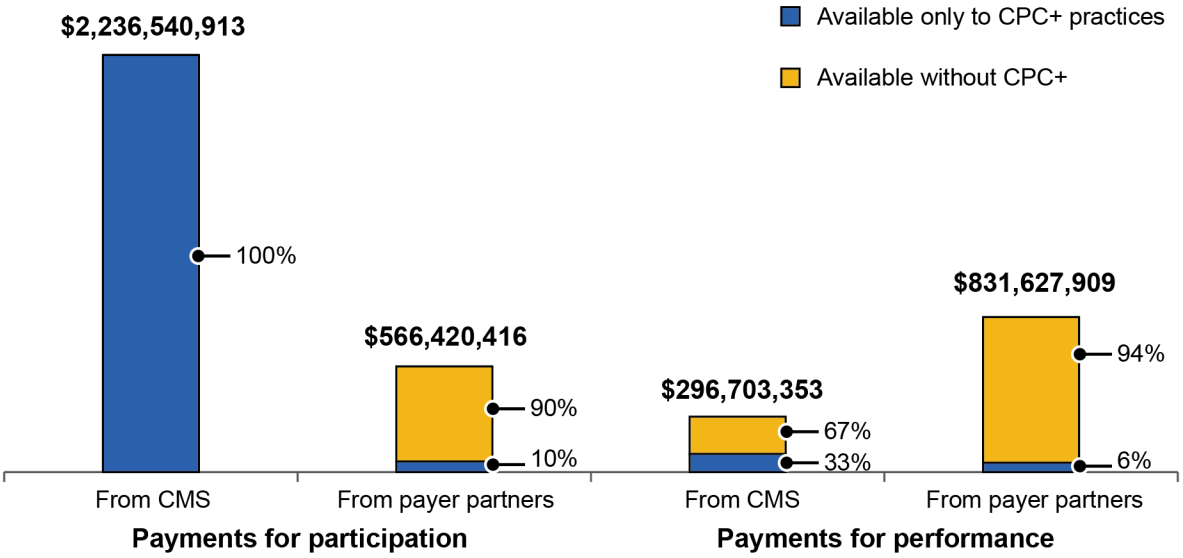
- ***This overall disparity in unique funding was driven by a particularly striking gap in unique payments for participation.*** Throughout CPC+, CMS provided practices with large care management fees that were entirely unique to CPC+ (Figure 3.6). In contrast, payer partners not only contributed far smaller payments for participation collectively (about one-quarter the overall size of CMS's

contribution), but only 10 percent of this smaller amount was unique to CPC+. The remaining 90 percent of payer partners' payments for participation would have been available to primary care practices participating in these payers' other VBPs, even if CMS had not launched CPC+. As a result, CMS's care management fees accounted for 98 percent of all unique payments for participation.

- ***Most payments for performance—from both CPC+ and payer partners—were not unique to CPC+, but the unique proportion from payer partners was particularly small.*** In contrast to CMS's large care management fees, which were all unique to CPC+, only 33 percent of CMS's smaller payments for performance were unique to CPC+. This unique portion came from PBIP earnings, which CMS paid to practices not participating in SSP. The remaining 67 percent of CMS's payments for performance, which were not unique to CPC+, came in the form of shared savings earned by practices belonging to SSP ACOs. Compared with CMS, payer partners structured a far larger share of their total enhanced payments as payments for performance. Therefore, the total amount of payer partners' collective payments for performance to CPC+ practices was nearly three times the amount paid by CMS. However, payer partners made only 6 percent of their total payments for performance unique to CPC+; the remaining 94 percent were available to practices participating in other VBPs sponsored by payer partners. As a result, despite CMS accounting for only about one-quarter of total payments for performance, it contributed two-thirds of all unique payments for performance received by CPC+ practices.

Figure 3.6. Enhanced payments from CMS and payer partners, and the proportions of enhanced payments that were unique to CPC+, all five program years

All of CMS's care management fees were available only to CPC+ practices. In contrast, only one-third of CMS's payments for performance, and no more than 10 percent of payer partners' enhanced payments (for both participation and performance), were available only to CPC+ practices.



Sources: Mathematica's analysis of data from the independent evaluation's CPC+ Payer Survey for all five program years, practice-reported financial data for all five program years submitted to CMS, and payment data for all five program years provided by CMS.

Notes: N = 2,905; 2,716; 2,675; 2,599; and 2,419 CPC+ practices that were participating at the end of PYs 1, 2, 3, 4, and 5, respectively.

A.4. Payment changes during the COVID-19 pandemic

At the height of the COVID-19 pandemic in early PY 4, nearly all payers made major, temporary changes to their payment policies to help ease financial pressures on practices and improve access for patients. As described in the fourth annual report, in early 2020 (PY 4), payers nationwide, including CMS and most CPC+ payer partners, responded to the unprecedented disruptions caused by the pandemic by introducing payment changes, such as reducing patient cost sharing, expanding telehealth coverage, increasing reimbursement, and providing temporary financial assistance (such as grants, loans, and accelerated payments) to health providers (Swankoski et al. 2022). Although most of these payment changes were not specific to CPC+, their impact on CPC+ practices was substantial.

The changes that most deep-dive practices reported finding most helpful for protecting practice finances and maintaining patient access were coverage expansions and payment rate increases for telehealth visits. Several practices also credited a separate but related change—the U.S. Department of Health and Human Services' Health Insurance Portability and Accountability Act (HIPAA) waiver for telehealth—for making telehealth far more accessible by allowing the temporary use of non-HIPAA-compliant platforms, such as FaceTime and Zoom.

In PY 5, CMS and most payer partners kept in place most, but not all, of the temporary financial supports they had launched in PY 4. As the pandemic continued but evolved in 2021 (PY 5), CMS and most payer partners maintained most of the major payment changes they had launched in the previous year—an acknowledgment of the pandemic's ongoing disruptions to care delivery. However, during PY 5, payers did roll back some PY 4 payment changes. For example, some commercial payers that had temporarily reimbursed for telehealth visits on par with office visits reverted to lower pre-pandemic payment rates. In addition, some commercial payers that had waived patient cost sharing for services such as COVID-19 treatment and primary care telehealth in PY 4 began reimposing cost-sharing requirements on patients. Still, after these rollbacks in temporary supports, more than 7 in 10 payer partners—including many of the largest payers—kept in place the key temporary financial supports (such as telehealth coverage expansions and reimbursement rate increases) that they had introduced the previous year. Accordingly, most deep-dive practices reported feeling little, if any, adverse impact from the rollbacks. (Laird et al. 2023a, Appendix 3.E presents detailed findings on payer partners' responses to the COVID-19 pandemic in PYs 4 and 5.)

By the end of PY 5, most deep-dive practices reported that their visit volumes and practice finances had rebounded nearly to pre-pandemic levels. In PY 4, during the shutdowns early in the pandemic, all practices suffered major financial shocks as office visits and FFS revenues plummeted. However, as described in the fourth annual report, about half of the deep-dive practices interviewed about PY 4 payment reported that their visit volumes and their finances had largely recovered by the end of PY 4—boosted in large part by robust telehealth programs combined with a partial recovery in office visits in the later months (Swankoski et al. 2022).

This recovery continued throughout the final year of CPC+. Nearly all of the deep-dive practices interviewed about payment at the end of PY 5 reported that the pandemic had little lingering impact on their visit volumes and financial performance. According to most practices, overall PY 5 visit volumes—although not fully rebounding to the normal pre-pandemic levels seen in PY 3—were much closer to normal than to PY 4 levels. Many practices attributed their recovery to a strong rebound in office visits combined with the ongoing use of telehealth visits by a portion of the patient panel. Several practices noted that decisions by most of their contracted payers to extend key telehealth coverage expansions and

reimbursement increases throughout PY 5 helped to protect practice revenues, particularly during COVID surges.

A.5. Practices' perspectives on CPC+ payments

This analysis of practices' experiences with CPC+ payments draws from both quantitative data (the CPC+ Practice Survey in PYs 2 through 5) and qualitative data (interviews with a longitudinal sample of deep-dive practices about CPC+ payments from PYs 1 through 5). The survey provided a broad, comprehensive overview of practices' perspectives on key topics, such as adequacy and usefulness of CPC+ payments, while the interviews yielded in-depth insights on issues such as the major challenges practices faced with CPC+ payments and how these challenges changed over time.

A.5.1. Adequacy of CPC+ payments

Practices expressed divided opinions about the adequacy of CPC+ payments from both CMS and payer partners. In PY 5, 55 percent of practices rated CPC+ payments from CMS as adequate or more than adequate, given the amount of work required by CPC+ (Figure 3.7). In comparison, 45 percent of practices found CPC+ payments from payer partners adequate or more than adequate. This pattern of practices rating CMS payments more favorably than payer partners' payments remained stable over time.

Practices that received higher CPC+ payments tended to rate their payments more favorably. Median per-practitioner payments were 15 percent higher for practices that rated payments adequate or more than adequate than for practices that rated payments less than adequate. Track 2 practices, which received median per-practitioner CPC+ payments that were 52 percent higher than those of Track 1 practices, but also had to meet more care delivery requirements, held slightly more favorable views of CPC+ payments (58 percent favorable for Track 2 versus 52 percent for Track 1). These correlations between higher CPC+ payments and more favorable ratings of payment adequacy remained stable over the course of CPC+.

Practices' survey ratings for both CMS and payer partner payments improved over time. As total enhanced payments to practices increased by slight to moderate increments over the course of CPC+, practices' ratings of both CMS and payer partner payments also trended upward over time. The percentage of practices rating CMS payments adequate or more than adequate increased from 47 percent in PY 2 to 55 percent in PY 5, while the percentage rating payments from payer partners adequate or more than adequate improved from 31 to 45 percent over the same period.

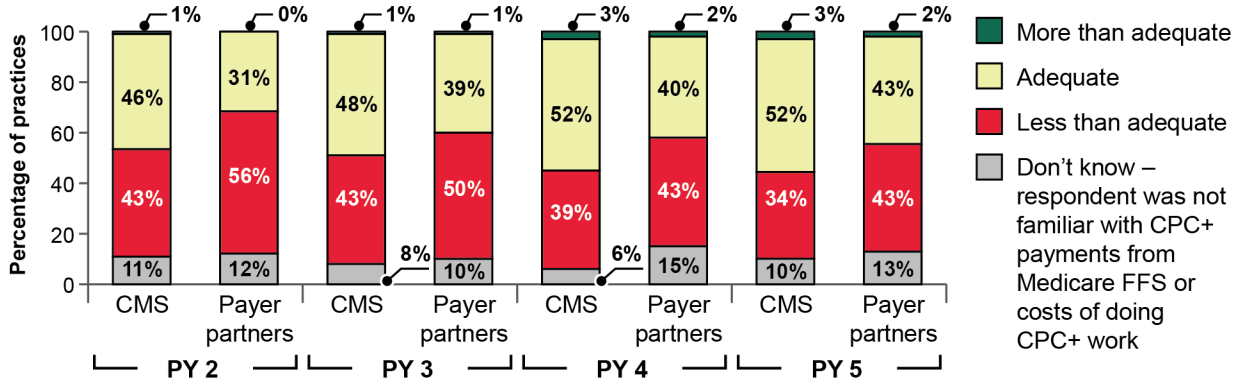
Many physicians in CPC+ practices considered CPC+ payments inadequate, although ratings improved slightly over time. In PYs 3 and 5, we surveyed physicians in CPC+ practices (Laird et al. 2023a, Appendix 3.C). Unlike the CPC+ Practice Survey, which asked separately about payments from Medicare FFS versus payments from payer partners, the Physician Survey asked respondents to assess payment adequacy from all CPC+ payers combined. In PY 5, 36 percent of physicians in CPC+ practices rated CPC+ payments from all payers combined (including CMS) as less than adequate, considering the amount of work that CPC+ required. This improved slightly from the 41 percent who found CPC+ payments less than adequate in PY 3.[20] Twenty-six percent of physicians rated CPC+ payments as adequate or more than adequate in PY 5, while 38 percent of physicians said they were not familiar

[20] Because the Practice and Physician Surveys had different sampling frames and were fielded separately to different types of respondents (practice managers versus physicians), and because the questions on payment adequacy were worded differently, we cannot directly compare responses to the two surveys about payment adequacy.

enough with these payments or the cost of doing CPC+ work to rate payment adequacy. Taken together with the Practice Survey findings, these results indicate that a substantial proportion of both practices and physicians surveyed had concerns about the adequacy of CPC+ payments from CMS, payer partners, or both.

Figure 3.7. Practices' ratings of adequacy of payment supports provided by CMS and payer partners, PY 2 through PY 5

Practices consistently rated CPC+ payments from CMS higher on adequacy than they rated CPC+ payments from payer partners. Ratings for both CMS and payer partners improved over time.



Sources: Mathematica's analysis of data from the independent evaluation's PY 2, PY 3, PY 4, and PY 5 CPC+ Practice Surveys.

Notes: N = 2,290 CPC+ practices that responded to the CPC+ Practice Survey in each program year. Data for practices' ratings for payer partners come from the 2,031 practices that reported contracting with CPC+ payer partners. The percentage of missing responses each year was less than 2 percent.

PY = Program Year.

Most practices found CPC+ payments useful for primary care, even when they judged payment amounts to be inadequate. In PY 5, 86 percent of all practices surveyed found CPC+ payments to be useful for improving primary care (with 57 percent rating them very useful and 29 percent somewhat useful). Ratings of usefulness, which improved from PY 2 to PY 4 before leveling off in PY 5, were generally similar across the two CPC+ tracks. Even among the 31 percent of practices that deemed payments from both CMS and payer partners inadequate in PY 5, 83 percent still considered the payments very or somewhat useful for improving primary care. These findings remained stable throughout CPC+.

Practices consistently rated care management fees the most useful CPC+ payment support by far, and used these payments as the main funding source for salaries for care managers and other staff. All of the deep-dive practices interviewed about payment over the course of CPC+ consistently described care management fees as the most useful type of payment support they received. These payments provided a large, stable, and prospectively paid funding stream for paying staff salaries. All deep-dive practices reported using care management fees to pay for care managers and care coordinators. Other staff positions commonly funded by these payments included behavioral health providers, data analysts, population health coordinators, and clinical pharmacists. In contrast, payments for performance tended to be smaller, more volatile, and either not paid or not finalized until well after each performance period had ended—characteristics that rendered them unfeasible as a funding source for staff salaries. As for alternative payments, even though they were paid prospectively like care management fees, they represented substitutes for regular FFS payments rather than additions to FFS. As a result, practices could

not use them to expand staffing resources—as care management fees were used—without jeopardizing funding for normal business operations.

A.5.2. Key payment-related challenges

The key payment-related challenge reported by practices was concern about inadequate CPC+ payments from payer partners. Many deep-dive practices highlighted two aspects of payer partners' payments as posing key barriers to implementing practice changes: lack of payments unique to CPC+ and low contributions per attributed life. Other key challenges included uncertainty about how practice changes could be sustained after CPC+ ended; lack of alignment among payers' payment approaches; and unclear or unfair payment methodologies used by one or more payer partners.[21]

A.6. Practices' response to CMS's payment incentives

Despite the unique design of PBIPs, practices reported treating their PBIP payments no differently than conventionally designed performance-based rewards. While nearly all payers structure their performance-based rewards to be paid well after a performance period has ended, CMS launched a novel design for PBIPs: Each practice received its maximum reward payment at the beginning of the performance year; then, in the following year, CMS calculated the amount the practice had earned and required the practice to repay the unearned portion. This distinctive design, informed by the behavioral economics theory of loss aversion, was intended to provide practices with stronger incentives to retain their maximum rewards. However, among the deep-dive practices we interviewed about payment, none viewed the prospective structure of the PBIPs as a stronger incentive than the retrospective design of other performance programs. Moreover, all the practices that received PBIPs reported setting their entire payments aside until CMS had notified them in the following year how much they had earned.

While practices found PBIP rewards too small to drive change on their own, the aggregate incentives across all payers' performance-based programs did spur practices to take several concrete steps to retain collective rewards. In each round of interviews, practices consistently reported that no single VBP, including the PBIP, offered large enough incentives on its own to justify significant investments in quality improvement. However, the collective rewards that could be earned across all the performance-based programs in which they participated were sizable enough to motivate practices to make meaningful changes.

On the quality side, these approaches included refining or adding to quality improvement processes, helping providers improve documentation of electronic clinical quality measures, so they could earn full credit for services already provided, and giving individual providers timely feedback on performance metrics to help them meet benchmarks. On the utilization side, approaches included providing emergency department alternatives and educating patients about these alternatives—for example, 24/7 nurse advice lines steering patients to other settings, such as urgent care centers—and focusing care management services on reducing avoidable admissions among high-risk patients.

[21] For example, multiple practices noted that many commercial payers considered their performance-based programs proprietary and declined to disclose fully the algorithms used to calculate payments earned. As a result, practices could not replicate those payers' payment calculations. A few practices also expressed concern that some payers—primarily commercial payers—set performance benchmarks at levels that these practices believed to be unreasonably difficult to meet.

While all deep-dive practices took at least some actions to try to earn aggregate performance-based rewards, the practices we interviewed varied widely in how robust their responses were to the performance incentives they faced.

Most practices pooled PBIP earnings with their other VBP earnings to reward staff performance and to increase quality improvement investments. Throughout CPC+, most deep-dive practices receiving PBIPs combined the rewards they earned from all the performance-based programs in which they participated. Practices used these pooled funds primarily for two purposes: (1) paying bonuses to practitioners and other staff, and (2) investing in more quality improvement infrastructure and staffing, aimed at helping the practice continue to improve the rewards they earn from performance-based programs. Practices did not rely on PBIPs or other payments for performance to pay any portion of staff salaries because these payments were relatively small and the amounts earned were neither guaranteed nor, in most cases, paid in advance.

Total PBIP scores increased over the course of CPC+, largely driven by improving scores on utilization measures. Over the five years of CPC+, PBIP-eligible practices (those not participating in SSP) increased their total PBIP scores, which represented the proportion of maximum PBIPs they were able to retain. In PY 5, the median PBIP score was 79 percent—13 percentage points higher than the baseline score of 66 percent in PY 1. Median utilization scores—only 34 percent in PY 1—showed striking improvement over time, reaching 84 percent in PY 5. Median quality scores, which started from a much higher baseline of 74 percent in PY 1, reached 88 percent in PY 5. (Laird et al. 2023a, Appendix 3.F contains a detailed description of PBIP trends.)

Independent practices achieved higher PBIP scores than system-owned practices, driven by a substantial, persistent gap in utilization performance. Both system-based and independent practices improved their overall PBIP scores over time, but a gap persisted between the two types of practices, with independent practices outperforming system-owned practices in every year of CPC+. On quality, the gap between system-owned and independent practices was often narrow and sometimes statistically indiscernible. In contrast, a much larger utilization gap persisted throughout the five program years (with independent practices outperforming system-owned practices by 17 percentage points in PY 1 and by 20 percentage points in PY 5), as both types of practices improved their utilization performance. In interviews, some practices, payer partners, and regional conveners noted two factors that might account for this performance gap. First, because systems continue to rely on hospital use to drive organizational earnings, practices owned by systems may be more likely than physician-owned practices to face weak or conflicting incentives to contain hospital utilization. Second, systems are more likely to have layers of internal bureaucracy that practices must navigate before implementing concrete steps to respond to payment incentives.

B. Alternative to FFS payments

For Track 2 practices, CMS and payer partners agreed to use an alternative to the historically common FFS payment approach (“alternative payments”).

B.1. CMS’s hybrid payment approach

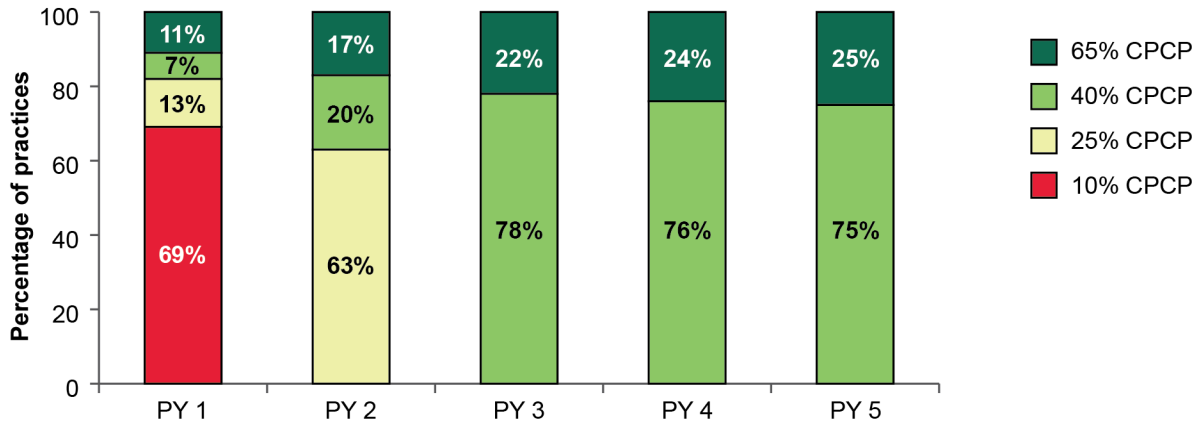
In CMS’s alternative payment approach for Track 2 practices (called the “hybrid payment approach”), CMS calculated each practice’s average Medicare PBPM payments for selected evaluation and management (E&M) services for the 24-month period before CPC+ started. Then, it paid the practice a

proportion of that amount prospectively on a quarterly basis, in the form of a Comprehensive Primary Care Payment (CPCP). Starting in PY 3, Track 2 practices could elect to have either 40 or 65 percent of their payments paid prospectively via the CPCP.[22] CMS correspondingly reduced FFS payments for those E&M services by that chosen proportion (together with the CPCP, this is known as the "hybrid payment").

Over the course of CPC+, most Track 2 practices continued to elect the lowest CPCP option available to them, but the proportion of practices choosing the highest CPCP option more than doubled over the course of CPC+. As the menu of CPCP options offered to Track 2 practices narrowed over time, the proportion of practices choosing the minimum CPCP option available to them (40 percent CPCP) held largely steady over the last three years of the model, at around three-quarters of all Track 2 practices (Figure 3.8). Still, a broader look across all five years of the model reveals that the proportion of practices choosing the maximum CPCP level of 65 percent more than doubled from 11 percent in PY 1 to 25 percent in PY 5. Although this still represents a limited portion of Track 2 practices, the trend suggests that at least some Track 2 practices' early experiences with CPCPs were favorable enough to lead them to seek more of a transition away from FFS as time progressed.

Figure 3.8. Percentage of Track 2 practices electing each CPCP election available, all five program years

Throughout CPC+, most Track 2 practices continued electing the minimum CPCP options available to them. However, the proportion of practices electing the maximum CPCP of 65% more than doubled from PY 1 to the later years of CPC+.



Source: Mathematica's analysis of CPC+ portal data for all five program years submitted by practices on their CPCP elections.

Notes: N = 1,265 Track 2 practices for which CPCP election data were available for all five program years.

CPCP = Comprehensive Primary Care Payment; PY = Program Year.

[22] In PY 1, practices could also elect a 10 or 25 percent CPCP; in PY 2, they could also elect a 25 percent CPCP (but no longer had a 10 percent option). This planned increase in the minimum CPCP level over the first three program years was designed to enable practices with less experience in alternative payment arrangements to adjust gradually to CMS's hybrid payment approach.

B.2. Alternative payment approaches used by payer partners

With more than four in five payer partners opting not to provide alternative payments throughout CPC+, little progress was made toward CMS's goal that CPC+ payers take an aligned approach in moving Track 2 payment away from FFS. At the start of CPC+, CMS had set a goal for all payer partners to join CMS in providing alternative payments to Track 2 practices, and for all alternative payment approaches to be launched no later than the start of PY 2. However, by the end of CPC+, only 9 of the 47 payer partners (19 percent) responding to the PY 5 Payer Survey reported using an alternative payment approach.[23] Eight of those nine payer partners had used the same alternative payment approach in all previous years of CPC+. One payer partner launched a new alternative payment model in PY 5, closely modeled on CMS's hybrid payment model, but discontinued this model when CPC+ ended.

Most of the payer partners providing alternative payments to CPC+ practices simply continued using their longstanding capitation arrangements that pre-dated CPC+. All nine payer partners providing alternative payments reported using full or partial primary care capitation as their payment approach. Six of these nine payers noted that their capitation contracts with primary care practices had been in place long before CPC+. As a result, these payers neither differentiated between Track 1 and Track 2 practices nor geared their alternative payment approaches specifically toward CPC+ practices.

Alternative payment pilot programs failed to gain traction. In early PY 2, four payer partners launched pilot programs to test new alternative payment arrangements with a few practices. These payers initially planned to expand the pilots into full programs widely offered to CPC+ practices, once they had resolved any issues that surfaced in the pilot phase. However, none of the four payers ultimately did so, in large part because most of their contracted practices expressed little or no interest in moving toward new payment arrangements that required taking on more risk. (In addition, one of the four payers, which operated in multiple states, noted the challenges of ensuring that its new partially capitated model satisfied the state regulatory requirements in all the states where the model might be launched.) Instead, all four payers kept their small alternative payment programs in place for the few practices that welcomed those payment arrangements.

The payer partners that opted not to implement alternative payments at all cited two key barriers: (1) the investment required to upgrade their incompatible data systems and (2) the lack of interest from practices. By the end of CPC+, most payer partners had not attempted to launch any alternative payment approach—even a small-scale pilot test—at any point during the model. Over multiple interview rounds throughout CPC+, several payers cited their existing payment data systems, which had been designed only to handle FFS payments, as the key barrier to launching alternative payment models. According to these payers, upgrading to systems that could handle prospective payments accurately and seamlessly would have been very costly. Payers noted that such investments likely would have paid off only if a large number of practices had agreed to participate in the new alternative payment models. However, like the four payers that launched alternative payment pilots, most of the payer partners that never attempted to implement alternative payments at all reported that most of their contracted practices showed little or no enthusiasm about taking on more risk-based payment arrangements. (Indeed, some deep-dive Track 2 practices confirmed they were reluctant to take

[23] Because the number of payer partners responding to the CPC+ Payer Survey served as the denominator for calculating the percentage of payer partners providing alternative payments in each year, year-to-year fluctuations in this number of survey respondents led to slight fluctuations from one annual report to the next in the percentage of payer partners providing alternative payments. However, the numerator (the actual number of payer partners reporting that they provided alternative payments) remained unchanged at eight from PY 1 through PY 4, indicating no change in payer partners' use of alternative payment approaches in the first four years of CPC+. In PY 5, one payer partner launched a new alternative payment approach, increasing the total number of payer partners providing alternative payments to nine.

on additional capitation risk from other payers, given the risk they had already assumed under CMS's hybrid payment model. In addition, several Track 1 practices described feeling unprepared to take on risk-sharing arrangements with payers, despite recognizing that payment trends are inevitably moving in that direction.)

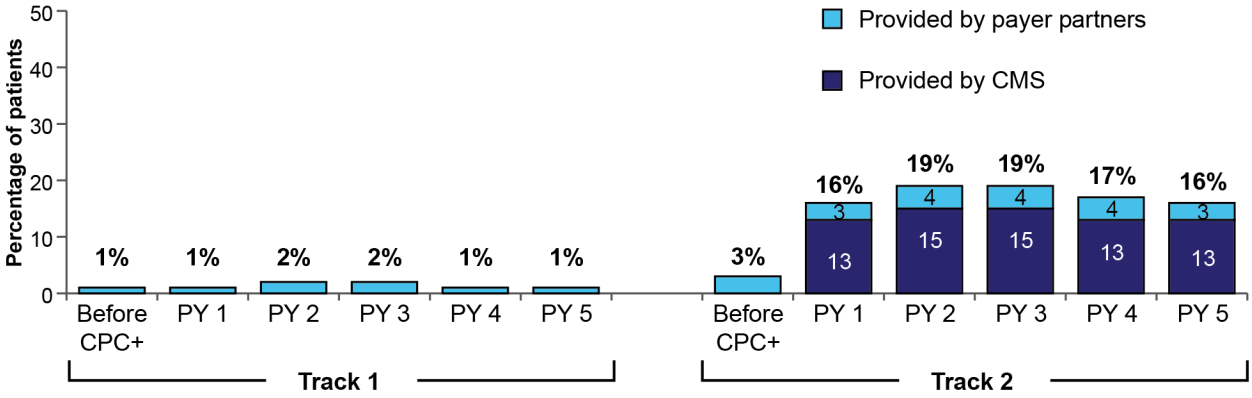
B.3. Number of patients covered by CPC+ alternative payments

By the end of CPC+, only about one in six patients in Track 2 practices were covered by payers with alternative payment approaches. Nearly 80 percent of these patients were Medicare FFS beneficiaries attributed by CMS, rather than patients covered by payer partners (Figure 3.9). Before the start of CPC+, only 3 percent of patients in the practices that eventually joined Track 2 of CPC+ were covered by alternative payment arrangements—all of them through longstanding capitation contracts between the practices and non-CMS payers. In PY 1, the proportion of Track 2 patients covered by alternative payments jumped to 16 percent—the direct result of CMS launching its hybrid payment approach. However, this proportion showed no sustained or substantial growth during the remaining years of the model.

Given that a major aim of alternative payments is to offer practices the flexibility to deliver innovative and typically nonbillable services that might benefit patients, these findings suggest that the limited number of dollars shifting from FFS to alternative payments served as an overall constraint on Track 2 practices' ability to implement nonbillable services on a large scale. In addition, according to the theory of action CMS used in designing the CPC+ model, a critical mass of payers is needed to collectively support a new payment approach before practices would be sufficiently incentivized to make fundamental changes in how they delivered care. If that theory holds true, then having so few patients covered by prospective, population-based payments would have hindered any significant movement away from a volume-based mindset and patterns of care delivery.

Figure 3.9. Approximate percentage of all patients served by CPC+ practices for which CMS or payer partners provided alternative to FFS payments, from before CPC+ through PY 5

The proportion of patients covered by alternative payments, even in Track 2 practices, remained small and did not show a sustained increase over the course of CPC+. The reach of alternative payments fell far short of CMS's expectations for moving Track 2 practices away from FFS.



Source: Mathematica's analysis of data from the CPC+ Payer Survey, payment data provided by CMS, and practice-reported financial data submitted to CMS for all program years.

Note: N = 1,103 Track 1 practices and 1,316 Track 2 practices that were participating at the end of PY 5. Track 1 practices reported serving 6,023,509 patients, and Track 2 practices reported serving 8,643,080 patients in PY 5.

FFS = fee-for-service; PY = Program Year.

B.4. Progress in using alternative payments to implement alternative visits in Track 2 practices

Throughout CPC+, many deep-dive practices in Track 2 struggled with how best to use alternative payments to implement alternative visits.[24] Among the 14 Track 2 practices interviewed about CPC+ payment at the end of PY 5, perspectives on CMS's hybrid payment model and the broader movement away from FFS varied widely, as they did in the three earlier rounds of deep-dive interviews. By the end of CPC+, 2 of the 14 practices continued to reject the premise that practices should have to move away from FFS at all, even though that premise was a central element of Track 2 design. At the opposite end of the spectrum, 4 of the 14 practices embraced the opportunity to move toward more population-based payment and to expand alternatives to traditional office visits. These practices, most of which elected higher CPCP levels from the start of CPC+, described participation in the hybrid payment model as a success for both practice finances and patient care.

More than half of the Track 2 practices we interviewed about payment (8 of the 14 practices) described their alternative payment experiences as falling between these two extremes. This group of practices accepted the premise that they should move away from FFS but struggled throughout CPC+ with key implementation challenges, including the lack of provider buy-in and various logistical concerns (such as how to adapt existing budgeting and payment processing systems to handle prospective payments). Several of these practices reported that their challenges eased somewhat over time, enabling them to make progress—albeit limited, halting progress—in implementing alternative visits. Overall, this group's assessments of alternative payments and alternative visits became slightly to moderately more favorable by the end of CPC+.

As described in the fourth annual report, many practices in both CPC+ tracks rolled out telehealth broadly in PY 4 as a response to the COVID-19 pandemic (Swankoski et al. 2022). However, because this widespread expansion was made possible only by broad coverage expansions and payment rate increases for telehealth, it was largely a FFS expansion. During the pandemic, practices were able to bill payers for nearly all of the telehealth services they provided, typically at rates that were on par with office visits. Therefore, this pandemic-induced telehealth growth would not be considered a move away from FFS.

[24] CMS defined alternative visits as visits provided in settings other than traditional, one-on-one, office-based visits. Key examples include telehealth visits, home visits, and group visits.

By the end of CPC+, about two-thirds of deep-dive Track 2 practices said they believed CMS's hybrid payment approach had helped their practices move away from FFS. Despite the persistent challenges that many practices faced in using CMS's hybrid payments to implement alternative visits, 9 of the 14 Track 2 practices credited this payment model with helping their practices transition at least partially from volume-based to value-based care by the end of CPC+. After the model ended, seven of those nine practices moved on to participate in CMS's PCF model, and the remaining two practices joined CMS's Global and Professional Direct Contracting model. These activities seem consistent with a continued transition away from FFS.

However, also joining PCF were some of the deep-dive Track 2 practices that reported—after five years of receiving hybrid payments—that this payment model had not helped them move away from FFS. Along with Track 1 practices that joined PCF with little or no previous exposure to alternative payments, these Track 2 practices, still in a self-described "FFS mindset," are likely to face substantial challenges adapting to the PCF payment model, which further emphasizes the shift from FFS to alternative payments (Conwell et al. 2022).

C. Sustainability of funding for practice transformation beyond CPC+

To gain insight into practices' perspectives on funding for practice transformation beyond CPC+, we asked the 20 deep-dive practices interviewed about CPC+ payments at the end of PY 5 in-depth questions about:

- The extent to which they expected to maintain their CPC+ practice changes after CPC+ ended
- The major funding sources they planned to use to support those changes after CPC+ ended
- Key financial concerns they had about those post-CPC+ funding sources

To establish a baseline for measuring post-CPC+ changes in funding for practice transformation, we first asked practices to confirm the key practice changes that they had funded, at least in part, with CPC+ payments. Among the 20 deep-dive practices we interviewed:

- All 20 practices reported using a large share of their CPC+ funding to pay for care management services throughout the model.[25] This finding was consistent with the views widely expressed by practices that expanding care management services was the practice change most beneficial to patient care, and therefore the most impactful use of CPC+ funds.
- Many practices (15 of the 20) also used a portion of their CPC+ funding to launch or expand behavioral health services.[26] However, care management accounted for a more sizeable portion of practices' spending than behavioral health.[27]

[25] Compensation for care managers accounted for most of these expenses.

[26] Compensation for behavioral health providers accounted for most of these expenses.

[27] Among the 15 deep-dive practices we interviewed that used CPC+ funding to pay for both care management and behavioral health services, care management staff outnumbered behavioral health staff by a median ratio of 5:1 full-time equivalents (FTEs).

- In addition, all deep-dive practices used a portion of their CPC+ payments to pay for a variety of other services. Examples of these other CPC+-funded services, which varied widely across practices, included data analysis; implementation of telehealth and other alternatives to traditional office visits; expanded office hours; and management and administrative services related to CPC+.

C.1. Practices' plans for sustaining funding for practice transformation beyond CPC+

After the end of CPC+, most deep-dive practices initially planned to maintain the same level of funding for care management, behavioral health, and other services that they had provided under CPC+. Among the 20 deep-dive practices, which all used a large portion of their CPC+ payments to support care management services, 17 practices (85 percent) planned to maintain funding for those services at about the same level after CPC+ ended. Of the 15 practices that used CPC+ funds to help pay for behavioral health services, 12 (80 percent) planned to maintain those services at the same level after CPC+. Most practices also planned to maintain funding for other key services they had supported with CPC+ funds (such as data analysis and expanded office hours) at the same level after CPC+ ended.

However, practices were not confident they would be able to maintain the same funding level beyond the first year, given that future funding sources do not offer large, stable care management fees that CMS paid in CPC+. This uncertainty stemmed from the changing nature of the major funding sources that practices expected to draw upon after CPC+. Compared with the payments CMS had provided in CPC+, these other funding sources make a far smaller proportion of payments available in the form of large, stable, and guaranteed care management fees, and a correspondingly higher proportion that is subject to risk based on practice performance. As a result, practices questioned whether these future funding streams would be large or stable enough to hire and retain all the experienced staff needed to sustain the care delivery changes they had made under CPC+.

In addition, a few practices noted that the cash reserves they had on hand at the end of CPC+ should be sufficient to compensate for potential shortfalls in other funding streams, such as VBP earnings, at least for the first year after CPC+. These practices expected to draw on their cash reserves, if needed, to maintain staffing stability in the short term. However, these practices expected their cash reserves to be exhausted if funding shortfalls persisted, which would force them to consider cutting back on key staff and services that had been added under CPC+.

C.2. Practices' expected sources of funding after CPC+

Most deep-dive practices reported they expected to rely on two key post-CPC+ funding sources: the VBPs sponsored by non-CMS payers and the PCF model sponsored by CMS. Eighteen of the 20 deep-dive practices (90 percent) cited VBPs sponsored by private or public payers as a key post-CPC+ funding source. In addition, all 20 deep-dive practices interviewed about payment applied for and were accepted into the PCF model. Fifteen of these 20 practices (75 percent) ultimately decided to participate in PCF.

Aside from PCF and non-CMS payers' VBPs, no other funding source was cited nearly as often by practices. Seven of the 20 practices (35 percent) expected participation in the Medicare Shared Savings Program (SSP) to provide funding for transforming care delivery. Two practices chose to participate in CMS's Global and Professional Direct Contracting model instead of PCF, and two practices each reported plans to increase their revenues from Medicare FFS billing by using psychotherapy billing codes and Chronic Care Management billing codes for the first time.

In contrast to PCF, which is a new CMS-sponsored post-CPC+ funding stream, VBPs sponsored by non-CMS payers largely represent an ongoing source of funds for practices. CPC+ practices that joined PCF were not eligible to begin receiving PCF payment supports until 2022, after they had stopped receiving CPC+ payments. In contrast, VBP payments earned by participating in non-CMS payers' programs largely represent a continuing funding stream for practices. Indeed, during CPC+, most payer partners used their existing VBPs as their CPC+ payment model, and most reported plans to continue offering the same VBPs after CPC+. Even though care management fees from most other payers were typically small compared with those CMS had provided under CPC+, these payments still provide a key ongoing source of funding to support practice transformation and to help stabilize practice finances in the post-CPC+ payment environment.

C.3. Key challenges to sustaining funding for practice transformation

For the deep-dive practices participating in PCF, the main post-CPC+ financial concern was a reduction in the overall level of payment because of a lack of sizable care management fees and increased exposure to risk. The 15 deep-dive practices that decided to join PCF said they viewed the model as a major funding source for sustaining CPC+ practice changes. However, many of these practices also expected their financial challenges to intensify under PCF. Nine of the 15 practices (60 percent) expressed concern that their overall level of payment would decrease under PCF compared with CPC+. These concerns stemmed primarily from the lack of sizable care management fees and the increased exposure to risk in the PCF model.

Five of the 15 PCF practices (33 percent) cited the lack of care management fees as a key reason for expecting the overall level of payment to decline under PCF. Care management fees have several attributes that make them particularly valuable to practices' financial stability and their ability to hire and retain staff: the payments are large, prospectively paid, and typically guaranteed; they are also enhanced payments (made in addition to FFS) rather than alternative payments (made in lieu of FFS).

In addition, 7 of the 15 practices that were joining PCF (47 percent) reported feeling unprepared for the higher level of risk in the PCF model. Relative to CPC+, PCF represents a further shift from volume-based payment toward prospective, population-based payment—a shift that requires practices to assume more risk. Although practices generally recognized that this increased exposure to risk is an intrinsic feature of the PCF model, many still felt unprepared for it. They expressed concern that that their finances might not fare well under the model and that their progress toward achieving transformation goals would be disrupted.

Besides these broad, general concerns about assuming more risk, one specific aspect of the PCF model that puts a portion of payment at risk is the "leakage adjustment," which reduces a practice's quarterly population-based payment to account for the practice's attributed patients receiving primary care services outside the PCF practice site. The model assesses the penalty even when the site where the patient receives care belongs to the same system or organization as the PCF practice site to which the patient is attributed. (CMS structured the leakage adjustment to keep the PCF payment model revenue-neutral relative to FFS.) Only 2 of the 15 PCF practices voiced explicit concerns about the leakage adjustment, but our analysis suggests that multiple other practices in our interview sample likely would be subject to these leakage adjustments, given that they allow patients to receive primary care in other settings within the same system. Practices that failed to account accurately for leakage adjustments are likely to have lower PCF revenues available for practice transformation and other uses than they initially projected.

PCF practices also expressed concerns about the substantial impact of HCC risk scores on payment amounts. In the PCF model, CMS calculates an average HCC score across each practice's entire Medicare FFS patient panel, then uses that average score to place the practice in one of four risk tiers that, in turn, determines the PBPM payment amount to be applied to each of the practice's attributed Medicare FFS patients. Several practices joining PCF said they would have felt more comfortable with the payment amount being tied to each patient's individual HCC score—the approach that CMS had used in CPC+. Specifically, these practices expressed concern that an average HCC score that barely missed qualifying for a higher risk tier would result in much lower total PCF Population-Based Payments, which might deal a serious blow to overall practice finances.

Another issue that several practices raised about patient risk scores was the concern that potential gaps and shortcomings in the way their own staff conducted HCC coding might lead to their patients' health risks not being fully captured, which might result in the practices being placed in a lower risk tier and receiving lower Population-Based Payments than they would with full, accurate coding. (Practices cited accurate HCC coding as a priority and a challenge across all the models in which they participated, but PCF's aforementioned use of risk tiers at the patient-panel level caused practices additional concern, since incomplete coding that led to a practice barely missing out on a higher risk tier would result in the practice receiving lower payments for all their attributed beneficiaries, not just the ones with incompletely coded HCC scores.) These practices emphasized the need to educate and incentivize their staff about the impact of coding on the practice's financial well-being.

Concerns about other post-CPC+ funding sources largely mirrored the concerns raised about the PCF payment model. The broader financial challenges that practices anticipated facing from their other post-CPC+ funding sources were largely the same as the challenges they expected with regard to PCF: (1) potential declines in the overall level of funding support for practice transformation, given the lack of sizable care management fees and (2) the increased exposure to risk in these payment models. In addition, several practices described some of their contracted payers as "free riders" that were opting not to make significant contributions to overall practice transformation. As a result, these practices described the total payment supports they have been receiving (and expect to receive going forward) from all non-CMS payers combined as sufficient to fund needed changes for only a fraction of their patient panels—far short of the number of patients who could benefit from the changes.

D. Key lessons identified by practices about CPC+ payments

In the final round of deep-dive payment interviews we conducted at the end of PY 5, we asked our sample of 20 practices to reflect on the key lessons they had learned with respect to CPC+ payments. We posed these questions to interview respondents in an open-ended format, without presenting any response categories or otherwise prompting them. This approach enabled us to identify the key lessons that were foremost or "top of mind" in practices' experiences with CPC+ payments.

D.1. What practices wish they had understood earlier in CPC+

Practices wished they had better understood from the start of CPC+ the payment models payer partners intended to use in CPC+. Seven of the 20 practices (35 percent) noted that they began participating in PY 1 under the assumption that all their contracted payers would be making CPC+-specific payment supports. These practices made their initial budget and staffing projections based on those assumptions. When practices discovered that most payer partners were simply using their existing VBPs (in which the practices already participated) as their CPC+ payment models, they realized that the

total funding available to support practice changes was lower than expected, and they had to scale back budget projections and planned staffing expansions.

Some practices also wished they had been aware of how much organizational change needed to take place before they could reap tangible benefits from CPC+ funding. Five of the 20 practices (25 percent) observed that two types of organizational change needed to happen before their CPC+ funding could yield improvements in patient care: (1) substantial infrastructure and staffing investment and (2) culture change. These practices also noted that both these types of organizational change took substantially more time and effort than they had expected at the start of the model. As a result, most of these practices said it was only in the later years of the model that they began to see a meaningful payoff from their CPC+ funding. Two of these practices also reported that, in retrospect, they believed five years to be too short a timeline for an ambitious practice transformation model like CPC+.

D.2. What practices wish they had done differently in CPC+

Half of the Track 1 practices interviewed would have applied for Track 2 instead, to qualify for higher payments to better support practice change. Among our small sample of six Track 1 practices, three said that, in retrospect, they should have applied for Track 2 instead of Track 1, because the higher Medicare FFS care management fees in Track 2 (nearly twice the PBPM amount, on average, as Track 1) would have enabled them to implement more of the care delivery changes they believed were essential. These three practices also expressed a wish that CPC+ had been designed to enable practices to move from one track to the other once practices had gained some experience in the model.

Some practices wished they had trained their staff to conduct more thorough HCC coding, to qualify for higher risk-adjusted payments. Four of the 20 practices (20 percent) said they wish they had better educated their practitioners and other clinic staff on the importance of capturing their patients' true health risks by conducting thorough and accurate HCC coding. This view reflects a strong, persistent perception by some practices that their own patients tended to be sicker than the average patient panel, but shortcomings in their own HCC coding were preventing them from receiving full financial credit for those higher health risks.

D.3. What practices wish CMS had done differently in CPC+

Some practices wished CMS had used a broader, more flexible definition of a practice. When asked what CMS could have done differently to help improve the practice's overall experience with CPC+ payments, 6 of the 20 practices (30 percent) said they would have found it helpful if CMS had not required each separate brick-and-mortar site to participate as a separate practice. These practices noted that they normally conducted their budgeting, contracting, and other business operations at a broader level (typically at the Taxpayer Identification Number level). Because CPC+'s site-specific practice definition meant these practices had to implement a new, separate set of financial and administrative record-keeping processes, it imposed considerable burden on both the individual practice sites and the larger organizations to which they belonged.

Some practices also wished CMS had streamlined annual financial reporting requirements from the start of CPC+. Five of the 20 practices (25 percent) characterized PY 1 financial reporting requirements as very burdensome, confusing, and resource-intensive. They recognized and appreciated that CMS substantially reduced reporting requirements from PY 2 on, but would have found it helpful if the streamlined requirements had been in place from the start of the model.

A few practices would have found it helpful to receive clearer guidance from CMS at the start of CPC+ on allowable uses of CPC+ payments. Three of the 20 practices described spending considerable time and effort in PY 1 trying to confirm whether CMS allowed certain proposed uses of care management fees. Two of these practices said that a detailed list of allowed and non-allowed uses of care management fees would have been a useful resource.

Practices' perspectives on PBIPs varied widely and depended largely on the practice's own PBIP performance. Among the 11 PBIP practices we interviewed, two high-performing practices (which were able to retain all or nearly all of their maximum PBIP payments from the first year of their PBIP participation) suggested that PBIP performance benchmarks be set higher, to incentivize continuous improvement. They also proposed tweaking the model to increase the proportion of PBIPs relative to guaranteed care management fees—thus making more of the total CPC+ payment dependent on performance—to boost practice incentives to improve. In contrast, two other PBIP practices that struggled to retain a large portion of their PBIP payments said they would have found lower PBIP benchmarks and clearer descriptions of PBIP methodology to be helpful.

D.4. What practices wish payer partners had done differently in CPC+

More than half of the interviewed practices said that if payer partners had provided larger, CPC+-specific payments, that change would have made the most positive impact on their own experiences with CPC+ payments. Eleven of the 20 practices (55 percent) described payment supports from at least some of their contracted CPC+ payer partners as inadequate to support care delivery changes and expressed frustration that most payer partners provided little or no funding specifically for practices participating in CPC+. This finding is consistent with feedback that practices provided about payer partners' payments in every round of the deep-dive interviews since PY 1.

> **"To us, CPC+ felt like it was just a single-payer [initiative] from CMS…How can you call it 'multipayer' when our other payers hardly stepped up at all...in delivering extra financial support?"**
>
> ***— Independent deep-dive practice***

Some practices cited the need for better alignment among payer partners' payment models and performance metrics. Five of the 20 practices (25 percent) noted that the plethora of different payment models and performance metrics they participated in both within and outside CPC+ significantly increased the burden they faced in responding to differing incentives. These practices wished CPC+ payer partners had better aligned their payment models and performance metrics with those of CMS and other payers, but they expressed little optimism that closer alignment could be achieved in future multipayer models.

Some practices called for more transparency in commercial payer partners' performance-based payment models. Four of the 20 practices (20 percent) reported that the commercial payers they contracted with considered their payment models proprietary and typically did not share the exact payment formulas or calculations used in determining practices' performance payments. As a result, practices had no way of independently verifying those payers' calculations. These practices cited the need for greater transparency in payment models that adjust payments based on performance.

3.2.2. Data feedback

A. Overview of data feedback to CPC+ practices

Since the start of CPC+, CMS has provided practices with data feedback to guide their decision making, and payer partners committed to sharing service utilization and/or total cost-of-care data with practices at least quarterly**.** CPC+ payer partners in each region agreed to support an existing common approach for sharing claims data with practices, or develop and implement one by PY2; these data aggregation efforts were intended to reduce the burden of accessing and reconciling claims data from multiple payers. The goal of these efforts was to help practices better manage population health for a larger proportion of their patient panel using more streamlined, actionable data.

By the end of CPC+, CMS was providing data on Medicare FFS beneficiaries in all regions through an interactive web-based data feedback tool, nearly all payer partners were providing data feedback with about two-thirds (65 percent) providing these data through an interactive tool, and payer partners in 8 of 14 regions were providing aggregated data to practices. Payer partners in four of these eight regions began aggregating data during CPC+, and payer partners in the other four regions built upon aggregation efforts they began before CPC+ (payer partners in three of these regions developed aggregated data reports while participating in CPC Classic). After CPC+ ended, payer partners in four of the eight aggregating regions continued to offer aggregated tools to practices in their region. Payer partners in two other regions that had not aggregated data during CPC+ pursued alternative pathways to offering aggregated data after CPC+ ended, such as state health information exchanges.

In this section, we describe the data feedback CMS and payer partners provided to practices throughout CPC+ and how data aggregation efforts progressed throughout the model. In addition, we discuss lessons learned from CPC+ data feedback efforts and payer partners' plans for sustaining data aggregation after CPC+ ended.[28]

B. What data feedback did CMS and payer partners provide to CPC+ practices?

CMS and nearly all payer partners provided CPC+ practices with some form of data feedback on at least a quarterly basis throughout CPC+: either an individual payer's unaggregated report or a report that contained aggregated data from CMS and several payer partners from a given region. On average, 95 percent of payer partners provided data feedback to practices throughout CPC+. Nearly all data that payer partners provided to practices were calculated at the practice level (95 percent); many payer partners also provided data calculated at the patient, practitioner, and system levels (85, 79, and 67 percent, respectively). By the last year of CPC+, all payer partners that reported providing data to CPC+ practices noted they were also providing data to their non-CPC+ practices that were at least as comprehensive as their CPC+ reports.

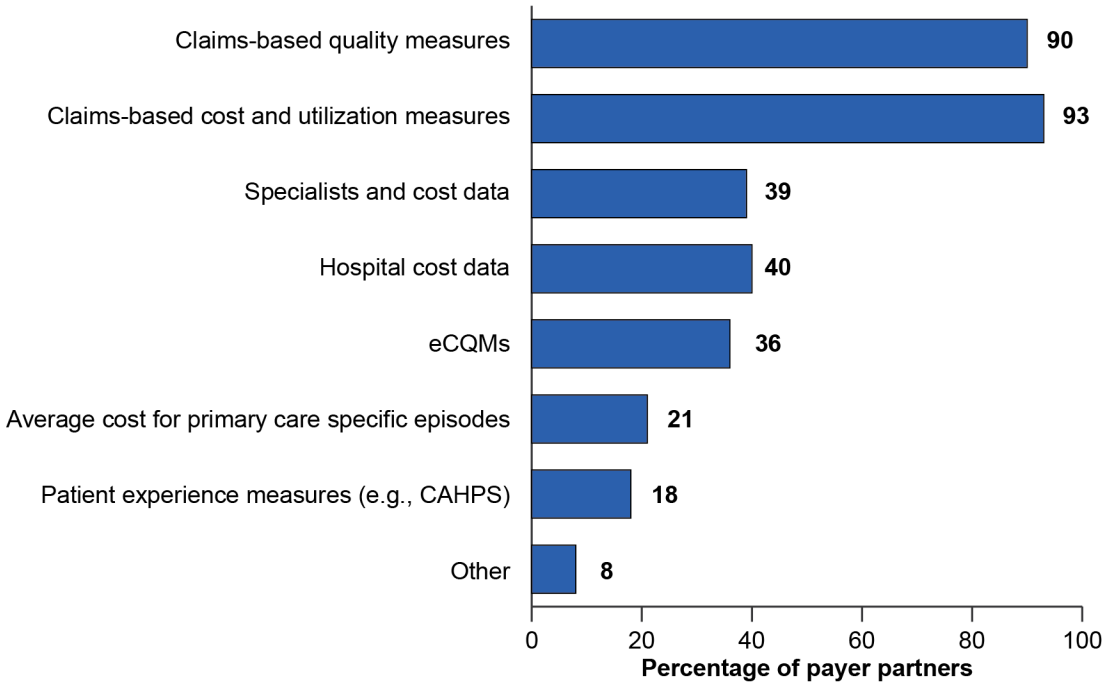
Throughout CPC+, payer partners most commonly provided claims-based cost and utilization data and quality measures, and about two-thirds of payer partners consistently provided these data to practices through an interactive data portal. Beyond these two types of measures, payer partners were

[28] Payers' reported plans for providing aggregated reports after CPC+ ended are based on data collected during PY 4, and verified with CMS at the end of the model period.

less likely to provide other measures such as specialist cost data or patient experience to practices; this has been fairly consistent since PY 2 (Figure 3.10).

Figure 3.10. Among payer partners providing data feedback, the weighted average that included types of data in their feedback reports and tools across PYs 2–5

The percentages of payer partners that included various types of data in feedback reports and tools have been fairly consistent between PY 2 (the first year we collected this information) and PY 5. The most commonly provided feedback remained claims-based quality and claims-based cost and utilization measures.



Source: Mathematica's analysis of data from the independent evaluation's PY 5 CPC+ Payer Survey and PY 5 practice-reported financial data submitted to CMS.

Notes: Individual values for each PY have been weighted based on the N of CPC+ Payer Survey respondents for that PY (60 payers in PY 1, 54 payers in PY 2, 53 payers in PY 3, 50 payers in PY 4, and 47 payers in PY 5). These values represent the averages of those weighted values.

Payer partners that reported "Other" indicated other types of data, such as engagement measures and pharmacy claims cost data.

This figure does not present data from the PY 1 CPC+ Payer Survey because there were significant changes in the wording of this question and the response options between the PY 1 survey and the PY 2–PY 5 surveys.

Between PYs 2 and 3, one payer partner stopped offering claims-based quality measures across several CPC+ regions, leading the percentage of payer partners reporting that they offered this measure to decrease from 90 to 79 percent. This percentage increased to 94 percent in PY 4, when the same payer partner began offering claims-based quality measures again.

CAHPS = Consumer Assessment of Healthcare Providers and Systems; eCQM = electronic clinical quality measure; PY = Program Year.

C. To what extent did payer partners aggregate data during CPC+?

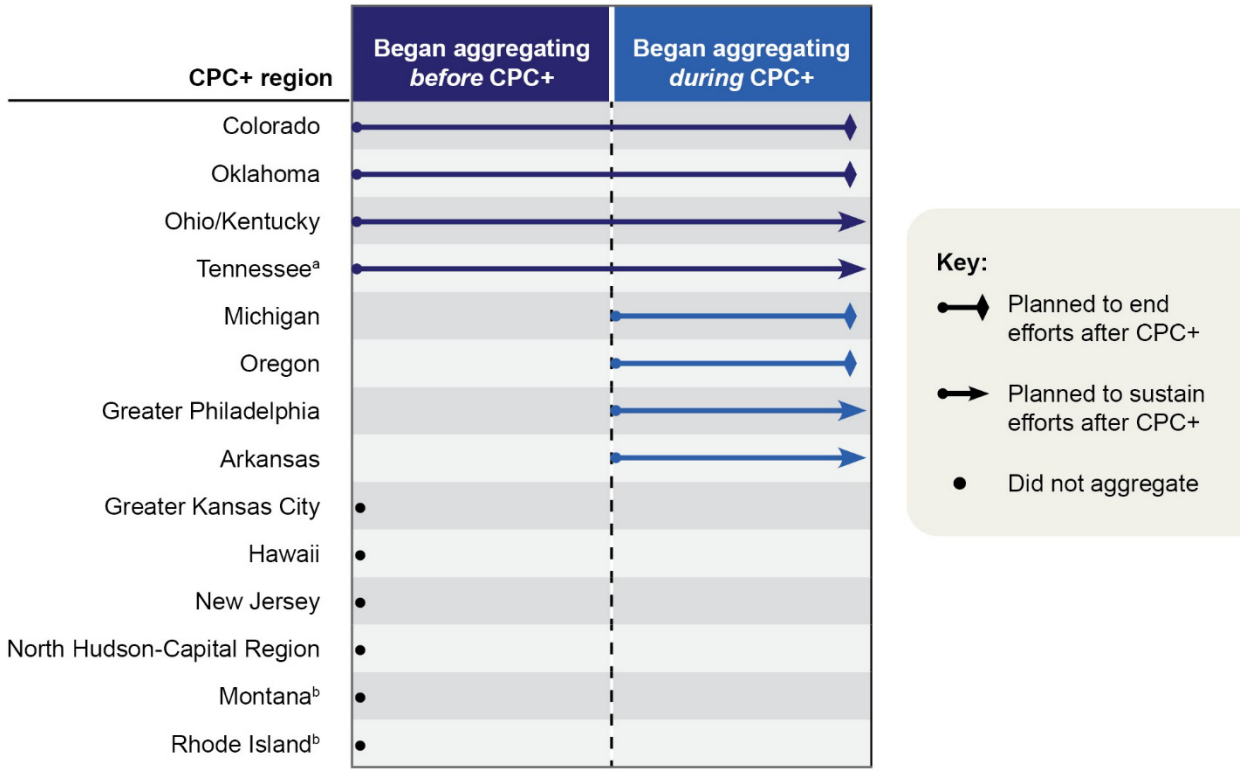
During CPC+, payer partners made modest progress developing and providing aggregated regional multipayer reports to practices; payer partners in 4 of 14 regions initiated efforts to aggregate their data with CMS's Medicare FFS data into one streamlined tool for CPC+ practices. Payer partners in three additional regions carried over their aggregation efforts from CPC Classic. One region that did not participate in CPC Classic provided aggregated reports before the start of CPC+ and continued to do so

throughout the model; these reports contained data from all payer partners in the region but were limited to their Medicaid lines of business (from the state and managed care organizations).[29] Of payers in these eight regions providing aggregated data to practices, four of them planned to sustain these efforts after CPC+ ends (Figure 3.11).

Payer partners in the other six regions did not achieve data aggregation by the end of CPC+. However, two of these six regions were still exploring providing aggregated reports to practices through their state health information exchange (HIE) after CPC+ ended. Regions that did not offer an aggregated tool during CPC+ described that a relatively low number of payer partners or lack of engagement from key payer partners posed a fundamental challenge to their efforts, particularly if another robust data initiative existed, such as a state HIE.

Figure 3.11. Status of data aggregation efforts by the end of CPC+

By the end of CPC+, eight regions sent practices aggregated reports. Four of these regions planned to continue to do so after CPC+ ended.



[a] Tennessee did not include Medicare FFS data in its aggregated reports because only Medicaid lines of business participated in CPC+ in this region; therefore, their aggregated reports only contained measures wholly relevant to a Medicaid population.

[b] At the end of CPC+, payers in Montana and Rhode Island were exploring data aggregation through a state information exchange.

[29] Tennessee did not include Medicare FFS data in its aggregated reports because only Medicaid lines of business participate in CPC+ in the region; therefore, their aggregated reports only contain measures wholly relevant to a Medicaid population. Tennessee also sends real-time admission, discharge, and transfer notifications to CPC+ practices and non-CPC+ practices participating in the state's patient-centered medical home program.

D. Sustainability of data aggregation efforts

Payers in four of the eight regions with data aggregation efforts will continue to work with their data aggregating organization after CPC+ ends.[30] One region will completely discontinue their efforts, but the other three have arranged or are exploring related efforts after CPC+ ends. Payers in two of these three regions plan to continue convening, but not aggregating data; payers in the other region will not continue providing an aggregated CPC+ tool but will continue working with a state information exchange. In interviews during PYs 4 and 5, payer partners, regional conveners, and data aggregating organizations described their challenges trying to develop an aggregated feedback tool and reflections on multipayer collaboration in this space.

A couple of regions perceived a challenge in sustaining their data aggregation efforts past the CMS-funded model period based on their understanding of CMS data destruction policies. CMS provided guidance about the use of Medicare FFS data (not payer partner data) after CPC+ ended, specifying that as long as data were integrated into the patient's medical record, providers could retain these data after CPC+. Since the aggregated data are not contained in medical records, two regions described this policy as a key barrier to maintaining the data past the end of CPC+ and subsequently their efforts ended. It is unclear if these regions explored opportunities to sustain their existing data aggregation infrastructure while destroying Medicare FFS data.

One payer partner suggested it might have been more efficient and sustainable for CMS to develop a single-platform infrastructure by offering payers the option of adding their data to CMS's data feedback tool. Given that CMS built a robust tool for Medicare FFS data—and that it was costly and time consuming for payers to aggregate data on their own—this payer felt a single platform approach could be a more practical option for future CMS models than each region developing an aggregated tool. The payer partner felt this might also have had a better chance of being sustained after the CPC+ model period ended.

E. Challenges regions experienced aggregating data during CPC+

Throughout CPC+, we conducted five rounds of interviews with aggregating organizations and regional conveners in all regions that expressed any active effort toward aggregating data at any point during CPC+. In this section, we describe the challenges reported by respondents in regions pursuing aggregation, including regions that reported success. Respondents in these regions reported challenges including technical issues developing aggregated tools, payer concerns regarding sharing proprietary cost information, low levels of practice engagement with aggregated tools, and variation in payer partner engagement with aggregation efforts.

Data aggregators in several regions reported technical challenges in producing aggregated data feedback, primarily related to lags in payer partners' claims data. Data aggregators in most regions described the challenges of producing actionable aggregated reports when they needed to align multiple payers' data submissions, each with its own lag in processing claims data. In PY 3, a couple of regions reduced the risk of data processing delays by proactively reaching out to payer partners about streamlining their timeline and data-validation processes. In PYs 3 and 4, data aggregators in a couple of regions also described challenges aggregating data across payer partners that use different data file formats. In PY 4, aggregators in a few regions sought to supplement claims data with more timely or richer data sources to improve the actionability of their tools, such as admission/discharge/transfer notifications or clinical data from HIEs.

[30] Tennessee will continue data aggregation among Medicaid MCOs (without Medicare FFS data).

Several payer partners and data aggregators noted that low levels of practice engagement and use of the aggregated tools were key challenges in all model years, and dipped even further during the COVID-19 pandemic. In PY 3, data aggregators and conveners in two regions described low practice engagement with aggregated tools and with trainings designed to teach practices how to use the tools. In PY 4, data aggregators in most regions reported that smaller practices faced greater challenges using aggregated data feedback tools due in part to limited resources and fewer staff to dedicate to using tools. To support practices' use of aggregated data, data aggregators in a few regions offered tailored support such as custom static reports and coaching. Practice engagement with aggregated tools dipped even further during the COVID-19 pandemic due to competing clinical demands, though COVID-19 only exacerbated the existing challenge. Engagement continued to decrease toward the end of the model.

During interviews in PYs 3–5, data aggregators in most regions noted that payer partners had concerns about sharing proprietary cost data. These respondents generally felt that these payer partners' antitrust concerns slowed progress aggregating data in the region. Two regions came up with solutions to address this challenge; they developed proxies to use in their tools instead of proprietary cost data, such as averages of the allowed payment amount.

During interviews conducted in PY 5, several conveners and payer partners reflected that challenges with multipayer collaboration hindered meaningful progress with data aggregation. These challenges included difficult payer partner dynamics, such as having a very dominant payer in the region or an atmosphere of peer competition, and a lack of a CMS-funded regional convener (as compared to CPC Classic) or turnover in conveners. One payer partner described a decrease in multipayer collaboration from CPC Classic to CPC+ (due to changes in CMS funding for convening) and felt this slowed progress in achieving data aggregation.

F. Key lessons learned from CPC+ data aggregation efforts

In the final round of interviews with payer partners, regional conveners, and CMS region leads, we asked our respondents to reflect on the key lessons they had learned with respect to their CPC+ experiences. We posed these questions to interview respondents in an open-ended format, did not ask specifically about data aggregation, and did not present any response categories or otherwise prompt them. This approach allowed us to identify the key lessons that were foremost or "top of mind" in respondents' experiences with CPC+ implementation.

Respondents from several regions noted it was critical to have an impartial convener to successfully facilitate data aggregation among payer partners. Respondents in a few regions reported they highly valued their conveners' efforts to encourage payer partners to share data, noting this role helped to align interests given the costs and time that aggregation efforts involve. Respondents in these regions felt that strong facilitation and communication can encourage continual progress, even in competitive markets. Conveners can also serve as a bridge between payer partners and practices to better understand what practice staff value in an aggregated tool, or to encourage practices to use aggregated reports. Conversely, several regions that were unable to aggregate data during CPC+ believed the absence of a convener was the primary factor that prevented them from making significant progress. In a couple of regions, the aggregation effort stalled once the convener stepped away, underscoring the importance of this role. Several respondents noted the importance of CMS's investment in the regional convener role, and were encouraged when CMS re-prioritized this role midway through and beyond CPC+ by supporting a separate convening contract.

It takes time to forge the payer partner collaborations and build the capacity for data aggregation. All of the regions that built on their CPC Classic efforts appreciated the benefit of this prior aggregation work. Similarly, a few other regions wished they had more time to work on their efforts beyond the CPC+ model period. In both types of regions, there was a common understanding of and appreciation for the incremental and challenging nature of this work.

While practices commonly require a high level of training to effectively use aggregated tools, a couple of regions noted that regional learning faculty can be leveraged to support practices in this work. While these respondents anticipated the need to train practices, the level of support required was higher than anticipated, and overall practice engagement was relatively low throughout CPC+. However, learning faculty could be one way to mitigate this challenge moving forward.

Closer look: Practices' use of the CMS data feedback tool throughout CPC+

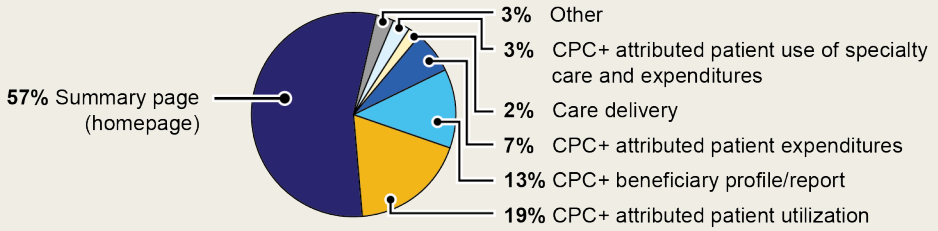
Throughout most of CPC+, CMS offered practices an interactive data feedback tool to view Medicare FFS expenditures, utilization, and care delivery data via an online portal. Practices were also able to drill down to patient-level data and produce customized reports.

In its first full year of use, 79 percent of practices accessed the data feedback tool at least once, but use steadily declined after that, to 59 percent in the last year of CPC+. Total page views among practice users fell markedly from about 320,500 page views in PY 3 to just over 120,500 in PY 5. (This decrease could be related to anticipation of CPC+ ending in PY 5.) In all years, more large and medium-sized practices used the interactive data feedback tool than small practices (65, 60, and 47 percent).*

The summary page was the most frequently viewed page because it was the default page when users accessed the tool (57 percent). The summary (home) page provides a snapshot of a practice's key performance indicators (such as total Medicare FFS expenditures, hospitalizations, and ED visits), relative to the averages for the practice's region and across CPC+, and trends from prior quarters (Figure 3.12).

**We defined these groups as: large practices (>5 primary care practitioners [PCPs]), medium practices (3–5 PCPs), and small practices (0–2 PCPs).*

Figure 3.12. Percentage of CMS data feedback tool page views by page type, of the total practice page views in PY 5



Source: CPC+ Data Feedback Tool Practice Monthly Usage Reports, January to December 2021.

Note: N = 127,717 page views. The summary page is the tool's default page, which users always access at least once during each session. "Other" includes patient demographics and home/quick tips pages. The care delivery page includes statistics on the percentage of: active patients empaneled, ED discharges with a follow-up visit within one week, empaneled patients who are risk-stratified, empaneled patients who are under care management, hospital discharges with a follow-up within 72 hours or two business days, and average number of Patient and Family Advisory Council meetings in the last two quarters.

3.2.3. Learning

A. Learning supports

In this section, we describe the learning supports CMS and payer partners provided to CPC+ practices, including how CMS's learning strategy evolved across the five years of the model. We first describe how the learning supports changed throughout CPC+. We then characterize how CPC+ practices used and perceived the usefulness of each learning support, and discuss lessons learned from implementing the supports. Finally, we describe the CPC+ learning system's role in helping practices implement CPC+ and prepare to sustain the changes practices made during CPC+ after the model ends.

A.1. Overview of learning supports

CMS planned, created, and funded a learning system to support CPC+ practices in changing care delivery. The learning system provided practices with detailed information and resources on the Comprehensive Primary Care Functions and care delivery requirements, facilitated peer learning among participating practices, and supported practices in their goal to improve quality, access, and efficiency of primary care.

Our evaluation focused primarily on the learning system funded by CMS and provided by its contractors because it was the main source of learning support for participating practices. CPC+ payer partners did not commit to providing CPC+ practices with learning support in their MOU with CMS, although most payer partners reported offering learning supports on their own in all model years (see text box).

CMS's learning supports

CMS contracted with several organizations to provide national- and regional-level learning support to CPC+ practices. The National Learning Team (NLT) led the national learning activities for CPC+ practices, such as hosting national webinars and disseminating information about CPC+ to practices through CPC+ Connect and the Implementation Guide. The Regional Learning Network (RLN) coordinated regional learning activities by overseeing the work of practice facilitators, who provided learning support to practices in their region, such as group learning events and tailored one-on-one support to individual practices (called "practice coaching"). In each program year, CMS tried to standardize learning supports across regions by creating minimum requirements for learning contractors and practice facilitators. A separate implementation contractor supported CMS's work across a variety of activities, including learning activities, such as maintaining a help desk for practices, and other activities including onboarding practices and assisting with calculation of CPC+ payments.

CMS provided practices with the same two key types of learning supports in all five years of CPC+: (1) durable learning products and (2) tailored support (Table 3.1). Durable products (such as webinar recordings or the CPC+ Implementation Guide) were available on demand, meaning CPC+ practices could access them at any time during CPC+. Durable products were typically created to apply to many or all CPC+ practices. In contrast, tailored supports (such as practice coaching or regional learning sessions) were highly adapted to the needs of a practice or group of practices participating in the learning activity, and typically happened in real time. Tailored supports were generally more resource-intensive to deliver.

Table 3.1. Description of the CPC+ learning supports and key changes over time

Across all five program years, CMS provided to CPC+ practices four types of durable learning products and five tailored supports. In PY 3, Health IT Affinity Groups were discontinued. CMS added podcasts in PY 4.

Learning support	Changes
Durable learning products	
CPC+ Connect – Web-based collaboration platform for practices that was moderated by CMS learning contractors	PY 4: CMS added requirements for practice facilitators to (1) generate new weekly posts for regional groups and (2) respond to practices' posts within 24 hours.
CPC+ Implementation Guide – Comprehensive document detailing CPC+ care delivery and reporting requirements; included examples, recommendations, and references	PY 1–5: CMS made minor changes to the Implementation Guide each year to streamline content.
Podcasts – Episodes published on CMS's YouTube channel, in which CPC+ practice staff described strategies for care transformation concepts	PY 3: 'CPC+ Tactics to Go' podcasts began.
Webinars – Virtual events hosted by the NLT for all CPC+ practices	PY 3–5: CMS decreased the number of webinars delivered to practices over time.
Tailored supports	
CPC+ Help Desk support – Point of contact for CPC+ practices to ask questions via phone or email	No major changes were made.
Practice coaching – Virtual or in-person interactions between practices and practice facilitators; practice facilitators provided one-on-one coaching with individual practices, and small group coaching sessions with multiple practices	CMS implemented new coaching requirements for practice facilitators each year: • PYs 1 and 2: CMS only required practice facilitators to visit priority practices. • PY 3: Rather than only priority practices, CMS required practice facilitators to offer every practice or system two visits per year, in person or virtually. • PY 4: CMS required practice facilitators to conduct multiple types of coaching and provided targets for each type of coaching and interaction: (1) quarterly coaching for the lowest-performing practices in their regions; (2) one-on-one coaching with the highest-performing 1 percent of practices in their regions; (3) small group coaching; and (4) any other type of coaching that practices needed or wanted. In response to COVID-19, these targets were eliminated, but practice facilitators were still encouraged to provide this coaching. • PY 5: practice facilitators continued these four types of coaching, without targets for the percentage of practices to receive coaching.
Regional Implementation Networking Groups (RINGs) – Virtual topic- or role-based groups led by practice facilitators in each region	• PY 2: RINGS were introduced for care managers and practice managers, to occur monthly or quarterly, depending on the region's preferences. • PY 3: RINGs became optional in each region and no longer focused exclusively on care managers and practice managers. • PY 4: CMS required practice facilitators in each region to host three RINGs quarterly. (In response to COVID-19, RINGs became optional.) • PY 5: RINGs remained optional.
Regional learning sessions – Full-day, in-person meetings hosted in each region twice yearly	• PY 1 to PY 3: practice facilitators were required to host two in-person learning sessions. • PY 4 (COVID-19-related change): learning sessions became virtual and optional.
Health IT Affinity groups – Virtual group meetings between practices and health IT vendors to discuss using health IT	• PY 3: CMS stopped offering Health IT Affinity Groups, due primarily to low attendance.

NLT = National Learning Team; PY = Program Year.

The learning supports that payer partners offered throughout CPC+

CMS was the primary source of learning support to practices throughout CPC+; however, most payer partners also provided some limited level of support or technical assistance to CPC+ practices throughout the model. In each year of the payer survey, over 80 percent of payer partners reported offering practice coaching or technical assistance to practices, including 84 percent of payer partners in PY 5. Among payer partners providing any learning support in the last two years of the model, over 80 percent of payer partners offered web-based group learning sessions and individualized practice coaching. Fewer payer partners offered in-person group learning sessions (50 percent of payer partners that offer any type of learning support). This was a change from the first three program years, in which in-person group learning sessions were offered more often than web-based group learning sessions. In general, payer partner learning supports focused on topics such as understanding how to access and use data feedback reports or improving processes and workflows like team-based care.

Across program years, practices responding to the CPC+ Practice Survey reported using the learning supports provided by payer partners less frequently than CMS's learning supports. About half of the practices reported receiving coaching on how to improve practice processes and workflows from payer partners (ranging from 49 percent to 56 percent from PY 2 to PY 5).

In the PY 2 through PY 5 payer surveys, a little more than half of payer partners reported that they coordinated their technical assistance for CPC+ practices with the CMS-sponsored CPC+ regional learning network. This was an increase from PY 1, in which about 40 percent of payer partners were coordinating with this regional learning network. This collaboration looked different in each region, but generally included payer breakout sessions as part of the broader learning sessions, attendance at learning contractor monthly meetings, and joint coaching activities. However, several practice facilitators reported that payer partner engagement declined in the last year of CPC+.

B. Key changes to the CMS CPC+ learning supports throughout CPC+

B.1. CMS's learning strategy

CMS consistently provided learning supports throughout CPC+, but adapted its learning strategy and the focus of the supports as practices' needs evolved and practices approached the end of the model. CMS's initial learning strategy in PYs 1 and 2 was to provide similar content across all regions and to monitor practices' performance on process measures. This primarily focused on practice activities for the five Comprehensive Primary Care Functions, such as care management processes or conducting quarterly Patient and Family Advisory Councils. PY 3 marked a significant change in strategy toward greater flexibility in adapting learning supports, an emphasis on peer learning, and helping practices improve outcomes (for example, by helping practices understand how to use their data feedback reports to improve hospital or ED utilization rates). In PY 4, CMS continued this shift in focus and began an effort to reach more practices by developing durable learning products (for example, podcasts on Behavioral Health Integration in CPC+), and discussing with practices how to sustain the changes they made for CPC+. These strategies were maintained in PY 5, as learning contractors continued to emphasize sustainability to prepare practices for the end of the model by increasing the focus on durable products and peer learning. CMS continued to allow practice facilitators greater flexibility to tailor learning to practices' needs and capacity for engagement.

B.2. Changes to the learning system

Each year, CMS planned changes to the learning supports to better respond to practice needs and align requirements with CMS's learning strategy, including new coaching requirements for practice facilitators each year (Table 3.3). Additionally, CMS made changes to the learning supports to better support practices during the COVID-19 pandemic.

B.2.a. Planned changes

About halfway through CPC+, CMS began incorporating input from practice facilitators when prioritizing which practices received coaching, newly required that *all* practices receive a minimum level of coaching, and diversified the types of coaching practices received. In the first two program years, practice facilitators used data from a coaching support priority tool to prioritize practices for coaching. In PY 1, CMS and the learning contractors solely used data (such as information practices reported in the CMS Portal on their progress toward the Comprehensive Primary Care Functions) to identify which practices would receive coaching. In PY 2, in response to concerns raised by practice facilitators, CMS began incorporating input from practice facilitators into the process for prioritizing practices for coaching (for example, if a practice recently lost a care manager or changed EHRs) to help refine the list of practices prioritized to receive coaching. In PY 3, practice facilitators were required to provide at least two visits to every practice or system. In PY 4, CMS required practice facilitators to conduct multiple types of coaching: (1) at least three coaching sessions for each practice identified by the learning contractors as the lowest-performing practices in their region in each quarter; (2) quarterly, one-one-one coaching sessions with 1 percent of the high-performing practices in their region; and (3) depending on the region size, a minimum number of small group coaching sessions per quarter. Practice facilitators could also conduct any other type of coaching that any practice needed or wanted. Minor changes over time included changes to RINGs, adding podcasts, and ending Health IT Affinity Groups. Changes to all learning supports over time are described in Table 3.3.

B.2.b. Changes in response to the COVID-19 pandemic

To minimize burden on practices in the face of the pandemic and ensure communication was aligned across CMS models, CMS paused most CPC+ learning activities from April to July of 2020 (PY 4). CMS limited, but did not completely stop, the national learning activities. For example, the NLT canceled the CPC+ national meeting and stopped encouraging practices to converse on CPC+ Connect. They continued to share critical information (such as updates about telehealth or CPC+ reporting deadlines) on CPC+ Connect and through the e-newsletters. Although practice facilitators could not proactively reach out to practices, they could respond to practices' requests for communication and coaching. Several deep-dive practices reported the pause in learning supports did not affect them, because they were too busy responding to the COVID-19 pandemic to attend learning activities or they had processes in place to continue their work on CPC+ without learning supports. Many practices reported they were able to consult durable learning products, and their practice facilitator, to answer their questions.

After receiving feedback that practices were ready to re-engage with learning supports, CMS resumed regional learning activities in September 2020 and gave facilitators more flexibility in meeting practices' needs. However, for the remainder of PY 4 through PY 5, CMS removed requirements for practice facilitators to engage with a certain percentage of practices or to deliver a minimum number of regional learning sessions, RINGs, or practice coaching sessions. CMS also gave facilitators additional flexibility to determine how to best meet the evolving needs of their region's

practices given local effects of the pandemic. Practice facilitators could decide which practices to engage, and which learning supports to offer to them.

C. CPC+ practices' use and perceptions of CMS's learning supports

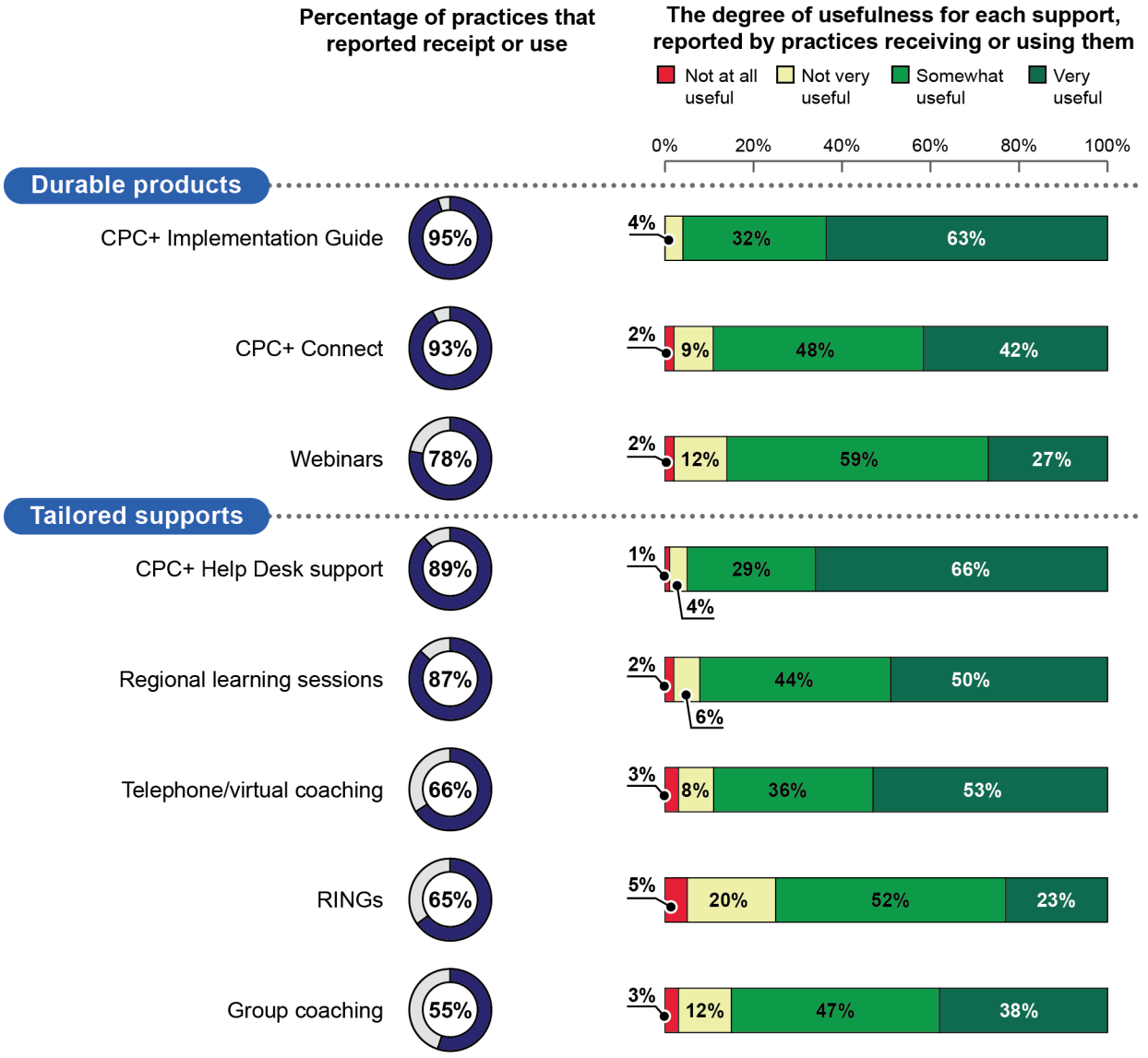
In the CPC+ Practice Surveys from PY 2–PY 5 (the only years in which the survey collected information on learning supports), practices generally reported finding the CPC+ learning supports useful. Practices' use of all learning supports was consistent during CPC+, except for participation in webinars, which decreased from over 85 percent in the first half of CPC+ to around 65 percent in the last two model years. This is consistent with reporting from learning contractors that the number of webinars offered declined over time.

In the years they were offered, each learning support was used by at least half of all CPC+ practices; however, practices generally used durable supports more often than tailored supports. Two durable products—the Implementation Guide and CPC+ Connect—were the most-used learning supports (by 95 and 93 percent of practices, respectively) (Figure 3.13). Among tailored supports, practices most often used the Help Desk (89 percent of practices). In PYs 2 through 4, two-thirds of practices consistently reported using virtual coaching and over half of practices reported participating in group coaching. In PY 5 alone, 66 percent of practices reported receiving virtual coaching and 60 percent reported receiving group coaching in the past six months. This is consistent with data from the practice coaching logs, which indicate that 83 percent of practices received any type of coaching in PY 5.[31]

[31] Coaching log data are not precise and may undercount coaching interactions (for example, data may not list all practices that received small group coaching).

Figure 3.13. Practices' use and perceptions of CMS's CPC+ learning supports, average of PY 2 through PY 5

Practices were consistently highly engaged with all the CMS learning supports and generally found them useful. The most used learning supports were the CPC+ Implementation Guide and CPC+ Connect, and 60 percent or more of practices found the CPC+ Implementation Guide and CPC+ Help Desk very useful.



Source: Mathematica's analysis of the independent evaluation's PY 2, PY 3, PY 4, and PY 5 CPC+ Practice Surveys.

Notes: N = 2,290 CPC+ practices that responded to the CPC+ Practice Survey in each program year. The percentage of missing responses each year was less than 2 percent. Not all practices responded to each question in each year. Group coaching was asked about only for PY 4 and PY 5. RINGS were asked about only for PY 3. Regional learning sessions were asked about only for PY 2 and PY 3.

PY = Program Year; RING = Regional Implementation Networking Group.

From the perspectives of both practices and practice facilitators, specific CPC+ learning supports provided essential information and facilitated peer learning. For example, in PY 4 several deep-dive practice and several practice facilitators cited the Implementation Guide as a useful resource because it served as one central place to go for program information, including links and useful examples for practices (such as example collaborative care agreements). Many respondents noted that regional learning sessions, RINGs, and small group coaching sessions facilitated peer learning by encouraging practices to make presentations, listen to other practices' presentations, and share information in small group breakouts.

Practice facilitators appreciated the increased flexibility to provide coaching to practices beginning in PY 3 and wished they could have provided coaching to all practices at the start of CPC+. The role of the practice facilitators was to learn about the strengths and needs of practices and create linkages between them. Practice facilitators felt that individual coaching with all types of practices (high- and low-performing) was important for relationship building, especially early in the model. Practice facilitators' deep knowledge of practices helped them provide highly tailored and efficient support and build connections among practices that were the basis for peer-to-peer learning. In addition, although coaching was time- and resource-intensive, it helped facilitate the provision of other learning supports by familiarizing practice facilitators with practice needs, generating buy-in, and identifying potential practices willing to share their knowledge with other CPC+ practice participants. The CMS leads indicated that they recognized early in the model that coaching was one of the supports they would not be able to sustain long term. The decision to limit individual coaching was made because it was resource-intensive for CMS to provide, but CMS was intentional in providing it to struggling practices to help them with practice transformation efforts.

Practices selectively engaged with the learning supports, in part because they did not have time to engage with supports they did not find helpful, particularly the Health IT Affinity Groups and aspects of CPC+ Connect. CMS's Health IT Affinity Groups were consistently rated less favorably than other learning supports on the CPC+ Practice Survey and engagement diminished over time, leading CMS to discontinue them in PY 3. Separately, health IT vendors provided some technical assistance to CPC+ practices through their own communication channels, but reported using CPC+ Connect to access resources, such as webinars and the newsletter. Practices selectively used CPC+ Connect in ways they found helpful—most often as a repository of information. However, many practices encountered time-consuming difficulties with logging in, and other practices preferred direct live interaction for peer networking. Over the course of CPC+, CMS created more requirements for practice facilitators to encourage engagement among practices on CPC+ Connect; however, these efforts did not result in increased engagement, and facilitators continued to find it difficult to encourage practices to use CPC+ Connect.

D. The role of CMS learning supports in sustaining care delivery changes after CPC+ ends

In interviews in PY 5, learning contractors and deep-dive practices reflected on how the CMS learning supports have promoted sustainability of care transformation after CPC+ ends.

In the final years of CPC+, CMS and the learning contractors focused on developing and disseminating durable learning products and helping practices build ongoing peer networks to support sustainability. CMS and the NLT described durable learning products (such as podcasts) as a key component of CMS's intentional strategy to leave practices with materials that captured the work of CPC+ and helped them

sustain care delivery changes. The NLT said that practices found materials created by other practices especially helpful. In PY 5, the learning contractors also focused on helping practices build peer networks, based on their perception of the importance of peer-to-peer learning and networking in sustaining the work of CPC+. Practice facilitators used several strategies to help practices sustain the networks and relationships they had built, including small group coaching and encouraging practices to share contact information. However, building and maintaining networks was perceived to be time-intensive and a couple of practice facilitators noted that practices might need help to do this after CPC+ ends.

CPC+ practices had mixed responses to the learning system's efforts to promote sustainability. In reflecting on the model during PY 4 interviews, several deep-dive practices perceived the CPC+ learning supports to be helpful and most highly valued opportunities to learn from other practices' experiences. However, a few other deep-dive practices indicated that the CPC+ learning supports generally did not help them prepare to sustain CPC+ activities after the model ended. Several deep-dive practices said the learning activities in which they participated did not address sustainability, or they could not recall whether it had been addressed. For example, one system lead noted that, if sustainability was discussed, they were not part of those conversations, and observed that differences in how systems implemented CPC+ made it difficult for their system to learn from others regarding sustainability. A few deep-dive practices indicated that discussions of sustainability occurred but were not helpful to them, primarily because the information provided was not actionable.

> **"…Practices value hearing from each other more than anything … they want to hear each other's strategies, how they've overcome similar challenges, what their best practices are, what they're struggling with. "[A]nything where they can learn from each other, network with each other, connect with each other, has been probably the most useful for them or what they have valued most."**
>
> ***—NLT***

Practices remain interested in and committed to practice transformation and value-based care but were concerned about how to finance ongoing delivery of CPC+ services after the model ended. The CMS learning leads reported hearing from practices that funding is the key resource needed to sustain care delivery changes made during CPC+. The learning contractors and a few practice facilitators also indicated that practices had unmet learning needs about financing and understanding the financial risks of transitioning to new models. They observed that practices wanted help figuring out how to maintain high-priority services such as care management and behavioral health integration. A few deep-dive practices indicated they were more concerned with finding ways to finance care delivery processes and felt the learning supports were not as relevant if they could not sustain care delivery changes once CPC+ ended.

> **"Sustaining activities probably boils down to two things, did the culture change in physicians so that they want it. And do you have the monetary income to sustain those two things. So, I don't know that the learning activities, aside from helping us to gain physician support, would help sustain those any differently."**
>
> ***—System lead, Track 2 system-owned practice***

The role of peer learning in CPC+

In interviews in PY 5, learning contractors noted the following successful strategies for encouraging peer learning:

- ***Group practices with similar characteristics together.*** Peer learning works best when practices can share and learn from each other's similar experiences. For example, practice facilitators hosted RINGs or small group coaching sessions for practices in rural areas with specialist or hospital shortages. In addition, cross-regional groups were helpful to connect practices to practices in another region that might have more similar characteristics than those in their own region.
- ***Meet in person whenever possible.*** Before the pandemic, practice facilitators reported that in-person interactions (like regional learning sessions) yielded more peer learning than virtual interactions (like CPC+ Connect or RINGs). A couple of learning contractors noted that in-person interactions at the start of the relationship made it more likely practices would continue communicating virtually afterward.
- ***Utilize small group settings.*** Several practice facilitators observed that successfully connecting people involves having practices share their stories, including what did and did not work for them. This requires that facilitators create a level of trust among participating practices, which is best accomplished in small groups.
- ***Encourage peer learning in networks established outside of CPC+, such as those supported by ACOs, health systems, commercial payers, or regional physician organizations.*** These learning networks typically existed before CPC+ and might be more likely to be sustained after CPC+ ends. A few deep-dive practices thought CPC+ might have improved participant engagement in those non-CPC+ learning networks, because it gave the host and participants more content to discuss across their various quality improvement interventions.

Learning contractors and practices also identified common challenges to peer learning:

- ***Peer learning can be facilitated with an online platform, but due to limitations of CPC+ Connect, opinions about its effectiveness were mixed.*** CMS developed CPC+ Connect as a space that was intended to feel personal and to link people into conversations, for example, by creating small topical and role-based groups to promote engagement. However, a few practice facilitators and a few deep-dive practices observed that, although the platform was a valuable way to share information and tools, especially in the beginning of CPC+, it was of limited value in connecting practices. This was partly because of ongoing technical barriers in using the platform (for example, a cumbersome log-in process).
- ***Advanced practices regularly found themselves offering advice to other practices but felt overwhelmed by the demands this placed on their time.*** Practice facilitators reported challenges engaging more advanced systems and practices. These practices expressed concern that they benefited less from peer learning because they were asked to disproportionately share their approaches, and felt they learned relatively less from other, less advanced practices.

3.2.4. Health IT vendor support

A. Overview of the support health IT vendors offered practices through CPC+

CPC+ practices were required to meet specific health IT requirements that differed by track. Both Track 1 and 2 practices were required to meet eCQM and Certified Electronic Health Record Technology (CEHRT) requirements. Track 2 practices had additional advanced health IT requirements, receiving support from all partnering vendors who signed an MOU with CMS in which they committed to (1) provide Track 2 practices advanced health IT functionalities to meet CPC+ requirements, and (2) participate in CMS's national learning activities. Vendors could also sign practice-specific Letters of Support indicating their willingness to partner with a practice to support a given function and communicate to CMS that the practice had a strategy in place to address the Track 2 health IT requirements. Though only Track 2 practices formalized their health IT vendor partnership, practices in both tracks could choose to work with health IT vendors through CPC+-sponsored learning supports or other vendor-initiated forums outside of CPC+.

In this section, we describe (1) the support health IT vendors offered practices throughout CPC+; (2) health IT vendors' experiences partnering in CPC+, including challenges encountered throughout the model; and (3) practices' perspectives on health IT vendor support.

B. CPC+ health IT requirements

CPC+ practices were required to meet specific health IT requirements that differed by track. Practices in both tracks were required to adopt a CEHRT that aligned with Quality Payment Program requirements, maintain technology that could report eCQMs at the practice site level and report eCQMs electronically, and attest to refraining from interfering with or inhibiting the access, exchange, or use of Electronic Health Information (that is, information blocking).

Track 2 practices were also required to meet advanced health IT requirements, which CMS introduced at the start of CPC+ in response to the challenges practices identified in CPC Classic regarding inadequate health IT for primary care transformation (Peikes et al. 2018c). The advanced health IT requirements initially encompassed seven standalone health IT functionalities related to the five Comprehensive Primary Care Functions (for example, a requirement to use health IT-based functionality to assess patients' health-related social needs in support of the comprehensiveness and coordination function) (Anglin et al. 2019). CMS revised the health IT requirements in PY 2 to reduce practice burden, allowing practices and vendors to focus on higher priority functionalities or those that were more straightforward to develop (listed below). CMS made no major changes during PYs 3, 4, or 5. During these latter years, CMS required Track 2 practices to:

1. Display eCQM results at the CPC+ practice site level with at least quarterly updates to reflect practices' current progress and support population health management and continuous feedback on quality improvement efforts.
2. Maintain targeted care management optimized by health IT through risk stratification and care plans.
3. Assess health-related social needs using health IT (CMMI 2020: https://innovation.cms.gov/media/document/cpcplus-hit-py2021).

Because health IT functionalities are complex to develop and implement, CMS formally integrated health IT vendors into CPC+. These vendors committed to provide CPC+ practices with the technology necessary to meet model requirements, and to participate in CMS's national learning activities. Such formal integration of health IT vendors into CPC+ differentiated this model from prior and subsequent advanced payment models. For example, CPC Classic and Primary Care First have health IT requirements for practices but do not include health IT vendors as partners. Since the beginning of CPC+, CMS did not prescribe how practices or vendors must meet their respective health IT requirements. Instead, CMS specified only the types of functionalities health IT vendors must make available for practices to use. There were multiple ways for vendors and practices to fulfill the requirements, including for practices to work with multiple health IT vendors (which 12 to 27 percent of practices did throughout CPC+).

C. Health IT vendors' experiences partnering in CPC+

C.1. Health IT vendors' experiences offering functionalities

Health IT vendors supported CPC+ practices by providing full-featured EHRs; tools that support population health management, information exchange, or reporting; and narrower IT solutions, such as software to help practices with regulatory compliance. Descriptions of the functionalities that vendors provided to help practices meet CPC+ requirements are drawn from CMS program documentation and interviews with vendors conducted toward the end of PYs 1, 3, and 5.

Health IT vendors primarily enhanced functionalities that were in place before CPC+, rather than creating new functionalities for CPC+. For example, vendors reported adding practice-site level eCQM reporting to their standard eCQM reporting and improving the usability of tools like care manager dashboards and health-related social needs assessments to better support CPC+ practices. Enhancing existing functionalities facilitated vendors' development work in addition to practices' use of these functionalities. Most vendors reported throughout CPC+ that practices were using their functionalities with ease. However, a few consistently described challenges practices had using care plan functionalities because they required duplicate data entry by practices, rather than automatically integrating data from other sections of the EHR (such as a problem list or progress note).

Most vendors offered most CPC+ functionalities to non-CPC+ practices. Because vendors enhanced existing functionalities for CPC+ that were part of core or standard add-on products, these functionalities were available to CPC+ Track 1 and 2 practices, and mostly available to non-CPC+ practices as well. A few vendors reported charging a fee for CPC+-specific functionalities, such as practice-site-level reporting.

C.2. Challenges supporting CPC+ practices in meeting model requirements

During interviews in PYs 1, 3, and 5, health IT vendors discussed several challenges they experienced developing functionalities and supporting practices in using them. These issues included technical challenges enhancing functionalities, not being involved in designing model requirements, and lacking the ability to affect broader change because CPC+ practices represented only a small proportion of their customer base.

All of the vendors we interviewed identified technical challenges enhancing at least one of the functionalities they offered to support CPC+ practices. A few vendors noted difficulties with eCQM reporting, such as when practice sites merged, switched vendors, or had inconsistent data formatting. A couple of vendors also identified challenges effectively using care management functionalities, including

risk stratification and care plans. Respondents noted both types of challenges in all rounds of interviews; however, in the first two rounds of interviews they more commonly reported difficulty trying to develop or enhance functionalities when there was not a corresponding clinical or industry standard.

A few vendors consistently noted the difficulty of supporting practices in meeting model requirements that they weren't involved in designing. In each round of interviews, these vendors felt they could have more effectively incorporated CPC+ requirement updates into their workflows if vendors were included earlier in the design process and given more notice about changes to requirements. A few vendors suggested it would also have been helpful if CMS provided clearer guidance for health IT vendors on how to ensure they enabled practices to meet the CPC+ requirements, such as an example of a satisfactory care plan in an EHR.

Several vendors consistently felt CPC+ had limited ability to drive meaningful progress in how health IT could support primary care transformation because CPC+ practices were a small proportion of the practices they served. In all three rounds of interviews, several vendors noted that CPC+ practices represented only a small fraction of their overall client base, and CPC+ only accounted for a portion of primary care practices in 18 regions in the country. (Many of the vendors we interviewed worked with health systems and multispecialty groups, not just primary care practices, and also worked with clients outside of CPC+ regions.) As a result, vendors noted having to balance investments made for CPC+ against broader development needs. Several vendors suggested it would have been beneficial for CMS to align the CPC+ health IT requirements more closely with other federal and private models to mitigate the tradeoffs they were asking vendors to make to partner with practices.

C.3. Vendors' overall perspectives on CPC+

During PY 5 interviews, health IT vendors reflected that they had generally positive experiences in CPC+. They expressed support for model requirements and formal partnerships with practices and CMS. They noted that partnership with CMS was generally not burdensome because CPC+ development activities aligned with broader work, and they reported that CPC+ partnership seamlessly transitioned into Primary Care First practice support.

One particularly unique health IT element of the CPC+ model was that vendors were considered formal partners by CMS and Track 2 practices; this created both benefits and opportunities for improvement. CPC+ is the only Advanced Alternative Payment Model to use MOUs to formalize vendors' commitment to provide specific health IT functionalities and other support to participating Track 2 practices. Several vendors felt the formalized partnerships helped to mitigate ongoing difficulty in identifying CPC+ practices, as some vendors chose to have practices sign Letters of Support, which made it easier to identify CPC+ practices for outreach, discuss updates to functionalities, and provide technical support. However, a few vendors were uncomfortable committing to support health IT requirements that they were not involved in designing and that CMS reserved the right to change.

Most vendors noted that the CPC+ health IT requirements generally aligned with their broader development activities, so it was not burdensome to partner in the model. These vendors explained that the enhancements they offered to CPC+ practices were consistent with planned development to improve their overall products. A few vendors noted that developing enhancements to help practices meet CPC+ requirements would also support primary care practices more generally. For example, at least one vendor explained that developing enhancements for CPC+ practices accelerated their timeline for general functionalities benefiting non-CPC+ practices, such as risk stratification. Several vendors even noted that

prospective and current customers discussed CPC+ enhancements during negotiations, indicating that these new, CPC+ related offerings may have been part of those practices' thinking around their vendor needs.

Several vendors reported that partnering in CPC+ facilitated their support of practices participating in Primary Care First. One vendor noted that much of the work they did for CPC+ would "seamlessly transition" into Primary Care First. Another vendor explained that Primary Care First defines eCQMs in the same way that CPC+ did, which was an enhancement vendors first developed for CPC+. This will allow vendors to offer eCQM reporting to Primary Care First practices without needing additional time for development.

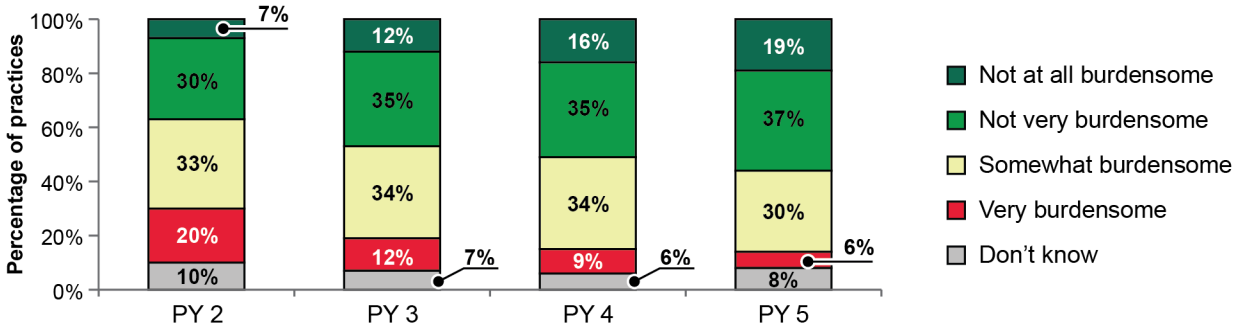
Vendors reported mixed experiences using CPC+ communication channels, and generally preferred to use their own outreach for practice communication. Early in CPC+, most vendors felt they benefitted from connecting with CMS and practices through CPC+ Connect and health IT affinity groups. However, most vendors also expressed concerns that these CPC+ communication channels were redundant with their own outreach methods and often more difficult to use; they therefore continued to also host their own meetings for CPC+ and non-CPC+ practices. By the end of CPC+, most vendors reported using CPC+ Connect to access reference materials, but not to directly engage with practices. Vendors' perspectives of health IT in CPC+ are described in further detail in Laird et al. (2023a Appendix 3.G).

D. Practices' perspectives on health IT requirements and vendor support

Throughout CPC+, practices perceived that it was less burdensome to meet health IT requirements than to meet financial reporting or care delivery requirements (Figure 3.14). In PY 2, over half of all practices reported finding it somewhat or very burdensome to meet health IT requirements, whereas this dropped to over 35 percent of practices by PY 5. (There were no differences by track in either year.) These declines may reflect that CMS reduced health IT requirements in PY 2, and practices became more experienced in meeting the requirements over time.

Figure 3.14. Percentage of practices reporting that meeting health IT requirements is burdensome, over time

Just over one-third of CPC+ practices found meeting health IT requirements to be somewhat or very burdensome by PY 5, down from 53 percent in PY 2.



Source: Mathematica's analysis of data from the independent evaluation's PY 5 CPC+ Practice Survey.

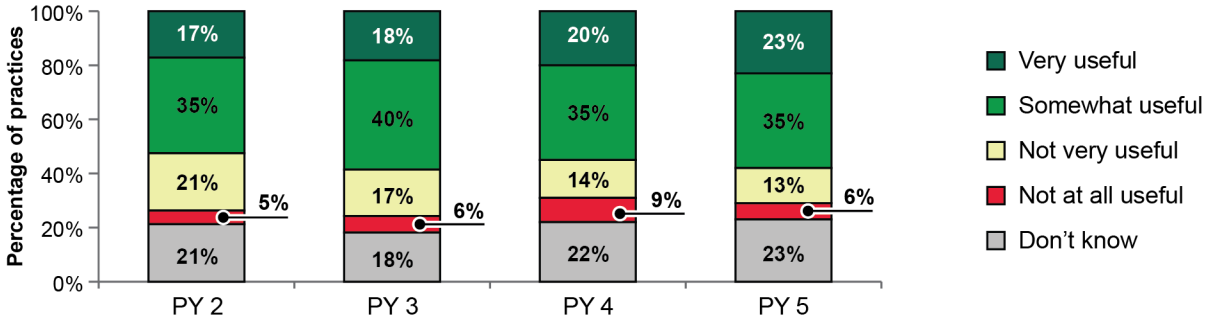
Note: N = 2,290 CPC+ practices that responded to the CPC+ Practice Survey in each program year. The percentage of missing responses each year was less than 2 percent. Not all practices responded to each question in each year.

EHR = electronic health record; PY = Program Year.

Throughout CPC+, over half of practices reported that they perceived health IT vendor support to be useful in improving primary care. In PY 5, 56 percent of Track 1 and 60 percent of Track 2 practices reported health IT vendor support was somewhat or very useful (Figure 3.15). The percentage of practices that found health IT vendor support to be somewhat or very useful is consistent with prior years. Also consistent with prior years, health IT vendor support was the lowest rated of all CPC+ supports, and about one-quarter of practices in each track said they were not sure health IT vendor support was useful. Practices' perspectives of health IT in CPC+ are described in further detail in Laird et al. (2023a, Appendix 3.G).

Figure 3.15. Percentage of practices reporting that health IT vendor support is useful, over time

Around 6 in 10 CPC+ practices reported on the PY 5 CPC+ Practice Survey that health IT vendor support was somewhat or very useful for improving primary care, consistent with prior years.



Source: Mathematica's analysis of data from the independent evaluation's PY 5 CPC+ Practice Survey.

Note: N = 2,290 CPC+ practices that responded to the CPC+ Practice Survey in each program year. The percentage of missing responses each year was less than 2 percent. Not all practices responded to each question in each year.

EHR= electronic health record; PY = Program Year.

4 | Changes to the Way CPC+ Practices Deliver Care

Key takeaways

Throughout the course of the CPC+ model, practices and physicians reported that they were satisfied with their decision to join CPC+ and it improved primary care delivery by funding additional staff and providing a roadmap for transformation.

Despite CMS's efforts to decrease the burden of CPC+ on practices, many practices continued to report in the final year that CPC+ requirements, particularly financial reporting, were burdensome. Nonetheless, physicians in CPC+ and comparison practices reported similar levels of job satisfaction, burnout, and likelihood of leaving their current practice.

Practices and physicians in both tracks reported making improvements to specific aspects of care delivery throughout CPC+. Beneficiary reports about care experiences were more positive in Track 2 CPC+ practices than in comparison practices in a few areas, though the findings were not consistent across tracks. Over time, more practices indicated they provided fairly advanced or very advanced care overall based on their responses to the modified Patient-Centered Medical Home Assessment (M2-PCMH-A) in the CPC+ Practice Surveys.[32] In addition, physicians' responses on the Program Year (PY) 5 CPC+ Physician Survey indicated that CPC+ practices provided more advanced primary care in specific aspects of care delivery than did comparison practices (for example, risk stratifying patients, using designated care managers to help high-risk patients, and having arrangements to ensure timely follow-up after emergency department [ED] and hospital visits). Nonetheless, when beneficiaries of all risk levels in CPC+ and comparison practices were asked more generally about their experiences with care on the PY 5 CPC+ Beneficiary Survey, their responses did not differ meaningfully.[33]

Practices engaged in making changes related to the CPC+ care delivery requirements throughout the model but faced challenges making some changes and reaching all patients who would benefit from services (Table 4.1). Care delivery requirements are spread across five Comprehensive Primary Care Functions that support the CPC+ model of primary care that CMS hypothesizes will improve patient health and reduce costs: (1) access and continuity, (2) care management, (3) comprehensiveness and coordination, (4) patient and caregiver engagement, and (5) planned care and population health. Across the five program years, practices made the most changes to care delivery between PYs 1 and 2, with some additional change in PY 3 and then stabilized their efforts in PYs 4 and 5; this trajectory was similar to the timing of changes in CPC Classic (Peikes et al.

[32] Laird et al. (2023a, Appendix 3.B) includes more information on the M2-PCMH-A content and administration of the CPC+ Practice Survey.

[33] As discussed later in Chapter 4, item wording about primary care experience in the CPC+ Beneficiary Survey was very high level and differed from wording in the CPC+ Practice and Physician Surveys, which were more operational. This might have affected the lack of difference between the experiences reported by beneficiaries in CPC+ and comparison practices.

2018b). Practices in both tracks made similar changes for the care delivery requirements that CMS required of both tracks (such as longitudinal care management). For the requirements that pertained only to Track 2 practices (such as comprehensive medication management), Track 2 practices typically reported more advanced activities than Track 1 practices, as expected.

Despite identical care delivery requirements, CMS hypothesized that there may be synergistic effects of the Medicare Shared Savings Program (SSP) and CPC+ on quality, cost, and utilization outcomes; thus, we looked for differences in model implementation by SSP participation and found few differences. There were no consistent differences in care delivery changes between SSP and non-SSP practices within tracks, based on the data practices reported to CMS, or on the CPC+ Practice and Physician Surveys or during in-depth interviews with practices. The exceptions to this in PY 5 were that SSP practices were more likely than non-SSP practices to report using utilization and cost measures related to specialty care, post-acute care, and imaging/labs to guide continuous improvement. SSP practices were also more likely than non-SSP practices in each track to report on the CPC+ Practice Surveys that they based QI strategies on a proven QI strategy and continuously used these activities to meet organizational goals. Additionally, Track 2 SSP practices were more likely to report that they coordinated referral management for various high-frequency and/or high-cost specialists than Track 2 non-SSP practices.

The coronavirus disease 2019 (COVID-19) pandemic challenged primary care practices' ability to make some changes for CPC+, while CPC+ enhanced payments helped practices sustain staffing levels during this time. In PY 4, which corresponds to the first year of the pandemic, practices' CPC+ care delivery activities, particularly longitudinal and episodic care management, took a back seat to the pressing needs of the pandemic. Practice staff focused on COVID-19 screening, symptom management, and vaccinations and focused episodic care management activities on patients hospitalized for COVID-19 in PY 4 at the height of the pandemic. In the latter part of PY 4 and in PY 5, in-person office visits resumed, though the use of telehealth continued as well.

Table 4.1. Summary of practices' care delivery changes and challenges, by CPC+ Comprehensive Primary Care Function

Changes CPC+ practices made	Challenges CPC+ practices faced
Access and continuity	
• Practices used workflows that often predated CPC+ to provide high levels of after-hours access throughout the model; CPC+ physicians reported higher rates of after-hours access than comparison physicians. • More beneficiaries in Track 2 CPC+ practices than comparison practices reported receiving information about how to access care after hours. • Practices tracked continuity of care at very high rates, after increasing efforts in PY 1. • Practices increased provision of telehealth visits starting in PY 4, prompted by the COVID-19 pandemic. • Physicians, or someone from the practice, offered home visits at higher rates than staff in comparison practices.	• CPC+ and comparison physicians reported similar rates of continuity for patients' acute care visits in PY 5. • With the exception of provision of telehealth, practices struggled throughout the model to offer and cover the costs of other types of alternative visits, such as home visits and group visits, with CPC+ payments.

Table 4.1. ***(continued)***

Changes CPC+ practices made	Challenges CPC+ practices faced
Care management	
• Practices increasingly integrated risk stratification into care over the course of the model, especially between PYs 1 and 2; physicians in CPC+ practices reported that their practice used a standard process for risk stratification at a higher rate than physicians in comparison practices. • Practices used care managers, typically hired in PY 1, to provide longitudinal care management for high-risk patients; more physicians in CPC+ than comparison practices reported having designated care managers on site and engaging with care managers at least weekly. • More beneficiaries in Track 2 CPC+ than comparison practices reported timely follow-up after an ED visit. • Practices improved information sharing agreements with hospitals and increased use of episodic care management to provide timely follow-up after hospital and ED visits, especially in PYs 1–3.	• Practitioners questioned the benefit of risk stratification throughout the model, and several practices reported challenges defining risk levels, automating risk scores in the EHR, and updating risk scores based on clinical intuition. • Practices struggled to provide longitudinal care management services to most of their patients at higher risk, citing insufficient care manager staff time, and to a lesser extent difficulty engaging patients and gaining practitioner buy-in, as barriers. • In PYs 4 and 5, system-owned practices reported that previously embedded care managers moved to centralized locations outside the practice. • Several practices limited episodic care management to patients discharged from the hospital or ED for COVID-19 in PY 4, but resumed support to the broader population in PY 5.
Comprehensiveness and coordination	
• Practices increased use of behavioral staff substantially; physicians in CPC+ practices reported that their practice offered behavioral health counseling at a higher rate than physicians in comparison practices. • Practices screened a larger proportion of patients for health-related social needs each program year, and typically used a screening tool developed in house to do so. • Physicians in CPC+ practices documented health-related social needs in EHRs and used designated staff to link patients to community resources to meet their health-related social needs at higher rates than physicians in comparison practices. • Practices took steps to implement complex medication management; an increasing percentage of practices reported having a clinical pharmacist at the practice site each program year, especially among Track 2 system-owned practices.	• Practices did not take up or value collaborative care agreements or use cost data on specialty providers as CMS expected. Instead, practices used informal referral processes they largely had in place prior to CPC+ to manage specialty care referrals (such as existing relationships with specialists and patient preference). • Practices experienced challenges with behavioral health provider shortages. • The effect of practitioners' limited time to conduct health-related social needs screening was compounded by patients' reluctance to discuss "non-medical" issues. • Practices struggled to understand complex medication management and how it differed from medication review and reconciliation.
Patient and caregiver engagement	
• Practices established patient and family advisory councils (PFACs) and used patient feedback to guide practice improvements, especially in PYs 1–3, prior to COVID-19. • Practices took steps to implement advance care planning; more physicians in CPC+ practices reported documenting advance care plans in EHRs than physicians in comparison practices. • More beneficiaries in Track 2 CPC+ than comparison practices reported being asked about advance care planning.	• Practices faced challenges recruiting patients, caregivers, practitioners, and staff to attend PFAC meetings throughout the model. • Practices experienced challenges with the complicated, sensitive, time-consuming nature of advance care planning (though several found strategies to overcome these barriers as the model progressed).

Table 4.1. ***(continued)***

Changes CPC+ practices made	Challenges CPC+ practices faced
Planned care and population health	
• Practices adopted more formal processes to guide continuous data-driven improvement throughout the model and increased the availability of staff and resources for QI, especially between PYs 1 and 2. • Physicians in CPC+ practices received—and made changes to care delivery based on—utilization and cost data at higher rates than physicians in comparison practices.	• Fewer physicians received and used data on service utilization and total cost of care than data on quality of care. • Issues with the accuracy and timeliness of data, lack of time to generate and review data feedback, and a lack of practitioner and staff engagement hindered practices' efforts to use data for continuous improvement.

ED = emergency department; EHR = electronic health record; PFAC = Patient and Family Advisory Council; PY = Program Year; QI = quality improvement.

4.1. Comprehensive Primary Care Functions and related care delivery requirements

For CPC+, CMS required participating practices to make many complex, interconnected changes in how they deliver care to their patients by focusing on five Comprehensive Primary Care Functions: (1) access and continuity, (2) care management, (3) comprehensiveness and coordination, (4) patient and caregiver engagement, and (5) planned care and population health. The five functions together support a model of primary care that CMS hypothesizes will improve patient health and reduce costs (see Chapter 1).

To promote improvements within these functions, CMS specified a series of care delivery requirements for practices in each track at the start of all CPC+ program years. CMS encouraged practices to view the care delivery requirements as starting points to build on as they work to improve the care they deliver. Practices had autonomy to decide how they approached their improvement work, including how to implement the care delivery requirements, which care delivery processes within each function to prioritize, which staff to involve, and how to monitor change. In PY 3, CMS reduced the number of care delivery requirements and shifted toward goal-oriented, evidence-based activities to improve care within each of the five functions. The care delivery requirements did not change between PYs 3 and 5. (Table 4.2 describes the care delivery requirements for PY 5, by track, for practices that joined in 2017, and how the requirements changed between PY 1 and PY 5.) We do not discuss findings for practices that joined CPC+ in the four 2018 Starter regions in this annual report because these practices account for only 5 percent of the total number of practices in CPC+. Findings in our second annual report indicated that the implementation experiences of practices and payers that joined CPC+ in 2018 were similar to the experiences of those that started in 2017 (Ghosh et al. 2020).

Table 4.2. Care delivery requirements for 2017 Starters in PY 5

PY 5 requirements for Track 1[a]	PY 5 requirements for Track 2	Changes to requirements for both tracks from PY 1 to PY 5
1. Access and continuity		
Access		
Ensure patients have 24/7 access to a care team practitioner with real-time access to the EHR[b]	Complete Track 1 requirement.	This requirement did not change between PYs 1 and 5. Throughout CPC+, CMS required all practices to ensure patients have 24/7 access to a care team practitioner with real-time access to the EHR.
Continuity		
Optimize continuity of care for empaneled patients while preserving access.	Complete Track 1 requirement.	In PY 1, CMS required all practices to organize care by practice-identified teams to optimize continuity of care. In PY 2, CMS required practices to measure continuity of care. In PYs 3 to 5, CMS required practices to optimize continuity of care while preserving access.
Alternative care		
No Track 1 requirements.	Use CPC+ payments to deliver care in new ways that improve quality and reduce total cost of care, beyond what the practice can currently accomplish in traditional fee-for-service office visits.	In PYs 1 and 2, CMS required Track 2 practices to regularly offer at least one alternative to traditional office visits and/or expanded hours. In PYs 3 to 5, CMS instructed Track 2 practices to use their CPC+ payments to deliver care in new ways—beyond traditional office visits—that meet patient needs.
2. Care management		
Risk stratification		
Ensure all empaneled patients are risk stratified.	Complete Track 1 requirement.	In PY 1, CMS required all practices to risk stratify all empaneled patients and Track 2 practices to use a two-step risk-stratification approach. In PY 2, CMS required all practices to use a two-step risk-stratification process and required Track 2 practices to maintain and review that process. In PYs 3 to 5, CMS required all practices to risk stratify all empaneled patients and encouraged, yet no longer required, practices to use and maintain a two-step risk-stratification process.

Table 4.2. ***(continued)***

PY 5 requirements for Track 1[a]	PY 5 requirements for Track 2	Changes to requirements for both tracks from PY 1 to PY 5
Longitudinal care management		
Ensure patients who have complex needs and are likely to benefit receive proactive, relationship-based care management.	Complete Track 1 requirement.	In PYs 1 and 2, CMS required all practices to provide targeted, proactive, relationship-based care management to all patients identified through the risk-stratification process as at increased risk and likely to benefit from intensive care management. In PYs 3 to 5, CMS encouraged, but no longer required, practices to use risk stratification to identify patients for longitudinal care management.
Care plans		
No Track 1 requirements.	Not an explicit requirement in PYs 3, 4, or 5.	In PYs 1 and 2, CMS required Track 2 practices to use a plan of care for patients receiving longitudinal care management. In PYs 3 to 5, CMS encouraged, but no longer required, practices to use a plan of care.
Episodic care management		
Ensure all patients receive timely follow-up contact from the practice after ED visits and hospitalizations.	Complete Track 1 requirement.	In PYs 1 and 2, CMS required all practices to provide short-term (episodic) care management to a high and increasing percentage of empaneled patients who have an ED visit or hospitalization. CMS required practices to deliver this care within specific time frames. In PYs 3 to 5, CMS encouraged timely follow-up, but no longer required follow-up to occur within specific time frames.
3. Comprehensiveness and coordination		
Coordination with specialty care		
Ensure coordinated referral management, especially with specialists to whom they frequently make referrals and/or high-cost specialist care.	Complete Track 1 requirement.	In PY 1, CMS required all practices to identify high-cost, high-volume specialists serving their patients and Track 2 practices to enact collaborative care agreements with at least two groups of those specialists. In PY 2, CMS required all practices to enact these agreements with at least two groups of specialists. In PYs 3 to 5, CMS required all practices to ensure coordinated referral management, and encouraged practices to employ tools such as collaborative care agreements to facilitate coordination.

Table 4.2. ***(continued)***

PY 5 requirements for Track 1[a]	PY 5 requirements for Track 2	Changes to requirements for both tracks from PY 1 to PY 5
Behavioral health integration		
Integrate behavioral health into primary care services.	Complete Track 1 requirement.	In PY 1, CMS required Track 2 practices to choose and implement at least one behavioral health integration option. In PY 2, CMS required Track 2 practices to build on this work and Track 1 practices to plan for integrating behavioral health care. In PYs 3 to 5, CMS required all practices to provide integrated behavioral health care.
Comprehensive medication management		
No Track 1 requirements.	Provide comprehensive medication management to patients receiving care management and in transitions of care who are likely to benefit.	In PY 2, CMS required Track 2 practices to develop a plan to provide comprehensive medication management to patients discharged from the hospital and those receiving longitudinal care management. In PYs 3 to 5, CMS required Track 2 practices to implement their plan to provide comprehensive medication management.
Health-related social needs		
No Track 1 requirements.	Identify patients' high-priority health-related social needs, connect patients to community resources that can meet those needs, and track the results of these linkages.	In PY 1, CMS required Track 2 practices to assess their patients' psychosocial needs and conduct an inventory of resources to meet those needs. In PY 2, CMS required Track 2 practices to maintain the inventory and establish relationships with at least two resources to meet their patients' most significant psychosocial needs. In PYs 3 to 5, CMS required Track 2 practices to identify patients' high-priority health-related social needs, connect patients to community resources that can meet those needs, and track the results of these linkages.
Capacity to address the complex needs of a subpopulation of patients		
No Track 1 requirements.	Not an explicit requirement in PYs 3, 4, or 5.	In PY 1, CMS required Track 2 practices to identify a capability to address the needs of a subpopulation of patients with complex needs, and in PY 2, CMS required them to develop that capability. In PYs 3 to 5, CMS encouraged, but no longer required, all practices to increase their capabilities to manage medical conditions in the practice to meet the needs of the practice population.

Table 4.2. ***(continued)***

PY 5 requirements for Track 1[a]	PY 5 requirements for Track 2	Changes to requirements for both tracks from PY 1 to PY 5
4. Patient and caregiver engagement		
Patient and Family Advisory Councils		
Convene a Patient and Family Advisory Council and integrate recommendations into care and practice improvement activities.	Complete Track 1 requirement.	In PY 1, CMS required Track 1 practices to convene a Patient and Family Advisory Council at least once and Track 2 practices to do so twice a year. In PY 2, CMS required practices to hold more frequent Patient and Family Advisory Council meetings: three times a year for Track 1 practices and quarterly for Track 2 practices. In PYs 3 to 5, CMS relaxed the requirement by not specifying the frequency of meetings.
Advance care planning		
No Track 1 requirements.	Ensure patients' goals, preferences, and needs are integrated into care through advance care planning.	In PY 2, CMS required Track 2 practices to engage patients in advance care planning. In PYs 3 to 5, CMS required Track 2 practices to ensure patients' goals, preferences, and needs are integrated into care through advance care planning.
Self-management support		
No Track 1 requirements.	Not an explicit requirement in PYs 3, 4, or 5.	In PY 1, CMS required Track 1 practices to assess their capabilities and plan for self-management support and Track 2 practices to provide that support. In PY 2, CMS required all practices to provide that self-management support. In PYs 3 to 5, CMS encouraged, but no longer required, practices to use self-management support as an integral part of the practice's longitudinal care management.
5. Planned care and population health		
Continuous improvement		
Use data to continuously improve patients' health, experience, and quality of care, and decrease cost.	Complete Track 1 requirement.	In PYs 1 and 2, CMS required all practices to use feedback reports provided by CMS and payer partners at least quarterly on at least two utilization measures at the practice level and practice data on at least three electronic Clinical Quality Measures (derived from the EHR) at both the practice and panel levels to inform strategies to improve population health management. In PYs 3 to 5, CMS required practices to use data to continuously improve patients' health, experience, and quality of care and decrease costs, but did not specify which data to use or how frequently to use them.

Table 4.2. ***(continued)***

PY 5 requirements for Track 1[a]	PY 5 requirements for Track 2	Changes to requirements for both tracks from PY 1 to PY 5
Care team meetings		
No Track 1 requirements.	Not an explicit requirement in PYs 3, 4, and 5.	In PYs 1 and 2, CMS required Track 2 practices to conduct care team meetings at least weekly to review practice- and panel-level data from CMS, payer partners, and internal monitoring and to use these data to guide testing of tactics to improve care and achieve practice goals in CPC+. In PYs 3 to 5, CMS encouraged, but no longer required, practices to hold data-focused care team meetings.

Source: Center for Medicare & Medicaid Innovation. "2021 CPC+ Implementation Guide: Guiding Principles and Reporting." January 19, 2021.

[a] In PY 1, CMS required Track 1 practices that had previously participated in CPC Classic to satisfy some of the additional Track 2 requirements to build on their CPC Classic work. Specifically, in PY 1, CMS required Track 1 CPC Classic practices to enact collaborative care agreements with specialists, work to meet their patients' behavioral health needs, hold two PFAC meetings (as opposed to one as required for other Track 1 practices), and provide self-management support. In PYs 2 through 5, CMS required all Track 1 practices, regardless of their participation in CPC Classic, to meet these requirements.

[b] Practitioners include physicians, nurse practitioners, physician assistants, and clinical nurse specialists.

ED = emergency department; EHR = electronic health record; PY = Program Year.

Methods: Data source and analysis for understanding the ways CPC+ practices deliver care

We analyzed data from a subset of the sources described in Table 1.2 to understand changes in the ways CPC+ practices deliver care.

Data sources

We relied on self-reported data to understand the ways CPC+ practices delivered care, as well as the barriers and facilitators they faced while implementing the CPC+ model. We used data from the CPC+ Practice Survey (collected annually), the CPC+ Physician Survey (collected in PY 5), care delivery data that practices reported to CMS (submitted by practices in the fourth quarter each PY),[a,b] and interviews with practitioners and staff at a representative sample of "deep-dive" practices (conducted in PYs 2, 3, and 5). Each wave of deep-dive interviews asked about practices' experiences with CPC+ during the prior year; in PY 5, we did an additional round of interviews focused on practices' plans for sustaining efforts after CPC+. In a few instances, we also draw from the CPC+ Beneficiary Survey (collected in PYs 2, 3, and 5). The Appendices provide additional details about these data sources.[c]

Data analysis

Characterizing interview data. We interviewed 23 deep-dive practices in September—December of PY 5 about their experiences with CPC+ generally and their plans to sustain care delivery changes after CPC+. When reporting findings from qualitative interviews with deep-dive practices, we use the word "couple" to denote 2 practices, "few" to denote 3 to 4 practices, "several" to denote 5 to 10 practices, "many" to denote more than 10 practices but fewer than three-fourths of practices, and "most" to indicate more than three-fourths of practices.

Understanding how findings differ by practice. Where possible, we considered whether there were meaningful differences by practice type, including differences by track, ownership (independent or owned by a hospital or health system), participation in the Medicare SSP, and size.

Characterizing meaningful differences. For analyses of the CPC+ Practice and Physician Survey, we did not conduct tests of statistical significance, given the risk of false positives due to the large number of variables examined. Instead, we describe meaningful differences (which we define as differences of 10 percentage points or larger). For analyses of the CPC+ Beneficiary Survey, we define meaningful differences as differences of 5 percentage points or larger and where the *p*-value was less than or equal to 0.10. When differences are not described, the findings were similar over time and across different types of practices and respondents.

[a] *Not all questions were included in the CPC+ Practice Survey or the CPC+ Portal each year.*

[b] *We do not use data from the PY 3 CPC+ Physician Survey (Orzol et al. 2021, see Appendix 3.C) because the sampling approach was different from PY 5, limiting comparability over time.*

[c] *Laird et al. (2023a) further describes our methods and include survey instruments and additional analysis tables (where relevant) for the CPC+ Practice Survey (Appendix 3.B), the CPC+ Physician Survey (Appendix 3.C), the qualitative deep-dive study (Appendix 4.A), care delivery data reported to CMS (Appendix 4.B), COVID and CPC+ participation (Appendix 4.C), practices' efforts with comprehensive medication management (Appendix 4.D), the CPC+ Beneficiary Survey (Appendix 4.E), and practice service interruptions (Appendix 4.F).*

4.2. Changes over time in practices' approach to CPC+

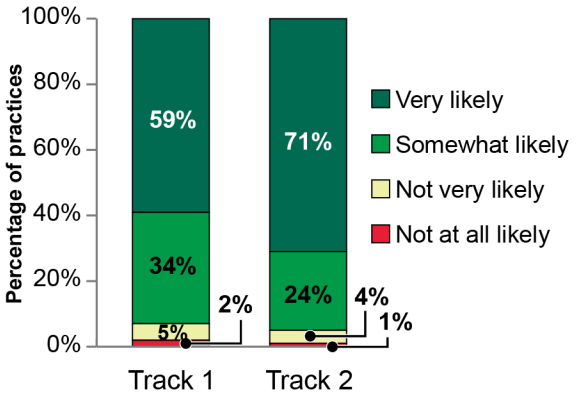
In this section, we describe practices' experiences with the CPC+ model as a whole. First, we describe their perceptions of the model. Second, we describe practices' reports of how they improved primary care over the course of CPC+. Then, we describe how practices approached CPC+ implementation. Last, we describe practices' experiences with the COVID-19 pandemic.

4.2.1. What were practices' overall impressions of CPC+?

Practices were very satisfied with their decision to join CPC+; a lower percentage of physicians were very satisfied. Around two-thirds of practices annually reported on the CPC+ Practice Survey that, given their practice's overall experience in CPC+, they would be very likely to participate in CPC+ again. More Track 2 than Track 1 practices reported this in PYs 3 to 5 (approximately 71 versus 59 percent, respectively) (Figure 4.1). A lower proportion, 31 percent, of physicians in each track reported on the PY 5 CPC+ Physician Survey that they would be very likely to recommend that their practice participate in CPC+ again.

Figure 4.1. Likelihood that practices would participate in CPC+ if they could do it all over again, in PY 5, by track

Based on their overall experience with CPC+, most practices reported in PY 5 that they would be likely to participate in CPC+ again if given the opportunity. Track 2 practices were more likely than Track 1 practices to report that they would be very likely to participate in CPC+ again.



Source: Mathematica's analysis of data from the independent evaluation's PY 5 CPC+ Practice Survey.

Note: N = 1,052 Track 1 practices and 1,227 Track 2 practices that responded to the survey.

PY = Program Year.

Practices and physicians reported that CPC+ improved the quality of care provided to patients. Over 90 percent of practices reported each year on the CPC+ Practice Survey and about 70 percent of physicians in CPC+ practices reported on the PY 5 CPC+ Physician Survey that CPC+ improved the quality of care they provide to their patients somewhat or a lot. Only 2 percent of physicians reported that CPC+ worsened the quality of care they provide.

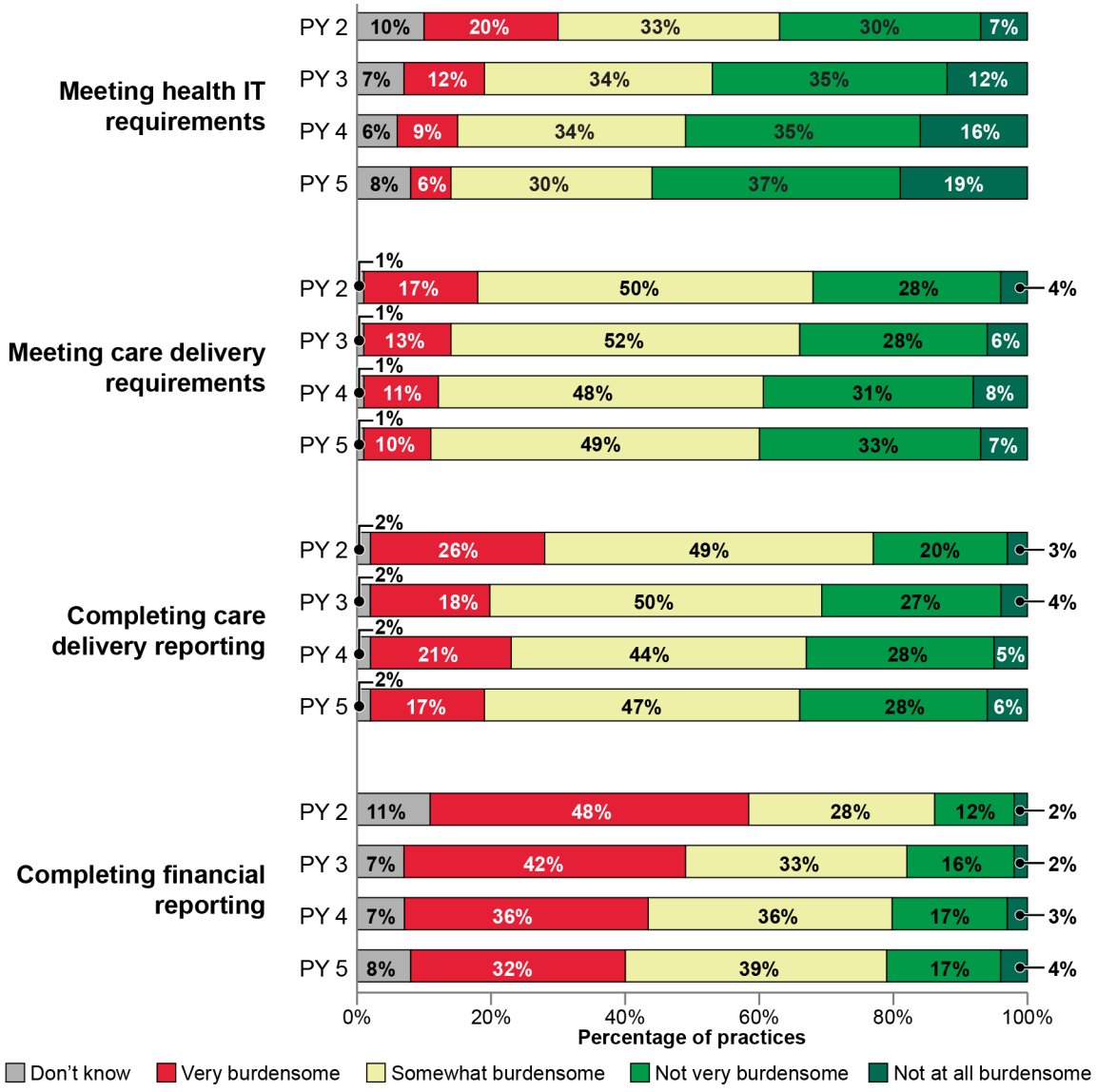
Despite CMS's efforts to decrease the burden of CPC+ on practices, many practices continued to report that CPC+ requirements were at least somewhat burdensome. Responding to practice feedback, starting in PY 3, CMS reduced the number of care delivery requirements, reduced the frequency of reporting from four to two times per year, and removed or delayed some health information technology (IT) requirements. While fewer practices reported over time on the annual CPC+ Practice Surveys that CPC+ requirements were burdensome to meet, practices continued to consider reporting (particularly financial reporting) as burdensome throughout CPC+ (Figure 4.2).

"We're a better organization and our patients are receiving a better level of care because of our participation in [CPC+]. It's moved us forward and we're glad we participated in it."

—Health system lead for a large practice

Figure 4.2. Percentage of practices reporting the extent to which CPC+ requirements are burdensome, PY 2 through PY 5

Practices' reports of burden waned over time, but they continued to report that CPC+ requirements, especially financial reporting, were burdensome throughout CPC+.



Source: Mathematica's analysis of data from the independent evaluation's CPC+ Practice Surveys. Questions not asked in the PY 1 CPC+ Practice Survey.

Note: N = 2,284 practices. Not all practices responded to each question. The percentage of missing responses to each question was less than 1 percent. Individual percentages may not sum to totals due to rounding.

PY = Program Year.

Despite practices' reported burden of CPC+, physicians in CPC+ and comparison practices reported similar levels of job satisfaction, burnout, and likelihood to leave their current practice in PY 5, which corresponds to the second year of the pandemic. About three-quarters of physicians in both CPC+ and comparison practices reported on the PY 5 CPC+ Physician Survey that they agreed or strongly agreed with the statement "Overall, I am satisfied with my current job." Although many were satisfied, about 40 percent of physicians in both groups reported that they were experiencing burnout and about 30 percent reported that they were somewhat or very likely to leave their current practice within two years.

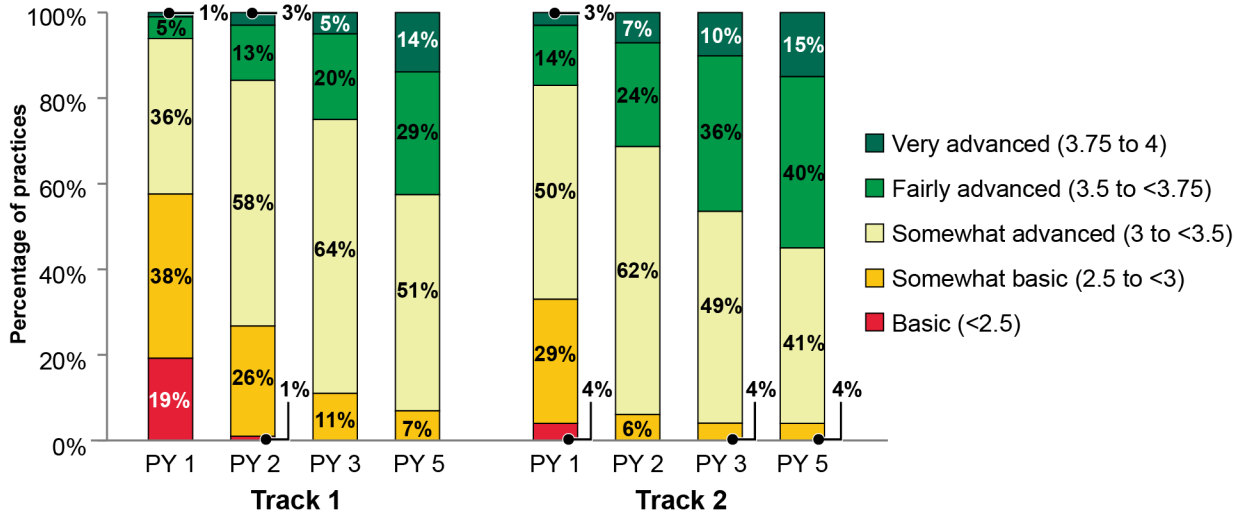
4.2.2. How have practices improved primary care delivery?

Practices provided more advanced approaches to care delivery over the course of CPC+. Practices reported on the modified Patient-Centered Medical Home Assessment (M2-PCMH-A) on the PYs 1, 2, 3 and 5 CPC+ Practice Surveys how they delivered various aspects of care. Mathematica summarized practices' responses and classified their summary scores by how advanced their approaches were. These scores indicated that CPC+ practices in both tracks made improvements to care delivery throughout CPC+.[34] Over time, more CPC+ practices' responses indicated they provided fairly advanced or very advanced care overall (Figure 4.3). While improvements to care delivery for both tracks have been relatively steady each year, Track 2 practices continued to report more advanced approaches, consistent with their increased funding and additional requirements. Physicians also reported on the PY 5 CPC+ Physician Survey that CPC+ practices are providing more advanced primary care in some areas (for example, risk stratifying patients, using designated care managers to help high-risk patients, and having arrangements to ensure timely follow-up after ED and hospital visits) than comparison practices. Among beneficiaries who reported an ED visit in the past six months on the PY 5 CPC+ Beneficiary Survey, 66 percent of beneficiaries in Track 2 CPC+ practices compared to 57 percent of beneficiaries in Track 2 comparison practices reported that they were contacted by their doctor's office within one week of the ED visit. Otherwise, patients in CPC+ and comparison practices reported comparable patient experiences in access, continuity, coordination, and comprehensiveness of care on the PY 5 CPC+ Beneficiary Survey, suggesting that the more advanced care that practices and physicians reported was not captured in responses to the more general items asked of beneficiaries of all risk levels on the PY 5 CPC+ Beneficiary Survey.

[34] Laird et al. (2023a, Appendix 3.B) includes more information on the M2-PCMH-A content and administration of the CPC+ Practice Survey.

Figure 4.3. Distribution of regression-adjusted average overall M2-PCMH-A scores in PYs 1, 2, 3, and 5, by track

Practices in both tracks improved care delivery over the course of CPC+. Track 2 practices continued to use more advanced care delivery processes than Track 1 practices.



Source: Mathematica's analysis of data from the independent evaluation's CPC+ Practice Surveys. Questions not asked in the PY 4 Practice Survey.

Note: N = 1,056 Track 1 practices and 1,234 Track 2 practices that responded to the survey each program year. Practices rated their approaches to care delivery on a scale from 1 to 4. Mathematica summarized practices' responses and classified their summary scores by how advanced their approaches were. We determined the five categories using the survey instrument and the summary statistics from the PY 1 survey. Individual percentages may not sum to totals due to rounding.

M2-PCMH-A = modified Patient-Centered Medical Home Assessment; PY = Program Year.

Among subgroups of CPC+ practices,[35] most reported similar advancements to care delivery over time, with one exception. During PY 1, more CPC+ practices with prior primary care transformation experience than practices without that experience indicated that they provided fairly or very advanced care delivery (16 percent versus 5 percent) on the CPC+ Practice Survey. However, by the end of CPC+, similar proportions of practices in the two groups reported providing fairly or very advanced care (52 percent of practices with prior primary care transformation experience and 45 percent of those without). We did not find differences in self-reported care delivery improvements by participation in the Medicare SSP, practice size, ownership, or practice location.

[35] An analysis of practice subgroups investigated whether groups of practices with different characteristics responded differently on the CPC+ Practice Survey. We considered the following practice characteristics for subgroup analysis: participation in SSP, practice ownership, practice size, practice location, and the practice's prior transformation experience. See Laird et al. (2023a, Appendix 3.B) for more information on these subgroups.

Practices made staffing changes to implement the CPC+ model, which they felt improved care delivery. Throughout CPC+, many deep-dive practices reported that using CPC+ resources allowed them to add staff such as care managers, behavioral health providers, and pharmacists, which was especially helpful for improving patient care and alleviating burden on primary care practitioners. Changes also included redefining the roles of existing staff to work on CPC+ activities (such as reallocating a nurse's time to focus on longitudinal care management or assigning new responsibilities to a medical assistant to support CPC+ work) and working to integrate newly hired staff into practice teams and workflows. System-owned practices also reported adding system-level staff (such as pharmacists or behavioral health providers) to work on site with care teams at one or more of the system's practices.

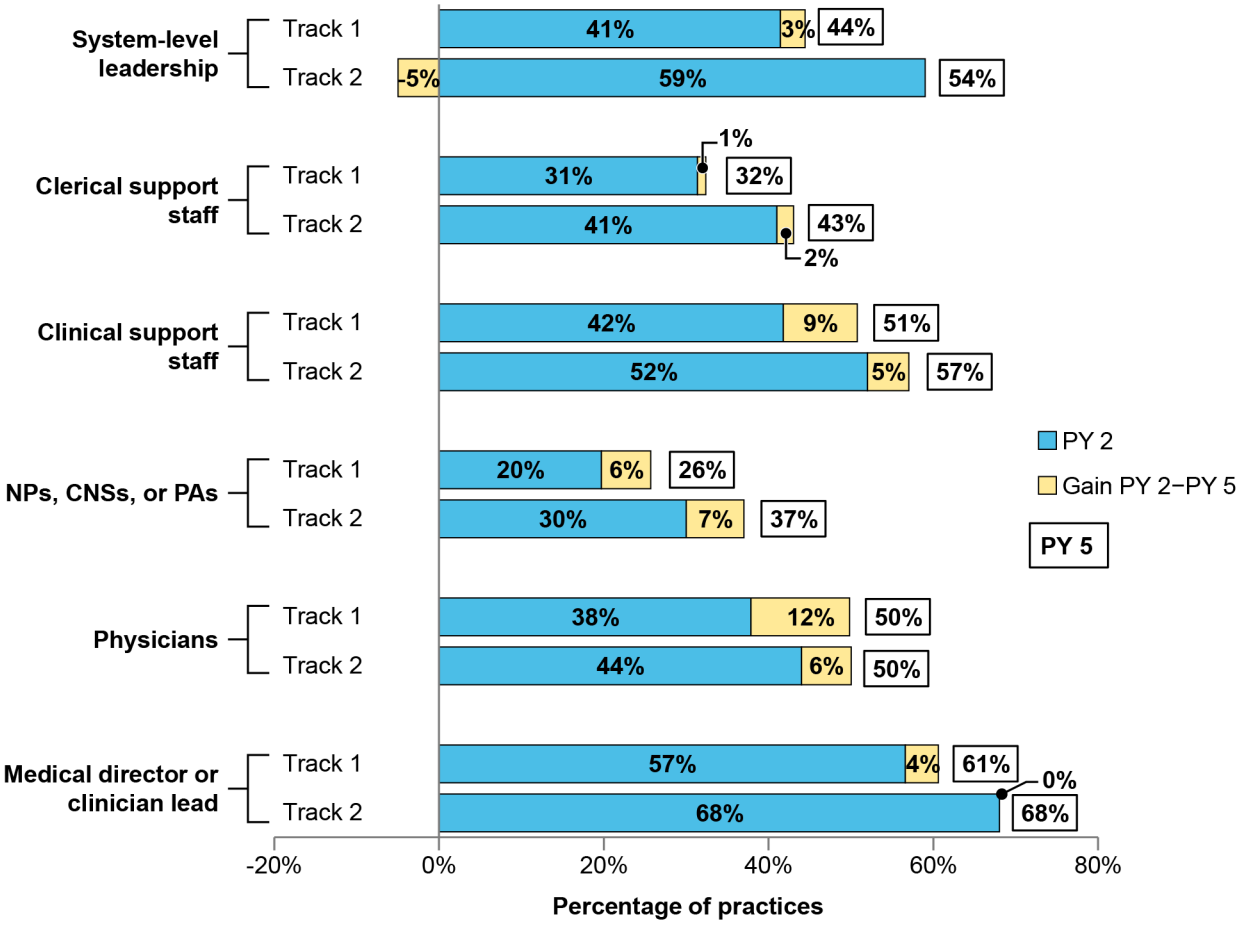
4.2.3. How did practices approach CPC+ implementation?

Practices generally reported spending most of the first year of CPC+ developing new workflows, updating electronic health records (EHRs), and getting staff buy-in. After the initial development of start-up activities and workflow changes in PY 1, deep-dive practices reported that they were able to shift their focus to refining and maintaining processes in subsequent years.

Practices involved a variety of practitioners and staff in implementing CPC+. Practices reported on the CPC+ Practice Surveys that, throughout their participation in the CPC+ model, medical directors/clinician leads, physicians, and clinical support staff were the most involved in implementing CPC+ (Figure 4.4). More Track 2 than Track 1 practices reported very high levels of involvement in implementing CPC+ among their non-physician practitioners, clinical support staff, clerical support staff, and system-level leadership. Track 1 and Track 2 practices were similarly likely to report that their physicians were very involved in implementing CPC+ by the final year of the model.

Figure 4.4. Percentage of practices reporting that staff type is "very involved" in implementing CPC+, PY 5, by track

In PY 5, medical directors/clinician leads, physicians, and clinical support staff were the most involved in implementing CPC+.



Source: Mathematica's analysis of data from the independent evaluation's CPC+ Practice Surveys.

Note: N = 1,055 Track 1 practices and 1,230 Track 2 practices that responded to the survey each program year. Not all practices responded to each question. The percentage of missing responses to each question was less than 2 percent, except for the question about the involvement of NPs, CNSs, or PAs in implementing CPC+, which was missing for up to 7 percent of practices annually. To correct for a higher percentage of missing responses because some practices do not have these types of staff, we recalculated practices' responses, taking into account whether they reported having NPs, CNSs, or PAs earlier in the survey. About one-third of Track 1 practices and one-quarter of Track 2 practices responded annually that they did not have NPs, PAs, or CNSs. About 22 percent of Track 1 and 17 percent of Track 2 practices responded annually that they were not part of a system (i.e., did not have system-level leadership).

CNS = clinical nurse specialist; NP = nurse practitioner; PA = physician assistant; PY = Program Year.

Independent practices included more of their practitioners and staff in implementing CPC+ than did system-owned practices. More physicians in independently owned practices (about 48 percent) versus system-owned practices (about 35 percent) reported on the PY 5 CPC+ Physician Survey that "Most or all of the practice site was involved in the substantive work in CPC+." Physicians in system-owned practices were more likely to report that they did not know who at the practice made substantive contributions to implement CPC+ (17 percent versus 6 percent). Similarly, as reported in the third annual report, practices reported on the PY 3 CPC+ Practice Survey that staff in system-owned practices had less autonomy than independent practices in hiring staff, setting organizational priorities, clinical work processes, and choosing specialists (Peikes et al. 2021).

Spread of CPC+ to non-CPC+ primary care practices

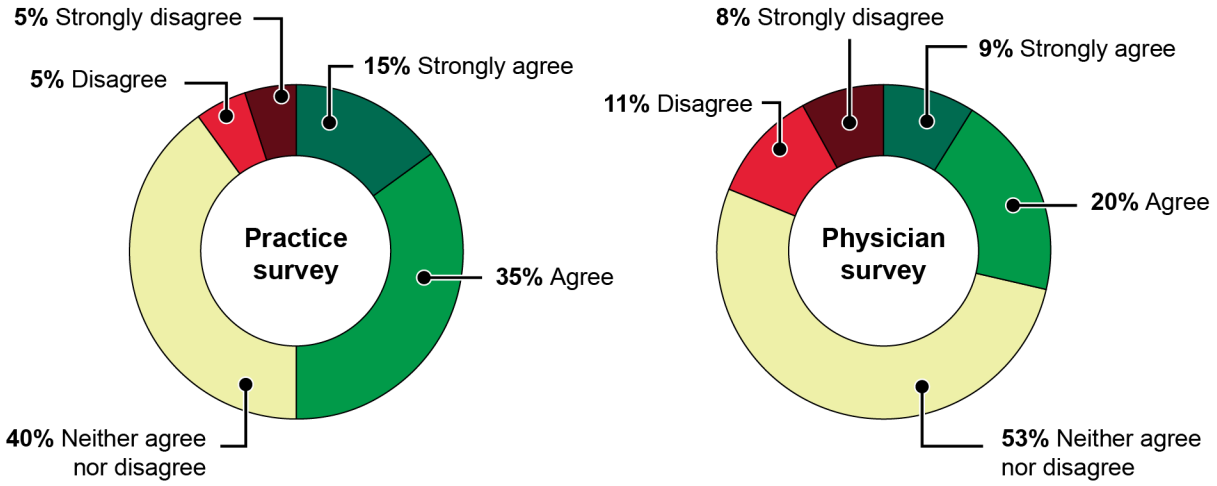
The changes practices made for CPC+ spread to some non-CPC+ primary care practices within participating health care systems. Throughout CPC+, system-owned deep-dive practices reported adopting a standardized approach to implementation across their primary care practices, extending changes they made for CPC+ to non-CPC+ primary care practices in the system as well. Among practices in systems with non-CPC+ primary care practices, 51 percent of Track 1 practices and 64 percent of Track 2 practices reported on the PY 5 CPC+ Practice Survey that those non-CPC+ practices adopted some of the CPC+ changes; most of the rest did not know whether changes were made.

4.2.4. What were practices' experiences with the COVID-19 pandemic?

One-half of practices and just under one-third of physicians agreed that CPC+ better positioned them to meet patients' care needs during the COVID-19 pandemic. Fifty percent of CPC+ practices reported on the PY 5 CPC+ Practice Survey (the 2nd year of the pandemic) that they agreed or strongly agreed with the statement that they were "better positioned to meet patients' care needs during the coronavirus pandemic because of [their] participation in CPC+." While the overall percentage of agreement was relatively stable compared to the prior year, more Track 1 practices agreed in PY 5 than in PY 4 (48 versus 37 percent, respectively). Twenty-nine percent of physicians in CPC+ practices reported on the PY 5 CPC+ Physician Survey that they agreed or strongly agreed with the same statement. Ten percent of practices and 18 percent of physicians disagreed that they were better positioned to meet patients' care needs during the coronavirus pandemic because of CPC+ (Figure 4.5). More large practices and physicians in large practices agreed that CPC+ better positioned them to meet patients' care needs during the pandemic: 54 percent of large practices (compared to 42 percent of small practices) and about 33 percent of physicians in large practices (compared to 20 percent of physicians in small practices). More rural practices than suburban practices agreed or strongly agreed that participating in CPC+ better positioned them to meet patients' care needs during the pandemic (57 percent vs. 43 percent; 51 percent of urban practices agreed or strongly agreed). More rural physicians than suburban or urban physicians agreed or strongly agreed that participating in CPC+ better positioned them to meet patients' care needs during the pandemic (41 percent vs. 20 percent and 29 percent), respectively. There were no notable differences in agreement by track, ownership, or SSP status.

Figure 4.5. Percentage of practices and physicians that reported they were better positioned to meet patients' care needs during the COVID-19 pandemic because of CPC+, in PY 5

In PY 5, half of practices and 3 in 10 physicians agreed or strongly agreed that they were better positioned to meet patients' care needs during the COVID-19 pandemic because of their participation in CPC+.



Source: Mathematica's analysis of data from the independent evaluation's PY 5 CPC+ Practice and Physician Surveys.

Note: N = 2,282 practices that responded to the PY 5 CPC+ Practice Survey and 530 physicians that responded to the PY 5 CPC+ Physician Survey. While the physician survey included a "don't know" response option, the follow-up open-ended responses often indicated a lack of knowledge rather than a neutral response. Therefore, for the physician survey, we grouped the "don't know" response under the "neither agree nor disagree" response category. Individual percentages may not sum to totals due to rounding.

PY = Program Year.

Longitudinal and episodic care management, risk stratification, and telehealth were the most commonly identified CPC+ care delivery requirements that practices and physicians reported helped them meet patient care needs during the pandemic. On the PY 5 CPC+ Practice and Physician Surveys, practices and physicians were asked to describe how CPC+ affected their ability to meet patients' care needs during the pandemic. Practices and physicians said longitudinal and episodic care management processes helped ensure that patients received necessary outreach and support during the pandemic, including patients who required additional support after testing positive for COVID-19. Practices and physicians also noted that risk stratification helped them understand patients' needs and prioritize patients in need of outreach during a time when fewer patients came to the office for in-person visits. Practices and physicians also saw longitudinal and episodic care management services as helpful generally: they noted high-risk patients received education and monitoring to help them avoid the hospital through their longitudinal care management efforts and staff were able to provide timely follow-up to patients who were discharged from the hospital or ED through their episodic care management processes. Regarding telehealth, practices and physicians described how telehealth tools that were already in place due to the CPC+ requirements made it faster and easier to pivot to telehealth to continue providing care during COVID-19.

Practices and physicians also identified payments and expanded staffing as mechanisms that improved their readiness to meet patients' care needs during the pandemic. Specifically, payments helped practices stay open and maintain operations during the pandemic by providing stable payment outside of a fee-for-service framework, though neither practices nor physicians typically specified which payments were important (that is, responses did not differentiate between the monthly risk-adjusted per-beneficiary care management fee, annual prospective Performance-based Incentive Payment, or, for Track 2 practices, quarterly prospective payments). Furthermore, robust care teams including care managers, behavioral health specialists, pharmacists, or coaches were seen as helpful during the pandemic by providing practices with flexibility to address emergent issues, such as vaccine administration and increased behavioral health needs.

CPC+ may have reduced service interruption during COVID-19 among Track 2 primary care physicians. Physician service interruption occurs when primary care physicians at the practice billed at least one claim in the prior month, but no claims in the given month. In an analysis of Medicare Part B professional claims, physicians in Track 2 CPC+ practices were 0.9 percentage points less likely to experience service interruption in April 2020 compared to April 2019 relative to physicians in Track 2 comparison practices. There were no differences in service interruption among CPC+ and comparison physicians in Track 1 practices. Laird et al. (2023a, Appendix 4.F) details the methodological approach and further findings from this analysis.

4.3. Practices' work by Comprehensive Primary Care Function

In this section, we describe practices' experiences with individual care delivery requirements over the course of CPC+. For each care delivery requirement, we first describe the requirement. Then, we describe the changes practices made related to the requirement and factors that helped or hindered their change efforts. Finally, we describe practices' plans for sustaining the changes made related to the requirement.

4.3.1. Function 1: Access and continuity

CPC+ encouraged practices to improve patients' access to, and continuity of, primary care. CPC+ defined *access to care* as the availability of health services when patients need and want them, and *continuity of care* as the creation of long-term, trusting relationships between patients and practitioners to enable effective provision of care (CMMI 2021). Access to primary care is expected to promote health and the adoption of healthy behaviors that can help patients prevent and manage disease (ODPHP n.d.). Access to a regular source of primary care also can prevent unnecessary and costly care, such as avoidable ED visits.

A. 24/7 access

What were the CPC+ requirements?

CMS required all practices to ensure patients have 24/7 access to a care team practitioner with real-time access to the EHR each year of CPC+.

How did practices change their processes to provide 24/7 access and what helped or hindered their efforts?

A higher percentage of physicians in CPC+ than comparison practices reported that patients had after-hours access to a primary care practitioner with real time access to the EHR; however, beneficiaries did not report differences in access. On the PY 5 CPC+ Physician Survey, 90 percent of

physicians in CPC+ practices compared with about 79 percent of physicians in comparison practices indicated that patients' after-hours access (24 hours a day, 7 days a week) to a physician, PA, NP, clinical nurse specialist, or answering service is always available; that the practitioner on call communicates problems and decisions back to the physicians regularly; and that they have real-time access to the practice's EHR system. From the beneficiary perspective, there were no differences in the percentages of patients in CPC+ and comparison practices who reported on the CPC+ Beneficiary Survey that they always received an answer to their health question as soon as needed when contacting doctor's office outside of regular office hours (approximately 65 percent in each group in PYs 2, 3, and 5).

Beneficiaries in Track 2 CPC+ practices were more likely than those in Track 2 comparison practices to report receiving information on how to access care after hours. Among beneficiaries in Track 2 CPC+ practices in PY 5, 72 percent reported on the CPC+ Beneficiary Survey that they received information from their doctor's office about what to do if they need care during evenings, weekends, or holidays, compared to 68 percent of beneficiaries in Track 2 comparison practices.

Several deep-dive practices said that having real-time access to the EHR made it easier to provide after-hours care. Practitioners at a couple of deep-dive practices noted that having EHR access on their mobile devices specifically enabled them to provide care from almost anywhere.

"It's very valuable to have staff understand that healthcare isn't 8 to 5, it's 24/7. It's important to educate patients on opportunities they have after hours or on weekends to get the help they need versus continuing to use an emergency room or a hospital."

—CPC+ program manager at a large, system-owned, Track 2 practice

Several deep-dive practices noted that benefits of 24/7 access included prevention of unnecessary ED visits. Several deep-dive practices said it was beneficial for patients to have access to care from a practitioner familiar with their circumstances instead of from a provider who did not know them in another setting like the ED. Providing this access can also benefit practices: the CPC+ coordinator at one of these deep-dive practices thought that offering 24/7 access may help the practice earn shared savings through their Accountable Care Organization (ACO) by reducing the number of ED visits.

How were practices planning to sustain 24/7 access?

Deep-dive practices planned to sustain 24/7 access because they believed such access prevents unnecessary ED visits. Most deep-dive practices planned to continue using the same approach to 24/7 access after CPC+ ends because of the benefit of preventing unnecessary ED visits mentioned above.

B. Continuity of care

What were the CPC+ requirements?

In PY 1, CMS required practices to organize care by practice-identified teams that were responsible for a specific group of patients and to ensure care teams could access patient information in the EHR to promote continuity of care. CMS also encouraged practices to develop the capacity to measure and analyze continuity of care for their empaneled patients. In PY 2, measuring continuity became a requirement. In PYs 3 to 5, CMS required practices to optimize continuity of care for empaneled patients while preserving access.

How did practices change processes to optimize continuity of care and what helped or hindered their efforts?

Practices tracked continuity of care at high rates since the beginning of CPC+. In the last three years of CPC+, all or nearly all practices (99 to 100 percent) reported to CMS that they tracked continuity of care. The biggest shift in the percentage of practices reporting to CMS that they tracked continuity of care occurred between PY 1 (77 percent) and PY 2 (91 percent), when measuring continuity became a requirement.

On the PY 5 CPC+ Physician Survey, similar percentages of physicians in CPC+ and comparison practices reported that patients usually or always see their physician when they come to the practice for acute care. Across tracks, 44 percent of physicians in CPC+ practices and approximately 39 percent of physicians in comparison practices reported that patients usually or always see their physician when they come to the practice for acute care. Similarly, there were no differences in the percentages of patients in CPC+ and comparison practices that reported on the CPC+ Beneficiary Surveys that they always received care from their primary care doctor (approximately 80 percent in each group in PYs 2, 3, and 5).

Deep-dive practices reported a tension between optimizing access and continuity of care and identified some strategies to help manage the tension. Strategies included offering same-day appointments for all practitioners, explaining to patients that practitioners see one another's patients for acute-care visits, and ensuring communication within the practice when practitioners see one another's patients, often through in-person discussion and/or EHR notes.

Several deep-dive practices described ways in which using their EHRs supported a continuous patient-practitioner relationship. For example, making patient assignments easily visible in the EHR helped practices schedule patients' visits with their assigned provider and helped practitioners and staff communicate and coordinate patient care with the assigned practitioner. Practices also described the role of health IT in facilitating continuity of information, such as by storing patient data in one searchable record in the EHR, and allowing practitioners and staff to message each other quickly and securely about patient care, and access information about care delivered outside of the practice.

How were practices planning to sustain continuity of care?

Deep-dive practices indicated that they plan to continue to empanel patients and support continuity of care after CPC+ ends. Several deep-dive practices said that empaneling their patients allows them to continue to track and provide continuity of care.

C. Alternative visits

What were the CPC+ requirements?

In PYs 1 and 2, Track 2 practices were required to regularly offer at least one alternative to traditional office visits. In PY 3, Track 2 practices were required to use their CPC+ payments to deliver care in new ways—beyond traditional office visits—that met patient needs. Alternative ways of delivering care could include e-visits, phone visits, video visits, group visits, home visits, or visits at an alternative location, such as a nursing home or skilled nursing facility.

How did practices change to provide alternative visits and what helped or hindered their efforts?

Telehealth visits increased starting in PY 4, prompted by the COVID-19 pandemic. On the CPC+ Practice Survey, the percentage of Track 1 practices that reported scheduled phone or video visits with a physician were generally available to patients increased from 14 percent in PY 3 to 92 percent in PY 5, and from 27 to 93 percent for Track 2 practices. This increase was not specific to CPC+ practices; according to the PY 5 CPC+ Physician Survey, about 97 percent of physicians in CPC+ and comparison practices in each track reported use of scheduled phone, video, or e-visits for at least some of their patients. Many deep-dive practices reported dramatically increasing the ratio of telehealth to in-person visits starting in the spring of 2020, necessitated by the pandemic.

"We've had a big push for telehealth, especially in the wake of [the COVID-19 pandemic]. We've had a lot of conversations about making sure that practitioners have [telehealth] available on their schedule and it will be an initiative that continues after CPC+."

—CPC+ program manager at a large, system-owned, Track 2 practice

Beyond telehealth, few Track 2 CPC+ practices offered other types of alternative visits. Across PYs 3 to 5, about one-third of Track 2 practices reported to CMS offering hospital visits, group visits, and home visits. Physicians in Track 2 CPC+ practices were more likely than physicians in Track 2 comparison practices to report that they or someone from their care team offered home visits to at least some of their frail or homebound patients (51 versus 36 percent). Track 1 practices were not required to offer alternative visits, but across PYs 3 to 5 approximately one-third reported to CMS offering hospital visits, about one-fifth reported offering group visits, and about one-quarter reported offering home visits.

Early in CPC+, deep-dive practices experienced challenges increasing their provision of all types of alternative visits. In later years, increased reimbursement for telehealth due to the COVID-19 pandemic mitigated this challenge for telehealth visits. Several deep-dive practices discussed challenges with covering the costs of alternative visits with CPC+ payments. Of the several Track 2 deep-dive practices that said they did not implement alternative visits in PY 2, a few reported as a barrier the belief that alternatives to fee-for-service payments (including CMS's Comprehensive Primary Care Payment for Track 2 practices) were inadequate to cover the costs of implementing home and telehealth visits. A few deep-dive practices also said they were concerned that if they began to offer phone visits, some payers would not reimburse for them, or patients would be unwilling to pay a copay for a service that practices had traditionally provided at no cost. However, by PY 4, several deep-dive practices reported that increased reimbursement rates for telehealth in response to COVID-19 helped to accelerate its use.

Deep-dive practices faced challenges with using telehealth technology to easily provide needed care. In PY 4, many deep-dive practices faced challenges with telehealth technology, including the complexity of using their telehealth platforms (the software systems practices use to provide telehealth). Many practices also noted the limitations of not being able to conduct a physical exam using telehealth. In PY 5, a couple of deep-dive practices described how certain patients find telehealth technology difficult to use. A couple of practices noted that telehealth is useful for visits that do not require a physical exam, such as visits for mental health. Other practices, however, noted that providing mental health exams via telehealth made it difficult to build trust with patients. How were practices planning to sustain alternative visits?

Deep-dive practices planned to continue offering telehealth to at least some patients after CPC+ ends because they perceive that telehealth is beneficial to patients. Many deep-dive practices planned to continue using telehealth visits after CPC+ ends without changing their current workflows. A couple of deep-dive practices explained that they will do so because telehealth helps patients avoid making unnecessary trips to the emergency room or hospital. A few other deep-dive practices noted that they will sustain telehealth because it is convenient for patients and a good way for providers to keep in touch with patients who have a difficult time coming to the office.

Deep-dive practices indicated that continued reimbursement is important to sustain telehealth. A few deep-dive practices explained they would be able to continue providing telehealth if payers continue to reimburse these visits at the same rates as during the COVID-19 pandemic.

A few deep-dive practices planned to continue providing home visits for homebound patients after CPC+ ends because these visits benefit patients. For example, a couple of deep-dive practices reported that they expanded their home visit programs as part of CPC+ and did not plan to scale back home visits when CPC+ ends. These practices find that home visits benefit patients through their convenience, especially for homebound patients. Deep-dive practices also noted that seeing patients in their homes gave practitioners a more complete picture of the patient's life, including their living conditions or how they store and take medications. Practitioners can better tailor their treatments and guidance to patients based on this knowledge.

"Going into somebody's home as opposed to them coming to your office, it really shows you exactly what they may be doing. They can tell you, 'No, I don't have trip hazards, I don't have rugs, I use my cane all the time.' But then the home visit nurse goes out and there are rugs everywhere."

—CPC+ program manager at a large, system-owned, Track 2 practice

4.3.2. Function 2: Care management

CMS views care management for patients with complex needs or high health care costs as a hallmark of comprehensive primary care. The term "care management" describes a set of proactive activities intended to improve health outcomes and reduce overutilization, harm, and waste (CMMI 2021). CPC+ requires practices to implement two aspects of care management. Longitudinal care management is more intensive and relationship-based and is provided to patients who are identified as having high and/or rising risk of poor health outcomes through a risk-stratification process and who would benefit from ongoing, proactive care. Shorter-term "episodic" care management focuses on care after acute care events such as ED visits and hospitalizations.

A. Risk stratification

What were the CPC+ requirements?

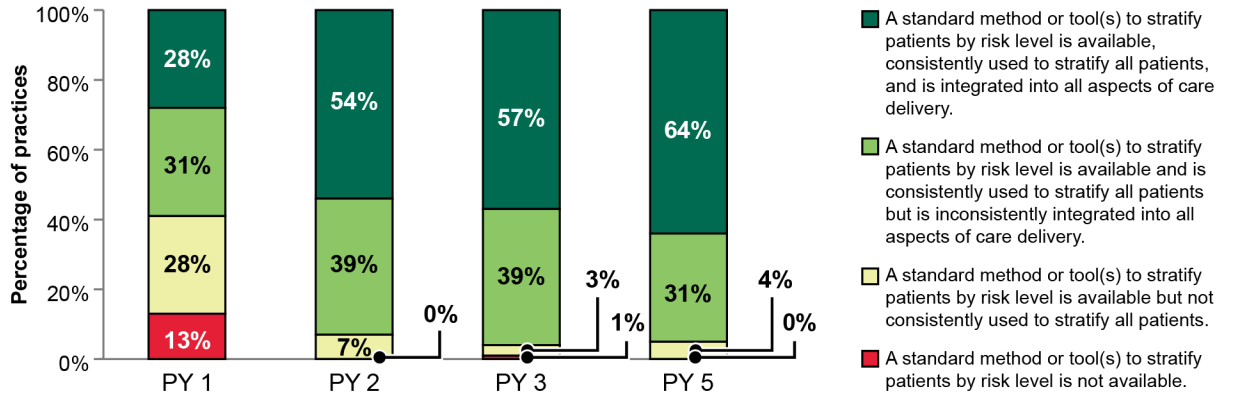
In PY 1, CPC+ required all practices to risk stratify their empaneled patients and encouraged practices to do so at least once a year; Track 2 practices were required to use a two-step risk-stratification process.[36] In PY 2, CPC+ required both Track 1 and Track 2 practices to use a two-step process to risk stratify their empaneled patients and encouraged (but did not require) practices to regularly reassess individual patients' levels of risk and the distribution of risk levels across their patient population. In PYs 3, 4, and 5, CPC+ required both Track 1 and Track 2 practices to ensure all empaneled patients were risk stratified.

How did practices change processes to risk stratify empaneled patients, and what helped or hindered their efforts?

Most CPC+ practices used standard tools or processes to support risk stratification, but fewer practices integrated them into all aspects of care delivery. Starting in PY 2, approximately 93 percent of practices reported on the annual CPC+ Practice Surveys that they consistently used a standard method or tool to stratify all patients by risk level, up from 59 percent in PY 1. However, fewer practices reported that the standard method or tool was consistently integrated into all aspects of care delivery (Figure 4.6).

Figure 4.6. CPC+ practices' reports about the availability and use of a standard method or tool to stratify patients by risk level, by program year.

The percentage of CPC+ practices that reported consistently using a standard method or tool to risk stratify patients increased from PY 1 to PY 2 and was about 95 percent in PYs 3 and 5. The percentage of practices that consistently used and integrated a risk-stratification method or tool into all aspects of care delivery was lower throughout the model, reaching 64 percent in PY 5.



Source: Mathematica's analysis of data from the independent evaluation's CPC+ Practice Surveys.

Notes: N = 2,287 practices. Not all practices responded to the question each year. The percentage of missing responses each year was less than 1 percent.

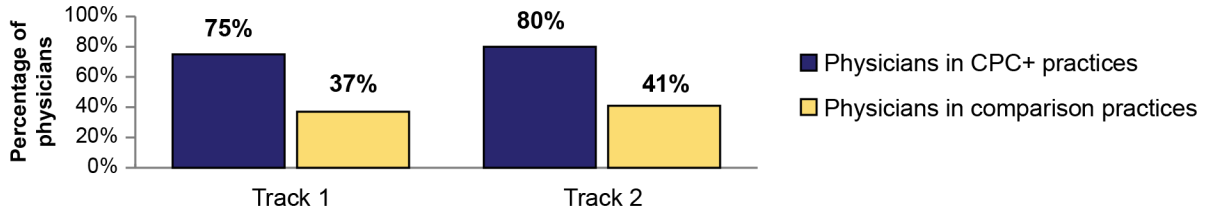
PY = Program Year.

[36] For the first step of two-step risk stratification, practices use an algorithm (using claims and utilization data, diagnosis clusters, clinical data in structured fields within the electronic health record, or combinations of these) to assign a risk status to each empaneled patient. For the second step, practices adjust the risk status score based on the care team's knowledge of the patient or their "clinical intuition," such as knowledge of whether the patient lives with a caregiver or faces economic challenges.

Substantially more physicians in CPC+ than comparison practices reported use of a standard process for risk stratification. On the PY 5 CPC+ Physician Survey, around three-quarters of physicians in CPC+ practices reported that their practice or health system used a standard method, tool, or algorithm to categorize patients into risk levels, compared to approximately 39 percent of physicians in comparison practices (Figure 4.7).

Figure 4.7. Percentage of physicians in CPC+ and comparison practices who reported that their practice or health system categorizes patients into risk levels using a standard method, tool, or algorithm in PY 5, by track.

Physicians in CPC+ practices were twice as likely as physicians in comparison practices to report that their practice or health system categorizes physicians' patients into risk levels using a standard method, tool, or algorithm.



Source: Mathematica's analysis of data from the independent evaluation's PY 5 CPC+ Physician Survey.

Notes: N = 248 and 318 physicians in Track 1 CPC+ and comparison practices, respectively; N = 291 and 315 physicians in Track 2 CPC+ and comparison practices, respectively. Each outcome is weighted to account for sampling design and nonresponse and to ensure CPC+ and comparison respondents had similar practice-level and respondent-level characteristics.

PY = Program Year.

Throughout CPC+, several deep-dive practices found risk stratification valuable for identifying patients for longitudinal care management. These practices described risk scores as helpful for identifying and tracking patients with higher levels of need, helping them manage their conditions, and keeping them from falling through the cracks. Additionally, several deep-dive practices described using risk scores to alert staff when high-risk patients contacted the practice and to indicate to staff when a patient should be scheduled for an extended visit.

Practices faced challenges defining risk levels, automating risk scores in the EHR, and updating risk scores based on clinical intuition. Several practitioners questioned the benefit of risk stratification. Early in CPC+, several deep-dive practices reported challenges with defining clear clinical criteria for categorizing patients into distinct risk levels (such as differentiating high risk versus rising risk). Throughout CPC+, practitioners and staff in many deep-dive practices expressed uncertainty about how automated risk scores were assigned (for example, which data sources were used to calculate risk scores) or the process for adjusting them based on their clinical judgment. Several deep-dive practices developed manual workarounds for assigning risk scores and entering them into the EHR, either because their EHR lacked the functionality to automate risk scores or because they perceived automated scores as inaccurate. Likewise, several practitioners questioned the value of risk scores for practices. For example, several practitioners said they knew their patients well and could anticipate their patients' needs without a risk score. Several practitioners perceived risk scores to be associated with patients' total cost of care and speculated that risk scores were more useful for payer partners than for their practice.

How were practices planning to sustain risk stratification?

Practices shared mixed reports on whether they planned to continue risk stratification after CPC+. Several deep-dive practices said they planned to sustain risk stratification, primarily because it helped them meet their patients' needs or because payer partners would require it for reimbursement. A few of these practices also indicated that working toward patient-centered medical home accreditation motivated them to integrate risk stratification into practice workflows before or during CPC+, so such use would continue after CPC+. In contrast, plans for sustaining risk stratification were unclear in several other deep-dive practices due to contradicting responses among system- and practice-level respondents. At these practices, system-level respondents reported plans to sustain risk stratification because their EHR automatically generated risk scores, but practice-level respondents in the same practices said they did not find risk scores to be helpful and therefore did not plan to use them in the future.

B. Longitudinal care management

What were the CPC+ requirements?

Throughout CPC+, CMS expected all practices to provide targeted, proactive, relationship-based (longitudinal) care management to all complex patients who are likely to benefit from it. While CMS no longer formally required Track 2 practices to use a care plan for patients receiving longitudinal care management starting in PY 3, CMS recommended that all practices develop care plans for patients with complex needs. CMS also recommended that practices integrate self-management support into their care management strategy starting in PY 3.[37]

How did practices change processes to provide longitudinal care management services, and what helped and hindered these efforts?

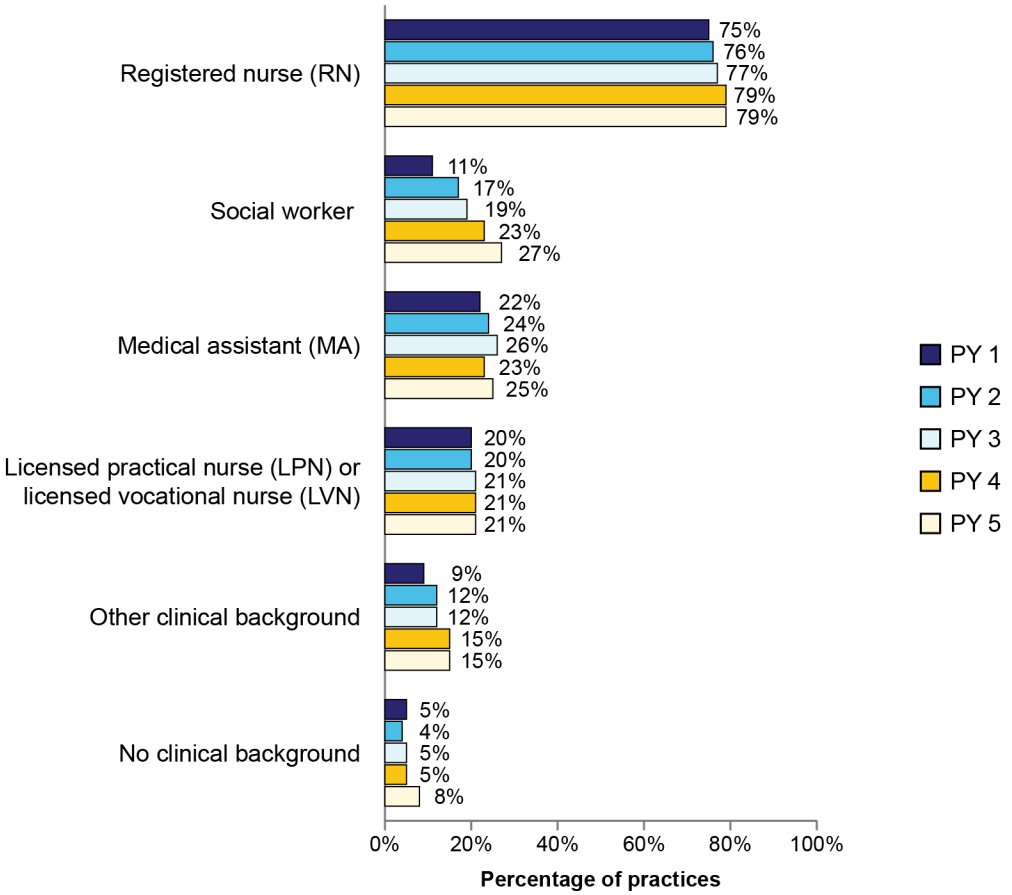
After increasing care management staffing in the first year of CPC+, most practices reported having a care manager (either full-time or part-time) in the later years of CPC+. Many Track 1 deep-dive practices and several Track 2 deep-dive practices reported that their practice hired care managers for CPC+ in PY 1. On the PY 1 CPC+ Practice Survey, 72 percent of Track 1 and 89 percent of Track 2 practices reported having at least one full- or part-time care manager/care coordinator to work with high-risk patients between and during visits to provide ongoing support, chronic care management, and coordinated care. In PYs 2 through 5, the percentage of practices that reported having at least one full- or part-time care manager/care coordinator was approximately 96 percent for Track 1 and 98 percent for Track 2 practices.

Throughout CPC+, many practices reported that at least one of their care managers was a registered nurse. In the later years of CPC+, an increasing number of practices reported having at least one care manager with a background in social work. Among practices that reported having one or more care managers/care coordinators on the CPC+ Practice Surveys, each year, 75 percent or more reported that at least one of their care managers had a clinical background as a registered nurse. As CPC+ progressed, the percentage of practices that reported that at least one of their care managers had a clinical background in social work increased from 11 percent in PY 1 to 27 percent in PY 5, making this the second most common clinical background by the final year of CPC+ (Figure 4.8).

[37] The PY 2 requirement to "implement self-management support for at least three high-risk chronic conditions" was previously related to the patient and caregiver engagement function (Function 4). In PY 3, CMS moved the recommendation related to self-management support to the care management function (Function 2).

Figure 4.8. Percentage of practices that reported that at least one of their care managers had each type of clinical background among practices that reported having one or more care managers, by program year

Among practices that reported having one or more care managers, three-quarters or more reported that at least one care manager was a registered nurse each year. About one-quarter or fewer practices reported that at least one care manager was a social worker, medical assistant, licensed practical nurse or licensed vocational nurse, or had no clinical background. The percentage of practices that reported that at least one of their care managers was a social worker increased 16 percentage points during CPC+.



Source: Mathematica's analysis of data from the independent evaluation's CPC+ Practice Surveys.

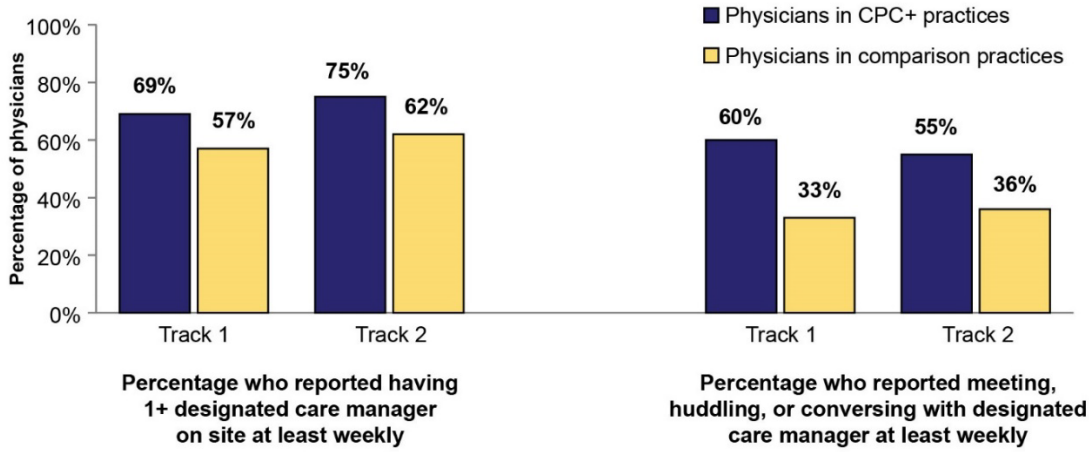
Note: N = 1,834 practices in PY1, N= 2,166 practices in PY2, N = 2,199 practices in PY3, N = 2,220 practices in PY4, N = 2,214 practices in PY5. Practices could select multiple options.

More physicians in CPC+ than comparison practices reported that their practice had care managers dedicated to supporting high-risk patients and that they engaged with these care managers regularly. On the PY 5 CPC+ Physician Survey, 91 percent of physicians in CPC+ practices reported that their practice used designated care managers whose primary role was to help high-risk patients, compared to approximately 71 percent of physicians in comparison practices. Among these physicians, those in CPC+ practices were more likely than those in comparison practices to report that their practices' dedicated care managers were located on site at least once per week and that they engaged in meetings, huddles, or conversations with the dedicated care manager at least weekly (Figure 4.9). As

described in Chapter 3, all of the practices interviewed about CPC+ payments reported using a substantial portion of those payments to staff care management positions.

Figure 4.9. Percentage of physicians at CPC+ and comparison practices with dedicated care managers who reported having care managers on site at least once per week and huddling with care managers at least weekly in PY 5, by track

Among physicians who reported their practice uses dedicated care managers to support high-risk patients, more physicians in CPC+ than comparison practices reported that (1) one or more designated care managers were on site at the practice at least weekly and (2) they met, huddled, or conversed with designated care managers at least weekly.



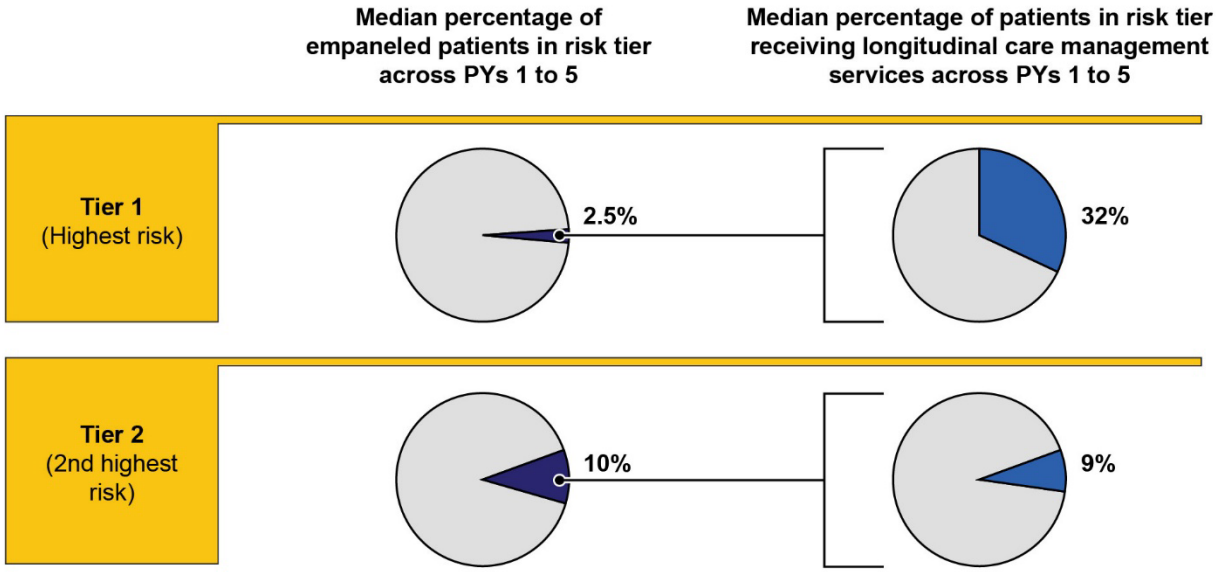
Source: Mathematica's analysis of data from the independent evaluation's PY 5 CPC+ Physician Survey.

Note: First survey question (left): N = 224 Track 1 and 266 Track 2 CPC+ practices. N = 212 Track 1 and 220 Track 2 comparison practices. Second survey question (right): N = 222 Track 1 and 265 Track 2 CPC+ practices. N = 211 Track 1 and 218 Track 2 comparison practices.

Throughout CPC+, practices provided longitudinal care management to a relatively small percentage of high-risk patients, citing insufficient care manager staff time as a key barrier to providing this service to more patients. The CPC+ Implementation Guide notes that 3 to 5 percent of a typical primary care practice's population is in the highest risk tier and that practices should ensure that such patients with complex needs, if likely to benefit, receive longitudinal care management (CMMI 2021). Throughout CPC+, practices reported to CMS that they placed a median of 2.5 percent of patients in the highest risk tier, of which a median of 32 percent were receiving longitudinal care management each year (Figure 4.10). On the PY 5 CPC+ Practice Survey, 57 percent of practices reported insufficient care manager staff time as a major or minor challenge to providing longitudinal care management. Among these practices, the most common reasons reported for having insufficient care manager time was that care managers were focused on episodic care management (32 percent) and the CPC+ care management fees were not enough to support hiring more care managers (24 percent). Similarly, many deep-dive practices noted that care managers' competing responsibilities (such as episodic care management and other clinical activities), made it difficult to devote sufficient time to providing longitudinal care management to all patients who would benefit. In PYs 4 and 5, COVID-19 exacerbated this challenge, as many deep-dive practices reported assigning new responsibilities to care managers such as conducting episodic care management for patients with COVID-19 and assisting with COVID-19 testing and vaccination efforts. Several deep-dive practices noted that they would like to hire more care managers if funding and qualified candidates became available.

Figure 4.10. Comparison of patients' receipt of longitudinal care management during CPC+

Across program years, CPC+ practices reported to CMS that the median percentage of empaneled patients in the highest risk tier (Tier 1) was 2.5 percent. Of these patients, practices reported that around one-third received longitudinal care management. Practices reported placing a median of 10 percent of patients in the next highest risk tier (Tier 2), of which practices reported that 8 percent received longitudinal care management.



Source: Mathematica's analysis of PYs 1, 2, 3, 4, and 5 practice-reported care delivery data submitted to CMS.

Note: Practices defined the number and criteria for as many as 10 risk tiers used in risk stratification. Based on the CPC+ Reporting Guide, for the purposes of this figure and the text, we use the term "Tier 1" to refer to the highest risk tier and "Tier 2" to refer to the second-highest risk tier. The number of practices reporting in each risk tier varied by year.

For Q4 PY 1, Tier 1 included 2,270 practices; Tier 2 included 2,203 practices. For Q4 PY 2, Tier 1 included 2,273 practices and Tier 2 included 2,325 practices. For Q4 PY 3, Tier 1 included 2,347 practices and Tier 2 included 2,395 practices. For Q4 PY 4, Tier 1 included 2,338 practices and Tier 2 included 2,406 practices. For Q4 PY5, Tier 1 included 2,329 practices and Tier 2 included 2,382 practices.

In PYs 2–5, the percentage of patients in a given risk tier under longitudinal care management was calculated automatically and provided in the portal data. In PY 1, this calculated percentage was not provided with the portal data and was instead constructed by dividing the number of patients in a risk tier by the number of patients receiving longitudinal care management within the risk tier.

PY = Program Year; Q4 = fourth quarter.

Additional challenges to conducting longitudinal care management included difficulty engaging patients, and to a lesser extent, lack of practitioner buy-in. Each year, many deep-dive practices reported that they were unable to engage some high-risk patients in longitudinal care management because the patients were difficult to contact, were not ready to make lifestyle changes to support their health, or had other psychosocial barriers to participation. In addition, throughout CPC+, a few deep-dive practices said some practitioners were reluctant to integrate longitudinal care management into their workflows because they did not view the services as beneficial, preferred to manage patients on their own, or did not fully understand care management processes at their practice.

In PYs 4 and 5, practices reported that previously embedded care managers moved to centralized locations outside the practice, despite the CPC+ model recommendation that care managers be embedded at the practice site. On the CPC+ Practice Surveys, the percentage of practices that reported that care management services for high-risk patients were provided by a care manager located at their practice site increased during the first three years of CPC+ (from 57 percent in PY1 to 76 percent in

PY3), before declining to 63 percent in PY 5. Likewise, in PYs 4 and 5, several system-owned deep-dive practices said their systems moved previously embedded care managers to centralized locations outside the practice as part of broader efforts to standardize care management throughout the system. Respondents from these deep-dive practices had mixed views about the transition to centralized care managers. For example, a care manager at one of these practices noted that the transition out of the practice reduced distractions and made it easier to focus on longitudinal care management. In contrast, practitioners and staff at a few of these practices said that centralizing care managers made it challenging to communicate about high-risk patients and to conduct "warm handoffs," in which practitioners introduced patients to the care manager in person to establish a relationship and build trust. The CPC+ model recommends that care managers are located at the practice site where they can be directly integrated into the primary care team.

Deep-dive practices consistently highlighted the benefits of longitudinal care management for high-risk patients and practitioners. Throughout CPC+, many deep-dive practices reported that dedicated care managers helped ensure high-risk patients received needed services and eased time constraints for busy practitioners who lacked the time to address all aspects of patients' medical and psychosocial needs. In PY 5, a few deep-dive practices said that longitudinal care management was "the most valuable" change their practice implemented for CPC+.

"When you think about the implication of cost, hospitalizations, and progression of illness…I think [care management] is one of the most significant things we've found."

— Physician at a large, system-owned practice

In PY 5, more physicians in CPC+ than comparison practices reported that their practice developed care plans for high-risk patients. However, practitioners' use of care plans was low for both groups and deep-dive practices consistently said working on care plans was burdensome. On the PY5 CPC+ Physician Survey, 80 percent of physicians in CPC+ practices reported that they, or someone from their care team, developed care plans (defined as a structured personalized plan of care) for at least some of their high-risk patients, versus 66 percent of physicians in comparison practices. Among physicians in both CPC+ and comparison practices who said that they or someone from the care team develops care plans, only about one-quarter reported "usually or always" using care plans personally for ongoing care. Deep-dive practices described a variety of challenges to using care plans including difficulty using their EHR to access, create, and update care plans and practitioners' resistance to using care plans due to their perceived low clinical usefulness and burden. In addition, in PYs 1 and 2, the term "care plan" meant different things to different types of staff at practices, suggesting a lack of understanding about the purpose of care plans.

How were practices planning to sustain longitudinal care management?

Many practices planned to sustain longitudinal care management because they believed it was beneficial for patients and practitioners. On the PY 5 CPC+ Practice Survey, 75 percent of practices reported that they planned to maintain most or all of the process to provide longitudinal care management to patients. The most common reason deep-dive practices cited for sustaining longitudinal care management was that they believed it provided the aforementioned benefits to patients and practitioners.

Practices said the availability of funding and staffing will be essential for sustaining longitudinal care management. Many deep-dive practices highlighted the importance of funding to sustain longitudinal care management. While several deep-dive practices said they identified new funding sources such as value-based contracts with payers, Primary Care First, and other initiatives, a few deep-

dive practices shared concerns about having adequate funding to continue this work in the absence of CPC+. In addition, a few deep-dive practices speculated that ongoing challenges with staffing—including insufficient care management staff time and difficulty hiring qualified care managers—will make it hard to sustain longitudinal care management.

C. Episodic care management

What were the CPC+ requirements?

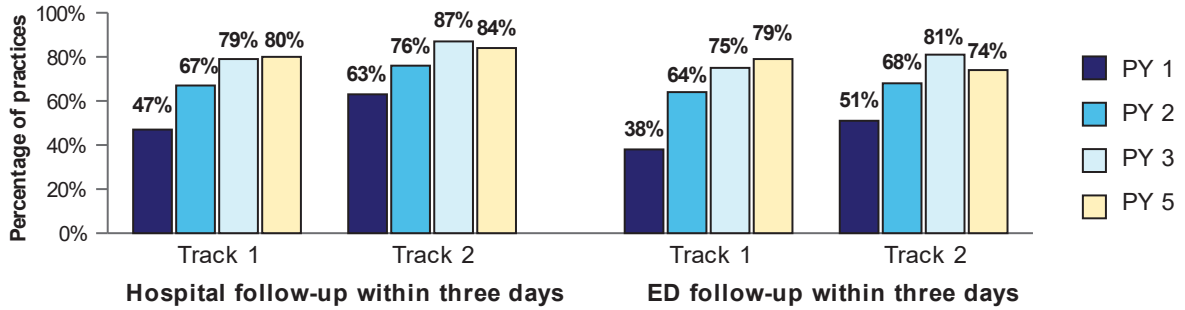
CMS required all practices to provide short-term (episodic) care management to a high and increasing percentage of empaneled patients who had an ED visit or hospital admission, discharge, or transfer and were likely to benefit from care management. Episodic care management services include transition of care planning, medication reconciliation, and education. CMS required practices to deliver these services within specific time frames. In PYs 1 and 2, CMS required practices to have a follow-up interaction with patients discharged from the ED within one week and with patients discharged from target hospitals within 72 hours or 2 business days. In PYs 3 to 5, CMS required practices to ensure that all patients received timely follow-up contact from the practice after discharge from an ED or hospital, as clinically indicated, but encouraged rather than required the specific timeframes.

How did practices change processes to provide episodic care management and what helped or hindered their efforts?

Practices followed up with an increasing proportion of patients after ED visits and hospital discharges in the first three years of CPC+. The percentage of practices that reported on the annual CPC+ Practice Surveys that they reached out to most or all patients within one week of an ED visit and three days of a hospital discharge increased between PYs 1 and 3 (Figure 4.11). In the later program years, the percentage of practices reporting that they reached out to most or all patients decreased slightly in Track 2 and leveled off in Track 1. This trend may be related to practices' response to the COVID-19 pandemic. At the height of the pandemic, several deep-dive practices said that they focused ED and hospital follow-up calls only on patients who had been admitted for COVID-19.

Figure 4.11. Percentage of practices that reported following up with most or all patients within three days of a hospital discharge and within one week of an ED visit, by track and program year

Practices in both tracks increased the proportion of patients with whom they conducted timely outreach after hospital discharges and ED visits during the first few program years. Their progress leveled off in the later program years.



Source: Mathematica's analysis of data from the independent evaluation's CPC+ Practice Surveys.

Note: N = 1,056 Track 1 practices and 1,234 Track 2 practices. Not all practices responded to the question in each year. The percentage of missing responses each year was less than 1 percent.

PY = Program Year.

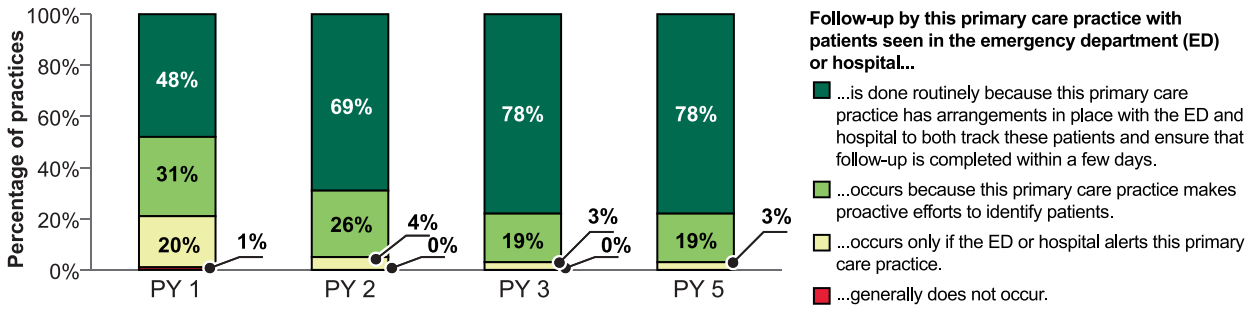
Practices changed the types of patients who received episodic care management as they prioritized responding to the COVID-19 pandemic. In the first two years of CPC+, most deep-dive practices reported that they focused episodic care management on patients who (1) went to the ED or hospital for acute issues, (2) developed complications after surgery or other hospitalizations, or (3) developed a new or exacerbated illness. At the height of the pandemic, several deep-dive practices said that they limited ED and hospital follow-up calls to patients who had been admitted for COVID-19.

In PY 5, more beneficiaries in Track 2 CPC+ than in comparison practices reported timely follow-up after an ED visit. Among beneficiaries who reported an ED visit in the past six months on the PY 5 CPC+ Beneficiary Survey, 66 percent of beneficiaries in Track 2 CPC+ practices compared to 57 percent of beneficiaries in Track 2 comparison practices reported that they were contacted by their doctor's office within one week of the ED visit. There were no differences between beneficiaries in Track 2 CPC+ and comparison practices in prior PYs. While there were no differences between beneficiaries in Track 1 CPC+ and comparison practices in PY 5, more beneficiaries in Track 1 CPC+ than comparison practices reported timely follow-up after an ED visit in PYs 2 and 3.

By PY 3, about three-quarters of CPC+ practices reported having information-sharing relationships with local hospitals, which facilitated timely follow-ups with their patients. The percentage of practices that reported on the CPC+ Practice Surveys that they had arrangements with EDs and hospitals to track their patients and ensure that follow-up is completed increased by 30 percentage points between PYs 1 and 3, then remained steady between PYs 3 and 5. As practices improved their information-sharing relationships with hospitals and EDs, they tended to require less frequent outreach to hospitals and EDs for information about their patients. Correspondingly, the percentage of practices that reported making proactive efforts to identify patients decreased 12 percentage points over the course of CPC+ (Figure 4.12). Several independent and system-owned deep-dive practices described how they improved information-sharing processes with local and system-affiliated hospitals during CPC+ so that they received timely notifications if their patients presented to an ED or hospital. A couple of system-owned deep-dive practices reported in each program year that they struggled to get timely information only when their patients visited non-affiliated, local hospitals that did not have the same EHR.

Figure 4.12. Percentage of CPC+ practices that reported having information exchange arrangements with hospitals and EDs, by program year

The percentage of CPC+ practices that reported having arrangements in place with EDs and hospitals to ensure timely follow-up with discharged patients increased each year between PYs 1 and 3, then remained steady between PYs 3 and 5.



Source: Mathematica's analysis of data from the independent evaluation's CPC+ Practice Surveys.

Note: N = 2287. Not all practices responded to the question in each year. The percentage of missing responses each year was less than 1 percent.

ED = emergency department; PY = Program Year.

Physicians in CPC+ practices were more likely than physicians in comparison practices to have access to timely information from hospitals, especially if they were affiliated with a system. On the PY 5 CPC+ Physician Survey, more physicians in CPC+ practices than in comparison practices had arrangements in place with EDs and hospitals to track patients and ensure timely follow-up was completed (71 versus approximately 55 percent, respectively). Moreover, more physicians in system-owned CPC+ practices had these information-sharing arrangements in place than physicians in independent CPC+ practices (approximately 78 percent versus approximately 61 percent, respectively).

Several health systems spread episodic care management to all primary care practices in their system. In PY 5, several system-owned deep-dive practices reported that ED and hospital follow-up processes were standardized across primary care practices, regardless of CPC+ participation. Moreover, a few of these practices said that spreading episodic care management to all primary care practices aligned with their system-wide efforts to enhance population health and decrease ED visits and hospitalizations. Systems may have spread episodic care management to non-CPC+ practices by integrating the workflow into the roles of existing staff and/or by funding the activities through the system's general revenue, other initiatives, or value-based payments.

How were practices planning to sustain episodic care management?

Most practices said they planned to sustain episodic care management because ED and hospital follow-up is valuable to patient care. Ninety-three percent of practices reported on the PY 5 CPC+ Practice Survey that they are likely to maintain a lot, most, or all of their episodic care management processes after CPC+ ends. Many deep-dive practices said they will continue these processes because they help staff educate patients about their health, reconcile medication lists, provide guidance on when to seek which type of care, and ultimately reduce avoidable ED visits and hospitalizations. Additionally, several deep-dive practices shared that receiving follow-up calls after ED or hospital visits made patients feel cared for and comforted, knowing that the practice was closely monitoring them.

Deep-dive practices planned to use a variety of funding streams to sustain episodic care management, but a few practices were concerned that funding will be insufficient. Specifically, several deep-dive practices planned to use funding from initiatives like Primary Care First or value-based care contracts with other payers and ACOs to support episodic care management. However, a few practices noted that the care manager position (the staff member who typically completed most of these activities) was the most expensive aspect of CPC+ and expressed concern that they would not be able to fund the position after the model ended.

4.3.3. Function 3: Comprehensiveness and coordination

CMS encourages CPC+ practices to provide comprehensive and coordinated care. The CPC+ Implementation Guide uses the term "comprehensiveness" in the primary care setting to refer to a practice meeting most of its patient population's medical, behavioral health, and health-related social needs. "Coordination" refers to the primary care practice's central role in helping patients and caregivers navigate a complex health care system, including identifying and communicating with specialists and accessing community resources to meet their needs (CMMI 2021).

A. Ensuring coordinated referral management

What were the CPC+ requirements?

In PYs 1 and 2, CMS required practices to maintain or initiate collaborative care agreements with at least two groups of specialists that are used frequently by the practices' patients or are high cost. Practices were to identify these specialists based on information in reports from CMS and other payer partners. These formal written agreements were to include expectations for timely patient visits, the frequency and type of information communicated between the primary care practice and specialist, and their respective roles. In PYs 3 to 5, CMS required practices to ensure coordinated referral management, especially for specialists to whom they frequently make referrals and/or for high-cost specialty care. Though still encouraged, practices were no longer required to initiate or maintain collaborative care agreements.

How did practices change processes to provide coordinated referral management and what helped or hindered their efforts?

Throughout CPC+, practices used workflows and tools they largely had in place before CPC+ to manage referrals with specialists, with some modifications. Across program years, many deep-dive practices reported:

- Establishing collaborative care agreements, and for a few practices, adding new referral management tools such as e-consults.
- Using CPC+ funding to add or repurpose existing staff, especially in the early years of CPC+, to enhance coordination referral tracking and follow-up.
- Relying on a system-wide EHR or other referral management technology to manage specialty referrals and share consult notes and test results between primary and specialty care.
- Using unwritten and informal referral processes such as referring patients to specialists who were covered by patients' insurance, were convenient for patients, and with whom they had established relationships.

More practices reported using collaborative care agreements with specialists over time, but some practices continued to express reservations about the usefulness of these agreements. The percentage of practices that reported on the annual CPC+ Practice Surveys that they had formal written agreements that described expectations for timely patient visits, the frequency and type of information communicated between the primary care practice and specialist, and their respective roles with many or most or all medical and surgical specialty groups more than doubled over the course of the model, from 17 percent in PY 1 to 40 percent in PY 5. In PY 5, an additional 53 percent of practices reported that they had formal agreements with some medical and surgical specialist groups. Practices most commonly reported to CMS, from PYs 3 to 5, that they supported referral management with cardiology and gastroenterology. Deep-

dive practices, however, consistently reported confusion and mixed perceptions about the purpose and value of collaborative care agreements. For example, over the years, several deep-dive practices said that having collaborative care agreements in place with specialists did not improve access to or communication with specialists, nor did it reduce the cost of care, but several other deep-dive practices noted benefits in these areas.

In PY 5, a few deep-dive practices reported that their system spread referral management processes and tools, such as e-consults, to non-CPC+ primary care practices and specialists within the system because it helped retain revenue; a couple of these practices said it helped to either improve quality or decrease costs. One system medical lead said that he developed a business plan to show that hiring staff to manage referrals would not only close gaps in care but also "drive revenue" by retaining care within the system. At another deep-dive practice, the medical lead said that referral management reduced costs by outlining protocols for when primary care could quickly consult with cardiologists rather than run additional tests. Another system medical lead said that expanding their e-consult platform to allow primary care providers and a larger group of specialists to directly message each other to treat high-cost diseases like diabetes and cancer led to "very meaningful" coordination of patient care.

"We have a way to control referrals…and make sure that the referrals, when we do our gaps in care work, that they're staying within the network."

—Medical system lead at a medium, system-owned, Track 1 practice

A few deep-dive practices noted that collaborative care agreements had limited effects on the behaviors of primary care physicians and specialists. These practices said that agreements do not incentivize primary care physicians or specialists to improve communication and collaboration with each other. The system medical lead at one such practice explained that primary care providers simply do not prioritize pursuing structured relationships with specialists, even if they have collaborative care agreements in place, because they allow their patients to choose their own specialists, regardless. These practices also said that they are working with their ACOs and Managed Care Organizations (MCOs) to refine their agreements to incentivize primary care physicians and specialists to change their behavior.

"A care compact…it's kind of a handshake in some ways even though it's in writing. There's not necessarily a lot of teeth behind it."

—System lead at a small, independent, Track 2 practice

While CMS intended to increase the orientation of primary care practices to patients' total cost of care, many practices did not receive or consider data on high-volume or high-cost specialty care when making referral decisions. Compared to physicians in comparison practices, physicians in CPC+ practices more frequently reported on the PY 5 CPC+ Physician Survey receiving cost data on specialists from payers (16 versus approximately 7 percent, respectively). Yet they were not more likely to report using data a lot or some when deciding to which specialist to refer a patient (54 versus approximately 48 percent, respectively). Over the years, deep-dive practices said that rather than focus on cost, they commonly made specialist referrals based on existing relationships with specialists, insurance type, and patient preference.

Although many CPC+ practices reported an increased ability to exchange clinical information with specialists, physicians in CPC+ and comparison practices reported similar levels of receiving and using such information. The percentage of practices that reported on the annual CPC+ Practice Surveys that they electronically send and receive patient clinical data for most or all specialist practices increased from 58 percent in PY 1 to 72 percent in PY 5, with most of the change occurring between PYs 3 and 5. However, according to the PY 5 CPC+ Physician Survey, physicians in CPC+ and comparison practices reported no difference in their, or someone in their care team's, routine use of the EHR or other health IT to track referral and consultation communications with providers (approximately 85 percent of physicians in both groups). In addition, similar percentages of physicians in CPC+ and comparison practices reported that they always or most of the time received useful information about their referred patients from specialists (approximately 60 percent of physicians in both groups).

Over the years, many deep-dive practices reported that shared or interoperable EHRs facilitated coordinated referral management when present and challenged it when absent. A few deep-dive practices that did not have EHRs that were interoperable with specialists described a time-consuming process of manually requesting patient information from specialists, making it difficult to consistently access patient information.

How were practices planning to sustain providing coordinated referral management?

Many practices reported plans to continue coordinating care with specialists after CPC+, especially for tasks supported by EHRs. Ninety-one percent of practices reported on the PY 5 CPC+ Practice Survey that they would maintain a lot or most of their processes to coordinate care with specialists. Several deep-dive practices in PY 5, almost all of which were part of a system, noted that they will continue referral management processes that are automated in their EHR.

"E-consult is built and…there's no significant additional financial outlay or operational outlay so that's just become part of care now."

—Medical system lead at a large, system-owned, Track 2 practice

Many practices reported plans to maintain their processes for collaborative care agreements with specialists, but deep-dive practices had mixed views on continuing these efforts because they perceived limited effects on specialists' behavior. Fifty-six percent of practices reported on the PY 5 CPC+ Practice Survey that they would maintain a lot or most or all of their process for using formal written agreements with specialists to set expectations about roles and information sharing. At the same time, deep-dive practices reported mixed views, with a couple saying they would maintain collaborative care agreements in their current form, a few others saying they planned to make changes, and a few more saying they would discontinue them entirely. They cited the aforementioned limited effect on primary care physicians' and specialists' behavior as the reason for discontinuing collaborative care agreements.

Practice participation in shared savings initiatives may help sustain coordinated referral management after CPC+ ends. In PY 5, Track 2 SSP practices were more likely to report to CMS that they coordinated referral management for various high-frequency and/or high-cost specialists than Track 2 non-SSP practices. For five of eight specialties—endocrinology, gastroenterology, oncology, orthopedic surgery, and surgery—Track 2 SSP practices reported higher percentages of referral management, with percentage point differences ranging from 12 to 21. No differences in referral management were reported for cardiology, obstetrics, or ophthalmology. Track 1 SSP and non-SSP practices reported no differences in referral management for any specialties.

B. Integrating behavioral health care with primary care

What were the CPC+ requirements?

In PY 1, CMS required that Track 2 practices choose and implement at least one option for integrating behavioral health into their primary care practice. In PY 2, CMS required all Track 1 practices to plan to implement at least one option for integrating behavioral health care, and required Track 2 practices to build on their work from PY 1 to further integrate behavioral health care into primary care. From PYs 3 to 5, CMS required both Track 1 and Track 2 practices to follow an evidence-based approach (or combination of approaches) to provide integrated behavioral health care.

Evidence-based models for behavioral health care integration

CMS required both Track 1 and Track 2 practices to follow an evidence-based approach (or combination of approaches) to provide integrated behavioral health care. The two evidence-based models of behavioral health integration for CPC+ are:

1. **Primary Care Behaviorist model:** a behavioral health specialist (licensed clinical social worker, psychologist) is located on site at the primary care practice to provide time-limited therapy for patients with behavioral health needs.
2. **Care Management for Mental Illness model:** practices use a care manager with behavioral health training to support the care management of patients with behavioral health needs. The care manager works closely with a psychiatrist who supports the care manager and provides decision support. The psychiatrist should be connected to the team telephonically and through the EHR.

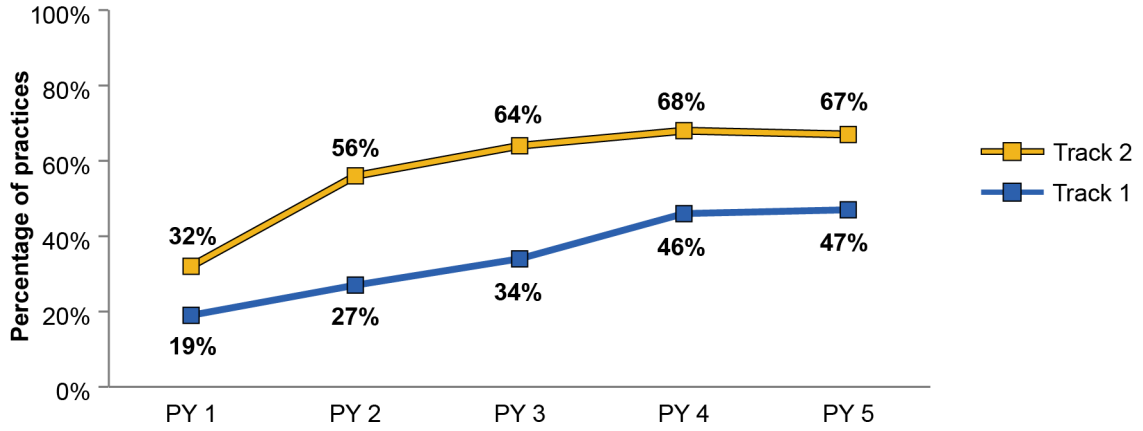
How did practices change processes to integrate behavioral health care and what helped or hindered their efforts?

Nearly all practices worked to implement a strategy to address behavioral health needs. From PY 3 to PY 5, at least 98 percent of practices reported to CMS that they worked to implement either the Care Management for Mental Health Illness or the Primary Care Behaviorist model to address patients' behavioral health needs. Over the course of the model, more practices selected the Primary Care Behaviorist model than the Care Management for Mental Illness model to address behavioral health needs. Similar to previous years, in PY 5, 58 percent of practices reported to CMS that they used the Primary Care Behaviorist model, 35 percent used the Care Management for Mental Illness model, and 5 percent indicated that they used a combination of the two approaches.

Since the beginning of CPC+, the percentage of practices with behavioral health staff increased substantially. By the final year of the model, 47 percent of Track 1 and 67 percent of Track 2 practices reported on the PY 5 CPC+ Practice Survey that they had a full- or part-time clinical psychologist, psychiatrist, or clinical social worker (behavioral health specialist) at the practice site (Figure 4.13). Track 1 practices reported that the increase in staff occurred gradually between PYs 1 and 4, whereas Track 2 practices reported that most of the increase in staff occurred in PYs 1 and 2. Relatedly, among practices that reported having a care manager or care coordinator on the PY 5 CPC+ Practice Survey, about 60 percent across tracks reported that their care managers or care coordinators had behavioral health training. This increased from 38 percent of Track 1 practices and 48 percent of Track 2 practices in PY 2 (question not asked in PY 1), with most of the increase occurring between PYs 2 and 3.

Figure 4.13. Percentage of practices with a full- or part-time behavioral health specialist, by track and program year

Practices reported increasing their behavioral health staff capacity throughout CPC+ by hiring new staff.



Source: Mathematica's analysis of data from the independent evaluation's CPC+ Practice Surveys.

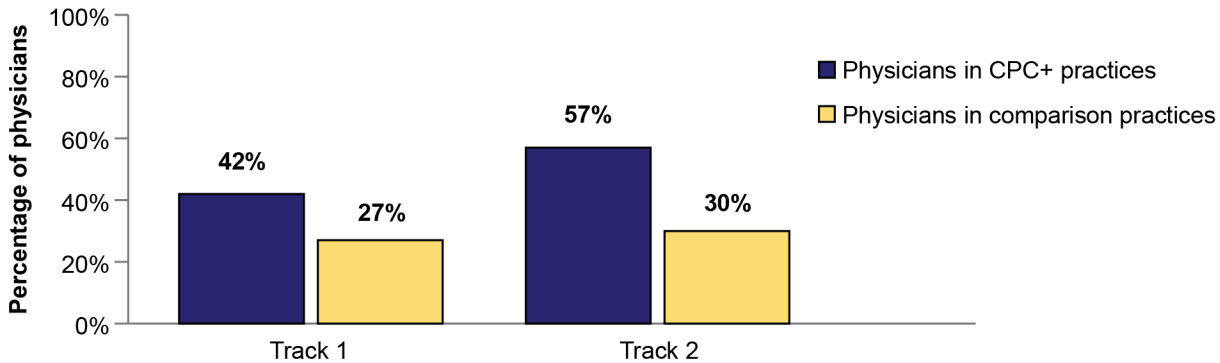
Note: N = 1,054 Track 1 practices and 1,232 Track 2 practices. Not all practices responded to the question each year. The percentage of missing responses each year was less than one percent.

PY = Program Year.

More physicians in CPC+ than comparison practices reported that their practice offered on-site counseling for behavioral or mental health problems. On the PY 5 CPC+ Physician Survey, 42 percent of physicians in Track 1 CPC+ practices and 57 percent of physicians in Track 2 CPC+ practices reported that behavioral health counseling was available at the practice site, compared to around 30 percent of physicians in comparison practices across tracks (Figure 4.14). These results from the PY 5 CPC+ Physician Survey support PY 5 CPC+ Practice Survey findings on increases in behavioral health providers, which has likely led to differences in the availability of on-site behavioral health services at CPC+ practices.

Figure 4.14. Percentage of physicians reporting availability of behavioral health counseling at practice site in PY 5, by track and CPC+ participation

In PY 5, physicians in CPC+ practices were more likely than those in comparison practices to report offering on-site behavioral health counseling.



Source: Mathematica's analysis of data from the independent evaluation's PY 5 CPC+ Physician Survey.

Note: N = 253 Track 1 and 291 Track 2 CPC+ practices. N = 314 Track 1 and 313 Track 2 comparison practices.

Across program years, practices described benefits of providing behavioral health care in the primary care setting. Many deep-dive practices reported that behavioral health integration led to increased access and better care, improved communication between practitioners and behavioral health specialists, and increased patients' comfort with receiving behavioral health care. Additionally, several practices noted that behavioral health integration saved time for practitioners and staff to focus on the patient's medical issues by enabling skilled behaviorists to co-manage behavioral health issues. Despite practices reporting that behavioral health integration increased patients' comfort receiving behavioral health care, across program years, several practices continued to report challenges engaging some patients due to patients' discomfort with and stigma around behavioral health care.

> **"I think if you asked any primary care provider [which CPC+ change] has probably been the most transformative from their day-to-day, behavioral health probably would be one. We really had no integrated behavioral health platform and very, very poor access to behavioral healthcare [before CPC+]. To be able to just place a consult and get someone plugged into behavioral healthcare has been hugely impactful."**
>
> ***— Physician at a large, system-owned Track 2 practice***

Practices noted the critical role of system-level resources in integrating and promoting improved access to behavioral health care services. Several system-owned deep-dive practices noted that their health system offered supports that improved patients' access to behavioral health services, such as behaviorists at the system's mental health clinics and system-wide therapy classes or groups for patients with behavioral health conditions. A few practices noted that their health systems also invested in training and quality improvement efforts. For example, one practice reported that their health system offered a three-day retreat to educate primary care practitioners about behavioral health, which helped practitioners feel more comfortable with behavioral health integration.

EHRs supported behavioral health integration throughout CPC+. Several deep-dive practices noted their embedded behavioral health specialists had access to their EHR and were able to document patient information, which facilitated communication with primary care practitioners. In addition, a few Track 2 practices noted that EHRs supported their work to screen patients for behavioral health conditions by reminding practitioners to complete assessments such as the Patient Health Questionnaire two-item (PHQ-2) depression screening tool, highlighting positive screening results in red text, and automatically opening longer depression screening tools (for example, the PHQ-9) based on patients' responses.

Across program years, practices faced challenges with behavioral health provider shortages, though fewer physicians in CPC+ than comparison practices reported that a lack of behavioral health specialists greatly limited their ability to provide optimal care. Many deep-dive practices reported shortages in their communities and in the larger, national behavioral health provider market, which resulted in difficulty hiring and retaining embedded behavioral health providers and challenges referring patients to external providers. Relatedly, around 90 percent of physicians in CPC+ and comparison practices in each track reported on the PY 5 CPC+ Physician Survey that the lack of available behavioral health specialists greatly or somewhat limited their ability to provide optimal patient care. Still, fewer physicians in CPC+ practices (42 percent) than comparison practices (approximately 54 percent) reported that a lack of behavioral health specialists greatly limited their ability to provide optimal care.

COVID-19 increased the demand for—and complicated the provision of—behavioral health care. In PYs 4 and 5, a few deep-dive practices reported that the number of patients with anxiety, depression, substance abuse, insomnia, and other behavioral health concerns increased during the pandemic. This increased demand was accompanied by new challenges providing behavioral health care due to COVID-

19. For example, several deep-dive practices noted that they could not do warm handoffs because behavioral health specialists were working remotely, or patients were attending appointments by phone or video. Practices reported mixed views on the use of telehealth for behavioral health care. While several practices highlighted benefits, such as increased access and convenience, reduced stigma, and the ability to see patients' entire face (versus seeing their masked face in the office), several others noted that providing behavioral health via telehealth made it difficult to build trust with patients, increased the number of "no-shows" at appointments, and posed challenges for patients who did not have the required technology to meet virtually.

How were practices planning to sustain integration of behavioral health?

Many practices reported plans to maintain integrated behavioral health processes after CPC+ ends. Several deep-dive practices planned to sustain their behavioral health integration efforts with no expected changes. Several other deep-dive practices planned to expand their approach by hiring more behavioral health providers, embedding new providers into practices, and/or providing training to staff because they found their behavioral health integration efforts during CPC+ to be beneficial. Correspondingly, 82 percent of practices reported on the PY 5 CPC+ Practice Survey that they would sustain most, a lot, or some of their processes to provide on-site behavioral health care that is integrated into primary care services.

Deep-dive practices reported that dedicated staff and funding from other initiatives would help sustain behavioral health integration, but provider shortages would be a challenge to overcome. Many deep-dive practices reported plans to sustain behavioral health integration because they now had dedicated behaviorists to co-manage patient's behavioral health needs. Several deep-dive practices reported that their efforts would be supported by funding from other initiatives, such as Primary Care First and Global and Professional Direct Contracting, and the ability to use billing codes to get reimbursed for these services. Still, several practices reported that they expect to face challenges with staffing, including difficulty hiring behavioral health providers (due, in part, to ongoing behavioral health provider shortages) or finding space for existing or new providers within the practice.

C. Comprehensive medication management

What were the CPC+ requirements?

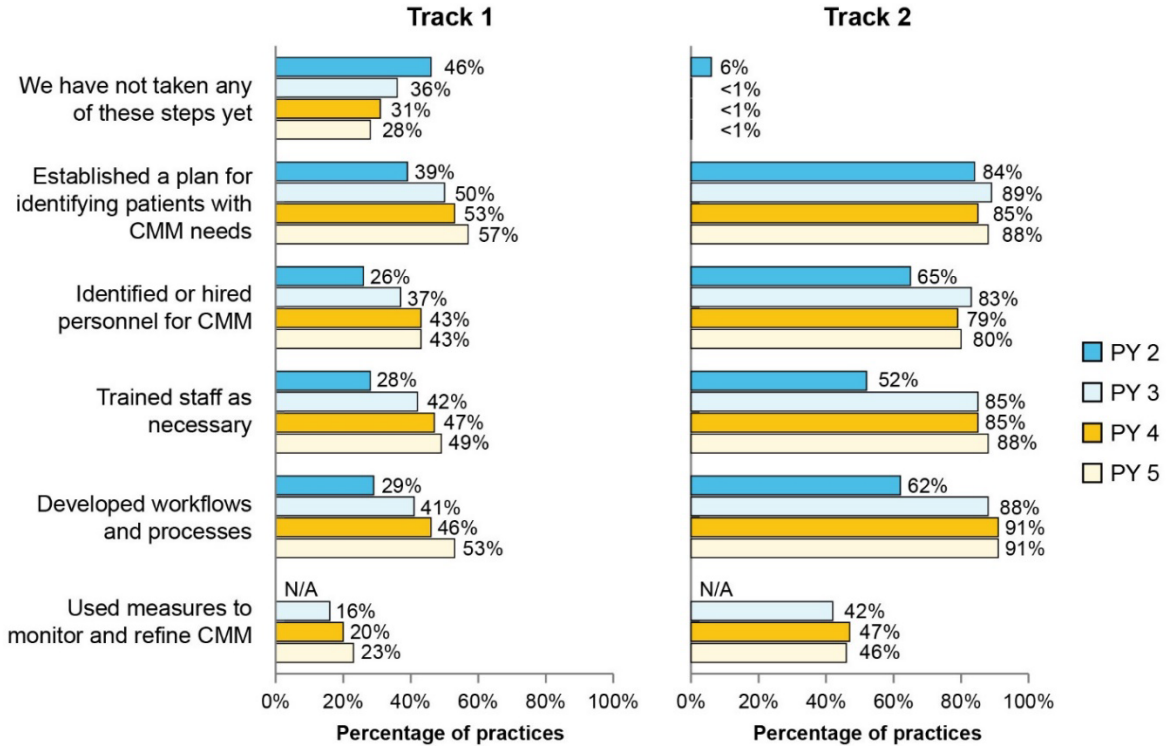
In PY 2, CMS introduced a requirement for Track 2 practices to develop a plan to provide comprehensive medication management to patients. Beginning in PY 3, Track 2 practices were required to provide comprehensive medication management to patients receiving care management and in transitions of care who are likely to benefit from it. CPC+ defines comprehensive medication management as a collaborative process between the primary care team and a comprehensive medication management specialist (often a pharmacist), that involves the following activities: (1) identifying high-risk patients for comprehensive medication management services, (2) assessing patients and evaluating medication therapy (that is, supplementing an initial medical record review with discussions with patients/caregivers to identify medication issues such as effectiveness, safety, affordability, and therapy adherence), (3) developing an individualized action plan to address medication issues, and (4) conducting patient follow-up to monitor the effectiveness of the action plan and alert primary care teams of potential new medication issues (CMMI 2021).

How did practices change processes and services to provide comprehensive medication management and what helped or hindered their efforts?

By the end of CPC+, 80 percent or more of Track 2 practices reported to CMS that they had taken each of 4 of the 5 recommended steps to implement comprehensive medication management**.** These steps included (1) establishing a plan for identifying patients with comprehensive medication management needs, (2) developing workflows and processes, (3) identifying or hiring personnel, and (4) training staff as necessary. Just less than half of Track 2 practices reported using measures to monitor and refine comprehensive medication management, the fifth step CMS added to the care delivery reporting requirements in PY 3 (Figure 4.15). Generally, the proportion of practices that reported to CMS that they took each of the steps to implement comprehensive medication management increased between PYs 2 and 3, when comprehensive medication management implementation was first required of Track 2 practices, and remained steady in the final years of CPC+. Although Track 1 practices were not required to implement comprehensive medication management, the percentages of Track 1 practices that reported taking each of the five steps increased over the course of CPC+.

Figure 4.15. Percentage of practices that reported taking steps to implement comprehensive medication management in PYs 2 through 5, by track

Track 2 practices made substantial progress in implementing processes to support comprehensive medication management between PYs 2 and 3 and maintained efforts to implement comprehensive medication management in PYs 4 and 5. Despite not being required to do so, Track 1 practices also made progress implementing comprehensive medication management over the course of the model.



Source: Mathematica's analysis of PYs 2, 3, 4, and 5 practice-reported care delivery data submitted to CMS. Data not collected in PY 1, as PY 2 was the first year comprehensive medication management implementation was required.

Note: N = 1,064 Track 1 practices and 1,270 Track 2 practices in PY 2. N = 1,098 Track 1 practices and 1,301 Track 2 practices in PY 3. N = 1,100 Track 1 practices and 1,315 Track 2 practices in PY 4. N = 1,095 Track 1 practices and 1,310 Track 2 practices in PY 5.

CMM = Comprehensive Medication Management; PY = Program Year.

N/A = Not available. Information on practices' use of measures to monitor and refine comprehensive medication management was not collected in PY 2.

Over the course of the model, practices struggled to understand comprehensive medication management and how it differed from medication review and reconciliation. When asked how they were implementing comprehensive medication management, around two-thirds of deep-dive practices described providing comprehensive medication management services as defined by CMS, including practices that were working with pharmacists. However, many other deep-dive practices said explicitly that they did not understand what comprehensive medication management entailed, or said that they provided comprehensive medication management, yet described services that were less comprehensive than those CMS envisioned. Thus, findings on the implementation of comprehensive medication management should be interpreted with caution given that many practices might not have fully understood the care delivery requirement.

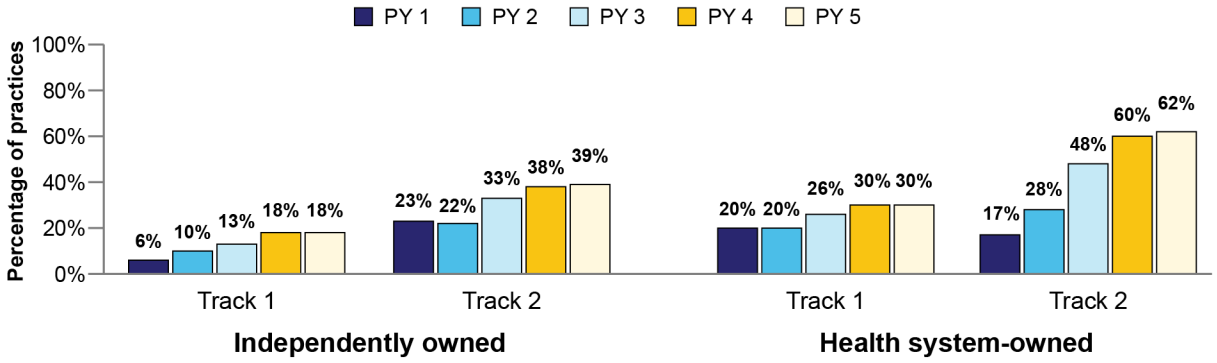
More Track 2 practices, especially those that are system- owned, had a full- or part-time clinical pharmacist or Doctor of Pharmacy at the practice site by the end of the model. The proportion of Track 2 practices that reported on the CPC+ Practice Surveys that they had a pharmacist on site increased from 19 percent in PY 1 to 54 percent in PY 5, with the biggest increase occurring between PYs 2 and 3. Despite not being required to provide comprehensive medication management, more Track 1 practices also had these staff on site in PY 5 (25 percent) compared to PY 1 (14 percent). Additionally, while the percentage of practices that reported having a clinical pharmacist or Doctor of Pharmacy at the practice site increased over the course of the model regardless of ownership status, the increase between PYs 1 and 5 was most pronounced for Track 2 system-owned practices (Figure 4.16). In PY 5, 62 percent of system-owned Track 2 practices reported having a pharmacist on site compared to 39 percent of independent Track 2 practices.

"[The pharmacist is] probably the most invaluable member of our team."

—Program manager at a medium-size, system-owned, Track 2 practice

Figure 4.16. Percentage of practices that reported having a full- or part-time clinical pharmacist or Doctor of Pharmacy at the practice site, by practice ownership and track, across program years

More Track 2 than Track 1 practices reported having a full- or part-time clinical pharmacist or Doctor of Pharmacy on site in each PY. From PYs 1 to 5, in Track 2, the percentage of practices that reported having a clinical pharmacist or Doctor of Pharmacy on site increased more among system-owned than independent practices.



Source: Mathematica's analysis of data from the independent evaluation's CPC+ Practice Surveys.

Note: N = 423 Track 1 independently owned practices, 632 Track 1 health-system owned practices, 461 Track 2 independently owned practices, and 771 Track 2 health-system owned practices.

Not all practices responded to the question each year. The percentage of missing responses each year was less than one percent.

PY = Program Year.

Across program years, deep-dive practices reported benefits of working with pharmacists to provide comprehensive medication management. Several deep-dive practices noted that pharmacists helped patients by taking time to discuss the benefits and harms of medications, preventing problems with multiple medications and potential drug interactions, finding medication assistance programs when patients could not afford medications, and educating patients and family members about medication topics. A few deep-dive practices specifically mentioned the value of pharmacists in providing care to patients with diabetes and hypertension. In addition, a few deep-dive practices reported that comprehensive medication management improved patients' adherence to medication regimens and reduced hospitalizations. Several deep-dive practices also described benefits of comprehensive medication management to practitioners. These included pharmacists taking on work practitioners had previously done, such as reviewing medication lists and obtaining prior authorizations, which reduced practitioners' burden. In addition, pharmacists provided specialty medication knowledge and guidance to practitioners who were selecting medications for patients with complex medication issues, and educated nursing and other staff.

> **"[W]e have embedded a pharmacist and she's done a tremendous job as far as helping patients with the medication assistance programs, and she's a certified diabetic educator so she also does a great job helping the providers in prescribing medication … she's been a real asset."**
>
> ***—Practice manager at a large, system-owned, Track 2 practice***

How were practices planning to sustain comprehensive medication management?

Many Track 2 practices planned to maintain most or all of their comprehensive medication management processes for high-risk patients. Sixty-seven percent of Track 2 practices reported on the PY 5 CPC+ Practice Survey that it was likely that they would maintain most or all of their comprehensive medication management processes for high-risk patients. Nearly half of Track 1 practices planned to sustain most or all of the comprehensive medication management processes they had implemented. Several deep-dive practices indicated that they were planning to sustain comprehensive medication management services because of the benefits to patients described above.

Several deep-dive practices described being committed to finding funding to continue their comprehensive medication management services. Deep-dive practices said that pharmacy payment "capture," which provides revenue to support pharmacists and funding from within the system (such as the primary care budget) were likely sources of funding for continuing comprehensive medication management services. Practices also mentioned participation in other programs and contracts, including value-based payment programs, as potential sources of support.

D. Assessing and addressing patients' health-related social needs

What were the CPC+ requirements?

In PY 1, CPC+ required Track 2 practices to systematically assess their patients' social needs and conduct an inventory of resources to address those needs. CMS defined social needs to include food insecurity, exposure to violence, lack of heat and shelter, lack of transportation to obtain social and health care services and materials, and other social issues (CMMI 2021). In PY 2, CPC+ additionally required Track 2 practices to address common social needs for at least their high-risk patients by (1) prioritizing common social needs in their practice population and maintaining an inventory of resources and supports available to address those needs and (2) establishing relationships with at least two resources and supports that meet patients' most significant social needs. In PYs 3 to 5, CMS required Track 2 practices to

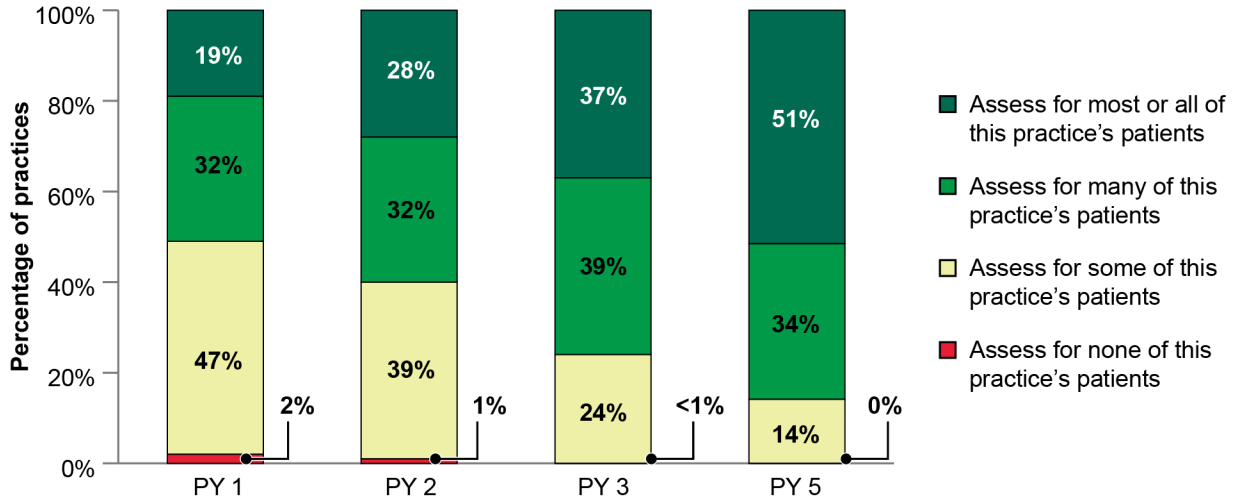
identify patients' high-priority health-related social needs, connect patients to community resources that can meet those needs, and track the results of these linkages.

How did practices change processes to identify and meet patients' high-priority health-related social needs and what helped or hindered their efforts?

Track 2 practices screened a larger proportion of their patients for health-related social needs each year of CPC+, and by PY 5, nearly all used a screening tool to do so. The percentage of Track 2 practices that reported on the CPC+ Practice Surveys that they assessed the social and functional support needs (e.g., transportation, home equipment)[38] for most or all of the practice's patients increased each program year, from 19 percent in PY 1 to 51 percent in PY 5 (Figure 4.17). The percentage of Track 2 practices that reported to CMS that they used a screening tool to capture health-related social needs in their patient population increased from 78 percent in PY 1 to 99 percent in PY 5. Across years, more practices reported using a tool developed in house by the practice or health system (an average of 59 percent) than using a standardized screening tool published by a third party (an average of 46 percent).

Figure 4.17. Percentage of Track 2 practices that reported assessing the social and functional support needs of the practices' patients, by program year

The percentage of Track 2 practices that reported assessing the social and functional support needs of most or all of their practice's patients consistently increased over the course of CPC+.



Source: Mathematica's analysis of data from the independent evaluation's CPC+ Practice Surveys. This question was not asked in PY 4.

Note: N = 1,205 1,234 Track 2 practices. Not all practices responded to the question each year. The percentage of missing responses each year was less than 1 percent.

PY = Program Year.

[38] Question wording and terminology used to refer to screening for health-related social needs vary by CPC+ survey and intended respondent. For the CPC+ Practice Survey, the question reads: "This practice site assesses the social and functional support needs (e.g., transportation, home equipment) for …", with response options: "none of this practice's patients," "some of this practice's patients," "many of this practice's patients," "most or all of this practice's patients."

Despite the high screening rates practices reported, low percentages of beneficiaries in CPC+ and comparison practices reported their doctor or someone in their practice asked whether they had problems with basic needs[39] in the last 6 months with rates higher for beneficiaries in CPC+ than comparison practices. Relative to comparison beneficiaries, a slightly larger fraction of CPC+ beneficiaries reported being screened for social needs by their primary care doctor's office in PY 3 and PY 5. Further details can be found in chapter 5.

Only 5 percent of beneficiaries in CPC+ and comparison practices reported having one or more problems with basic needs (defined as issues with transportation, paying for utilities, getting enough food, rent/housing/homelessness, or abuse/violence in their home or neighborhood). Two percent or fewer beneficiaries in each track of the CPC+ and comparison practices reported problems with any individual need.

Practices believed screening patients for health-related social needs was an important part of high-quality patient care. Many deep-dive practices said social needs screenings were valuable because practitioners and staff used the information to inform patients' care and address non-medical barriers affecting patients' health, which in turn, helped prevent unnecessary hospital and ED visits. Practitioners and staff said they found their work more satisfying when they screened patients for health-related social needs because it enabled them to uncover and address issues about which they were not previously aware.

"We are building relationships with patients and trying to meet them where they're at. We know this gets better outcomes."

—Program manager at a large, system-owned Track 1 practice

The proportion of Track 2 practices that integrated their screening tool into their EHR increased over the course of CPC+; in PY 5, more physicians in Track 2 CPC+ than comparison practices routinely documented health-related social needs in their EHR. By the final program year, 92 percent of Track 2 practices reported to CMS that their screening tools or questions were integrated with their EHR or health IT system, compared to 65 percent in PY 1; most of this change occurred in the first two years of CPC+. On the PY 5 CPC+ Physician Survey, more physicians in Track 2 CPC+ practices than comparison practices reported routinely using the EHR or other health IT to document patients' health-related social needs in the past six months (67 percent compared to 53 percent, respectively). Several deep-dive practices said that having the screening tool built into the EHR made it easier for practitioners and staff to see the screening questions and record answers in discrete fields during office visits. Deep-dive practices that did not have screening tools integrated into their EHRs typically documented information about patients' social needs in a free-text field in the EHR, such as a progress or encounter note, or scanned paper copies of the tool into the EHR as an attachment. A few of these practices explained that storing information in these ways limited their ability to easily search, generate data reports, or track a patient's progress in addressing social needs.

Limited practitioner time was compounded by patients' reluctance to discuss "non-medical" issues, posing challenges to screening for patients' health-related social needs. Throughout CPC+, many deep-dive practices felt burdened by the amount of time it took to screen patients for unmet social needs.

[39] Based on pretesting, "basic needs" was the term patients felt best reflected health-related social needs. The CPC+ Beneficiary Survey asked patients, "In the last 6 months, did you have problems with any of the following basic needs? (Response options were: "Getting enough food," "Rent, housing, or homelessness," "transportation," "Paying for utilities (such as heating, electric, or phone bills)," "none of the above.")

Practitioners said that screening patients during routine visits reduced the time they had available to cover patients' medical issues. In addition, many deep-dive practices reported that some patients were too afraid, embarrassed, or uncomfortable to divulge non-medical information to their practitioners or to follow through on referrals to receive support to address health-related social needs. Practices noted that they were able to alleviate these challenges by conducting assessments during patients' longer annual wellness visits, building trust with patients, and using dedicated staff to conduct screenings.

Nearly all Track 2 practices used an inventory of community-based resources to connect patients with supports for unmet social needs, though less than half of these practices reported that their inventory was integrated into the EHR. Similar to prior years, 99 percent of Track 2 practices reported to CMS that they maintained an inventory of social resources in PY 5, yet less than half of practices (around 42 percent across years) reported that the inventory was integrated within the practice's EHR or health IT system. Throughout CPC+, many deep-dive practices described using inventories developed in house that were not integrated into the EHR, including manuals, resource lists, and shared computer drives. Several deep-dive practices reported using resources developed by other organizations—either alongside their in-house tools or exclusively—such as county databases and community referral services. Only a few practices reported being able to use their EHR to electronically refer patients to care coordinators or social workers.

Across program years, practices faced a variety of challenges to maintaining an inventory of community-based resources, including frequent changes in resource availability and insufficient community-based services to address patients' health-related social needs. In the early years of CPC+, several deep-dive practices reported frustration with the time-consuming nature of creating and maintaining inventories of community resources. Several deep-dive practices said they had to frequently update their inventories because community-based organizations changed their available services, hours of operation, or eligibility requirements. Later in CPC+, practices highlighted challenges identifying available resources. While several deep-dive practices noted it was easy to identify community resources to meet patients' social needs, many other practices reported insufficient services in their communities, especially transportation and housing resources.

Social needs that practices reported prioritizing in PY 5

Track 2 practices reported to CMS that they prioritized a range of social needs in PY 5:

- Transportation (89 percent of practices)
- Food insecurity (87 percent)
- Safety (78 percent)
- Financial resource strain (71 percent)
- Housing instability (70 percent)
- Utility needs (64 percent)
- Social isolation (60 percent)
- Employment (33 percent)

More physicians in Track 2 CPC+ practices than comparison practices used a designated staff person at their practice to link patients to community resources to meet their health-related social needs. Physicians in Track 2 CPC+ practices were more likely than physicians in Track 2 comparison practices to report on the PY 5 CPC+ Physician Survey that linking patients to supportive community-based resources was accomplished by a designated staff person (77 versus 52 percent). Many deep-dive practices said CPC+ enabled their practice to dedicate staff, such as social workers or care managers, to screening and connecting patients to community resources, either by identifying community organizations for patients to contact or by contacting community organizations on behalf of patients.

While not required, Track 1 practices reported increasing activities to screen for and address health-related social needs over the course of CPC+, though to a lesser extent than Track 2 practices. In PY 5, for example, 92 percent of Track 1 practices reported to CMS that they screened patients for health-related social needs, 85 percent reported that screening tools were integrated into their EHR, and 98 percent reported that they maintained an inventory of social service resources. The percentage of Track 1 practices that reported on the CPC+ Practice Surveys connecting patients to community resources increased by 35 percentage points over the course of the model, from 49 percent in PY 1 to 84 percent in PY 5.

> **"Screening patients for social needs is very important. Do they have financial barriers, transportation issues? Do they understand basic medical terminology? It's important to screen because it helps us guide how we care for patients."**
>
> ***—Medical lead at a medium-sized, system-owned Track 1 practice***

How were practices planning to sustain efforts to assess and address patients' health-related social needs?

Most practices planned to sustain their processes to assess patients' health-related social needs after CPC+. On the PY 5 CPC+ Practice Survey, 83 percent of Track 1 practices and 91 percent of Track 2 practices reported that they were likely to maintain a lot, most, or all of the practice's current process to assess patients' health-related social service needs and refer them to community resources after CPC+. Deep-dive practices corroborated this finding, with most reporting that they planned to continue screening patients for unmet social needs and many saying they planned to maintain an inventory of social resources and continue to use designated staff to link patients to community resources.

Although many practices believed they would continue screening and referring patients for health-related social needs, several cited concerns about funding for, and availability of, social workers. Many deep-dive practices said they had laid the groundwork for sustaining their screening and referral activities by training staff, incorporating screening into "daily life," establishing workflows to link patients to supports, and building tools to assist with these activities in their EHR. Many system-owned practices reported that these activities aligned with their system's priorities, supporting their ability to continue them after CPC+. Access to system-funded staff, most commonly social workers, was particularly important for sustainability among these practices. Several deep-dive practices, however, said that a lack of available social workers and changes in their systems' willingness to fund the work could negatively impact their ability to sustain efforts. Only a few practices had identified external funding (such as Primary Care First, Medicare Advantage, State Medicaid, or commercial payers) to support their ongoing work.

> **"One of the things that was helpful with CPC+ was that the financial support allowed me to extend patients' visits to longer durations, so that I could spend more time asking patients about what they came in for, even beyond their chronic condition…what was going on in their life, and trying to determine how to help them with things other than matters that were directly related to their health. So, the challenge will be, when CPC+ ends, being able to continue that, because then we'll be facing concerns [related to] maintaining the financial sustainability of the practice."**
>
> ***—Medical lead at a small, independent, Track 2 practice***

4.3.4. Function 4: Patient and caregiver engagement

CPC+ encourages practices to promote patient and caregiver engagement in care delivery. This means using patients' and caregivers' experience and expertise to improve processes and accelerate practice change. Because patients and caregivers see and experience care in ways that practices often do not, they can point out areas for improvement and identify solutions that practices may not have considered (CMMI 2021). Also, engaged patients equipped with information about their conditions and available services are expected to take a more active role and make more informed choices about their health care (CMMI 2021).

A. Engaging patients in Patient and Family Advisory Councils

What were the CPC+ requirements?

CPC+ required all practices to establish a Patient and Family Advisory Council (PFAC) consisting of patients who received care at the practice or their caregivers, and to integrate the PFAC's recommendations into care, as appropriate. In PY 1, CMS required Track 1 practices to convene a PFAC at least once and Track 2 practices to do so twice a year. In PY 2, CMS increased the required frequency to at least three times a year for Track 1 practices and quarterly for Track 2 practices. In PYs 3 to 5, CMS required practices to convene a PFAC and integrate PFAC recommendations into care and practice improvement activities, but no longer specified the frequency of the meetings.

How did practices change processes to engage patients in PFACs and what helped or hindered their efforts?

Practices increased the number of PFAC meetings held and use of patient feedback to guide practice improvements in the first three years of CPC+. These activities declined in the last two years of the model, corresponding with the COVID-19 pandemic. Practices reported to CMS that on average, they held two PFAC meetings in the last two quarters of PY 3, compared to an average of one meeting in the last two quarters of PYs 1 and 2. Practices reported that the frequency of PFAC meetings returned to an average of one meeting in the last two quarters of PYs 4 and 5. Similarly, on the CPC+ Practice Surveys, the percentage of practices across tracks that reported that feedback from PFACs was collected and consistently used to guide practice improvements increased from 45 percent in PY 1 to approximately 56 percent in PYs 2 and 3, and then returned to 44 percent in PY 5. Many deep-dive practices noted that COVID-19 hindered their ability to conduct PFAC meetings in the last two years of CPC+. While these practices described attempts to hold PFACs virtually during this time, virtual platforms created new challenges—for example, elderly patients struggled with using technology, and practitioners and staff faced difficulties facilitating and gaining meaningful engagement during virtual meetings.

Practices faced challenges recruiting patients, caregivers, practitioners, and staff to attend PFAC meetings throughout the course of CPC+. Many deep-dive practices described challenges finding patients and caregivers who were interested in attending PFACs, engaging patients and caregivers with diverse perspectives, and scheduling PFACs at convenient times. In addition, a few practices shared that practitioners and staff lacked sufficient time to devote to holding PFACs. A few system-owned deep-dive practices reported that holding multi-practice PFACs eased challenges with PFAC recruitment and facilitation. This approach also enabled these practices to address concerns raised by PFAC members at both the system and practice levels.

Throughout CPC+, practices shared mixed views on the value of PFACs. Roughly half of deep-dive practices said PFACs were beneficial because they enable practices to learn from patients directly about successful approaches to care delivery and areas for improvement. For example, in response to PFAC feedback, one practice began educating patients about 24/7 access to the practice and another developed "where to go now" flyers that helped patients decide when to go to the practice, ED, or urgent care. A few practices noted that practitioners, staff, and health system leadership attended PFAC meetings, which helped practices implement patient recommendations. On the other hand, several deep-dive practices shared that PFACs were not valuable—mainly because PFACs did not provide helpful insights or diverse perspectives, patients were reluctant to be candid, or meetings stagnated as practices ran out of topics that needed to be addressed.

"I enjoy the PFAC because I get to interact with the patients and find out, through their eyes, what they're seeing when they visit the clinic, which is, I'm sure, very different from what I see on a day-to-day when I'm travelling through the hallways."

—Nurse leader at a large, system-owned Track 1 practice

How were practices planning to sustain PFACs?

Around one-half of practices planned to sustain PFACs after CPC+. Forty-nine percent of Track 1 practices and 60 percent of Track 2 practices reported on the PY 5 CPC+ Practice Survey that they plan to maintain a lot, most, or all of their current process to use PFACs to better understand what matters most to patients and to guide improvements at the practice when CPC+ ends. Nine percent of Track 1 and 7 percent of Track 2 practices reported that they would maintain none of the current process.

Practices' plans to sustain PFACs were related to their perceptions of the value of these activities. Many deep-dive practices reported that they planned to continue holding PFACs because PFACs offered valuable insights. Among these practices, several said they wished to revert to face-to-face meetings and others planned to conduct PFAC meetings more than once per year in the future. A few system-owned practices said they would continue holding multi-practice PFACs. In contrast, many other deep-dive practices said that they would not continue to hold PFAC meetings because the challenges they encountered with PFAC implementation outweighed the value.

B. Providing advance care planning

What were the CPC+ requirements?

Advance care planning is a process of discussing and documenting a patient's goals and preferences for medical care at the end of life or other times when they cannot make the decision themselves (CMMI 2021). It enables patients to make plans about the care they would want to receive should they become unable to speak for themselves. In PY 2, CMS required Track 2 practices to identify and engage a subpopulation of patients with serious illness and their caregivers in advance care planning.[40] In PYs 3 to 5, CMS required Track 2 practices to ensure that targeted patients' goals, preferences, and needs are integrated into care through advance care planning.

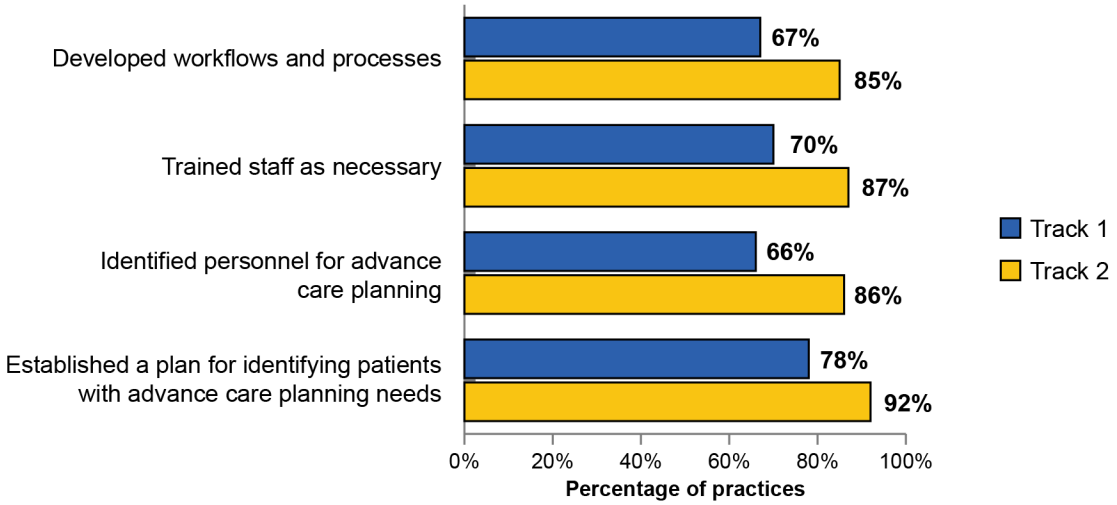
[40] CMS recommended that practices use their risk-stratification process to target advance care planning efforts among a subpopulation of patients at highest risk, focusing on those with serious illness. CMS recommended that practices could further limit their subpopulation to patients who could benefit most from advance care planning, such as those with a cancer diagnosis, end-stage kidney disease, heart failure, chronic obstructive pulmonary disease, dementia, or advanced age.

How did practices change processes to engage patients in advance care planning and what helped or hindered their efforts?

Many practices took recommended steps to implement advance care planning throughout CPC+. From PY 3 (the first year data were available) to PY 5, more than 80 percent of Track 2 practices reported to CMS that they took each of the recommended steps to implement advance care planning. These steps included developing workflows and processes, identifying personnel for advance care planning, training personnel as necessary, and identifying patients with advance care planning needs (Figure 4.18). Even though it was not required as part of CPC+, between one-half and three-quarters of Track 1 practices also reported taking each of these steps each year.

Figure 4.18. Percentage of practices that reported taking steps to implement advance care planning in PY 5, by track

In PY 5, more than 85 percent of Track 2 practices reported to CMS that they took each of the four recommended steps to implement advance care planning. Although this care delivery requirement applied only to Track 2 practices, more than two-thirds of Track 1 practices also reported taking each of these steps in PY 5.



Source: Mathematica's analysis of PY 5 practice-reported care delivery data submitted to CMS.
Notes: N = 1, 095 Track 1 practices and 1,310 Track 2 practices. Practices could select all applicable responses.
PY = Program Year.

Beneficiaries in Track 2 CPC+ were more likely than those in comparison practices reported being asked about advance care planning. Among beneficiaries in Track 2 CPC+ practices, 51 percent reported on the PY 5 CPC+ Beneficiary Survey that their doctor or someone from the doctor's office asked them about their end-of-life care wishes or creating an advance care plan, compared to 47 percent of beneficiaries in Track 2 comparison practices.

More physicians in CPC+ than comparison Track 2 practices reported that they or someone from their care team documented advance care plans in their EHR for most or all of their high-risk patients. On the PY 5 CPC+ Physician Survey, 41 percent of physicians in Track 2 CPC+ practices reported documenting advance care planning preferences in EHRs for most or all of their high-risk patients, compared with 32 percent of physicians in Track 2 comparison practices. When asked more

generally about where advance care planning conversations and decisions are stored, nearly all of CPC+ practices in both tracks reported to CMS that they used their EHR or other health IT to do so.

A shared belief among practitioners and staff in the value of advance care planning to patients and their families facilitated practices' efforts to provide this service during CPC+. Deep-dive practices said that advance care planning helped practitioners and caregivers know what the patients wanted at the end of life. Practices also described advance care planning as a duty of primary care, given that they see patients from birth to death.

> **"We know that we need that open line of communication to patients about their wishes or their needs, to make a plan for themselves or with family. That can be a major issue if a patient passes away and has no plan. It's a lot of stress having to put people through that if that patient does not have a plan."**
>
> ***—Practice manager at a small, system-owned practice***

Throughout CPC+, practices experienced challenges with advance care planning due to the complicated, sensitive, and personal nature of the topic, yet found that practitioner and staff training and experience mitigated these challenges. Deep-dive practices noted that some patients, practitioners, and staff found advance care planning conversations to be emotionally difficult or uncomfortable and were therefore hesitant to participate in them. Other practices observed that some patients were "superstitious" or had cultural beliefs that made them reluctant to discuss end-of-life wishes. Many practices found that it was helpful to provide training and support for practitioners and staff on how to conduct advance care planning conversations, as was employing practitioners and staff who had experience with advance care planning.

Although practices consistently reported that advance care planning was time-consuming, several practices identified strategies to overcome this barrier as CPC+ progressed. In the early years of CPC+, deep-dive practices pointed to challenges finding the time needed to discuss advance care plans with patients and to track down completed advance care planning paperwork. When Medicare began allowing practitioners to bill for advance care planning during Annual Wellness Visits, practices reported leveraging this opportunity, giving practitioners more time for discussion with patients. Other strategies practices used to overcome the lack of time included conducting advance care planning conversations outside of regular office appointments (such as through group educational events or by mailing paperwork to patients to complete before appointments) and involving practice staff other than practitioners (for example, social workers, case managers, or nursing staff) in conducting advance care planning discussions.

Practices noted the importance of having sufficient health IT capabilities for advance care planning activities. Several deep-dive practices described features of their EHR that supported advance care planning, such as having a specific tab for the area in which documents are stored, having the documents interface with the patient portal, or making the documents easy to share with other practitioners and staff. Conversely, other practices noted that insufficient EHR functionality impeded advance care planning, especially when the EHR made it difficult to find, organize, or access scanned advance care planning documents.

How were practices planning to sustain advance care planning?

Many deep-dive practices planned to sustain advance care planning after CPC+, mainly due to its compatibility with workflows and commitment by practitioners and staff. Several deep-dive practices indicated that the process of advance care planning was fully embedded as part of their daily work, so they planned to continue it after CPC+ ends. In addition, several deep-dive practices shared that practitioners and staff felt responsible for the advance care planning process, which they speculated would help sustain advance care planning efforts in the future.

4.3.5. Function 5: Planned care and population health

A. Using data to continuously improve care delivery outcomes

What were the CPC+ requirements?

In PYs 1 and 2, all practices were required to (1) use practice-level data feedback provided by CMS and payer partners on *at least two utilization measures* at least quarterly and (2) use practice-level and panel-level data on *at least three eCQMs,* derived from the practice's EHR at least quarterly to improve population health management.[41] In PYs 3 to 5, CMS relaxed these requirements by requiring practices to use data to continuously improve patients' health, experience and quality of care, and decrease costs, but not specifying which data to use or how frequently to use them. In PYs 3 to 5, CMS encouraged, but did not require as it did in PYs 1 and 2, Track 2 practices to hold care team meetings to review data feedback from CMS and payer partners.

How did practices change their processes for continuous improvement and what helped and hindered these efforts?

Practices—especially those in SSP ACOs—adopted more formal processes to guide continuous data-driven improvement during CPC+. Most deep-dive practices reported in PY 1 that they had been monitoring population-level data before CPC+ as part of practice- or system-wide initiatives or work they were doing for ACOs. Over the course of CPC+, the percentage of practices that reported on the CPC+ Practice Surveys that they based quality improvement (QI) activities on a proven improvement strategy and continuously used these activities to meet organization goals increased from 50 percent in PY 1 to 75 percent in PY 5. SSP practices were more likely than non-SSP practices in each track to report using a proven improvement strategy to continuously meet goals. In Track 1, 77 percent of SSP practices versus 67 percent of non-SSP practices reported using "a proven improvement strategy and used QI improvement continuously in meeting organizational goals" in PY 5, and in Track 2, 83 percent of SSP practices versus 73 percent of non-SSP practices reported doing so.

Over the course of CPC+, practices reported increases in the availability of staff and resources for continuous improvement initiatives, with most change occurring in the first two years of the model. On the CPC+ Practice Surveys, practices reported increases in the following between PYs 1 and 5, with most improvement occurring in PYs 1 and 2:

[41] Practice-level data are aggregated for patients across all practitioners in the practice, whereas as panel-level data are reported for the patients empaneled to an individual practitioner or care team.

- *QI specialists.* The percentage of practices that reported having a full- or part-time QI specialist increased from 32 percent in PY 1 to 43 percent in PY 2, and continued to increase gradually to 51 percent in PY 5.
- *Staff, resources, and time available for QI activities.* The percentage of practices that reported that staff, resources, and time for QI activities were generally or fully available at the level needed increased from 58 percent in PY 1 to 74 percent in PY 2, before stabilizing at approximately 77 percent in the final years of the model.
- *Availability of registry*[42] *data to assess or manage care for groups of patients.* In Track 1, the percentage of practices that reported having access to some registry data increased from 73 percent in PY 1 to 88 percent in PY 3, and then stabilized through PY 5. Most Track 2 practices reported having access to some registry data throughout CPC+, although a higher percentage of Track 2 practices reported having access to registry data for six or more diseases or risk states over time (rising from 44 percent in PY 1 to 57 percent in PY 3, then stabilizing through PY 5).

Compared to data feedback on quality of care, fewer physicians reported receiving and used data feedback on patients' service utilization and total cost of care to change how they deliver care. Around 90 percent of physicians in CPC+ and comparison practices reported on the PY 5 CPC+ Physician Survey that they received data feedback on quality of care, and approximately 80 percent reported using quality data to make major or minor changes to how they deliver care. Fewer physicians in CPC+ and comparison practices reported receiving data feedback on health care service utilization than on quality of care, and still fewer physicians in both groups of practices reported receiving data feedback on patients' total cost of care. Around half or fewer physicians (in each track and in each group) reported using utilization data to make changes to care delivery, and around one-quarter or fewer physicians (in each track and in each group) reported using cost data to change care delivery (Figure 4.19).

"Data is what drives our goal for excellence, to know where we are and where we can improve."

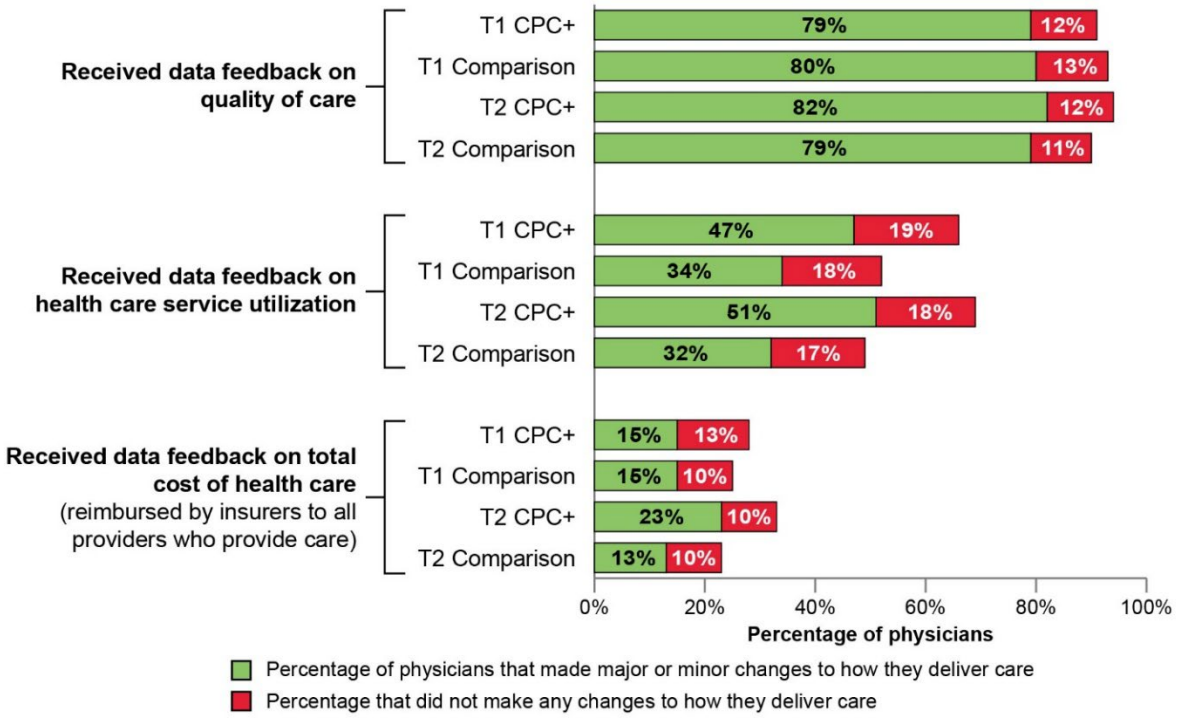
— Physician/clinical lead at large, system-owned, non-SSP practice

Nonetheless, physicians in CPC+ practices were more likely than those in comparison practices to report receiving and making changes to care delivery based on data feedback on utilization and cost. On the PY 5 CPC+ Physician Survey, approximately 67 percent of physicians in CPC+ practices in both tracks reported receiving data feedback on their patients' health care service utilization compared to around half of physicians in comparison practices that reported receiving utilization data. Physicians in CPC+ practices in both tracks were also more likely than those in comparison practices to report making changes to care delivery based on utilization data. In Track 2, 33 percent of physicians in CPC+ practices reported receiving data feedback on the total cost of care for their patients, compared to 23 percent of physicians in comparison practices, and more physicians in CPC+ than comparison practices reported making changes to care delivery based on cost data (Figure 4.19).

[42] A registry, which may be part of an electronic health record or a stand-alone tool, includes data on the practices' patients' conditions, receipt of recommended services and other data. It is a searchable database that can be used to support care management and outreach to patients in treatment as well as for population health, including quality improvement.

Figure 4.19. Percentage of physicians in CPC+ and comparison practices that reported receiving and using data feedback on quality of care, utilization, and total cost of care in the past 12 months in PY 5, by track

In PY 5, more physicians (across tracks and groups) reported receiving, and making changes to care delivery based on, data feedback on quality of care than on service utilization and patients' total cost of care. More physicians in CPC+ than comparison practices in both tracks reported receiving and making changes based on data feedback on utilization. In Track 2, more physicians in CPC+ than comparison practices reported receiving and making changes based on data feedback on patients' total cost of care.



Source: Mathematica's analysis of data from the independent evaluation's PY 5 CPC+ Physician Survey.

Notes: N = 252 and 317 physicians in Track 1 CPC+ and comparison practices, respectively; N = 289 and 314 physicians in Track 2 CPC+ and comparison practices, respectively. Each outcome is weighted to account for sampling design and nonresponse and to ensure CPC+ and comparison respondents had similar practice-level and respondent-level characteristics.

PY = Program Year; T1 = Track 1; T2 = Track 2.

Throughout CPC+, practices reported quality data were more useful than cost data. Many deep-dive practices described benefits of using data on quality, including reminding practitioners and staff to regularly monitor which patients were due for screenings and preventive care; enabling practices to assess performance against benchmarks; and inspiring healthy competition among practitioners on eCQM performance. On the other hand, practices generally shared less favorable feedback on the usefulness of cost data. Several deep-dive practices said that a patient's cost of care was outside primary care practitioners' control and thus cost data were not useful for guiding practice change. A few practices explained that, despite having information on high-cost specialists, they could not change which specialists their patients saw due to shortages of specialists in their regions or because patients have strong preferences about which specialists they see. Practitioners at a few other deep-dive practices stated that their job was to focus on providing patients the highest quality of care, rather than using cost data to guide care decisions.

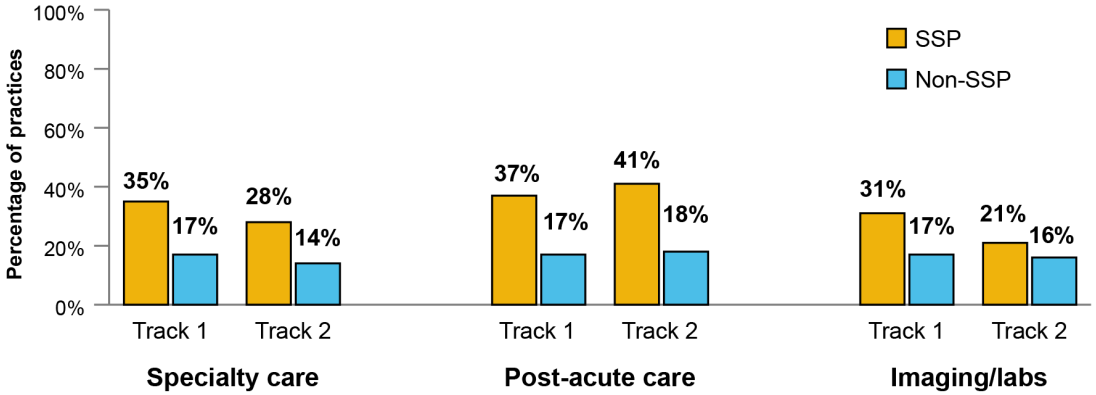
Physicians in system-owned CPC+ practices were less likely than those in independent CPC+ practices to report receiving and using data feedback on cost. On the PY 5 CPC+ Physician Survey, 25 percent of physicians in system-owned CPC+ practices reported that they received data feedback on patients' total cost of care versus 38 percent of those in independent CPC+ practices. Among these physicians, those in system-owned practices were also less likely than those in independent practices to report using cost data to make major or minor changes to care delivery (48 versus 75 percent, respectively). There were no differences by ownership status in receipt or use of data on quality of care or utilization. As noted in Chapter 3, these differences in rates of cost data reporting and use may be related to the notion that (1) systems are more likely to have layers of internal bureaucracy that practices must navigate before receiving or acting on data and (2) practices owned by systems may be more likely than physician-owned practices to face weak or conflicting incentives to contain hospital utilization and thus cost.

Many system-owned deep-dive practices reported that system-level staff led or were primarily responsible for population health efforts. For example, deep-dive practices said system-level staff reviewed data feedback and provided annotated reports highlighting areas for improvement, offered guidance on the interpretation of data feedback, and facilitated meetings with the practice to discuss reports. A few system-owned deep-dive practices noted that all efforts to review and use data feedback occurred at the system level rather than among practitioners and staff at the practice.

In PY 5, SSP practices were more likely than non-SSP practices to report using certain utilization and cost measures to guide continuous improvement. In both tracks, a higher percentage of SSP than non-SSP practices reported to CMS that they focused on utilization and cost measures related to specialty care, post-acute care, and imaging/labs for QI efforts (Figure 4.20). A few SSP deep-dive practices noted that they tried to align their work for their ACO with the work they were doing for CPC+, including which measures they focused on for continuous improvement initiatives.

Figure 4.20. Percentage of practices that reported focusing on various utilization and cost measures to guide quality improvement in PY 5, by track and SSP status

Compared to non-SSP practices, SSP practices were more likely to report focusing their quality improvement efforts on utilization and cost measures related to specialty care, post-acute care, and imaging/labs.



Source: Mathematica's analysis of PY5 practice-reported care delivery data submitted to CMS.

Note: N = 2,405 practices that submitted care delivery requirement data. N = 1,095 Track 1 practices and N = 1,310 Track 2 practices. Sample includes practices that were participating in CPC+ at the end of PY5. Practices could select all applicable responses.

PY = Program Year; SSP = Medicare Shared Savings Program.

Deep-dive practices described several challenges to using data, including issues with the accuracy and timeliness of data, lack of time to generate and review data feedback, and a lack of practitioner and staff engagement in continuous improvement efforts. Several deep-dive practices noted that quality measures and reports generated from their EHR, and other health IT were not always accurate, and it was time consuming for practitioners and staff to identify and correct the cause of the inaccuracies. Furthermore, several practices noted that data feedback from CMS and other payers tended to have a lag—often six months or longer—rendering data feedback too outdated to inform changes to care delivery. In addition, several deep-dive practices reported that practitioners and staff did not have time to review data. This challenge was more pronounced at independent practices, which lacked support from system-level data experts and QI specialists. Finally, several deep-dive practices described challenges engaging practitioners and staff in planned care and population health efforts. For example, practitioners at a few deep-dive practices explained that their practices never used data to inform practice change during CPC+ because their practitioners and staff did not see value in doing so.

How were practices planning to sustain processes for continuous improvement?

Most practices planned to sustain efforts to use data to guide practice improvements after CPC+ ends, primarily because the work aligns with other initiatives they are involved in or because they believe it benefits patients. On the PY 5 CPC+ Practice Survey, 83 percent of practices reported that they planned to sustain most or all of the processes associated with tracking and using quality measures and other data to guide practice improvements. An additional 11 percent reported plans to sustain a lot of the processes and 4 percent reported plans to sustain some of the processes. Many deep-dive practices also highlighted their plans to continue reviewing data feedback and dashboards, using reports to guide outreach to patients with gaps in care, and meeting as a practice to discuss ways to improve performance on various measures. The most common reasons deep-dive practices cited for sustaining these efforts are: (1) the work aligns with practices' or systems' priorities or other initiatives in which practices participate (such as value-based contracts with payers, ACOs, and Primary Care First) and (2) the belief that using data supports improvements in practice processes and care delivery. A few practices noted that they plan to continue using data for continuous improvement efforts because they already made the health IT investments required for this work.

> **"I think an ongoing challenge is to…make sure that we choose QI projects that are useful and reasonable and not too time consuming on the staff, that are implemented with efficiency as well as wisdom."**
>
> ***—Physician/clinical lead at a large, system-owned, SSP practice***

Practices' efforts to sustain the use of data to improve care delivery outcomes will depend on practitioners and staff having sufficient time available for this work after CPC+ ends. A few deep-dive practices indicated that a lack of time to review and use data has been an ongoing challenge and will likely persist after CPC+ ends. The clinical lead at one practice planned to address this by pursuing improvement initiatives that do not place too much burden on staff time.

4.4. Sustainability of CPC+ activities

CMS is interested in understanding the extent to which practices will sustain CPC+ activities after the model ends, even though practices were not required to do so. As reported earlier in this chapter, practices generally held positive impressions of CPC+ overall, found that participating in CPC+ improved the quality of care provided to patients, and said they would be willing to participate in CPC+ again if they could do it all over again, which could signal strong interest in continuing to provide care as they did

under CPC+. However, lack of funding for the salaries of staff who conduct CPC+ activities may hamper practices' ability to sustain certain activities.

During the final years of CPC+, we sought to understand practices' motivations and plans for sustaining each CPC+ care delivery requirement. Specifically, we focused on understanding which CPC+ activities practices found most valuable and wanted to continue, as well as what resources practices needed to continue them. In PYs 4 and 5, the CPC+ Practice Surveys asked practices about their plans to sustain specific CPC+ care delivery activities. In PY 5, the deep-dive practice interviews focused on sustainability. Practices' intentions to sustain individual care delivery requirements are discussed earlier in this chapter (in Section 4.3).

In this section we first report how practices made decisions about what to sustain, which CPC+ activities practices planned to sustain, and the factors affecting practices' decisions to sustain activities. Then we describe the resources practices expected to need to sustain CPC+ activities after the model's payments and supports ended. Finally, we provide more specifics about the other CMS initiatives CPC+ practices joined after CPC+ ended.

4.4.1. Practices' plans to sustain CPC+ activities

System leaders, often with physician input, typically decided which CPC+ activities practices would continue; among independent practices, physician leaders typically made these decisions. Many system-owned deep-dive practices reported that their system leaders decided what to sustain after CPC+. Several of these practices said that their system leaders sought input from physicians at the practice level, typically by including physicians on leadership committees. Reports from system- and practice-level respondents were generally aligned on what will continue after CPC+. The exception was risk stratification; system-level staff planned to continue generating risk scores because EHRs automatically generated them and other payer partners required them, yet practice-level staff did not find risk scores helpful and therefore did not use them. A few practices said that decisions about what to sustain were informed by indicators of benefits to patient care (such as improving performance on clinical quality measures) so that system leaders could justify or garner support for sustaining an activity. At several independent deep-dive practices, physician leaders decided which CPC+ activities to sustain, and a few did so with input from practice staff.

> **"In terms of deciding what stays in place, that's decided for [practices]. From the beginning of participation in these programs, it was a large push from leadership to get site-level providers [to] understand the program requirements [and] drive the requirements forward. It very much comes from the top down—all the way from central leadership to local leadership to site-level leadership, and then continuing down from there."**
>
> ***— System leader at a medium, system-owned, Track 1 practice***

By the end of CPC+, many or most practices reported plans to sustain most CPC+ activities. Table 4.3 summarizes the findings on the extent to which CPC+ practices reported intentions to sustain each care delivery activity, which are described in more detail in Section 4.3. The care delivery activities that practices most commonly reported they were highly likely to sustain spanned four of the five primary care functions, and included: 24/7 access, episodic care management, behavioral health integration, health-related social needs, and using data to guide quality improvement activities. The two activities with the lowest likelihoods of continuing after CPC+ included PFACs and collaborative care agreements with specialists, which deep-dive practices said did not provide value relative to the effort they required.

Table 4.3. Practices' reported likelihood of sustaining CPC+ care delivery activities

Primary care function	Care delivery process	Proportion of practices likely to sustain
Access and continuity	24/7 access	**Most**
	Continuity of care	**Most**
	Alternative visits	**Many**
Care management	Longitudinal care management	**Many**
	Episodic care management	**Most**
	Risk stratification	**Many**
Comprehensiveness and coordination	Behavioral health integration	**Many**
	Comprehensive medication management	**Many**
	Health-related social needs	**Most**
	Specialty care coordination	**Many**
	Collaborative care agreements with specialists	**Half or fewer**
Patient and caregiver engagement	Patient and Family Advisory Councils	**Half or fewer**
	Advance care planning	**Many**
Planned care and population health	Using data to guide quality improvement	**Most**

Source: Mathematica's synthesis of findings from the PY5 CPC+ Practice Survey and 2021 deep-dive interview findings, as reported in detail in prior sections of this chapter. For care delivery processes assessed largely from the survey, "many" denotes more than 50 percent but less than 90 percent of practices and "most" denotes 90 percent or more of practices. For care delivery processes assessed largely from the interviews, "many" denotes more than 10 and up to 3/4 of the sample and "most" denotes more than 3/4 of the sample.

Track 2 practices faced more advanced requirements than Track 1 practices for some CPC+ activities and were somewhat more likely to report plans to sustain most or all processes related to those activities. On the PY 5 CPC+ Practice Survey, more Track 2 practices reported plans to sustain most or all processes related to: providing advance care planning (73 percent of Track 2 practices versus 63 percent of Track 1), providing comprehensive medication management for high-risk patients (67 versus 48 percent), assessing patients' health-related social needs and referring them to community resources (75 versus 61 percent), and providing on-site behavioral health care that is integrated into primary care services (55 versus 43 percent). CMS required only Track 2 practices to implement these activities, except for behavioral health integration, for which Track 2 practices faced more advanced requirements than Track 1 practices in PYs 1 and 2. Notably, for the other care delivery activities, Track 1 and 2 practices reported similar likelihoods of sustaining them, including for those that were required of Track 2 only practices.

The main reasons practices cited for wanting to sustain a CPC+ activity included:

- ***Perception that the activity improved patient care and practitioners' experience.*** Practices valued CPC+ activities because they perceived them to improve patients' experience and quality of care. The activities also increased practitioners' job satisfaction by sharing responsibilities with other staff, which gave practitioners more time to spend with patients. Valuing an activity was practices' primary reason for planning to sustain it.
- ***Alignment between the activity and other initiatives.*** The CPC+ activities that practices planned to sustain commonly aligned with the goals and requirements of other initiatives in which practices

planned to participate (such as Primary Care First or other payer-led value-based programs) or already participated in (such as patient centered medical home efforts or ACOs). Most deep-dive practices hoped to participate in other value-based payment models, like Primary Care First or ACOs, after CPC+ ended. Practices considered the CPC+ activities useful for meeting the goals and expectations of these other initiatives. In particular, they reported hoping to keep their care managers to support episodic and longitudinal care management and behavioral health care providers to support behavioral health integration.

- ***Integration of the activity into the practice's culture and workflows.*** Another reason for sustaining CPC+ activities was practices' perception that continuing what they implemented during the model would be less resource-intensive than returning to how they used to function. Reverting to previous workflows could lead to unnecessary use of resources and spending, such as retraining staff or removing functionalities from the EHR. For example, practices thought advance care planning would continue beyond CPC+ because their new workflows allowed time for practitioners and staff to conduct and document these conversations, their EHRs had a place to document them, and practice staff perceived that conducting these conversations in the primary care setting is beneficial for patients and families.

I don't think there's a whole lot of deciding [what to sustain] required because [the activities] just became a part of our practice. They just became the way we do things. So, they kind of develop their own sustainability. They've made the case for themselves, and so it's just kind of built in."

— Medical leader at a large, system-owned, Track 1 practice

4.4.2. Supports practices expect to need for sustaining CPC+ activities

Practices reported concerns that the end of CPC+ payments may threaten their ability to hire or retain staff integral for sustaining many activities. Practices relied on CPC+ funding to hire and retain staff they could dedicate to specific CPC+ activities. These include care managers, behavioral health care providers, and social workers who respectively conduct care management activities, provide behavioral health services, and address health-related social needs. Without new funding sources, practices shared that they may not be able to pay these staff, which would mean discontinuing the functions they support after CPC+ ends. In particular, practices were concerned that the end of care management fees would mean they would be unable to retain care managers, whose salaries were among the costliest aspects of sustaining CPC+.

Practices reported looking to multiple revenue streams to replace the CPC+ payments that funded CPC+ activities. First, practices expected to use value-based and capitated payments from other payers and initiatives to support activities that cannot be billed—such as continuous quality improvement, comprehensive medication management, and coordinated referral management. Second, practices reported looking for direct reimbursements from payers for the services these staff provide. Examples included identifying billing codes for behavioral health services and providing telehealth visits if payers continued the same level of reimbursement as they did during the COVID-19 pandemic. Finally, several system-owned practices said that they will rely on their health systems to strategize how to fund CPC+ activities after the model ends. The funding may come from other initiatives, value-based payments, and/or the system's general revenue, based on what the system decides.

Practices had mixed perceptions of how much financial support they will have to maintain CPC+ activities after the model ends. During the last year of CPC+, about half of the deep-dive practices could estimate their level of future funding from current initiatives or those they will participate in, such as Primary Care First or ACOs, and had earmarked funds from those sources to support CPC+ activities. The other half of practices either were unsure of the level of funding available after CPC+ (through external initiatives or their health systems) or expected the level of funding to be inadequate to sustain CPC+ activities.

Practices worried that staffing shortages would influence their ability to hire staff integral to sustaining many activities. Practices commonly cited shortages of care managers, behavioral health care providers, and social workers. Practices also cited general staffing shortages due to the COVID-19 pandemic, which could make hiring new staff more expensive than before and potentially cost-prohibitive. A few deep-dive practices reported shortages of staff including physicians and medical assistants or registered nurses, who contributed to many CPC+ activities. With these shortages, staff take on more responsibilities and must make tradeoffs about what they do. For example, a registered nurse may have to focus on direct patient care instead of tracking and using data to guide quality improvement efforts.

Practices expected to receive ongoing support from health IT vendors to maintain EHR changes that enabled CPC+ activities. Many deep-dive practices expressed appreciation for vendor support to maintain and update EHR functionalities that support CPC+ activities. Helpful functionalities included quality dashboards, better interoperability, pop-up reminders and alerts, and data fields to enter information about social determinants of health. These functionalities helped support quality reporting, monitoring gaps in care, and improving access to patient information after hours or among patients' care team members and care settings.

Several practices wished that CMS had provided more support for sustainability planning before CPC+ ended. Although the CMS learning system made efforts to offer practices sustainability strategies in the last two years of the model, practices' awareness and perceived value of these efforts were mixed. A few deep-dive practices said they needed more concrete guidance and strategies for overcoming challenges to sustaining CPC+ activities. For example, a couple of deep-dive practices wanted CMS to help them identify programs and funding that could replace CPC+ payments (see Chapter 3 for more details).

4.4.3. Practice participation in other CMS initiatives after CPC+ ended

After CPC+ ended in December 2021, CPC+ practice participation in other CMS initiatives—including the Medicare SSP and PCF—grew faster than participation among practices that did not participate in CPC+ (Table 4.4). Track 2 practices were more likely than Track 1 practices to join these initiatives.

- The proportion of Track 2 practices that participated in SSP increased between the end of CPC+ and six months after CPC+ ended (from 48 to 56 percent). The proportion of comparison practices and Track 1 practices participating in SSP remained stable during the time period.
- CPC+ practices were more likely to join PCF than comparison practices six months after CPC+ ended. (CPC+ practices were not allowed to join PCF or DC before the model ended.) As of July 2022, around half of Track 1 CPC+ practices (49 percent) and almost two-thirds of Track 2 CPC+ practices (61 percent) had joined PCF – far greater than the 2 percent of comparison practices participating (both tracks). This is partly because some comparison practices were not in a PCF

region and thus ineligible to participate in PCF. Even still, accounting for the fact that 8 percent of the comparison practices (both tracks) were in a PCF region, about 25 percent of the comparison practices in PCF regions joined PCF 6 months after CPC+ ended, still much lower compared to participation across CPC+ practices.

- Participation in the Global and Professional Direct Contracting model remained low across CPC+ practices (both tracks) and comparison practices.

Table 4.4. Practices' participation in other initiatives by end of CPC+ and after CPC+

	Participation by end of CPC+ (as of 12/31/2021)		Participation after CPC+ (as of 7/1/2022)	
	CPC+ (%)	Comparison (%)	CPC+ (%)	Comparison (%)
Track 1				
Medicare SSP	45	57	47	59
PCFa	--[b]	1	49	2
DC[a]	--[b]	1	6	5
Track 2				
Medicare SSP	48	54	56	57
PCF[a]	--[b]	1	61	2
DC[a]	--[b]	1	13	7

Source: Mathematica's analysis of practitioner MDM extracts from February 25, 2022 and July 27, 2022.

Note: We rolled up practitioner participation to the practice level counting a practice as participating if any practitioner in the practice was reported as participating and conducted analyses at the practice-level. We weighted analyses by matching weights and the size of practices (i.e., number of beneficiaries at baseline in the practices), so that the results can be interpreted as the percentage of beneficiaries who were participating in the initiative. Sample sizes: N = 1,373 for Track 1 CPC+ practices, N = 5,243 for Track 1 comparison practices, N = 1,515 Track 2 CPC+ practices, N = 3,783 for Track 2 comparison practices.

[a] Practices can participate in either PCF or DC, but not both.

[b] CPC+ practices were not allowed to participate in PCF or DC during the CPC+ intervention period.

CMS = Centers for Medicare & Medicaid Services; CPC+ = Comprehensive Primary Care Plus; DC = Direct Contracting; MDM = CMS Master Data Management System; PCF = Primary Care First; SSP = Medicare Shared Savings Program.

4.5. Cross-cutting factors influencing practice change and implications for future primary care delivery initiatives

In this section, we describe facilitators and barriers that deep-dive practices reported having influenced practice change across *multiple* care delivery requirements or years, and that may influence practices' plans to sustain care delivery requirements. Barriers and facilitators related to *individual* care delivery requirements are discussed earlier in this chapter (in Section 4.3) and in previous CPC+ annual reports (Peikes et al. 2019a; Anglin et al. 2020; Swankoski et al. 2022). This section also presents implications (indicated by lightbulb icons) of practices' experiences implementing CPC+ for future primary care delivery initiatives. We organize the discussion of cross-cutting facilitators and barriers and their implications into three dimensions of the care delivery context: (1) characteristics of the CPC+ model, (2) characteristics of CPC+ practices, and (3) characteristics of the environment surrounding CPC+ practices. In Table 4.5, we identify the individual care delivery requirements related to each cross-cutting barrier and facilitator. Additional implications of the CPC+ evaluation findings for future models and outcomes are described in Chapter 6.

4.5.1. Characteristics of the CPC+ model

Practitioners' and staff members' perceptions that CPC+ activities improved the quality, delivery, and organization of patient care facilitated implementation. In the early years of CPC+, practices reported that practitioners and staff were more willing to adapt workflows to support CPC+ activities if they believed that these activities would improve patient care. Practices commonly noted the benefits of some CPC+ activities for preventing unnecessary hospitalizations and ED visits, reducing the burden on practitioners from having to cover various topics during the patient visit, and providing high-quality, individualized patient care that benefited patients and their families. These CPC+ activities included risk stratification, longitudinal care management, episodic care management, behavioral health integration, comprehensive medication management, screening for health-related social needs, and advance care planning. However, practices described some other CPC+ activities, such as collaborative care agreements, as not being beneficial to patient care; this limited the practices' buy-in and thus implementation effort for such activities.

Practitioners and staff experienced relatively more implementation challenges when a CPC+ activity involved sequential processes or multiple decision points. Throughout the initiative, practitioners and staff described these types of CPC+ activities as complicated and time-consuming to carry out. Practitioners and staff noted that these challenges reduced their buy-in and thus implementation effort for these CPC+ activities. Affected activities included defining clear clinical criteria for categorizing patients into distinct risk levels, screening patients to identify unmet social needs, maintaining an up-to-date inventory of social resources, and using data to support continuous improvement.

Practitioners and staff did not understand the concepts underlying some CPC+ activities and were therefore less likely to implement them. Deep-dive practices varied in their understanding of some care delivery requirements in the early years of CPC+. Most commonly, practitioners conflated "care plans" as envisioned by the CPC+ Implementation Guide with after-visit summaries, progress notes, and condition-specific action plans for patients. Similarly, practitioners and staff face challenges differentiating comprehensive medication management from medication reconciliation.

The CPC+ financial support practices received allowed them to hire and retain staff to support CPC+ activities. Practices reported that financial resources made available through CPC+ enabled them to hire staff to support CPC+ activities. Practices also reported that care management fees were the most useful type of CPC+ payment support they received. They primarily used these fees to fund the salaries of additional practice staff, including care managers and behavioral health specialists, such as clinical psychologists, or clinical social workers. They also used the fees to fund the salaries of quality improvement specialists. Conversely, many practices reported that with increased funding they could have enhanced staffing and the provision of care, particularly for longitudinal care management. (See implication on supporting care managers in this Section below.)

"CPC+ is helping build the system we needed to build anyway… because when you're looking at population health, when you're looking at being completely at risk for the cost of care, having these resources [especially behavioral health staff, care managers, social workers] in the clinic is a necessity."

—Health system leader

Practices consistently reported that participating in the model was somewhat burdensome, particularly due to the volume of reporting requirements. Despite CMS's efforts to decrease the burden on CPC+ practices, by reducing the number of care delivery and health IT requirements over time and by reducing the frequency of financial and care delivery reporting from four to two times a year, practices continued to consider reporting (particularly financial reporting) burdensome throughout CPC+.

Balance model guidance and requirements. Practices found that CPC+ provided a useful roadmap, offering direction and learning support to steer changes in care delivery. Yet, it is important for models to balance guidance and requirements to maximize practice participation while minimizing burden. Practices valued the CPC+ Implementation Guide and learning supports and were more likely to implement changes that they understood and perceived to positively influence the quality of care. Types of guidance that could improve transformation experiences include: (1) emphasizing the evidence base for suggested changes; (2) focusing on changes that align with the values and beliefs of clinicians, staff, and patients; (3) increasing the specificity of guidance in written materials (such as describing initial steps, sequencing, and timing); and (4) offering learning supports tailored to practices' specific needs (especially for complicated care delivery changes). Given that CPC+ practices struggled with requirements, particularly those related to financial reporting, future models might consider the minimum necessary reporting requirements for practice participants. For example, the Primary Care First model has fewer care delivery requirements and less extensive reporting than CPC+ and CPC Classic and CMS is less prescriptive about how practices meet the requirements.

4.5.2. Characteristics of CPC+ practices

Having a practice culture and designated leader that embraced CPC+ concepts, including team-based care, facilitated implementation. Practices that described having a culture that (1) embraced the comprehensive role of primary care, (2) promoted good working relationships among staff and practitioners, and (3) enabled team members to speak openly about problems seemed to have an easier time implementing CPC+ requirements. A strong team-based culture helped providers expand access to care with 24/7 coverage, use electronic messaging and ad hoc communication with co-located staff to support longitudinal care management, implement huddles to identify gaps in care, and offer feedback on care processes as a part of population health management. Practices that had someone at the practice who championed CPC+, as well as designated leaders for specific CPC+ activities, found implementing CPC+ requirements more manageable.

The resources practices had access to through affiliation with a larger health care organization facilitated implementation. In the early years of CPC+, system-owned practices reported that they used their system's resources to build an infrastructure to support CPC+ activities. These resources included staff for care management, behavioral health integration, and comprehensive medication management. These resources also included data analytics capabilities to support continuous improvement and a network of secondary and tertiary care providers who were part of their system. System practices reported that they had health IT functionality to access and exchange data from specialists, EDs, and hospitals within their system. In contrast, independent practices commonly described having fewer resources and expanding the roles of (already burdened) existing staff and practitioners to support CPC+ activities. Independent practices struggled with more complicated and technical requirements due to resource limitations; for example, instead of updating their EHR, they developed manual processes. However, independent practices often said they had more autonomy than system-owned practices to make CPC+-related changes.

Practices' health IT infrastructure and EHR functionalities were important factors that enabled and hindered efforts to implement several CPC+ activities. Practices with a robust health IT infrastructure and EHR functionalities identified these factors as key facilitators of CPC+ activities. Practices described how their health IT infrastructure supported CPC+ activities by allowing practitioners to access the EHR from anywhere, facilitating communication and sharing patient information within and outside of the practice, and supporting the use of data and dashboards for continuous improvement. Similarly, they described EHR functionalities to support maintaining accurate patient panels, documenting patient information, automating risk stratification, and incorporating tasks such as screening for health-related social needs within the EHR. Practices without a robust health IT infrastructure and EHR functionalities described challenges with similar CPC+ activities.

Continue to support practices' adoption of, and vendors' creation of, robust EHR functionalities. To foster wide-spread use of robust health IT, future models may need to require practices to use EHRs with minimum required functionality at baseline or establish an MOU with EHR vendors that incentivizes vendors to strengthen the functionality soon after they begin participating (see Chapter 3).

Dedicating staff time to CPC+ activities facilitated implementation. Practices reported that having staff with time dedicated to supporting CPC+ activities facilitated implementation because these staff had fewer competing priorities. Practitioners and staff said that having staff with protected time helped them ensure high-risk patients were receiving the necessary services, provide timely follow-up with patients after a hospitalization or ED visit, connect patients with community resources to meet their health-related social needs, manage patients' behavioral health issues, and review medication lists and obtain prior authorizations. In addition, practices reported that having staff available to review and adjust risk scores improved the accuracy of their risk-stratification processes. In contrast, practitioners and staff at several practices reported that care management staff with little time available could not provide longitudinal care management to all patients who might benefit. Successfully implementing longitudinal care management requires care manager availability, as well as expertise. Despite CPC+ care management fees, practitioners and staff at many practices experienced inadequate funding and support for hiring enough well-trained and skilled care managers. Although care management is part of nursing school curricula, the instruction often focuses on acute care settings and transitions to community-based care rather than on providing services in primary care settings (Orzol, et al. 2021, see Appendix 4.C). In PYs 4 and 5, several system-owned deep-dive practices reported moving previously embedded care managers from practice sites to central locations—which were more distant from patients and clinical care teams—as part of broader efforts to standardize care management throughout their systems.

Support care manager staffing to enhance the uptake of longitudinal care management. Longitudinal care management is a cornerstone of CPC+, yet throughout the model uptake by practices was lower than CMS had envisioned. According to practices' reports, this low uptake reflects the fact that care managers lacked time to provide this type of care. Going forward, practices might benefit from additional funding for, and supply of, on-site skilled care managers. Among exemplar CPC+ practices, those that reported doing longitudinal care management well (that is, using experienced RNs who were embedded in the practice and thus worked closely with practitioners, staff, and patients) had some of the greatest reductions in acute hospitalization rates (Laird et al. 2022, see Appendix 4.C). Going forward, longitudinal care management could also be strengthened by an increased supply of care managers trained in primary care. (See implications of glidepath for sustainability in this Section below.)

4.5.3. Characteristics of the environment surrounding CPC+ practices

Prior participation in primary care transformation efforts facilitated practices' early implementation of aligned CPC+ activities. Practices that had participated in prior transformation initiatives noted they began CPC+ with a foundation that enabled them to implement CPC+ activities into existing workflows. They had staff in place to support population health efforts, processes for using data to support continuous improvement, and protocols for providing patients with high levels of access to the care team. This alignment increased collective practitioner and staff support for such CPC+ activities, decreased disruption to practices' existing processes to implement CPC+ requirements, and reinforced for practitioners and staff that those activities were improving patient care.

Practices faced challenges implementing CPC+ activities to address health-related social needs and mental health needs due to limited resources available in their communities. Practices reported challenges linking patients to community-based services to address behavioral health needs and health-related social needs (especially transportation and housing resources). Practices also reported difficulties finding community-based psychologists or behaviorists with appointments available to address their patients' behavioral health needs. This issue was prevalent in all setting types, but was pronounced in rural locations, where most practices noted this constraint. Community-based resources were especially limited in PY 4, as many community organizations closed or experienced high demand during the pandemic.

Support practices' efforts to identify and coordinate with resources outside the practice site. Practices increased their efforts to screen patients for health-related social needs and reported improving processes for linking patients to resources over the course of CPC+. However, primary care practices reported that they lacked sufficient access to and collaboration with community resources to help meet patients' needs. Types of support that could enhance practices' (or their affiliated systems) capacity to build relationships with community-based organizations to address health-related social needs include guidance on how to (1) develop data use or other agreements to set expectations for creating and maintaining inventories of community-based resources, (2) define patient eligibility requirements, and (3) establish processes for referrals and exchanging referral information, including whether the patient received a service. Such efforts may help patients receive resources critical to reducing socio-economic barriers and achieving the health outcomes desired in primary care transformation models.

In the fourth program year, COVID-19 increased the demand for particular CPC+ activities and also hindered implementation efforts. Practices described how the pandemic increased demand for telehealth and behavioral health services, which both facilitated and hindered implementation. Practices reported that meeting the demand to provide more services via telehealth allowed them to continue providing care during the pandemic while keeping patients and staff safe. However, the increase in the number of patients with behavioral health concerns created new challenges, particularly in delivering these services via telehealth. The pandemic also placed new demands on staff time, making it difficult to conduct outreach to address gaps in care and routine screenings. Practices also reported that, because of demands related to the pandemic (such as checking in with patients who tested positive for COVID-19 or assisting with COVID-19 testing and vaccinations) and staff turnover, care management staff had to prioritize providing care to patients who were scheduled for regular office visits rather than providing longitudinal care management and conducting hospital and ED follow-up. In addition, the pandemic hindered practices' ability to conduct PFAC meetings and, as described above, limited the availability of community resources to help meet patients' social needs.

Throughout CPC+, practices faced difficulties engaging patients in different aspects of their care, which hindered the implementation of many CPC+ activities. Practices described challenges with addressing various patient needs. Practices noted that some patients had limited transportation and financial resources as well as familial and employment obligations, which made it difficult for them to prioritize their health and engage with the practices' services. In addition, practices described challenges motivating some patients to self-manage their chronic conditions and to appropriately use health care resources such as 24/7 primary care access and patient portals, rather than EDs and hospitals for non-urgent needs. Practices also said that some patients resisted services because they feared they would incur out-of-pocket expenses or felt inundated with medical information from multiple sources. Practices also described difficulties overcoming patients' reluctance to share sensitive information, especially when discussing unmet social needs or preferences for medical care at the end of life during a regular office visit.

> **"If you're afraid someone's going to hurt you, if you can't afford food, if you're going to be kicked out of your house, you're not thinking about your blood pressure or your diabetes. So, you need to hit those needs first and make [patients] feel safe....before you can even get a patient to think about their health."**
>
> ***— Care manager at a small, system-owned, Track 2 practice***

Build practice capacity to meet patients "where they are at." While many practices reported that building trust with patients and offering educational activities supported patient engagement, practices reported difficulties engaging some patients. Practices need continued support to engage patients to help them realize the benefits of high-quality primary care. Practitioners and staff in future models may also face challenges overcoming patients' barriers to engagement in terms of readiness to participate in preventive care or health behavior modification and willingness to share information. To overcome these barriers, future models could continue to offer learning supports and activities intended to develop practices' understanding of the factors that influence patient engagement, as well as their ability to communicate with and encourage patients to participate as partners in their health care. For example, more resources and support for practices' efforts to train practitioners and staff to assess patients' readiness for change and conduct motivational interviewing.

Primary care practices have little influence over specialists; thus, it is hard for primary care practices alone to carry out CPC+ care delivery changes that require specialist participation. The CPC+ model recommends that participating practices pursue enhanced coordination with specialists through collaborative care agreements and the use of data on high-cost, high-volume specialists to inform referral decisions. Over the course of the model, practices continued to express reservations about the value of collaborative care agreements as executed by their health systems, noting that in some systems these agreements focused more on referring patients to specialists within their system to retain specialists' revenue (under fee-for-service) than on the goals CMS intended (establishing processes for accessing and communicating effectively with specialists). Although practices reported having implemented collaborative care agreements during CPC+, physicians' perceptions of the usefulness of communication received from specialists to whom they referred patients did not differ for those in CPC+ and comparison practices. In addition, CMS hoped that primary care referrals would be informed by data feedback practices received from CMS on their patients' use of high-cost, high-volume specialists, but many practices did not consider these data when making referral decisions.

Align financial incentives across primary care and specialist providers. The differences observed in use of data on health care cost and utilization among CPC+ practices in ACOs may be an early sign of increasing attention to these other providers' costs in the health care system (see Section 4.3.5). A few deep-dive practices also said that they are working with their ACOs and MCOs to refine their collaborative care agreements to better incentivize specialists on cost control. Practice participation in shared savings may help sustain coordinated referral management after CPC+ ends. In PY 5, Track 2 SSP practices were more likely to report to CMS that they coordinated referral management for various high-frequency and/or high-cost specialists than Track 2 non-SSP practices. Nonetheless, despite receiving value-based reimbursement incentives from payers, primary care and specialist physicians' compensation continues to be dominated by volume-based incentives. Further alignment of financial incentives across the medical neighborhood, including primary care, specialty care and hospital-based care, could be achieved through a variety of strategies.

Practices reported concerns about being able to sustain many CPC+ activities when the model ends, especially those for which they relied on CPC+ funding to hire and retain staff. Practices reported looking to multiple revenue streams to replace CPC+ payments that funded CPC+ activities and staff (such as care managers and social workers), but they had mixed perceptions on whether they would be able to secure sufficient support to maintain CPC+ activities and staff after the model ends.

Facilitate a glidepath for sustainability. Practices were interested in sustaining many CPC+ activities after the model ends, though they were not required to plan for sustainability as part of the model. Lack of ongoing payment to fund the salaries of staff who conducted CPC+ activities (particularly episodic and longitudinal care management and behavioral health integration) may limit practices' ability to sustain some activities even though they desire to do so. For example, many practices want to sustain behavioral health integration because they felt it improved patients' access to care for common conditions like depression and anxiety, while reducing primary care practitioners' burden to do mental health counseling (which they might not be trained to do). Although billing codes for behavioral health integration exist, practices' uptake of such codes has been low to date (see Chapter 6). A glidepath could begin to support practices in identifying ways to cover such services after CPC+ ends midway through implementation, after they have established workflows. In addition to implementation guides, future models could produce sustainability guides that outline options for the long-term maintenance of practice changes (via billing, grant writing, hiring staff through external organizations, establishing community care teams, and so on).

Table 4.5. Facilitators and barriers to implementing CPC+ care delivery requirements, as reported by deep-dive practices

	CPC+ care delivery requirements in 2021												
	Access	Continuity	Alternative care	Risk stratification	Longitudinal care management	Episodic care management	Coordination with specialty care	Behavioral health integration	Comprehensive medication management	Health-related social needs	Patient and Family Advisory Councils	Advance care planning	Continuous improvement
Characteristics of CPC+ activities													
CPC+ activities that practices perceived as improving or not improving outcomes				F/B	F	F	B	F	F	F		F	
CPC+ activities that involved several sequential processes or multiple decision points				B						B			B
Concepts underlying CPC+ activities were not sufficiently understood by practices					B				B				
CPC+ financial supports that allowed practices to hire and retain staff					F	F	F	F		F			F
Characteristics of CPC+ practices													
A practice culture and designated leader that embraced change	F	F			F			F					F
Access to resources through an affiliation with a larger health care organization					F	F	F	F	F	F			F
Health IT infrastructure and EHR functionalities	F/B	F	F	F/B	F/B	F/B	F/B	B		F		F/B	F/B
Availability of staff time to dedicate to supporting CPC+ activities				F	F / B	F		F		F			B
Characteristics of the environment surrounding CPC+ practices													
Prior primary care transformation experience	F	F				F	F	F				F	F
Limited resources available in the community								B		B			
The COVID-19 pandemic			F		B	B		F/B			B		
Difficulties engaging patients	B				B			B		B	B	B	
Limited control over specialists							B						B
Options after CPC+ to fund activities			B		B	B		B	B				

Note: Facilitators are marked with a green (F) and barriers with a red (B) for each care delivery requirement to which they apply.

EHR = electronic health record; IT = information technology.

5 | Outcomes for Medicare FFS Beneficiaries

Key takeaways

Overview

Over the five program years, CPC+ reduced key utilization measures (outpatient emergency department [ED] visits and acute hospitalizations) over a time-path that was consistent with the model's theory of change. The reductions in total acute hospitalizations were driven by reductions in acute medical (that is, non-surgical) hospitalizations—which are typically of a lower severity than acute surgical hospitalizations. CPC+ Track 2 also reduced ambulatory primary care and specialist visits. CPC+ reduced expenditures for acute inpatient care in both tracks. However, due to offsetting increases in expenditures on other services, CPC+ did not reduce total Medicare expenditures without enhanced payments and increased costs by roughly the size of the enhanced payments.

Although CPC+ had small favorable effects on a few of the claims-based quality of care measures, it did not meaningfully improve other measures related to readmissions and unplanned acute care, low-value service use, continuity, or comprehensiveness of care, and it had small, unfavorable effects on some measures of appropriate use of medications. CPC+ also did not meaningfully alter beneficiaries' experience of care. It is, however, difficult to draw definitive conclusions about the effect of CPC+ on quality of care since the set of claims-based quality measures that we examined is limited. Specifically, we could not use electronic clinical quality measures (eCQMs) (which are more directly incentivized by the CPC+ model) due to the lack of comparable data between CPC+ and comparison practices.

Consistent with CMS's expectations about possible alignment between incentives and supports offered by CPC+ and SSP, effects across several outcomes were more favorable for practices that were participating in SSP when CPC+ began (SSP subgroup) relative to those that were not (non-SSP subgroup). We also observed differential effects by practice ownership status—in Track 2, hospitalizations declined among independent practices but did not change among hospital-or system-owned practices.

Our results were generally robust to a wide range of sensitivity tests. One important source of potential bias was the unforeseen coronavirus 2019 (COVID-19) pandemic that could introduce bias into our impact estimates if COVID-19 differentially affected outcomes for CPC+ and comparison regions. We observed some differences across regions in the effects of COVID-19 on Medicare expenditures and health care utilization during 2020 and 2021 (Program Years [PYs] 4 and 5), particularly early in the pandemic. To account for these differences, we included COVID-19-related regional controls in our models, which we found helped reduce the magnitude of the differences. However, it is still possible that these controls do not fully capture regional differences that arose from the pandemic.

This chapter first presents a high-level summary of key findings for readers who are more interested in focusing on the results than the detailed methods. We then present a more expansive discussion of methods and findings beginning in section 5.1.

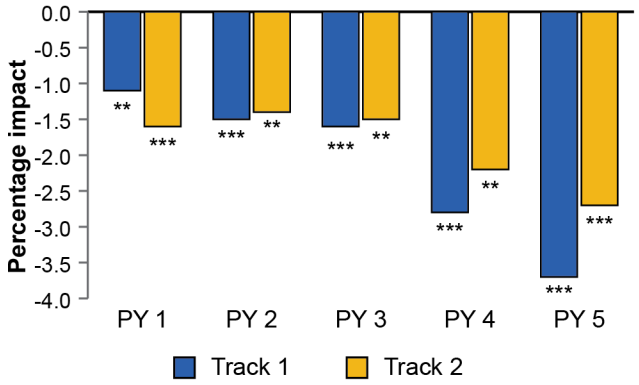
Summary

CPC+ led to reductions in service use over a time path that was generally consistent with the CPC+ theory of change.

As expected according to the CPC+ theory of change, reductions in outpatient ED visits emerged early and persisted across the five years (Figure 5.1), with a nearly 2 percent ($p < 0.01$) average annual reduction in both Tracks 1 and 2.

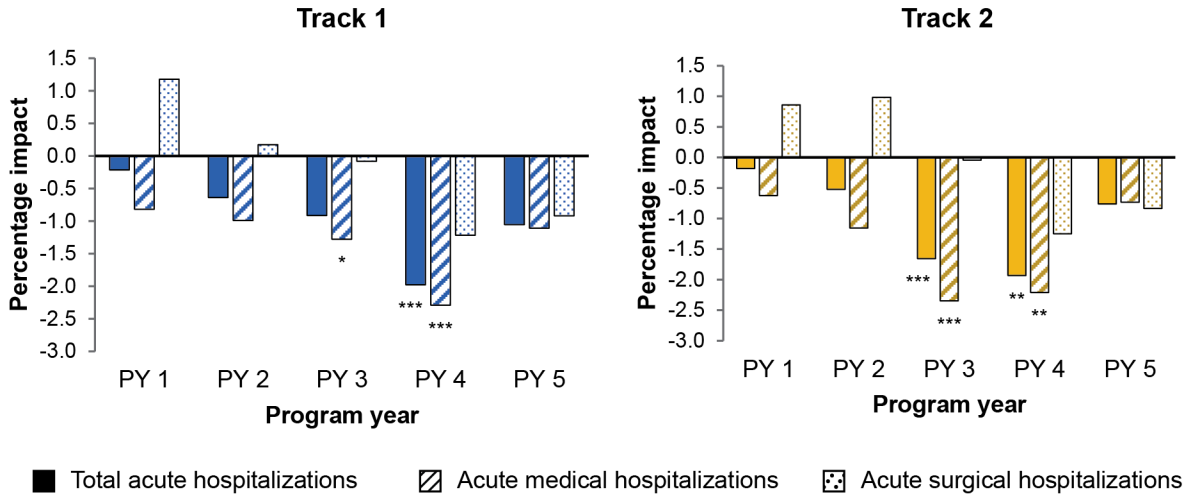
Reductions in acute hospitalizations emerged later, starting in PY 3 (with a 1.7 percent reduction, $p < 0.01$) for Track 2 practices and in PY 4 (with a 2 percent reduction, $p < 0.01$) for Track 1 practices, leading to average annual reductions of about 1 percent ($p < 0.1$). (Figure 5.2 shows the annual estimates). Reductions were driven by acute medical hospitalizations, with generally no changes in acute surgical hospitalizations.

Figure 5.1. CPC+ annual impacts on outpatient emergency department visits, by track



*Notes: */*/*** Impact estimates significantly different from zero at .10/.05/.01 level.*

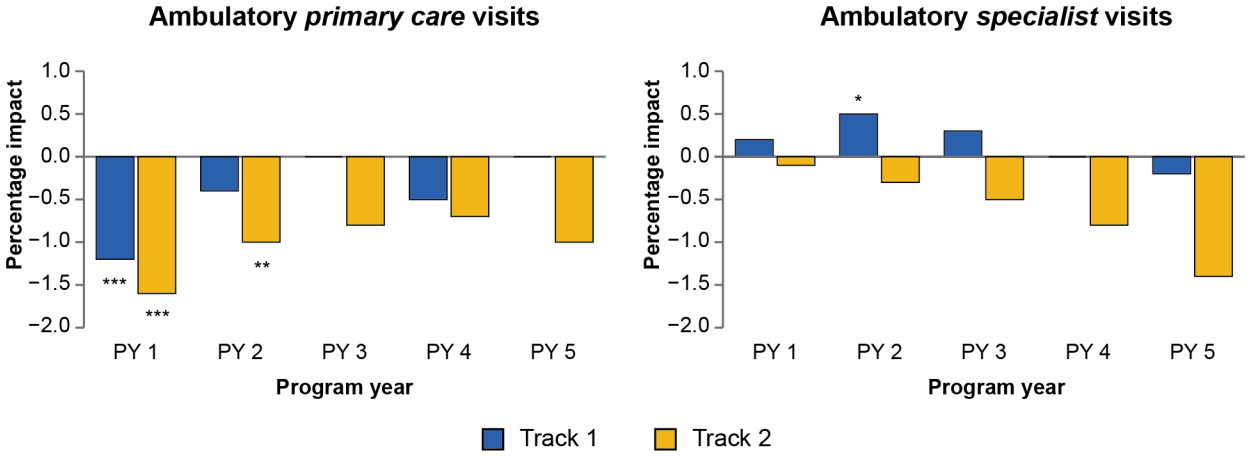
Figure 5.2. CPC+ annual impacts on types of acute hospitalizations, by track



*Notes: */*/*** Impact estimates significantly different from zero at .10/.05/.01 level.*

Over the five years, CPC+ Track 2 practices reduced ambulatory primary care visits by 1 percent ($p < 0.05$) and specialist visits by 0.6 percent ($p < 0.1$) but Track 1 practices did not have these reductions. Figure 5.3 shows annual estimates.

Figure 5.3. CPC+ annual impacts on ambulatory primary care and specialist visits, by track

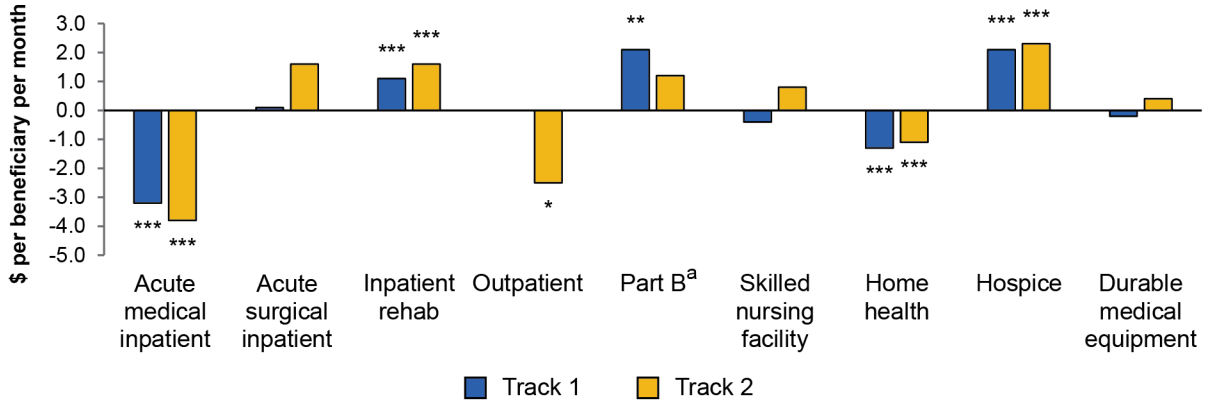


*Notes: */*/*** Impact estimates significantly different from zero at .10/.05/.01 level. Estimates that are not visible are close to zero.*

CPC+ did not reduce total Medicare expenditures without enhanced payments and it increased expenditures with enhanced payments. Although CPC+ reduced expenditures for acute medical hospitalizations, it increased expenditures for some other services, so that the total effect on Medicare expenditures without enhanced payments was close to zero.

In each track, there were average annual reductions in expenditures for acute medical hospitalizations of about 2 percent ($p < 0.01$) (Figure 5.4 shows the annual estimates expressed in terms of per beneficiary per month dollars).

Figure 5.4. CPC+ average annual impacts on Medicare expenditure categories, by track



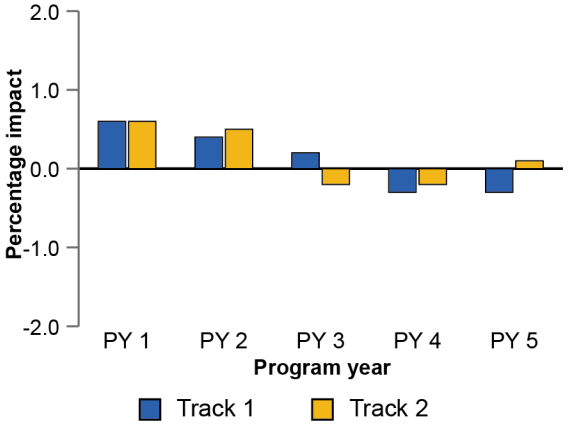
*Notes: */*/*** Impact estimates significantly different from zero at .10/.05/.01 level. Estimates that are not visible are close to zero.*

[a] Includes services provided by professional providers (including physicians, physician assistants, clinical social workers, nurse practitioners, and clinical nurse specialists) and by some organizational providers (for example, independent clinical laboratories, ambulance providers, freestanding ambulatory surgical centers, and freestanding radiology centers). See Laird et al. (2023b, Appendix 5.C) for details.

However, these reductions were offset by increases in expenditures on other services (inpatient rehabilitation facilities, physician and nonphysician Part B noninstitutional services in any setting, and hospice), yielding estimated effects on total Medicare expenditures without enhanced payments that were small and not statistically significant in either track in any of the five years (Figures 5.4 and 5.5).

Consistent with CMS's expectations about possible alignment between incentives and supports offered by CPC+ and SSP, a pattern emerged in which CPC+ generated more favorable effects for practices that were participating in SSP when CPC+ began (SSP subgroup) relative to those that were not (non-SSP subgroup).

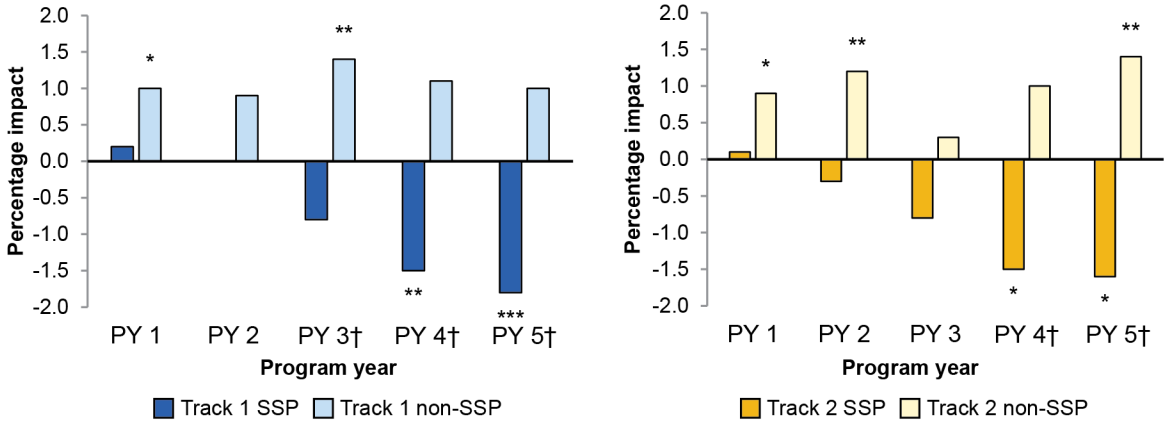
Figure 5.5. CPC+ annual impacts on total Medicare expenditures without CMS's enhanced payments, by track



*Notes: */*/*** Impact estimates significantly different from zero at .10/.05/.01 level.*

There was an approximately 1 percent (p = 0.08 in Track 1 and p = 0.18 in Track 2) average annual decrease in expenditures in the SSP group in both tracks and about a 1 percent (p < 0.1) average annual increase in expenditures in the non-SSP group in both tracks. The differential became more prominent in later years (PY 3 through PY 5) (Figure 5.6). Reductions in expenditures for SSP practices were largely driven by reductions (p < 0.1) in acute inpatient expenditures in both tracks. Relatively small increases in a mix of expenditure categories (expenditures on Part B noninstitutional services, inpatient rehabilitation, hospice, and durable medical equipment) contributed to the increases in overall expenditures among non-SSP practices (Tables 5.4 and 5.5).

Figure 5.6. CPC+ annual impacts on total Medicare expenditures without CMS's enhanced payments, by SSP and track



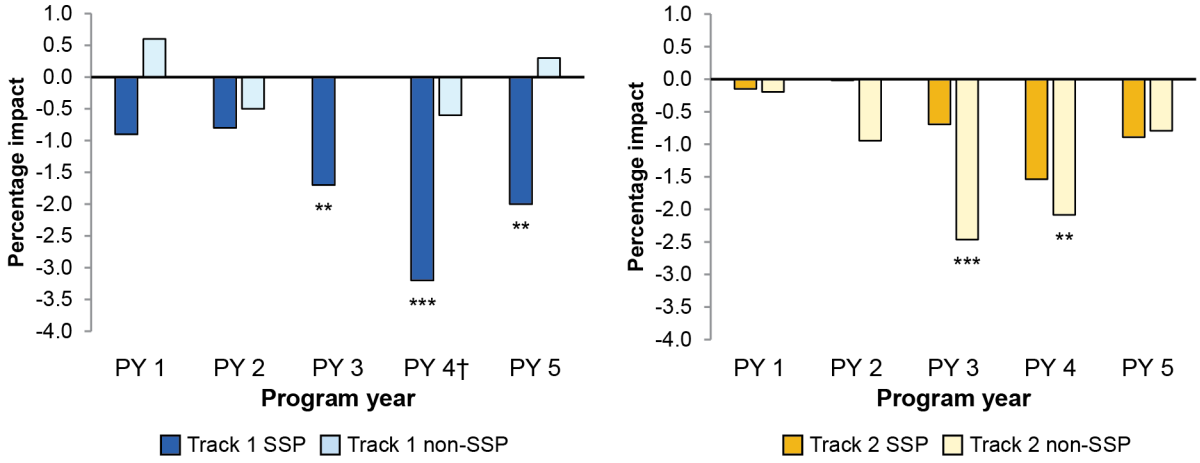
*Notes: */*/*** Impact estimates significantly different from zero at .10/.05/.01 level. Estimates that are not visible are close to zero.*

† Impact estimates for SSP/non-SSP subgroups significantly different from each other at the 0.10 level.

SSP = Medicare Shared Savings Program

A similar, albeit less consistent, pattern emerged for service use outcomes. In Track 1, reductions in acute hospitalizations were concentrated in the SSP group. Track 2 had the opposite pattern, with only non-SSP practices showing statistically significant reductions in acute hospitalizations (Figure 5.7).

Figure 5.7. CPC+ annual impacts on acute hospitalizations, by SSP and track



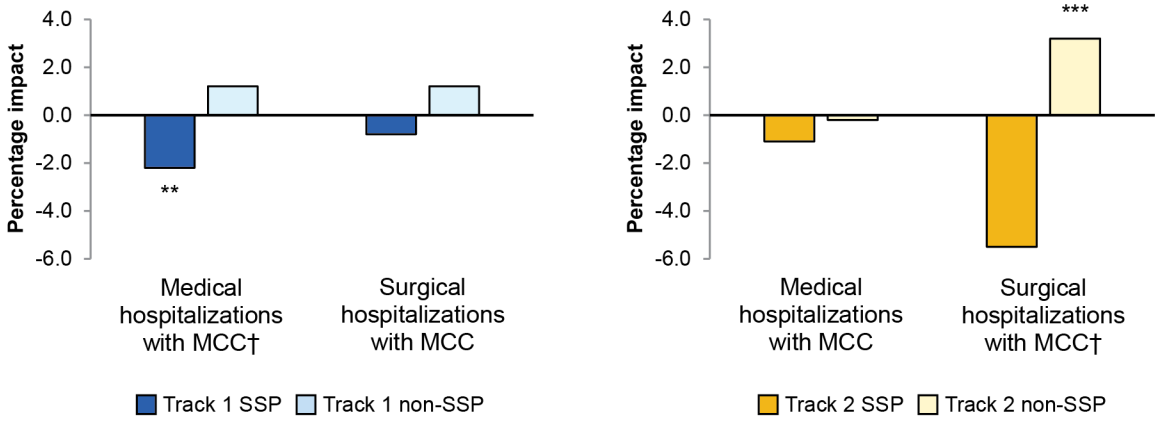
*Notes: */*/*** Impact estimates significantly different from zero at .10/.05/.01 level. Estimates that are not visible are close to zero.*

† Impact estimates for SSP/non-SSP subgroups significantly different from each other at the 0.10 level.

SSP = Medicare Shared Savings Program

When looking at types of acute hospitalizations (medical/surgical, with/without, major/non-major/no complication or comorbidity) across both tracks, only SSP practices reduced the highest severity acute hospitalizations that involved a major complication or comorbidity (both within the acute medical and acute surgical hospitalization categories) (Figure 5.8). This effect was particularly pronounced in Track 2, where SSP practices reduced the highest severity hospitalizations (acute surgical with a major complication or comorbidity) by 5.5 percent ($p < 0.01$) across the five years.

Figure 5.8. CPC+ average annual impacts on types of acute hospitalizations, by SSP and track



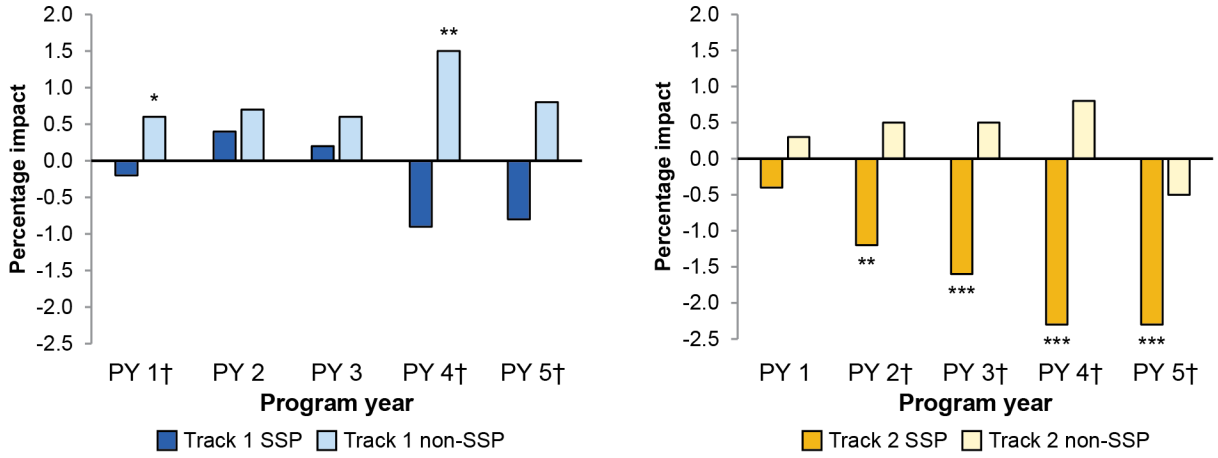
*Notes: */*/*** Impact estimates significantly different from zero at .10/.05/.01 level. Estimates that are not visible are close to zero.*

† Impact estimates for SSP/non-SSP subgroups significantly different from each other at the 0.10 level.

MCC = major complication or comorbidity, SSP = Medicare Shared Savings Program.

Among other service use outcomes, SSP practices reduced ambulatory specialist visits in Track 2 by 1.5 percent ($p < 0.01$), but non-SSP practices did not have these reductions (Figure 5.9 shows annual estimates for both tracks).

Figure 5.9. CPC+ annual impacts on ambulatory specialist visits, by SSP and track



*Notes: */*/*** Impact estimates significantly different from zero at .10/.05/.01 level.*

† Impact estimates for SSP/non-SSP subgroups significantly different from each other at the 0.10 level.

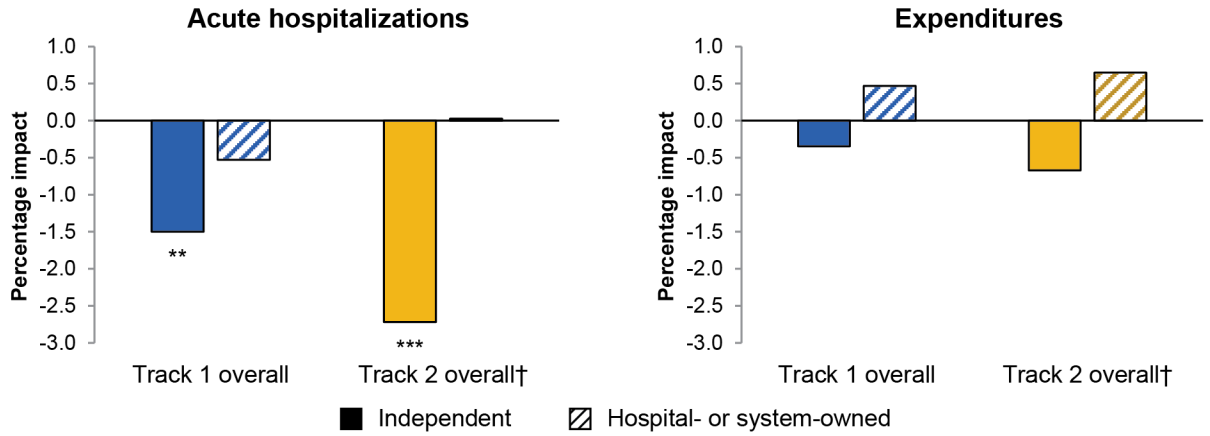
SSP = Medicare Shared Savings Program

A consistent pattern of differential effects was observed for practice subgroups based on only one other characteristic (besides SSP participation)—ownership status. There was little variation in effects by beneficiary characteristics.

In Track 2, there was a statistically significant differential between impact estimates for independent and hospital-or system-owned practices for acute hospitalizations: Specifically, Track 2 independent practices reduced hospitalizations by 3 percent but there was no effect for hospital-or system-owned practices (Figure 5.10). In Track 1, the direction of the estimates followed the same pattern as in Track 2 (that is, decreases in hospitalizations for independent practices and no effects for system-owned practices), though the difference in effects between the independent and system-owned practices was not statistically significant.

In Track 2, we also observed a statistically significant differential between independent and hospital-or system-owned practices for expenditures, with decreases for independent practices and increases for system-owned practices (Figure 5.10). Track 1 showed a similar pattern, but the estimates were not statistically different from each other.

Figure 5.10. CPC+ average annual impacts on acute hospitalizations and expenditures, by ownership and track

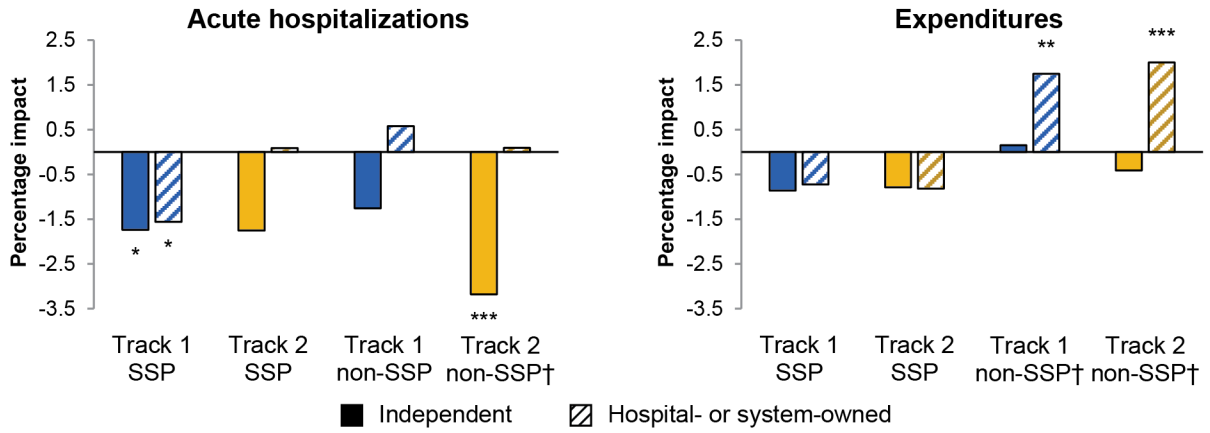


*Notes: */*/*** Impact estimates significantly different from zero at .10/.05/.01 level. Estimates that are not visible are close to zero.*

† Impact estimates for independent/hospital-or system-owned groups significantly different from each other at the 0.10 level.

When stratifying effects by both SSP participation and ownership status, we found that the differential in effects on expenditures and acute hospitalizations between independent and system-owned practices was more pronounced in the non-SSP subgroups in each track, with the least favorable effects generally occurring among hospital-or system owned practices that were not participating in SSP at the start of CPC+ (Figure 5.11). This is consistent with expectations about ownership structure and incentives: while practices that are system owned or tied to hospitals lose revenue when hospitalizations fall, those disincentives may be mediated by the global incentives to reduce overall costs in SSP.

Figure 5.11. CPC+ average annual impacts on acute hospitalizations and expenditures by ownership, track, and SSP participation



*Notes: */*/*** Impact estimates significantly different from zero at .10/.05/.01 level. Estimates that are not visible are close to zero.*

† Impact estimates for independent/hospital-or system-owned groups significantly different from each other at the 0.10 level.

SSP = Medicare Shared Savings Program

CPC+ had small favorable effects on some claims-based quality-of-care measures of planned care and population health and patient and caregiver engagement, no meaningful effects on outcomes in other quality domains, and unfavorable effects on a few measures of appropriate use of medications. CPC+ also did not meaningfully alter beneficiaries' experience of care.

CPC+ led to improvements in some quality-of-care measures. Over the five years, the percentages of beneficiaries who received all recommended services for diabetes increased by about 1 percentage point (2 percent, $p < 0.01$) and females who received breast cancer screening increased by about 1 percentage point (1 percent, $p < 0.01$) in both tracks. Consistent with the emphasis on patient and caregiver engagement in CPC+, hospice use increased by 0.1 percentage point which translates to 3 percent increase for Track 1 and 4 percent increase for Track 2 ($p < 0.01$ for both tracks). These improvements emerged early (in PY 1 or 2) in both tracks and persisted through PY 5. Average annual reductions in the potential overuse of prescription opioids of 0.4 percentage points (3 percent, [$p = 0.07$ in Track 1 and $p = 0.13$ in Track 2]) in both tracks were driven by reductions that emerged in PY 3 and persisted through PY 5.

CPC+ did not have meaningful effects on incidence of readmissions and unplanned acute care, use of low-value services, appropriate use of recommended medications, continuity, or comprehensiveness of care. The few statistically significant effects that we observed for measures of appropriate use of recommended medications were not in the expected direction, as they indicated unfavorable (though small) effects of CPC+. Beneficiaries in CPC+ and comparison practices also reported comparable experiences of care on the survey composite measures during each year the beneficiary survey was fielded (PYs 2,3, and 5).

We cannot draw definitive conclusions about the impact of CPC+ on quality because the magnitude of estimated improvements is small, and there is some evidence of unfavorable effects on some measures that are not consistent with the model's theory of change. Moreover, the set of claims-based quality measures that we examined is limited as we could not use electronic clinical quality measures (eCQMs) (which are more directly incentivized by the CPC+ model) due to the lack of comparable data between CPC+ and comparison practices.

5.1. Introduction and methods

What's new in Chapter 5 of this final report relative to previous years?

1. Includes final year of data (through PY 5)
2. Refined empirical strategy (in 2020 and 2021) to account for regional variation in severity and responses to COVID-19
3. Estimates for the impact of CPC+ on additional expenditure categories, types of hospitalizations, and quality-of-care measures:
4. Laboratory and imaging expenditures
5. Post-acute care expenditures
6. Measures of types of acute hospital admissions (e.g., medical versus surgical)
7. Measures of comprehensiveness of care
8. Use of low-value services
9. Estimates for the impact of CPC+ on survey-based measures of experience of care
10. Additional/updated beneficiary- and practice-level subgroups:
11. Updated the beneficiary-level mental health subgroup definition to focus on beneficiaries with anxiety or depression whose mental health conditions are most directly affected by primary care
12. Additional practice subgroup indicating whether the practice shared a Tax Identification Number (TIN) with another primary care practice

Primary care practice transformation is a complex process that takes time to implement and manifest in improved patient outcomes. We hypothesized that improvements in measures of service use and quality of care that can be affected by less complex changes in primary care delivery might emerge in the early years (PY 1 through PY 2) of the model (for example, ED visits or process-of-care measures for patients with diabetes). We also expected to see some effects that require more changes in workflows and care processes to begin to emerge in the later years (PY 3 through PY 5) on other outcomes, such as hospitalizations and Medicare expenditures. Specifically, CMS hypothesized that, within each track, CPC+ would reduce Medicare expenditures and hospitalizations in one or more program years, with potentially larger effects in later years (Peikes et al. 2018a). Further, based on findings from the effects of longer-term practice transformation for practices that participated in CPC Classic (Laird et al. 2023b, Appendix 5.H), we expected that any effects of CPC+ on hospitalizations would emerge in the later years of the model. If these reductions in hospitalizations were large enough, we also expected that CPC+ would reduce expenditures.

However, the unforeseen COVID-19 pandemic in 2020 that extended through 2021 affected the implementation of the model and could affect the estimated effects of CPC+ in PY 4 and PY 5 depending on the intensity and response to COVID-19 in CPC+ practices' regions and how CPC+ interacted with COVID-19.

We estimated the impact of CPC+ using difference-in-differences (DD) regressions. Since our comparison practices are drawn from regions that are external to CPC+ regions, we were concerned about differential regional effects of COVID-19 on service use and expenditures in PY 4 (2020) and PY 5 (2021) and we adjusted our estimation strategy to account for COVID-19 specific region-level control variables in our regression models.

We also conducted sensitivity tests for our main impact estimates. In particular, to assess potential bias due to regional differences, we estimated effects using a triple-differences or difference-in-difference-in-differences (DDD) model that nets out differences between CPC+ and comparison regions in their changes in outcomes between baseline (the year before CPC+ began) and the intervention period. The DDD modeling approach has a unique set of assumptions, so we do not expect estimates from the two estimation strategies to be the same. But in discussing our results, we point out any large deviations from the DDD estimate— specifically, any instances in which our DD estimate is statistically different from the DDD estimate.

Additionally, we interpret with caution any large deviations in PY 4 and PY 5 estimates (the years during which COVID-19 might have affected the results) from the pattern of estimates across the first three years of CPC+. We also combine evidence from the magnitude of the effect, the *p* values, findings on related outcomes, subgroups, sensitivity tests, and other data sources about model implementation, thus reducing the risk of COVID-19-related bias in our policy conclusions about the effectiveness of the model.

The text box below briefly summarizes our analytic approach for the claims-based outcomes of service use, expenditures, and quality of care. As mentioned in the methods text box, the appendices to this chapter provide detailed descriptions of the empirical strategy, outcome measures, and control variables.

Methods: Understanding the effect of CPC+ on Medicare FFS beneficiaries' claims-based outcomes

Comparison group. We compared outcomes for CPC+ practices relative to a matched comparison group. To form the comparison group, we first selected regions that were geographically close to CPC+ regions but were not eligible to participate in CPC+. We then used propensity score matching methods to select comparison practices from these regions that had characteristics similar to CPC+ practices (after the matching weights were applied). These matching characteristics included (1) characteristics of Medicare fee-for-service (FFS) beneficiaries (demographics, chronic conditions, and trends in Medicare expenditures, hospitalizations, and ED use); (2) practice characteristics (such as size, health system ownership status, and experience with primary care transformation and electronic health records [EHRs]); and (3) characteristics of the county in which the practice was located (such as median income, rural/urban location, and percentage of the population in poverty). Comparison groups were selected separately by track and by SSP participation status at the start of CPC+ (see Appendix 6.C in Ghosh et al. 2020 for details on the comparison group).

We also used covariates in regression models to further (1) adjust for beneficiary risk; (2) mitigate potential bias in PY 4 and PY 5 impact estimates due to differences between CPC+ and comparison regions in the timing, severity, and effects of COVID-19 on mortality and health care use (see Laird et al. 2023b, Appendix 5.D for details on approach to assess and address potential bias due to COVID-19); (3) improve the precision of our models; and (4) account for remaining differences in beneficiary and practice characteristics at the start of CPC+.

Claims-based measures. We examined the effects of CPC+ on service use, expenditures, and selected aspects of quality of care for Medicare FFS beneficiaries during the five years of CPC+ (see Laird et al. 2023b, Appendix 5.C for details on claims-based outcome measures).

Analytic methods. We estimated the impact of CPC+ on most claims-based measures using DD regression models. For this technique, we calculated the mean change in outcomes for Medicare FFS beneficiaries from the year before CPC+ to the five program years for two groups: (1) beneficiaries served by the CPC+ practices, and (2) beneficiaries served by comparison practices. We then calculated the difference in the change between the two groups. We used a linear regression model controlling for beneficiary characteristics and practice fixed effects, with standard error estimates clustered at the practice level, and weighting for matching and patient eligibility. We calculated percentage impacts relative to what the CPC+ mean would have been in the absence of the intervention—that is, the unadjusted CPC+ mean minus the impact estimate (see Laird et al. 2023b, Appendix 5.E for details on empirical strategy).

For unplanned 30-day readmissions and unplanned acute care, we estimated the DD regressions at the discharge level (instead of at the beneficiary level like the other outcomes), used discharge-level control variables, and incorporated matching weights only. For comprehensiveness-of-care outcomes, for which the study population is primary care practitioners, we estimated the difference-in-differences regressions at the practitioner level, used practitioner-level control variables, and incorporated matching weights only.

Methods (continued)

There were two exceptions where we used a straight-differences model: telehealth and mortality. Because telehealth use was close to zero at baseline, we estimated the impact of CPC+ by comparing the difference in mean outcomes between Medicare FFS beneficiaries served by CPC+ and comparison practices during a specific observation period. For mortality outcomes, the probability of dying increases with the length of the observation period and we have a much shorter baseline observation period (one year only) relative to the five-year intervention period included in this report; therefore, we looked at follow-up periods with a fixed length (for example, 12, 24, 36, 48, and 60 months) during the intervention period using a straight-differences model. We controlled for beneficiary and practice characteristics before CPC+, and COVID-19-related regional control variables (for regressions that include observations in PY 4 and PY 5). We used only the matching weights for mortality outcomes.

Sample. We used claims data to attribute Medicare FFS beneficiaries to practices each quarter of the six-year study period. We then assigned beneficiaries to CPC+ based on the first practice they were attributed to during the baseline and intervention periods. Once a beneficiary was attributed to a CPC+ practice for our analysis, we continued to include that beneficiary in all analyses, even if their practice later left CPC+ or if they were later attributed to a non-CPC+ practice (see Laird et al. 2023b, Appendix 5.B for details on the attribution methodology). We followed the same approach to identify and track beneficiaries served by comparison practices. This “intent-to-treat” approach helps to avoid the potential biases in impact estimates due to endogeneity concerns if, for example, CPC+ practices were more likely to stay open or beneficiaries were more likely to continue to visit CPC+ practices relative to their comparison counterparts.

For Track 1, we compared claims-based outcomes for more than 1.5 million Medicare FFS beneficiaries served by nearly 1,400 CPC+ practices with outcomes for more than 5.3 million beneficiaries served by more than 5,000 comparison practices. The corresponding sample sizes in Track 2 were nearly 1.9 million beneficiaries in more than 1,500 CPC+ practices and over 4.5 million beneficiaries in nearly 4,000 comparison practices.

Interpretation of SSP and non-SSP subgroup estimates. For all outcomes, we analyzed effects separately for the (1) overall, (2) SSP and (3) non-SSP subgroups in each track. Since CPC+ could affect participation in SSP during the intervention period, the SSP subgroups are defined based on participation in SSP at the start of CPC+. Since practices could and did switch in and out of SSP over time, the SSP subgroup estimates should be interpreted as the impact of starting CPC+ in SSP rather than as the impact of CPC+ combined with SSP throughout the intervention period.

Methods (continued)

Appendices.

Appendix 5.A provides the detailed findings including yearly and average annual estimates from impact analyses of all main outcomes, subgroup analyses, and sensitivity tests.

Appendices 5.B—5.E provide additional details on the attribution methods (5.B), the definitions of claims-based measures (5.C), our approach to assess and address potential bias in PY 4 and PY 5 impact estimates due to COVID-19 (5.D), and empirical strategy (5.E).

Appendix 5.F describes the detailed findings from participation in other initiatives by CPC+ and comparison practices.

Appendices 5.G—5.J describe the supplemental analyses regarding impacts of CPC+ on opioid overuse (5.G), long-term effects for CPC Classic practices (5.H), scalability of the CPC+ evaluation (5.I), and impacts of CPC+ on types of hospitalizations (5.J).

Appendix 5.K looks at the association between higher-than-average enhanced payments from CPC+ with changes in practice's care processes during the intervention.

Appendices 5.L—5.O analyze the association between changes in practices' care processes and key outcomes. Appendix 5.L investigates the role of access to care in reducing outpatient ED visits through PY 3. Appendix 5.M analyzes whether practice identification themes qualitatively identified by the "CPC+ Michigan ED and Inpatient Utilization High-Performing Practice Study" (Finkel and Marriott 2021) led to decreases in outpatient ED visits and acute hospitalizations from baseline through PY 3. Appendix 5.N analyzes whether activities identified by the qualitative practice exemplar study led to reductions in the outpatient ED visits and acute hospitalizations between baseline and PY 2 (Laird et al. 2022, Appendix 4.C). Appendix 5.O analyzes whether key care processes identified in Appendices 5.L—5.M affected changes from baseline to follow-up periods PY 2 through PY 5 in outpatient ED visits and acute hospitalizations.

Appendix 5.P analyzes the associations between levels of and changes in practice's capabilities with the Performance-based Incentive Payments they received in CPC+.

See Laird et al. (2023b) for appendices to Chapter 5 of the CPC+ final report.

Our DD estimation strategy assumes that absent CPC+, the outcomes of both CPC+ and comparison practices (that are drawn from regions external to CPC+ regions) would evolve in the same way during the model period. However, given (1) the regional nature of the spread, intensity, and impact of COVID-19 on health care systems and patient outcomes and (2) the fact that our comparison practices are drawn from non-CPC+ regions, we were concerned about the differential ways in which COVID-19 could have affected CPC+ and comparison practices. Therefore, we created regional control variables to net out these potentially distorting effects of COVID-19. The textbox below describes the region-level COVID-19 control variables included in the regression models for PY 4 and PY 5 and the rationale for their inclusion.

Closer look: Additional COVID-19 covariates included in PY 4 and PY 5

Excess mortality

- Excess mortality refers to the number of all-cause deaths above predicted counts given historic trends using Bayesian methods.
- Beneficiaries in regions with more excess deaths are likely to have higher health care utilization and expenditures for COVID-19. This may be offset by more delayed or avoided care in those regions.

Pandemic Vulnerability Index

- The Pandemic Vulnerability Index (PVI) evaluates community vulnerability to COVID-19 by combining 12 indicators across four domains (current infection rates, baseline population concentration, current interventions, and health and environmental vulnerabilities).
- Beneficiaries in regions with a higher PVI are more likely to incur higher utilization and expenses related to COVID-19. This may be offset by more health care avoidance.

Government Response Index

- The Government Response Index is a composite measure of 23 policy responses that state and local governments have taken to tackle COVID-19.
- Beneficiaries in regions with a stronger government response to COVID-19 tended to have lower long-run incidence of COVID-19, which may lead to lower health care utilization and expenditures for COVID-19.

Social Vulnerability Index

- Among 16 measures of vulnerability, the Social Vulnerability Index (SVI) counts the number of measures for which each census tract ranks above the 90th percentile (most vulnerable). The measures of vulnerability span three domains (socioeconomic, demographic, and housing/transportation).
- Communities with a higher SVI could have higher health care utilization and expenditures for COVID-19.

We calculated alternative estimates as robustness checks of the main impact estimates on the key outcomes of Medicare expenditures, acute hospitalizations, and outpatient ED visits. Specifically, we assessed the sensitivity of our results to changes in the following key elements of our estimation approach: (1) length of the baseline period, (2) definition of the beneficiary sample, (3) modeling assumptions, (4) controlling for contemporaneous (same-year) SSP participation status, and (5) alternative definition of the counterfactual (by using a triple-differences approach). We also conducted COVID-19-specific sensitivity tests by examining impact estimates after excluding claims from the peak COVID-19 period (March–May 2020). In the textbox below, we describe each sensitivity test (first bullet) and its rationale (second bullet).

Closer look: Sensitivity tests

Altering length of baseline period

- Two-year baseline test
  - Uses two instead of one pre-intervention years in the baseline period
  - Tests whether impact estimates are sensitive to using a longer baseline period and whether there are differences in trends prior to CPC+ for CPC+ and comparison practices

Altering the composition of the beneficiary sample

- Beneficiaries in both baseline and follow-up period test
  - Uses sample of beneficiaries attributed during the intervention period (who are also attributed during the baseline period) as the baseline sample
  - Helps to adjust for changes in sample composition between baseline and follow-up that may differ for the intervention and comparison groups
- Beneficiaries from Quarter 1 only test
  - Examines impacts for the subset of Medicare beneficiaries attributed in the first quarter of the period (that is, the first quarter of the baseline period and the first quarter of the intervention period)
  - Removes effects that may be due to differences over time in sample additions between the intervention and comparison groups
- No intent-to-treat (ITT) test
  - Instead of following an ITT approach to defining the beneficiary sample (once attributed, beneficiaries stay in the sample for the rest of the baseline or intervention period), allow beneficiaries to drop out of the sample if they no longer meet attribution requirements
  - Assesses whether the ITT approach tends to attenuate true effects by retaining beneficiaries in the intervention group who are no longer seen by CPC+ practices

Altering the modeling assumptions

- Generalized linear model test (conducted only for expenditures outcome)
  - For analysis of expenditures, uses a generalized linear model with log link
  - Accounts for skewed expenditure distribution
- Trim top 2 percent of costs test (conducted only for expenditures outcome)
  - Trims expenditures at 98th percentile
  - Reduces influence of high-cost cases

Closer look (continued)

- Log costs test (conducted only for expenditures outcome)
  - Log-transform the expenditures variable (generating impact estimates in percentage terms)
  - Reduces influence of high cost cases, accounts for skewed expenditure distribution
- Confounder test
  - Uses baseline beneficiary characteristics, practice characteristics, and practice-level averages of beneficiary characteristics (reflecting baseline characteristics of contemporaneous beneficiaries), all interacted with year indicators as additional controls.
  - Accounts for potential time-varying effects of baseline beneficiary and practice characteristics on the outcome. Adjusts for practice-level measures of beneficiary characteristics to align with participation in CPC+ varying at the practice level.

Controlling for contemporaneous SSP participation

- Uses a model that controls for contemporaneous (same year) SSP participation status
- Controls for changes in SSP participation status among CPC+ and comparison practices over time

Alternative definition of counterfactual

- Triple-differences test
  - Uses a triple differences approach that nets out differences between CPC+ and comparison regions in their changes in outcomes between baseline and the intervention period.
  - Controls for regional differences in trends among CPC+ and comparison practices

COVID-specific sensitivity test

- March – May 2020 claims excluded test
  - Excludes claims from March to May 2020 in the construction of outcomes in PY 4
  - Tests sensitivity of PY 4 estimates to changes in utilization and expenditures during the peak health care avoidance period.

The rest of the chapter proceeds as follows. Sections 5.2 and 5.3 describe the findings on the impact of CPC+ on service use and expenditure outcomes, respectively. Section 5.4 describes the key subgroup findings, and Section 5.5 describes CPC+'s effects on claims-based quality of care outcomes. Section 5.6 describes the findings on the impact of CPC+ on survey-based measures of experience of care. Section 5.7 concludes with a discussion of impact findings.

5.2. Effects of CPC+ on service use outcomes

5.2.1. Hypothesized effects of CPC+

CMS theorizes that practices' progress on the Comprehensive Primary Care Functions may change Medicare FFS beneficiaries' service use. Most notably, we believed that if practices improve care delivery and make progress on the five Comprehensive Primary Care Functions (in particular, access to and continuity of primary care and care management), ED visits and hospitalizations might decrease, and that these effects might be greater for Track 2 than Track 1. For example,

- Improved access to primary care could reduce visits to the ED for nonurgent issues.
- Better access to the primary care team might prevent a new symptom from worsening to the point where hospitalization would have been required.
- Through early follow-up after discharge, episodic care management may help high-risk patients remain stable and avoid hospital readmissions.
- Longitudinal care management may affect outcomes via two mechanisms. First, better control of chronic conditions might reduce exacerbations that would otherwise result in ED and hospital use. Second, additional and frequent contacts with the care manager can alert the primary care team to high-risk patients' new acute symptoms, which might be easily treatable in the outpatient setting (as evidenced in our findings from in-depth interviews with high-risk patients who received longitudinal care management in CPC Classic and CPC+).

Further, the design of the CPC+ performance-based incentive payment system incentivized the reduction of acute care utilization. Specifically, the utilization component of the CPC+ performance-based incentive payments (PBIPs) was based on the metrics of ED visits and acute hospitalizations.

CPC+ may also impact other aspects of utilization—including the number of visits Medicare FFS beneficiaries make to primary care practitioners or specialists— but we do not have a hypothesis on the direction of these relationships. For example, for visits to primary care practices, CPC+ could increase the total number of visits as practices offer more comprehensive services and, potentially, extend their office hours. Conversely, CPC+ could decrease in-person visits as practices shift to other nonbillable approaches for providing care to patients, such as nonbillable, patient-initiated communications or visits with nonbillable staff like care managers.

Similarly, for visits to specialists, there is no clear direction of hypothesized effects. More comprehensive care provided by primary care practices could reduce specialist visits. Conversely, CPC+ encourages coordination of care, and for some patients with previously unmet specialty care needs this may result in improved access to and use of specialists.

Other contextual factors limit the extent to which CPC+ can impact visits to specialists. For example, CPC+ does not create financial incentives for primary care providers to reduce referrals to higher-cost specialty services in cases where they add little value, so the model is unlikely to affect "overuse." Further, Medicare FFS beneficiaries can continue to self-refer to specialists regardless of their primary care practice's participation in CPC+.

Finally, the impact of CPC+ on some outcomes could have changed during PY 4 and PY 5 in ways CMS did not anticipate, due to the COVID-19 pandemic. For example, if CPC+ supports enabled practices to schedule telehealth visits more easily then we might observe larger increases in telehealth visits among CPC+ versus comparison practices in response to the pandemic.

5.2.2. Realized effects of CPC+

CPC+ generated reductions in some measures of Medicare FFS beneficiaries' service use, but the effects were less than 3 percent. In particular, over the five years of the model, CPC+ led to small reductions in outpatient ED visits and hospitalizations in both tracks, and in ambulatory primary care and specialist visits only in Track 2. Below, we describe the key findings for the service use outcomes synthesized across tracks, SSP subgroups, and sensitivity tests. Additional details on the year-specific data (particularly the *p* values and estimates of impacts) are available in Tables 5.A.1.1a through 5.A.1.22b in Laird et al. (2023b, Appendix 5.A).

Outpatient ED visits

Over the five years, CPC+ reduced outpatient ED visits in both tracks by about 2 percent, with reductions emerging early (in PY 1) and persisting across the five years. Although both CPC+ and comparison practices saw a decline in the rate of outpatient ED visits during the five years of CPC+ compared to the year before CPC+ began, the decline was greater for CPC+ practices than for comparison practices. Relative to the comparison group, CPC+ practices experienced a small net decrease in outpatient ED visits of nine visits per 1,000 beneficiaries (2.1 percent; $p < 0.01$) in Track 1 and eight visits per 1,000 beneficiaries (1.8 percent; $p < 0.01$) in Track 2 (Table 5.1 and Tables 5.A.1.1a and 5.A.1.2a in Laird et al. 2023b, Appendix 5.A). The reductions emerged in PY 1 in both tracks and persisted across the five years, which is consistent with the CPC+ theory of change (Table 5.1).

Table 5.1. Estimated impacts on outpatient ED visits, acute hospitalizations, and ambulatory visits for Medicare FFS beneficiaries, by program year and average for the five years of CPC+, by track and SSP status

	Track 1				Track 2			
	CPC+ mean	Percentage impacts, overall	Percentage impacts, SSP	Percentage impacts, non-SSP	CPC+ mean	Percentage impacts, overall	Percentage impacts, SSP	Percentage impacts, non-SSP
Key Service Use Outcomes (per 1,000 beneficiaries per year)								
Outpatient ED visits, including observation stays								
PY 1	490	***-1.1%****	***-1.2%****	-1.0%	486	***-1.6%*****	***-1.9%*****	***-1.3%****
PY 2	484	***-1.5%*****	***-1.7%****	-1.2%	483	***-1.4%****	***-1.7%****	-1.1%
PY 3	484	***-1.6%*****	***-1.6%****	***-1.7%****	483	***-1.5%****	***-1.6%****	***-1.4%****
PY 4	376	***-2.8%*****	***-3.6%*****	-1.7%	378	***-2.2%****	***-5.0%*****	0.6%
PY 5	407	***-3.7%*****	***-4.3%*****	***-3.2%****	408	***-2.7%*****	***-4.9%*****	-0.3%
PY 1 through PY 5	446	***-2.1%*****	***-2.3%*****	***-1.8%****	445	***-1.8%*****	***-2.9%*****	-0.8%
Interpretation: Over the five years, CPC+ reduced outpatient ED visits in both tracks by about 2 percent, with effects emerging early (in PY 1) and persisting across the five years. The magnitude of the PY 4 and PY 5 estimates of reduction in both tracks and PY 1 in Track 2 only should be interpreted with caution as they are statistically different (larger) from the DDD estimates (see Tables 5.A.5.1 and 5.A.5.2 in Laird et al. 2023b. Appendix 5.A) for details of DDD estimates).								
Acute hospitalizations (short-stay acute care and CAHs)								
PY 1	289	-0.2%	-0.9%	0.6%	292	-0.2%	-0.1%	-0.2%
PY 2	285	-0.6%	-0.8%	-0.5%	289	-0.5%	0.0%	-0.9%
PY 3	284	-0.9%	***-1.7%****	0.0%	286	***-1.7%*****	-0.7%	***-2.5%*****
PY 4	243	***-2.0%*****	***-3.2%*****	-0.6%	245	***-1.9%****	-1.5%	***-2.1%****
PY 5	244	-1.1%	***-2.0%****	0.3%	246	-0.8%	-0.9%	-0.8%
PY 1 through PY 5	268	***-0.9%****	***-1.6%****	0.0%	270	***-1.0%****	-0.6%	***-1.3%****
Interpretation: During the five program years, CPC+ reduced the rate of acute hospitalizations by about 1 percent in each track. The magnitude of the PY 4 estimate of reduction in both tracks should be interpreted with caution as it is statistically different (larger) from the DDD estimate of reduction. The reductions emerged in later years (PY 3 through PY 5). In Track 1, the reductions were concentrated in the SSP group and in Track 2, the reductions were concentrated in the non-SSP group.								
Acute medical hospitalizations								
PY 1	200	-0.8%	***-1.4%****	-0.2%	204	-0.6%	0.0%	-1.2%
PY 2	198	-1.0%	-1.2%	-0.8%	202	-1.2%	0.1%	***-2.2%****
PY 3	197	***-1.3%****	***-2.1%****	-0.2%	199	***-2.3%*****	-1.0%	***-3.5%*****
PY 4	172	***-2.3%*****	***-3.4%*****	-0.9%	174	***-2.2%****	-1.2%	***-2.8%****
PY 5	175	-1.1%	-1.5%	-0.1%	178	-0.7%	-0.4%	-1.4%
PY 1 through PY 5	188	***-1.3%****	***-1.9%****	-0.5%	191	***-1.4%****	-0.5%	***-2.3%*****
Interpretation: In both tracks, the reductions in total acute hospitalizations were driven by the reductions in acute medical hospitalizations which constitute approximately 70 percent of total acute hospitalizations and are generally of lower acuity than the acute surgical hospitalizations. For estimates of the more granular types of hospitalizations (with/without major/non-major/no complication or comorbidity), within acute medical hospitalizations, refer to Tables 5.A.1.7a, 5.A.1.7b, 5.A.1.8a, 5.A.1.8b in Laird et al. (2023b, Appendix 5.A).								

Table 5.1. ***(continued)***

	Track 1				Track 2			
	CPC+ mean	Percentage impacts, overall	Percentage impacts, SSP	Percentage impacts, non-SSP	CPC+ mean	Percentage impacts, overall	Percentage impacts, SSP	Percentage impacts, non-SSP
Acute surgical hospitalizations								
PY 1	89	1.2%	0.1%	***2.4%****	88	0.9%	-0.6%	***2.0%****
PY 2	86	0.2%	0.2%	0.1%	87	1.0%	-0.4%	***2.1%****
PY 3	87	-0.1%	-0.6%	0.6%	87	0.0%	0.0%	-0.1%
PY 4	71	-1.2%	***-2.7%****	0.4%	71	-1.2%	***-2.4%****	-0.3%
PY 5	69	-0.9%	***-3.2%****	1.2%	68	-0.8%	-2.2%	0.6%
PY 1 through PY 5	80	-0.1%	-1.0%	0.9%	80	0.0%	-1.0%	0.9%
Interpretation: Across the five years, CPC+ did not reduce acute surgical hospitalizations. The few statistically significant yearly estimates of *reduction* for surgical hospitalizations were observed in the SSP groups (PY 4 and PY 5 for Track 1, and PY 4 for Track 2) and the few statistically significant yearly estimates for increases for surgical hospitalizations were observed in the non-SSP groups (PY 1 for Track 1 and PY 1 and PY 2 for Track 2). For estimates of the more granular types of hospitalizations (with/without major/non-major/no complication or comorbidity), within acute surgical hospitalizations, refer to Tables 5.A.1.7a, 5.A.1.7b, 5.A.1.8a, 5.A.1.8b in Laird et al. (2023b, Appendix 5.A).								
Ambulatory primary care visits (including to FQHCs, RHCs, and CAHs)								
PY 1	4,295	***-1.2%*****	***-1.0%****	***-1.5%*****	4,364	***-1.6%*****	***-1.1%****	***-2.0%*****
PY 2	4,340	-0.4%	-0.1%	-0.8%	4,393	***-1.0%****	-0.6%	***-1.3%****
PY 3	4,406	0.0%	0.1%	-0.1%	4,449	-0.8%	-0.4%	-1.1%
PY 4	3,991	-0.5%	-0.1%	-0.8%	4,019	-0.7%	0.0%	-1.3%
PY 5	4,244	0.0%	-0.1%	-0.2%	4,236	-1.0%	-0.2%	-1.5%
PY 1 through PY 5	4,252	-0.4%	-0.2%	-0.6%	4,286	***-1.0%****	-0.5%	***-1.4%****
Interpretation: Over the five years, CPC+ Track 2 reduced ambulatory primary care visits by 1 percent. No such reduction occurred in Track 1.								
Ambulatory specialist visits								
PY 1	4,474	0.2%	-0.2%	***0.6%****	4,380	-0.1%	-0.4%	0.3%
PY 2	4,496	***0.5%****	0.4%	0.7%	4,362	-0.3%	***-1.2%****	0.5%
PY 3	4,403	0.3%	0.2%	0.6%	4,270	-0.5%	***-1.6%*****	0.5%
PY 4	3,830	0.0%	-0.9%	***1.5%****	3,695	-0.8%	***-2.3%*****	0.8%
PY 5	4,182	-0.2%	-0.8%	0.8%	4,019	***-1.4%*****	***-2.3%*****	-0.5%
PY 1 through PY 5	4,266	0.2%	-0.2%	***0.8%****	4,132	***-0.6%****	***-1.5%*****	0.3%
Interpretation: Over the five years, CPC+ Track 2 reduced ambulatory specialist visits by 0.6 percent driven by reductions in the Track 2 SSP subgroup (no reductions occurred in the Track 2 non-SSP subgroup). A somewhat similar pattern of SSP/non-SSP differences occurred in Track 1 with no changes for the SSP group and an average annual increase of 0.8 percent in ambulatory specialist visits in the non-SSP group.								

Source: Mathematica's analysis of Medicare claims data from January 2013 through December 2021.

Notes: Impact estimates. We base impact estimates (and tests of statistical significance) on a difference-in-differences analysis; they reflect the difference in the regression-adjusted average outcome for attributed Medicare FFS beneficiaries in CPC+ practices in PY 1 through PY 5 compared with the average outcome in the baseline year, relative to the same difference over time for attributed Medicare FFS beneficiaries in comparison practices. We calculate percentage impacts relative to what the CPC+ mean would have been in the absence of the intervention—that is, the unadjusted CPC+ mean minus the impact estimate. For a description of the service use outcomes, please refer to Laird et al. (2023b, Appendix 5.C).

Table 5.1. ***(continued)***

Shading. ***Yellow shading*** ***with bold, italicized text*** signifies that the underlying impact estimate was statistically significant at the 10 percent level using a two-sided test. Estimates with a positive sign show an increase in the service use outcome and estimates with a negative sign show a reduction in the service use outcome for CPC+ practices relative to comparison practices. Although this table indicates which estimates are statistically significant, when we interpret evidence, we combine evidence from the magnitude of the effect, the *p*-values, findings on related outcomes, subgroups, sensitivity tests, and other data sources about model implementation.

Unweighted sample sizes. For Track 1 and Track 2, respectively, this analysis includes: (1) 1,373 and 1,515 CPC+ practices that were participating in CPC+ as of April 1, 2017 (the end of the first program quarter), (2) 5,243 and 3,783 comparison practices, (3) approximately 1.5 million and 1.9 million CPC+ beneficiaries, and (4) approximately 5.3 and 4.5 million comparison beneficiaries. The counts of beneficiary-year observations are approximately 3.8 times the number of beneficiaries.

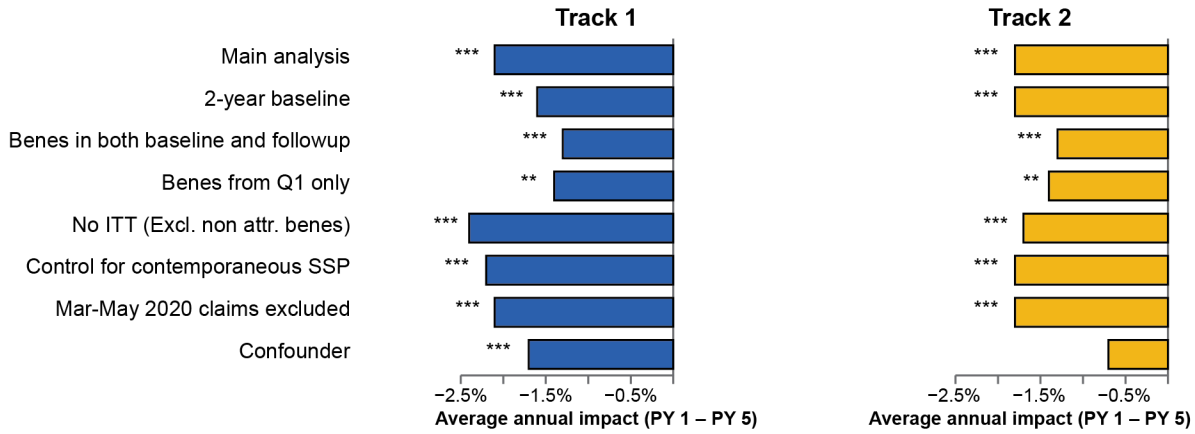
Effective sample sizes. After accounting for weights that adjust for matching and time observed in Medicare FFS, the effective sample sizes fall but are still substantial. For analyses of expenditures and service use measures, for the comparison group, the effective sample size is 40 to 45 percent of the size of the actual comparison group; the effective sample size for the CPC+ group is about 96 percent of the actual sample size because it is affected only by time observed (and not by the matching weights).

*/**/*** Underlying impact estimate (which is per 1,000 beneficiaries per year for continuous measures of service use) was significantly different from zero at the 0.10/0.05/0.01 level, two-tailed test.

CAH = Critical Access Hospital; DDD = triple differences; ED = emergency department; FFS = fee-for-service; FQHC = Federally Qualified Health Center; PY = Program Year; RHC = Rural Health Clinic; SSP = Medicare Shared Savings Program

The results for outpatient ED visits were generally robust to sensitivity tests; however, the estimated PY 4 and PY 5 reductions in both tracks and the PY 1 reduction in Track 2 should be interpreted with caution as they are statistically different from the DDD estimates. Across the seven sensitivity tests we conducted (in addition to the DDD), all seven showed significant reductions in Track 1, and six showed significant reductions in Track 2 (Figure 5.12). However, the PY 4 and PY 5 estimates of reduction in both tracks and the PY 1 estimate of reduction in Track 2 were statistically different from the corresponding DDD estimates, so their magnitude should be interpreted with caution (Figure 5.13).[43]

Figure 5.12. Comparison of estimates from sensitivity tests (excluding DDD) with main DD estimates, for outpatient ED visits, Tracks 1 and 2



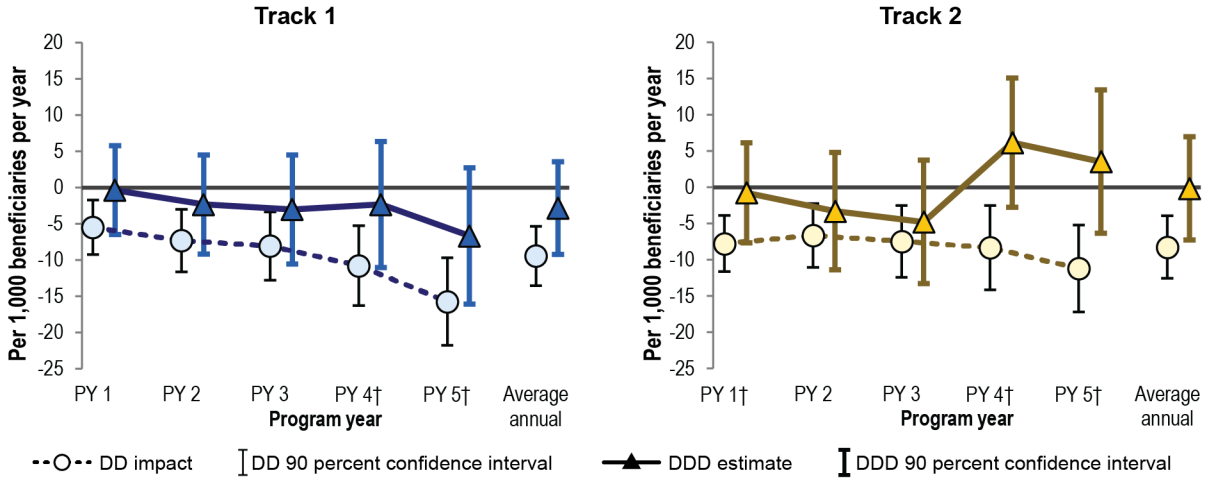
Source: Mathematica's analyses of Medicare claims data from January 2013 through December 2021.

Notes: We calculated percentage impacts (shown in this figure) relative to what the CPC+ mean would have been in Program Years 1 through 5 in the absence of the intervention—that is, the unadjusted CPC+ mean minus the impact estimate. Each impact estimate reflects the difference between the average outcome for Medicare FFS beneficiaries attributed to CPC+ practices in the five years of CPC+ and the average outcome in the baseline year, relative to the same difference over time for Medicare FFS beneficiaries attributed to comparison practices, while controlling for beneficiary characteristics, practice fixed effects, and COVID-19-related regional control variables (in PY 4 and PY 5 only). Asterisks denote whether the impact estimate is significantly different from zero at the 0.10(*), 0.05(**), or 0.01(***) level (two-tailed test). For a description of these tests and detailed estimates, please refer to Tables 5.A.1.15a and 5.A.1.16a in Laird et al. (2023b, Appendix 5.A).

Benes = Beneficiaries; DD = difference-in-differences; DDD = triple-differences; FFS = fee-for-service; PY = Program Year; No ITT = Does not use the intent to treat sample and thus excludes beneficiaries that are not attributed in a particular period; Q = Quarter; SSP = Medicare Shared Savings Program

[43] As described in the appendix on empirical strategy (Laird et al. 2023b, Appendix 5.E), despite being a key sensitivity test, the DDD approach has many limitations. So, we want to flag only sufficiently large deviations between estimates from DD and DDD estimation approaches. Therefore, we use the $p < 0.05$ (as opposed to $p < 0.1$) criterion to flag statistical differences between the two sets of estimates.

Figure 5.13. Comparison of DD and DDD estimates for outpatient ED visits, Tracks 1 and 2



Source: Mathematica's analyses of Medicare claims data from January 2013 through December 2021.

Notes: Each DD impact estimate reflects the difference between the average outcome for Medicare FFS beneficiaries attributed to CPC+ practices in the five years of CPC+ and the average outcome in the baseline year, relative to the same difference over time for Medicare FFS beneficiaries attributed to comparison practices, while controlling for beneficiary characteristics, practice fixed effects, and COVID-19-related regional control variables (in PY 4 and PY 5 only).

Each DDD impact estimate reflects (1) the difference in the regression-adjusted average outcome for attributed Medicare FFS beneficiaries in CPC+ practices in the five program years compared with baseline relative to the same difference over time for attributed Medicare FFS beneficiaries in comparison practices, and (2) the difference in the regression-adjusted average outcome for attributed Medicare FFS beneficiaries in non-CPC+ practices in the five program years compared with baseline relative to the same difference over time for attributed Medicare FFS beneficiaries in non-comparison practices, while controlling for beneficiary characteristics, practice fixed effects, and COVID-19-related regional control variables (in PY 4 and PY 5 only).

† DD and DDD estimates are significantly different from each other at the 0.05 level.

DD = difference-in-differences; DDD = triple-differences; ED = emergency department; FFS = fee-for-service; PY = Program Year.

Primary care substitutable and potentially primary care preventable outpatient ED visits accounted for slightly over two-thirds of the reduction in outpatient ED visits in Track 1 and almost all of the reduction in Track 2. The primary care substitutable outpatient ED visits (that is, for conditions that could potentially be treated in a primary care setting) and potentially primary care preventable outpatient ED visits (visits that required ED resources, but that effective primary care might have prevented) together constitute about two-thirds of all outpatient ED visits. For Track 1 practices, these visits contributed to the reduction in total outpatient ED visits roughly in proportion to the share of visits they made up, accounting for 70 percent of the overall decline in ED visits. Across the five years, there were reductions of 2.7 percent ($p < 0.01$) in primary care substitutable visits and 1.8 percent ($p = 0.013$) in potentially primary care preventable visits (Table 5.2). However, for Track 2 practices, almost all (98 percent) of the reduction in total outpatient ED visits were driven by reductions in these visits– across the five years, there were reductions of 3.1 percent ($p < 0.01$) in primary care substitutable ED visits and 2.3 percent ($p < 0.01$) in potentially primary care preventable ED visits (Table 5.2).

Table 5.2. Estimated average annual impacts on other (secondary) service use measures for Medicare FFS beneficiaries over the five years of CPC+, by track and SSP status

Over the five years, CPC+ reduced primary care substitutable and potentially primary care preventable outpatient ED visits in both tracks. The average annual increases in UCC visits are driven by increases in PY 4 and are not seen in a measure of UCC visits that excludes Covid-19 related diagnoses. Therefore, it is possible that the UCC visit increase could be driven by regional differences in response to Covid-19 that were not fully accounted for in the regression model.

	Track 1				Track 2			
	CPC+ mean	Percentage impacts, overall	Percentage impacts, SSP	Percentage impacts, non-SSP	CPC+ mean	Percentage impacts, overall	Percentage impacts, SSP	Percentage impacts, non-SSP
Primary care substitutable outpatient ED visits	163	***-2.7%****	***-3.1%****	***-2.1%****	163	***-3.1%****	***-4.8%****	***-1.7%****
Potentially primary care preventable outpatient ED visits	115	***-1.8%****	-1.3%	***-2.1%****	116	***-2.3%****	***-3.7%****	-1.1%
Total UCC visits	156	***4.2%****	***3.7%****	5.0%	140	2.2%	2.5%	1.2%
Primary care substitutable UCC visits	87	***5.9%****	***7.2%****	4.5%	78	3.4%	***6.6%****	0.7%
UCC visits that excludes COVID-related diagnoses	125	2.1%	2.0%	3.0%	116	0.8%	3.1%	-1.0%

Source: Mathematica's analysis of Medicare claims data from January 2013 through December 2021.

Notes: Impact estimates. We base impact estimates (and tests of statistical significance) on a difference-in-differences analysis; they reflect the difference in the regression-adjusted average outcome for attributed Medicare FFS beneficiaries in CPC+ practices in PY 1 through PY 5 compared with the average outcome in the baseline year, relative to the same difference over time for attributed Medicare FFS beneficiaries in comparison practices. We calculate percentage impacts relative to what the CPC+ mean would have been in the absence of the intervention—that is, the unadjusted CPC+ mean minus the impact estimate. For a description of the service use outcomes, please refer to Laird et al. (2023b, Appendix 5.C). For the yearly estimates for the other service use outcomes, please refer to Laird et al. (2023b, Appendix 5.A, Tables 5.A.1.1a, 5.A.1.1b, 5.A.1.2a, 5.A.1.2b).

Shading. ***Yellow shading with bold, italicized text*** signifies that the underlying impact estimate was statistically significant at the 10 percent level using a two-sided test. Estimates with a positive sign show an increase in the service use outcome and estimates with a negative sign show a reduction in the service use outcome for CPC+ practices relative to comparison practices. Although this table indicates which estimates are statistically significant, when we interpret evidence, we combine evidence from the magnitude of the effect, the *p* values, findings on related outcomes, subgroups, sensitivity tests, and other data sources about model implementation.

Unweighted sample sizes and Effective sample sizes are the same as in Table 5.1.

*/**/*** Underlying impact estimate (which is per 1,000 beneficiaries per year for continuous measures of service use) was significantly different from zero at the 0.10/0.05/0.01 level, two-tailed test.

ED = emergency department; FFS = fee-for-service; SSP = Medicare Shared Savings Program; PY = Program Year; UCC = urgent care center.

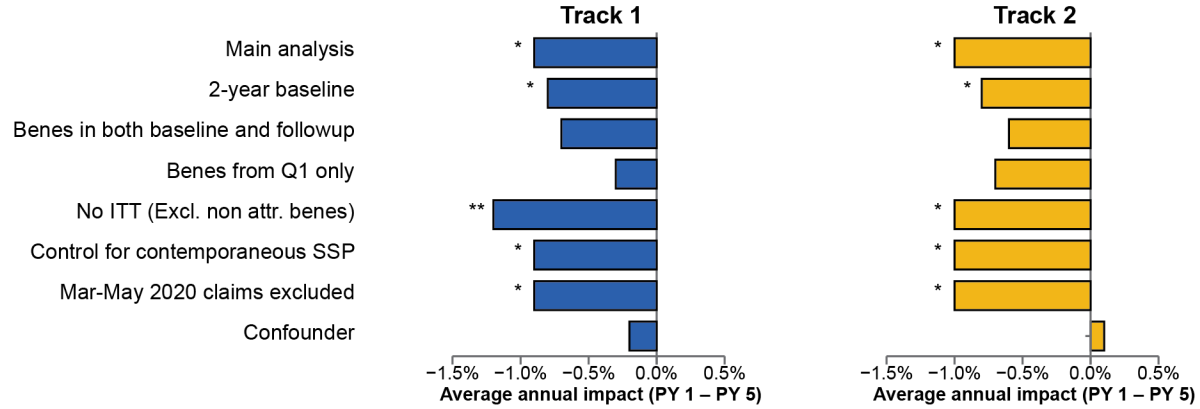
There were no differences in effects on outpatient ED visits by SSP status before PY 4 in either track. The magnitude of the relatively larger reductions in PY 4 and PY 5 for SSP practices in both tracks should be interpreted with caution as they are statistically different from the DDD estimates. Before PY 4, the estimates of reduction in outpatient ED visits were similar in magnitude and generally statistically different from zero across the SSP and non-SSP practices in both tracks (Table 5.1). In contrast, in PY 4 and PY 5, greater reductions in outpatient ED visits were observed in the SSP group (relative to previous years), while the reductions in the non-SSP group were smaller and not statistically significant (in PY 4 in both tracks and in PY 5 in Track 2 only) (Table 5.1). However, these differences between the SSP and non-SSP groups that were seen only in PY 4 and PY 5 and particularly in Track 2, should be interpreted with caution as the PY 4 and PY 5 estimates of reductions in the Track 2 SSP group are statistically different from the (smaller) DDD estimates (Laird et al. 2023b, Appendix 5.A, Tables 5.A.5.1, 5.A.5.2). It is possible that they reflect unobserved COVID-19-related regional differences that were not completely controlled for in our regression models.

Acute hospitalizations

Across the five program years, CPC+ reduced **acute hospitalizations in both tracks by 1 percent, with effects emerging in later years (starting from PY 4 in Track 1 and PY 3 in Track 2).** Over the five years of CPC+, there was a decline in acute hospitalizations for both CPC+ and comparison practices relative to the year before CPC+ began. But the decline was greater for CPC+ practices than for comparison practices, leading to an annualized average reduction of three hospitalizations per 1,000 beneficiaries in each track, which translated to a 0.9 percent ($p = 0.08$) reduction in Track 1 and 1 percent ($p = 0.08$) reduction in Track 2 (Laird et al. 2023b, Table 5.1 and Tables 5.A.1.1a and 5.A.1.2a in Appendix 5.A). The average annual reduction was driven by a 2 percent reduction ($p < 0.01$) that emerged in PY 4 for Track 1 and a 1.7 percent reduction ($p < 0.01$) in Track 2 that first emerged in PY 3 and persisted into PY 4 (Table 5.1). In PY 5, there was an attenuation in the effect on hospitalizations in both tracks, with the estimates not being statistically significant even though the estimate was still negative, suggesting a relative decrease in hospitalizations for CPC+ practices (Table 5.1).

Across the sensitivity tests we conducted, CPC+ was generally associated with decreases in hospitalizations over the five years although the magnitude of the reduction and statistical significance are sensitive to modeling specifications. The DD estimates generally implied reductions and were negative in all seven sensitivity tests (that were conducted in addition to DDD) in Track 1 and six of these tests in Track 2, but only four of the sensitivity tests had negative estimates that were also statistically significant (Figure 5.14). Moreover, the magnitude of the PY 4 estimates of reduction in both tracks should be interpreted with caution as they are statistically different from the DDD estimates (Figure 5.15, Tables 5.A.5.1 and 5.A.5.2 in Laird et al. 2023b, Appendix 5.A).

Figure 5.14. Comparison of estimates from tests (excluding DDD) with main DD estimates, for acute hospitalizations, Tracks 1 and 2

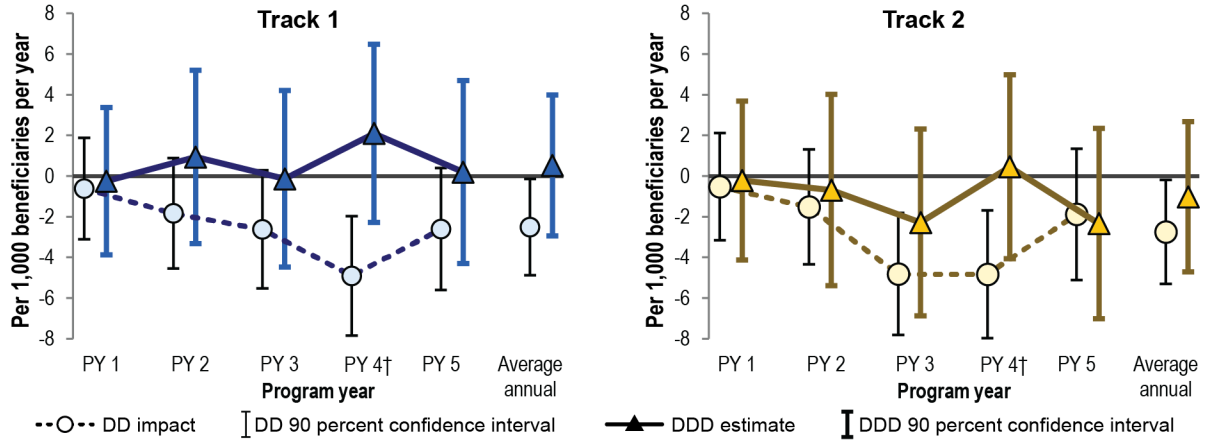


Source: Mathematica's analyses of Medicare claims data from January 2013 through December 2021.

Notes: We calculated percentage impacts (shown in this figure) relative to what the CPC+ mean would have been in Program Years 1 through 5 in the absence of the intervention—that is, the unadjusted CPC+ mean minus the impact estimate. Each impact estimate reflects the difference between the average outcome for Medicare FFS beneficiaries attributed to CPC+ practices in the five years of CPC+ and the average outcome in the baseline year, relative to the same difference over time for Medicare FFS beneficiaries attributed to comparison practices, while controlling for beneficiary characteristics, practice fixed effects, and COVID-19-related regional control variables (in PY 4 and PY 5 only). Asterisks denote whether the impact estimate is significantly different from zero at the 0.10(*), 0.05(**), or 0.01(***) level (two-tailed test). For a description of these tests and detailed estimates, please refer to Tables 5.A.1.19a and 5.A.1.20a in Laird et al. (2023b, Appendix 5.A).

Benes = Beneficiaries; DD = difference-in-differences; DDD = triple-differences; ED = emergency department; FFS = fee-for-service; PY = Program Year; No ITT = Does not use the intent to treat sample excluding beneficiaries that are not attributed in a particular period.

Figure 5.15. Comparison of DD and DDD estimates for acute hospitalizations, Tracks 1 and 2



Source: Mathematica's analyses of Medicare claims data from January 2013 through December 2021.

Notes: Each DD impact estimate reflects the difference between the average outcome for Medicare FFS beneficiaries attributed to CPC+ practices in the five years of CPC+ and the average outcome in the baseline year, relative to the same difference over time for Medicare FFS beneficiaries attributed to comparison practices, while controlling for beneficiary characteristics, practice fixed effects, and COVID-19-related regional control variables (in PY 4 and PY 5 only).

Each DDD impact estimate reflects (1) the difference in the regression-adjusted average outcome for attributed Medicare FFS beneficiaries in CPC+ practices in the five program years compared with baseline relative to the same difference over time for attributed Medicare FFS beneficiaries in comparison practices, and (2) the difference in the regression-adjusted average outcome for attributed Medicare FFS beneficiaries in non-CPC+ practices in the five program years compared with baseline relative to the same difference over time for attributed Medicare FFS beneficiaries in non-comparison practices, while controlling for beneficiary characteristics, practice fixed effects, and COVID-19-related regional control variables (in PY 4 and PY 5 only).

† DD and DDD estimates are significantly different from each other at the 0.05 level.

DD = difference-in-differences; DDD = triple-differences; ED = emergency department; FFS = fee-for-service; PY = Program Year.

Reductions in acute hospitalizations were driven by reductions in acute medical hospitalizations. Acute medical (non-surgical) hospitalizations constitute about 70 percent of all acute hospitalizations. In both tracks, reductions in acute medical hospitalizations drove the reductions in total acute hospitalizations with no statistically significant reductions in acute surgical hospitalizations (which are generally more severe than the acute medical hospitalizations). Across the five years, there were reductions of 1.3 percent ($p = 0.04$) and 1.4 percent ($p = 0.03$) in acute medical hospitalizations in Tracks 1 and 2, respectively (Table 5.1).

Acute medical and surgical hospitalizations can be categorized further into hospitalizations with/without major/non-major complication or comorbidity. When looking at this breakdown within the acute medical and surgical hospitalization categories for the overall tracks, the only statistically significant average annual reductions were for acute medical hospitalizations without any complications or comorbidities—which are generally the acute medical hospitalizations of the lowest acuity (Laird et al. 2023b, Appendix 5.A, Tables 5.A.1.7a, 5.A.1.8a). Across the five years, there were reductions of 2.6 percent ($p < 0.01$) and 2.4 percent ($p = 0.01$) in Tracks 1 and 2 respectively.

Reductions in acute hospitalizations in the later years were concentrated among SSP practices in Track 1. In Track 2, the reductions were concentrated in the non-SSP group, although the Track 2 SSP and non-SSP estimates were not statistically different from each other. In Track 1, reductions in total acute hospitalizations in later years were concentrated in the SSP group with a 1.7 percent ($p = 0.03$) reduction in PY 3, a 3.2 percent ($p < 0.01$) reduction in PY 4, and a 2 percent ($p = 0.04$) reduction in PY 5 (Table 5.1). Estimates were close to zero in the non-SSP group. The SSP and non-SSP estimates for changes in hospitalizations were statistically different from each other in PY 4 in Track 1.

For Track 2, reductions in total acute hospitalizations in PY 3 and PY 4 were statistically significant only in the non-SSP group with a 2.5 percent ($p < 0.01$) reduction in PY 3 and a 2.1 percent ($p = 0.03$) reduction in PY 4 (Table 5.1). The SSP and non-SSP estimates for changes in hospitalizations were not statistically different from each other in any of the years in Track 2.

Among all severity-related types of acute medical and surgical hospitalizations within the SSP and non-SSP groups, in both tracks, non-SSP practices reduced the least severe acute hospitalizations and there is some evidence to suggest that SSP practices were able to reduce the more complex acute hospitalizations. For Track 1 non-SSP practices, there were reductions of 3.5 percent ($p = 0.02$) in acute medical hospitalizations without any complication or comorbidity (Laird et al. 2023b, Appendix 5.A, Tables 5.A.1.7b, 5.A.1.8b). For Track 2 non-SSP practices, there were reductions of 4 percent ($p < 0.01$) and 3.9 percent ($p < 0.01$) in acute medical hospitalizations without any complication or comorbidity and acute medical hospitalizations with a complication or comorbidity, respectively.

Track 2 SSP practices reduced hospitalizations of the highest acuity—an average annual reduction of 5.5 percent ($p < 0.01$) in acute surgical hospitalizations with a major complication or comorbidity with statistically significant reductions in each year (Laird et al. 2023b, Appendix 5.A, Tables 5.A.1.7b, 5.A.1.8b). For Track 1 SSP practices, there were reductions in acute medical hospitalizations with a major complication or comorbidity, with an average annual reduction of 2.2 percent ($p = 0.03$). In both tracks, SSP practices reduced acute surgical hospitalizations without any complication or comorbidity in the last two program years.

Ambulatory primary care visits

Over the five years, there was a reduction in billable ambulatory visits to primary care practitioners in Track 2 only. Over the five years of CPC+, both CPC+ Track 2 and comparison practices saw a decrease in the rate of billable ambulatory primary care visits relative to the year before CPC+ began but the decrease was larger for CPC+ Track 2 practices than for the comparison practices. Specifically, average annualized estimates over the five years indicated that billable ambulatory care visits to primary care practitioners decreased by 44 more visits per 1,000 beneficiaries (1 percent, $p = 0.04$) in CPC+ Track 2 versus comparison practices (Table 5.A.1.2a in Laird et al. 2023b, Appendix 5.A and Table 5.1). While this reduction was driven by effects that emerged in PY 1 and PY 2, those effects did not persist (were not statistically significant) in the later years (Table 5.1). There were no notable differences in estimates of reduction in ambulatory primary care visits by SSP status within Track 2 (Table 5.1).

Ambulatory specialist visits

Across the five years, there was a small reduction in the ambulatory visits to specialists in Track 2 but not in Track 1. Over the five years of CPC+, both CPC+ Track 2 and comparison practices saw a decrease in the rate of ambulatory specialist visits relative to the year before CPC+ began, but the decrease was slightly larger for CPC+ Track 2 than for the comparison practices. Specifically, average annualized estimates over the five years indicated that ambulatory specialist visits decreased by 24 more visits per 1,000 beneficiaries (0.6 percent; $p = 0.09$) in CPC+ Track 2 versus comparison practices (Table 5.A.1.2a in Laird et al. 2023b, Appendix 5.A) and Table 5.1). These reductions in Track 2 were driven by reductions in the SSP subgroup (1.5 percent; $p < 0.01$) which became larger over time (Table 5.1). There were no discernible effects in the non-SSP subgroup in Track 2. In Track 1, overall, there were no discernible differences in specialist visits between CPC+ and comparison practices; however, there was a small increase in specialist visits of 0.8 percent ($p = 0.09$) in the Track 1 non-SSP group (Table 5.1).

Telehealth and UCC visits during the pandemic

In the fourth year (PY 4) of CPC+, which coincided with the outbreak of the COVID-19 pandemic, beneficiaries in CPC+ practices experienced a greater shift toward telehealth and had more urgent care center visits relative to beneficiaries in comparison practices. In PY 5, CPC+ beneficiaries continued having relatively higher rates of telehealth use.

In PY 4 and PY 5, CPC+ beneficiaries experienced a greater shift toward telehealth than comparison beneficiaries with the relative increase in non-face-to-face visits in Track 2 being more than double the magnitude of the relative increase in Track 1. Before the COVID-19 pandemic, less than 0.1 percent of billable ambulatory visits were not face-to-face. In PY 4, non-face-to-face visits comprised 16 and 17 percent of billable ambulatory visits to primary care providers among CPC+ beneficiaries in Tracks 1 and 2, respectively (Laird et al. 2023b, Appendix 5.A, Tables 5.A.1.13a, 5.A.1.14a). Relative to PY 4, the percent of billable ambulatory primary care visits that were non-face-to-face decreased in PY 5 to 8 percent and 9 percent for CPC+ beneficiaries in Tracks 1 and 2, respectively.

In PY 4, the proportion of billable primary care provider visits that were not face-to-face were 0.9 and 2.2 percentage points higher (5.9 and 14.6 percent, $p < 0.01$) for CPC+ Track 1 and Track 2 beneficiaries relative to comparison beneficiaries, respectively (Laird et al. 2023b, Appendix 5.A, Tables 5.A.1.13a, 5.A.1.14a). In PY 5, this proportion was higher by 0.3 percentage points (4.3 percent, $p = 0.08$) for Track 1 beneficiaries and 1.1 percentage points (13.8 percent, $p < 0.01$) for Track 2 beneficiaries.

Although both Track 1 and Track 2 CPC+ practices had a greater shift toward non-face-to-face ambulatory physician visits in PY 4 and PY 5, the relative increase in non-face-to-face visits for Track 2 CPC+ beneficiaries was more than double the magnitude of the increase for Track 1 CPC+ beneficiaries. This is consistent with the greater emphasis on the provision of non-billable services in CPC+ Track 2 relative to Track 1 before the pandemic which may have better prepared Track 2 practices for the switch to telehealth during the COVID-19 pandemic.

CPC+ was associated with increased UCC visits in PY 4. Before 2020, CPC+ had no effects on UCC visits. But in PY 4, UCC visits for CPC+ beneficiaries increased in both tracks relative to comparison beneficiaries, by 15 percent ($p < 0.01$) in Track 1 and 7 percent ($p = 0.02$) in Track 2 (Tables 5.A.1.1a and 5.A.1.2a in Laird et al. 2023b, Appendix 5.A). When we examined a measure of UCC visits that excluded visits that were made for COVID-19 related diagnoses, the difference between CPC+ and comparison practices was smaller (7 percent) and not quite statistically significant ($p = 0.10$) for Track 1 and was close to zero for Track 2.

It is possible that the relative increase in these visits in PY 4 was driven by differential regional responses to the COVID-19 pandemic that we have not fully controlled for, rather than CPC+. The change in the estimate from PY 3 (no effect) to PY 4 (increase) was driven by a decline in UCC visits for comparison beneficiaries (while the number of UCC visits for CPC+ beneficiaries remained stable across the two years) (Tables 5.A.1.1a and 5.A.1.2a in Laird et al. 2023b, Appendix 5.A). This decline was also observed for beneficiaries assigned to other practices (that were not selected as comparisons) in comparison regions, suggesting that COVID-19 shocks or other regional trends might explain the relative increase in UCC visits in PY 4. Consistent with the regional differences, there were no effects on UCC visits under the DDD modeling approach and the main Track 1 PY 4 estimate of increase in UCC visits was statistically different from the DDD estimate (Laird et al. 2023b, Appendix 5.A, Tables 5.A.5.1, 5.A.5.2).

Service use summary

To summarize the key findings for Medicare FFS beneficiaries' service use, we found reductions in acute care use for CPC+ practices in the form of fewer outpatient ED visits and hospitalizations in both tracks. Ambulatory primary care and specialist visits also reduced in CPC+ Track 2. Consistent with the theory of change for CPC+, reductions in outpatient ED visits emerged early (in PY 1) and reductions in hospitalizations emerged later (PY 3 for Track 2 and PY 4 for Track 1). These reductions were generally robust to various sensitivity tests, although the magnitude of some of the PY 4 and PY 5 estimates should be interpreted with caution. There were some differences in service use by SSP participation status—in particular, the reductions in hospitalizations in Track 1 and reductions in specialist visits in Track 2 were concentrated among the SSP practices.

5.3. Effects of CPC+ on Medicare expenditures

5.3.1. Hypothesized effects of CPC+

CMS theorized that changes in care delivery made by CPC+ practices and the theorized service use changes (described in section 5.2.1) would eventually result in a reduction in total Medicare expenditures large enough to offset CMS's enhanced payments. Given that the care management fees for Track 2 is almost double the fees for Track 1, CMS expected greater reductions in gross expenditures in Track 2 to offset the higher care management fees. To test this, we analyzed Medicare expenditures for FFS beneficiaries (1) without CMS's enhanced payments made in addition to payments for Part A and B services and (2) with CMS's enhanced payments (Table 5.3 reports what each measure contains). In PY 3, PY 4, and PY 5, expenditures without enhanced payments included Quality Payment Program (QPP) payment adjustments, which CMS applied, based on practitioners' performance two years before, to both CPC+ and comparison practices. As described in Chapter 3, enhanced payments included payments to CPC+ practices for participating in CPC+; payments to reward practices' performance on cost, utilization, and/or quality metrics; and shared savings payments to SSP Accountable Care Organizations (ACOs). (As we estimated impacts on Medicare expenditures for FFS beneficiaries, we did not include enhanced payments from other payers or the out-of-pocket expenditures of beneficiaries in our calculations.)

For Track 2 practices, CMS also provided alternative payments, in the form of a CPCP, which shifted a portion of the payments practices receive for services rendered from FFS to prospective payments. As these are payments for services, they are included in Medicare expenditure analyses both with and without enhanced payments (Table 5.3).

Table 5.3. Summary of CMS's payments included in the analysis of Medicare expenditures for Medicare FFS beneficiaries

Payment type	Practices that receive payment type				Included in expenditures analysis	
	Track 1 Non-SSP	Track 1 SSP	Track 2 Non-SSP	Track 2 SSP	Without CMS's enhanced payments	With CMS's enhanced payments
Enhanced payments in addition to payments for services						
Payments for participating in CPC+						
Care management fees	✓	✓	✓	✓		✓
Comprehensiveness supplement			✓	✓		✓
Payments for performance on cost, utilization, and/or quality metrics						
Performance-based Incentive Payments	✓		✓			✓
SSP payments (share of SSP ACO's payments that we allocated to the practice)[a]		✓		✓		✓
Payments for services						
Traditional FFS payments for Medicare Parts A and B[b]	✓	✓	✓	✓	✓	✓
Advanced APM bonus payment[c]	✓	✓	✓	✓	✓	✓
Alternative to FFS payments – Comprehensive Primary Care Payment			✓	✓	✓	✓

Table 5.3. ***(continued)***

[a] We group practices into SSP or non-SSP based on their SSP participation status at the start of PY 1. This can differ from their actual SSP status during CPC+ due to (1) differences in the way that practices are identified in the data for CPC+ and the SSP initiatives, and (2) practices—and the beneficiaries assigned to them—moving in and out of SSP over time. SSP payments are applicable for both CPC+ and comparison practices participating in SSP.

[b] Traditional FFS payments for Medicare Parts A and B include QPP payment adjustments in PY 3, PY 4, and PY 5 based on practitioners' performance two years before. The first QPP adjustments were paid in PY 3 (two years after the start of QPP), so there were no QPP payments in PYs 1 and 2. These payments are applicable for both CPC+ and comparison practices. One of the two types of QPP payment adjustments—the Merit-based Incentive Payment System adjustment—is applied directly to physician and outpatient claims (as a percentage of the charges on the claims).

[c] The Advanced APM bonus payment—the second type of QPP payment adjustment—is a lump-sum incentive payment to eligible practitioners who participated in Advanced APMs in 2017, 2018, and 2019 (calculated based on 2018, 2019, and 2020 claims, respectively, for these practitioners).

ACO = Accountable Care Organization; APM = Alternative Payment Model; FFS = fee-for-service; PY = Program Year; QPP = Quality Payment Program; SSP = Medicare Shared Savings Program.

5.3.2. Realized effects of CPC+

CPC+ did not reduce Medicare expenditures when excluding CMS's enhanced payments and it increased expenditures for Medicare FFS beneficiaries after including these payments. Below, we describe the key findings for the Medicare expenditure outcomes (with and without enhanced payments), synthesizing results across tracks, subgroups, and sensitivity tests.

CPC+ did not reduce Medicare expenditures when excluding CMS's enhanced payments across Track 1 and Track 2 overall. During the five program years, average annual impact estimates were close to zero and were not statistically significant in either track (0.1 percent [$p = 0.7$] in both tracks which translates to an increase of about a dollar per beneficiary per month) (Table 5.4). In line with these results, CPC+ and comparison practices in both tracks had similar quarterly trends in Medicare expenditures without CMS's enhanced payments before and after CPC+ began (Figure 5.16). While there were reductions in expenditures on acute medical hospitalizations in both tracks, these were offset by increases in other expenditure categories (primarily expenditures for inpatient rehabilitation facilities, Part B noninstitutional services, and hospice use) (Tables 5.4 and 5.5). The findings of no reduction in expenditures without enhanced payments for both tracks were robust to sensitivity tests (Figures 5.17 and 5.18).[44]

Notably, *expenditures* on ambulatory primary care visits increased significantly in Track 2 over the five years (4.6 percent, $p < 0.01$, Table 5.5) despite a reduction in ambulatory primary care *visits* of 1 percent ($p = 0.04$) (Table 5.1). Since the expenditures for ambulatory primary care visits include the base Comprehensive Primary Care Payments (CPCPs) (but not the 10 percent comprehensiveness supplement), this suggests that CPCPs may not be cost-neutral (that is, they may be too high).

[44] The specification in Track 2 that reduces the influence of high-cost cases by using log expenditures as the dependent variable produced a large estimated increase in expenditures of 5.5 percent ($p < 0.01$). However, the two other specifications that reduce the influence of beneficiaries with the highest outlier expenditures (trimming expenditures at the 98th percentile and using a generalized linear model with a log link function) showed estimates that were in line with the other sensitivity tests (up to 1 percent and not statistically significant). Out of the six tests (three in each track) for handling skewed expenditure distribution, only one test showed statistically significant unfavorable effect of greater than 1 percent; because this may have arisen by chance, we are not very concerned about the outlier highest-cost cases driving our estimates. Moreover, we do not necessarily prefer specifications that reduce the importance of high-cost cases, because one effect of CPC+ could be to reduce the number of high-cost cases, and specifications that minimize the importance of such cases would fail to take into account this effect.

Table 5.4. Estimated impacts on Medicare expenditures and key expenditure categories, by program year and average for the five years of CPC+, by track and SSP status

	Track 1				Track 2			
	CPC+ mean	Percentage impacts, overall	Percentage impacts, SSP	Percentage impacts, non-SSP	CPC+ mean	Percentage impacts, overall	Percentage impacts, SSP	Percentage impacts, non-SSP
Monthly Medicare Part A and B expenditures (PBPM)								
Excluding enhanced payments								
PY 1	$899	0.6%	0.2%	*1.0%**	$897	0.6%	0.1%	*0.9%**
PY 2	$949	0.4%	0.0%	0.9%	$949	0.5%	-0.3%	*1.2%***
PY 3	$994	0.2%	-0.8%	*1.4%***	$989	-0.2%	-0.8%	0.3%
PY 4	$949	-0.3%	*-1.5%***	1.1%	$946	-0.2%	*-1.5%**	1.0%
PY 5	$1,042	-0.3%	*-1.8%****	1.0%	$1,034	0.1%	*-1.6%**	*1.4%***
PY 1 through PY 5	$969	0.1%	*-0.8%**	*1.1%***	$965	0.1%	-0.8%	*0.9%**
Interpretation: Over the five years, CPC+ did not impact expenditures for Medicare Part A and B services without enhanced payments in either track. Reductions in expenditures emerged for SSP practices in the later years, but non-SSP practices had increases in expenditures.								
Including CPC+ CMFs								
PY 1	$913	*2.1%****	*1.7%****	*2.6%****	$923	*3.5%****	*3.0%****	*3.9%****
PY 2	$962	*1.8%****	*1.3%****	*2.3%****	$973	*3.1%****	*2.2%****	*3.9%****
PY 3	$1,006	*1.4%****	0.4%	*2.7%****	$1,013	*2.2%****	*1.5%***	*2.8%****
PY 4	$960	*0.9%**	-0.4%	*2.3%****	$969	*2.1%****	0.8%	*3.4%****
PY 5	$1,052	0.7%	-0.8%	*2.0%****	$1,054	*2.0%****	0.3%	*3.4%****
PY 1 through PY 5	$981	*1.3%****	0.4%	*2.3%****	$989	*2.6%****	*1.5%***	*3.5%****
Interpretation: Over the five years, CPC+ increased expenditures including care management fees in both tracks, roughly by the size of the care management fees in each track.								
Including CPC+ CMFs, PBIPs, and shared savings payments to SSP ACOs								
PY 1	$917	*2.2%****	*1.7%****	*2.7%****	$925	*3.5%****	*2.7%****	*4.1%****
PY 2	$966	*1.9%****	*1.4%****	*2.4%****	$976	*3.1%****	*2.1%****	*4.0%****
PY 3	$1,011	*1.5%****	0.5%	*2.7%****	$1,017	*2.2%****	*1.3%**	*2.9%****
PY 4	$966	0.6%	-0.8%	*2.2%****	$976	*2.0%****	0.6%	*3.4%****
PY 5	$1,057	0.5%	*-1.1%**	*1.9%****	$1,060	*1.9%****	0.1%	*3.4%****
PY 1 through PY 5	$986	*1.3%****	0.3%	*2.4%****	$993	*2.5%****	*1.3%***	*3.5%****
Interpretation: After adding the CPC+ PBIPs and shared savings payments from SSP, the net increase in estimates of expenditures is negligible.								

Table 5.4. ***(continued)***

	Track 1				Track 2			
	CPC+ mean	Percentage impacts, overall	Percentage impacts, SSP	Percentage impacts, non-SSP	CPC+ mean	Percentage impacts, overall	Percentage impacts, SSP	Percentage impacts, non-SSP
Key (the three largest) expenditures categories (PBPM)								
Acute inpatient care expenditures								
PY 1	$279	0.4%	-0.5%	1.5%	$284	1.0%	-0.2%	***2.0%****
PY 2	$285	-0.5%	-0.9%	-0.2%	$292	0.3%	-1.2%	1.4%
PY 3	$295	***-1.5%****	***-2.6%*****	0.0%	$298	***-2.2%*****	***-2.9%****	***-1.7%****
PY 4	$280	***-2.4%*****	***-4.1%*****	-0.4%	$284	***-1.8%****	***-2.9%****	-0.3%
PY 5	$294	-1.3%	***-3.3%*****	0.5%	$298	-0.6%	***-2.6%****	1.0%
PY 1 through PY 5	$287	***-1.1%****	***-2.3%*****	0.3%	$291	-0.7%	***-2.0%****	0.4%
Interpretation: Over the five years, CPC+ reduced acute inpatient expenditures in Track 1 by about 1 percent. In Track 2, reductions in acute inpatient expenditures of 0.7 percent were not statistically significant. The timing of the effects on acute inpatient expenditures (emergence in later years) aligned with the timing of effects on acute hospitalizations.								
Outpatient expenditures								
PY 1	$177	0.5%	0.4%	0.5%	$178	0.5%	0.8%	0.2%
PY 2	$199	0.8%	0.5%	1.3%	$199	0.0%	0.2%	-0.1%
PY 3	$214	0.5%	-0.5%	***1.7%****	$214	-0.7%	-0.8%	-0.5%
PY 4	$204	-0.1%	-0.5%	0.1%	$204	***-2.3%*****	***-3.0%*****	-1.5%
PY 5	$232	***-1.6%*****	***-2.0%*****	-1.6%	$230	***-3.2%*****	***-3.9%*****	***-2.5%*****
PY 1 through PY 5	$206	0.0%	-0.5%	0.3%	$206	***-1.2%****	-1.4%	-0.9%
Interpretation: Over the five years, CPC+ reduced outpatient expenditures in Track 2 by 1.2 percent. Reductions in outpatient expenditures emerged in the later years (PY4 for Track 2 and PY 5 for Track 1).								
Expenditures for physician and nonphysician Part B noninstitutional services in any setting								
PY 1	$258	0.0%	-0.5%	0.6%	$251	0.0%	***-0.8%****	0.6%
PY 2	$275	0.5%	0.0%	***1.0%****	$265	0.0%	***-1.3%****	***1.1%*****
PY 3	$289	***0.9%*****	0.5%	***1.6%*****	$278	0.3%	-1.1%	***1.3%*****
PY 4	$271	***1.2%*****	0.5%	***2.2%*****	$262	***1.1%****	-0.5%	***2.3%******
PY 5	$315	***0.9%****	0.0%	***2.0%*****	$302	0.8%	-1.2%	***2.5%******
PY 1 through PY 5	$283	***0.7%*****	0.1%	***1.5%*****	$272	0.4%	-1.0%	***1.6%******
Interpretation: Over the five years, CPC+ increased expenditures by about 1.5 percent for physician and nonphysician Part B noninstitutional services in any setting in the non-SSP groups in both tracks.								

Source: Mathematica's analysis of Medicare claims data from January 2013 through December 2021.

Notes: Impact estimates. We base impact estimates (and tests of statistical significance) on a difference-in-differences analysis; they reflect the difference in the regression-adjusted average outcome for attributed Medicare FFS beneficiaries in CPC+ practices in PY 1 through PY 5 compared with the average outcome in the baseline year, relative to the same difference over time for attributed Medicare FFS beneficiaries in comparison practices. We calculate percentage impacts relative to what the CPC+ mean would have been in the absence of the intervention—that is, the unadjusted CPC+ mean minus the impact estimate. For a description of the expenditure outcomes, please refer to Laird et al. (2023b, Appendix 5.C).

Table 5.4. ***(continued)***

Shading. ***Yellow shading*** ***with bold, italicized text*** signifies that the underlying impact estimate was statistically significant at the 10 percent level using a two-sided test. Estimates with a positive sign show an increase in the expenditures and estimates with a negative sign show a reduction in the expenditures for CPC+ practices relative to comparison practices. Although this table indicates which estimates are statistically significant, when we interpret evidence, we combine evidence from the magnitude of the effect, the *p* values, findings on related outcomes, subgroups, sensitivity tests, and other data sources about model implementation.

Unweighted sample sizes and Effective sample sizes are the same as in Tables 5.1.

*/**/*** Underlying impact estimate (which is in dollars PBPM for expenditures) was significantly different from zero at the 0.10/0.05/0.01 level, two-tailed test.

ACO = Accountable Care Organization; CMF = care management fee; FFS = fee-for-service; PBIP = Performance-based Incentive Payment; PBPM = per beneficiary per month; PY = Program Year; SSP = Medicare Shared Savings Program.

Table 5.5. Estimated average annual impacts on other expenditure categories for Medicare FFS beneficiaries over the five years of CPC+, by track and SSP status

Offsetting increases in other expenditure categories (Part B non-institutional services, inpatient rehabilitation facilities, hospice, and durable medical equipment) canceled out the reduction in expenditures in acute inpatient and outpatient expenditures to produce a null effect on total Medicare expenditures.

	Track 1				Track 2			
Expenditures (PBPM) for:	CPC+ mean for PY 1 through PY 5, overall	Percentage impacts, overall	Percentage impacts, SSP	Percentage impacts, non-SSP	CPC+ mean for PY 1 through PY 5, overall	Percentage impacts, overall	Percentage impacts, SSP	Percentage impacts, non-SSP
Inpatient rehabilitation facilities	$23	***5.0%****	0.9%	***9.7%****	$23	***7.5%****	***5.3%**	***8.7%****
Post-acute care	$101	0.5%	-0.9%	2.0%	$102	1.7%	2.3%	1.0%
Acute inpatient and post-acute care	$388	-0.7%	***-1.9%****	0.7%	$394	-0.1%	-0.9%	0.6%
Acute surgical hospitalizations	$146	0.1%	-1.4%	1.7%	$147	1.1%	-1.5%	***3.6%****
Acute non-surgical hospitalizations	$140	***-2.2%****	***-3.1%****	-1.2%	$144	***-2.6%****	***-2.5%**	***-2.7%****
Outpatient ED visits, including observation stays	$27	-0.5%	0.0%	-1.0%	$27	***-1.6%***	***-3.1%***	-0.1%
Ambulatory visits with primary care practitioners	$26	***-0.9%**	-0.8%	-1.1%	$28	***4.6%****	***4.9%****	***4.3%****
Ambulatory visits with primary care practitioners at assigned practice	$15	0.2%	-0.2%	0.5%	$17	***12.7%****	***13.4%****	***11.7%****
Ambulatory visits with specialists	$26	0.1%	-0.5%	***1.0%**	$24	***-0.8%***	***-1.7%****	0.1%
Laboratory services	$29	-0.4%	***-1.5%***	0.9%	$27	***-1.5%****	***-1.9%***	***-1.1%**
Imaging services	$51	***-0.8%**	***-1.3%***	0.0%	$49	***-0.8%**	***-1.9%***	0.1%
Skilled nursing home	$64	-0.6%	***-2.9%***	2.1%	$64	1.2%	1.2%	1.0%
Home health	$38	***-3.3%****	***-3.5%****	***-3.2%****	$40	***-2.8%****	***-2.8%***	***-2.8%***
Hospice	$30	***7.6%****	***9.8%****	***5.3%****	$31	***8.2%****	***7.8%****	***8.3%****
Durable medical equipment	$24	-0.8%	-2.4%	0.9%	$24	1.7%	0.5%	***2.7%**

Source: Mathematica's analysis of Medicare claims data from January 2013 through December 2021.

Notes: Impact estimates. We base impact estimates (and tests of statistical significance) on a difference-in-differences analysis; they reflect the difference in the regression-adjusted average outcome for attributed Medicare FFS beneficiaries in CPC+ practices in PY 1 through PY 5 compared with the average outcome in the baseline year, relative to the same difference over time for attributed Medicare FFS beneficiaries in comparison practices. We calculate percentage impacts relative to what the CPC+ mean would have been in the absence of the intervention—that is, the unadjusted CPC+ mean minus the impact estimate. For a description of the expenditure outcomes, please refer to Laird et al. (2023b, Appendix 5.C). For the yearly estimates for other expenditure categories shown in Table 5.5, please refer to Tables 5.A.2.1a, 5.A.2.1b, 5.A.2.2a, and 5.A.2.2b in Laird et al. (2023b, Appendix 5.A).

Shading. ***Yellow shading with bold, italicized text*** signifies that the underlying impact estimate was statistically significant at the 10 percent level using a two-sided test. Estimates with a positive sign show an increase in the expenditures and estimates with a negative sign show a reduction in the expenditures for CPC+ practices relative to comparison practices. Although this table indicates which estimates are statistically significant, when we interpret evidence, we combine evidence from the magnitude of the effect, the *p* values, findings on related outcomes, subgroups, sensitivity tests, and other data sources about model implementation.

Unweighted sample sizes and Effective sample sizes are the same as in Tables 5.1.

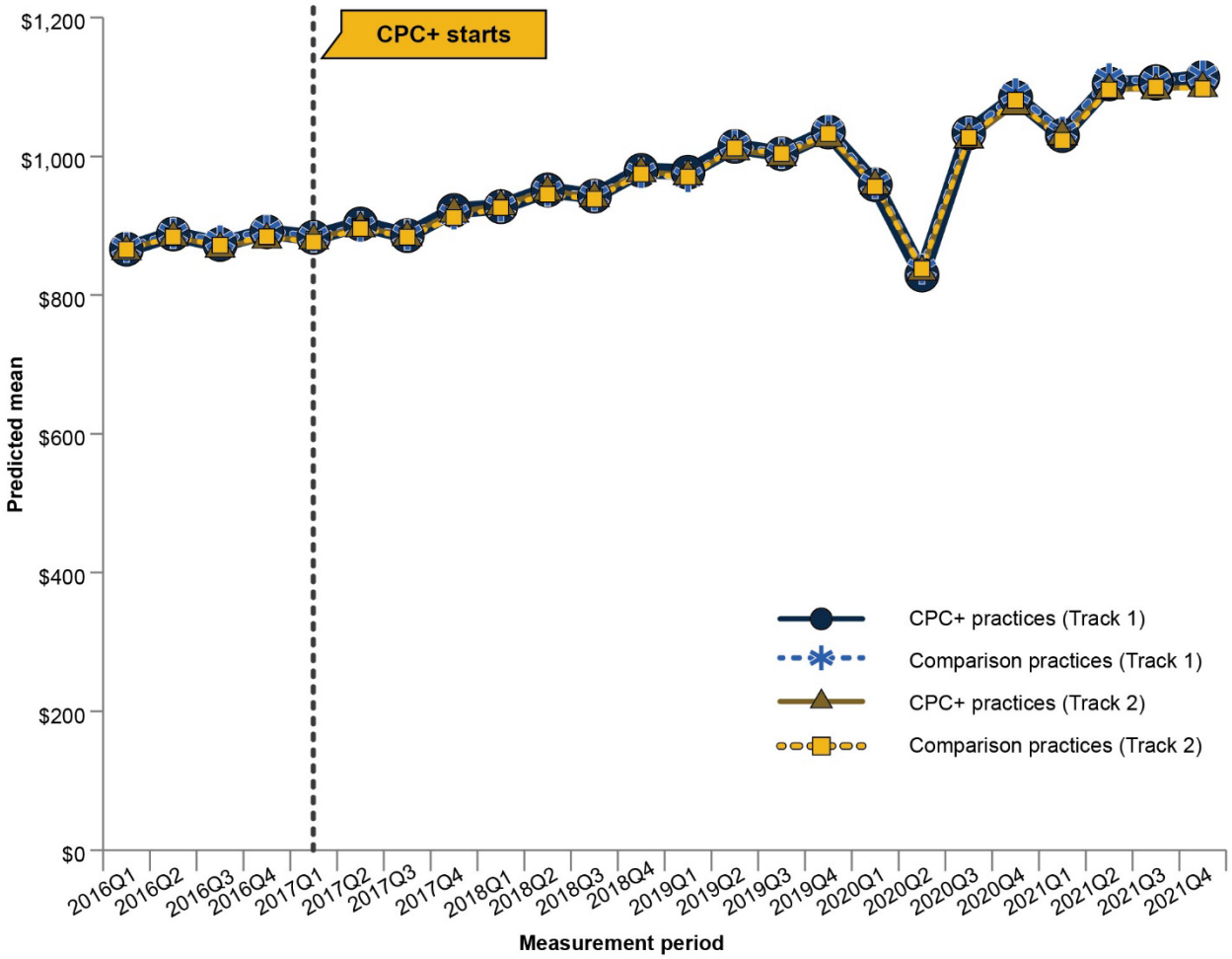
*/**/*** Underlying impact estimate (which is in dollars PBPM for expenditures) was significantly different from zero at the 0.10/0.05/0.01 level, two-tailed test.

ED = emergency department; FFS= fee-for-service; PBPM = per beneficiary per month; PY = Program Year; SSP = Medicare Shared Savings Program.

Figure 5.16. Quarterly trends in mean Medicare expenditures per beneficiary per month, excluding CMS's enhanced payments, by track

For both tracks, CPC+ and comparison practices had similar trends in Medicare expenditures without CMS's enhanced payments before CPC+ began and during the five years of CPC+.

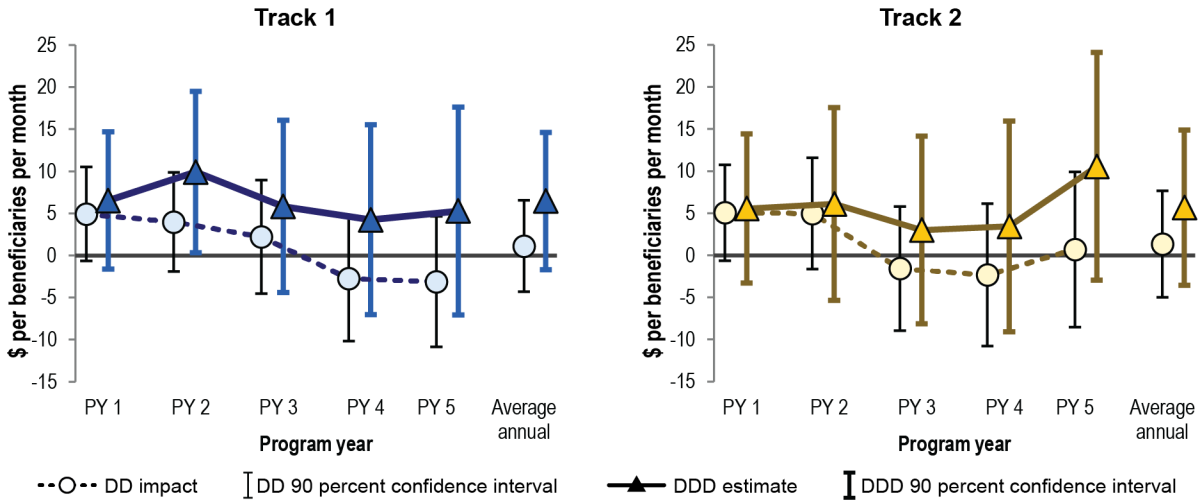
The sharp decline in expenditures for both CPC+ and comparison practices in 2020 is due to a decline in overall utilization of health services during the initial months of the COVID-19 pandemic.



Source: Mathematica's analyses of Medicare claims data from January 2013 through December 2021.

Notes: For beneficiaries attributed to CPC+ and comparison practices, the figure shows actual, unadjusted average expenditures in the baseline quarters, which are similar for the two groups due to matching. In the intervention quarters, the comparison group mean is regression-adjusted (using baseline characteristics as control variables). We obtained this adjusted mean by subtracting the regression-adjusted difference between the CPC+ and comparison means in each quarter (taken from the quarterly difference-in-differences model) from the CPC+ mean in that same quarter. The 4 quarters in 2016 represent the baseline year and the 20 quarters in 2017 through 2021 represent the five program years. The sharp decline in expenditures in 2020 can be attributed to the COVID-19 pandemic, which led to a decline in overall utilization of health services during the initial months of the year. For Track 1 and Track 2, respectively, this analysis includes (1) 1,373 and 1,515 CPC+ practices that were participating in CPC+ as of April 1, 2017 (the end of the first program quarter), and (2) 5,243 and 3,783 comparison practices.

Figure 5.17. Comparison of DD and DDD estimates for Medicare expenditures excluding CMS's enhanced payments, Tracks 1 and 2



Source: Mathematica's analyses of Medicare claims data from January 2013 through December 2021.

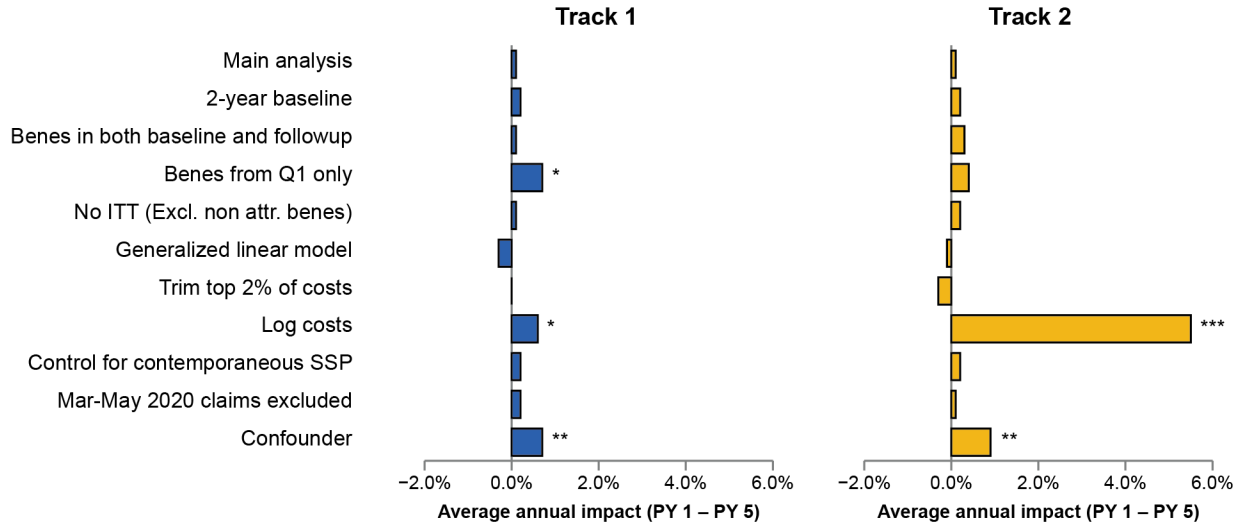
Notes: Each DD impact estimate reflects the difference between the average outcome for Medicare FFS beneficiaries attributed to CPC+ practices in the five years of CPC+ and the average outcome in the baseline year, relative to the same difference over time for Medicare FFS beneficiaries attributed to comparison practices, while controlling for beneficiary characteristics, practice fixed effects, and COVID-19-related regional control variables (in PY 4 and PY 5 only).

Each DDD impact estimate reflects (1) the difference in the regression-adjusted average outcome for attributed Medicare FFS beneficiaries in CPC+ practices in the five program years compared with baseline relative to the same difference over time for attributed Medicare FFS beneficiaries in comparison practices, and (2) the difference in the regression-adjusted average outcome for attributed Medicare FFS beneficiaries in non-CPC+ practices in the five program years compared with baseline relative to the same difference over time for attributed Medicare FFS beneficiaries in non-comparison practices, while controlling for beneficiary characteristics, practice fixed effects, and COVID-19-related regional control variables (in PY 4 and PY 5 only).

† DD and DDD estimates are significantly different from each other at the 0.05 level.

DD = difference-in-differences; DDD = triple-differences; FFS = fee-for-service; PY = Program Year.

Figure 5.18. Comparison of estimates from sensitivity tests (excluding DDD) with main DD estimates, for Medicare expenditures without CMS's enhanced payments, Tracks 1 and 2



Source: Mathematica's analyses of Medicare claims data from January 2013 through December 2021.

Notes: We calculated percentage impacts (shown in this figure) relative to what the CPC+ mean would have been in Program Years 1 through 5 in the absence of the intervention—that is, the unadjusted CPC+ mean minus the impact estimate. Each impact estimate reflects the difference between the average outcome for Medicare FFS beneficiaries attributed to CPC+ practices in the five years of CPC+ and the average outcome in the baseline year, relative to the same difference over time for Medicare FFS beneficiaries attributed to comparison practices, while controlling for beneficiary characteristics, practice fixed effects, and COVID-19-related regional control variables (in PY 4 and PY 5 only). Asterisks denote whether the impact estimate is significantly different from zero at the 0.10(*), 0.05(**), or 0.01(***) level (two-tailed test). For a description of these tests and detailed estimates, please refer to Tables 5.A.2.7a and 5.A.2.8a in Laird et al. (2023b, Appendix 5.A).

Benes = beneficiaries; DD = difference-in-differences; DDD = triple-differences; FFS = fee-for-service; PY = Program Year; No ITT = Does not use the intent to treat sample and thus excludes beneficiaries that are not attributed in a particular period; Q= Quarter; SSP= Medicare Shared Savings Program.

Differences in effects on expenditures between SSP and non-SSP practices

In both tracks, reductions in expenditures excluding CMS's enhanced payments emerged for SSP practices in the later years, but non-SSP practices had increases in expenditures. These reductions were driven by reductions in acute inpatient expenditures and (to a lesser extent) by reductions in outpatient expenditures. The reductions in acute inpatient expenditures aligned well with the reductions in acute hospitalizations in Track 1, but not as well in Track 2. The increases in expenditures in the non-SSP groups were driven by relatively small increases in a mix of expenditure categories. The differential between the expenditure estimates for the SSP and non-SSP groups in both tracks was generally robust to sensitivity tests but the findings of cost savings in the SSP groups were sensitive to modeling specifications. Below we describe each of these points in greater detail.

Reductions in expenditures in SSP practices were driven by reductions in acute inpatient expenditures and (to a lesser extent) reductions in outpatient expenditures. Over the five program years, there was a 0.8 percent ($p = 0.08$) reduction in expenditures excluding enhanced payments in the Track 1 SSP group. The reductions in Track 1 started to emerge in PY 3, with a 2.6 percent reduction in expenditures on acute inpatient care ($p < 0.01$) that drove a 0.8 percent reduction in total expenditures (albeit not statistically significant [$p = 0.14$]). By PY 4, reductions in acute inpatient expenditures became larger (4.1 percent, $p < 0.01$), leading to a statistically significant reduction of 1.5 percent in total Medicare expenditures in PY 4 ($p = 0.02$). In PY 5, consistent with the smaller and not statistically significant decreases in hospitalizations (relative to PY 4), reductions in acute inpatient expenditures

became slightly smaller (3.3 percent, $p < 0.01$). However, reductions in outpatient expenditures of 2 percent ($p = 0.04$) emerged in PY 5 for the first time, and the combined reductions in acute inpatient expenditures and outpatient expenditures led to a reduction of 1.8 percent ($p < 0.01$) in total expenditures in PY 5 (Table 5.4).

Although the magnitude of the average annual estimate of reduction in expenditures excluding enhanced payments in the Track 2 SSP group (0.8 percent) was similar to the reduction in the Track 1 SSP group, it was not statistically significant ($p = 0.18$). The trends in yearly expenditure estimates in Track 2 SSP were like those observed in Track 1 SSP. Track 2 SSP practices also had reductions in expenditures on acute inpatient care of 2.9 percent in PY 3 ($p = 0.01$), of 2.9 percent in PY 4 ($p = 0.03$), and of 2.6 percent in PY 5 ($p = 0.08$). In PY 4 and PY 5, there were also declines in outpatient expenditures of 3 percent ($p = 0.05$) and 3.9 percent ($p < 0.01$), respectively (Table 5.4 and Tables 5.A.2.1a, 5.A.2.1b, 5.A.2.2a, and 5.A.2.2b in Laird et al. 2023b, Appendix 5.A). The combined reductions in acute inpatient and outpatient expenditures led to declines of 1.5 percent ($p = 0.08$) and 1.6 percent ($p = 0.06$) in total expenditures in PY 4 and PY 5, respectively, for Track 2 SSP practices.

Track 1 had greater alignment between changes in acute inpatient expenditures and changes in acute hospitalizations within the SSP and non-SSP subgroups relative to Track 2. Despite the similarity in patterns of estimates for expenditures in Track 1 and 2, there were some differences in alignment between changes in acute inpatient expenditures and acute hospitalizations between the two tracks. As described in Section 5.2.2, reductions in both acute inpatient care expenditures and acute hospitalizations were concentrated among SSP practices in Track 1. However, in Track 2, the reductions in acute inpatient expenditures were larger in magnitude in the SSP subgroup but the reductions in acute hospitalizations were larger and statistically significant only in the non-SSP groups. It was surprising that CPC+ reduced acute inpatient expenditures for the Track 2 SSP group but did not reduce the overall number of acute hospitalizations. As noted in Section 5.2.2, Track 2 SSP practices had some success in reducing the acute hospitalizations of the highest severity (surgical hospitalizations with a major complication or comorbidity) and that partly accounts for the larger reductions in acute inpatient expenditures in that group (see Laird et al. (2023b, Appendix 5.J) for estimates for the more granular types of hospitalizations and associated expenditures).

Increases in expenditures in non-SSP practices were driven by relatively small increases in a mix of expenditure categories. Over the five program years, there was a 1.1 percent ($p = 0.04$) increase in expenditures excluding enhanced payments in the Track 1 non-SSP group. The increases in Track 1 non-SSP practices started early in the intervention—in PY 1—and the magnitude of the annual increases varied between 0.9 percent and 1.4 percent (although these increases were not always statistically significant). While no one category of expenditures completely drove the overall increase each year, Part B noninstitutional expenditures[45] contributed substantially to the increase in almost all years (except PY 1). Other main drivers were increases in inpatient rehabilitation facility expenditures (all years) and outpatient expenditures (only in PY 3) (Table 5.4 and Tables 5.A.2.1a, 5.A.2.1b, 5.A.2.2a, and 5.A.2.2b in Laird et al. 2023b, Appendix 5.A). CPC+ also increased expenditures for hospice and durable medical equipment, but the magnitude of these increases was not as large in dollar terms as the other categories of

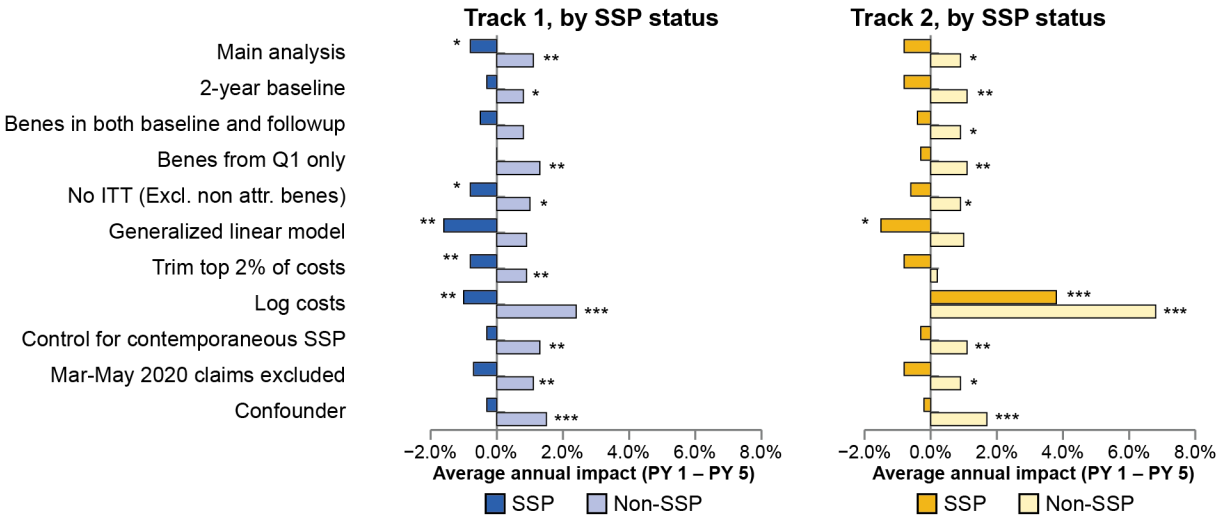
[45] Part B noninstitutional expenditures are expenditures for services provided by professional providers, including physicians, physician assistants (PAs), clinical social workers, nurse practitioners (NPs), and clinical nurse specialists (CNSs). Services provided by some organizational providers are also included in Part B expenditures. Examples of these organizational providers include independent clinical laboratories, ambulance providers, freestanding ambulatory surgical centers, and freestanding radiology centers.

service use. Also, there were no offsetting reductions in acute inpatient expenditures for Track 1 non-SSP practices (unlike the Track 1 SSP practices).

For the Track 2 non-SSP practices, there was a 0.9 percent (p = 0.06) average annual increase in expenditures over the five years. As among the Track 1 non-SSP practices, the increases in expenditures started as early as PY 1 and were not driven completely by any one category but increases in Part B noninstitutional and inpatient rehabilitation facility expenditures were notable contributors to the overall increase in expenditures.

The differential between the expenditure estimates for the SSP and non-SSP groups in both tracks was generally robust to sensitivity tests but the findings of cost-savings in the SSP groups were sensitive to modeling specifications. In each track, among the eleven sensitivity tests we conducted (in addition to the DDD), ten had point estimates that implied decreases in expenditures in the SSP group (though few of these tests were statistically significant) and all eleven showed increases in the non-SSP group (nine of which were statistically significant in each Track) (Figure 5.19). While the DDD estimates for expenditures were not statistically significant and generally did not (statistically) differ by SSP status, they also show relatively more favorable point estimates and confidence intervals for the SSP group compared to the non-SSP group in the later years (PYs 4 and 5) in both tracks (Tables 5.A.5.1 and 5.A.5.2 in Laird et al. 2023b, Appendix 5.A and Figure 5.20).

Figure 5.19. Comparison of estimates for SSP and non-SSP subgroups from sensitivity tests (excluding DDD) with main DD estimates, for Medicare expenditures without CMS's enhanced payments, Tracks 1 and 2

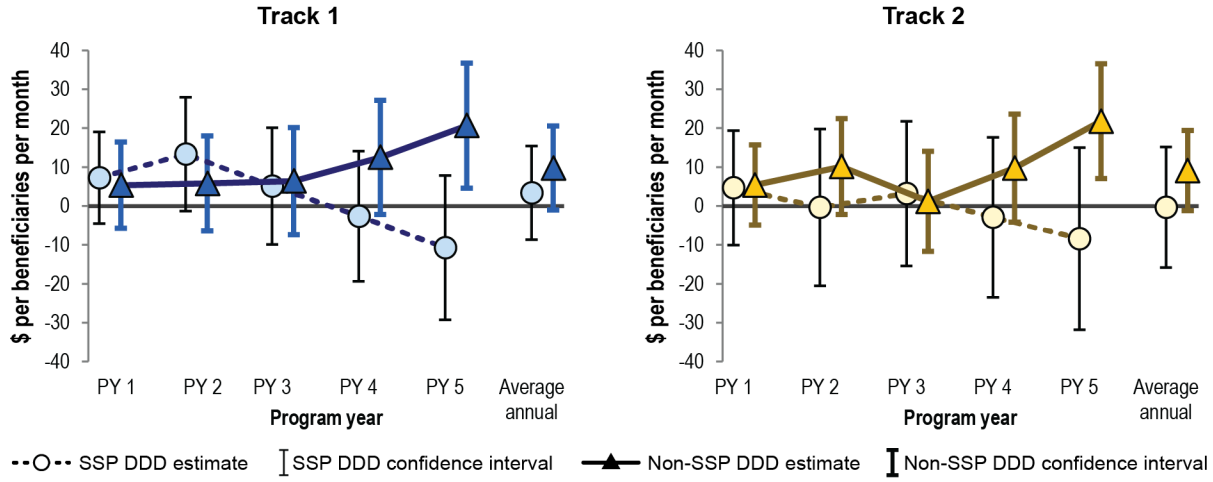


Source: Mathematica's analyses of Medicare claims data from January 2013 through December 2021.

Notes: We calculated percentage impacts (shown in this figure) relative to what the CPC+ mean would have been in Program Years 1 through 5 in the absence of the intervention—that is, the unadjusted CPC+ mean minus the impact estimate. Each impact estimate reflects the difference between the average outcome for Medicare FFS beneficiaries attributed to CPC+ practices in the five years of CPC+ and the average outcome in the baseline year, relative to the same difference over time for Medicare FFS beneficiaries attributed to comparison practices, while controlling for beneficiary characteristics, practice fixed effects, and COVID-19-related regional control variables (in PY 4 and PY 5 only). Asterisks denote whether the impact estimate is significantly different from zero at the 0.10(*), 0.05(**), or 0.01(***) level (two-tailed test). For a description of these tests and detailed estimates, please refer to Tables 5.A.2.7b and 5.A.2.8b in in Laird et al. (2023b, Appendix 5.A).

Benes = Beneficiaries; DD = difference-in-differences; DDD = triple-differences; FFS = fee-for-service; PY = Program Year; No ITT = Does not use the intent to treat sample and thus excludes beneficiaries that are not attributed in a particular period; Q= Quarter; SSP= Medicare Shared Savings Program.

Figure 5.20. Comparison of DDD estimates for SSP and non-SSP subgroups for Medicare expenditures excluding CMS's enhanced payments, Tracks 1 and 2



Source: Mathematica's analyses of Medicare claims data from January 2013 through December 2021.

Notes: Each DDD impact estimate reflects (1) the difference in the regression-adjusted average outcome for attributed Medicare FFS beneficiaries in CPC+ practices in the five program years compared with baseline relative to the same difference over time for attributed Medicare FFS beneficiaries in comparison practices, and (2) the difference in the regression-adjusted average outcome for attributed Medicare FFS beneficiaries in non-CPC+ practices in the five program years compared with baseline relative to the same difference over time for attributed Medicare FFS beneficiaries in non-comparison practices, while controlling for beneficiary characteristics, practice fixed effects, and COVID-19-related regional control variables (in PY 4 and PY 5 only).

DD = difference-in-differences; DDD = triple-differences; FFS = fee-for-service; PY = Program Year; SSP = Medicare Shared Savings Program.

Expenditures with enhanced payments

When including CMS's enhanced payments, CPC+ increased expenditures for Medicare FFS beneficiaries. Over the five years, Medicare expenditures, including CMS's care management fees (CMFs) and the comprehensiveness supplement for Track 2 practices, increased by $13 and $25 per beneficiary per month (PBPM) (1.3 and 2.5 percent), respectively, in Track 1 and Track 2 ($p < 0.01$ for each track), relative to comparison practices (Table 5.4). For each track, the estimated increase in these Medicare expenditures was similar to the size of the average CMFs CMS paid practices for Medicare FFS beneficiaries ($15 PBPM in Track 1 and $28 PBPM in Track 2). After including payments for performance (Performance-based Incentive Payments [PBIPs] that CPC+ practices retained and shared savings payments to CPC+ and comparison practices' ACOs for SSP practices in both tracks), in addition to the CMFs and the comprehensiveness supplement, the relative increase in expenditures for Track 1 and Track 2 practices remained similar—$13 and $24 PBPM (1.3 and 2.5 percent; $p < 0.01$ for each track) (Table 5.4). Therefore, CMFs accounted for almost all the increase in Medicare expenditures with enhanced payments.

The increases in expenditures with CMS's enhanced payments in the SSP and non-SSP subgroups were in line with the 1) estimates for expenditures without enhanced payments in the group and 2) the magnitude of the care management fees for the track. Over the five years, Medicare expenditures including CMS's enhanced payments increased by $3 PBPM (0.3 percent; $p = 0.43$) in the Track 1 SSP group and by $13 PBPM (1.3 percent, $p = 0.03$) in the Track 2 SSP group. Despite the similar estimates (of about 1 percent) for reduction in expenditures without enhanced payments, the Track 2 SSP subgroup had a larger increase than the Track 1 SSP subgroup due to the larger enhanced payments in Track 2. The increase in expenditures including CMS's enhanced payments over the five years was much greater in the

non-SSP groups—a $22 PBPM (2.4 percent; $p < 0.01$) increase in the Track 1 non-SSP group and a $33 PBPM (3.5 percent; $p < 0.01$) increase in the Track 2 non-SSP group. This was consistent with the increase in expenditures without enhanced payments (of about 1 percent) in the non-SSP groups in both tracks. With the favorable reductions in expenditures without enhanced payments and the smaller care management fees in Track 1 (relative to Track 2), the Track 1 SSP group came closest to reducing expenditures enough to offset the CMFs.

Expenditures summary

To summarize the key findings for Medicare FFS beneficiaries' expenditures, we found reductions in acute inpatient care expenditures starting in PY 3 in both tracks. However, these reductions were offset by small increases in expenditures on other services, yielding estimated effects on total Medicare expenditures without enhanced payments that were small and not statistically significant in either track in any of the five years. After including CMS's enhanced payments, we find that CPC+ increased expenditures over the five years by about the amount of the CMFs. The findings for expenditures without enhanced payments for both tracks were robust to sensitivity tests. Consistent with CMS's expectations about possible alignment between incentives and supports offered by CPC+ and SSP, effects on Medicare expenditures varied by participation in SSP and reductions in expenditures emerged in later years for SSP practices but not for non-SSP practices.

5.4. Variation in effects by subgroups

The impacts of CPC+ could differ for different types of practices and beneficiaries. Therefore, for selected outcomes, we estimated the effects of CPC+ for different types of beneficiaries and practices as described in the text box below. The hypothesized direction of effects for each of the subgroup is described in the appendix on empirical strategy (Laird et al. 2023b, Appendix 5.E).

Subgroups based on practice and beneficiary characteristics

Aside from SSP and non-SSP subgroups, we estimated differential effects for subgroups defined at baseline [a] by the following characteristics.

- Practice subgroups:
  - Whether the practice had participated in a prior primary care transformation initiative (in particular, CPC Classic, Multi-Payer Advanced Primary Care Practice Demonstration or medical home)
  - Practice size defined by the number of primary care practitioners (1-2 [small], 3-5 [medium]; 6 or more [large])
  - Whether the practice was multi-specialty or primary care only
  - Whether the practice was owned by a hospital-or health-system [b]
  - Practice location (rural, urban, suburban)

Subgroups (continued)

- Beneficiary subgroups:
  - Beneficiaries in the highest quartile of the distribution of HCC scores
  - Beneficiaries in the highest decile of the distribution of HCC scores
  - Beneficiaries with multiple chronic conditions, specifically at least 2 of the 12 frequently occurring chronic conditions, who also had prior hospitalizations
  - Beneficiaries who were also eligible for Medicaid (dually eligible)
  - Beneficiaries with anxiety, depression, or substance use disorders

Notes:

[a] We used the baseline period to define these characteristics because participation in CPC+ could affect practice and beneficiary characteristics over time.

[b] In AR5, we also tested a variation of the concept of ownership by looking at whether the practice shared a TIN with another primary care practice and found that findings were generally in line with those from the subgroup based on ownership by a hospital or health system.

Aside from SSP participation, a consistent pattern of differential effects was observed for practice subgroups based on only one other characteristic—ownership status at the start of CPC+. There was little variation in effects by beneficiary characteristics. There was a statistically significant differential impact between independent and hospital-or system-owned practices for both acute hospitalizations and expenditures without enhanced payments in Track 2. In Track 1, the direction of the estimates followed the same pattern as in Track 2, though the difference in effects between the two types of practices was not statistically significant.

Findings from the subgroup analyses suggest that independent practices fared better relative to hospital-or system-owned practices in CPC+ in terms of effects on acute hospitalizations and to a limited extent on expenditures. Over the five program years, CPC+ Track 2 independent practices had a relative decline of 7 acute hospitalizations per 1,000 beneficiaries (2.7 percent, $p < 0.01$), which was significantly different from the estimate of virtually zero for hospital-or system-owned practices. In Track 1, the direction of the estimates followed the same pattern as in Track 2 (that is, reduction in hospitalizations for independent practices and no effects for hospital-or system-owned practices), but the difference in effects between independent and system-owned practices was not statistically significant. Effects continued to follow a similar pattern of variation by practice ownership status when we looked at the more granular types of acute hospitalizations (Laird et al. 2023b, Appendix 5.J).

In Track 2, a statistically significant difference between independent and system-owned practices was also observed for expenditures. Specifically, there were decreases for independent practices (-$6 PBPM, -0.7 percent) and increases for system-owned practices ($6 PBPM, 0.6 percent) although neither of these estimates was significantly different from zero. The pattern was similar for Track 1 with small decreases in expenditures for independent practices and small increases in expenditures for hospital-or system-owned practices; however, the estimates were neither statistically significant nor statistically significantly different from each other.

When stratifying effects by both SSP and ownership status, we found that the difference in effects between independent and system-owned practices was more pronounced in the non-SSP subgroups in each track. The least favorable effects generally occurred in the non-SSP practices that were owned by hospitals or systems. This was especially true for expenditures; the pattern was similar—but less pronounced—for acute hospitalizations.

Effects on *expenditures* varied by practice ownership and by SSP participation at the start of CPC+ in the following ways:

- Within the groups of SSP practices in both tracks, there were no statistically significant effects on expenditures for the hospital-or system-owned or independent practice subgroups and no statistically significant differences in the expenditure estimates for the two subgroups (Table 5.6).
- In contrast, in the non-SSP group in both tracks, the difference in impact estimates by practice ownership was statistically significant. Among practices that were owned by a hospital or health system, expenditures without enhanced payments for CPC+ practices relative to their comparison counterparts increased by 1.7 percent more annually ($p < 0.05$) in Track 1 and by 2 percent more annually ($p < 0.01$) in Track 2, which was significantly different from the estimate of virtually no change for independent practices in both tracks (Table 5.6).

Effects on *hospitalizations* varied by practice ownership and by SSP participation at the start of CPC+ in the following ways:

- For the SSP group in both tracks, the difference in impact estimates by practice ownership was not statistically significant. In the Track 1 SSP group, estimates for the independent and hospital-or system-owned practices were very similar in magnitude and direction and showed a decrease of about 1.5 percent ($p < 0.1$) for both groups (Table 5.6). In the Track 2 SSP group, the estimates showed a decrease (albeit not statistically significant) for independent practices and virtually no effect (close to zero) for hospital-or system-owned practices (Table 5.6).
- In contrast, in non-SSP groups, there was evidence of relative decreases in hospitalizations for independent practices with little to no effect among hospital or system-owned practices. In the Track 2 non-SSP group, the difference in impact estimates by practice ownership was statistically significant. Among independent practices, hospitalizations decreased by 3.2 percent ($p < 0.01$), but there was no effect for hospital-or system-owned practices (Table 5.6). In the Track 1 non-SSP group, estimates followed the same pattern as the Track 2 non-SSP group, although the difference in impact estimates by practice ownership was not statistically significant.

These findings indicate meaningful differences in the impact of CPC+ on hospitalizations by practice ownership. They are also in line with the much better performance of independent CPC+ practices relative to hospital- or system-owned CPC+ practices on utilization measures (Chapter 3). It is likely that the incentives to reduce hospitalizations are muted for practices that are owned by (or in a system that includes) hospitals. The pattern of differences in effects by SSP status is also consistent with expectations about ownership structure and incentives: although practices that are system owned or tied to hospitals lose revenue when hospitalizations fall, those disincentives may be mediated by the global incentives to reduce overall costs in SSP.

Table 5.6. Estimated average annual impacts of CPC+ on acute hospitalizations and Medicare expenditures without CMS's enhanced payments, for independent and system-owned practices

Independent practices fared better than hospital or system-owned practices in CPC+ in terms of effects on acute hospitalizations and to a limited extent on expenditures. The differential in effects between independent and system-owned practices was more pronounced in the non-SSP subgroups in each track. The least favorable effects generally occurred among hospital-or system-owned, non-SSP practices.

	Percentage of CPC+ beneficiaries in subgroup at baseline	Impact estimate (standard error)	Percentage impact	*p*-Value for difference in impact estimates between subgroups[a]
Hospitalizations				
Track 1 overall				
Hospital- or system-owned	474,606 (54.3%)	-1.5 (2.0)	-0.5%	
Independent	399,264 (45.7%)	-4.0** (2.0)	-1.5%	0.43
Track 2 overall				
Hospital- or system-owned	619,957 (58.1%)	0.1 (2.0)	0.0%	
Independent	446,869 (41.9%)	-7.3*** (2.3)	-2.7%	0.01
Track 1 SSP				
Hospital- or system-owned	250,558 (55.8%)	-4.3* (2.4)	-1.6%	
Independent	198,464 (44.2%)	-4.8* (2.8)	-1.7%	0.65
Track 2 SSP				
Hospital- or system-owned	289,350 (61.4%)	0.2 (2.8)	0.1%	
Independent	182,287 (38.6%)	-4.9 (3.7)	-1.8%	0.11
Track 1 non-SSP				
Hospital- or system-owned	224,086 (52.7%)	1.6 (3.2)	0.6%	
Independent	200,762 (47.3%)	-3.2 (2.8)	-1.3%	0.15
Track 2 non-SSP				
Hospital- or system-owned	330,724 (55.6%)	0.3 (2.8)	0.1%	
Independent	264,465 (44.4%)	-8.2*** (2.9)	-3.2%	0.03
Expenditures				
Track 1 overall				
Hospital- or system-owned	474,606 (54.3%)	$4.5 ($4.5)	0.5%	
Independent	399,264 (45.7%)	-$3.4 ($4.8)	-0.3%	0.26
Track 2 overall				
Hospital- or system-owned	619,957 (58.1%)	$6.3 ($5.0)	0.6%	
Independent	446,869 (41.9%)	-$6.4 ($5.6)	-0.7%	0.05
Track 1 SSP				
Hospital- or system-owned	250,558 (55.8%)	-$7.2 ($5.9)	-0.7%	
Independent	198,464 (44.2%)	-$8.8 ($6.9)	-0.9%	0.54
Track 2 SSP				
Hospital- or system-owned	289,350 (61.4%)	-$8.1 ($7.4)	-0.8%	
Independent	182,287 (38.6%)	-$7.8 ($9.3)	-0.8%	0.86
Track 1 non-SSP				
Hospital- or system-owned	224,086 (52.7%)	$16.5** ($7.0)	1.7%	
Independent	200,762 (47.3%)	$1.4 ($6.6)	0.2%	0.08

Table 5.6. ***(continued)***

	Percentage of CPC+ beneficiaries in subgroup at baseline	Impact estimate (standard error)	Percentage impact	*p*-Value for difference in impact estimates between subgroups[a]
Track 2 non-SSP				
Hospital- or system-owned	330,724 (55.6%)	$18.9*** ($6.5)	2.0%	
Independent	264,465 (44.4%)	-$3.9 ($6.9)	-0.4%	0.01

Source: Mathematica's analysis of Medicare claims data from January 2013 through December 2021.

Note: In this table, we only show the findings for the subgroup based on practice ownership status because of all the subgroups (based on practice and beneficiary characteristics) that we examined, these are the only subgroups that show a consistent pattern of differential effects across more than one key outcome. The estimates (and standard errors) in the impact estimate column show impacts over the five years of CPC+, separately, for hospital-or system-owned and independent practices.

[a] The *p* values in the last column represent results from testing for statistically significant differences in impact estimates between the hospital-or system-owned and independent practices using a t-test.

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

SSP = Medicare Shared Savings Program

5.5. Effects of CPC+ on claims-based quality measures

5.5.1. Hypothesized effects of CPC+

CMS expected CPC+ to lead to some improvements in the dimensions of planned care and population health, continuity, coordination, comprehensiveness, and patient and caregiver engagement because the CPC+ care delivery requirements (CDRs) aim to improve them.

For example, CPC+ aims to increase planned care and population health by (1) providing reports (using claims data) and encouraging practices to develop their own reports based on heath IT data to identify gaps in care at the population level, (2) creating financial incentives to improve performance on population-level quality measures through the PBIP, which includes electronic clinical quality measures (eCQMs) like controlling high blood pressure, and (3) for Track 2 practices, explicitly requiring providers to meet weekly to review reports of population-level performance and to develop tactics for improving performance, such as proactive pre-visit planning/huddles. These efforts should, in turn, lead to improvements in population-level receipt of recommended care such as improvements in proportion of patients with diabetes receiving recommended diabetes care, as measured in claims data. Unfortunately, due to lack of eCQM data for comparison practices, we could not assess the impact of CPC+ on the more direct clinical measures incentivized by CPC+.

In terms of continuity, the CDRs require practices to empanel all their patients—making it clear both to providers within the practice and to the patients which providers are on each patient's care team. Further, practices must measure continuity (defined as the fraction of a patient's visits to a primary care practice that are with a member of the patient's care team). While there are not any direct requirements to use these continuity measurements to change care, the measurement alone may spur providers to be aware of—and strive to minimize—gaps in continuity.

The CDRs encourage coordination by requiring practices to identify the hospitals and EDs that their patients use frequently and to establish timely notifications and data sharing. This, in turn, can help practices provide episodic care management by following up with patients in a timely way after inpatient or ED discharge, thereby decreasing the rates of readmissions to the hospital or the ED.

CDRs also encouraged some elements of comprehensiveness primary care services including (1) integrating behavioral health into primary care; and (2) for Track 2 practices, assessing psycho-social needs, referring patients to community organizations, and conducting comprehensive medication management for all patients receiving longitudinal care management or those recently discharged from the hospital.

Finally, the CDRs require practices to engage patients and caregivers in advance care planning. The advance care planning discussions could, in turn, lead to greater use of hospice care at the end of life.

5.5.2. Realized effects of CPC+

CPC+ led to modest improvements of one percentage point or less in some of the claims-based quality-of-care measures of planned care and population health. Specifically, for recommended services for diabetes, Track 1 practices improved by about one percentage point or less (6.5 percent or less, $p < 0.1$) on each of the five measures examined (eye exam, attention for nephropathy, HbA1c testing, and two composite measures—for receiving all three tests, and for not receiving any of the three tests). Track 2 practices improved by one percentage point or less (2 percent or less, $p < 0.1$) on three of these measures (eye exam, HbA1c testing, and composite measure for receiving all three tests). For breast cancer screening, there was an improvement of 0.7 percentage points in Track 1 and 0.8 percentage points in Track 2 (1 percent, $p < 0.01$ in both cases). For some of these quality measures that showed favorable impacts, there was little room for improvement, so it was not surprising that impacts were small. For example, more than 90 percent and 80 percent of beneficiaries with diabetes received HbA1c tests and attention for nephropathy, respectively, in the year before CPC+ began. However, for the other measures, there was considerable room for improvement. For example, only two-thirds of beneficiaries with diabetes received an eye exam in the year before CPC+ (Table 5.7, Laird et al. 2023b, Appendix 5.A Tables 5.A.3.1a, 5.A.3.1b, 5.A.3.2a, 5.A.3.2b).

CPC+ led to increases in two measures of patient and caregiver engagement. For the evaluation's two measures of patient and caregiver engagement, in both tracks there were relative increases in the percentage of beneficiaries receiving hospice services (0.1 percentage point; $p < 0.01$), and the length of hospice stays increased by 3.1 days or approximately 4.8 percent ($p < 0.01$) in Track 1, and by 2.3 days, or approximately 3.6 percent ($p = 0.01$) in Track 2. The 0.1 percentage point increase in the percentage of beneficiaries receiving hospice services in both tracks is meaningful, because only about 3 percent of beneficiaries in the sample received hospice services before CPC+ began. Consistent with the increase in use of hospice, there was an increase in hospice expenditures of about 8 percent ($p < 0.01$) in both tracks.

CPC+ led to some improvements in overuse of prescription opioids but did not affect long-term opioid use. In particular, there were reductions in potential overuse of prescription opioids of 0.4 percentage points in both tracks (3 percent; $p = 0.07$ in Track 1 and $p = 0.13$ in Track 2).

In both tracks, there was little evidence that CPC+ reduced the incidence of readmissions, unplanned acute care following hospital or ED discharges, use of low-value services, or mortality, or that CPC+ improved appropriate use of recommended medications,[46] continuity, or comprehensiveness of care. In fact, the few statistically significant effects that we did observe in the measures of appropriate use of recommended medications (for example, in percentage of beneficiaries ages 18 and older on renin-angiotensin system antagonists with proportion of days covered by medication greater than 80 percent in Track 1) showed declines, although the magnitudes were small (less than 0.5 percentage points, or 0.5 percent) (Tables 5.A.3.1a, 5.A.3.2a in Laird et al. 2023b, Appendix 5.A).

Similarly, among the measures of continuity of care, only one measure—percentage of primary care ambulatory care visits at assigned practice—showed a small improvement (1 percentage point, 1.6 percent, $p = 0.02$) in Track 2. Among the other measures of continuity of care, there were small declines (less than 0.2 percentage points, or 0.4 percent) declines in the percentage of visits with the usual provider of care.

Among the measures of comprehensiveness of care examined, there was a statistically significant improvement—a 0.6 percentage point increase (0.9 percent, $p = 0.02$) in physicians' involvement in patient conditions in Track 1 only and there was a small decline of 0.3 percentage points (0.3 percent, $p = 0.08$) in new problem management in Track 2 only. This was not surprising, given that the claims-based measures of comprehensiveness captured aspects of care like new problem management and involvement across the range of a patient's conditions and service needs, which the CPC+ model did not incentivize. The aspects of comprehensiveness that CPC+ did emphasize (and that practices made some initial movement on)—behavioral health integration and comprehensive medication management—may have been insufficient to move the needle on these more global aspects of primary care comprehensiveness.

Claims-based measures summary

Given that the set of claims-based quality measures that we examined is limited, the magnitude of estimated improvements is small, and there is some emerging evidence for unfavorable effects on certain measures, we cannot draw definitive conclusions about the impact of CPC+ on quality. Many practices use eCQMs to guide quality improvement activities, and CMS also uses them to calculate the amount of PBIPs that practices retain. However, even though eCQMs are the more direct measures of quality on which CPC+ incentivizes practices, we do not estimate impacts on eCQMs because we lack comparable eCQM data for the CPC+ and comparison practices. Further, the eCQMs that CPC+ practices were required to report have changed over time, which limits our ability to examine changes in the quality measures between the baseline and intervention periods. Therefore, it is difficult to draw definitive conclusions about the impact of CPC+ on quality of care.

[46] Appropriate use of recommended medications is measured using six outcome measures: (1) percentage of beneficiaries ages 21 and older with cardiovascular disease who were prescribed and filled statin therapy, (2) percentage of beneficiaries ages 18 and older on diabetes medications with 80% of days covered by medication, (3) percentage of beneficiaries ages 18 and older on renin-angiotensin system antagonists with 80% of days covered by medication, (4) percentage of beneficiaries ages 18 and older on statins with 80% of days covered by medication, (5) percentage of beneficiaries ages 18 and older with both coronary artery disease (CAD) and diabetes who were prescribed and filled angiotensin-converting enzyme (ACE) inhibitors or angiotensin receptor blockers (ARB) therapy, and (6) percentage of beneficiaries ages 65 and older who received two or more prescriptions for high-risk medications in the same class.

Table 5.7. Estimated impacts on select claims-based quality-of-care measures for Medicare FFS beneficiaries, average for the five years of CPC+, by track and SSP status

CPC+ led to small increases in the percentage of beneficiaries who received recommended services for diabetes and the percentage of female beneficiaries (ages 52-74) who received breast cancer screening. CPC+ also increased hospice use and was associated with some declines in potential opioid overuse.

	Track 1				Track 2			
	CPC+ mean	Impact estimates, overall	Impact estimates, SSP	Impact estimates , non-SSP	CPC+ mean	Impact estimates, overall	Impact estimates, SSP	Impact estimates, non-SSP
Planned care and population health measures for beneficiaries ages 18–75 with diabetes (percentage)								
Received HbA1c test	90.5%	***0.3**** ***(0.2)***	***0.6**** ***(0.3)***	0.0 (0.2)	92.0%	***0.3**** ***(0.2)***	0.0 (0.3)	***0.5**** ***(0.2)***
Received eye exam	64.2%	***0.9***** ***(0.2)***	0.4 (0.3)	***1.4***** ***(0.4)***	66.1%	***1.1***** ***(0.3)***	***1.5***** ***(0.5)***	***0.7**** ***(0.3)***
Received attention for nephropathy	81.3%	***0.7**** ***(0.3)***	0.3 (0.3)	***1.1**** ***(0.4)***	82.7%	0.2 (0.3)	-0.4 (0.4)	***0.7**** ***(0.4)***
Diabetes Composite Measure 1 (received all three tests above: HbA1c test, eye exam, attention for nephropathy)	51.8%	***1.1***** ***(0.3)***	***0.7**** ***(0.4)***	***1.5***** ***(0.4)***	54.6%	***1.1***** ***(0.3)***	***1.2**** ***(0.5)***	***0.9**** ***(0.4)***
Diabetes Composite Measure 2 (received none of the three tests above)	2.6%	***-0.2**** ***(0.1)***	-0.1 (0.1)	***-0.2**** ***(0.1)***	2.3%	-0.1 (0.1)	0.1 (0.1)	***-0.3***** ***(0.1)***
Planned care and population health measures for females ages 52-74 (percentage)								
Received breast cancer screening	73.8%	***0.7***** ***(0.2)***	0.0 (0.3)	***1.5***** ***(0.3)***	74.8%	***0.8***** ***(0.2)***	0.1 (0.3)	***1.3***** ***(0.2)***
Patient and caregiver engagement								
Percentage of beneficiaries receiving hospice services	3.1%	***0.1***** ***(0.0)***	***0.1***** ***(0.0)***	0.0 (0.0)	3.1%	***0.1***** ***(0.0)***	***0.1**** ***(0.0)***	***0.2***** ***(0.0)***
Days of hospice use for beneficiaries receiving hospice services in the measurement year	68	***4.8%*****	***4.4%****	***5.0%****	68	***3.6%****	***4.8%****	2.8%
Days of hospice use for all beneficiaries in the measurement year	2	***8.8%*****	***10.8%*****	***6.7%****	2	***8.6%*****	***8.3%*****	***8.7%*****
Other quality measures								
Potential opioid overuse (percentage)a	14.2%	***-0.4**** ***(0.2)***	***-0.8**** ***(0.3)***	-0.1 (0.4)	14.3%	***-0.4*** ***(0.3)***	-0.1 (0.4)	-0.5 (0.3)

Source: Mathematica's analysis of Medicare claims data from January 2013 through December 2021.

Notes: Impact estimates. We base impact estimates (and tests of statistical significance) on a difference-in-differences analysis; they reflect the difference in the regression-adjusted average outcome for attributed Medicare FFS beneficiaries in CPC+ practices in PY 1 through PY 5 compared with the average outcome in the baseline year, relative to the same difference over time for attributed Medicare FFS beneficiaries in comparison practices. For the binary quality-of-care outcomes (all measures in this table except those that relate to days of hospice use), we present the absolute impact estimate on the relevant measures in percentage points. We do so because

Table 5.7. ***(continued)***

percentage impacts for some of these measures are likely to be misleadingly large, given the low means for the measures. For the days of hospice use measures, we show the percentage impact and not the impact estimate in percentage points, because the measure is not calculated in percentage units. We calculated percentage impacts relative to what the CPC+ mean would have been in PYs 1 through 5 in the absence of the intervention—that is, the unadjusted CPC+ mean minus the impact estimate.

We grouped the claims-based quality-of-care measures into the domains according to the Comprehensive Primary Care Functions under which they appear in the 2018 Implementation Guide (CMMI 2018). We examined other claims-based quality-of-care measures (listed in Table 5.8), which are not included in this table. For these other measures, impact estimates were either not statistically significant or not meaningful in size (less than or equal to 0.5 percent) or did not indicate any consistent pattern across multiple measures in a particular domain. For a detailed description of the claims-based quality-of-care measures, please refer to Laird et al. (2023b, Appendix 5.C).

Shading. ***Yellow shading with bold, italicized text*** signifies that an estimate was statistically significant at the 10 percent level using a two-sided test. Estimates with a positive sign show an improvement and those with a negative sign imply a deterioration in the quality-of-care outcome for CPC+ practices relative to comparison practices. There are three exceptions where negative signs instead imply an improvement in quality: (1) the diabetes composite measure of receiving none of the three tests, (2) long-term opioid use measure, and (3) potential opioid overuse measure. Although this table indicates which estimates are statistically significant, when we interpret evidence, we combine evidence from the magnitude of the effect, the *p* values, findings on related outcomes, subgroups, sensitivity tests, and other data sources about model implementation.

Unweighted sample sizes and Effective sample sizes. Most of the claims-based quality-of-care measures presented in this table are relevant to specific Medicare populations. The unweighted and effective sample sizes for each of these measures are available in the detailed findings appendix (Laird et al. 2023b, Appendix 5.A, Tables 5.A.3.1a, 5.A.3.1b, 5.A.3.2a, 5.A.3.2b).

[a] This measure is defined only among long-term users of opioids.

*/**/*** Underlying impact estimate was significantly different from zero at the 0.10/0.05/0.01 level, two-tailed test.

FFS = fee-for-service; PY = Program Year; SSP = Medicare Shared Savings Program.

Table 5.8. Claims-based quality-of-care measures for which impact estimates were not statistically significant or not meaningful in size (≤ 0.5 percent) or did not show consistent pattern for multiple measures in one domain

Planned care and population health measures
Percentage of beneficiaries who were prescribed and filled statin therapy
Percentage of beneficiaries on diabetes medications with proportion of days covered by medication > 80%
Percentage of beneficiaries on renin-angiotensin system antagonists with proportion of days covered by medication > 80%
Percentage of beneficiaries on statins with proportion of days covered by medication > 80%
Percentage of beneficiaries with both CAD and diabetes who were prescribed and filled ACE inhibitors or ARB therapy
Continuity-of-care measures
Percentage of primary care ambulatory visits at assigned practice
Across all PCPs and specialists providing care to a patient, where each practitioner in the beneficiary's assigned practice is treated separately:
Percentage of visits with the usual provider of care
Reversed Bice-Boxerman Continuity-of-Care index
Across all PCPs and specialists providing care to a patient, where all practitioners in the beneficiary's assigned practice are treated as a single practice:
Percentage of visits with the usual provider of care
Reversed Bice-Boxerman Continuity-of-Care index
Comprehensiveness of care (measured at the physician level)
Physician involvement in patient conditions
Management of new problems by physicians
Range of services provided by physicians
Other quality-of-care measures
Percentage of index acute care hospital discharges that were followed by an unplanned readmission within 30 days
Percentage of index acute care hospital discharges that were followed by an unplanned acute care hospitalization or ED visit (including observation stays) within 30 days
Percentage of index ED discharges that were followed by an unplanned acute care hospitalization or ED visit (including observation stays) within 30 days
Percentage of age 65 and older Medicare FFS beneficiaries who filled two or more prescriptions for high-risk medications in the same class
Annualized number of low-value services per 1,000 beneficiaries
Long-term opioid use

Notes: For a detailed description of these measures, please refer to Laird et al. (2023b, Appendix 5.C). For the yearly and average annual estimates of impact of CPC+ on these measures, please refer to Tables 5.A.3.1a, 5.A.3.1b, 5.A.3.2a, and 5.A.3.2b in Laird et al. (2023b, Appendix 5.A).

ACE = angiotensin-converting enzyme; ARB = angiotensin receptor blockers; CAD = coronary artery disease; ED = emergency department; FFS = fee-for-service; PCP = primary care practitioner.

5.6. Beneficiary experience of care

5.6.1. Hypothesized effects of CPC+

Patient-centeredness is a core tenet of CPC+, and several aspects of CPC+ aim to improve patient experience through transformation of care delivery. For example, access to care and continuity of care should help patients at CPC+ practices receive care more readily, get the right care at the right time, and develop more meaningful, longitudinal relationships with their providers. Additionally, by promoting episodic care management, CPC+ aims to strengthen practices' ability to support patients experiencing an acute event, such as an ED visit or a hospitalization.

To understand the association between CPC+ and patient experiences, we used a patient survey to examine the self-reported experiences of Medicare FFS beneficiaries served by CPC+ practices relative to those of beneficiaries in comparison practices. The survey was administered during PY 2 from May through December 2018, PY 3 from February through May 2019, and PY 5 from June through September 2021.

Methods: Understanding the association between CPC+ and Medicare FFS beneficiaries' experiences

Survey-based measures of beneficiary experience. The CPC+ Beneficiary Survey asked beneficiaries about their experiences of care received from the CPC+ or comparison practice they were attributed to in the past six months. The survey instrument primarily contained items based on the Clinician and Group Consumer Assessment of Healthcare Providers and Systems 6-Month Survey (CAHPS version 3.0). We modified CAHPS survey items and created new survey items to reflect the innovative features of CPC+ and specific areas of focus for CMS, such as social determinants of health and COVID-19. All new or revised items were pretested with cognitive interviews prior to fielding the initial survey. In total, we conducted 118 cognitive interviews across the three survey waves to test, refine, and validate the survey questions.

We grouped 34 items on patient experience that were present in all three waves of the CPC+ Beneficiary Survey into 10 composite measures based on a factor analysis: access; continuity in the doctor's office; continuity across health care settings; care management; comprehensiveness; coordination; patient and family caregiver engagement; helpful, courteous, and respectful office staff; teamwork; and patients' rating of the primary care doctors and their staff. These measures organize patients' responses by content areas based loosely on the Comprehensive Primary Care Functions and other topics that are important to CPC+.

Methods (continued)

Analytic methods. We used logistic and ordinary least squares regression models to conduct a cross-sectional analysis of the differences in the best and average survey responses from Medicare FFS beneficiaries in CPC+ and comparison practices by track. We controlled for beneficiary and practice characteristics at baseline, clustered standard errors at the practice level, and weighted for matching, sampling, and nonresponse. We conducted overall and subgroup analyses for the composite measures and examined the primary differences seen at the individual question level between tracks and between CPC+ and comparison practices.

Sample. For each survey wave, we invited about 20,000 of the roughly 1.8 million beneficiaries attributed to CPC+ practices (about 10,000 per track) to respond to the survey. Among the roughly 3.5 million beneficiaries attributed to comparison practices, we invited about 27,000 beneficiaries to respond to the PY 2 survey and about 16,000 beneficiaries to respond to the PY 3 and PY 5 surveys.

We obtained response rates of about 41 percent for CPC+ beneficiaries and about 43 percent for comparison beneficiaries in PY 2 and PY 3, and about 40 percent for both CPC+ and comparison beneficiaries in PY 5. In each wave, we had at least 6,500 beneficiaries from CPC+ practices and at least 5,000 beneficiaries from comparison practices. Our total analysis sample across the three survey waves included over 22,000 Medicare FFS beneficiaries who received care from a CPC+ practice at least once in the six months before they completed the survey, and over 21,000 beneficiaries who received care from a comparison practice in the same timeframe. The beneficiaries were from about 80 percent of the CPC+ practices and about 40 percent of the comparison practices that were active during each survey data collection period.

Interpreting results. To reduce the risk of incorrectly concluding there were effects of CPC+, we generally considered responses between beneficiaries in CPC+ and comparison practices to be statistically different and substantially important if the difference met two criteria: (1) the *p* value was less than or equal to 0.10 and (2) the difference between the two groups rounded up to at least 5 percentage points. Additionally, because we were not able to collect baseline data before CPC+ began, it is important to note that the differences we observed in the beneficiary survey may reflect preexisting differences between the beneficiaries served by CPC+ and comparison practices.

Laird et al. (2023a, Appendix 4.E) provides more detail about survey content, analytic methods, sampling, and weighting.

5.6.2. Realized effects of CPC+

Beneficiaries in CPC+ and comparison practices reported comparable experiences of care on the survey composite measures during each year the beneficiary survey was fielded (PYs 2, 3, and 5). CPC+ and comparison beneficiaries' experiences did not differ meaningfully on any of the 10 composite measures in PYs 2, 3, or 5 (Laird et al. 2023a, Appendix 4.E, Tables 4.E.7a and 4.E.7b). Although findings from our subgroup analyses suggest some differences between CPC+ and comparison beneficiaries' experience by practice type, given the large number of subgroup tests and limited pattern in

the results, it is possible these differences could have occurred due to chance (Laird et al. 2023a, Appendix 4.E, Tables 4.E.9a through 4.E.11d.2).

Beneficiaries' reported experiences at CPC+ and comparison practices as measured by individual survey questions were also largely similar to each other across all three years of the survey, with some exceptions. In the PY 5 survey, we observed some small favorable differences for CPC+ Track 2 beneficiaries relative to comparison beneficiaries on 4 of the 34 survey questions included in the composite measures covering three domains; that is, beneficiaries in Track 2 CPC+ practices were more *likely* to choose the best response option than beneficiaries from comparison practices for these 4 items. Beneficiaries in Track 2 CPC+ practices were more likely to report that they (1) received information from the doctor's office about what to do if they needed care outside of office hours (72 percent CPC+ versus 68 percent comparison beneficiaries, $p < 0.01$) (access domain), (2) were contacted by their doctor's office within one week of an ED visit (66 percent CPC+ versus 57 percent comparison beneficiaries, $p < 0.01$) and were asked if there are things that make it difficult for them to take care of their health (57 percent CPC+ versus 51 percent comparison beneficiaries, $p < 0.01$) (care management domain), and (3) were asked about their end-of-life care wishes or advance care plan (51 percent CPC+ versus 47[47] percent comparison beneficiaries, $p < 0.01$) (patient and family caregiver engagement domain). None of these differences were observed in PY 2 or PY 3 (Laird et al. 2023a, Appendix 4.E, Tables 4.E.7a and 4.E.7b).

A few differences between CPC+ and comparison beneficiaries on individual survey questions were also observed in the PY 2 and PY 3 surveys but these were less consistent across measures and CPC+ tracks. In the care management domain, CPC+ beneficiaries in Track 1 practices surveyed in PY 2 and PY 3 were more likely to choose the best response option than beneficiaries from comparison practices for a question asking whether they were contacted by their doctor's office within one week of an ED visit (64–66 percent for CPC+ beneficiaries versus 58–59 percent for comparison beneficiaries, $p < 0.10$). In PY 3, beneficiaries in Track 2 CPC+ practices were also more likely to report that their doctor's office contacted them within three days of a hospital stay (62 percent for CPC+ beneficiaries versus 52 percent for comparison beneficiaries, $p < 0.01$). In PY 3, beneficiaries in Track 1 CPC+ practices were also more likely to report (64 percent CPC+ versus 60 percent comparison beneficiaries, $p = 0.02$) that they received an answer to their health questions the same day when contacting their doctor's office during regular office hours (access domain) (Laird et al. 2023a, Appendix 4.E, Tables 4.E.7a and 4.E.7b).

Although only a small share of all beneficiaries surveyed reported being screened for social needs by their primary care doctor's office, relative to comparison beneficiaries, a slightly larger share of CPC+ beneficiaries reported being screened in PY 3 and PY 5. Less than 15 percent of the survey respondents in both CPC+ and comparison practices reported being screened for social needs by their primary care doctor's office. But relative to the small percentage of comparison beneficiaries, a slightly larger share of CPC+ beneficiaries reported being screened. In Track 2 practices, 15 percent of CPC+ beneficiaries reported being screened in PY 5 and PY 3 relative to 11 percent of comparison beneficiaries in PY 5 ($p < 0.01$), and 13 percent of comparison beneficiaries in PY 3 ($p = 0.03$) (Laird et al. 2023a, Appendix 4.E, Tables 4.E.7a and 4.E.7b). In Track 1, 13 percent of CPC+ beneficiaries were screened relative to 11 percent of comparison beneficiaries in PY 5 ($p = 0.02$). Given the low rates of screening for

[47] Percentages are rounded to the nearest whole number, which makes it *appear* as if there is a difference of only 4 percentage points for this finding. But this finding meets our criteria of being considered substantially important: the difference between the two groups rounded up to at least 5 percentage points and had a *p*-value of 0.10 or less.

social needs, even though the absolute differences are less than 5 percentage points, we think these differences are still meaningful as they represent an 18 to 36 percent difference compared to the comparison group mean.

In PY 5 (the only year in which the survey included detailed questions about beneficiaries' social needs), the percentage of beneficiaries who reported having problems with unmet social needs was small. Only 5 percent of beneficiaries in CPC+ and comparison practices reported having one or more problems with basic needs (defined as transportation, paying for utilities, getting enough food, rent/housing/homelessness, or abuse/violence in their home or neighborhood). Two percent or fewer of beneficiaries from CPC+ and comparison practices in both tracks reported having problems with any individual need (Laird et al. 2023a, Appendix 4.E, Tables 4.E.12a and 4.E.12b). Given the very small number of respondents who reported having an unmet social need, we cannot assume that these results would hold true for a larger population of patients with unmet social needs.

In the PY 5 survey, most beneficiaries reported that they did not avoid or delay getting medical care in the previous six months due to the COVID-19 pandemic, and there were no meaningful differences in beneficiaries' experience with delaying or avoiding care between the CPC+ and comparison groups for either track. This is not surprising, given that the PY 5 survey was fielded in summer 2021, well after the peak of the COVID-19 pandemic in the United States.

For both the CPC+ and comparison groups, among the 14 percent of beneficiaries who reported delaying or avoiding any type of medical care for any reason, a larger percentage of respondents delayed or avoided getting *check-ups or routine care* (6–12 percent) than *urgent care* (1–2 percent). Additionally, a larger share reported delaying or avoiding routine care *due to personal health concerns about getting or spreading COVID-19* (11–12 percent) than *due to issues related to the primary care office* such as staffing (6–7 percent) (Laird et al. 2023a, Appendix 4.E, Tables 4.E.7a, 4.E.7b, 4.E.12a, and 4.E.12b).

5.7. Discussion of impact findings

Over the five program years, CPC+ did not reduce total Medicare expenditures across Track 1 and Track 2 overall, even though it reduced acute care utilization and expenditures on acute inpatient care. In particular, CPC+ reduced ED visits by a little under 2 percent each year. Hospitalizations also fell by about 1 percent over the five years, with impacts first emerging in PY 3. The reductions in hospitalizations were accompanied by reductions in expenditures on acute inpatient care. However, there were offsetting increases in expenditures on other services. As a result, even in the later years, the effect of CPC+ on total Medicare expenditures for services was close to zero, which meant that net expenditures increased after factoring in enhanced payments. CPC+ also led to improvements in some claims-based quality-of-care measures, but the size of these effects was generally one percentage point or less. Finally, across multiple outcomes in the expenditures and service use domain, practices that were participating in SSP at the start of CPC+ did better relative to those that were not participating in SSP at the start of CPC+.

The finding of null effects of CPC+ on total expenditures in the overall tracks is robust to a wide range of sensitivity tests, including those that intended to minimize bias due to COVID-19. For utilization outcomes, some estimates were sensitive to modeling specifications and we cannot rule out the possibility that the estimated reductions may be overstating the favorable effects of CPC+. Differential participation rates of CPC+ and comparison practices in other initiatives did not appear to bias our results (Laird et al. 2023b, Appendix 5.F).

The impact findings are largely consistent with findings from other studies of primary care medical home interventions, which found mixed results from practice transformation initiatives. Most prior transformation studies, as currently designed and implemented, found no or limited improvements in quality of care, and only some generated savings.[48]

The reductions in acute care utilization are consistent with the time path of the theory of change for CPC+ and findings from our evaluation of the implementation of CPC+ at the practice level. Improved access to primary care can lead to reductions in ED visits relatively quickly. In contrast, reductions in hospitalizations are likely to require longer-term care management of chronic conditions, which is consistent with these reductions emerging in later years. In CPC+, practices were required to increase the delivery of episodic care management (outreach to patients after a hospital or ED discharge) which could affect ED visits and reduce unplanned hospitalizations. Findings from the PY 3 and PY 5 CPC+ Physician Survey (the years in which the survey was fielded) showed that a higher proportion of physicians in CPC+ than in comparison practices provided timely follow-up after ED visits and hospitalizations and after-hours access.[49] Beneficiaries in Track 2 CPC+ practices were also more likely than those in comparison practices to report receiving timely follow-up after hospitalizations in the PY 2, PY 3, and PY 5 CPC+ Beneficiary Surveys. Additionally, "deep-dive" practices reported educating patients about appropriate ED use, emphasizing the access to and continuity of care provided by the primary care practice, particularly for patients who have historically used the ED for nonurgent care. These process improvements could contribute to both the short- and long-term favorable effects on ED visits and hospitalizations. These qualitative findings may also explain why there were reductions in the primary care substitutable and potentially primary care preventable ED visits—which drove the overall reduction in outpatient ED visits. Longitudinal care management, which practices were required to establish over time, could lead to reductions in hospitalizations in later years.

The early improvements in some claims-based quality of care measures are also consistent with findings from the implementation analysis. CPC+ practices adopted more formal processes to guide data-driven quality improvement (QI) and increased the availability of staff and resources for QI, especially between PYs 1 and 2, which is consistent with the quick emergence of the small effects on measures of population health. Deep dive practices also reported that they worked to improve planned care and population health—many were using eCQMs, and some were also using utilization data to systematically guide QI activities. These activities can lead relatively quickly to increases in percentage of beneficiaries receiving recommended care for diabetes and breast cancer screening (both of which are process measures)—consistent with impacts on these measures emerging in the first two years. Additionally, CMS's

[48]For example, some previous studies found the initiative generated savings (Cuellar et al. 2016; Shi et al. 2017; Song et al. 2014; OIG 2017; Patel et al. 2021), while others, including the evaluation of CPC Classic, did not (Peikes et al. 2018b, 2018c; Yoon et al. 2016; Orzol et al. 2018; Colasurdo et al. 2022). One study found mixed effects on total spending among practices participating in singular or multiple primary care practice innovation models (Adler-Milstein et al. 2022). Similarly, some previous studies found limited improvements in measures of quality of care (Adler-Milstein et al. 2022; Farley et al. 2019; Swietek et al. 2018; Kahn et al. 2016) and patient engagement (Dorr et al. 2016; Kern et al. 2013; Swankoski et al. 2018; Reid et al. 2010; Sarinopolous et al. 2017; Nichols et al. 2017; Kahn et al. 2016; Aysola et al. 2018) while others found no appreciable effects (Peikes et al. 2018b; Jaén et al. 2010; Maeng et al. 2013; Heyworth et al. 2014; Reddy et al. 2015).

[49] In Laird et al. (2023b, Appendix 5.O) which analyzes the key care processes that lead to changes in outcomes over time, we found some evidence that practice-reported improvement in the availability for same-day and next-day visits was associated with decreases in both ED visits and acute hospitalizations among CPC+ beneficiaries.

performance-based payments incentivized practices to improve in the area of planned care and population health, including in diabetes care and breast cancer screening.

The onset of the pandemic affected CPC+ practices' ability to implement CDRs. In PY 4, which corresponds to the first year of the pandemic, practices' CPC+ care delivery activities, particularly longitudinal and episodic care management, took a back seat to the pressing needs of the pandemic. During the height of the pandemic in PY4, practice staff focused on COVID-19 screening, symptom management, and vaccinations and focused episodic care management activities on patients hospitalized for COVID-19. But CPC+ enhanced payments helped practices sustain staffing levels during this time and about one-half of practices and just under one-third of physicians in the PY 5 CPC+ practice survey agreed that CPC+ better positioned them to meet patients' care needs during the COVID-19 pandemic (by helping sustain staffing levels, particularly for care managers).

Despite the upheaval brought on by the pandemic, the reductions in acute care utilization that CPC+ generated in years up to PY 3 generally persisted into PY 4. The estimated effects of reductions in acute care utilization in PY 4—which are qualitatively similar to the effects in PY 3—suggest that, in spite of the difficulty in making progress on CDRs during the pandemic, at a minimum, CPC+ practices maintained the improvement over comparison practices that they had achieved in pre-pandemic years (consistent with CPC+ practices' survey responses about better positioning to meet patients' needs).

Although CMS's CMFs for Track 2 ($28 PBPM) was almost double the CMF for Track 1 ($15 PBPM), CPC+ had similar effects on Medicare expenditures without enhanced payments in both tracks. Track 2 did not have larger effects than Track 1, possibly because Track 2 did not move away from FFS incentives as much as expected and because Track 1 practices made progress on CDRs intended for Track 2. CMS conceptualized that Track 2 practices might move away from FFS incentives given the alternative payments provided in Track 2. However, in practice, only a small fraction of dollars shifted from FFS to alternative payments as practices were cautious about taking on capitation risk. Also, despite the difference in CMFs, the percentage of practices that reported CPC+ payments to be inadequate was similar in both tracks (Chapter 3). Implementation findings (as described in Chapter 4) also suggest that both tracks made similar changes to meet CDRs required of both. And for Track 2-specific CDRs, practices in both tracks made some changes, though Track 2 practices made more. The lack of larger effects in Track 2 (relative to Track 1) suggests that there wasn't a "dose-response" to the CPC+ model. But we should be cautious about the generalizability of such an interpretation since CPC+ Track 2 practices were different (more sophisticated) than an average CPC+ Track 1 practice (Singh et al.,2020).

Consistent with CMS's expectations about possible alignment between incentives and supports offered by CPC+ and SSP, a pattern of more favorable effects was observed for practices that were participating in SSP when CPC+ began (SSP subgroup) relative to those that were not (non-SSP subgroup) across several outcomes. Although sensitive to modeling assumptions, reductions in expenditures emerged for SSP practices in the later years which were driven by reductions in acute inpatient expenditures and (to a lesser extent) reductions in outpatient expenditures.

In contrast, expenditures appear to have increased for non-SSP practices in both tracks. While no one category of expenditures was entirely driving the increases in expenditures in the non-SSP group, increases in Part B noninstitutional services were an important contributing factor. It is possible that greater (though not always statistically significant) increases in ambulatory visits to specialists (that were mainly observed in the non-SSP groups), together with resulting increases in downstream utilization of

diagnostic testing, laboratory, and imaging expenditures, contributed to the increase in Part B expenditures in the non-SSP groups.

SSP practices also had more favorable effects than non-SSP practices across several service use outcomes. In particular, this pattern was observed for reductions in (1) hospitalizations in Track 1, (2) (typically) more-severe acute surgical hospitalizations in both tracks, and (3) ambulatory specialist visits in Track 2.

While there were only limited differences in care delivery changes between SSP and non-SSP practices within tracks, based on the data practices reported on the CPC+ Practice and Physician Surveys and during in-depth interviews with practices, these differences were in favor of SSP practices (as described in Chapter 4). In particular, SSP practices were more likely than non-SSP practices to report using certain utilization and cost measures to guide continuous improvement. Also, Track 2 SSP practices were more likely to report that they coordinated referral management for various high-frequency and/or high-cost specialists than Track 2 non-SSP practices. Relative improvements over comparison SSP practices could be achieved by CPC+ SSP practices if CPC+ provides the "tools" for improved care delivery. Lack of effects in the non-SSP group suggests that global incentives for reducing utilization and costs (similar to those in the SSP program) may be needed in order for primary care transformation models like CPC+ to achieve favorable outcomes.

Among the other practice subgroups examined, independent practices in Track 2 reduced hospitalizations while practices that were hospital- or system-owned did not. Consistent with this, a differential for expenditures (small decreases for the independent practices and small increases for the system-owned practices) was also observed in Track 2. Although differences were not statistically significant, the pattern of findings was similar in Track 1. We also found that the differential between independent and health system owned practices was generally more pronounced in the non-SSP groups in both tracks with the least favorable effects seen for non-SSP hospital-or system-owned practices.

It is likely that the incentives to reduce hospitalizations are muted for practices that are owned by (or in a system that includes) hospitals, particularly when they lack countervailing incentives from other programs like SSP. In the PY 5 Physician Survey, physicians in system-owned CPC+ practices were less likely than those in independent CPC+ practices to report receiving and using data feedback on cost. We also know from our implementation findings that independent practices are nimbler than hospital-or system-owned practices and are less likely to have the layers of internal bureaucracy that practices must navigate before implementing concrete steps to respond to incentives. The relatively larger differential between independent and hospital-or system owned-practices among non-SSP practices (which may not have the same global incentives to reduce overall utilization and costs as the SSP participants) is also consistent with expectations.

Primary care practices in CPC+ face some systemic barriers to meeting the model's goal of reducing Medicare FFS expenditures while improving quality, which could explain the lack of larger impacts of CPC+. Even if CPC+ practices fully achieve the Comprehensive Primary Care Functions, important contextual factors influence outcomes and are beyond a primary care practice's control. Markedly, specialists and hospitals operate in a largely FFS payment system; their incentives to deliver high-volume, high-cost care may need to be altered before CPC+ practices can reduce total Medicare expenditures and achieve budget neutrality or savings. Findings from our interviews with CPC+ practices revealed that few were altering their referral behaviors based on data feedback on specialists' costs. Further, other contextual factors like social determinants of health and patient preferences could

limit the degree to which patients engage with improved primary care and therefore alter their behavior and outcomes. Also, as practices make improvements in primary care delivery, expenditures could increase due to costs of expanded screening and treating previously undiagnosed conditions.

Even positive changes made by CPC+ practices during the model period may not be sufficient or may need a longer duration to show up as substantial changes in expenditures. For example, through improvements in timely access and enhanced care management activities, primary care models like CPC+ may be most successful at reducing acute hospitalizations and lower-complexity admissions (consistent with our impact findings for types of acute hospitalizations). However, if the types of hospital admissions being reduced by CPC+ are among the least costly admissions, that may not be sufficient to generate the types of savings that would reduce spending enough to offset investments.

In the short run, CPC+ could lead to potential substitutions in expenditure categories, limiting the potential for reducing expenditures. For example, appropriate use of inpatient rehabilitation services (such as for stroke patients) has been shown to reduce disability and enhance quality of life and ability to live independently (Alcusky et al. 2018, Özdemir et al., 2001). The emphasis of CPC+ on care coordination and care management, which includes transitional care planning, could have increased the appropriate recommendation of inpatient rehabilitation stays thus increasing expenditures on inpatient rehabilitation facilities. This could prevent premature return to the home environment and ensure appropriate home modifications as well as patient's greater physical resilience once back at home. Both could lead to better recovery and help avoid future acute inpatient hospitalizations, but such reductions and associated savings may not materialize for many years (Winstein et al., 2016). Consistent with this, CPC-Classic had greater reductions on hospitalizations after the initiative ended than during the initiative (see Laird et al. 2023b, Appendix 5.H), so it is possible that the effects of CPC+ on hospitalizations could grow in future years.

Different factors may explain why CPC+ did not have meaningful effects on measures of readmissions, unplanned acute care, continuity, appropriate use of recommended medications, comprehensiveness of care, and composite measures of experience of care in either track. As described in Section 5.5, many of the claims-based measures of quality that we examined are not directly incentivized in CPC+, so it is perhaps unsurprising that we did not find meaningful effects on them. Furthermore, CPC+ practices were working to reduce readmissions and other measures of unplanned acute care before CPC+ began. For example, Medicare payment policy focused on reducing readmissions long before CPC+ started. Similarly, the self-reported Primary Care Medical Home Assessment measures of continuity of care in the practice surveys show that CPC+ practices had very high scores at baseline, which remained high during the intervention period. Although the CDRs encourage comprehensive medication management (CMM) for Track 2 practices, CPC+ practices may not have fully implemented the concept (see Chapter 4 for discussion of CMM). Interviews with deep-dive practices showed that, especially in the early years of the model, practices were confused about CMM, and many conflated it with the simpler task of medication reconciliation. These factors could explain the lack of improvements in measures of appropriate use of recommended medications. As previously mentioned in Section 5.5, the aspects of comprehensiveness that CPC+ emphasized may have been insufficient to move the needle on the more global aspects of primary care comprehensiveness that our claims-based measures of comprehensiveness capture. Finally, changes at the practice level may not be visible enough to the average patient or may take longer to reach an impactful level of visibility for the patient (at least as measured by current survey instruments) which could explain the lack of meaningful effects on experience of care.

Overall, despite some promising reductions in acute care utilization and expenditures for some subgroups in the later years, CPC+ did not generate savings to Medicare in either Track, nor was CPC+ found to generate meaningful improvements in quality at no additional costs to Medicare. While the reductions in hospitalizations and accompanying reduction in expenditures on acute inpatient care and reductions in expenditures in the SSP groups in later years were promising, CPC+ did not attain cost neutrality in either track or SSP subgroup over the five intervention years combined. The findings from the scalability analysis using Bayesian causal forest (BCF) methods show that there is almost no chance that a nationwide scale up of either track's fifth-year effects (the year in which the program would be expected to be most mature) would generate sufficient savings to offset the care management fees (Laird et al. 2023b, Appendix 5.I). Any targeted scale up (to a subset of practices) of the fifth-year effects is also not likely to be cost neutral—a Track 1 scale-up to Medicare Shared Savings Program (SSP) practices (the most promising scale up) had only a 34 percent probability of being cost neutral. This was true despite the fact that a targeted scale-up of Track 1 to SSP practices was estimated to decrease both outpatient ED visits (86 percent probability) and acute hospitalizations (89 percent probability). As seen in the overall findings from the impact evaluation of CPC+, even when efforts to transform primary care demonstrably lead to reductions in service use, reducing total costs of care remains an elusive goal.

6 | Conclusions and Key Implications from the Five-Year Evaluation of CPC+

6.1 Introduction

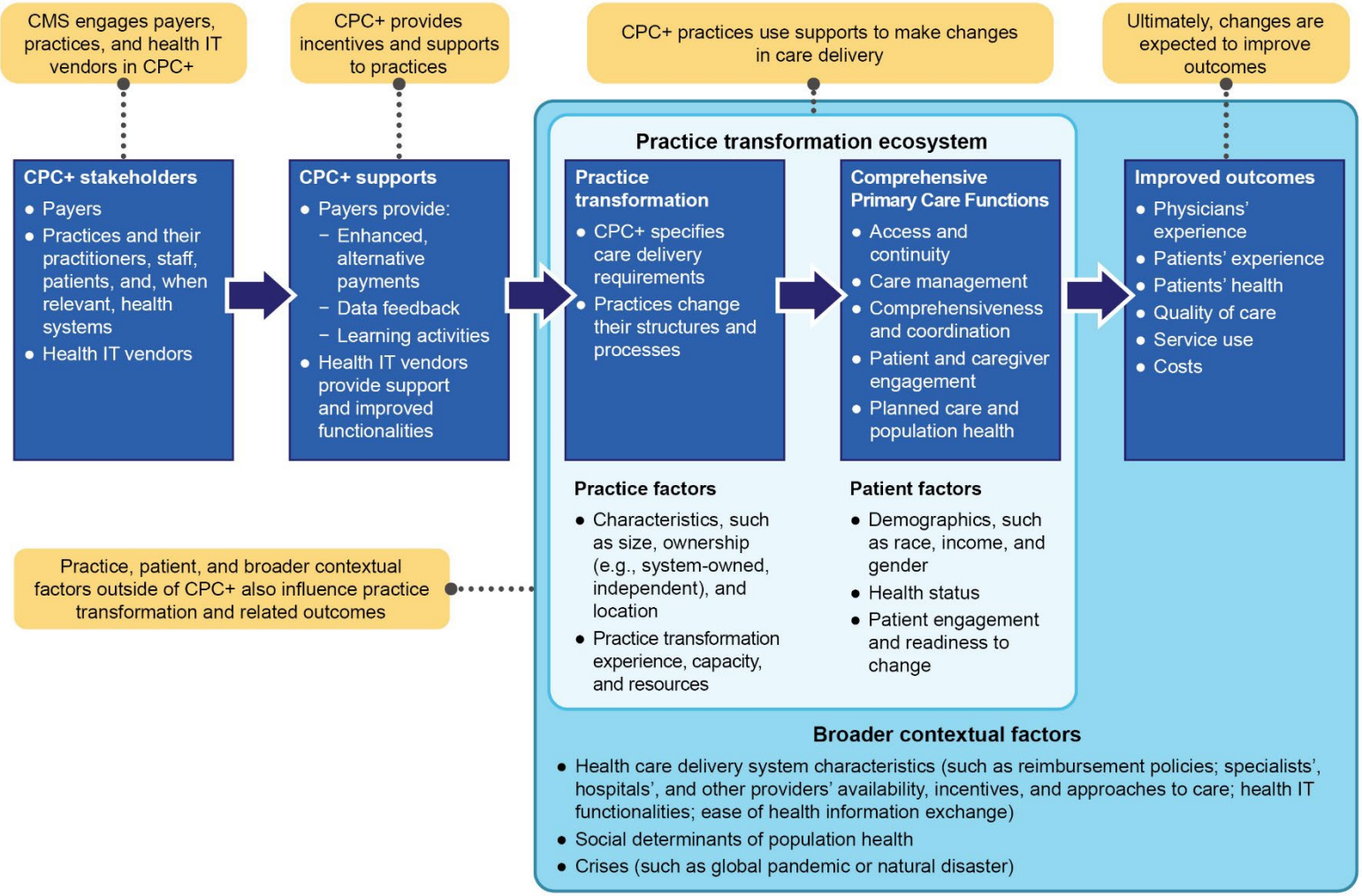
The U.S. health care system is characterized by chronic underinvestment in primary care, despite robust evidence on its many benefits for patients. This has led to calls for multiple stakeholders to engage and collectively "ensure that high-quality primary care is implemented in the United States" (NASEM 2021). Over the years, there has been a sustained effort to bolster primary care through alternative payment models and other supports. Following the passage of the Affordable Care Act, several primary care transformation model tests were launched by the Center for Medicare and Medicaid Innovation over the past decade. These include the Multipayer Advanced Primary Care Practice Demonstration, the Federally Qualified Health Center Advanced Primary Care Practice Demonstration, Independence at Home Demonstration, Comprehensive Primary Care Initiative, Comprehensive Primary Care Plus, and the ongoing Primary Care First (PCF) Initiative (Kahn et al. 2016; Nichols et al. 2017; Peikes et al. 2018b, 2018c, 2020; Swankoski et al. 2022; Conwell et al. 2022; Kimmey et al. 2023). By supporting and incentivizing improved primary care delivery, these models sought to enable practice transformation that improves access to advanced primary care services and the quality and efficiency of the care patients receive.

We evaluated CPC+—the largest primary care model tested to date in the United States—using rigorous quantitative and qualitative research approaches over the full five years of the model. In this concluding chapter of the final report, we attempt to weave together evidence from the preceding chapters and the full evaluation on how successfully CPC+ accomplished its goals. We interpret the successes and challenges of CPC+ considering contextual factors and emerging or established trends in the health care system to further discuss the implications of our evaluation findings for future primary care transformation models.

We start by describing how well CPC+ accomplished each of its four goals as laid out in the logic model of the CPC+ evaluation (Figure 6.1). These goals are: CMS recruits and engages CPC+ stakeholders, CPC+ provides incentives and supports to practices, CPC+ practices use supports to make changes in care delivery to achieve the five Comprehensive Primary Care Functions, and ultimately, changes are expected to improve outcomes. We conclude by discussing future implications, given the contextual factors and health care trends that affected the model implementation and its successes and failures.

Figure 6.1. Logic model for the CPC+ evaluation

This high-level evaluation logic model depicts the components of CPC+ and the hypothesized relationships between program elements and key outcomes. It indicates that the implementation and evaluation of CPC+ occurred within a complex "practice transformation ecosystem" that also had the potential to affect outcomes.



6.2. How well did CPC+ accomplish its goals?

Goal: CMS recruits and engages CPC+ participants (payers, practices and their patients, health IT vendors)

CPC+ was the largest primary care payment and care delivery reform model ever tested in the U.S. with high participation among payers and practices. In addition to guidance on how to enhance important primary care functions, CPC+ provided enhanced and alternative payments, data feedback, and individualized and group learning supports to practices. It also was the first federal advanced primary care payment and delivery reform effort in which CMS formalized health IT vendors' roles in supporting health IT implementation and specified detailed health IT requirements for practices.

The true extent of multipayer participation and engagement in CPC+ fell short of the intended target and CMS's vision of multipayer support, limiting the number of covered lives, the amount of support practices received, and practices' incentives for care transformation. CMS hypothesized that practices needed to receive supports for a critical mass of their patients to effectively change care delivery (Landon 2017; Glied and Zivin 2002). This was based on the implicit assumption that if payers partnering in CPC+ collectively represented a critical mass of all the payers contracting with CPC+ practices, and therefore, provided supports for a critical mass of those practices' patients, then participating practices would be similarly and strongly incentivized by a majority of payers and have sufficient funding to make the needed changes across all the patients they served. CMS, therefore, required that CPC+ practices implement care delivery changes *across all patients they served in the practice,* rather than just the patients for whom they received supports.

Although most of the big payers participated, many payer partners did not participate for all their major lines of business, and consequently, did not include a significant portion of their total covered lives in CPC+. Only about one-third of the patients seen at CPC+ practices were attributed by Medicare fee-for-service (FFS) and CPC+ payer partners combined. Despite efforts by CMS to engage new payers in CPC+ over time, the model was unable to increase the number of payer partners. A key issue payers and vendors raised was the absence of a critical mass of practices. Despite being a large model, CPC+ still did not have enough practices to make it worthwhile for all payers and vendors to make major model-specific investments. Key nonparticipating private payers and self-insured employers were reportedly focused on pursuing their own value-based payment strategies (such as direct contracting with large systems) that they believed would be more likely to yield a positive return on investment in the short term than CPC+ participation. Also, in some regions, large payer partners selectively excluded some of their most important lines of business from CPC+. For example, some payer partners with a large presence in the commercial market in certain regions opted not to include their commercial lines of business in CPC+, citing strategic, competitive reasons. Consequently, a substantial number of lives that could have been attributed to CPC+ practices by payer partners were not included in the model in those regions.

Regional dynamics, such as the presence of an effective convener or a historically competitive market, played an important role in dictating the extent of multipayer collaboration in CPC+ regions. Having an engaged, neutral convener who had the time to build relationships and who understood the local dynamics of the region facilitated multipayer collaboration. In retrospect, most participants (including CMS) acknowledged that not funding the convener role at the start of CPC+ was a mistake—one that CMS eventually rectified. With or without an effective convener, multipayer collaboration was difficult, if not impossible, in regions that lacked multiple engaged payer partners. For example, in Rhode Island only one payer participated, and in Arkansas payers contributed unequally to collaboration efforts.

Even the presence of an effective convener was not sufficient to overcome key challenges, such as intensely competitive dynamics among payers, in some regions. Competitive market conditions made payers in some regions, such as Ohio, reluctant to collaborate. Commercial payers in Ohio often hesitated to share information or contribute ideas for fear of yielding a potential competitive edge to rivals; also, some commercial payers expressed ambivalence about contributing to initiatives such as regional data aggregation, since that could allow less-committed rivals to benefit. Payer partners sometimes described building positive relationships through multipayer collaboration but were ultimately unable to make significant progress toward meeting many of the multipayer alignment goals on CPC+, like participating in and paying for data aggregation, and closely aligning provider performance metrics. Robust multipayer collaboration did not always equate to alignment or commitment to CPC+. Payer partners sometimes focused more on aligning with each other or with state-based initiatives rather than on CPC+, as in Ohio and New York.

There were significant differences between CMS's and many payers' visions for value-based payment; balancing broad payer participation with close alignment among participating payers' approaches proved difficult. Payment alignment was difficult to achieve given fundamental differences in the visions and approaches of payers toward value-based payment. Some key payers believed successful value-based payment arrangements are not necessarily synonymous with moving toward capitation or prospective, population-based payments over time. These payers described pursuing different approaches toward paying for value that were built on an FFS structure (such as negotiating higher fee schedules with large systems that are willing to take on more downside risk). Had CMS tried to require payer partners to align more closely to CMS's payment model (for example, by requiring them to pay large care management fees [CMFs] unique to CPC+ or to implement population-based payments), many key payers likely would have declined to participate. This points to a fundamental challenge in designing a multipayer model that achieves both widespread payer participation (covering a critical mass of patients) and close alignment among participating payers' approaches.

Smaller, independent primary care practices and practices serving more disadvantaged patients were less likely to participate in CPC+, preventing the model from boosting this important segment of the primary care infrastructure and improving health equity. The CPC+ model was not designed to address equitable health care delivery, and the model design required practices to be relatively sophisticated in terms of health IT, payment, and reporting. Thus, smaller, independent, and less resourced practices serving many Medicare FFS beneficiaries were less likely to apply (Singh et al. 2020). However, such practices provided care for 39 percent of traditional Medicare beneficiaries attributed to a physician, or 27 percent of all traditional Medicare beneficiaries in 2018 (Beaulieu et al. 2023). Since the requirements of the model made it more challenging for practices that served under-resourced communities to participate, CPC+ practices served more advantaged patients than typical

primary care practices in the United States (Singh et al. 2020). To garner greater participation of practices serving under-resourced communities, including rural and lower-income areas, and communities with larger proportions of persons of color, future model designs should consider allowing less resourced practices (including Federally Qualified Health Centers [FQHCs] and Rural Health Clinics [RHCs]) to participate. Such models would also need to include requirements and supports that are sensitive to challenges under-resourced practices face joining initiatives like CPC+.

Goal: CPC+ provides incentives and supports to practices

Although CPC+ provided some of the highest care management fees of primary care models to date, just over half the practices rated CPC+ payments from CMS as adequate or more than adequate for the work CPC+ required. Of the three types of payments, practices found CMFs to be most useful, by far, for investing in staff and resources for care transformation. On the other hand, practices found performance-based payments to be too small, volatile, and delayed to affect care delivery change. The proportion of practices rating CPC+ payments from CMS as adequate did not differ much by track (52 and 58 percent in Track 1 and Track 2, respectively), despite significantly larger payments for Track 2 practices. This raises a critical question on whether upfront payment for undertaking care transformation can be sufficiently increased and if there is even a right level of investment (Landon 2017; Glied and Zivin 2002) or, in the absence of any evidence on cost savings, the model requirements need to be more manageable. Primary Care First (PCF), for example, has fewer formal care delivery requirements, and, as an alternative to traditional Medicare fee-for-service payments, offers a mix of payments, including performance-based payments and capitated payments that depend on the average medical complexity of the practice's Medicare patient panel (Conwell et al. 2022). It is too early to assess whether the greater flexibility and the novel payment approach under PCF will lead to Medicare cost savings. Although offering larger performance-based adjustments might boost outcomes, it could also make the cost-neutrality test more challenging to meet and may not be well suited to engaging and transforming less financially sophisticated practices.

CMS provided the lion's share of payments unique to CPC+, reflecting the absence of robust multipayer payment support to practices. CMS contributed a disproportionate share of total enhanced payments because of the larger CMFs it paid compared to payer partners. The lack of multipayer support constrained the incentives for practice-wide transformation, especially for non-Medicare patients, as well as practices' ability to implement nonbillable services and move away from reliance on FFS for their entire patient panel. Although CMS covered fewer than 40 percent of attributed CPC+ patients over the course of the model, it contributed nearly 70 percent of the total enhanced payments practices received from all payers combined. As large as CMS's share of total enhanced payment was, its share of enhanced payments that were unique to CPC+ was even more striking: 96 percent. This was largely because all of CMS's large CMFs were unique to CPC+, while most payer partners used existing value-based payment arrangements to meet their CPC+ commitment. Only 10 percent of payer partners' CMFs were unique to CPC+. The unique portion of total enhanced payments is important because it captures the financial contribution CPC+ made toward practices' ability to invest in transforming care delivery and is the portion that was expected to drive CPC+ impacts. Further, although CMS and all other payer partners that joined CPC+ offered enhanced payments, only around one-third of all patients seen by CPC+ practices were covered by enhanced payments, reflecting the lack of participation by many payers in each region. In other words, the model was unable to offer payment support for a critical mass of a practice's patient panel.

Only a small proportion of Track 2 patients were covered by prospective, population-based payments, resulting in a limited **shift from FFS to alternative payments.** Alternative payments such as the Comprehensive Primary Care Payments were a substitute for FFS (not an addition to it), were limited in magnitude, and covered too few patients to bring about any significant expansion in non-billable services. Fewer than one in five payer partners met their commitment to provide Track 2 practices with alternative payments that shifted a portion of payments away from FFS, and nearly all these payers were simply continuing longstanding capitation arrangements that predated CPC+. Among all patients seen by Track 2 CPC+ practices, approximately 13 percent were covered by alternative payments from CMS and only 3 percent were covered by alternative payments from other payer partners. This likely hindered any significant movement away from a volume-based mindset and patterns of care delivery, and practitioners and practices had insufficient resources outside of FFS payments for implementing large-scale changes. In some cases, practices' resistance to accepting capitated payments was also a factor in payers' inability to move towards greater population-based payment arrangements.

In some cases, practices felt they were not able to fully take advantage of the CPC+ payment supports CMS provided. Some practices wished they had trained their staff to conduct more thorough hierarchical condition category (HCC) coding, to qualify for higher risk-adjusted CMFs. This is a theme that recurs on PCF, where practices admit to being focused on increasing their HCC scores for more payment through "better" coding, pointing towards the high likelihood of practices gaming a risk-based payment approach. Also, half of the deep-dive Track 1 practices in CPC+ said they would have applied to Track 2 instead and would have used the higher CMFs to support more practice changes. Some were fearful of applying for Track 2 initially but once they started participating in the model and learned more about the payments, they wished they could have had the option to move up to Track 2. Practices also cited the need for better alignment among payer partners' payment models and performance metrics, which would have enabled them to take more advantage of the payment supports CMS provided.

Goal: CPC+ practices use supports to make changes in care delivery by implementing the five primary care functions

Practices highlighted the benefits of timely primary care access (24/7 coverage and same-day/next-day appointments) to better meet patients' needs and reduce unnecessary emergency department (ED) visits and acute hospitalizations. There was a meaningful increase over the course of the model in the proportion of practices that provided 24/7 access directly to the primary care practice team or practitioner who has real-time access to the patient's electronic medical record. Findings from the synthesis and exemplar analyses (see Laird et al. 2023b, Appendices 5O and 5N) found that increases in same-day and next-day appointments were consistently and meaningfully associated with better outcomes in terms of decreases in costs, ED visits, and acute hospitalizations.

Even with CPC+ enhanced payments, implementation of alternative visits (other than telehealth during the coronavirus 2019 [COVID-19] pandemic) was low. This is because practices remained concerned about the cost of providing alternative visits. Although enhanced payments, including Comprehensive Primary Care Payments, were intended to relieve some of the pressure to rely on FFS payments, practices' consideration of what sort of alternative visits to offer involved the calculus of whether that service could be supported by FFS.

Although practices' efforts on longitudinal care management increased, they struggled to provide this service to most of their patients at higher risk, citing insufficient care manager staff time as a barrier. The CPC+ model started to move incentives away from FFS, but it wasn't enough of an

alternative payment to affect incentives for practices, systems, and organizations to support sufficient care manager time or to keep care managers embedded in the latter years of CPC+. For example, in the last two years of CPC+, system-owned practices reported that they moved previously embedded care managers to centralized locations outside the practice (even after COVID-19 cases peaked). Throughout the model, many practices reported that they did not have enough longitudinal care management resources for all patients that could benefit from them.

There were limited improvements in coordination between primary care practitioners (PCPs) and specialists and in primary care referrals to specialists. CPC+ encouraged practices to use data feedback on high-cost, high-volume specialists to inform referral decisions, and collaborative care agreements to improve coordination of care, but practices did not implement these activities as CMS intended. Findings on the use of other tools to improve referral coordination, such as e-consults (also known as e-referrals), were mixed, although these tools hold promise for improving the coordination of care. Their low uptake in CPC+ practices is symptomatic of the current volume based FFS incentives and PCPs continuing to refer to specialists they are familiar with instead of using new tools. Going forward, if incentives are right, these tools could increase access to specialists for patients with unmet needs, while decreasing inappropriate use of specialists for other populations (Chen et al. 2013; Lee et al. 2018; BEESC Committee 2022).

Enhanced behavioral health integration was one of the successes of the CPC+ model, although PCPs had few financial incentives or supports to improve other important aspects of the comprehensiveness of primary care. CPC+ practices increased their reliance on and use of behavioral health staff substantially, offered behavioral health counseling at a higher rate than comparison practices, and improved access to behavioral health care for patients. However, practices cited the behavioral health workforce shortage as a challenge to further expanding integrated behavioral health care. Also, practices did not improve other aspects of comprehensiveness such as managing a greater depth and breadth of patients' conditions, because their reimbursement was still dominated by misaligned FFS payments. In our studies that assessed how variations in other aspects of PCP and practice comprehensiveness were associated with outcomes, we found that more comprehensive PCPs and practices had significantly better outcomes for patients in terms of lower Medicare expenditures, ED visits, and hospitalization rates (O'Malley et al. 2019, 2021; Rich et al. 2021). Therefore, future models would ideally also encourage support for these other aspects of comprehensiveness.

More physicians reported documenting, and more beneficiaries reported being asked about, advance care plans in CPC+ than in comparison practices, but findings from earlier deep-dive data and from outside of CPC+ suggest that such efforts may not be sufficient to improve end-of-life care. Increased reports from physicians and beneficiaries about documenting and being asked about advance care plans (ACP) were accompanied by small increases in the hospice use among beneficiaries in CPC+ practices, though we cannot ascertain causality. As noted in our fourth annual report (Swankoski et al. 2022), many deep-dive practices reported that advance care planning activities had no direct impact on their referrals to hospice or palliative care. These practices believed that a patient's decision to enter hospice is entirely separate from advance care planning activities. However, several other deep-dive practices shared that advance care planning changed the nature of, and practitioners' comfort level with, hospice and palliative care discussions. Recent literature reviews found that advance care planning, as currently practiced, does not improve end-of-life care, nor does its documentation serve as a reliable and valid quality indicator of an end-of-life discussion (Morrison et al. 2021; Jimenez et al. 2018). Morrison et al. (2021) note that "new research focused on training clinicians and preparing patients and families to

engage in high-quality discussions when actual (not hypothetical) medical decisions must be made is needed to achieve the outcomes that ACP has not."

Medicare Shared Savings Plan (SSP) practices were more likely than non-SSP practices to report using data on utilization and cost measures to guide continuous improvement. Practices and physicians generally found data on quality measures more useful and actionable than data on cost and utilization measures, noting that patients' cost of care was outside of their control. However, a higher percentage of SSP than non-SSP practices in both tracks reported to CMS that they focused on utilization and cost data of specialty care, post-acute care, and imaging/laboratory tests for quality improvement efforts.

Goal: Ultimately, changes are expected to improve outcomes

CPC+ reduced outpatient ED visits, acute inpatient hospitalizations, and acute inpatient expenditures; however, these reductions were not sufficient to reduce total Medicare expenditures or achieve net savings, after accounting for increased expenditures in other areas and enhanced payments in both tracks. Reductions in acute inpatient expenditures were offset by increases in some other types of expenditures, resulting in a net increase in total Medicare expenditures after accounting for enhanced payments. CPC+ reduced acute medical hospitalizations as well as expenditures on such hospitalizations, with the largest reductions in medical hospitalizations occurring among those without a complication or comorbidity, that is, in lower-acuity medical hospitalizations. However, as expected, CPC+ did not reduce surgical hospitalizations. Finally, the reductions in acute medical hospitalizations and expenditures were concentrated among independent practices, pointing towards the greater challenge of reducing hospitalizations among hospital and system-owned practices that rely on revenues from hospitals and specialist services.

There was a favorable interaction between participation in CPC+ and the SSP incentives in terms of reduction in total Medicare expenditures. In both tracks, CPC+ practices that also participated in SSP at baseline were successful in reducing acute inpatient expenditures and total expenditures, while non-SSP practices experienced an increase in total expenditures. SSP practices in Track 2 also achieved a reduction in specialist visits, but non-SSP practices did not reduce specialist visits in either track. Further, in Track 2, only SSP practices reduced ED visits. Provided with CPC+ resources, practitioners (both primary care and specialists) in SSP might have the tools and the system-level payment incentives needed to better achieve the goals of reducing hospitalizations, unnecessary utilization of costlier specialist visits, and total costs.

There were limited improvements in quality of care, as measured in Medicare claims. The impact analysis examined quality of care based only on Medicare claims-based measures that could be defined for both CPC+ and comparison beneficiaries. For many of the claims-based quality measures, CPC+ practices were already at high levels of performance at baseline with limited room for improvement. Impact estimates show small increases in some claims-based measures of quality of care, such as the receipt of recommended services for diabetes, breast cancer screening, and hospice use, as well as a reduction in potential opioid overuse. However, these were accompanied by the absence of any meaningful effects on many other claims-based quality-of-care measures as well as small reductions in a few measures of appropriate medication use (as observed in Medicare prescription drug event data). Future studies would benefit from examining impacts on clinical outcomes, which requires access to clinical measures among a comparison group.

6.3. Implications for future primary care models

Without direct incentives for specialists and hospitals to reduce costs, primary care physicians lack control over critical aspects of care that drive large portions of unnecessary utilization and Medicare costs.

Due in part to the prevailing misaligned FFS payment incentives, primary care practices have little influence on other providers' behaviors. Given that the CPC+ model focused on primary care transformation, other providers—including specialists and hospitals—that accounted for a large share of Medicare service utilization and expenditures among beneficiaries attributed to CPC+ and comparison practices at baseline (Petersen et al. 2020) did not face any requirements or incentives to alter their behaviors. In addition, Medicare FFS beneficiaries can self-refer to specialists, so they exercise substantial control over their utilization of services. Thus, the bulk of specialist visits and high-cost diagnostic testing and procedures, including use of low-value services, likely continued to occur outside the realm of the primary care practices' control, especially in the absence of shared incentives for care coordination between PCPs and specialists. Notably, there was some evidence that combining SSP incentives with CPC+ resulted in a reduction in specialist visits, especially in Track 2, and better performance in general among SSP practices in both tracks with respect to reduction in Medicare expenditures. However, CPC+ did not have any effect on the use of low-value services, which account for a substantial amount of Medicare spending. For instance, Mafi et al. (2021) found that nearly 34 percent of Medicare FFS beneficiaries received any of 32 low-value services in 2018, with an associated spending of $144,741 per 1,000 beneficiaries at the claim level.

Given that specialists largely operate outside the sphere of influence of PCPs for Medicare FFS beneficiaries, it is not surprising that CPC+ did not reduce fragmentation of care even among Medicare beneficiaries with the most fragmented care at baseline (Timmins et al. 2022a). Care fragmentation has been shown to adversely affect patient outcomes in many studies (Nyweide et al. 2013; Kern et al. 2018; 2021, 2022). In other analyses, we found that only a small proportion of the variation in fragmentation and use of low-value services can be explained by beneficiary, physician, and primary care practice characteristics; instead, much of that variation seems to be driven by the behavior of diverse health care providers beyond primary care (Timmins et al. 2022b; Shin et al. 2022). Given the disproportionate growth in the number of practicing specialists and the sharply increasing number of referrals, it is not surprising that there has been a much greater increase in the annual number of specialist visits relative to primary care visits for Medicare beneficiaries in general over the past decade (Barnett et al. 2012, 2021). The median number of other physicians seen by a PCP's Medicare patient panel increased from 52 in 2000 to 95 in 2019, pointing to the challenges of care coordination PCPs face (Barnett et al. 2021).

To improve the integration and coordination of care, it is critical to engage other providers, for instance, by creating more incentives for specialists and hospital systems to work with primary care practices. CMS has also acknowledged the need for aligning incentives and promoting greater integration of primary and specialty care, for example, by facilitating greater data sharing and by supporting the use of behavioral health integration and collaborative care codes, creating financial incentives within primary care for specialist engagement through the use of e-consults for example, and by more Accountable Care Organizations (ACOs) assuming full risk for managing the care of complex beneficiaries (Fogler et al. 2022; Fowler et al. 2022). Use of e-consults by PCPs offers a potentially promising approach for more appropriate in-person referrals to specialists. Prior work has found that e-consults or e-referrals hold promise for the more efficient and effective use of specialist visits, enhanced primary care

comprehensiveness, lower fragmentation of care, and better coordination of care (Chen et al. 2013; Lee et al. 2018; BEESC Committee 2022).

Improvement in patient outcomes through primary care transformation and alignment of financial incentives across the medical neighborhood, including specialty care and hospital-based care, could be achieved through a variety of other strategies. For instance, just as combining SSP incentives with CPC+ resulted in a reduction in specialist visits, it might also be possible to leverage SSP to implement alternative payment approaches for primary care and achieve primary care transformation (Pham et al. 2022). However, current evidence on SSPs suggest that physician-owned ACOs are more likely to achieve reduction in expenditures than those owned by hospitals or hospital systems (McWilliams et al. 2018). Therefore, in leveraging SSPs to transform primary care, integration of primary and specialty care would need to be done thoughtfully, designing incentives that are likely to sufficiently offset FFS incentives to maintain a high level of care by the costliest providers who have little interest in changing the status quo.

Hospital consolidation and hospital ownership of physician practices will continue to affect practices' ability to reduce utilization and expenditures.

Increased hospital consolidation and employment of physicians can create incentives for hospitals to garner lucrative referrals from primary care to their employed and more highly reimbursed specialists and specialty services to reap financial rewards (Furukawa et al. 2020; Whaley et al. 2021; Curto et al. 2022). Recent evidence suggests that commercial insurers pay higher prices to physicians and hospitals in health systems than those not in systems; also, even with administered prices, Medicare spending was 5 percent higher for beneficiaries attributed to system physicians in 2018 than those attributed to non-system physicians (Beaulieu et al. 2023), likely driven by greater service utilization.

In line with these findings, hospital- or system-owned practices in CPC+ had higher rates of hospitalizations and greater expenditures than independent practices, even after controlling for patient risk scores and other characteristics at baseline. Further, reductions in acute medical hospitalizations and expenditures were concentrated among independent practices, pointing towards the greater challenge of reducing hospitalizations among hospital- and system-owned practices that rely on revenues from hospitals and specialist services. Although both system-owned and independent practices improved their overall Performance-based Incentive Payment (PBIP) scores over time, independent practices achieved higher PBIP scores than system-owned practices, driven by a substantial, persistent gap in utilization performance. Although the gap between system-owned and independent practices was often narrow and sometimes statistically indiscernible on the quality component of the PBIP score, there was a much larger gap on the utilization component that persisted throughout the five program years. In interviews, some practices, payer partners, and regional conveners noted that systems continued to rely on hospital use to drive organizational earnings and are more likely to have layers of internal bureaucracy that practices must navigate before implementing concrete steps to respond to payment incentives.

Although models such as CPC+ are intended to be practice site-level interventions, systems that employ the practitioners and staff at those practices tend to take more top-down approaches and want universal implementation of changes across practice sites. Primary care practitioners on the front-line, for example, may have little say in the amount of care manager staff time they receive. Systems also want to integrate Center for Medicare and Medicaid Innovation models with their other health plan and quality improvement efforts at the central level. Consequently, front-line clinicians at practices affiliated with a

health system are less likely to be directly exposed to the payment incentives or have much say in the extent to which changes sought by a model like CPC+ are implemented.

With increasing consolidation and hospital ownership of physician practices, achieving cost savings from primary care transformation models is likely to become more challenging. Practices owned by systems may be more likely than physician-owned practices to face weak or conflicting incentives to contain hospital utilization. However, motivating change among system-owned practices is going to be critical to rein in hospital costs, especially since these practices make up an increasingly larger share of primary care practices compared to independent practices. For instance, while 41 percent of PCPs were integrated with a system in 2018 (Machta et al. 2020), a recent report found that 74 percent of primary care physicians and 55 percent of primary care practices were employed by a hospital, system, or another corporate entity in January 2022 (PAI-Avalere 2022).

Although market consolidation continues, smaller independent practices remain a key component of the nation's primary care infrastructure—especially in certain geographic areas—and their role in future models requires careful consideration.

Nearly 90 percent of all primary care practices in CPC+ regions had 5 or fewer primary care practitioners in 2016. Also, despite a reduction over time in the share of physician-owned independent practices, a recent survey by the American Medical Association that included both primary care physicians and specialists found that nearly half the physician practices continued to be owned entirely by physicians without any hospital, foundation, or private equity ownership (Kane 2021). Smaller, independent practices also provided care for more than a quarter of all traditional Medicare beneficiaries in 2018 (Beaulieu et al. 2023). However, as discussed above, smaller, independent practices were less likely to apply to CPC+ because it would have been harder for such practices to meet the financial, managerial, health IT, and reporting requirements of CPC+. This pattern holds true for more recent primary care transformation models like PCF. In PCF, about 85 percent of practices are owned by a larger health care organization such as a health system or a group (Conwell et al. 2022). Since advanced primary care models like CPC+ and PCF end up having less reach, they are unable to support more robust primary care for practices that might be in greater need of such support. Also, these models do not fully capitalize on certain advantages of engaging smaller, independent practices. For instance, in CPC+, smaller, independent practices that did participate showed greater agility to respond to incentives and were able, for example, to adapt more quickly to using telehealth services during the COVID-19 pandemic. Lower participation by smaller, independent practices poses a challenge to strengthening the national primary care infrastructure and increasing their participation in future models requires careful consideration.

Assessing the consequences of the broader goal of health system transformation for health equity will require including patients with limited access to primary care and practices serving less-resourced communities.

Beneficiaries without primary care visits are not directly included in models like CPC+ and PCF because patient attribution to practices is based on having evaluation and management visits with a participating primary care physician. Assessing the consequences of the broader goal of health system transformation for health equity might require population-based studies, rather than identifying just those with existing claims for (and hence some basic level of access to) primary care and other services. Although improving health equity was not a stated goal of CPC+, it is something to keep in mind in future model evaluations, especially since advancing health equity was identified as one of the CMS Innovation Center's strategic objectives in its 2021 strategy refresh (CMS, 2021). For instance, the evaluation for a future initiative could consider estimating impacts on all Medicare FFS beneficiaries residing in the geographic area from

which practices were recruited to participate in the model, and not just beneficiaries attributed to participating practices. The appropriateness of such an approach would depend on the scope and nature of the intervention as well as the extent of practice participation. For instance, a similar approach is being used to estimate impacts in the evaluation of the Maryland Total Cost of Care Model, given that the intervention is expected to improve outcomes for all Medicare beneficiaries in Maryland.

Practices with relatively high shares of minority patients were less likely to participate in CPC+ (Rubio et al. 2023). Therefore, to address health equity, future models would also need to support practices in less-resourced communities, such as those serving persons of color and rural populations, to participate. To ensure a more inclusive pool of practices, future primary care models may need to relax the eligibility criteria for less financially and information technology enabled practices and combine that with greater outreach and supports to such practices. For example, practices that typically serve a higher proportion of beneficiaries in less-resourced communities and were not eligible to participate in CPC+, such as FQHCs and RHCs, could be invited to participate by creating a separate track for such practices to join the model and they could be provided with greater supports. This may need to be combined with realigned incentives and supports for primary care practices to screen for and coordinate with community-based organizations on health-related social needs.

Apart from expanded telehealth codes, alternative payment arrangements helped enhance practices' financial stability during the pandemic; however, FFS payments continue to be an attractive default option, including the expanded billing codes for telehealth.

To address the unprecedented disruptions to health care faced by providers and patients due to the pandemic, especially in 2020, CMS and CPC+ payer partners introduced several temporary changes to CPC+ supports and requirements to ease burden on practices. CPC+ payments—in particular, CMFs—helped practices maintain key patient care activities like care management and coordination by funding the salaries of care managers and other key staff during the pandemic. Although enhanced FFS billing codes for telehealth during the pandemic were helpful to practices, the sharp reduction in in-person visits demonstrated the weakness of the FFS payment system in terms of its reliance on volume. It also highlighted the benefits of participating in value-based payment models to a wide range of providers, including primary care physicians, specialists, and hospitals (Roiland et al. 2020). For example, CPC+ payments—in particular, the monthly CMFs—helped practices weather the financial shock of plummeting FFS revenues in the early phase of the pandemic and allowed them to keep key staff such as care managers continuously employed and maintain important patient care activities, especially care management and care coordination (Swankoski et al. 2022). Similarly, hospital global budgets provided financial protection to Maryland hospitals under the Maryland Total Cost of Care Model when hospital volumes declined during the pandemic (Machta et al. 2021). Greater financial stability and flexibilities offered by value-based payment arrangements allowed health care organizations and providers to develop and employ new capabilities in meeting care needs during the pandemic. However, given the attractive outside option of continuing in an FFS system, capitalizing on the enthusiasm among providers for alternative payments will require coordinated multipayer efforts.

Primary care is critical and central to an organized health care system even if primary care transformation alone is insufficient to achieve cost savings in short-run model tests.

In discussing lessons learned, it is useful to note that most of the findings and their implications from the CPC+ evaluation further confirm those from its predecessor—the Comprehensive Primary Care Initiative, or CPC Classic. Our previous evaluation of CPC Classic found that, although the initiative had considerable success in bringing together public and private partners to improve primary care and in implementing the key aspects of the model among participating practices, the reductions in Medicare FFS utilization were not large enough to offset the CMFs that Medicare provided to practices (Peikes et al. 2018b, 2018c). Additional investigation of CPC Classic practices that continued in CPC+ revealed that practices were more successful in reducing hospitalizations over a longer time horizon, although they did not reduce total costs (Fu et al. 2021). A key implication of these findings is that payers and policymakers may need to test and assess primary care reform over longer periods and that reducing total spending requires new approaches. Another important implication is that payers and policymakers might consider testing primary care payment reforms covering the majority of patients in a practice through multipayer participation before expecting changes in primary care delivery. Focusing on more near-term metrics amenable to improvements in primary care capabilities in assessing the success of such reforms would also be useful.

Relatedly, models to strengthen primary care may fail to do so if they make expansion of such models contingent on reducing total Medicare expenditures, especially in the absence of aligned incentives for other providers. Policymakers may want to consider the unintended harm from initiatives that hold primary care practices, particularly small- to medium-sized ones, responsible for substantial financial risk when they lack the financial reserves to sustain losses (Berenson and Haft). In its call to implement high-quality primary care in the United States, the National Academies of Sciences, Engineering, and Medicine did not recommend using financial risk as a performance incentive (NASEM 2021). In general, primary care practices should not be expected to assume the insurance risk of transforming primary care delivery (Haft and Berenson 2023). Instead, a more useful point of departure is likely to be an acknowledgment that primary care is critical and central to an organized health care system but is not sufficient to move the needle on expenditures (NASEM 2021; Jain and Gadhe 2021; Bynum et al. 2017).

Ongoing primary care models like PCF differ from CPC+ in their essential model features, for example, PCF offers more flexibility to practices with fewer requirements than CPC+ and explicitly targets the reduction in acute hospitalizations. However, PCF still lacks incentives for specialists and hospitals to work in greater coordination with primary care providers and change behaviors or costs. Consequently, it is unclear whether PCF holding primary care practices accountable for all acute hospitalizations will prove to be an effective strategy in achieving cost savings.

Future models could better explain and support comprehensive primary care through supporting and rewarding primary care physicians and teams to better manage the breadth and depth of conditions and problems that are within their training competencies and expertise, rather than referring patients to a different specialist for each body system. Avoiding non-evidence-based referrals to specialists, could help reduce the volume of specialist visits and the resulting cascade of specialist services. Irrespective of future model tests, innovative payment approaches can support primary care in assuming a more central role in the health care system. These could include, for example, a hybrid form of payment that combines prospective population-based payments and FFS-type payments that reward patient-provider interactions (NASEM 2021; Pham et al 2022). Ultimately, achieving health system transformation with a greater role for primary care would also require parallel work on right-sizing payments for low-value services, specialists, and hospitals.

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