

**Environmental Scan on Issues Related to the
Development of Population-Based Total Cost of Care (TCOC) Models in the
Broader Context of Alternative Payment Models (APMs) and Physician-Focused
Payment Models (PFPMs)**

March 1, 2022

This environmental scan was prepared at the request of the Office of the Assistant Secretary for Planning and Evaluation (ASPE) as background information to assist the Physician-Focused Payment Model Technical Advisory Committee (PTAC) in preparing for a series of theme-based discussions on issues related to the development of larger population-based models with accountability for quality and total cost of care (TCOC). The discussion will examine key issues related to definitions, options for model design, identifying best practices, measuring and evaluating performance, and developing payment methodologies for population-based TCOC models in the broader context of Alternative Payment Models (APMs) and Physician-Focused Payment Models (PFPMs).ⁱ The environmental scan is based on information that was publicly available relating to this topic in the literature as of the time that the analysis was completed.

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Table of Abbreviations

Abbreviation	Term
AAFP	American Academy of Family Physicians
AAHPM	American Academy of Hospice and Palliative Medicine
ACA	Affordable Care Act
ACM	Advanced Care Model
ACO	Accountable Care Organizations
ACS	American College of Surgeons or American Community Survey
ACSC	Ambulatory care sensitive condition
ADI	Area Deprivation Index
AHC	Accountable Health Community
APM	Alternative Payment Model
AS	Active surveillance
ASCO	American Society of Clinical Oncology
ASPE	Assistant Secretary for Planning and Evaluation
BMI	Body mass index
BPCI	Bundled Payments for Care Improvement
CAHPS	Consumer Assessment of Healthcare Providers and Systems
CCO	Coordinated care organizations
CDC	Centers for Disease Control
CHART	Community Health Access and Rural Transformation
CHCF	California Health Care Foundation
CHIP	Children's Health Insurance Program
CJR	Comprehensive Care for Joint Replacement
CMMI	Center for Medicare and Medicaid Innovation
COPD	Chronic obstructive pulmonary disease
CPC+	Comprehensive Primary Care Plus
CPOC	Consolidated Payments for Oncology Care
DCE	Direct contracting entity
DME	Durable medical equipment
E&M	Evaluation and management
ED	Emergency department
EHR	Electronic health record
FAI	Financial Alignment Initiative
FFS	Fee-for-service
GAO	Government Accountability Office
GPDC	Global and Professional Direct Contracting
HCC	Hierarchical conditions category
HCV	Hepatitis C virus
HEDIS	Healthcare Effectiveness Data and Information Set
HHS	Health and Human Services
HIT	Health information technology
HPP	Hospital Payment Program
HPSA	Health Professional Shortage Area
HRSA	Health Resources and Services Administration
HRSN	Health-related social need

Abbreviation	Term
ICU	Intensive care unit
IHP	Integrated health partnership
IOM	Institute of Medicine
LCSW	Licensed clinical social worker
LOS	Length of stay
LUGPA	Large Urology Group Practice Association
MA	Medicare Advantage
MCAHPS	Medicare Consumer Assessment of Healthcare Providers and Systems
MCBS	Medicare Current Beneficiary Survey
MCO	Managed care organization
MMC	Medicaid managed care
MPFS	Medicare Physician Fee Schedule
MSSP	Medicare Shared Savings Program
MUA	Medically Underserved Area
NF	Nursing facility
NRHI	Network for Regional Healthcare Improvement
NPRA	Net Payment Reconciliation Amount
NPVoC	Net present value of care
NQF	National Quality Forum
OCM	Oncology Care Model
PARHM	Pennsylvania Rural Health Model
PBIP	Performance-based incentive payment
PBPM	Per-beneficiary per-month
PCDT	Preliminary Comments Development Team
PCF	Primary Care First
PCMH	Patient-centered medical home
PCOP	Patient-Centered Oncology Payment
PCP	Primary care provider
PCT	Palliative care teams
PFBPM	Physician-focused payment model
PHE	Public health emergency
PHN	ProvenHealth Navigator
PMPM	Per member per month
PPIC	Patient-perceived integrated care
PRT	Preliminary Review Team
PTAC	Physician-Focused Payment Model Technical Advisory Committee
QP	Qualifying APM Participant
RAF	Risk adjustment factor
RUI	Resource Use Index
SDOH	Social determinants of health
SIM	State Innovation Models
SNF	Skilled nursing facility
SSP	Shared Savings Program
SVR	Sustained virological response
TCI	Total Cost Index
TCOC	Total Cost of Care

Abbreviation	Term
TCRRV	Total Care Relative Resource Value
VBID	Value-Based Insurance Design
VBP	Value-based purchasing programs

Section I. Introduction and Purpose

Under the bipartisan Medicare Access and Children's Health Insurance Program (CHIP) Reauthorization Act (MACRA) of 2015, Congress significantly changed Medicare fee-for-service (FFS) physician payment methods. The law also specifically encouraged the development of Alternative Payment Models (APMs) known as physician-focused payment models (PFPs) and created the Physician-Focused Payment Model Technical Advisory Committee (PTAC) to review stakeholder-submitted PFP proposals and make comments and recommendations on them to the Secretary of Health and Human Services (HHS; "the Secretary").

Since its inception, PTAC has received 35 proposals for PFPs from a diverse set of physician payment stakeholders, including professional associations, health systems, academic groups, public health agencies, and individual providers.ⁱⁱ PTAC evaluates the PFP proposals based on the extent to which they meet the Secretary's 10 regulatory criteria for PFPs (specified in federal regulations at 42 CFR § 414.1465), including "Cost and Quality" (which is also referred to as Criterion 2). Consistent with the definition of this criterion as established in regulation, PTAC evaluates proposals on the extent to which they are "anticipated to improve health care quality at no additional cost, maintain health care quality while decreasing cost, or both improve health care quality and decrease cost."¹

Within this context, several previous submitters have discussed the use of TCOC measures in their payment methodology and performance reporting as part of their proposal submissions.² PTAC has assessed the proposed use of TCOC measures as a basis for payment incentives such as shared savings and penalties in proposed models that target specific patient populations and episodes of care. The Committee has also provided comments and recommendations regarding the strengths and weaknesses of the use of TCOC in the payment methodologies of proposals in the Committee's reports to the Secretary.³

The purpose of this environmental scan is to provide members of PTAC with background information and context about current perspectives on issues related to the development of population-based TCOC models, and the role that population-based TCOC models can play in optimizing health care delivery and value-based transformation in the context of APMs and PFPs specifically. The information in this environmental scan is expected to help PTAC members review TCOC components in proposals previously submitted to the Committee. In addition, the environmental scan can inform the Committee's review of future proposals, and future comments and recommendations they may submit to the Secretary relating to TCOC and population-based TCOC models.

This environmental scan summarizes and analyzes relevant information from PTAC's review of proposals from previous submitters. In addition, the environmental scan synthesizes findings from relevant literature; selected Center for Medicare and Medicaid Innovation (CMMI) models; and other Centers for Medicare & Medicaid Services (CMS) and State models, demonstrations, and programs. The scan adopts the Health Care Payment Learning & Action Network's (HCP-LAN's) categorization of payment models and distinguishes among models that create provider incentives aimed at addressing TCOC for a wide population with diverse characteristics; models that focus on patients with specific characteristics (e.g.,

ⁱⁱ The 35 proposals submitted to PTAC represent an unduplicated count (i.e., proposals with multiple submissions are counted only once) of the number of proposals that have been voted and deliberated on by the Committee (28) and the number of proposals that have been withdrawn by stakeholders (7, including one proposal that was withdrawn prior to any review by the Committee).

diagnoses) or for care during specific episodes of time; and advanced primary care models.⁴ Section II provides key highlights of the findings from the environmental scan. Section III describes the research questions and methods used in the environmental scan. Subsequent sections explore background and definitions of population-based TCOC models and related terms (Section IV); relevant features of existing programs and selected CMMI models (Section V); relevant features in selected previously submitted PTAC proposals (Section VI); relevant performance and outcome measures used in reporting and evaluation (Section VII); findings from research related to population-based models and programs that seek to reduce TCOC (Section VIII); barriers and challenges related to developing and implementing population-based TCOC models (Section IX); and opportunities for improving and optimizing efforts to develop and implement population-based TCOC models (Section X). Additionally, a list of exhibits and list of abbreviations can be found at the beginning of the environmental scan, following the table of contents.

Section II. Key Highlights

The following section highlights important findings from this environmental scan, describing issues related to the development of population-based TCOC models in the context of APMs and PFPs.

Definitions and Context of Population-Based TCOC Models

Frameworks such as the one developed by the Health Care Payment Learning & Action Network (HCP-LAN) provide one approach for distinguishing between population-based TCOC models and other forms of health care payment. The HCP-LAN APM Framework, presented in Exhibit 1 below, shows a progression of payment approaches away from traditional FFS (Category 1) and toward population-based models with provider accountability for TCOC (Category 4). However, while many experts reference the development of population-based TCOC models that can transform health care delivery and payment, there is not a widely accepted definition of the characteristics of these models or recognition of a single approach to achieving these aims.

Increased Emphasis on Developing Models with Accountability for Quality and Cost. The Center for Medicare and Medicaid Innovation (CMMI) has set the goal of having every Medicare fee-for-service (FFS) beneficiary with Parts A and B in a care relationship with accountability for quality and TCOC by 2030.⁵ Additional priorities identified by CMMI include increasing provider capacity to participate in these models; ; increasing coordination between providers that are responsible for accountable care relationships and specialty providers that are accountable for delivering high-cost episodic and/or complex care; improving patient experience through more person-centered, integrated care; improving quality and outcomes; better aligning provider and beneficiary incentives to increase use of high-value services; improving affordability; increasing access to accountable, value-based care for underserved beneficiaries; and increasing the level alignment across payers on value-based care initiatives.

Defining TCOC. PTAC is using the following working definition of how TCOC should be defined in the context of population-based TCOC models.

Total Cost of Care is a composite measure of the cost of all covered medical services delivered to an individual or group. In the context of Medicare alternative payment models, TCOC typically includes Medicare Part A and Part B expenditures [representing Medicare Part A and Part B expenditures only], and is calculated on a per-beneficiary basis for a specified time period.

This definition will likely evolve as the Committee collects additional information from stakeholders. For example, there may be an interest in including additional services in future population-based TCOC models to support patient-centered care, addressing social determinants of health, and incentivizing

additional efficiencies. The following are examples of additional services that could be included in these models: self-administered drugs / biologics, behavioral health, Long Term Services and Supports (LTSS), Home & Community Based Services (HCBS), and screening and referrals to address social needs.

Defining Population-Based TCOC Models. Frameworks such as the one developed by the Health Care Payment Learning & Action Network (HCP-LAN, see Exhibit 1 below) provide one approach for distinguishing between population-based TCOC models and other forms of health care payment. The HCP-LAN Framework is aligned with the goal of moving payments away from fee-for-service FFS (Category 1) and into population-based payment (Category 4).

Under the HCP-LAN framework, Category 4 includes models that receive population-based payments that reflect the TCOC for comprehensive care for an entire population over a long period of time (e.g., a full year) for a broad population (e.g., all Medicare beneficiaries in a state) or a population with specific conditions. For Category 4 models, accountable entities outside of Medicare bear financial risk for care delivered through global budgets or capitated payments where accountable entities have the potential for monetary losses or gains.

Category 3 of the HCP-LAN framework includes episode-based models with payment approaches that incorporate financial risk and are associated with specific interventions. Under these models, TCOC may be defined within a relatively short period of time (e.g., 30 days, 60 days, etc.) when a patient is receiving specific clinical services (e.g., following a hospital stay or the period when a patient is undergoing a surgical intervention).

PTAC is using the following working definition of population-based TCOC model.

A population-based TCOC model refers to a population-based APM in which participating entities assume accountability for quality and TCOC and receive payments for all covered health care costs for a broadly defined population with varying health care needs during the course of a year (365 days).

Within this context, a population-based TCOC model would not be an episode-based, condition-specific, or disease-specific specialty model. However, these types of models could potentially be “nested” within a population-based TCOC model.

This definition will likely evolve as the Committee collects additional information from stakeholders.

Identifying the Potential Structure and Characteristics of Future Population-Based TCOC Models.

There is not a widely accepted definition of the characteristics of future population-based TCOC models with accountability for quality and TCOC that can support progress toward broader health system transformation. However, there are some characteristics where there appears to be general consensus for inclusion in future population-based TCOC models, including:

- Facilitating accountable relationships for quality and TCOC;
- Encouraging care coordination and integration of specialty care with primary care, particularly for beneficiaries with complex needs;
- Improving patient experience and outcomes;
- Facilitate identification of and sharing of best practices;

- Using performance metrics, including patient-centered metrics, to incentivize quality improvements;
- Improving equity; and
- Aligning provider and beneficiary incentives.

Examples of areas where additional discussion is needed regarding defining the characteristics of future population-based TCOC models include:

- Definition of TCOC and which services are included with regard to accountability for TCOC (including which definition is best for the patient);
- Identification of types of accountable entities and types of clinicians and groups that are appropriate for participation in these models;
- Duration of accountability period (e.g., 30 vs. 60 vs. 90 vs. 365 days);
- Minimum threshold of the number of patients that could be included
- Options for desired care delivery model;
- Variations in structure of payment models;
- How to do patient attribution, benchmarking and risk adjustment;
- How to incentivize participation and facilitate transition (e.g., not all providers are prepared to have 365-day accountability for TCOC with two-sided risk);
- Encouragement of multi-payer alignment on model design components; and
- How to address overlap between models (nesting, carve-outs, etc.)

Relationship with PFPs. PFPs, including those proposed to PTAC, can inform the development of larger population-based models in several important ways. For example, PFPs can identify best practices in care delivery and care coordination; highlight areas where payment incentives may be misaligned; help to identify potential opportunities for nesting more targeted payment models within a larger population-based TCOC framework; and assist in determining how to enhance provider readiness and incentivize provider participation in payment models with two-sided risk through the development of innovative physician payment models.

Relevant Features in Selected CMMI Models and Other CMS Programs

The evolution of various CMMI Models and other CMS programs includes a range of approaches that can provide relevant information for developing future population-based TCOC models. For this environmental scan, several models and programs falling under Category 3 and 4 of the HCP-LAN framework have been identified as having elements that are relevant for the development of population-based TCOC models. These models have been organized into the following categories: population-based models, episode-based or condition-specific models, and advanced primary care models.

The selected models and programs vary across multiple dimensions, including how beneficiaries are enrolled or aligned, covered services covered, the use of benchmarks and risk adjustment to pay accountable entities, the amount of financial risk, provider network, and the approaches used to incentivize care coordination and quality improvement. Some of these differences, such as level of financial risk or approach to quality, may have larger implications for provider participation and patient outcomes. Other differences relating to payment methodology may have larger implications for

incentivizing improvements in care management and care coordination that can result in improvements in outcomes and reductions in cost.

Use of population-based approaches in Medicaid Section 1115 waiver programs. Several state Medicaid programs have used Section 1115 waivers to implement alternate payment approaches that are designed to reduce TCOC. For example, in Minnesota, over 80 percent of the state’s Medicaid enrollees are in managed care, and the state recently introduced the Integrated Health Partnerships (IHP) program to support care coordination and introduce risk into provider payment. The program stems from a State Innovation Model (SIM) award from CMS. Additionally, given the integrated nature of Medicaid ACOs or other managed care arrangements common to APMs, several models support efforts to address health-related social needs either by providing on-site social and behavioral health services or by connecting patients to community-based partners.**Multi-payer participation in relevant payment models.** Some experts believe that payer participation in multi-payer models can increase engagement in value-based payment models, simplify administrative and financial planning for provider organizations, and result in broader systemwide impacts. Incorporating multi-payer participation in APMs affects model design and implementation. However, multi-payer population-based TCOC models may be more difficult to implement due to differing rules governing commercial plans versus Medicare and Medicaid. Examples of multi-payer TCOC models include: the Maryland All-Payer Model, the Pennsylvania Rural Health Model (PARHM), and the Vermont All-Payer Model.

Participants in the Maryland All-Payer Model and Pennsylvania Rural Health Model (PARHM)—both of which govern hospital payments and incorporate global budgets for hospital operations—have noted the need for transparency when developing a new model policy, determining all-payer rates, and distributing accountability. If multiple payers participate in models with global budgets, program administrators need a resource such as an all-payer claims database to provide a common source of patient-level cost data for the relevant population. Research shows that providers participating in multi-payer models can benefit from funding to invest in customized data analytic platforms. In addition to investments in comprehensive data sources and analytic platforms, multi-payer models should involve an independent governing body with payer and provider representation.

Relevant Features in Selected PTAC Proposals

Between 2016 and 2020, PTAC received 35 distinct proposals, including 34 proposals that received any review by the Committee. The Committee deliberated and voted on 28 of these proposals in public meetings.

The Secretary of HHS established “Quality and Cost” as one of the ten criteria for proposed PFPs that PTAC uses to evaluate submitted proposals. The goal of this criterion is to ensure that each proposed model will “improve health care quality at no additional cost, maintain health care quality while decreasing cost, or both improve health care quality and decrease cost” (Criterion 2). Within this context, PTAC has assessed previous submitters’ use of TCOC measures in various PFP proposals that targeted specific patient populations and episodes of care.

Nearly all of the 35 proposals that have been submitted to PTAC between 2016 and 2020 address the proposed model’s potential impact on costs, to some degree. Additionally, at least ten previous submitters have discussed the use of TCOC measures in their payment methodology and performance

reporting as part of their proposal submissions (also referred to as PTAC proposals with TCOC components).ⁱⁱⁱ

The PTAC proposals with TCOC components models were primarily condition- or episode-specific. One of these proposals had an advanced primary care focus, three of these proposals had a population specific focus, and six of these proposals had an episode-based focus. None of these PTAC proposed models were intended to serve a broad population, such as those that would be covered under ACOs.

The ten PTAC proposals with TCOC components varied by clinical focus and setting of care. However, all ten of these proposals sought to reduce health care costs. Common cost reduction objectives in these proposals included: decreasing hospitalizations and ED visits, limiting costs associated with a particular episode of care (defined by diagnosis, prognosis, or procedures), and avoiding unnecessary services and medications.

PTAC members noted several issues for consideration related to use of TCOC incentives in the proposals they reviewed. Notably, PTAC members indicated that any given provider's accountability related to TCOC should reflect their specific role in driving health care costs. PTAC members noted that if not properly designed and implemented, the use of TCOC incentives, could potentially lead to a reduction in services that would improve patient-centeredness of care.

Relevant Performance and Outcome Measures Used in Reporting and Evaluation

While there are some promising findings with respect to process measures, overall, cost and quality outcomes for beneficiaries served by current population-based TCOC models are similar to those served under FFS – particularly after accounting for the cost of model implementation. However, some population-based TCOC models have been shown to increase access to specific services. For example, the Maryland TCOC model has resulted in improved access to care outside of business hours, increased follow-up after hospital discharge, and increased access to behavioral health services.

Relevant Performance and Outcome Measures used in Reporting and Evaluation

The relevant literature highlights the importance of evaluating all aspects of health care costs to completely understand the impacts of interventions related to TCOC. The literature also emphasizes the importance of including related measures for utilization, quality of care, out-of-pocket costs, and patient experience. Additionally, one study indicated that that when conducting evaluations, performance metrics should incorporate more sophisticated risk adjustment, segment populations by health status and illness burden, be actionable and transparent, and come from a readily available source.

Measuring TCOC. HealthPartners' Total Cost of Care and Resource Use (TCOC) measurement approach is one of the only published, established population-based measures of TCOC that has been reviewed and endorsed by the National Quality Forum (NQF). HealthPartners' framework incorporates two different measures, a Total Cost Index (TCI) and a Resource Use Index (RUI), to support multiple levels of analysis. Using both tools together, users can compare cost, resource, and utilization metrics by condition cohort, procedure, and patient.

Differences in measures being used. One study indicated that there was some differentiation in measures among models – with older VBP programs historically utilizing quality performance measures,

ⁱⁱⁱ These proposals were identified using TCOC-based keyword searches of key documents related to the Committee's proposal review process.

while newer programs like ACOs and bundled payments incorporated both cost and quality measures in their physician incentive and payment determination methodologies. Documented measures varied, but typically included clinical process and intermediate outcomes measures, patient safety measures, utilization measures, and patient experience measures.

Experts have expressed concern with existing performance measures for VBPs, noting that many of the measures used only address a small fraction of care delivered by providers and encouraged providers to focus improvement efforts on things that are measured, rather than overall improvement. Many of these experts have recommended shifting the focus of measurement to performance areas that are lagging or creating a broader and more comprehensive set of measures, to best encourage broad improvements and understand the overall impact of program

Impact of different aggregation methods. One study noted that different methods for weighting and grouping ACO quality measures could have significant impacts on overall model scores, potentially impacting shared savings payments

Performance measures used in multi-payer models. Several current CMMI models are multi-payer models and incorporate partnerships with other payers and states to help advance health. Among these models, performance measures can differ between Medicare implementation and private payer implementation.

With the goal of producing a replicable strategy for reducing TCOC in multiple regions, the Network for Regional Healthcare Improvement (NHRI) published their own “Technical Resource for Measurement of Total Cost of Care Using Multi-Payer Datasets,” documenting their Total Cost of Care Pilot project. The pilot used the HealthPartners TCOC tool to measure the outcomes of the project.

Findings from Research Related to Population-Based TCOC Models

There have been some promising results regarding the impact of population-based TCOC models on various metrics.

Increasing Financial Accountability. Early performance results from CMS’ Medicare Shared Savings Program Pathways to Success final rule suggest that ACOs with greater financial accountability (e.g., more accurate financial benchmarks, downside risk) are more likely to deliver better coordinated and efficient care for Medicare patients. These ACOs joined one of the MSSP’s new participation options on July 1, 2019 under the program’s Pathways to Success policies, which were intended to improve the accuracy of financial benchmarks and provide incentives to take on downside risk.

Reducing Avoidable Health Care Utilization. Evaluations of population-based TCOC approaches have yielded promising findings on the impact on avoidable health care utilization. TCOC approaches are more likely to target beneficiaries with the potential for reducing expenditures and utilization. For example, Medicare FFS beneficiaries who met Accountable Health Communities (AHC) model eligibility criteria had higher total expenditures, inpatient admissions, ED visits, and unplanned readmissions than beneficiaries that did not meet the criteria. Early findings from the AHC model indicate some decreases in ED use, with beneficiaries in the intervention group having nine percent fewer ED visits than their control group counterparts.

Improving quality of care. There have been mixed results on the impact of population-based payment models on quality of care. A 2019 evaluation of the commercial plan Blue Cross Blue Shield of Hawaii’s

population-based payments for primary care found that the population-based payments and TCOC incentives were associated with small improvements in quality of care in the first year of implementation (i.e., 2.3 percentage point increase in the risk-standardized probability of meeting quality measures). Additionally, during the first three years, CMMI's Comprehensive Primary Care Plus (CPC+) model slightly increased the percentage of beneficiaries with diabetes who received the recommended services and the percentage of female beneficiaries who received breast cancer screening. However, CPC+ practices did not score significantly better than non-CPC+ practices on measures of care continuity, fragmentation, and comprehensiveness.

Improving coordination of care. Effective care coordination, especially for high-cost patients, provides an opportunity to improve care while reducing costs. However, few large rigorous studies have evaluated the cost-effectiveness of care coordination, and those that do present mixed results. For example, a randomized trial on the effect of home-based nurse care coordination on Medicare patients found significant net cost savings. However, evaluations of selected CMMI models found minimal Medicare net savings after accounting for shared savings and additional payments.

Improving patient health and experience of care. There is limited evidence of the impact of population-based TCOC approaches and their effect on patient health and experience with care. Evaluations of selected CMMI models have shown no improvement in health outcomes and beneficiaries served by CPC+ and Oncology Care Model (OCM) practices did not rate the quality of their care experience differently from comparison groups. However, during their third performance year, CPC+ practices did report timelier follow-up after hospital stays for Track 2 relative to comparison beneficiaries. Additionally, one 2017 study using Medicare Consumer Assessment of Healthcare Providers and Systems (MCAHPS) measures and claims data to assess patient experience found that MA plans outperformed FFS plans on most patient experience measures.

Improving equity. Recent studies show that incidences of patient depression, dementia, limitations in activities of daily living, functional status, and residing in areas of mental health care shortage or high unemployment are associated with substantially higher TCOC, after risk adjustment. There are also significant racial and ethnic disparities in behavioral and mental health care outcomes and the incidence of mental health conditions like depression.

However, there are limited specific illustrations of how population-based TCOC models affect health equity beyond increasing access to services that are traditionally underutilized by underserved populations. Additionally, providers with specific designations such as federally-qualified health centers (FQHCs) and rural health centers (RHCs) already operate under cost-based payment rules that are different than other providers. Some experts, including those convened by the Institute of Medicine (IOM), also note difficulty in defining safety net providers, as current designations may not sufficiently identify providers that disproportionately treat underserved populations. To address this issue, some population-based TCOC models have used different definitions of the provider safety net.

Reducing cost of care and return on investment. Effective population-based TCOC approaches present an opportunity to improve care while reducing costs, especially for high-cost patients, presents an opportunity to improve care while reducing costs. In 2019, ACOs in MSSP that adopted downside risk or responsibility for additional costs under their model outperformed the ACOs that did not, with net per beneficiary savings of \$152 per beneficiary as opposed to \$10 per beneficiary.

Physician-led ACOs in MSSP were also more likely to generate savings, with rates of 70 to 85 percent compared to 66 to 78 percent for hospital-led ACOs and 63 percent to 85 percent for integrated ACOs. ACOs that participated in two-sided risk models and that took on greater risk levels were also more likely to generate savings.

While there have been promising reductions in costs for some types of care (such as the impact of the use of primary medical home principles on payments for inpatient care and emergency department visits), many CMMI models have generated minimal net Medicare savings, after accounting for shared savings and additional payments. Additionally, there is little evidence in Medicaid that models like Pay for Performance (P4P) models actually reduce costs of care.

Barriers and Challenges Related to Implementing Population-Based TCOC Models

There are many design and implementation challenges related to implementing population-based TCOC models effectively.

Provider-level challenges. A recent study found that greater provider participation in APMs was associated with being in the Northeast, being affiliated with a broader medical group or health care system and achieving greater clinical and structural integration. In addition to the organizational and structural factors, there are other factors that influence provider participation, including requirements related to mandatory versus voluntary participation in models.

Previous studies have shown that ACOs tend to be developed in areas with higher income levels. This phenomenon has also been consistent across other CMS payment models like CPC+. Although one-third of primary care physicians (PCPs) work in ACOs, participation is lower in places with vulnerable populations. Additional incentives may be necessary to encourage health systems and practices operating in rural areas and areas with higher poverty rates to participate in APMs.

There are challenges related to identifying and defining safety net providers is challenging in the current health care system. However, some of the existing population-based TCOC models have incorporated newer metrics for identifying providers serving underserved areas. For example, the Maryland TCOC model uses the Patient Adversity Index. This index has been developed by the Maryland Health Service Cost Review Commission. It is a combination of three factors: 1) Medicaid status; 2) race; and 3) Area Deprivation Index (a multidimensional index of a region's socioeconomic conditions developed by the Centers for Disease Control [CDC]).

Providers also experience challenges associated with varying financial incentives. Despite growth in population-based TCOC models and increased focus on value-based models, physician payment often continues to be driven by volume-based incentives. Given the co-existence of population-based TCOC models with traditional FFS arrangements, it is difficult for physicians to strike a balance between the incentives associated with these two payment methodologies.

Additionally, participation in primary care models and population-based TCOC models involves greater financial risk for physicians. Asking health systems and providers to start with two-sided risk models might reduce incentives for smaller health systems, health systems that treat a population with complex and unpredictable health care costs, or individual physician practices that seek to limit their risk exposure. There are several strategies for facilitating the transition from upside to two-sided risk arrangements and limiting the exposure to financial risk for physicians in primary care models.

Patient-level barriers. The role of health insurance and lack of price transparency within the U.S. health care system are two factors that contribute to patients not knowing the actual cost of their health care. Another key patient-level barrier lies in the nature of the patient physician relationship.

Additionally, high-cost or high-need patients could benefit from participation in a value-based model that seeks to reduce TCOC through innovations such as care coordination. One study suggested that ACOs or other population-based models are better vehicles for adjusting resources and delivering more equitable care. These models have levers to increase payments for underserved groups, thus incentivizing providers to care for underserved groups.

System-level barriers. One challenge related to reducing the TCOC relates to how TCOC is calculated. Currently, there are a variety of approaches for calculating TCOC in the context of Medicare APMs, as well as in other contexts. For example, in some cases, pharmaceutical costs are excluded from calculations, and in other cases, the patient out-of-pocket costs are excluded. Without a uniform approach to determining TCOC, it is challenging to measure the effectiveness of population-based TCOC models. Another barrier to reducing TCOC relates to a lack of transparency related to data on the cost of health care.

Opportunities for Improving and Optimizing Efforts to Develop and Implement Population-Based TCOC Models

Promising care delivery arrangements. Several innovative care delivery systems and models have shown some impact on reducing TCOC. Specifically, innovations that use health information technology (HIT), community health workers (CHWs), behavioral health, and patient-centered medical homes. For example, Health Care Innovation Awardees that incorporated HIT, CHWs, or both achieved over \$150 per beneficiary per quarter reductions in TCOC, and TCOC reductions for award organizations with primary care medical homes (PCMHs), behavioral health programs, or both were closer to \$100 per beneficiary per quarter.

Promising payment arrangements. Despite the lack of consistent research findings, the literature suggests that APMs show promise in improving specific performance metrics when they create incentives for TCOC reductions. Different forms of value-based payment, including shared savings and risk, reference pricing, capitation, and bundled payments, combined with incentives for quality and efficiency, can be appropriately adjusted to different market conditions and organizational settings.

Considerations related to nesting of episode-based models within population-based models. There are options for facilitating coordination between population-based TCOC models and episode-based models. For example, in a scenario where the APMs overlap within markets but not provider organizations, Medicare could link the BPCI Advanced provider's actual episode cost, instead of the target price amount, with the ACO. There may be a rationale for holding MSSP providers accountable for care that its beneficiaries incur through other unrelated providers (an incentive aligned with ACOs' focus on global, longitudinal care management). In addition, measures could be adopted to avoid double counting savings.

Mandatory versus voluntary participation. Provider participation in most APMs, including population-based TCOC models, is voluntary. Although statute allows HHS to implement mandatory APMs under Medicare, mandatory models may pose challenges to provider engagement. A recent study suggested that voluntary participation is likely to garner support from the "best of the lot," or organizations that are better prepared to perform under value-based payments. The authors also suggested that voluntary versus mandatory models may be more appropriate under different clinical scenarios.

Potential opportunities for multi-payer alignment. Potential options for improving multi-payer alignment in population-based TCOC models and assisting payers with shifting financial risk for patient care to non-payer accountable entities include: **multi-layered accountability structure** or established governance with multiple payer participation and representation; **leveraging state-specific models** to build upon existing value-based models and state-level delivery system reform initiatives, and tailor the model design to the state's health care network; or **providing technical assistance** to ensure that commercial, MA, and Medicaid provider payment reforms meet the standard for Medicaid APMs and therefore qualify for bonus payment incentives

Section III. Research Approach

Section III provides a brief review of the research questions and methods that were used in developing this environmental scan.

III.A. Research Questions

Working closely with staff from the Office of the Assistant Secretary for Planning and Evaluation (ASPE), with input from a subset of Committee members known as a Preliminary Comments Development Team (PCDT),^{iv} the following high-level list of research questions was developed to inform this environmental scan:

- What is TCOC? How is it defined in the context of population-based TCOC models? What does it include?
- What are the characteristics of population-based TCOC models? How do these models fit within the context of existing APM frameworks, and how do they compare with existing models and programs?
- What are trends related to implementing models that might be considered relevant for developing population-based TCOC models (care delivery innovations, etc.)?
- How did previously submitted PTAC proposals incorporate TCOC measures and other components relevant for the development of population-based TCOC models?
- What performance and outcomes measures are used in evaluation of models that might be considered relevant for the development of population-based TCOC models?
- What is current evidence on effectiveness of models that might be considered relevant for the development of population-based TCOC models?
- What is current evidence on promising approaches for reducing cost and improving quality as it relates to physician participation in future population-based TCOC models?
- What challenges and opportunities exist related to developing population-based TCOC models?

III.B. Research Methods

The environmental scan presents background information from a targeted literature review, reviews of PTAC documents, and review of resources related to CMMI models. The aim of the targeted internet search was to identify and to synthesize information from existing peer-reviewed publications and gray literature from organizations focused on health care delivery transformation. The following terms were used to conduct this targeted internet search: “total cost of care;” “cost of care;” “population-based cost of care;” and “net savings.” These terms were used with more specific search terms for each section. The inclusion criteria focused the search on publications from health care agencies and research organizations between 2012 and the present, in the English language, and based in the United States.

The analysis of PTAC proposals included a thorough review of past proposals, PTAC reports to the Secretary, and content available in other PTAC process documents (e.g., public meeting minutes, Preliminary Review Team [PRT] reports). The analysis of CMMI APMs was based on a review of publicly available resources, including the description and technical documents related to each selected model

^{iv} A Preliminary Comments Development Team (PCDT) comprised of three PTAC members: Lawrence R. Kosinski, MD, MBA; Joshua M. Liao, MD, MSc; and Soujanya R. Pulluru, MD also provided feedback relating to the research approach used in this environmental scan.

on the CMMI website and the most recent CMMI evaluation report for the model, when available. Where CMMI evaluation reports were not available on the CMMI website, an online internet search was conducted to locate other relevant evaluations including those that may have been initiated by the participants themselves. For CMMI models that involved a state Medicaid agency, the agency's website was reviewed to identify any additional information on the model.

Section IV. Background: Defining Population-Based TCOC Models and Related Terms

The Center for Medicare and Medicaid Innovation (CMMI) has set the goal of having every Medicare fee-for-service (FFS) beneficiary with Parts A and B in a care relationship with accountability for quality and TCOC by 2030.⁶ Additional priorities identified by CMMI include increasing provider capacity to participate in these models; increasing coordination between providers that are responsible for accountable care relationships and specialty providers that are accountable for delivering high-cost episodic and/or complex care; improving patient experience through more person-centered, integrated care; improving quality and outcomes; better aligning provider and beneficiary incentives to increase use of high-value services; improving affordability; increasing access to accountable, value-based care for underserved beneficiaries; and increasing the level alignment across payers on value-based care initiatives.

However, while many experts reference the development of population-based TCOC models that can transform health care delivery and payment, there is not a widely accepted definition of TCOC and the characteristics of population-based TCOC models. There is also a lack of consensus regarding a single approach to achieving these aims.⁷

IV.A. Definitions of TCOC

There is no comprehensive definition of TCOC that encompasses all APMs within Medicare or across payers. In the literature, TCOC typically refers to all direct and indirect costs associated with health care services given over a specified period. The costs included in estimates of TCOC may vary. Some definitions of TCOC exclude administrative costs (e.g., the cost of health care operations) but may include some costs associated with provider contracting.⁸ In addition, TCOC definitions vary according to which health services are included in the aggregate or total cost. Health care services for an individual patient can include coordination among primary care providers, specialty care providers, and ancillary care providers, as well as other services outside of direct care delivery. The California Health Care Foundation (CHCF) and the Health Care Transformation Task Force use comprehensive definitions of TCOC:

"Total cost of care refers to the cost of all medical services consumed by a population of patients in a year, and includes all covered professional, hospital, pharmacy, and ancillary care."⁹

"Total cost of care is defined to encompass all services, including medical, facility, behavioral, pharmaceutical, and laboratory. Even though additional providers might be involved, such as through a carve-out behavioral health vendor, the associated costs would be included for the purposes of calculating total cost of care."¹⁰

By comparison, the definition of TCOC adopted by CMMI for the Maryland TCOC Demonstration is specific to those services which are covered under Medicare Parts A and B:

“Total cost of care means the aggregate Medicare FFS costs for all items and services, or a specific subset thereof, [delivered] to Medicare FFS beneficiaries.”¹¹

The aggregate Medicare FFS costs include Medicare Part A and Part B expenditures only. When determining the annual Medicare savings any Outcomes-Based Credits are also included in the per beneficiary TCOC calculation.

Additionally, in the Global and Professional Direct Contracting (GPDC) Model,

“The Performance Year Benchmark [a target Per Beneficiary Per Month (PBPM) dollar amount] represents the average Medicare beneficiary [TCOC] for aligned beneficiaries and refers to the target expenditure amount [calculated using the Parts A and B expenditures for aligned beneficiaries during a baseline period] that will be compared to Medicare expenditures for items and services furnished to aligned beneficiaries (Direct Contracting beneficiaries) during a performance year [to determine the DCE’s savings or losses].”¹²

Under some accountable care arrangements, entities can choose which health care services are included in the TCOC measures. For example, the OneCare Vermont Accountable Care Organization, LLC’s definition of TCOC gives payers the opportunity to negotiate with the Accountable Care Organization’s (ACO) regarding which services are included in the per beneficiary TCOC calculation:

“Total Cost of Care means, generally, the Payer’s financial cost of providing qualifying health care services to Accountable Care Organization’s Attributed Lives for a Performance Year. Each Program Agreement between ACO and a Payer will more particularly describe components of TCOC for that Program, for example, pharmacy may be excluded from some Programs’ calculations of Total Cost of Care.”¹³

PTAC is using the following working definition of how TCOC should be defined in the context of population-based TCOC models.

Total Cost of Care is a composite measure of the cost of all covered medical services delivered to an individual or group. In the context of Medicare alternative payment models, TCOC typically includes Medicare Part A and Part B expenditures [representing Medicare Part A and Part B expenditures only], and is calculated on a per-beneficiary basis for a specified time period.

This definition will likely evolve as the Committee collects additional information from stakeholders. For example, there may be an interest in including additional services in future population-based TCOC models to support patient-centered care, addressing social determinants of health, and incentivizing additional efficiencies. The following are examples of additional services that could be included in these models: self-administered drugs / biologics, behavioral health, Long Term Services and Supports (LTSS), Home & Community Based Services (HCBS), and screening and referrals to address social needs.

Appendix C includes additional information about several different TCOC definitions that were identified for this environmental scan.

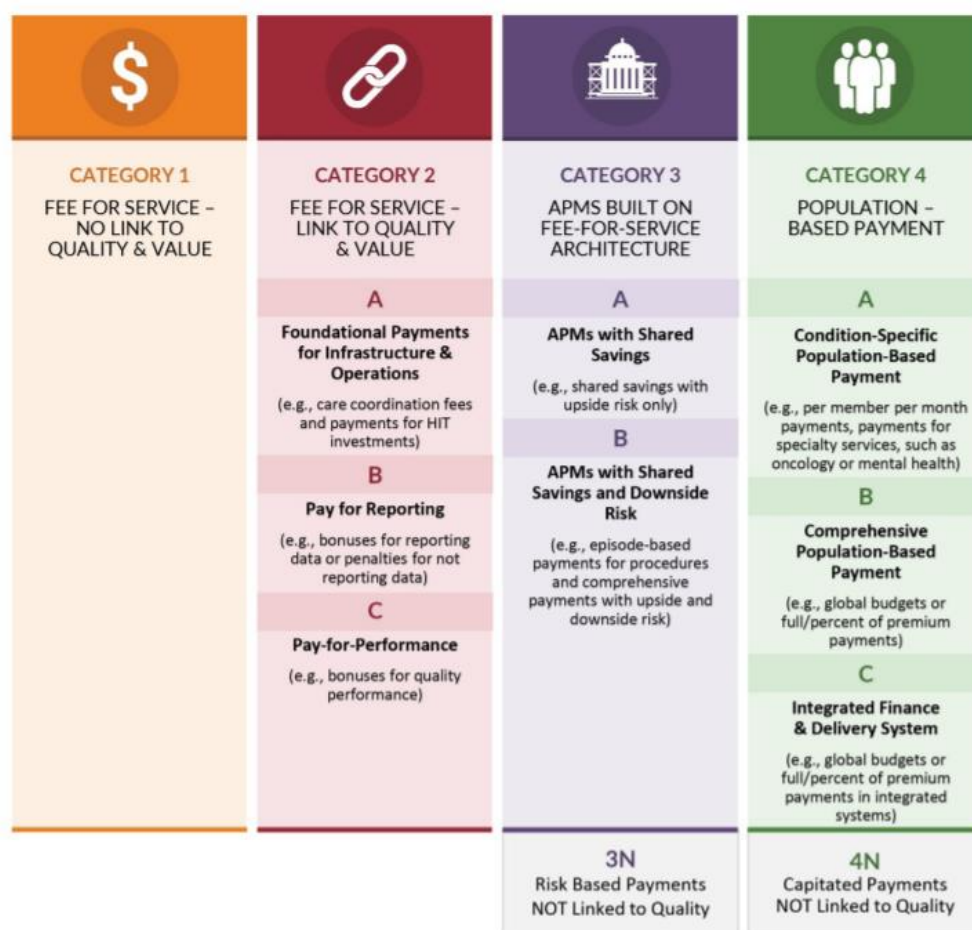
IV.B. Definition of Population-Based TCOC Models

Frameworks such as the one developed by the Health Care Payment Learning & Action Network (HCP-LAN) provide one approach for distinguishing between population-based TCOC models and other forms of health care payment. The HCP-LAN APM Framework, presented in Exhibit 1 below, shows a

progression of payment approaches away from traditional FFS (Category 1) and toward population-based models (Category 4).

Under the HCP-LAN framework, Category 4 includes models that receive population-based payments that reflect the TCOC for comprehensive care for an entire population over a long period of time (e.g., a full year) for a broad population (e.g., all Medicare beneficiaries in a state) or a population with specific conditions. For Category 4 models, accountable entities outside of Medicare bear financial risk for care delivered through global budgets or capitated payments where accountable entities have the potential for monetary losses or gains.

Exhibit 1. The HCP-LAN APM Framework



Source: HCP-LAN Framework: <https://hcp-lan.org/workproducts/apm-refresh-whitepaper-final.pdf>

There has been an increasing focus on adopting population-based payment methodologies (Category 4). Unlike episode-based or condition-specific models, population-based TCOC models do not require a diagnosis for model eligibility. CMMI described the importance of designing and testing population-based payment options to increase the number of providers and health care organizations that participate in population-based TCOC models.¹⁴ MedPAC also supports the use of population-based payment approaches. In its June 2021 report to Congress, the Commission suggested that CMMI focus on a single population-based model with different tracks by provider type or beneficiary population as a

method for streamlining the number of APMs being tested. Under this scenario, other types of models (e.g., episode-based or advanced primary care) could be extensions of this main population-based model.¹⁵

Population-based payment models often use prospective payments for aligned patients and are not triggered by specific episodes of care or services. Population-based models often cover health care services for a population with varying health care needs over a long periods (e.g., a year), regardless of new diagnoses or treatment needs that arise during that time.¹⁶ Several major forms of population-based payment methodologies exist, such as full capitation, global budgets, partial capitation, and retrospective reconciliation with shared savings or losses.

- Full capitation involves a single payment intended to cover all services an individual needs for their health problems; providers bear downside financial risk for service costs that exceed the capitated rate. These are typically paid on a per patient served basis.
- Global budgets are prospective, institution-level payments (often to hospitals) that reflect costs they are anticipated to incur over a specified period. Full capitation and global budget models may not be appropriate for all health care entities.¹⁷
- Partial capitation methods involve capitated payments for specific services (e.g., primary care) or a specific portion of TCOC. Under retrospective reconciliation with shared savings or losses, accountable entities bill through traditional FFS but are eligible for shared savings at the end of the year if their spending is lower than a benchmark or, in the case of two-sided risk models, are also responsible for paying shared losses if their spending exceeds benchmarks.

Category 3 of the HCP-LAN framework includes episode-based models with payment approaches that incorporate financial risk and are associated with specific interventions. Under these models, TCOC may be defined within a relatively short period of time (e.g., 30 days, 60 days, etc.) when a patient is receiving specific clinical services (e.g., following a hospital stay or the period when a patient is undergoing a surgical intervention).

Episode-based payment initiatives, which are included in Category 3B often specifically target reductions in TCOC, albeit in a narrower timeframe than population-based models. Episode-based payments often identify a pre-determined value for costs associated with delivering care during a clinically defined episode (e.g., a period after hospital discharge for specific conditions) and use this benchmark to set incentives around payments to providers. They may measure and hold entities accountable for costs associated with treating specific conditions or providing specific services or hold entities accountable for TCOC during an episode.¹⁸ Accountable entities in episode-based payment models can assume upside or downside risk depending on actual costs under the model relative to a benchmark.

ACO programs are a common population-based TCOC model where physicians or health systems assume responsibility for TCOC associated with a patient population. Relative to the HCP-LAN framework ACOs may fit into Category 3A or Category 3B.¹⁹ Additional population-based or advanced primary care TCOC models that fall under Category 4 represent the furthest departure from traditional FFS. Category 4A includes TCOC payment models that are specific to chronic conditions (e.g., diabetes or cancer) and may focus on payments to specific types of providers (e.g., oncologists). Models that use full capitation with per-beneficiary per-month (PBPM) payments or that pay hospitals using global budgets may fall under 4B or 4C depending on whether the financial management rests with an entity distinct from provider organizations (4B) or an integrated care delivery and finance entity (4C). Medicare Advantage (MA) is an example of a program and payment approach that falls under category 4B of the HCP-LAN framework.

PTAC is using the following working definition of population-based TCOC model.

A population-based TCOC model refers to a population-based APM in which participating entities assume accountability for quality and TCOC and receive payments for all covered health care costs for a broadly defined population with varying health care needs during the course of a year (365 days).

Within this context, a population-based TCOC model would not be an episode-based, condition-specific, or disease-specific specialty model. However, these types of models could potentially be “nested” within a population-based TCOC model.

This definition will likely evolve as the Committee collects additional information from stakeholders.

IV.C. Identifying the Potential Structure and Characteristics of Population-Based Total Cost of Care (TCOC) Models

There is not a widely accepted definition of the characteristics of future population-based TCOC models with accountability for quality and TCOC that can support progress toward broader health system transformation. However, there are some characteristics where there appears to be general consensus for inclusion in future population-based TCOC models, including:

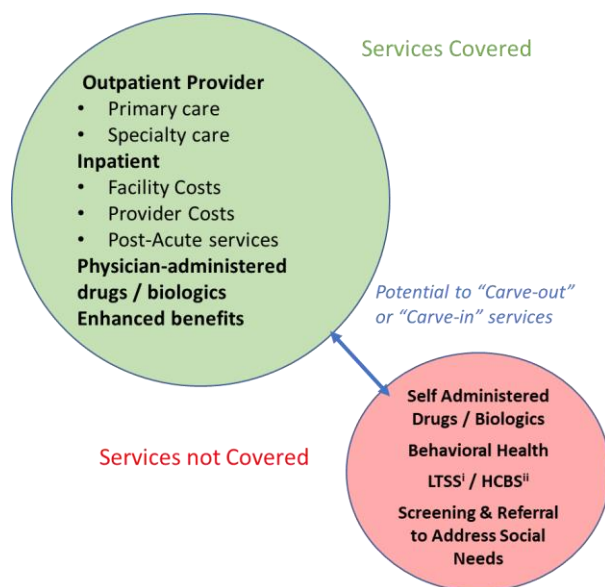
- Facilitating accountable relationships for quality and TCOC;
- Encouraging care coordination and integration of specialty care with primary care, particularly for beneficiaries with complex needs;
- Improving patient experience and outcomes;
- Facilitate identification of and sharing of best practices;
- Using performance metrics, including patient-centered metrics, to incentivize quality improvements;
- Improving equity; and
- Aligning provider and beneficiary incentives.

Examples of areas where additional discussion is needed regarding defining the characteristics of future population-based TCOC models include:

- Definition of TCOC and which services are included with regard to accountability for TCOC (including which definition is best for the patient);
- Identification of types of accountable entities and types of clinicians and groups that are appropriate for participation in these models;
- Duration of accountability period (e.g., 30 vs. 60 vs. 90 vs. 365 days);
- Minimum threshold of the number of patients that could be included;
- Options for desired care delivery model;
- Variations in structure of payment models;
- How to do patient attribution, benchmarking and risk adjustment;
- How to incentivize participation and facilitate transition (e.g., not all providers are prepared to have 365-day accountability for TCOC with two-sided risk);
- Encouragement of multi-payer alignment on model design components; and
- How to address overlap between models (nesting, carve-outs, etc.)

Exhibit 2 presents a general framework for understanding services that are typically covered by current Medicare population-based TCOC models and services that are not covered (i.e., carve-outs). There may be an interest in including additional services in future population-based TCOC models to support patient-centered care, addressing social determinants of health, and incentivizing additional efficiencies.

Exhibit 2. Services In and Out of Existing Medicare Population-based TCOC Models



Note: ⁱLong Term Services & Supports (LTSS). ⁱⁱHome & Community Based Services (HCBS).

IV.D Relationship with PFPs

Large population-based TCOC models can include a variety of health care providers and settings in the care delivery team and accountable entity, including but not limited to physicians. Physicians and other eligible clinicians are an integral component of care delivery across these different settings. PFPs, including those proposed to PTAC, can inform the development of larger population-based models in several important ways. First, PFPs can identify best practices in care delivery and care coordination. PFPs can also highlight areas where payment incentives may be misaligned and identify options related to improving financial incentives and provider participation in models. For example, many physicians participating in ACOs and Medicare Advantage plans continue to receive FFS payments; as a result, the financial incentives for delivering high value care may be somewhat weak at the individual provider level.

PFPs can also help to identify potential opportunities for nesting more targeted payment models within a larger population-based TCOC framework or areas where carving out certain types of services or conditions might be appropriate to achieve the desired mix of incentives and accountability for providers as well as access to and quality of care for beneficiaries. Additionally, PFPs can assist in determining how to enhance provider readiness and incentivize provider participation in payment models with two-sided risk through the development of innovative physician payment models, particularly for independent physician practices and safety-net providers.

To assist in identifying additional options for the potential structure and design of future population-based TCOC models, this environmental scan will examine the characteristics of several current or completed CMMI models and other CMS programs. These models were selected based on their use of TCOC measures (see Section V for additional information).

Section V. Comparison of Relevant Features in Selected CMMI Models and Other CMS Demonstrations and Programs

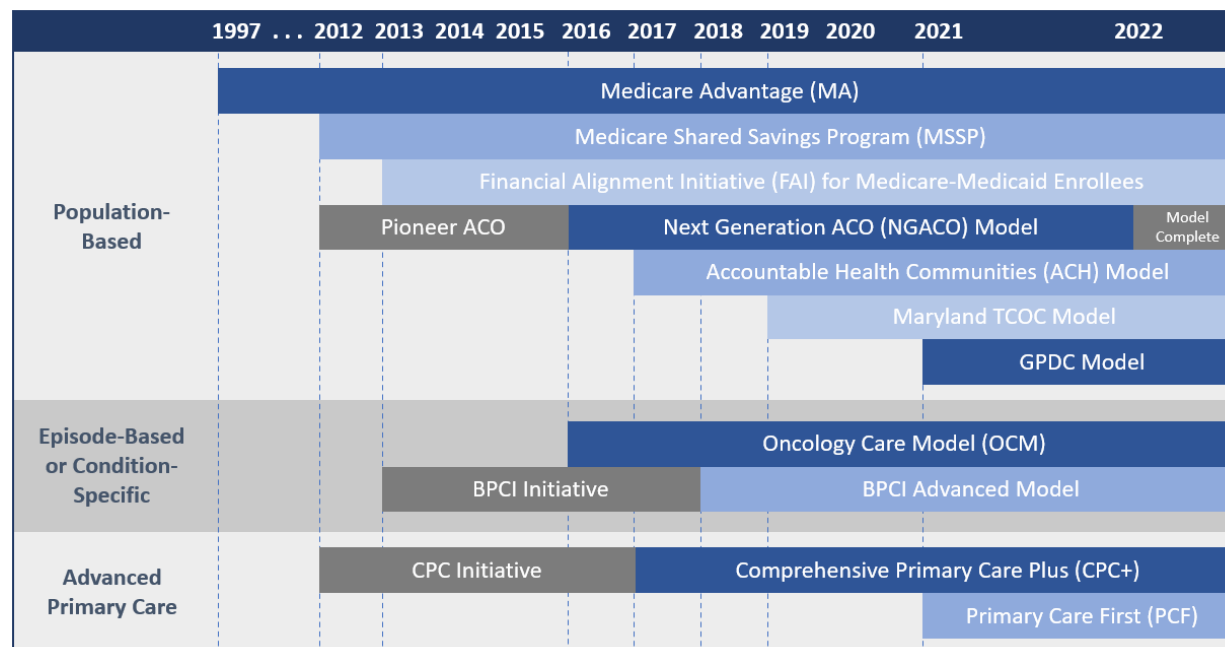
Since the Innovation Center began in 2010, CMMI has designed and launched APMs with mechanisms to measure, manage, and reduce TCOC in Medicare and Medicaid. In a 2020 Report to Congress, CMS noted that an estimated 528,000 providers and nearly 28 million individuals across all payers were affiliated with one or more CMMI models during government fiscal year 2018 through 2020.²⁰

The evolution of various CMMI Models and other CMS programs includes a range of approaches that can provide relevant information for developing future population-based TCOC models. For this environmental scan, several CMS and CMMI models and programs falling under Category 3 and 4 of the HCP-LAN framework have been identified as having elements that are relevant for the development of population-based TCOC models. These models have been organized into the following three categories:

- **Population-based models.** Models that include the entire patient population served by a given accountable entity or a broad subset of the patient population served by an accountable entity (e.g., Medicare-Medicaid enrollees).
- **Episode-based or condition-specific models relevant to population-based TCOC models.** Models that assign accountability for the quality and cost of a clinically defined episode (e.g., a period after hospital discharge for specific conditions) or diagnosis (e.g., cancer).
- **Advanced primary care models relevant to population-based TCOC models.** Models that promote Advanced Primary Care, an approach that enables primary care innovations to achieve higher quality care and allows providers more flexibility to offer a broader set of services and care coordination.

Exhibit 3 illustrates the evolution of these selected models and programs according to their characterization by model type (population-based, episode-based or condition-specific, and advanced primary care). The number of models in each category demonstrates how as APMs continue evolving away from traditional FFS, there has been an increasing focus on population-based models. The remainder of this section and Appendix D include additional details regarding the design features of these models and programs.

Exhibit 3. Timeline of Selected CMMI Models and Other CMS Programs



Note: GPDC = Global and Professional Direct Contracting; BPCI = Bundled Payments for Care Improvement.

V.A. Comparison of Design Features by Model Type

Exhibit 4 summarizes the characteristics of population-based, episode-based, and advanced primary care models. While all three model types encourage care coordination to improve quality and reduce TCOC, they differ in their structure and payment mechanisms. Population-based and episode-based models hold accountable entities (often groups of providers) to some level of risk for cost and quality outcomes. In episode-based models, this accountability is limited to specific timeframes, specific treatments (e.g., chemotherapy in the Oncology Care Model [OCM]) or procedure (e.g., joint replacement in the Comprehensive Care for Joint Replacement [CJR] model).

In population-based models, accountability generally extends to all Medicare Parts A and B spending over a full year. Advanced primary care models build on the concept of patient-centered medical homes (PCMHs) and include PBPM payments to primary care providers to enhance access to care and coordinate with other providers.

Care transformation strategies across these three model types is closely aligned with the overall payment mechanism and incentives to reduce TCOC. For instance, population-based models are incentivized to lower TCOC as the accountable entities are likely to receive performance-based bonus payment if their cost of care is below the benchmark. Episode-based models and advanced primary care models have very similar mechanisms for transforming care delivery and payment. Accountable entities under these models also have a benchmark or target cost, and they can receive performance-based payments if the cost of care is below the benchmark or incur a loss if the cost of care is above the benchmark.

Across all three model types, there are varying features and approaches to setting benchmarks that drive payment. These features include how benchmarks account for differences in the acuity of an entity's patient population (e.g., through risk adjustment), and the nature of financial risk associated

with cost and quality benchmarks. Section IX and Section X address these topics and also discuss challenges and opportunities related to participation in population-based TCOC models by safety net providers, the importance of financial incentives, the potential nesting of models (e.g., use of condition or episode-specific payment approaches under the umbrella of a population-based payment model), and opportunities for multi-payer alignment.

Exhibit 4. Characteristics of Population-Based, Episode-Based, and Advanced Primary Care Models

Model Type	Care Transformation Strategies	Payment Mechanism	Measuring TCOC and Incentives	Issues and Considerations
Population-Based Models	Practitioners and facilities share accountability for overall quality and cost outcomes and are incentivized to use data analytics, care coordination, and other strategies to manage population health.	<ul style="list-style-type: none"> • Participants or accountable entities are responsible for cost and quality for a target patient population. • If cost is below the threshold, participants receive bonus payment. 	<ul style="list-style-type: none"> • Bonuses for lower total TCOC. • Voluntary participation leads to lower cost of care. 	<ul style="list-style-type: none"> • Challenges include attribution, risk adjustment, degree of risk sharing, and benchmark setting. • Provider consolidation. • Typically exclude drug coverage.
Episode-Based or Condition-Specific	Practitioners and facilities share accountability for overall quality and cost outcomes related to a specific treatment or procedure and are incentivized to coordinate transitions in care.	<ul style="list-style-type: none"> • Participants are accountable for cost and quality of care that beneficiaries received during a specific episode of care or period of disease. • Prospective payment leads to two-sided risk for participants. 	<ul style="list-style-type: none"> • Two-sided risk with benchmark based on discounted historical spending creates incentive for lower cost. • Separate payment for care coordination activities. 	<ul style="list-style-type: none"> • Could potentially be nested within population-based models, allowing providers to address specific conditions that beneficiaries may develop or procedures they may need.
Advanced Primary Care	Primary care practices coordinate care for beneficiaries through a PCMH. PBPM payments enable practices to offer enhanced services to improve access and quality.	<ul style="list-style-type: none"> • PCMH with combination of population-based payment (prospective) and per-visit payments. • Payment is risk adjusted based on each patient. 	<ul style="list-style-type: none"> • Positive performance-based adjustment is based on a comparison with the benchmark. • Hybrid payment model is intended to increase beneficiary access and improve patient experience. 	<ul style="list-style-type: none"> • Specialists and hospitals operating in a largely FFS system are incentivized to deliver high volume, high-cost care. • Tier-based risk adjustment based on HCC scores.

V.B. Comparison of Key Design Features Across Selected CMS Models and Programs

Most CMMI models, and the entities participating in these models, use TCOC-related incentives to reduce health care costs while improving or maintaining quality of care. Some of these models use capitation covering all health care services or yearly global payments to hospitals. Other models use capitated payments to facilitate provision of specific services (such as care coordination). Many models use FFS payments as their basis but build in specific payment-based incentives to manage TCOC and improve quality.

This section reviews key design features of eight ongoing and recently completed CMMI models and two ongoing Medicare programs (MA and Medicare Shared Savings Program [MSSP]) that are relevant for the development of future population-based TCOC models (see Exhibit 3). Where available, findings are described related to impacts on TCOC and other outcomes.

The selected models feature various alternative payment approaches to reducing TCOC. While there are many objectives associated with these models, the discussion below focuses on how these features are intended to address TCOC specifically. The models are compared across five domains: 1) accountable entity; 2) beneficiary participation and total covered population; 3) coverage of services; 4) payment mechanism and financial risk; and 5) provider participation, care coordination and quality of care. See Appendix D for a table that includes additional information about each model based on key features, such as coverage, population covered, benchmarks, risk adjustment, and quality of care.

Accountable Entities. Accountable entities can vary largely depending on the model. For example, ACOs are typically integrated health care delivery systems, hospital-based health systems, or physician practices. Under MA, health plans (typically insurers or plans specific to integrated delivery systems) are accountable entities. For the ACOs, physician practices, health systems, or integrated health care delivery systems are the accountable entities.

Beneficiary Participation and Total Covered Population. Most of the models included in this section allow a beneficiary to opt in to receive services. For MA plans (encompassing 42 percent of the Medicare population), beneficiaries can enroll during an annual open enrollment period. For the ACO models such as NGACO and GPDC, beneficiaries have the opportunity for voluntary alignment, or they are prospectively aligned with participating providers based on claims.

In MSSP, beneficiaries can identify their primary care provider or are otherwise aligned based on claims. The MD All-Payer and BPCI Models do not feature beneficiary voluntary alignment. In these models, beneficiaries are aligned based on the hospital where they receive care (MD All-Payer) or the providers from whom they receive an included episode of care (BPCI Advanced). In all of the selected models and programs, beneficiaries retain their full Medicare benefits, and they are not restricted in their ability to access care from participating or non-participating providers, though beneficiaries will pay out-of-network costs in MA. Exhibit 5 below shows how beneficiaries are identified for inclusion in the different models and programs.

Exhibit 5. Comparison of Selected Models and Programs on Beneficiary Participation and Covered Population

Model / Program	Beneficiary Participation and Total Covered Population
MA	Beneficiaries may opt to enroll in MA benefits (Medicare Part C) during annual open enrollment periods. Beneficiaries may enroll in MA-only plans or MA-PD plans (which include Medicare Part D prescription drug benefits) that cover self-administered prescription drugs in addition to other medical and supplemental benefits. Nationally, MA plans covered 26.5M beneficiaries (42 percent of Medicare beneficiaries) in 2021.
NGACO	Beneficiaries are aligned with an NGACO either voluntarily or prospectively based on claims. Under prospective alignment, beneficiaries are covered through the ACO if they receive a specified share of their care from a participating provider. Alignment and voluntary beneficiary enrollment methods are set such that beneficiaries are likely to see providers associated with the ACO during the program. However, beneficiaries may choose to see any Medicare provider, even if the provider is not a part of the model.
GPDC	Beneficiaries are aligned with a direct contracting entity (DCE), and participating and preferred providers, either through voluntary alignment or claims-based prospective alignment. Alignment depends to some extent on DCE type.
MD all-payer	Eligible individuals include all Maryland residents (~6.2 million). For the Hospital Payment Program (HPP) component, each Medicare beneficiary is attributed to a hospital.
MSSP	Medicare FFS beneficiaries may choose their primary care provider (PCP) without any cost-sharing implications. The Shared Savings Program will use the eligible beneficiary's selection of a primary clinician over a claims-based assignment methodology. The claims-based assignment methodology refers to the assignment of PCPs based on the plurality of claims. The average number of beneficiaries included in an MSSP ACO is 20,700. The MSSP ACO program included approximately 10.6 million attributed beneficiaries in 2020—around 28 percent of Medicare FFS beneficiaries.
BPCI	Beneficiaries may receive care from providers that do not participate in a BPCI initiative. Beneficiaries retain their full original Medicare benefits. BPCI does not restrict beneficiaries from accessing care from participating or non-participating providers.

As shown in Exhibit 6, most of the selected models and programs cover all Medicare services covered under Part A and Part B. In many cases, MA plans also cover self-administered prescription drugs (e.g., MA-PD plans that include Part D benefits). ACO models cover physician-administered prescription drugs that are covered under Part B (including physician-administered medications) but do not include self-administered medications covered under Part D. However, Medicare beneficiaries receiving services through ACOs can separately enroll in Part D for self-administered medications. In addition, ACO models cover more PAC services than traditional FFS Medicare and have waivers for use of skilled nursing facility (SNF) stay without a prior 3-day hospital stay. The BPCI model also includes a 3-day hospital waiver for SNF services outside of the initial hospital stay.

Exhibit 6. Comparison of Covered Services Across Selected Models and Programs

Model / Program	Core Services	Rx Benefits	Post-Acute Care	Extra Benefits
MA	Medicare Part A and B services	<ul style="list-style-type: none"> Physician-administered prescription drugs under Part B Most MA plans offer a Medicare Advantage-Part D (MA-PD) plan for self-administered prescription drugs 	Offers PAC services without a prior 3-day hospital stay	<ul style="list-style-type: none"> Access to eye exams and/or glasses, hearing exams and/or aids Telehealth services Dental care and fitness support Most MA plans cover transportation Other nonmedical benefits, such as meal services and pest control
NGACO	Medicare Part A and B services	<ul style="list-style-type: none"> Physician-administered prescription drugs under Part B Self-administered prescription drugs (Part D) are not covered 	Offers PAC services without a prior 3-day hospital stay	<ul style="list-style-type: none"> Telehealth expansion waiver Waiver to cover in-home nursing visits preventing hospitalizations Adjust cost-sharing rules for specific Part B services.
GPDC	Medicare Part A and B services	Same as NGACO	Same as NGACO	<ul style="list-style-type: none"> Same as NGACO No homebound requirement for beneficiaries receiving home health May provide concurrent care for beneficiaries who elect Medicare hospice.
MD All-Payer	<ul style="list-style-type: none"> Hospital services Services provided by hospital-based physicians and services delivered during post-discharge episodes Care management by primary care practice 	Same as NGACO. However, Maryland state-level programs allow discounts for self-administered medication.	PAC services are covered	Awaiting discussion with researchers and stakeholders.

Model / Program	Core Services	Rx Benefits	Post-Acute Care	Extra Benefits
MSSP	Medicare Part A and B services	Same as NGACO	Same as NGACO	As of 2018, MSSP ACOs (Track C – Enhanced) expanded access to telehealth services and extended waiver of 3-day SNF requirement to MSSP ACOs with two-sided risk.
BPCI	Model 4 (2013 – present) Single, prospectively determined bundled payment to the hospital that includes all services Participants can select up to 48 different clinical episodes	Prescription drugs covered under Part D are not included. Prescription drugs in Part B are included as part of bundled payments.	Waivers for SNF stay without a prior 3-day hospital stay and post-discharge home visit	Participants have a waiver for providing beneficiary incentives. Transportation was the most common beneficiary incentive distributed, followed by medication management tools.

Payment Mechanism and Financial Risk. For population-based models and programs, such as MA, NGACO, GPDC, MSSP, and Maryland TCOC, the participants or accountable entities are responsible for cost and quality for a target patient population. Under BPCI, the model participants are accountable for cost and quality of care that beneficiaries receive during a specific episode of care.

Use of Benchmarks or Target Price. Cost accountability is enforced by comparing actual spending to benchmarks that are set based on historical spending for patients associated with participating providers or those residing in a specific region. These benchmarks are established based on historical spending (participant and/or region). Exhibit 7 compares implications of the use of benchmarks across the selected models.

Implication of Benchmarks for Medicare Advantage. CMS establishes benchmarks for annual established maximum per beneficiary payments. These benchmarks are determined based on average FFS spending per Medicare beneficiary. County benchmarks are set at one of four levels based on 95, 100, 107.5 or 115 percent of the FFS projected spending per beneficiary with risk adjustment related to geographic variation in historical costs. Regional risk adjustment factors that affect the benchmark are set by grouping counties by quartile based on historical costs. Rural counties with low Medicare spending typically have a higher benchmark than average, and urban counties with higher Medicare spending typically have lower benchmarks. MA plans then bid against those benchmarks to provide coverage of Medicare Part A and Part B services at proposed savings. If an MA plan's bid is lower than the benchmark, the plan receives a rebate for a portion of the difference that is used for supplemental benefits.²¹

The plan's rebate represents a proportion of the difference between the plan's bid and the benchmark (between 50 percent and 70 percent, depending on the plan's quality ratings). MA plans are required to use the rebate to provide additional benefits to enrollees in the form of in the form of lower cost sharing, lower premiums, or supplemental benefits. The plans are also allowed devote some of the rebate to administration costs and margins.²² Rebates are primarily used to provide extra benefits and a small portion for cost-sharing and premium reductions.

Implications of Benchmarks for Accountable Care Organizations. For a given ACO, CMS sets a spending target or benchmark for the assigned beneficiary population. If the ACO's spending is less than the benchmark, the ACO can receive a portion of the "shared savings" and if the spending is above the benchmark, CMS could recoup the losses (or a portion of it) from the ACO. Whether ACOs can experience losses and the specific amounts associated with both savings and losses varies considerably by different ACO models and tracks. Exhibit 7 includes additional details on benchmarks, financial risk and risk adjustment for various models.

For the ACOs included in this analysis, benchmarks are primarily set based on historical spending. The benchmark for NGACO is adjusted for national spending growth and local price changes. Since 2019, MSSP benchmarks are based on a blend of historical and regional spending, and benchmark growth is based on a blend of national and regional growth. For the GPDC model, the benchmark is constructed using adjusted MA rates and the Medicare spending per capita growth is trended forward.

Financial Risk. Providers and accountable entities across the selected models and programs described in this environmental scan take financial responsibility for the care they provide. Each APM has its own financial risk arrangement, which can include upside risk, downside risk, or a combination of the two. In upside risk-only APMs, accountable entities can earn health care savings if they perform services at costs

below the benchmark. Conversely, if actual costs exceed the benchmark, providers in upside risk-only models do not qualify for shared savings payments but they are also not financially penalized. Payment methods that incorporate “two-sided” risk include a potential financial downside where CMS can recoup the difference between the benchmark and cost of services if the cost of services exceeds the benchmark.

Since MA plans are paid PBPM capitated payments, they incur two-sided risk, but the risk level may vary based on the plan structure. Earlier ACO models used upside-only risk. Newer ACO models incorporate more risk, including potential risk to providers “downstream” to the accountable entity. The MSSP has four options for financial risk assumption for participating ACOs (Levels A-E and an “Enhanced” track). Levels A and B of the basic track offer upside risk of up to 40 percent of savings/losses with a 10 percent cap. The remaining tracks call for two-sided risk of 50-70 percent of savings/losses with caps of 10-20 percent. As of 2020, 63 percent of MSSP ACOs opted for upside risk-only and the remaining 37 percent opted for two-sided risk.

Risk Adjustment. Distinct from financial risk, risk adjustment refers to adjustments to payments based on patient attributes. This is accomplished using factors associated with scoring linked to patient demographic factors and health status. Demographic factors typically include age, gender, and dual eligibility for Medicare and Medicaid. Typically, diagnosis codes submitted on claims are used to retrospectively adjust payments based on patients’ health status.

Both MA plans and MSSP ACOs use the hierarchical conditions category (HCC) methodology, which relies on ICD-10 coding to assign risk scores based on health status derived from retrospective claims data review. The risk adjustment algorithm used by these models also accounts for demographic factors like age and gender to assign patients a risk adjustment factor (RAF) that predicts future costs and informs benchmarks.

The focus on accurate risk adjustment has gained importance as accountable entities bear financial risk managing costs associated with their patient populations. Before January 2019, ACOs could not increase their risk scores for continuing enrollees beyond the average increase for assignment-eligible beneficiaries with the same demographic characteristics. As of July 2019, ACOs can increase their risk scores by up to 3 percent relative to the assignment-eligible beneficiaries with the same demographic characteristics. Section IX describes some of the issues and mitigation strategies regarding risk adjustment.

Exhibit 7. Comparison of Selected Models and Programs Based on use of Cost Benchmarks, Financial Risk, Risk Adjustment and Beneficiary Cost-Sharing

Model / Program	Implications of Cost Benchmarks	Financial Risk Track	Risk Adjustment	Beneficiary Cost-Sharing
MA	Plans bidding below the benchmark provide benefits beyond those covered under Part A and Part B using 75 percent of the difference between their bid and the benchmark costs.	<ul style="list-style-type: none"> • Two-sided risk • Risk levels may change based on cost-sharing flexibilities in plan structure. 	MA plan per member per month (PMPM) benchmarks are adjusted at the beneficiary level using HCC scores. HCC scores account for differences in expected medical expenditures based on demographic and diagnostic information.	<ul style="list-style-type: none"> • MA plans may reduce cost-sharing as a mandatory supplemental benefit and may use rebate dollars to do so. • Out-of-pocket limit for services covered under Part A and B services.
NGACO	The benchmarking methodology rewards NGACOs for favorable financial performance on spending relative to historical or regional benchmarks.	<p>Two options for sharing overall financial risk relative to risk-adjusted benchmarks:</p> <ul style="list-style-type: none"> • Partial risk (80 percent shared savings/losses) • Full risk (100 percent shared savings/losses) <p>NGACOs also select risk caps on their shared savings and losses between 5 percent and 15 percent.</p>	Renormalization of risk scores by NGACO adjusts for changes in risk scores between baseline and performance years.	<ul style="list-style-type: none"> • Same cost-sharing rules as FFS • Optional Part B cost-sharing incentive to reduce aligned beneficiaries' out-of-pocket costs. Part B drugs and durable medical equipment (DME) are not eligible for cost-sharing reductions.

Model / Program	Implications of Cost Benchmarks	Financial Risk Track	Risk Adjustment	Beneficiary Cost-Sharing
GPDC	<p>Benchmark construction is based on:</p> <ul style="list-style-type: none"> • Use of adjusted MA rates • Use of national per capita cost to establish the trend rate to adjust for year over year cost changes 	<p>DCEs have two voluntary risk-sharing options:</p> <ul style="list-style-type: none"> • DC Professional (50 percent savings/losses) • DC Global DC (100 percent savings/losses) <p>Unlike NGACO, there is no cap on this risk for DCEs.</p>	<p>CMS will apply a modified risk adjustment methodology for the model. Effective risk adjustment is not currently available, as the model began in April 2021.</p>	<ul style="list-style-type: none"> • Same cost-sharing rules as FFS • Can reduce or eliminate beneficiary cost-sharing amounts for specific categories of aligned beneficiaries for Part B services identified by the DCE.
MD All-Payer	<p>Hospitals face rewards or benefits if TCOC for attributed Medicare beneficiaries falls above or below a benchmark based on actual Medicare spending in MD in 2013 trended forward at the national Medicare spending growth rates.</p>	<p>Participating hospitals are at risk for care delivered under a global per capita payment. Other providers experience only upside risk</p>	<p>For Primary Care Program, care management fees are adjusted based on beneficiary risk tiers assessed on the HCC.</p>	

Model / Program	Implications of Cost Benchmarks	Financial Risk Track	Risk Adjustment	Beneficiary Cost-Sharing
MSSP	<p>Payment benchmarks are established based on:</p> <ul style="list-style-type: none"> • Spending for beneficiaries who would have been assigned to the ACO in the baseline years and the region • CMS does not recalculate benchmarks based on changes in National Provider Identifications (NPIs) billing under the Tax Identification Numbers (TINs). 	<p>Four risk options. Levels A-E and an “Enhanced” track. Levels A and B of the basic track offer upside risk up to 40 percent of savings/losses with a 10 percent cap. The remaining tracks call for two-sided risk of 50-70 percent of savings/losses with caps of 10 percent-20 percent. As of 2020, 63 percent of MSSP ACOs opted for upside risk-only and the remaining 37 percent opted for two-sided risk.</p>	<p>When establishing the historical benchmark, CMS uses the HCC scores to adjust for changes in severity of the population assigned to the ACO. CMS risk-adjusts the county-level expenditures used in calculating the regional component of the national-regional blend growth rate.</p>	<ul style="list-style-type: none"> • Cost-sharing requirements are consistent with rules under FFS Medicare. • Reduce out-of-pocket expenses for select Part B services.
BPCI	<p>CMS created a participant-specific benchmark by updating historical episode payments with national spending trends, and then discounted it 2 to 3 percent to create a target price.</p>	<p>When a participant’s aggregate Medicare episode payments were less than the target price, they could receive Net Payment Reconciliation Amounts (NPRA) and conversely repay if payments were higher than target price. Under Model 4, hospital retained any positive difference between target price and payment to providers.</p>	<p>BPCI Advanced (Model 2, 3 & 4) features modified target prices that incorporate risk adjustment and reflect peer performance and a higher discount. Some BPCI clinical episodes were not included in BPCI Advanced due to high clinical heterogeneity or small volume.</p>	<p>Same cost-sharing rules as FFS.</p>

Provider Participation, Care Coordination and Quality of Care. This section compares the selected models and programs based on provider network, care coordination, and quality of care (see Exhibit 8 for additional information). Most MA plans have provider network requirements and enrolled beneficiaries have access to in-network providers with cost-sharing responsibilities. For out-of-network providers, beneficiaries have higher out-of-pocket costs. In areas with fewer than two network plans, MA private fee-for-service (PFFS) plans are not required to have provider networks.

For the ACOs that are included in Exhibit 8, provider participation is voluntary. Certain additional providers are designated as “preferred” providers to facilitate coordination of services across the continuum, but they are not obligated to accept financial risk.

Care coordination efforts vary across MA plans and typically include a focus on disease management. Some MA plans offer enhanced care management and coordination that can result in fewer hospital admissions, emergency department (ED) visits and shorter hospital and SNF length of stay (LOS). The payment benchmark for MA varies depending on a plan’s rating based on the CMS five-star system that measures the quality of care that plans provide based on 46 measures of clinical quality, patient experience, and administrative performance. Plans with higher quality ratings will have bonus amounts added to benchmark levels.

Although ACOs do not have bonus payments associated with quality thresholds, they have quality withholds associated with reported quality measures. NGACOs are given a quality score based on their performance on three quality measures: hospitalizations for ambulatory care sensitive conditions (ACSCs), 30-day hospital readmissions, and 30-day hospital readmission from a SNF. NGACOs are subject to quality withholds (2 percent) from their shared savings if they do not meet quality benchmarks. A recent evaluation did not find any impact of the NGACO model on quality of care outcomes overall, though some groups of NGACOs achieved improvements.²³

Section IX focuses on specific issues and mitigation strategies associated with some of these features for population-based TCOC models.

Exhibit 8. Comparison of Selected Models and Programs Based on Provider Network, Care Coordination and Quality of Care

Model / Program	Provider Participation / Network	Coordination of Care	Quality of Care
MA	<ul style="list-style-type: none"> Beneficiaries have access to in-network health care providers with cost-sharing Out-of-pocket costs for receiving services from non-network providers vary by plan. PFFS plans are not required to have provider networks in areas with fewer than two network plans. 	<ul style="list-style-type: none"> MA plans' approach to care coordination varies and often includes a focus on disease management. Research shows that MA plans offer better care management and coordination compared to FFS Medicare.²⁴ 	<ul style="list-style-type: none"> MA uses a five-star rating system to rate each contract based on 46 measures of clinical quality, patient experience, and administrative performance. MedPAC has expressed concerns about the current state of quality reporting in MA.²⁵ Some research shows that enrollment in MA was associated with more preventive care visits, fewer hospital admissions and ED visits, shorter hospital and SNF lengths-of-stays.
NGACO	<ul style="list-style-type: none"> Providers can choose to participate in NGACOs. NGACOs can also designate specific providers as "preferred" providers to facilitate coordination of services across the continuum of care. 	Specific approaches to care coordination by NGACOs vary but some ACOs are known to use chronic care management and transitional care management services.	<ul style="list-style-type: none"> Quality score based on the ACO's performance on three quality measures Subject to quality withholds (2 percent) from their shared savings if they do not meet quality benchmarks.
GPDC	Same as NGACO	It is anticipated that specific approaches to care coordination will vary by DCE and participating providers. The model allows the participating DCEs to provide gift cards to beneficiaries with complex, chronic conditions to participate in disease management programs	DCEs are assessed on performance on five quality measures

Model / Program	Provider Participation / Network	Coordination of Care	Quality of Care
MD TCOC	Consistent with Medicare FFS, the model has an open network policy; all hospitals in the state of Maryland participate.	More than 50 percent of hospitals had implemented care coordination plans to reduce spending and hospitalizations.	<ul style="list-style-type: none"> • Nine quality measures are used in Maryland's quality-based incentive program • Measures are included for performance calculations, rewarding hospital improvement, attainment of high level of quality or both.
MSSP	<ul style="list-style-type: none"> • Medicare FFS beneficiaries have the flexibility to choose their PCP without any cost-sharing implications. • The Shared Savings Program will use the eligible beneficiary's selection of a primary clinician over a claims-based assignment methodology. 	In addition to the care management programs targeting high-risk population, MSSP ACOs have financial incentives under the program's Pathways to Success policies to support rural ACOs in delivering better coordinated care and more efficient care for beneficiaries and encourage providers to enter value-based care.	<ul style="list-style-type: none"> • MSSP ACOs are required to report on 31 quality measures. • Quality score based on the ACO's performance on three quality measures related to care coordination/patient safety, preventive health, and control of diabetes, depression, and hypertension. • Subject to quality withholds from their shared savings if they do not meet quality benchmarks. In 2019 and 2020 hospitals met performance standards for these quality measures.
BPCI	Participants could be hospitals, physician group practices (PGPs), PAC providers, or other entities. The agreements also specify participants' choices among three payment models, 48 clinical episodes, three options for episode length, and three risk tracks	Accountability for patient care coordination and spending	Quality measures for BPCI evaluation are all-cause mortality, unplanned admissions, and ED visits within post-discharge period within 90 days of the initial hospital stay.

V.C. Comparison of Design Features of Several Medicaid Section 1115 Waiver Programs

Several state Medicaid programs have used Section 1115 waivers to implement alternate payment approaches that are designed to reduce TCOC. Although the specific goals and underlying implementation mechanisms vary across demonstrations, most of these demonstrations seek to reduce TCOC by promoting accountable, value-based care and enhanced care coordination. Appendix D.3 provides descriptions of selected state-level demonstration programs. Additionally, given the integrated nature of Medicaid ACOs or other managed care arrangements common to APMs, several models support efforts to address health-related social needs either by providing on-site social and behavioral health services or by connecting patients to community-based partners. Details on selected states with population-based models for Medicaid operating under Section 1115 waivers are provided below.

Minnesota was an early adopter of MMC programs and value-based payment approaches. According to recent estimates, about 80 percent of the state's Medicaid beneficiaries are enrolled in managed care.²⁶ ²⁷ The Integrated health partnerships (IHPs) program, Minnesota's Medicaid ACO program, is one of the state's most notable value-based, population-based TCOC-related programs operating under a Section 1115 waiver. IHPs were authorized by the Minnesota State Legislature in 2010 and first began providing services in 2013 with the help of funding from a State Innovation Model Award.²⁸ ²⁹ IHPs are responsible for delivering all primary care services, coordinating care, and partnering with community organizations and social services agencies.³⁰ Between 2013 and 2017, the IHP program is estimated to have saved \$185 million after accounting for shared savings payments and avoided hospital costs.³¹ Beginning in 2018, Minnesota introduced an updated version of the IHP program (IHP 2.0), which includes two tracks. Track 1 is non-risk bearing and is intended for smaller IHPs whereas Track 2 requires IHPs to accept financial risk under a TCOC risk arrangement.³² ³³ Under IHP 2.0, IHPs are also eligible to receive a population-based payment intended to help support care coordination activities—part of this payment is contingent on satisfying a series of quality measures.³⁴

Oregon has also taken advantage of the Section 1115 waiver program to reduce Medicaid costs through coordinated, value-based care. In 2012, the Oregon Health Plan, the state's Medicaid program, created coordinated care organizations (CCOs), which function under a capitated payment system and are responsible for providing comprehensive, accountable care.³⁵ Approximately 90 percent of Oregon's Medicaid beneficiaries receive care through one of the state's 16 CCOs.³⁶ In addition to coordinating care across the full spectrum of medical, dental, and behavioral health services, CCOs also offer several social services and educational resources. For example, CCOs offer lifestyle classes and other programs that provide education on topics such as nutrition and exercise.³⁷ One CCO based in a rural setting developed "tiny homes" for beneficiaries experiencing homelessness (Commonwealth article 2019).³⁸ Research examining the impacts of CCOs suggests improved health outcomes; one study found that mothers on Medicaid were 13 percent more likely to receive first trimester care post CCO implementation in addition to experiencing improvements in care quality.³⁹

Although most state Medicaid payment and delivery system reform efforts are designed according to the model features used in commercial and Medicare markets, the Medicaid programs have not typically aligned their model strategies with Medicare and commercial payers due to differences in both populations and payment rates. Overall, Medicaid payments are lower than commercial payments for similar services, and the Medicaid population has higher health care utilization than commercially covered groups.⁴⁰ The next section provides information regarding multi-payer participation in selected models.

Exhibit 9. Characteristics of Medicaid Models

Model Type	Care Transformation Strategies	Payment Mechanism	Measuring TCOC and Incentives	Issues and Considerations
Selected Medicaid Section 1115 Waiver Programs	Use of accountable entities with a network of providers responsible for delivering all primary care services, coordinating care across the full spectrum of services (medical, dental, behavioral health), partnering with community organizations and social services agencies.	<ul style="list-style-type: none"> • Various payment arrangements (episode of care, bundled payment, shared savings, capitation) • Inclusion of non-risk bearing track for smaller entities and risk-bearing track for larger entities • Potential eligibility to receive population- based payment to support care coordination activities 	<ul style="list-style-type: none"> • Use of quality measures 	<ul style="list-style-type: none"> • Varying eligibility requirements by State • Mixed outcomes regarding cost savings • Opportunities for multi payer alignment • Transferability of ideas into Medicare

V.D. Multi-Payer Participation in Relevant Payment Models

Population-based TCOC models may be implemented at the level of a specific health insurance program (e.g., Medicare, Medicaid, or employer-sponsored health plans), or these models can represent common approaches used by multiple payers that partner to align incentives for a specific group of providers. There are limited examples of population-based TCOC models that are multi-payer. Such models can generate a broad impact across a state or region and may reduce provider administrative burden associated with being paid differently for the same services. Different market characteristics and insurance laws across the United States can make widespread adoption of these models difficult.⁴¹ However, some providers find that multi-payer alignment can facilitate transition to value-based care.⁴²

Policy stakeholders have indicated that achieving multi-payer alignment is necessary to sustain provider engagement in value-based payment models across the payer systems in the United States. According to some experts, value-based models with multi-payer participation and alignment are much more likely to generate system-wide impacts than are similar models that are limited to one single payer.^{43 44} Part of the CMMI's strategic objective of partnering to achieve system transformation includes a goal of making multi-payer alignment available in all new models, where applicable, by 2030.⁴⁵

Incorporating multi-payer participation in APMs affects model design and implementation. Participants in the Maryland All-Payer Model and Pennsylvania Rural Health Model (PARHM)—both of which govern hospital payments and incorporate global budgets for hospital operations—have noted the need for transparency when developing a new model policy, determining all-payer rates, and distributing accountability.^{46 47}

If multiple payers participate in models with global budgets,^y program administrators need a resource such as an all-payer claims database to provide a common source of patient-level cost data for the relevant population.^{48 49} Research shows that providers participating in multi-payer models can benefit from funding to invest in customized data analytic platforms. Nearly all the participating hospitals in the Maryland All-Payer Model used data analytics (e.g., predicting high-cost patients) to support site operations under the global budget.⁵⁰ In addition to investments in comprehensive data sources and analytic platforms, multi-payer models should involve an independent governing body with payer and provider representation.⁵¹

Section VI. Relevant Features in Selected PTAC Proposals

VI.A. Criteria for Identifying Relevant PTAC Proposals

Between 2016 and 2020, PTAC received 35 proposals, including 34 proposals that the Committee has reviewed and 28 proposals that PTAC has deliberated and voted on during public meetings. As noted above, PTAC evaluates PFPM proposals based on the extent to which they meet the Secretary's 10 regulatory criteria for PFPMs. The second of the ten criteria focuses on quality and cost, specifically whether the proposal is anticipated to improve health care quality at no additional cost, maintain health care quality while decreasing cost, or both improve health care quality and decrease cost. The third of the Secretary's ten criteria relates to payment methodology, and the extent to which the proposal offers

^y This environmental scan uses the Pennsylvania Rural Health Model definition of a global budget: a fix amount, set in advance to cover all inpatient and hospital-based outpatient items and services. (<https://innovation.cms.gov/files/reports/episode-payment-models-wp.pdf>)

a clear and viable path to innovative payment that beneficially creates incentives not present in FFS. As a result, nearly all proposals submitted to PTAC address the potential impact on costs, to some degree. However, none of the proposals submitted to PTAC are population-based models in which the participating entity receives *comprehensive* capitated payments to cover all health care costs for a defined population with varying health care needs and in which the APM entity assumes accountability for TCOC in this context.

Several previous submitters have discussed the use of TCOC measures in their payment methodology and performance reporting as part of their proposal submissions. This section discusses the role of TCOC measures in ten PTAC proposals and includes an overview of the TCOC-related components that were included in the proposed PFPs. The proposals were selected to provide potential insights for future population-specific payment and delivery models, episode-based payment models, and advanced primary care models. The proposals are relevant to many different provider types, incorporate different care models, relate to different clinical settings, and include different payment approaches. Exhibit 10 provides an overview of the clinical focus and settings, patient populations, and payment mechanisms represented in the ten proposed PFPs. Appendix E includes more detailed information regarding model characteristics, TCOC elements, and relevant PTAC comments in the ten selected proposed PFPs.

Exhibit 10. Summary of the Care Delivery and Payment Model Characteristics of the Ten Selected PTAC Proposals

Submitter Name and Type	Proposal Name	Clinical Focus, Providers, and Setting	Patient Population Targeted	Payment Mechanism
American Academy of Hospice and Palliative Medicine (AAHPM) <i>(Provider association and specialty society)</i>	Patient and Caregiver Support for Serious Illness	Clinical Focus: Serious illness and palliative care Providers: Palliative care teams (PCTs) Setting: Inpatient, outpatient, and other palliative care settings	Beneficiaries with serious/advanced illness	PBPM payment with opportunity for shared risk/savings
Coalition to Transform Advanced Care (C-TAC) <i>(Coalition)</i>	Advanced Care Model (ACM) Service Delivery and Advanced Alternative Payment Model	Clinical Focus: Advanced Illness Providers: Providers with board-certified palliative care experience as part of interdisciplinary care team, RN, licensed clinical social worker (LCSW), other clinicians as necessary Setting: All sites of care during treatment for advanced illness, including the home	Beneficiaries with advanced illness, focusing on last 12 months of life	Capitated PBPM payment with downside risk for TCOC and upside bonus for quality performance, subject to maximum payment and loss amounts

Submitter Name and Type	Proposal Name	Clinical Focus, Providers, and Setting	Patient Population Targeted	Payment Mechanism
University of Chicago Medicine (UChicago) <i>(Academic Institution)</i>	Comprehensive Care Physician Payment Model	Clinical Focus: Frequently hospitalized patients Providers: Inpatient and outpatient providers Setting: Home care and rehabilitation	Frail/complex beneficiaries with hospitalizations	Supplemental PBPM payment with shared risk
American Academy of Family Physicians (AAFP) <i>(Provider association and specialty society)</i>	Advanced Primary Care: A Foundational Alternative Payment Model (APC-APM) for Delivering Patient-Centered, Longitudinal, and Coordinated Care	Clinical Focus: Primary Care Providers: All physicians with a primary specialty of family medicine, general practice, geriatric medicine, pediatric medicine, or internal medicine Setting: Primary care practices	30 million Medicare beneficiaries (if implemented nationally)	<ul style="list-style-type: none"> • PBPM global- and population-based payments • Quarterly performance-based incentive payments • FFS limited to services not covered by the global payment
American College of Surgeons (ACS) <i>(Provider association and specialty society)</i>	The ACS-Brandeis Advanced APM	Clinical Focus: Cross-clinical focus Providers: Single / multispecialty practices; groups of small provider practices Setting: Inpatient, outpatient, and ambulatory	Beneficiaries having at least one of over 100 conditions or procedures	Episode-based model with continued FFS and shared risk/savings

Submitter Name and Type	Proposal Name	Clinical Focus, Providers, and Setting	Patient Population Targeted	Payment Mechanism
American Society of Clinical Oncology (ASCO) <i>(Provider association and specialty society)</i>	Patient-Centered Oncology Payment (PCOP) Model	Clinical Focus: Oncology Providers: Clinicians, including hematologists and oncologists Setting: Oncology practices	Oncology practice patients	<ul style="list-style-type: none"> • FSS payments • Monthly care management payments • Performance incentive payments • Track 2 practices have option of bundling either 50 percent or 100 percent of the value of specified services.
Avera Health (Avera Health) <i>(Integrated, regional health system)</i>	Intensive Care Management in Skilled Nursing Facility Alternative Payment Model (ICM SNF APM)	Clinical Focus: Primary care (geriatricians) in SNFs Providers: Geriatrician care teams Setting: SNFs and nursing facilities (NFs)	Beneficiaries who reside in SNFs	One-time payment for new admission and a PBPM payment with two separate shared risk options (Performance-Based Payment and the Shared Savings Model)
Large Urology Group Practice Association (LUGPA) <i>(Provider association and specialty society)</i>	LUGPA Advanced Payment Model for Initial Therapy of Newly Diagnosed Patients with Organ-Confined Prostate Cancer	Clinical Focus: Urology/ oncology (treatment of prostate cancer) Providers: Eligible professionals (including urologists) at large and small urology and multispecialty practices Setting: Large and small urology and multispecialty practices	Beneficiaries who are newly diagnosed with prostate cancer (localized disease)	<ul style="list-style-type: none"> • Monthly care management fee (PBPM for initial and subsequent 12-month episodes) • Performance-based payment for enhancing utilization of active surveillance

Submitter Name and Type	Proposal Name	Clinical Focus, Providers, and Setting	Patient Population Targeted	Payment Mechanism
New York City Department of Health and Mental Hygiene (NYC DOHMH) <i>(Public Health Department)</i>	Multi-provider, bundled episode of care payment model for treatment of chronic hepatitis C virus (HCV) using care coordination by employed physicians in hospital outpatient clinics	Clinical Focus: Multispecialty, hepatitis C infection management Providers: Physicians at hospital-based outpatient clinics; supporting wide mix of clinicians, including infectious disease specialists, gastroenterologists, PCPs Setting: Hospital-based outpatient clinics	Medicare beneficiaries with hepatitis C infection	Bundled payment replacing FFS with opportunity for shared risk/savings
Illinois Gastroenterology Group and SonarMD, LLC (IGG/ SonarMD) <i>(Specialty Practice)</i>	Project Sonar	Clinical Focus: Chronic disease (Crohn's Disease) Providers: Gastroenterology practices; community-based physicians and specialists Setting: Patient home	Beneficiaries with chronic illness: patients with Crohn's disease	<ul style="list-style-type: none"> • PBPM payment with two-sided risk • Additional monthly payment to support ongoing monitoring

VI.B. Summary of TCOC-Related Information in Selected PTAC Proposals

Cost-related Objectives. All ten of the proposed PTAC models in this analysis sought to reduce health care costs in some form. Some of the ten proposals explicitly mentioned reducing TCOC as an objective of the proposed PFFM—through improved care management, reduced hospitalizations and ED visits, and avoiding unnecessary services and medications. Some of the ten proposals sought to reduce the cost of care related to particular episodes of care, defined by diagnoses, prognosis, or procedures. Finally, a few of the ten proposals focused on reducing utilization of unnecessary services as part of a pathway toward reducing costs.

Capitation-like Payment Approaches. Though none of the ten proposals submitted to PTAC included comprehensive, fully capitated payments on total costs of care, several proposals included partially capitated payments on subset of total costs.

- **Advanced Primary Care:** The AAFP proposal included two forms of PBPM payments, a risk-stratified care management PBPM as well as a capitated “global primary care” fee covering evaluation and management (E&M) services.
- **Population-specific models:** The population-specific proposals submitted to PTAC included monthly payments to support a range of care activities. These payments were intended to facilitate care coordination, care by a multidisciplinary care team, and health care delivery in multiple settings.
 - The AAHPM and C-TAC proposals both focused on patients with serious and advanced illness, providing PBPM payments for services delivered by a multidisciplinary care team. The current Medicare Physician Fee Schedule (MPFS) does not provide reimbursement for the provision of many nursing, social work, and spiritual services that are key components of palliative care. Some proposals noted that monthly care management payments that could be used to secure services not otherwise reimbursable would provide greater flexibility in care delivery than payments to limited types of practitioners individually under the traditional Medicare fee schedule.
 - The UChicago proposal focused on care transitions between inpatient and outpatient settings for frail and chronically ill Medicare beneficiaries by incentivizing the same physician to provide care in both settings. Participating physicians would receive an add-on monthly payment for eligible beneficiaries based on the provision of inpatient and outpatient services.
- **Episode-based models:** the six episode-based PFFM proposals cover a range of clinical conditions and episodes, and as a result their payment approaches vary. Though focused on Medicare beneficiaries with a particular condition or specific episodes of care, four of the six proposals included monthly PBPM payments to support care management and other services.
 - The proposal by ASCO includes monthly care management payments set to be 2 percent (Track 1) and 3 percent (Track 2) of total Medicare FFS spending and would vary across phases of cancer care to reflect resources required for care management in that phase. The initial care management payment amounts would be based on historical TCOC and may be adjusted annually based on trends. Participants in Track 1 would continue to receive FFS payments during the episode but Track 2 participants would receive Consolidated Payments for Oncology Care (CPOC) that require them to bundle either 50 percent or 100 percent of Medicare FFS payments for hematology/oncology-specific

professional services, as well as drug costs. The CPOCs would also vary across cancer treatment phases.

- The ICM SNF APM proposal also includes monthly payments as well as a one-time payment for newly enrolled beneficiaries to support a geriatric care team for Medicare beneficiaries residing in a SNF. The team would provide geriatric care management and planning, medication reconciliation, behavioral health support, and transitional care support.
- The proposal by LUGPA includes monthly care management fees during active surveillance for patients with organ-confined prostate cancer. The proposed \$75 fee is structured to support the enhanced services not currently reimbursed by FFS Medicare, such as tracking AS beneficiaries to ensure compliance, tracking lab results longitudinally in a consistent format, educating beneficiaries about disease progression, social services, and reviewing the care plan. Providers would receive a \$75 monthly payment during each initial or subsequent 12-month clinical episode.
- The proposal by IGG/SonarMD includes a one-time fee for a remote monitoring device as well as a monthly care management PBPM payment for Medicare beneficiaries with Crohn's disease.
- The NYC DoHMH proposal included a bundled episode-based payment (not risk-adjusted) for Medicare beneficiaries with Hepatitis C Virus (HCV). The bundled payment would support care delivery through three phases of the episode: a pre-treatment assessment involving care coordination in phase I; the treatment period is phase II; and report of SVR12 concludes the final phase.
- The ACS proposal does not include population-based payments. Instead, it includes continued FFS payments during the episode with retrospective reconciliation against expected total episode-specific expenditures.

Financial Accountability for TCOC in Proposed PTAC Models. The ten proposals submitted to PTAC used a variety of methodologies to determine financial accountability for PFFM participants. Some of the ten proposals included two-sided shared risk for PFFM participants, with potential upside financial gain or downside financial loss based on performance relative to performance targets. Overall, a few of the ten proposals submitted to PTAC in this analysis included shared financial accountability for total costs of care.

- The advanced primary care proposal from AAFP proposed performance-based incentive payments that would be paid prospectively on a quarterly basis with annual reconciliation. The performance of PFFM participants would be based on measures of clinical quality and patient experience as well as two utilization measures, hospitalizations, and ED visits. The benchmarks would be risk-adjusted with a historical baseline. The submitters of the proposal noted their strong opposition to PCPs assuming risk for TCOC.
- The three population-specific models differed in their approach to financial accountability. One proposal included accountability for TCOC, but the two others used utilization measures to determine performance-based payments.
 - In the C-TAC proposal, participants would be eligible for quality bonus payments or shared losses based on the TCOC for the last 12 months of life with a 4 percent minimum shared savings/loss rate. A bonus payment would be triggered only if savings

is at least 4 percent of a risk-adjusted, TCOC spending target; similarly, a shared loss rate would be triggered only if the excess spending is at least 4 percent of the spending target. A 40-60 percent shared loss rate would be based on quality performance and compliance with a minimum quality standard, with maximum savings and minimum loss guardrails in place.

- In contrast, though also focused on patients at the end of life, the AAHPM proposal does not propose to use TCOC as a performance metrics but instead uses utilization of hospice and intensive care unit (ICU) services at the end of life as a performance metric.
- In the UChicago proposal, amount of the care transition payments was dependent on the proportion of inpatient and outpatient care delivered by the participating provider. Providers would receive the transition payments if they met two criteria: the percent provision of inpatient care for their panel of enrolled patients exceeds 50, and the provision of outpatient general medical care for their panel of enrolled patients exceeds 67 percent.
- In the six episode-based models took the following approaches to financial accountability
 - In the IGG/SonarMD proposal, the APM entity would be eligible for shared savings up to 10 percent of spending and be required to repay losses up to 5 percent of spending based on retrospective reconciliation against a risk-adjusted target price. The model would also include stop-loss provisions and outlier protections. The submitter considered whether to propose accountability for episode-specific costs or TCOC and calculated target prices both ways in interactions with PTAC during review.
 - In the ASCO proposal, performance incentive payments reflect performance on cost of care metrics as well as adherence to clinical pathways and quality. The three components are unplanned hospital admissions, ED and observation care visits, and supportive and maintenance care drug costs. Performance on these metrics would be compared with an external group, adjusting for case mix. In track 2, up to 10 percent of the comprehensive oncology care payment is subject to adjustment based on performance.
 - The proposal from LUGPA included a performance-based payment reflecting provider performance on quality measures and total costs of care for all conditions during the AS episode compared to a historical benchmark.
 - The proposal from NYC DoHMH included bonus payments and penalties based on its sustained virological response (SVR) rate, with the risk-adjusted rate compared to an established benchmark. These bonus payments (or penalties) for each patient who achieved (or did not achieve) SVR would be calculated by applying a CMS-determined shared savings rate reflecting annual HCV costs avoided and the expected years of life gained. Only medical costs for HCV-related disease would be included.
 - The ACS proposal included a risk-based contract with CMS for the quality and cost of its contributions to a set of procedure or condition episodes defined in the contract. Incentive payments would be made retrospectively based on the difference between the observed and expected spending for the episode. Each clinical role would be assigned a fixed proportion of the savings or loss amount. Savings or losses would be attributed to each participating QP based on the episodes they are involved in and on their specific role in that care. The APM entity would receive a share of these gains or losses based on the contract with CMS.

- The ICM SNF APM proposal included two approaches to performance measurement. In the first simpler option, an APM entity that failed to meet performance standards would receive reduced one-time and PBPM payment amounts in the following year. Performance would be determined using 11 measures of clinical quality, health outcomes, and indicators of health care cost management. In the second shared risk option, actual Medicare Part A and B expenditures (with some exclusions) for all health care services received by residents during their SNF/NF stays (including services delivered in hospitals) plus 30-days post-discharge would be compared against HCC risk-adjusted target amounts based on historical spending. The reconciliation would occur annually. Beneficiaries attributed to other programs (e.g., ACOs) would be excluded from these calculations. Shared savings would be limited to 10 percent of the target amount, and repayments would be limited to the one-time and PBPM payments.

VI.C. PTAC Assessments and Recommendations Related to Population-Based Models / Approaches and Efforts to Reduce TCOC

This section draws on an analysis of PTAC voting patterns and comments on proposed PFPMs to highlight PTAC's findings regarding two criteria closely associated with TCOC as well as PTAC's comments in Reports to the Secretary on TCOC in the context of PFPM development.

PTAC Findings Regarding Considerations for the Use of TCOC in PFPM Development. The following are key findings from a synthesis of PTAC comments and recommendations regarding considerations for the use of TCOC in PFPMs based on a review of PTAC voting patterns and recommendations for proposals that were deliberated and voted on by the Committee:

- A participating provider's ability to direct TCOC relates to the appropriateness of shared savings and penalties based on TCOC. For two proposed models (C-TAC and LUGPA), PTAC expressed concern about the appropriateness of calculating shared savings based on TCOC. For example, in the LUGPA proposed model, PTAC noted that holding urologists responsible for TCOC with shared risk for patients under active surveillance for prostate cancer did not accurately reflect urologists' role in overall patient care.
- Accountability for TCOC could lead to unintended incentives for participants. PTAC questioned whether the C-TAC proposed model, which would hold APM entities accountable for TCOC in the last 12 months of an enrollee's life, was appropriate. The Committee noted that patients may not receive serious illness services from the APM entity during that entire period and that shared savings could create incentives to stint on care at the end of life.
- PTAC discussed alternatives to TCOC proposed in two cancer care models (HMH/Cota and IOBS). HMH/Cota left open the possibility of shared savings based on either TCOC or the cost of oncology care, and PTAC ultimately recommended that CMMI test the approach to shared savings for HMH/Cota. In addition, while PTAC praised IOBS for holding oncologists accountable only for cancer-related expenditures rather than for TCOC, PTAC members noted that isolating cancer care expenditures will be challenging and may raise implementation challenges.
- The approach to calculating bonuses and penalties should reflect the provider's contributions to care. PTAC expressed concern about the approach to bonuses and penalties in NYC DOHMH, where it was proposed that bonuses be based on estimated lifetime savings from curing

hepatitis C. PTAC noted that this approach is unprecedented in Medicare and that it would reward providers for cost savings that were attributable primarily to prescription drugs.

- Alternatives to TCOC may be appropriate for certain PFPs. PTAC members recommended several alternatives to calculating shared savings based on reductions in TCOC, including measuring utilization such as avoidable ED visits and avoidable hospitalizations (Avera Health), focusing on the costs of care related to the targeted condition (LUGPA) and avoiding shared savings entirely (Avera Health, C-TAC).⁵²

Section VII. Relevant Performance and Outcome Measures used in Reporting and Evaluation

Validated performance measures are used to set payment rules and evaluate the effectiveness of efforts to reduce TCOC. The relevant literature highlights the importance of evaluating all aspects of health care costs to completely understand the impacts of interventions related to TCOC. Measures employed to reduce TCOC include those associated with cost in different categories such as inpatient, outpatient, and self-administered prescription pharmaceuticals, physician services as separate from facility costs, and provider-administered pharmaceuticals. The literature also emphasizes the importance of including related measures for utilization, quality of care, out-of-pocket costs, and patient experience.

This section summarizes findings from the literature on performance measures related to reducing TCOC while maintaining or improving quality of care and patient experience used by population-based TCOC models including multi-payer models. The section also includes additional information about specific measures used in selected CMMI models and measures that were proposed in selected PTAC proposals.

VII.A. Performance Measures for Reducing TCOC

As noted above, some definitions of TCOC emphasize the importance of measuring and accounting for the “sum of all medical expenditures.”⁵³ Moore and DeBuono (2013) define TCOC as a composite measure of costs, reflecting total medical expenditures by both insurers and patients, and incorporating the following⁵⁴:

- Payments by insurers and patients (including deductibles and copayments)
- Utilization (including inpatient admissions, outpatient visits, physician visits, potentially preventable events, radiology and therapies, and prescriptions)
- Health care access (including geographic access to health care services and continuity of care)
- Quality (including the Quality Index Score and organization or content-dependent metrics)
- The cost of the services themselves (as distinct from payments by insurers or patients)

The authors posit that evaluating new initiatives using a TCOC-focused approach will help programs to improve the health care delivery system and work toward aligning incentives to a population-based approach. They indicate that when conducting evaluations, performance metrics should incorporate more sophisticated risk adjustment, segment populations by health status and illness burden, be actionable and transparent, and come from a readily available source. Moore and DeBuono assert that evaluations focused on TCOC should look at quality, utilization, and cost measures as “inextricably linked components of overall performance” that can be used for demonstrable impacts on population health.⁵⁵

Including Pharmaceutical Costs as Part of Total Cost of Care. Nguyen et al. (2016) developed a TCOC estimator to better understand the impact of disease management interventions on TCOC for a patient population with nonvalvular atrial fibrillation (NVAF).⁵⁶ In their TCOC estimator, the authors used medical and pharmacy claims data from the IMS PharMetrics Health Plan Claims Database and developed models to compare current and projected medical care costs for different interventions. The tool was developed using commercial claims data and may provide an example of how tools focused on TCOC can help cost-effectively support population health management.

Some sources highlight different perspectives on how to incorporate pharmaceutical costs and pharmacies into TCOC measures. Others include pharmaceutical costs in their analyses of TCOC and argue for such inclusion. For example, Parekh et al. (2018) argue that pharmacies need to be more deeply integrated into payment and delivery reform in order to reduce TCOC.⁵⁷ Along the same lines, Doucette (2021) evaluates financial outcomes for a value-based payment program using performance-determined capitated payments for community pharmacies offering enhanced clinical services; the author finds that the program significantly reduced total costs of care in a commercial population with one or more chronic conditions.⁵⁸

Other authors note that there may be model and patient-specific issues associated with including pharmaceutical costs in TCOC measures. For this reason, alternative approaches are recommended for preserving value-based care in the context of increasing pharmaceutical prices. Osarogiagbon et al. (2021) note concerns with including drug spending in APM bundles for cancer care, due to constant innovation and lack of lower-cost alternatives in cancer treatment.⁵⁹ Similarly, Lyss et al. (2020) find that the inclusion of pharmaceutical costs in TCOC measures in the OCM could have the unintended consequence of discouraging use of high-cost novel treatments. The authors suggest holding clinicians accountable for avoiding use of low-value therapies, rather than for overall pharmaceutical costs.⁶⁰

VII.B. Performance Measures for Population-Based Approaches / Improving Person-Centered Care

HealthPartners' Total Cost of Care and Resource Use (TCOC) measurement approach is one of the only published, established population-based measures of TCOC that has been reviewed and endorsed by the National Quality Forum (NQF).⁶¹ HealthPartners' framework incorporates two different measures, a Total Cost Index (TCI) and a Resource Use Index (RUI), to support multiple levels of analysis. Using both tools together, users can compare cost, resource, and utilization metrics by condition cohort, procedure, and patient.⁶² The TCI is a comparative tool to reflect the cost-effectiveness of managing the patient population, and it is calculated by comparing risk-adjusted PMPM cost measurements (developed by combining administrative claims and membership eligibility data and risk adjusting with Johns Hopkins' Adjusted Clinical Groups system) with risk-adjusted PMPMs from peer groups and benchmarks. The RUI calculates the incidence and intensity of services used to manage a condition or procedure, and it is calculated using HealthPartners' Total Care Relative Resource Value (TCRRV) algorithm. Ultimately, providers can leverage HealthPartners' measurement approach to predict patient-level estimates of future health care costs, discover areas for potential cost reduction, and ultimately reduce TCOC.

Much work on performance measures related to population-based payment models relates to how ACOs are monitored and evaluated. McDowell et al. developed a comparison of methods for aggregating quality measures in ACOs and noted that different weighting and grouping of quality

measures could have significant impacts on overall model scores, potentially impacting shared savings payments.⁶³

In their review of value-based purchasing programs (VBPs), Damberg et al. noted that there were relatively narrow sets of measures used when determining payments, but they also highlighted that there was some differentiation in measures among models, especially when the type of VBP was considered. Older VBPs, like pay-for-performance (P4P) programs, historically utilized quality performance measures, while newer program types, like ACOs and bundled payments, incorporate both cost and quality measures in their physician incentive and payment determination methodologies.

Documented measures varied across program type and situation, but typically included clinical process and intermediate outcomes measures (such as the Healthcare Effectiveness Data and Information Set [HEDIS] or Joint Commission measures), patient safety measures (such as surgical infection prevention), utilization measures (such as ED use, LOS, and ambulatory care sensitive hospital admissions), and patient experience measures (such as Consumer Assessment of Healthcare Providers and Systems (CAHPS) surveys).

ACOs and bundled payment programs also commonly included cost measures, such as TCOC. Experts express concern with existing performance measures for VBPs, noting that many of the measures used only address a small fraction of care delivered by providers and encouraged providers to focus improvement efforts on things that are measured, rather than overall improvement. Many of these experts recommend shifting the focus of measurement to performance areas that are lagging or creating a broader and more comprehensive set of measures, to best encourage broad improvements and understand the overall impact of programs.⁶⁴

Navathe et al. examined the impacts of participation in the Population-based Payments for Primary Care (3PC), a capitation-based primary care payment system introduced by the Hawaii Medical Service Association in 2016, on quality, utilization, and TCOC. While the authors could not determine the results of longer-term outcomes on TCOC, they did note that the program was associated with small improvements in quality and reduced utilization.⁶⁵

Quality measures in this analysis included influenza vaccine, patient experience, tobacco cessation and follow-up, social determinants of health (SDOH) assessment, adolescent well-care visits, developmental screening in the first 3 years of life, screening for symptoms of clinical depression, and weight assessment and counseling for nutrition and physical activity for children/adolescents. To examine cost and utilization, the authors examined claims-based secondary outcomes, including primary care spending per member per year, aggregate medical spending per member per year, and utilization of primary care, hospital, ED, specialists, laboratory tests, and prescription drugs.

VII.C. Performance Measures Used in Selected CMMI Models That Relate to TCOC

Ten selected CMMI models use a variety of measures to track performance and evaluate their impact on TCOC. While some models, such as the Maryland All-Payer Model, explicitly reference the concept of TCOC in their payment methodologies, measures, and evaluations, most models address TCOC through a combination of spending assessments and utilization measures gathered from claims data.

For example, the evaluation of the NGACO model, aimed at reducing unnecessary utilization in the Medicare population, pairs utilization measures such as risk-standardized, all condition readmissions; all-cause unplanned admissions for patients with chronic conditions; and ACSC admissions with assessments of gross and net Medicare spending to provide insights on TCOC. Similarly, the OCM evaluations pair assessments of total episode payments and net Medicare spending with utilization measures like hospital admissions and ED visits.

Exhibit 11. Performance Measures Associated with Selected CMMI Models

CMMI Model	Performance Measures Related to TCOC
Accountable Health Communities (AHC) Model⁶⁶	Cost Measures: Total expenditures PBPM Utilization Measures: Inpatient admissions; admissions for ACSCs; 30-day unplanned readmissions; ED visits Quality Measures: health-related social needs (HRSN) resolution; closed navigation cases
Financial Alignment Initiative (FAI) for Medicare-Medicaid Enrollees⁶⁷	Cost Measures: Medicare Part A and B spending; prescription drug costs Utilization Measures: All-cause readmissions; encounter data Quality Measures: Annual flu vaccine; follow-up after hospitalization for mental illness; medication adherence for diabetes medications
Global and Professional Direct Contracting (GPDC) Model⁶⁸	Cost Measures: TCOC (all expenditures incurred by Medicare, including capitation payments, non-claims-based payments, and FFS claims paid on behalf of aligned beneficiaries) ⁶⁹ Utilization Measures: All-cause unplanned admissions for patients with multiple chronic conditions; risk-standardized all condition readmissions; days spent at home Quality Measures: Patient experience of care survey (CAHPS); timely follow-up after acute exacerbation of chronic conditions
Maryland TCOC Model⁷⁰	Cost Measures: Total Medicare Part A and B spending; hospital spending; non-hospital spending Utilization Measures: Inpatient admissions; ED visits Quality Measures: Patient experience of care survey (CAHPS); controlling high blood pressure; diabetes hemoglobin A1c (HbA1c) poor control; initiation and engagement of alcohol/drug dependence treatment; body mass index screening and follow-up
Medicare Shared Savings Program (MSSP)⁷¹	Cost Measures: Per capita expenditures ⁷² Utilization Measures: Unplanned hospital readmissions; admissions for patients with multiple chronic conditions Quality Measures: ACO Quality Performance Standard (33 measures, including measures from CAHPS, such as getting timely care, appointments, and information, provider communication, patients' rating of provider, access to specialists, and care coordination) ⁷³
Next Generation ACO (NGACO) Model⁷⁴	Cost Measures: Total Medicare Parts A and B spending Utilization Measures: All condition readmission; SNF 30-day all-cause readmission; all-cause unplanned admissions for patients with diabetes, heart failure, and multiple chronic conditions; ambulatory sensitive conditions admissions for chronic obstructive pulmonary disease (COPD) and heart failure Quality Measures: Patient experience of care survey (CAHPS); documentation of current medications in the medical record; screening for future fall risk; preventive care and screening measures; clinical care for at-risk populations: depression, diabetes, hypertension, ischemic vascular disease, heart failure, and coronary artery disease

CMMI Model	Performance Measures Related to TCOC
Bundled Payments for Care Improvement (BPCI) Advanced Model⁷⁵	<p>Cost Measures: Not applicable</p> <p>Utilization Measures: Hospital-wide all-cause unplanned readmission</p> <p>Quality Measures: Advance Care Plan; CMS Patient Safety and Adverse Events Composite (CMS PSI 90); Perioperative care: selection of prophylactic antibiotic; hospital 30-day mortality rate; complication rate following total hip/knee arthroplasty</p>
Oncology Care Model (OCM)⁷⁶	<p>Cost Measures: Total episode payments, net savings/losses to Medicare, Medicare Part A payments, Medicare Part B payments, Medicare Part D payments</p> <p>Utilization measures: proportion of patients with all-cause hospital admissions; proportion of patients with all-cause ED visits; proportion of patients that died who were admitted to hospice for three days or more</p> <p>Quality Measures: Pain intensity quantified; plan of care for pain; screening for depression and follow-up plan; patient-reported experience of care; clinical quality of care; care plan; receipt of specialist report; documentation of current medications in the medical record</p>
Comprehensive Primary Care Plus (CPC+)⁷⁷	<p>Cost Measures: Not applicable</p> <p>Utilization Measures: acute hospital utilization; ED utilization</p> <p>Quality Measures: Patient experience of care survey (CG-CAHPS); controlling high blood pressure; diabetes hemoglobin A1c (HbA1c) poor control</p>
Primary Care First (PCF) Model⁷⁸	<p>Cost Measures: total per capita cost</p> <p>Utilization Measures: Acute hospital utilization</p> <p>Quality Measures: Patient experience of care survey (CAHPS); advance care planning; diabetes hemoglobin A1c (HbA1c) poor control; controlling high blood pressure; colorectal cancer screening; days at home</p>

VII.D. Performance Measures Proposed in Selected PTAC Proposals

Exhibit 12 summarizes the performance measures related to TCOC that submitters recommended for use in evaluating the ten selected models proposed to PTAC. Some PTAC proposed models, like those from UChicago and NYC DoHMH, directly mention accountability via TCOC as a key aspect of accounting for performance. Other PTAC proposed models rely more on using measures of utilization developed through claims data, such as ED visits, ICU days, and hospital admissions to indirectly calculate health care costs and account for TCOC.

Exhibit 12. Performance Measures Related to TCOC Proposed in PTAC Proposed Models

PTAC Proposed Model	Performance Measures Related to TCOC
American Academy of Hospice and Palliative Medicine (AAHPM)	Cost Measures: TCOC; spending Utilization Measures: Receipt of hospice care; enrollment in hospice more than 7 days before death; ICU stays during the 30 days before death; ED visits; hospital admissions in the last year of life Quality Measures: Quality of communication; timeliness of response to urgent needs; adequacy of treatment for pain and symptoms; likelihood to recommend the PCT to friends or family; completion of a comprehensive assessment; screening for pain, dyspnea, nausea, and constipation; discussion regarding emotional needs/screening for anxiety or depression; discussion of spiritual concerns; discussion of advance care planning; structured assessment of caregiver needs and distress
Coalition to Transform Advanced Care (C-TAC)	Cost Measures: ACM episode expenditures Utilization Measures: Hospital admissions; ED visits; ICU days; readmission rate Quality Measures: Timeliness of Care; responsiveness to emergent medical issues; advanced care planning; visit frequency; care coordination
University of Chicago (UChicago)	Cost Measures: TCOC Utilization Measures: number of unplanned hospitalizations; number of ambulatory care sensitive hospitalizations Quality Measures: patients' rating of provider; depression remission at 12 months
American Academy of Family Physicians (AAFP)	Cost Measures: TCOC Utilization Measures: Inpatient hospitalization utilization; ED utilization; admissions and readmissions; duplicative or clinically unnecessary testing; medication-related complications Quality Measures: Core Quality Measures Collaborative's patient-centered medical home (PCMH)/ACO/Primary Care Core Set, including clinical quality, patient safety, and resource use measures

PTAC Proposed Model	Performance Measures Related to TCOC
American College of Surgeons (ACS)	<p>Cost Measures: Not specified</p> <p>Utilization Measures: Unplanned hospital readmission within 30 Days of principal procedure</p> <p>Quality Measures: Surgical plan and goals of care, postoperative care plan, identification of major co-morbid medical conditions; preventive care and screening: tobacco screening and cessation intervention; preoperative key medications review for anticoagulation medication; postoperative care coordination and follow-up with primary/referring provider, postoperative plan communication with patient and family, and post-discharge review of patient goals of care</p>
American Society of Clinical Oncology (ASCO)	<p>Cost Measures: TCOC; supportive and maintenance drug costs</p> <p>Utilization Measures: Unplanned acute care hospital admissions; unplanned emergency and observation care visits; hospice admission; chemotherapy receipt at end of life</p> <p>Quality Measures: Care Plan; preventive care and screening</p>
Avera Health (Avera)	<p>Cost Measures: Medicare Part A spending; Medicare Part B spending</p> <p>Utilization Measures: ED visits; SNF readmissions; hospital readmissions</p> <p>Quality Measures: Assessments of short-stay residents; function of short-stay residents; assessments of long-stay residents; function of long-stay residents</p>
Large Urology Group Practice Association (LUGPA)	<p>Cost Measures: Medicare Part A payments; Medicare Part B payments</p> <p>Utilization Measures: Time on active surveillance (AS); utilization of AS</p> <p>Quality Measures: shared decision-making;</p>
New York City Department of Health and Mental Hygiene (NYC DoHMH)	<p>Cost Measures: TCOC</p> <p>Utilization Measures: Resource utilization</p> <p>Quality Measures: Risk-adjusted, facility-based SVR score; matched cohort study analyzing the impact of care coordination on TCOC for Medicare and Medicaid FFS beneficiaries</p>
Illinois Gastroenterology Group and SonarMD, LLC (IGG/ SonarMD)	<p>Cost Measures: Average total cost per patient; average inpatient cost per patient; average emergency room cost per patient; average biologic cost per patient</p> <p>Utilization Measures: Hospital admissions; ED visits</p> <p>Quality Measures: Patient satisfaction; proactive patient engagement</p>

VII.E. Performance Measures Used for Multi-Payer Models

Several current CMMI models are multi-payer models and incorporate partnerships with other payers and states to help advance health, including the SIM, CPC+, the Maryland TCOC Model, the Vermont All-Payer ACO Model, Community Health Access and Rural Transformation (CHART) Model, OCM, the Pennsylvania Rural Health Model, and PCF.

Among these models, performance measures can differ between Medicare implementation and private payer implementation. For example, in the OCM, in which both Medicare providers and private payers participate, private payers can develop their own payment incentives, while aligning with the Innovation Center's goals for improvement in care provision and efficiency. CMS provides payers with recommended measures, highlighted in the OCM Other Payer (OCM-OP) Core Measure set, including the same claims-based quality measures as the Medicare Model, proportion of patients with all-cause hospital admissions, proportion of patients with all-cause ED visits or observation stays that did not result in a hospital admission, and proportion of patients that died who were admitted to hospice for three days or more. Payers are not required to collect practice-reported measures, but if they do, they are encouraged to use the same subset of Consensus Core Set measures used by CMS to determine OCM performance-based payments. Payers are encouraged not to capture additional practice-measures that are not included in the OCM-OP Core Measure Set.⁷⁹

With the goal of producing a replicable strategy for reducing TCOC in multiple regions, the Network for Regional Healthcare Improvement (NHRI) published their own "Technical Resource for Measurement of Total Cost of Care Using Multi-Payer Datasets," documenting their Total Cost of Care Pilot project.⁸⁰ The pilot used the HealthPartners TCOC tool to measure the outcomes of the project.⁸¹

Section VIII. Findings from Research Related to Population-Based TCOC Models

Models that aim to reduce TCOC include other important objectives such as reducing preventable utilization, improving quality of care, improving patient experience, improving equity, and leveraging innovative payment arrangements. Additionally, there is a financial interest in understanding the extent to which interventions implemented under population-based models provide a positive return on investment from the provider perspective.

Efforts to reduce TCOC vary based on the needs of the individual patients and resource constraints, and an effective TCOC intervention for one population might not be appropriate for another. This section summarizes findings from the implementation and evaluation of different models' and health care systems' efforts to reduce TCOC-based on a review of peer-reviewed literature and evaluations of CMMI models.

VIII.A. Increasing Financial Accountability

Early performance results from CMS' Medicare Shared Savings Program suggest that ACOs with greater financial accountability are more likely to deliver better coordinated and efficient care for Medicare patients. These ACOs joined one of the MSSP's new participation options on July 1, 2019 under the program's Pathways to Success policies, which were intended to improve the accuracy of financial benchmarks and provide incentives to take on downside risk.⁸²

VIII.B. Reducing Avoidable Health Care Utilization

Evaluations of population-based TCOC approaches have yielded promising findings on the impact on avoidable health care utilization. For example, a recent evaluation of a value-based payment program with capitated payments for community pharmacies that offered enhanced clinical services found reduced TCOC for the beneficiaries with one or more chronic conditions and non-statistically significant reductions in hospital admissions and ED visits.⁸³

A recent evaluation of the PCMH ProvenHealth Navigator (PHN) model which included a shared saving incentive payment based on quality outcomes found that the model was associated with a total reduction of 56 admissions per 1000 patients per year, 21 fewer admissions per 1000 patient per year, and an estimated cumulative total spending reduction of seven percent.⁸⁴ Other literature shows evidence of the success of the PCMH program for reducing ED visits, utilization, and costs.^{85,86,87,88,89} One study showed that practices with PCMH status had reduced total Medicare payments, acute care payments, and emergency room visits for Medicare FFS beneficiaries.⁹⁰

TCOC approaches are more likely to target beneficiaries with the potential for reducing expenditures and utilization. For example, Medicare FFS beneficiaries who met AHC eligibility criteria had higher total expenditures, inpatient admissions, ED visits, and unplanned readmissions than beneficiaries that did not meet the criteria. Early findings from the AHC model indicate some decreases in ED use, with beneficiaries in the intervention group having nine percent fewer ED visits than their control group counterparts.

An evaluation of a community-based oncology OCM participant (Cancer Care Specialists of Illinois) engaged in a risk-based relationship with New Century Health within the value-based model and leveraging clinical pathways revealed a 13.5 percent reduction in overall drug spending during a 15-month period (from October 2017 to January 2019). The evaluation identified important factors contributing to this decrease in spending including physician adherence rates, real-time identification of high-cost drugs and regimens, and a rapid desktop access to catalog of higher value alternative therapies.⁹¹

During the first years of CPC+, participating entities slightly reduced the rate of acute hospitalizations for Track 2, slightly reduced the rate of ED visits, and minimally slowed the growth of billable ambulatory primary care visits for Track 2.⁹² In 2019, 541 ACOs participating in the MSSP—a predecessor of NGACO and GPDC—generated \$1.19 billion in total net savings to Medicare with continued reductions in PAC spending, hospitalizations, and ED visits.⁹³

Medicaid managed care (MMC) delivers Medicaid health benefits and additional services to nearly two-thirds of Medicaid beneficiaries through contracts with Medicaid agencies and MCOs with PBPM capitation payments. Through contracting with different MCOs to deliver Medicaid health services, states can reduce Medicaid program costs and more effectively manage the utilization of health services.⁹⁴

Medicaid provides the main source of financing for long-term care services, and risk-based managed care continues to grow as states expand their MCO contracting.⁹⁵ Recently, studies have examined the impact of MMC on cost, quality, and access and noted varying findings from states.^{96,97} While there is no

definitive evidence of reduced health care utilization for adults in MMC, one study in children in Medicaid programs found that MMC decreased outpatient utilization.⁹⁸ Additionally, an evaluation found that increased MMC in a county might be associated with an increase in the probability of an ED visit.⁹⁹ Finally, another study found that Medicaid Pay for Performance (P4P) programs in Minnesota and Alabama had success in reducing hospitalizations.¹⁰⁰

VIII.C. Improving Quality of Care

Value-based payment models are sometimes promoted based on the observation that higher costs often lead to poor quality care health outcomes, and that targeted improvements in the quality of care can lead to better outcomes and lower health care costs overall.¹⁰¹ A 2019 evaluation of the commercial plan Blue Cross Blue Shield of Hawaii's population-based payments for primary care found that the population-based payments and TCOC incentives were associated with small improvements in quality of care in the first year of implementation (i.e., 2.3 percentage point increase in the risk-standardized probability of meeting quality measures).

The TCOC incentive changed from upside-only in the first year of provider participation to a two-sided risk-based on the same benchmark. Initial risk-adjusted PBPM payments included adjustments for panel risk and prior-year performance on quality and TCOC to reward PCPs for high quality care and/or low TCOC. Secondary analyses suggested that the quality improvements were primarily captured in process measures for advanced care planning diabetes care, blood pressure control, and body mass index (BMI) assessments.¹⁰²

CMMI models aim to reduce costs while improving or at least maintaining the quality of care. During the first three years, CPC+ slightly increased the percentage of beneficiaries with diabetes who received the recommended services and slightly increased the percentage of female beneficiaries who received breast cancer screening. However, on measures of care continuity, fragmentation, and comprehensiveness, CPC+ practices did not score significantly better than non-CPC+ practices.¹⁰³ While the impact has yet to be evaluated, new incentives in the Maryland TCOC Model to reduce TCOC have encouraged hospitals to partner with PAC facilities, home health agencies, and other facilities to improve the quality and efficiency of care episodes.¹⁰⁴

VIII.D. Improving Coordination of Care

Care coordination used in the context of population-based TCOC models is often evaluated indirectly by looking at utilization, quality, and cost of care outcomes associated with a program overall, rather than narrowly considering the impact of specific care coordination activities that those implementing the program may deploy. Population-based payments, value-based payments, and other TCOC approaches give health care systems greater financial flexibility to redirect resources to where they are needed, such as rapid ramp-ups of telehealth or deployment of care coordinators to serve as contact tracers.¹⁰⁵ Peer-reviewed research on how population-based TCOC models impact care coordination activities is limited.

Effective care coordination, especially for high-cost patients, presents an opportunity to improve care while reducing costs.¹⁰⁶ However, few large rigorous studies have evaluated the cost-effectiveness of care coordination. Those that do present mixed results.^{107, 108, 109} For example, a randomized trial on the effect of home-based nurse care coordination on Medicare patients found significant net cost savings.¹¹⁰

Another study on the impact of MMC in various states found that MMC in Oregon was associated with an improvement in access to prenatal care with its coordinated care model.

Evaluations of selected CMMI models found minimal Medicare net savings after accounting for shared savings and additional payments. Next Generation ACOs (NGACOs) showed reduced spending on SNFs and other PAC facilities.¹¹¹ Peer-reviewed research on reduced spending from care coordination relative to its cost is limited. Some research shows returns for interventions targeting high-risk beneficiaries.^{112,113} Interventions focused on care transitions also show promising results for reducing cost of care.^{114,115}

VIII.E. Improving Patient Health and Experience of Care

There is limited evidence of the impact of population-based TCOC approaches and their effect on patient health and experience with care. Evaluations of selected CMMI models have shown no improvement in health outcomes and beneficiaries served by CPC+ and OCM practices did not rate the quality of their care experience differently from comparison groups.^{116, 117} However, during their third performance year, CPC+ practices did report timelier follow-up after hospital stays for Track 2 relative to comparison beneficiaries.

MA plans receive a capitated monthly payment to provide Parts A and B benefits for each beneficiary they enroll, creating an incentive to manage care utilization.¹¹⁸ One 2017 study by Timbie et al, used Medicare Consumer Assessment of Healthcare Providers and Systems (MCAHPS) measures and claims data to assess patient experience for beneficiaries in MA plans versus FFS and found that MA plans outperformed FFS plans on most patient experience measures.¹¹⁹ Another study used results from the 2015 Medicare Current Beneficiary Survey (MCBS), including metrics of patient-perceived integrated care (PPIC) and found that patient perceptions of integrated care were largely similar across MA, ACO, and FFS health care systems.¹²⁰

VIII.F. Improving Equity

There is limited research on the extent to which population-based TCOC models address equity specifically. However, there are findings on the relationship between these models and outcomes that reflect disparities in care for vulnerable or marginalized groups including those defined by race and ethnicity. Recent studies show that incidences of patient depression, dementia, limitations in activities of daily living, functional status, and residing in areas of mental health care shortage or high unemployment are associated with substantially higher TCOC, after risk adjustment.¹²¹ There are significant racial and ethnic disparities in behavioral and mental health care outcomes and the incidence of mental health conditions like depression.^{122,123}

Cognitive, affective, and behavioral health conditions are among the costliest and fastest growing in the United States. These conditions are also the leading cause of disability in the nation, and often coexist with co-morbidities like heart diseases, hypertension, and diabetes. Interventions that seek to address these conditions and unmet needs for these underserved populations have the potential to create substantial TCOC savings.¹²⁴

One qualitative analysis of 90 provider organizations participating in Medicare ACO demonstration programs between 2012 through 2015 found that while there was substantial interest in integrating behavioral health care into primary care across the majority of ACOs, there was limited evidence that acting to improve behavioral health care for their populations reduced costs for beneficiaries with unmet behavioral health care needs.¹²⁵

Compared to other populations dual eligible beneficiaries are poorer, have higher levels of frailty, more chronic conditions, and are more likely to have functional and cognitive impairments. While evidence suggests that dual eligible beneficiaries have limited access to providers, there are no recent findings on the impact of population-based TCOC models on improving this disparity in access.^{126,127} A recent study by Fung, et.al found that physician dual eligible caseloads declined from 2012 to 2017, despite a pay bump implemented by the Affordable Care Act (ACA) to incentivize Medicaid beneficiary inclusion and promote access and utilization.¹²⁸ These results aligned with previous findings on the relationship between the 2013–14 Medicaid fee bump and physician-reported measures of participation in Medicaid, which showed no improvement in participation.¹²⁹ While racial and ethnic minorities are overrepresented in the treatment group for the AHC model, future reports will examine whether model impact differs by race and ethnicity.¹³⁰

Finally, an observational difference-in-differences analysis conducted on safety net and non-safety net hospitals into the BPCI model found that safety net hospitals did not perform differently from the other hospitals in terms of spending. The subject matter experts on this evaluation suggested that safety net status be considered in future model evaluations of BPCI.¹³¹

VIII.G. Reducing Cost of Care

Effective population-based TCOC approaches present an opportunity to improve care while reducing costs, especially for high-cost patients. In 2019, ACOs in MSSP that adopted downside risk or responsibility for additional costs under their model outperformed the ACOs that did not, with net per beneficiary savings of \$152 per beneficiary as opposed to \$107 per beneficiary. Typically, urban providers achieve greater reductions in cost of care than rural providers. In 2019, rural ACOs in MSSP generated \$64 net per beneficiary savings whereas urban ACOs in the same program generated \$125 net per beneficiary savings. The CHART Model is seeking to better promote value-based care in more remote rural areas with new payment structures.¹³²

Physician-led ACOs in MSSP were also more likely to generate savings, with rates of 70 to 85 percent compared to 66 to 78 percent for hospital-led ACOs and 63 percent to 85 percent for integrated ACOs. ACOs that participated in two-sided risk models and that took on greater risk levels were also more likely to generate savings. This is likely an indication that for these ACOs to take on risk or greater risk, they first invested in improving organizationally and adopting TCOC approaches.¹³³

After determining the average costs per beneficiary in 306 hospital referral regions and adjusting for regional price differences, a recent analysis of patient-based global payments in Medicare estimated that setting these payments at the level of average spending in the 25th percentile regions would save \$35 billion nationally and setting at the 50th percentile would save \$18.2 billion nationally.¹³⁴

Evidence from other CMMI model evaluations is less promising regarding reducing TCOC. Overall, many CMMI models have generated minimal net Medicare savings, after accounting for shared savings and additional payments. Medicare expenditures for the CPC+, NGACO, and OCM models increased slightly compared with comparison groups in the models' most recent evaluation reports, when accounting for payouts to participants.^{135,136,137} NGACO and OCM both achieved reductions in gross spending, which was offset by additional payments to participants. However, there have been promising reductions in costs for some types of care. NGACOs reduced gross spending on SNF and other PAC facilities.¹³⁸ While CMMI's CPC+ has yet to demonstrate consistent net cost reductions,¹³⁹ there are promising findings associated with use of the PCMH principles. One study found that Medicare payments decreased after practices received NCQA PCMH recognition. Sixty-two percent of this decrease was due to a reduction in payments for inpatient care and ED visits.¹⁴⁰

In Medicaid, there is little evidence that models like Pay for Performance (P4P) models actually reduce costs of care.¹⁴¹ One study noted that having fewer Medicaid patients in a provider's population makes Medicaid P4P incentives less impactful.¹⁴² Additionally, there is little evidence to support the idea that Medicaid P4P programs decrease spending.^{143,144,145} One study on MMC found that these models lowered costs slightly on the national level and could improve access to care, but the extent and amount of improvements differed across states.¹⁴⁶ However, a more recent article challenged these findings on cost reduction and found no reduction in spending by transitioning to MMC.^{147,148}

VIII.H. Return on Investment

Returns on investments are, to an extent, addressed in the section above (Section VIII.G Reducing Cost of Care) with net cost savings and net cost reductions. One recent evaluation of the Missouri Health Foundation pilot program, HealthTran, which hired a mobility coordinator, trained staff in clinics and hospitals to screen patients for their transportation needs and developed cost-effective solutions for those in need of transportation found a return on investment of \$7.68 for every \$1 invested.¹⁴⁹ Returns on investment for some of the selected CMMI models were negative, and analyses of ACOs in these CMMI models suggest that investments in TCOC approaches and care transformation take time to result in decreases in spending.^{150,151}

Section IX. Barriers and Challenges Related to Implementing Population-Based TCOC Models

Despite interest in population-based TCOC models, there are many design and implementation challenges to implementing these models effectively to reduce TCOC and improve quality and patient-centeredness of care. This section summarizes challenges identified in the TCOC literature.

IX.A. Provider-Level Challenges

This section summarizes challenges related to provider participation and readiness, safety net provider participation in APMs financial incentives, financial risk track, and risk adjustment.

Provider Participation and Readiness

The full diversity of beneficiaries has not been reflected in many Innovation Center models to date, in part due to issues related to participation among providers that care for underserved populations.¹⁵² A

recent study examined organizational and contextual factors associated with physician practices' participation in APMs.¹⁵³ The study found that greater participation in APMs was associated with being in the Northeast, being affiliated with a broader medical group or health care system and achieving greater clinical and structural integration. In addition to the organizational and structural factors, there are other factors that influence provider participation, including requirements related to mandatory versus voluntary participation in models.

A study conducted by RAND corporation in 2018 found that payment models are changing at an accelerating pace, and some physician practices, health systems, and consultants have found it difficult to keep up with the proliferation of new models.¹⁵⁴ As alternative payment models have become increasingly complex, practices that have invested in understanding more complex APMs have found opportunities to earn financial awards for their preexisting quality. Physician practices were more likely to be risk-averse, and risk-averse practices sought to avoid or offload downside risk to partners, such as hospitals and device manufacturers, whenever possible.

Challenges Related to Safety Net Provider Participation in APMs

Given the promise of population-based TCOC models such as ACOs, it is important to examine the reach of these models based on community and regional characteristics. Previous studies have shown that ACOs tend to be developed in areas with higher income levels.¹⁵⁵ This phenomenon has also been consistent across other CMS payment models like CPC+.¹⁵⁶ Although one-third of PCPs work in ACOs, participation is lower in places with vulnerable populations. Additional incentives may be necessary to encourage health systems and practices operating in rural areas and areas with higher poverty rates to participate in APMs. Research shows that providing upfront financial resources to physician practices in rural, underserved areas to create the required infrastructure and facilitate participation lowered health care spending and use can be effective.

Identifying and defining safety net providers is challenging in the current health care system. According to the Institute of Medicine (IOM), safety net providers are providers with an open-door policy regardless of a patient's ability to pay. Often these providers see patients who are uninsured, enrolled in Medicaid, or are otherwise vulnerable. There are some clearly identifiable safety net providers like community health centers, federally qualified health centers, public health departments, school-based clinics, and public hospitals to name a few types of organizations. There are also some designations such as Health Professional Shortage Areas (HPSAs), Medically Underserved Areas (MUAs), and Medically Underserved Populations (MUPs), and other geographic or population-based designations that identify areas or communities that do not have adequate health care resources.¹⁵⁷ However, it remains unclear, if these designations sufficiently identify all of the providers that disproportionately provide services to underserved groups, such as independent physician practices.

Some of the existing population-based TCOC models have incorporated newer metrics for identifying providers serving underserved areas. For example, the Maryland TCOC model uses the Patient Adversity Index. This index has been developed by the Maryland Health Service Cost Review Commission. It is a combination of three factors: 1) Medicaid status; 2) race; and 3) Area Deprivation Index (a multidimensional index of a region's socioeconomic conditions developed by the CDC). The Patient Adversity Index is applied as a multiplier to provide higher payment to providers in underserved areas with higher proportions of Medicaid enrollees, African-Americans, and higher needs as determined by

the Area Deprivation Index. A similar adjustment is applied in the CHART Model. However, in spite of these examples of payment adjustments for underserved areas, it is not clear if current models, such as ACOs, have a higher payment for providers in underserved areas.¹⁵⁸

In a recent study, the authors assessed the relationship between an ACO's service area characteristics and its savings rate.¹⁵⁹ They used the MSSP ACO provider and beneficiary characteristics paired with data from the American Community Survey (ACS) to measure community deprivation at the ACO service area-level by using the social deprivation index (a measure of social deprivation drawn from the ACS)¹⁶⁰, and the outcome of interest was the ACO savings rate. The study found that the savings rate for ACOs serving the most deprived communities was 1.2 percent compared with 1.1 percent for those serving the least deprived communities.

However, after adjusting for ACO and beneficiary characteristics, ACOs serving the most deprived neighborhoods had a savings rate that was 2.3 percentage points lower than those serving the least deprived. The more deprived neighborhoods had poorer social, physical, and medical infrastructure compared with the more affluent areas; and consequently limited access to essential services, such as transportation and medical care, which may eventually erode the ACO savings rate. From a policy perspective, accounting for disparities in deprived areas can help to ensure that ACO savings accrue equitably by keeping participating providers and hospitals within these high-need communities.

A recent study by the Government Accountability Office (GAO) examined the transitions to APMs for providers in rural areas, health professional shortage areas and MUAs.¹⁶¹ The study focused on the challenges faced by providers in these areas and steps taken by CMS to assist these providers in transitioning to APMs. Based on their interview with CMS officials and stakeholders, GAO identified several challenges that affected the providers ability to transition to APMs (see Exhibit 13).

Exhibit 13. Challenges Related to Participating in APMs For Providers in Rural, Shortage or Underserved Areas

Category	Description of Challenges
Financial resources and risk management	<ul style="list-style-type: none"> • Insufficient the capital to finance upfront costs of transitioning to APMs • Being averse to financial risk or lacking reserves to cover potential losses • Treating too few Medicare patients to justify investments in APM participation; and lower patient volumes result in less predictable spending patterns, heightening financial risk • Less ability to control cost of care because they often must refer patients elsewhere for tertiary care
Data and health information technology	<ul style="list-style-type: none"> • Inability to conduct data analytics or financial modeling needed to provide value-based care • Complexity and cost of electronic health records or lack of high-speed internet, hinder electronic health record (her) adoption
Staff Resources and capabilities	<ul style="list-style-type: none"> • Lacking staff members capable of managing the transition to or participation in APMs • Lacking awareness about APMs

Category	Description of Challenges
Design and availability of models	<ul style="list-style-type: none"> • Having limited APM options due to models' geographic or participant restrictions, a lack of nearby ACOs, or a lack of models appropriate for providers in rural shortage, or underserved areas • Struggling to adapt to changing model rules and regulations

Source: "Information on the Transition to Alternative Payment Models by Providers in Rural, Health Professional Shortage, or Underserved Areas" GAO-22-104618, Published: Nov 17, 2021. Publicly Released: Nov 17, 2021.

GAO also found that CMS had launched key initiatives to ease the transition of providers in rural and underserved areas to APMs, as described in Exhibit 14.

Exhibit 14. Key Initiatives to Transition Providers in Rural and Underserved Areas to APMs

Challenge	Initiative
Funding	<ul style="list-style-type: none">• Predictable, upfront payments through global budgets (e.g., Pennsylvania Rural Health Model)• Upfront funding to help transition to value-based care and form rural ACOs (20 rural-focused ACOs to join the MSSP)
Technical Assistance	<ul style="list-style-type: none">• Under the Pennsylvania Rural Health Model, the state provides technical assistance with data analysis for rural hospitals to redesign care delivery so their providers can better meet the health needs of their local communities.• Assistance with transformation plans
All-Payer ACO	Since Medicare comprises a small portion of the payer mix, there is less incentive to participate in Medicare APMs. To address this issue, the Vermont All-Payer ACO Model had the same payment structure across all payors
Staffing	Care transformation organizations, which are included in the Maryland TCOC Model, are intended to enable provider practices to participate in APMs by addressing the difficulties they may have hiring staff to perform care management services
Care Coordination	The Vermont All-Payer ACO Model assists providers with care coordination and supports their collaboration with community-based providers
Electronic Health Record	APMs with non-EHR tracks. Some Advanced APMs have nonadvanced tracks for providers who lack certified EHR technology, such as the Radiation Oncology Model

Source: Adapted from Information on the Transition to Alternative Payment Models by Providers in Rural, Health Professional Shortage, or Underserved Areas” GAO-22-104618, Published: Nov 17, 2021. Publicly Released: Nov 17, 2021

Challenges Associated with Financial Incentives

Despite growth in population-based TCOC models and increased focus on value-based models, physician payment continues to be driven by volume-based incentives. This limits the influence of quality and cost performance incentives on physician payment. Given the co-existence of population-based TCOC models with traditional FFS arrangements, it is difficult for physicians to strike a balance between the incentives associated with these two payment methodologies. As population-based TCOC models further evolve, physicians are likely to focus more on value-oriented payment reform.¹⁶²

Delivery of low-value care. Population-based TCOC models are designed to reduce the provision of low-value care. The delivery of low-value care, services that offer the patient no benefit or a benefit less than the cost, is a clear barrier to reducing TCOC. Some experts estimate that reducing the delivery of low-value care could save the U.S. health care system billions of dollars a year. In Virginia, the Virginia Center for Health Innovation identified almost \$750 million of services that were considered low-value services¹⁶³. Choosing Wisely—an effort by the American Board of Internal Medicine Foundation to encourage a national discussion on avoiding unnecessary medical tests, treatments, and procedures—is one approach to reducing low-value care. A wide array of medical societies contributes to the list of low-value care tests, treatments, and procedures.¹⁶⁴ While there is general acknowledgment of the importance of using innovation to reduce low-value care, there are also concerns that the emphasis on reducing or eliminating low-value care may lead to unintended consequences associated with quality of care. For example, concerns have been raised that shared decision making, which is a strategy to

improve the quality of care in the United States, may be compromised if a physician is overly focused on reducing low-value care. These experts believe that there are times when delivering low-value care may improve the patient provider relationship and the provider- patient relationship is a valuable tool in improving patient health.¹⁶⁵

Pricing and reimbursement. Calculating the cost of health care is challenging. There are many variable factors that can influence cost of care, and there can be incentives to shift the cost of care from one section of the health care system to another or onto the payer or patient. Until there are more effective ways to determine cost of care in a comprehensive and standardized way, providers may face incentives to shift the cost of care to other entities, which can prevent policy makers from understanding the true cost of health care services.¹⁶⁶

Lack of adequate measures of quality. Experts note that measuring how TCOC relates to quality and patient-centered care is challenging. Without proper measurement, it will be difficult for providers to know how to improve their care delivery to achieve higher quality and potentially lower costs. Only a handful of states evaluate spending using all payer claims databases to identify services that are truly wasteful and do not contribute to quality. Until more systems are in place to measure and provide feedback to providers on care they deliver that does not improve quality, the provision of low value care will continue.¹⁶⁷

Challenges Associated with Financial Risk Track: Upside, Downside or Both?

To avoid incentives to increase avoidable services in the FFS environment, accountable entities (including providers in some cases) accept financial responsibility for the care they provide under APMs. While APMs can include both upside and downside risk, CMS and other payers have been increasingly interested in implementing two-sided financial risk and moving towards models where full accountability for the cost of care resides outside the payer organization. As such, many APM models currently in testing by CMMI have two-sided risk arrangements (e.g., Comprehensive End-Stage Renal Disease Care Model, CPC+, Next Generation ACO Model, MSSP Tracks 2 and 3, OCM, CJR Payment Model, Vermont All-Payer ACO Model).¹⁶⁸ Additional information can be found in Appendix D.

Two-sided risk more directly motivates providers to use innovation in care delivery to effectively manage and ultimately reduce costs to CMS and society at large. Additionally, in two-sided risk models, any bonuses that occur inadvertently, due to pure chance, can be offset by potential penalties that may also occur by chance. In the MSSP, for example, the one-sided risk model incorporates a 50 percent shared savings, while two-sided models offer the possibility of 60 percent or 75 percent. Consistent with the HCP-LAN framework, CMS and other health care payers often view upside-only risk programs as steps along the path to two-sided risk. Asking health systems and providers to start with two-sided risk models might reduce incentives for smaller health systems, health systems that treat a population with complex and unpredictable health care costs, or individual physician practices that seek to limit their risk exposure. There are several strategies adopted by payers to facilitate the transition from upside to two-sided risk arrangements.

- **Finding a middle path.** CMS has introduced MSSP Track 1+, a hybrid downside risk model that caps losses and is more suitable for smaller organizations.¹⁶⁹

- **Greater gainsharing for model participants.** CMS is aware that requiring model participants to adopt two-sided risk within a short transition period could eventually lead some providers to withdraw from APMs altogether. CMS also recognizes that upside risk-only models can under some circumstances lead to savings, especially if rewards for generating such savings are substantial. Some experts suggest that CMS consider converting the five percent APM bonus (for ACOs in two-sided models) to a higher shared savings percentage. If it were structured as a higher shared savings percentage, particularly for organizations with low baseline spending, the participating organizations might have a greater incentive to generate savings.
- **Gradual progression for safety net providers.** Many payers recognize the importance of facilitating a gradual progression of provider accountability from the organization level down to the practice level. This can encourage innovative approaches to care among the practices directly serving patients. However, if providers are given financial accountability without the experience or reserves to manage that responsibility, they are likely to face consequential challenges. Some experts suggest that providers need to assume accountability at both vertical (the amount of downside risk as well as upside potential) and horizontal (the breadth of clinical services for which a provider assumes responsibility) levels.¹⁷⁰

Issues with Risk Adjustment

Risk adjustment assumes a very important role in accounting for differences in baseline costs based on geographic, demographic, and clinical considerations. Within this context, experts note that it is important to measure and account for all the factors that cause variation in costs, while avoiding the creation of perverse incentives to “game the rules” related to risk adjustment. In the last decade, there have been discussions about not only including geographic, demographic, and clinical characteristics but also including other social risk factors, such as lack of transportation and food insecurity as part of the risk profile for patients served by an accountable entity or provider (for example, through the potential combination of area-level and individual-level factors within a risk adjustment framework).

MA Program Risk Adjustment Challenges. The approach to risk adjustment under the MA program has garnered recent attention. As noted above, MA risk adjustment algorithms use demographic information and diagnosis-based HCC scores to calculate a risk score for each enrollee. HCCs are medical conditions or groups of related conditions with similar treatment costs. Some policy analysts have noted that under current mechanisms for MA risk adjustment plans may face incentives to document diagnosis codes in ways that translate into higher HCC scores and consequently higher monthly payments and rebates that a plan may use to provide extra benefits to enrollees.

In their March 2021 *Report to the Congress*, MedPAC found that coding intensity is higher in MA than in FFS Medicare and payments to MA plans are thus higher than intended.¹⁷¹ MedPAC indicated that MA plans use coding approaches that influence HCC scores. These approaches include using historical electronic health record data, claims, prescription drug data, or other sources to identify diagnoses that can then be documented in the current year to count towards MA payment. Additionally, MA plans may use chart reviews to capture and enhance information about diagnoses, which can exacerbate the difference between information about diagnoses in MA versus FFS. MedPAC recommended the following strategies to mitigate the issue of inflation in risk scores by MA plans.

- Develop a risk adjustment model that uses two years of FFS and MA diagnostic data. Using two years of diagnostic data would improve the accuracy of both FFS and MA diagnostic information and would reduce the variation from one year to the next.
 1. Exclude diagnoses that are documented only on health risk assessments from either FFS or MA. From 2022 onwards, CMS will be relying on encounter data to compute the risk scores.
 2. Apply a coding adjustment that fully accounts for the remaining differences in coding between FFS Medicare and MA plans.

ACO Risk Adjustment Issues. Unlike MA plans, ACOs have historically focused less on the implications of risk adjustment, and there is limited evidence regarding efforts on the part of ACOs to find ways to enhance risk scores. This may be because ACO benchmarks have not historically been adjusted based on risk scores over time. However, beginning in 2017, regional benchmark adjustments for ACOs were introduced, which could affect how ACOs approach risk adjustment moving forward.

Risk tiers under primary care models. Primary care models, such as CPC+, use risk tier thresholds (25th, 50th, 75th, and 90th percentiles) to establish risk scores. Use of tiers may prevent clinicians and health care organizations from dropping individual higher risk patients from their care. However, the use of these risk tiers poses challenges—for example, there might not be a statistically significant difference between patients in the 74th and 76th percentile, but based on the distribution, they would be categorized into two different tiers.

Participation in primary care models involves greater financial risk for physicians, and thus are likely to intensify the emphasis on and stakes surrounding risk coding. As part of an effort to avoid the financial penalties introduced by APMs with two-sided risk, clinicians may feel more pressured to increase their coding intensity or shift toward lower-risk panels. There are several policy initiatives that limit the exposure to financial risk for physicians in primary care models:¹⁷²

- Experts note that changing from retrospective to prospective attribution has enhanced the predictability of attribution and allowed providers to focus more on clinical management of at-risk beneficiaries. This also prevents adverse selection and avoidance of high-risk beneficiaries.
- Experts note that policy makers could consider shifting their focus to adjusting for risk score growth instead of risk score levels before attribution. This may mitigate concerns that clinicians and health care organizations are dropping chronically or acutely ill patients in APMs.

IX.B. Patient-Level Barriers

Patient-level factors may also contribute to challenges in understanding and evaluating population-based TCOC models. Many patients are unaware of the cost of their health care services. The role of health insurance and lack of price transparency within the U.S. health care system are two factors that contribute to patients not knowing the actual cost of their health care. Another key patient-level barrier relates to the nature of the patient physician relationship. Patients are apt to follow the advice of their physician regardless of the cost or quality of care being suggested. There are tools available to patients about the quality of provider care, but patients may not know that these tools exist and may trust their physician's suggestions for care. Additionally, high-cost or high-need patients could benefit from participation in a value-based model that seeks to reduce TCOC through innovations such as care coordination.¹⁷³

Equity. A recent article noted the limitation of an FFS system in creating a more equitable health care delivery system. The authors indicated that given the lack of coordination and fragmentation in FFS, it is unlikely that an FFS health care system will promote equity. Instead, the authors suggested that ACOs or other population-based models are better vehicles for adjusting resources and delivering more equitable care. These models have levers to increase payments for underserved groups, thus incentivizing providers to care for underserved groups.¹⁷⁴ One way to incentive providers to deliver high quality care to underserved communities is through bonus payments like the Alternative Quality Contract (AQC) offered in Massachusetts. Under this program, physician organizations could earn up to 10 percent of their risk-adjusted budgets in bonus payments for quality performance. This represented a sizable increase compared to the 2.3 percent average bonus that was available prior to the AQC.¹⁷⁵

Advancing health equity has been identified as a key objective for CMMI, with an aim to embed health equity in every aspect of CMS Innovation Center models and increase focus on underserved population. CMMI has identified several goals related to equity, including increasing access to accountable, value-based care for underserved beneficiaries as the innovation center focuses on increasing participation among safety net providers in its models.¹⁷⁶ The Innovation Center has indicated that achieving the goal of developing a health system that attains the highest level of health for all people and eliminates health disparities requires centering equity in all stages of model design, operation, and evaluation, and aligning these concepts with other CMS programs.¹⁷⁷ The Value-Based Insurance Design (VBID) model is one example of a model that serves nearly 3.7 million underserved participants, many of whom are dual eligible beneficiaries.¹⁷⁸

IX.C. System-Level Barriers

One challenge related to reducing the TCOC relates to how TCOC is calculated. Currently, there are a variety of approaches for calculating TCOC in the context of Medicare APMs, as well as in other contexts. In some cases, pharmaceutical costs are excluded from calculations, and in other cases, the patient out-of-pocket costs are excluded. Without a uniform approach to determining TCOC, it is challenging to measure the effectiveness of population-based TCOC models.¹⁷⁹

On a broader level, there are elements of the U.S. health care system that create barriers to the reduction of TCOC. One barrier to the reduction of TCOC is the degree of competition and consolidation in a specific geographic area, which can affect the baseline health care costs in a community. Without competition in the marketplace, costs can increase because there are no alternatives and increasing costs or poor quality are able to persist. The research is mixed regarding what is the right amount of competition in a community to incentivize cost reductions in health care services.^{180, 181}

Another barrier to reducing TCOC relates to a lack of data on the cost of health care. This lack of data has an impact on consumers, purchasers, and policy makers. At present, there is little understanding on how much it costs to deliver patient care. The lack of price transparency affects care purchasers who do not have effective tools for understanding the cost of care. For policy makers, increasing the availability of data on the costs of services could allow for the accurate measurement of costs and enable policy makers to make more accurate price decisions that could lead to cost reductions.¹⁸² Without a clear understanding of costs and quality outcomes, measurement becomes challenging. Without the ability to effectively measure the impact of clinical encounters and interventions, policy makers cannot effectively make decisions on the value of care.¹⁸³

Section X. Opportunities for Improving and Optimizing Efforts to Develop and Implement Population-Based TCOC Models and Reduce TCOC in APMs and PFPMs

This section summarizes some opportunities identified in the TCOC literature related to addressing some of the barriers that exist and facilitating the development of future population-based TCOC models.

X.A. Promising Care Delivery Arrangements

Several innovative care delivery systems and models have shown some impact on reducing TCOC. Specifically, innovations that use health information technology (HIT), community health workers (CHWs), behavioral health, and patient-centered medical homes. Health Care Innovation Awardees that incorporated HIT, CHWs, or both achieved over \$150 per beneficiary per quarter reductions in TCOC, and TCOC reductions for award organizations with PCMHs, behavioral health programs, or both were closer to \$100 per beneficiary per quarter.¹⁸⁴

Patient-Centered Care. As discussed in Section VIII.B (Reducing Avoidable Health Care Utilizations), a recent evaluation of PCMHs found an average total cost savings of nearly 8 percent over a 90-month study period and an average of \$53 cost savings in PBPM TCOC per site. These savings can be further broken-down into \$34 PBPM savings for acute inpatient care. A longer time to implement the PCMH model was associated with greater TCOC reductions.¹⁸⁵ An evaluation of Blue Cross Blue Shield New Jersey patient-centered programs found that, when compared to patients in traditional primary care practices, beneficiaries in the patient-centered programs saw a 9 percent reduction in TCOC.¹⁸⁶

Importance of Primary Care and Care Coordination. Primary care practices are often the central focus of population-based models that are designed reduce TCOC. This often involves the use of data analytics and education as well as additional staff resources to increase coordination and reduce fragmentation. These investments are generally effective, but only impact a small portion health care spending.¹⁸⁷ According to a recent report by the Patient-Center Primary Care Collaborative, the United States spends only about 5-7 percent of total health care spending on primary care.¹⁸⁸ As a result, even when gains are made in reducing costs associated with effective delivery of primary care, they may have a limited impact on reducing TCOC.

Subspecialty care is expensive and one approach for reducing TCOC involves moving more care delivery to primary care. Some states require commercial payers to increase their spending on primary care in order to reduce TCOC. Another approach to increasing primary care services could involve incentivizing PCPs to offer advanced services and care management to their patients.¹⁸⁹

Community Health Workers (CHWs). A recent evaluation of the Integrated Primary Care and Community Support (I-PaCS) model, which integrated CHWs into primary care settings and includes the management of SDOH found a 12.6 percent decrease inpatient hospital, outpatient hospital, and ED costs of high and moderate risk patients. The evaluation also estimated and 7.1 percent decrease in TCOC by year three of the model.¹⁹⁰ Overall, a literature review of the results from 17 peer-reviewed studies associated with PCMH implementation identified nine studies that found a measurable improvement in one or more cost measures. While most studies did not assess TCOC, the trends across all 17 studies suggested improvements in cost and/or utilization were demonstrated.¹⁹¹

Impact of TCOC Approaches on Care Delivery and Expanded Care Access. A recent article on the performance of the Maryland TCOC Model during the COVID-19 public health emergency (PHE) found that the unique population-based revenue was a resilient alternative to FFS, and allowed Maryland to largely avoid the overwhelming surge of COVID-19 hospitalizations.¹⁹² Prior to the PHE in 2019, Maryland TCOC providers reported making progress across the five primary care functions, including expanding access outside of standard business hours, doubling follow-up rates after hospital discharge, expanding care management services for high-risk beneficiaries, and researching more patients with behavioral health services. As of 2020, 83 percent of Maryland TCOC hospitals plan to participate in the Care Transformation Initiative in 2021. These initiatives reward hospitals for more efficient episodes of care and provide stakeholders flexibility to design these episodes and interventions.¹⁹³

Options for Improving Provider Accountability for Quality of Care. With an increased focus on reducing the TCOC also comes the need to ensure that cost reductions do not negatively impact quality; and value-based care initiatives often seek to improve quality. Existing CMMI models, demonstrations, and programs use several techniques to hold providers accountable for quality of care, including incorporating quality measurement and related benchmarks into payment mechanisms. One common approach that is used in several CMMI models, including OCM, NGACO, GPDC, CPC+, PCF, and Maryland TCOC, involves using data from electronic clinical quality measures (eCQMs), claims-based measures, and patient-reported experience of care survey measures, such as CAHPS measures, to measure quality. Provider performance on quality measures is then accounted for in the models' performance-based payment attribution methodologies.

CPC+ practices retain all or part of a performance-based incentive payment (PBIP) depending on their progress toward meeting performance goals on clinical quality, patient experience of care, and utilization. The payment methodology prioritizes achievement on quality measures, allowing practices to receive up to one-half of the PBIP if they meet quality performance goals but do not meet utilization goals.¹⁹⁴ In OCM, providers receive a performance-based payment that is calculated retrospectively based on their achievement on quality measures and reducing expenditures.¹⁹⁵ In each case, different models may use slightly different quality measures, performance-based payments, and payment methodologies, but all find ways to hold providers accountable for quality of care.

X.B. Promising Payment Arrangements

Despite the lack of consistent research findings, the literature suggests that APMs show promise in improving specific performance metrics when they create incentives for TCOC reductions. Different forms of value-based payment, including shared savings and risk, reference pricing, capitation, and bundled payments, combined with incentives for quality and efficiency, can be appropriately adjusted to different market conditions and organizational settings. The primary issue is aligning incentives to reduce TCOC with the appropriate organization form and other market considerations and beneficiary characteristics.

Bundled or episode-based payments. While bundled payments incentivize cost reductions per episode, depending upon how broadly episodes are defined, costs associated with pre-intervention and post-treatment care might not be prevented. It is therefore recommended that episodes be defined broadly to best incentivize TCOC savings.¹⁹⁶

Capitation or global payments. Under these payment models, providers are accountable for both unit cost and volume risk for the number and use of services per episode of care and for the number of episodes of care over time. When coupled with quality incentives, risk-adjusted prospective capitation can mitigate the potential stinting in the quality of care.¹⁹⁷

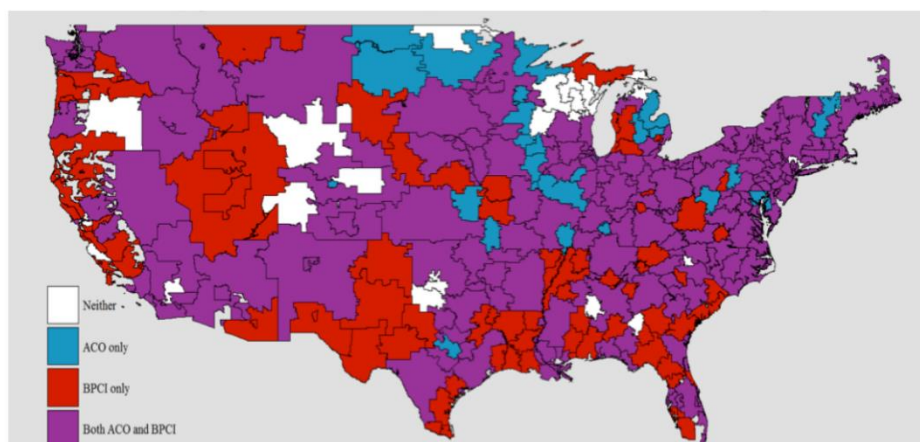
Shared savings. Shared savings models that combine prospective FFS with retrospective TCOC savings and can be one-sided or two-sided. The impact of shared savings depends upon the risk-sharing arrangement, TCOC performance metrics, and other quality incentives included in the model.¹⁹⁸

At-risk compensation models have demonstrated reductions in LOS and hospital readmissions.¹⁹⁹ The Texas Medicaid waiver incentive-based payment model has led to demonstrable reductions in hospitalizations for patients, generating an average savings of \$1,500 per year per patient.²⁰⁰

X.C. Considerations Related to Nesting of Episode-Based Models Within Population-Based Models

Both episode-based bundled payments and ACOs have been part of Medicare's APM strategy. As shown in Exhibit 15, the MSSP and BPCI have a high proportion of overlap in their geographic markets across the nation²⁰¹. The BPCI episode includes accountability for episodes beginning with hospitalization and spanning a period of post-acute care. On the other hand, the MSSP emphasizes global accountability for overall quality and costs over the course of a year, thereby emphasizing care management of both outpatient and hospital care. In this way, ACOs and bundled payment may complement each other, with the former focusing on reducing hospitalization and the latter focusing on improving hospital and post-acute care quality while lowering post-acute care intensity. Hospitals participating in both the MSSP and BPCI initiative had lower readmission rates compared to those participating in only one program also suggests potential synergies between the APMs.

Exhibit 15. Geographic Distribution of Markets by MSSP and Participating BPCI Hospitals



Source: Liao, JM, Dykstra SE, Werner RM, Navathe AS. BPCI Advanced Will Further Emphasize The Need To Address Overlap Between Bundled Payments And Accountable Care Organizations. Health Affairs Forefront. April 17, 2018.

Hospitals participating in ACOs and BPCI leverage different care strategies from hospitals in bundled payment alone without difference in episode spending. Despite the improved quality and synergy between ACO and bundled payment, payment mechanisms disincentivize the collaboration.

When patients attributed to an MSSP ACO trigger an episode at an unrelated BPCI provider, the BPCI provider's target price is functionally counted in the MSSP ACO's cost performance. In particular, the cost of claims submitted by the BPCI provider are attributed back to the MSSP ACO. If the BPCI provider also contains costs below the target price and generate episode savings, the ACO sees this reflected as an additional upward cost adjustment equal in magnitude to the savings amount.

There are options for facilitating coordination between population-based TCOC models and episode-based models. In a scenario where the APMs overlap within markets but not provider organizations, Medicare could link the BPCI Advanced provider's actual episode cost, instead of the target price amount, with the ACO. There may be a rationale for holding MSSP providers accountable for care that its beneficiaries incur through other unrelated providers (an incentive aligned with ACOs' focus on global, longitudinal care management). In addition, measures could be adopted to avoid double counting savings.

When the BPCI Advanced program and the MSSP overlap in both markets and provider organizations, and the ACO achieves shared savings, Medicare could manage the overlap by not pursuing financial recoupment from the BPCI Advanced provider. Such recoupment can counteract the incentive for the BPCI Advanced provider to work with other participants in the ACO to optimize outpatient and inpatient use (e.g., conveying the message to BPCI Advanced providers that active participation as an MSSP participant could result in financial consequences).

X.D. Mandatory Versus Voluntary Participation

Provider participation in most APMs, including population-based TCOC models, is voluntary. This section discusses considerations related to mandatory versus voluntary participation in population-based TCOC models.

In the early years of its existence, CMMI emphasized voluntary provider participation in APMs. Although statute allows HHS to implement mandatory APMs under Medicare, mandatory models may pose challenges to provider engagement. Exhibit 16 summarizes some pros and cons related to mandatory versus voluntary participation that were identified in a recent study.²⁰²

Exhibit 16. Pros and Cons of Mandatory versus Voluntary Provider Participation

Pros	Cons
Voluntary Participation	
<ul style="list-style-type: none">• Allows organizations to participate based on their assessment of readiness• Preserves patient choice regarding where to receive care (via APM provider or not)	<ul style="list-style-type: none">• Potentially susceptible to bias based on which providers participate (provider selection) and on participants' avoiding certain type of patients (patient selection)• Could result in inadequate participation, thereby limiting scaling efforts
Mandatory Participation	
<ul style="list-style-type: none">• Potential for greater geographic and patient coverage• Less susceptible to provider selection	<ul style="list-style-type: none">• Compelling providers and patients to participate could lead to unintended effects• Could potentially lead some clinicians and health care organizations to stop seeing Medicare patients

Source: Adapted from Joshua M. Liao, Mark V. Pauly, and Amol S. Navathe, "When Should Medicare Mandate Participation In Alternative Payment Models?," *Health Affairs* Vol. 39, No. 2: February 2020

Given the potential pros and cons associated with voluntary and mandatory participation, researchers have noted that policy makers would benefit from better understanding and coordination of mandatory and voluntary models.

A recent study suggested that voluntary participation is likely to garner support from the "best of the lot," or organizations that are better prepared to perform under value-based payments.²⁰³ The authors also suggested that voluntary versus mandatory models may be more appropriate under different clinical scenarios. They indicated that for elective or preference-sensitive care, voluntary participation is likely to engage early adopters and yield best-case estimates of potential APM benefits while preserving patient choice and monitoring for unintended effects. If successful as voluntary models, analogous mandatory programs could subsequently be implemented to drive greater market reform.

Conversely, for nonelective services, the early use of mandatory participation could potentially test how APMs affect patient outcomes while mitigating patient selection effects. The knowledge and experience gained from these programs could serve as the basis for larger voluntary programs that appeal to and engage a broader range of organizations. The authors noted that there is ambiguity regarding which clinical services are potentially appropriate for voluntary or mandatory participation. For example, while acute myocardial infarction and stroke are treated with nonelective, universally accepted therapies amenable to mandates, organizations vary in their technological capacity and ability to deliver related clinical services such as percutaneous coronary intervention.

X.E. Potential Opportunities for Multi-Payer Alignment

A key goal of multi-payer or all-payer models is to bring as many of a provider's patient panel under one set of common initiatives as possible—to reduce administrative burden and increase the business case for provider to engage in meaningful delivery system reform. This objective sets multi-payer or all-payer models apart from payer-specific initiatives. Managed care organizations (MCOs) have noted that multi-

payer alignment is beneficial to providers and plans and standardizes value-based payment models across plans and lines of business to improve provider engagement.²⁰⁴

While experts note that multi-payer models can increase engagement in value-based payment models, those designed for Medicare providers have failed to generate consistent participation from Medicaid and commercial payers.²⁰⁵ Experts note that increasing multi-payer participation in APMs could be facilitated by the all-payer advanced APM bonus payments created by Medicare Access and CHIP Reauthorization Act of 2015 (MACRA).²⁰⁶ Under the MACRA Quality Payment Program, eligible clinicians can apply to become Qualifying APM Participants (QPs) through the Medicare Option, which only accepts participation in Medicare Advanced APMs or the All-Payer Combination Option. The All-Payer Option allows participation in both Medicare APMs and Other Payer Advanced APMs. CMS defines Other Payer Advanced APMs as arrangements that meet certain criteria within Medicaid, Medicare, and as required for CMS multi-payer model participants and other commercial payers.²⁰⁷

Three recent multi-payer CMMI models include the Maryland All-Payer Model (implemented in 2014 and completed in 2018); Vermont All-Payer Model (implemented in 2017 with an anticipated end date of December 2022); and the Pennsylvania Rural Health Model (PARHM) (implemented in 2019 with an anticipated end date of December 2024).^{208,209,210} These multi-payer models align Medicare, Medicaid, and commercial payers around a common approach to payment. Multiple payer participation in one payment model can create greater incentives and flexibility for hospitals to transform care. While limitations and challenges remain for multi-payer participation, especially for commercial payers, their evaluations do provide some lessons learned on opportunities to improve multi-payer alignment. Multi-payer models create a common framework for financial incentives, quality reporting, and the payment rules.

Participating payers in these models often shift financial risk for patient care to non-payer accountable entities such as ACOs.²¹¹ These models may use a multi-layered accountability structure or establish governance through an independent regional redesign organization meant to support and monitor model implementation with multiple payers participating on the board.^{212,213} In these cases, experts recommend that CMS provide technical assistance to ensure that commercial, MA, and Medicaid provider payment reforms meet the standards for advanced Medicare APMs and therefore quality for bonus payment incentives.²¹⁴ Technical assistance can include alignment with managed care organizations (MCOs) and contractors or vendor providing support in hospital recruitment, data analytics and research, hospital transformation plan development, and education and resources for clinical transformation.²¹⁵

Finally, support from CMMI and CMS itself has been key to the promotion of multi-payer engagement and alignment. Since CMS has regulatory oversight over both Medicare and Medicaid, CMMI can work closely with participants to submit any necessary applications for state plan amendments or 1115 waivers to align incentives in these models. The most recent PARHM evaluation report highlights the important role that CMS plays supporting the model's sustainability because of the large share of Medicare discharges in participating hospitals' stays and CMS' continued encouragement of commercial payers that cover MA beneficiaries to participate in the model.²¹⁶

Since these multi-payer models are state-specific, they can build upon existing and past value-based models between CMS and their state (or other states) and benefit from their experience with related delivery system reform initiatives. An interesting model in this regard is Vermont's Global Commitment

to Health Section 1115 waiver, the Blueprint for Health, a multi-payer ACO Shared Savings Program (SSP) pilot under Vermont's State Innovation Models (SIM) Testing Grant. Others include the Finger Lakes demonstration in New York; Maryland's Total Patient Revenue Model; and Maryland's current TCOC Model.^{217,218,219}

Models can also tailor design of all-payer models to their state's health care network. For example, Pennsylvania has a high MA penetration, and a majority of the state's Medicaid enrollees are in managed care plans administered by commercial payers. Therefore, MA and Medicaid beneficiaries can be included in the model if their health plans (i.e., commercial payers) participate.²²⁰ For both the Vermont All-Payer and PARHM, the Maryland All-Payer Model provided a key foundation that Vermont and Pennsylvania were able to tailor to their needs. State-level models can also create very targeted recruitment efforts. For example, the Vermont All-Payer Model recruited commercial payers based on their historic market shares in the geographic service areas where participating hospitals operated.²²¹

While these multi-payer models did promote payer participation across Medicaid, Medicare, and commercial payers, lack of alignment persists across public and private (i.e., commercial). Furthermore, there is concern about encouraging commercial payers to participate. All-payer rate-setting in the Maryland All-Payer Model was intended to harmonize payment rates among payers, however findings from the final evaluation report suggested that higher Medicare inpatient payments (relative to the Medicare FFS comparison group) were not fully offset by the lower commercial insurance payments (relative to the commercial comparison group).^{vi}

Despite the intention that all-payer rate setting is intended to eliminate the payment differential by payer, Medicare payment rates in the Maryland All-Payer Model were higher for both inpatient and hospital outpatient claims, and commercial payer inpatient rates were lower.²²² In an early evaluation of the PARHM, commercial plans expressed concerns about global payment methodology, the complexity of the model, and their accountability to develop and implement hospital transformation plans.²²³

Some Medicaid programs cite differences in beneficiary populations and overall payment rates as challenges to Medicaid engagement in multi-payer models. However, some states have adopted components of value-based payment models (e.g., Minnesota's IHP initiative) and some MCOs indicate they try to align provider contracting strategies to create a level of standardization and semi-alignment that improves provider engagement.²²⁴ Finally, the multi-payer models discussed above are not designed to directly incentivize practitioners. PARHM excludes professional services from the hospital global budgets, and the hospitals are the primary risk-bearing entities in the Vermont All-Payer Model.^{225,226}

X.F. Summary of Promising Strategies for Developing Population-Based TCOC Models and Reducing TCOC

Models focused on high-cost and high-risk patients, multi-payer alignment, and value-based care arrangements with accountability for TCOC were more likely to achieve reductions in TCOC when

^{vi} The final evaluation of the Maryland All-Payer Model did not consider utilization changes when reporting on inpatient payments, and therefore should not be interpreted as reductions in hospital payments

compared with other models. Specific strategies linked with positive outcomes for consideration by designers of future population-based TCOC models are described below.

- Increase provider capacity to engage in and manage population-based TCOC models through incentives to enhance investment and planning at the level of accountable entities and providers.²²⁷
- The MA program, which allows Medicare beneficiaries to voluntarily enroll in a private plan that administers health benefits, introduced private-sector competition and innovation to Medicare beneficiaries. A number of private insurers (also known as payers or health plans) offer MA coverage, resulting in an increasingly competitive marketplace for consumers. As a result of this competition, MA plans have successfully lowered costs and improved quality and health care outcomes. MA plans have reduced costs for beneficiaries in terms of premiums and lowered out-of-pocket caps to reduce beneficiary exposure to excessive medical costs.²²⁸ Despite the reduction in costs, MA plans have expanded their coverage of supplemental benefits.
- While MA plans have matured and spearheaded some of the efforts in value-based care, the opportunities for reduction in care and improvement in quality by provider-based accountable care needs to be carefully examined. Over the past decade, ACOs have evolved to build large attributed populations, but have had limited success in reducing the cost of care delivery. Unlike MA plans, ACOs tend to have one-sided risk, which does not strongly incentivize them to use aggressive tactics to lower costs. Another major difference is that beneficiaries enroll in MA and are attributed to ACOs. The differences between enrollment and attribution heavily influence ACO and MA business practices. MA plans must expend significant resources developing customer acquisition and retention strategies. ACOs do not face those expenses, but they also do not have a direct and open relationship with their patients that would allow for more robust and effective management practices.²²⁹ Allowing beneficiaries to select MA versus ACO based on cost and benefits would set a level playing field between MA and ACO and make it necessary for MA plans to compete in local, provider driven markets.
- Focus on multi-payer alignment to make transitions into value-based care easier and achieve system wide impacts.^{230, 231, 232} The most effective implementation of multi-payer models may require use of an independent governing body with payer and provider representation and leveraging the All-Payer Advanced APM Bonus that was created by MACRA.^{233, 234, 235}
- Offer multiple levels of risk-sharing to support providers with different capacities to take on risk, as has been done in the Maryland TCOC, GPDC, NGACO, CPC+, and MSSP models.
- Use PCMH models with shared incentive payments based on quality outcomes and other TCOC-related metrics.²³⁶
- Adjust benchmarks for MA plans using a relatively equal blend of per capita local area FFS spending and standardized national FFS spending; the FFS population with both Part A and Part B in benchmarks; or eliminating the current pre-ACA cap on benchmarks.²³⁷
- Consider payment approaches found in relevant PTAC proposals including population-based payments and financial accountability for TCOC (e.g., shared savings and penalties for TCOC)
- Consider holding entities accountable for chronic condition-specific costs or specialty-specific costs instead of TCOC where appropriate.

- Consider using non-cost of care measures such as reductions in avoidable utilization, hospital admission rates and readmission rates; LOS for inpatient and post-acute facility stays; or rates of ED use; in combination with cost-based measures
- Incorporate pharmaceutical costs into TCOC measures but hold clinicians accountable for avoiding use of low-value therapies, rather than overall pharmaceutical costs.^{238, 239}
- Leverage clinical pathways and evidence-based medicine in value-based models²⁴⁰
- Use payment approaches that give health care systems greater financial flexibility to redirect resources to where they are needed, such as rapid ramp-ups of telehealth or deployment of care coordinators.²⁴¹
- Address SDOH and behavioral health needs (e.g., depression, dementia, limitations in daily living activities, functional status) for underserved populations that have the potential to create substantial TCOC savings.²⁴²

X.G. Areas Where Additional Information Is Needed Related to Development of Population-Based TCOC Models and Reducing TCOC

This section includes a summary of some areas for consideration to guide future research on TCOC in the context of APMs. Appendix F details additional areas for further exploration and research.

Financial Modeling and Prospective TCOC. One proposed approach that merits further research and development is the adoption of net present value of care (NPVoC) APMs into population-based TCOC models. NPVoC models build on the standard TCOC approach to incorporate estimated future savings into shared savings methodology and calculated shared savings. The Maryland All-Payer Model incorporated this approach in 2018 with the implementation of “outcomes-based credits.” Using outcomes-based credits, CMS gives credit toward annual shared savings incentives that are calculated on estimated future savings for CMS that are associated with improvements in population health outcomes. Some experts suggest that this approach may promote better health equity by taking into consideration opportunities for future savings in areas with more anticipated health care needs, and incentivize investment in interventions that are more likely to decrease health care costs overall.^{243, 244} One potential method for improving TCOC as a measure of efficient allocation of resources would be to include future-looking elements that estimate how the health care system’s present allocation of resources could impact future health outcomes and TCOC. Incorporation of the NPVoC into model incentives could help promote more cost-effective approaches (i.e., preventive health care and other population health investments) and reduce TCOC.²⁴⁵

Using the Area Deprivation Index (ADI) to target interventions. The ADI is a validated composite measure that uses U.S. census data to measure neighborhood socioeconomic disadvantage. The use of the ADI in combination with the HCC score may facilitate more precise targeting of care management resources and identification of high-cost Medicare beneficiaries. More specific care management targeted toward high-cost Medicare beneficiaries could have the potential for substantial TCOC savings.²⁴⁶

Impact of TCOC Approaches on Equity. Attention to health inequity has increased in recent years. However, evidence and research on TCOC approaches and their impact on improving health equity for underserved beneficiaries is limited. The full diversity of beneficiaries has not been reflected in many Innovation Center models to date.²⁴⁷ Additionally, while racial and ethnic minorities might be overrepresented in APMs that target high needs beneficiaries, future reports need to examine whether

model impact differs by race and ethnicity, and if there are any gains in equity for participating beneficiaries.²⁴⁸

Appendix A. Research Questions by Environmental Scan Section

Section	Research Questions
Section IV. Background: Defining Population-Based TCOC Models and Related Terms	<ul style="list-style-type: none"> • What are different model types that might be considered relevant for developing population-based TCOC models? <ul style="list-style-type: none"> ○ Models with TCOC incentives for a wide population-based on geography ○ Models with TCOC incentives for patients with specific characteristics (e.g., beneficiaries who are dually eligible or with specific diagnoses) ○ Models that relate TCOC and focus on specific episodes of care • How do these models fit within existing APM frameworks such as the Health Care Payment and Learning Action Network (HCP-LAN) framework? • What are the options for defining TCOC for use in relevant models?
Section V. Comparison of Relevant Features in Selected CMMI Models	<ul style="list-style-type: none"> • How do the features of models and programs that are relevant for developing population-based TCOC models vary on the following dimensions? <ul style="list-style-type: none"> ○ Beneficiary participation and total covered population ○ Provider participation and networks ○ Geography and access ○ Covered services: Part A and B services, Rx benefits, post-acute care (PAC) benefits, benefit enhancement ○ Payment model features: financial risk, implications of cost benchmarks in payment, use of risk adjustment for payment ○ Beneficiary cost-sharing ○ Coordination of care ○ Approach to quality of care
Section VI. Relevant Features in Selected PTAC Proposals	<ul style="list-style-type: none"> • How did PTAC proposals include consideration of TCOC measures in designing proposed payment methodologies?
Section VII. Relevant Performance and Outcome Measures used in Reporting and Evaluation	<ul style="list-style-type: none"> • What performance and outcome measures are used in reporting and evaluation models that might be considered relevant for developing population-based TCOC models? • How do these measures relate to provider, patient, and payer perspectives? • What considerations are relevant TCOC measures that are used to evaluate participating providers including primary care providers and specialists?
Section VIII. Findings from Research Related to Population-Based TCOC Models	<ul style="list-style-type: none"> • What are trends related to adoption and experience using with implementing models that might be considered relevant for developing population-based TCOC models?

Section	Research Questions
	<ul style="list-style-type: none"> • What do evaluation show about the effectiveness of models that might be considered relevant for developing population-based TCOC models? • What kinds of care delivery innovations are being used in models that might be considered relevant for developing population-based TCOC models? <ul style="list-style-type: none"> ○ Care coordination ○ Integration of primary and specialty care ○ Use of telehealth ○ Adherence to clinical standards ○ Other care delivery innovations • What are approaches used to evaluate models that might be considered relevant for developing population-based TCOC models? Including those related to return on investment? • What does research identify as promising approaches to reduce cost and improve quality as it relates to physician participation in models that might be considered relevant for developing population-based TCOC models? • Is the experience of managed care (e.g., Medicare Advantage [MA], commercial, or Medicaid managed care) related to use of TCOC measures?
<p>Section IX. Challenges and Opportunities Related to Implementing Population-Based TCOC Models</p> <p>Section X. Opportunities for Improving and Optimizing Efforts to Develop and Implement Population-Based TCOC models and Reduce TCOC in APMs and PFPMs</p>	<ul style="list-style-type: none"> • What challenges and opportunities related to developing and implementing population-based TCOC models? Including those related to: <ul style="list-style-type: none"> ○ Provider readiness to participate, particularly in two-sided risk models ○ Financial and operational needs ○ Non-covered benefits such as Rx drugs and use of carve-outs ○ Challenges with risk adjustment ○ Improving quality of care

Appendix B. Search Strategy^{vii}

Research Questions	Search Terms
Section IV. Background: Defining Population-Based TCOC Models and Related Terms	
<ul style="list-style-type: none"> What are different model types that might be considered relevant for developing population-based TCOC models? How do these models fit within existing APM frameworks such as the Health Care Payment and Learning Action Network (HCP-LAN) framework? What are the options for defining TCOC for use in relevant models? 	total cost of care OR cost of care (AND): <ul style="list-style-type: none"> population-based definition objectives alternative payment models functions
Section V. Comparison of Relevant Features in Selected CMMI Models and Other CMS Demonstrations and Programs	
<ul style="list-style-type: none"> How do the features of models and programs that are relevant for developing population-based TCOC models vary on the following dimensions? 	Centers for Medicare & Medicaid Services (CMS), CMS Program Statistics, and CMS and Innovation Center websites and associated evaluation and model overview documents
Section VI. Relevant Features in Selected PTAC Proposals	
<ul style="list-style-type: none"> How did PTAC proposals include consideration of TCOC measures in designing proposed payment methodologies? 	PTAC proposal documents
Section VII. Relevant Performance and Outcome Measures used in Reporting and Evaluation	
<ul style="list-style-type: none"> What performance and outcome measures are used in reporting and evaluation models that might be considered relevant for developing population-based TCOC models? How do these measures relate to provider, patient, and payer perspectives? What considerations are relevant TCOC measures that are used to evaluate participating providers including primary care providers and specialists? 	total cost of care OR cost of care OR net savings (AND): <ul style="list-style-type: none"> performance measures quality measures outcome measures metrics
Section VIII. Findings from Research Related to Population-Based TCOC Models	
<ul style="list-style-type: none"> What are trends related to adoption and experience using with implementing models that might be considered relevant for developing population-based TCOC models? What do evaluation show about the effectiveness of models that might be considered relevant for developing population-based TCOC models? 	total cost of care OR cost of care OR net savings (AND): <ul style="list-style-type: none"> trends utilization care coordination OR care management OR coordinated care patient experience OR equity cost savings

^{vii} The search strategy highlighted in this table include initial search terms and is not a comprehensive list of all targeted searches conducted by the team.

Research Questions	Search Terms
<ul style="list-style-type: none"> • What kinds of care delivery innovations are being used in models that might be considered relevant for developing population-based TCOC models? • What are approaches used to evaluate models that might be considered relevant for developing population-based TCOC models? Including those related to return on investment? • What does research identify as promising approaches to reduce cost and improve quality as it relates to physician participation in models that might be considered relevant for developing population-based TCOC models? • Is the experience of managed care (e.g., Medicare Advantage [MA], commercial, or Medicaid managed care) related to use of TCOC measures? 	<ul style="list-style-type: none"> • return on investment • care delivery • payment <p>cost of care + Medicare cost of care + Medicaid cost of care + commercial</p>
<p>Section IX. Challenges and Opportunities Related to Implementing Population-Based TCOC Models Section X. Opportunities for Improving and Optimizing Efforts to Develop and Implement Population-Based TCOC models and Reduce TCOC in APMs and PFPs</p>	
<ul style="list-style-type: none"> • What challenges and opportunities related to developing and implementing population-based TCOC models? 	<p>total cost of care OR cost of care OR net savings (AND):</p> <ul style="list-style-type: none"> • risks • challenges • accountability • facilitator • impact • payment AND global OR capitated • community • continuity • patient experiences OR equity

Appendix C. Definitional Table of Total Cost of Care

This table provides differing definitions identified during the environmental scan used to describe (TCOC) and the specific health care services that are included in each definition's per-beneficiary TCOC calculation.

Source	Definition and Included Services
Total Cost of Care	
California Health Care Foundation (CHCF) ^{viii} <i>Working definition from a 2016 report</i>	<u>Definition:</u> "Total cost of care refers to the cost of all medical services consumed by a population of patients in a year, and includes all covered professional, hospital, pharmacy, and ancillary care." <u>Included services:</u> <ul style="list-style-type: none"> • All inpatient and outpatient services. • All inpatient and outpatient pharmaceutical costs.
Health Care Transformation Task Force (HCTTF) ^{ix} <i>Working definition from a 2016 report on ACOs</i>	<u>Definition:</u> "Total cost of care is defined to encompass all services, including medical, facility, behavioral, pharmaceutical, and laboratory. Even though additional providers might be involved, such as through a carve-out behavioral health vendor, the associated costs would be included for the purposes of calculating total cost of care." <u>Included services:</u> <ul style="list-style-type: none"> • All inpatient and outpatient services. • ACO assumes risk for all services provided to the patient, regardless of which provider delivered the services.
Maryland Total Cost of Care Demonstration (2018) ^x	<u>Definition:</u> "Total cost of care means the aggregate Medicare FFS costs for all items and services, or a specific subset thereof, [delivered] to Medicare FFS beneficiaries." <u>Included services:</u> <ul style="list-style-type: none"> • Medicare Part A and Part B expenditures only. • Includes any Outcomes-Based Credits in the per beneficiary TCOC calculation when determining the annual Medicare savings.

^{viii} California Health Care Foundation. Managing Cost of Care: Lessons from Successful Organizations. Published online January 2016. <https://www.chcf.org/wp-content/uploads/2017/12/PDF-ManagingCostofCare.pdf>

^{ix} Health Care Transformation Task Force. Accountable Care Financial Arrangements: Options and Considerations. Published online June 2016. https://hcttf.org/wp-content/uploads/2018/01/HCTTF_ACOFinancialArrangementsWhitePaper.pdf

^x Maryland Health Services Cost Review Commission. Maryland Total Cost of Care Model State Agreement. Published online 2018. <https://hsrc.maryland.gov/Documents/Modernization/TCOC-State-Agreement-CMMI-FINAL-Signed-07092018.pdf>

Source	Definition and Included Services
OneCare Vermont Accountable Care Organization, LLC (2018) ^{xi}	<p><u>Definition:</u> “Total Cost of Care means, generally, the Payer’s financial cost of providing qualifying health care services to Accountable Care Organization’s Attributed Lives for a Performance Year. Each Program Agreement between ACO and a Payer will more particularly describe components of TCOC for that Program, for example, pharmacy may be excluded from some Programs’ calculations of Total Cost of Care.”</p> <p><u>Included services:</u></p> <ul style="list-style-type: none"> • Unique to each agreement between the ACO and a Payer. • Pharmacy, nursing facility care, psychiatric treatment in State psychiatric hospitals, involuntary placements for inpatient psychiatric stays, dental services, and non-emergency transportation are not included in the OneCare program. The Department of Vermont Health Access (DVHA) directly pays participants for these services. • Excludes any services that are offered to beneficiaries but are paid for by other Vermont government departments (e.g., Vermont Department of Mental Health or the Department of Disabilities, Aging and Independent Living).
Axene (2021) ^{xii}	<p><u>Definition:</u> “The total cost of care attempts to look at what it costs an entity to care for their members. It is the cost associated with a population and their specific conditions. It does not include the explicit admin costs that are required at a health plan, but would include some of the other costs associated with contracting with providers.”</p> <p><u>Included services:</u></p> <ul style="list-style-type: none"> • All inpatient and outpatient services. • Use claims data to generate unit costs and utilization statistics, which can be multiplied to yield a PMPM value (i.e., an actuarial model).
Global and Professional Direct Contracting (GPDC) Model ^{xiii}	<p><u>Definition:</u> The Performance Year Benchmark, a target Per Beneficiary Per Month (PBPM) dollar amount, represents the average Medicare beneficiary TCOC for aligned beneficiaries and refers to the target expenditure amount that will be compared to Medicare expenditures for items and services furnished to aligned Direct Contracting beneficiaries during a performance year to determine the direct contracting entities’ savings or losses.</p> <p><u>Included services:</u></p> <ul style="list-style-type: none"> • Part A and B expenditures for aligned beneficiaries during a baseline period.

^{xi} OneCare Vermont Accountable Care Organization, LLC. Risk-Bearing Participant & Preferred Provider Agreement. Published online September 2018.

<https://www.lawinsider.com/contracts/b3sUDVD6dDV>

^{xii} Axene J. What Is The “Total Cost of Care” and Why Does It Matter? Published online 2021. <https://axenehp.com/total-cost-care-matter/>

^{xiii} Center for Medicare and Medicaid Innovation. Direct Contracting Model: Global and Professional Options Request for Applications, 11/25/2019. Published online 2019. <https://innovation.cms.gov/files/x/dc-rfa.pdf>.

Source	Definition and Included Services
<p>HealthPartners' Total Cost of Care and Resource Use (TCOC) Framework – Total Cost Index and Resource Use Index^{xiv}</p> <p><i>HealthPartners' TCOC measurement approach is one of the only published, established population-based measures of TCOC that has been reviewed and endorsed by the National Quality Forum (NQF).^{xv}</i></p>	<p><u>Definition:</u> The Total Cost Index is a comparative tool to reflect the cost-effectiveness of managing the patient population, and it is calculated by comparing risk-adjusted PMPM cost measurements (developed by combining administrative claims and membership eligibility data and risk adjusting with Johns Hopkins' Adjusted Clinical Groups system) with risk-adjusted PMPMs from peer groups and benchmarks. The Resource Use Index calculates the incidence and intensity of services used to manage a condition or procedure, and it is calculated using HealthPartners' Total Care Relative Resource Value (TCRRV) algorithm.</p> <p><u>Included services:</u></p> <ul style="list-style-type: none"> • All administrative claims (inpatient, outpatient, clinic, ancillary, pharmacy).

^{xiv} HealthPartners. Total Cost of Care (TCOC) and Total Resource Use.; 2017:8. <https://www.healthpartners.com/content/dam/brand-identity/pdfs/plan/tcoc-total-resource-use.pdf>

^{xv} HealthPartners. HealthPartners Total Cost of Care and Resource Use Overview & National Quality Forum Endorsement. September 21, 2017. <https://www.healthpartners.com/content/dam/brand-identity/pdfs/plan/tcoc-executive-summary.pdf>

Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Appendix D.1. Side by Side Comparison of Medicare Advantage and Selected Medicare Innovation Models

Characteristic (Appendix D.1)	Medicare Advantage (MA) or Medicare Part C ^{xvi}	Next Gen ACO (NGACO)	Global & Professional Direct Contracting (DC) ^{xvii}	Maryland TCOC Model	Medicare Shared Savings Program (MSSP)	Bundled Payment Care Initiative (BPCI)
Brief Model Overview	Health plans that offer MA products (fully capitated) have incentives to reduce total cost of care. MA plans include traditional insurance carriers, staff model plans, and integrated delivery systems. Plan structures vary including Health Maintenance Organizations (HMO), Preferred Provider Organizations (PPOs), private fee-for-service (PFFS), special needs plans (SNPs), point of service (POS) HMOs, and medical savings account (MSA) plans. ²⁴⁹	Accountable care organizations have incentives to reduce total cost of care. May be physician-led, health system-led, integrated delivery system (IDS)-led or other models.	Direct Contracting Entities (DCEs) have incentives to reduce total cost of care. DCEs may be physician-led, health system-led, integrated delivery system-led. There are four types of DCEs 1. Standard DCEs are typically physician-, health system-, or IDS-led and composed of participating providers with experience serving Medicare and dual-eligible beneficiaries. These may be new entities or existing ACOs. 2. High-needs population DCEs serve beneficiaries with complex needs using an appropriate care model. 3. Medicaid managed care plans. 4. DCEs include “new entrants” that have not served Medicare beneficiaries.	Maryland hospitals participate in a TCOC model that sets a per capita limit on total inpatient Medicare costs called the Hospital Payment Program (HPP). The model also includes a Care Redesign Program (CRP), which allows hospitals to pay non-hospital health care providers who partner and collaborate with the hospital (includes care delivered in hospitals—HCIP ^{xviii} and care delivered over episodes that to 90-days following discharge—ECIP ^{xix}), and The Maryland Primary Care Program (MDPCP). ²⁵⁰	MSSP ACOs have incentives to reduce total cost of care. In 2020, 46% of ACOs were physician-led, 27% were hospital led and the remaining were integrated. Physician-led ACOs received bonuses and generated savings at rates of 70% and 85%. ²⁵¹ MSSP ACOs fall into four tracks. Basic tracks include levels A-E. Levels A and B are one-sided (upside only) models, and Levels C-E of basic and the Enhanced Track MSSP ACOs accept two-sided risk as described below. ²⁵²	Bundled Payments for Care Improvement (BPCI) initiative, now complete, included four broadly defined models of care, that consolidated payments for multiple services beneficiaries receive during specific episodes of care (e.g. major joint replacement of the lower extremity, Acute myocardial infarction, etc.). Under the initiative, organizations entered payment arrangements that gave them accountability for financial and performance outcomes for these episodes of care. These models aimed to increase quality and care coordination at a lower cost to Medicare. ²⁵³

^{xvi} Medicare Advantage includes several different kinds of plans: Health Maintenance Organizations (HMOs), Local Preferred Provider Organizations (PPOs), and Regional PPOs (which are known as Coordinated Care Plans [CCPs]); Private Fee-for-Service (PFFS); Medicare Savings Account (MSA) plans; and two additional plan classifications that cut across plan types: special needs plans (SNPs) and employer group plans.

^{xvii} The Global and Professional DC Model began its first performance year in April 2021, and therefore information on the intervention is limited and preliminary.

^{xviii} The Hospital Care Improvement Program (HCIP), which began in 2017, allows hospitals to pay in-hospital physicians for efforts to improve quality and efficiency of hospital care. This mitigates the concern that hospital-based physicians could be paid by volume and might have different incentives than hospitals to reduce avoidable acute care.

^{xix} The Episode Care Improvement Program (ECIP), which began in 2019, pays hospitals for successfully working with non-hospital partners to reduce total costs for episodes of care that start in the hospital but end 90 days late

Characteristic (Appendix D.1)	Medicare Advantage (MA) or Medicare Part C ^{xvi}	Next Gen ACO (NGACO)	Global & Professional Direct Contracting (DC) ^{xvii}	Maryland TCOC Model	Medicare Shared Savings Program (MSSP)	Bundled Payment Care Initiative (BPCI)
Beneficiary Participation and Total Covered Population	Beneficiaries have an opportunity to opt for MA benefits (Medicare Part C) during annual open enrollment periods. Beneficiaries opting for Part C can choose among plans in their area based on how a plan's benefits and co-pay structure aligns with preferences and needs. Beneficiaries also have the choice to enroll in MA-PDP (prescription drug plans) that cover self-administered prescription drugs in addition to other medical and supplemental benefits. Medicare eligible individuals enrolled in MA plans by choice. Nationally, MA plans covered 26.5M beneficiaries (42% of Medicare beneficiaries) in 2021. ²⁵⁴	Beneficiaries are aligned with an NGACO either through voluntary alignment on the part of the beneficiary or prospective alignment based on claims. Under prospective alignment, beneficiaries are covered through the ACO if they receive a specific share of their care from a participating provider (see below). ²⁵⁵ Alignment and voluntary beneficiary enrollment methods are set such that it is likely that beneficiaries see providers associated with the ACO during the program. However, beneficiaries are allowed to see any Medicare provider they choose even if the provider is not a part of the model. ²⁵⁶ In 2019, 1.2 million beneficiaries were aligned with NGACO providers.	Beneficiaries are aligned with a DCE (and participating and preferred providers) either through voluntary alignment or claims-based prospective alignment (to some extent depending on DCE type). ²⁵⁷	Eligible individuals include all potential patients residing in the state of Maryland. (~6.2 million). For the HPP component Medicare beneficiaries are each attributed to a hospital.	Medicare fee-for-service (FFS) beneficiaries have the flexibility to choose their primary care provider (PCP) without any cost-sharing implications. The Shared Savings Program will use the eligible beneficiary's selection of a primary clinician over a claims-based assignment methodology. ²⁵⁸ The claims-based assignment methodology refers to the assignment of PCP based on the plurality of claims. Average number of beneficiaries include in MSSO ACO is 20,700. The MSSP ACO program included approximately 10.6 million attributed beneficiaries in 2020—around 28% of traditional Medicare beneficiaries.	About 1 million beneficiaries ²⁵⁹ . Beneficiaries can choose to receive care from providers not participating in a BPCI initiative. Beneficiaries retain their full original Medicare benefits. The initiative does not restrict the ability of beneficiaries to access care from participating or non-participating providers.

Characteristic (Appendix D.1)	Medicare Advantage (MA) or Medicare Part C ^{xxi}	Next Gen ACO (NGACO)	Global & Professional Direct Contracting (DC) ^{xxii}	Maryland TCOC Model	Medicare Shared Savings Program (MSSP)	Bundled Payment Care Initiative (BPCI)
Provider Participation / Network	Beneficiaries have access to health care providers that participate in the plan's network with cost-sharing requirements set by the plan. Beneficiary "out-of-pocket" costs for receiving services for non-network providers vary by plan. Payments to out-of-network providers vary. PFFS plans are not required to have provider networks in areas with fewer than two network plans. ²⁶⁰	Providers can choose to participate in NGACOs. These providers are known as "participants." NGACOs can also designate specific providers as "preferred" providers to facilitate coordination of services across the continuum of care. ²⁶¹	Like NGACOs, providers can choose to participate in DCEs as "participants," and DCEs can also designate specific providers as "preferred providers."	Consistent with Medicare FFS, the model has an open network policy, all hospitals in the state of Maryland participate.	Medicare FFS beneficiaries have the flexibility to choose their PCP without any cost-sharing implications. The Shared Savings Program will use the eligible beneficiary's selection of a primary clinician over a claims-based assignment methodology ^{xx} .	BPCI is a voluntary initiative that allows participants to enter into agreements with CMS to be held accountable for total episode payments. Participants could be hospitals, physician group practices (PGPs), post-acute care (PAC) providers, or other entities. The agreements also specifies participants' choices among three payment models, 48 clinical episodes, three options for episode length, and three risk tracks. ²⁶²
Geography / Access	While MA plans are available in all parts of the U.S., over 40% of MA beneficiaries live in one of 19 states/territories. ^{xxi} MA plan penetration is low (20% or fewer eligible beneficiaries) in nine states/territories. ^{xxii, 263}	In 2019, 41 ACOs participated in the demonstration across 29 states and 112 hospital referral regions (HRRs). ²⁶⁴	53 DCEs are operating in 2021 across 38 states, the District of Columbia, and Puerto Rico. ²⁶⁵ Each DCE's service area includes a core: all counties in which DC Participant Providers have office locations and extended: includes counties contiguous to the core. ²⁶⁶	State of Maryland.	513 MSSP ACOs in 2020 across most of the states.	

^{xx} The claims-based assignment methodology refers to the assignment of PCP based on the plurality of claims. CMS will assign a beneficiary to a participating ACO when the beneficiary receives at least one primary care service furnished by a primary care practitioner within the ACO, and more primary care services (measured by Medicare-allowed charges) furnished by primary care practitioners at the participating ACO than from the same type of providers at any other Shared Savings Program ACO, non-ACO CCN, or non-ACO individual or group TIN.

^{xxi} This includes FL, MN, HI, OR, WI, MI, AL, CT, PA, CA, CO, NY, OH, AZ, GA, TN, RI, TX, LA) and Puerto Rico

^{xxii} Nine states include AS, HI, KS, MD, MT, ND, NE, VT & WY.

Characteristic (Appendix D.1)	Medicare Advantage (MA) or Medicare Part C ^{xxvi}	Next Gen ACO (NGACO)	Global & Professional Direct Contracting (DC) ^{xxvii}	Maryland TCOC Model	Medicare Shared Savings Program (MSSP)	Bundled Payment Care Initiative (BPCI)
Overview of Covered Services	MA plans are required to cover Medicare Part A and B services. Most plans also cover self-administered prescription drugs as an alternative to Part D, and supplemental benefits (see below). ^{xxiii,xxiv}	NGACO plans cover Medicare Parts A and B services.	Parts A and B services provided under DCEs and their participating providers and preferred providers.	HPP component includes hospital services. Other programs cover services provided by hospital-based physicians and services delivered during post-discharge episodes. Multi-Payer Advanced Primary Care Practice (MAPCP) covers care management and non-traditional modes of patient engagement.	MSSP ACOs cover Medicare Parts A and B services.	Four models – Model 1 (2013 – 2016) defined the episode of care as the inpatient stay in the acute care hospital and includes all MS DRGs Model 2 (2013 – 2018) the episode included the inpatient stay in an acute care hospital plus the post-acute care and all related services up to 90 days post-hospital discharge Model 3 (2013 – 2018) the episode of care was triggered by an acute care hospital stay but began at initiation of post-acute care. Model 4 (2013 – present) single, prospectively determined bundled payment to the hospital that encompassed all services furnished by the hospital, physicians, and other practitioners during the episode of care, which lasted the entire inpatient stay. Participants could select up to 48 different clinical episodes for models 2, 3 and 4.

^{xxiii} Medicare Part A hospital insurance covers inpatient hospital care, skilled nursing facility, hospice, lab tests, surgery, home health care.

^{xxiv} Medicare Part B covers services like doctors' services and tests, outpatient care, home health services, durable medical equipment, and other medical services. Part B also covers some preventive services and limited prescription drugs.

Characteristic (Appendix D.1)	Medicare Advantage (MA) or Medicare Part C ^{xxv}	Next Gen ACO (NGACO)	Global & Professional Direct Contracting (DC) ^{xxvi}	Maryland TCOC Model	Medicare Shared Savings Program (MSSP)	Bundled Payment Care Initiative (BPCI)
<i>Rx Benefits^{xxv}</i>	<i>MA plans cover prescription drugs in two ways. Physician-administered prescription drugs are covered under all MA plans (as they are under Part B). Most MA plans offer an MA-PD for self-administered prescription drugs prescribed by a licensed provider (an alternative to stand-alone Part D benefits).^{xxvi}</i>	<i>NGACOs cover Part B (physician-administered) prescription drugs. Self-administered prescription drugs are not covered; However, beneficiaries have the option to enroll in Part D PDP.</i>	<i>DCEs cover Part B (physician-administered) prescription drugs. Self-administered prescription drugs are not covered; however, beneficiaries have the option to enroll in Part D PDP.</i>	<i>Prescription drugs are not included but beneficiaries have the option to enroll in PDP. Maryland also has a subsidy program, Senior Prescription Drug Assistance Program (SPDAP) that provides financial assistance to moderate-income Maryland residents eligible for Medicare and who are enrolled in a PDP.</i>	<i>Prescription drugs under Part D are not included. Prescription drugs in Part B are included as part of the TCOC.</i>	<i>Prescription drugs covered under Part D are not included. Prescription drugs in Part B are included as part of bundled payments.</i>
<i>Post-Acute Care (PAC) Benefits</i>	<i>Unlike under FFS Medicare, MA plans may offer PAC services (including skilled nursing facility [SNF] stays, rehabilitation hospital [IRF] stays, and home health) without a preceding 3-day hospital stay.²⁶⁷</i>	<i>Unlike under FFS Medicare, NGACOs may offer PAC services (including SNF stays and rehabilitation hospital [IRF] stays) without a preceding 3-day hospital stay.</i>	<i>Unlike under FFS Medicare, DCEs may offer PAC services (including SNF stays and rehabilitation hospital [IRF] stays) without a preceding 3-day hospital stay.</i>	<i>ECIP component includes services delivered by PAC facilities—SNFs, HHA, and IRFs. Total SNF spending per beneficiary per year declined by 10% between 2013 to 2018 compared to 5% nationally.²⁶⁸</i>	<i>There is no requirement for a three-day hospital stay before SNF can be used. Findings indicate less use of PAC due to lower inpatient hospitalization.^{xxvii} Additionally, Hospital and SNF participation in a MSSP ACO were associated with lower readmission rates, Medicare spending on SNF, and SNF length of stay²⁶⁹</i>	<i>Models 2 and 3 included post -acute care after an initial inpatient hospital stay. Model 3 only covers the post-acute care after an initial hospital stay for potentially 48 different types of episodes for clinical conditions. Model participants have waivers for SNF stay without a preceding 3-day hospital stay and post-discharge home visit. Only 4.4% of episodes availed of the SNF waiver after 3-day hospital stay.</i>

^{xxv} Including both physician-administered drugs (e.g., Medicare Part B) and drugs prescribed by primary care and specialists, but obtained through pharmacies (e.g., Medicare Part D).

^{xxvi} The average deductible for MA-PD is \$121 compared to \$435 for Medicare Part D Plan. In all other aspects, it is very similar to Part D plans - after meeting the deductible, a beneficiary pays a 25% coinsurance and Medicare funds until \$4,020 after which the coverage gap begins. In the coverage gap, a beneficiary pays 25% of total costs for brand-name drugs and total generic costs up to an out-of-pocket spending limit up to \$6,350. Once a person reaches the out-of-pocket \$6,350 limit, their catastrophic prescription drug coverage kicks in. As a result, a person will pay 5% of their prescription drug costs, a \$3.60 copayment for generic drugs, or an \$8.95 copayment for branded drugs—whichever is greater.

^{xxvii} Not bound by the requirement for a three-day hospital stay before SNF can be used. Less use of PAC by MA due to healthier population, lower inpatient hospitalization, and more coordinated care. Also shift to lower acuity PAC providers, such as home health

Characteristic (Appendix D.1)	Medicare Advantage (MA) or Medicare Part C ^{xvi}	Next Gen ACO (NGACO)	Global & Professional Direct Contracting (DC) ^{xvii}	Maryland TCOC Model	Medicare Shared Savings Program (MSSP)	Bundled Payment Care Initiative (BPCI)
<i>Benefit Enhancement</i>	<i>Beyond services covered under Medicare Parts A and B, almost all MA plans provide access to eye exams and/or glasses, hearing exams/and or aids, telehealth services, dental care, and fitness support.²⁷⁰ As of 2021, most MA plans covered transportation. Some MA plans offer other, non-primarily health-related benefits, such as meal services, pest control, and transportation services.</i>	<i>NGACOs have some flexibility to enhance benefits beyond Parts A and B services. They can use a telehealth expansion waiver to cover services delivered to beneficiaries at home or alternative settings in non-rural areas. NGACOs may also use a waiver to cover in-home nursing visits following hospital discharge for beneficiaries at risk of hospitalizations from a licensed clinician to prevent hospitalization. They can also adjust cost-sharing rules for specific Part B services.²⁷¹</i>	<i>In addition to the NGACO enhanced benefits, DCE could offer home health services certified by NP. Through a waiver they may also be exempt from the homebound requirement for beneficiaries receiving home health and may provide concurrent care (both curative and end-of-life care) for beneficiaries that elect Medicare hospice.</i>	<i>It is possible that some components of Maryland TCOC (e.g., ECIP and PCT) represent enhancements in services covered by Medicare FFS, we will do additional research on this topic, which may require discussions with program stakeholders.</i>	<i>As of 2018, MSSP ACOs (Track C – Enhanced) expanded access to telehealth^{xxviii} services, extended waiver of 3-day SNF to MSSP ACOs with two-sided risk.</i>	<i>BPCI model participants have a waiver for providing beneficiary incentives. Transportation was the most common beneficiary incentive distributed, followed by medication management tools.²⁷²</i>

^{xxviii} Subsequent to the issuance of this waiver for NGACO Medicare FFS altered rules to expand telehealth coverage during the public health emergency.

Characteristic (Appendix D.1)	Medicare Advantage (MA) or Medicare Part C ^{xvi}	Next Gen ACO (NGACO)	Global & Professional Direct Contracting (DC) ^{xvii}	Maryland TCOC Model	Medicare Shared Savings Program (MSSP)	Bundled Payment Care Initiative (BPCI)
Overall Payment Model	MA plans are paid on a per-member per-month (PMPM) basis based on both county-level cost benchmarks (103% of per capita FFS costs adjusted for beneficiary-level risk) and annual PMPM bids submitted by MA plans. If a plan's bid is below the benchmark (ranging from 95 th to 115 th percentile of the prior-years per capita FFS Medicare risk-adjusted spending by county), its payment rate is the bid plus a share (between 50% and 70%, depending on a plan's quality rating; see below) of the difference between the plan's bid and the benchmark. Plan structures can vary based on differences between the benchmark PMPM and the accepted plan bid (see below).	NGACOs are allowed three variations on Medicare FFS payment models for provider and ACO payment: 1. FFS with an additional fixed per-beneficiary per-month (PBPM) infrastructure payment (ISP) to support ACO activities to providers. 2. Providers can opt for a population-based payments (PBP) model where they are paid the Medicare FFS, minus an amount agreed upon for expected overall population-level savings from FFS costs. ACOs are prospectively paid the difference between expected costs (base FFS rates) and reduced rate payments to providers that opt for PBPs. 3. Providers can opt for a model that is closer to full-capitation. Under All-inclusive PBPs (AIPBPs), ACOs receive prospective monthly PBPs population-level expected FFS claims. Providers receive no direct payments from CMS. ACOs can then set incentive-based rules for payment to providers. While not paid by CMS, providers submit claims to CMS for adjudication, and a reconciliation process requires ACOs to return funds paid to them in excess of actual costs. ²⁷³	DCEs are allowed two payment model options. The second is only available for DCEs opting for the higher risk-sharing arrangement (Professional v. Global see below). 1. Primary Care Capitation: DCEs receive a capitated, risk-adjusted monthly payment for primary care services provided by participating or preferred providers. 2. Total Care Capitation: DCEs receive a capitated risk-adjusted monthly payment for all covered services (available only for Global DCEs). ²⁷⁴	Includes three components ²⁷⁵ : 1. HPP: Hospitals receive prospective annual global budgets for all services adjusted based on historical TCOC for patients attributed to each hospital. 2. The CRP hospital payments to non-hospital health care providers who collaborate with the hospital to improve quality of care. 3. MDPCP: Participating practices receive an additional per beneficiary per month payment from CMS intended to cover care management services.	Payment model varies by track (basic or enhanced) and linked to benchmarks: 1. MSSP ACOs are subject to an annual spending target called a "benchmark" and a series of quality thresholds. ACOs that spend less than the benchmark share the savings with CMS. There is a penalty for spending more than the threshold under the enhanced track. 2. The Basic track (A-E) allows ACOs to begin under a one-sided risk model and gradually increase to higher levels of financial risk. The Enhanced track allows ACOs to take on the highest level of risk and potential shared savings.	Models 1, 2 & 3 include retrospective bundled payment arrangement where actual expenditures are reconciled against an episode of care's target price ^{xxix} . Initially Medicare makes FFS payments to providers and suppliers who furnish services to beneficiaries in Models 2 & 3 episodes. This payment is then reconciled against the target price and based on the reconciliation, the providers are further paid or recouped. In Model 4, CMS makes a single, prospectively determined bundled payment that encompassed all services during the entire inpatient stay. Physicians and other practitioners have the option to submit "no-pay" claims to Medicare and receive payment from the hospital out of the bundled payment. The bundled payment amount includes related readmissions for 30 days after hospital discharge

Characteristic (Appendix D.1)	Medicare Advantage (MA) or Medicare Part C ^{xvi}	Next Gen ACO (NGACO)	Global & Professional Direct Contracting (DC) ^{xvii}	Maryland TCOC Model	Medicare Shared Savings Program (MSSP)	Bundled Payment Care Initiative (BPCI)
Overall Financial Risk	Because all MA plans are paid on a PMPM basis, they face two-sided risk. Risk-levels may change based on varying cost-sharing flexibilities in plan structure. (See below and above)	NGACOs have two options for sharing overall financial risk relative to risk-adjusted benchmarks.: <ul style="list-style-type: none"> Partial risk (80% shared savings/losses). Full risk (100% shared savings/losses).²⁷⁶ NGACOs also select risk caps on their shared savings and losses between 5% and 15%.	DCEs have two voluntary risk-sharing options: <ul style="list-style-type: none"> DC Professional: 50% savings/losses. DC Global DC: 100% savings/losses.²⁷⁷ Unlike NGACO there is no cap on this risk for DCEs.	Participating hospitals are at risk for care delivered under a global per capita payment. Other providers experience only upside risk.	MSSP ACOs have four risk options. Levels A-E and an “Enhanced” track. Levels A and B of the basic track offer upside risk up to 40% of savings/losses with a 10% cap. The remaining tracks call for two-sided risk of 50-70% of savings/losses with caps of 10%-20%. ²⁷⁸ As of 2020, 63% of MSSP ACOs opted for upside risk only and the remaining 37% opted for two-sided risk. ²⁷⁹	When a participant’s aggregate Medicare episode payments were less than the target price, they could receive Net Payment Reconciliation Amounts (NPRA) from CMS. When aggregate episode payments were higher than the target price, participants may have had to repay amounts to CMS. Under Model 4, hospital retained any positive difference between target price and payment to providers – hence it is upside risk.

^{xxix} The episode cost to Medicare is calculated for each episode for each Episode Initiator using three years of historical data. Claims data are used to build episodes based on the included and excluded services for individual beneficiaries. If a minimum threshold of historical data is not available for a particular Episode Initiator for an episode, regional data are used to supplement the Episode Initiator’s historical data to calculate the episode cost. All episodes costs are trended forward using national, episode-specific growth rates to the participation year and a discount is applied to arrive at target price. In Model 2, 30 day or 60 day episode costs are discounted by 3% and 90 day episode costs are discounted by 2%.

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Implications of Cost Benchmarks in Payment	Implications of benchmarking relative to PMPM payments are described above. Plans bidding below the benchmark described above may provide benefits beyond those covered under Part A and Part B using 75% of the difference between their bid and the benchmark costs. ²⁸⁰	CMS uses the Hierarchical Condition Category (HCC) model to determine an ACO's average risk score for the ACO's baseline year population and the ACO's average risk scores for the performance-year population. The performance year benchmark is risk adjusted to reflect the change in average risk score between the base- and performance year populations. The benchmarking methodology further rewards an NGACOs for favorable financial performance on spending relative to historical or regional benchmarks. ^{281 282}	DC will introduce several innovative methodologies to benchmark construction, including: <ul style="list-style-type: none"> • Use of adjusted MA rates • Using national per capita cost to establish the trend rate to adjust for year over year cost changes. • Risk adjustment for the population of aligned beneficiaries based on HCC score. Benchmarking will be applied differently depending on the type of DCE and how beneficiaries are aligned to the DCE. ²⁸³	Under HPP hospitals face rewards or benefits if TCOC for attributed Medicare beneficiaries falls above or below a benchmark based on actual Medicare spending in MD in 2013 trended forward at the national Medicare spending growth rates. Under ECIP, hospitals select one or more of 23 clinical episodes and receive additional payments if the cost of care across all settings for 90 days after discharge falls below a benchmark and the hospital meets quality metrics. The risk is one-sided (upside) risk to the hospital.	Payment benchmarks are established based on: <ul style="list-style-type: none"> • Spending for beneficiaries who would have been assigned to the ACO in the baseline years (the 3 years prior to an ACO's agreement period). • Spending in the ACO's region CMS does not recalculate benchmarks based on changes in National Provider Identifiers (NPIs) billing under the Tax Identification Numbers (TINs).	CMS created a participant-specific benchmark by updating historical episode payments with national spending trends, and then discounted it 2% to 3% to create a target price. Model 2 and Model 3 participants with episode payments below their target price received the difference as reconciliation payments. Conversely, participants with episode payments above their target price repaid the difference to CMS. Medicare savings, therefore, depended on benchmarks accurately reflecting what episode payments would have been absent BPCI.

Characteristic (Appendix D.1)	Medicare Advantage (MA) or Medicare Part C ^{xvi}	Next Gen ACO (NGACO)	Global & Professional Direct Contracting (DC) ^{xvii}	Maryland TCOC Model	Medicare Shared Savings Program (MSSP)	Bundled Payment Care Initiative (BPCI)
<i>Use of Risk Adjustment for Payment</i>	<i>MA plan PMPM benchmarks are adjusted at the beneficiary level using HCC) scores which account for differences in expected medical expenditures based on demographic and diagnostic information.</i>	<i>Renormalization of risk scores by NGACO controls for changes in risk scores between baseline and performance years. In PY2 and PY3 NGACOs choose between renormalization and prospective coding adjustment to their scores to account for unforeseen increases in scores. Factors contributing to increased scores included ICD-10 implementation, widespread electronic health record (EHR) adoption, and increased value-based payments for Medicare/other payers. In PY4, several ACOs attributed losses or potential losses to the model's risk adjustment methodology.²⁸⁴</i>	<i>CMS will apply a modified risk adjustment methodology for the DC Model (effective risk adjustment is not currently available as the model began in April 2021).²⁸⁵</i>	<i>For PCT, care management fees are adjusted based on beneficiary risk tiers assessed on the HCC.</i>	<i>When establishing the historical benchmark, CMS uses the HCC scores to adjust for changes in severity of the population assigned to the ACO between the first and third benchmark years and between the second and third benchmark years. CMS risk-adjusts the county-level expenditures used in calculating the regional component of the national-regional blend growth rate used to trend the first and second benchmark years to the third benchmark year.²⁸⁶</i>	<i>BPCI Advanced (Model 2, 3 & 4) features modified target prices that incorporate risk adjustment and reflect peer performance and a higher discount. Some BPCI clinical episodes were not included in BPCI Advanced due to high clinical heterogeneity or small volume.</i>
<i>Beneficiary Cost-Sharing</i>	<i>MA plans have varying cost-sharing structures (plan enrollment premiums and co- payments for covered benefits provided by in- network providers). Total MA cost sharing for Part A and B services cannot exceed cost sharing for those services in FFS. MA plans may reduce cost sharing as a mandatory supplemental benefit and may use rebate dollars to do so. Since 2011, MA plans have had an out-of- pocket limit for services covered under Parts A and B.</i>	<i>Beneficiaries have the same cost-sharing rules they would experience under FFS. NGACOs and participating providers engaged in risk arrangements can implement an optional patient engagement incentive to reduce aligned beneficiaries' out-of-pocket costs for services such as preventive care and chronic disease management.²⁸⁷ Part B drugs and durable medical equipment (DME) are not eligible for cost- sharing reductions.²⁸⁸</i>	<i>Same as FFS with incentives; DCEs can enter arrangements with participating and preferred providers to reduce or eliminate beneficiary cost- sharing amounts for specific categories of aligned beneficiaries for Part B services identified by the DCE.²⁸⁹</i>	<i>Unclear if this is currently available in publicly available information.</i>	<i>Cost sharing requirements are consistent with rules under FFS Medicare. Like NGACO and GPDC, MSSP ACOs that accept two-sided risk provide support to patients to reduce out- of-pocket expenses for select Part B services.²⁹⁰</i>	<i>Beneficiaries have the same cost-sharing rules they would experience under FFS.</i>

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Health Equity and Access to Care	MA plans differ in their offering of supplemental benefits that address health equity. MA beneficiaries in racial and ethnic minority groups reported experiences with care that were either worse than or similar to experiences reported by white beneficiaries. ²⁹¹	NGACOs vary in the extent to which they implement interventions to specifically address equity. Evaluation findings suggest that NGACOs have opportunities to improve access to care for dually eligible beneficiaries and members of racial/ethnic minority groups, such as improving access to primary care, addressing gaps in care, and making connections to needed services. ²⁹²	The DC model aims to empower beneficiaries to personally engage in their own care delivery and aims to increase access to innovative and affordable care. ²⁹³	Payment incentives could improve care management. However, little information is available on how the program addresses equity.	Interventions addressing equity vary by ACO. MSSP ACOs have greater financial flexibility to help health care organizations meet health-related social needs and proactively reach beneficiaries, as opposed to waiting for patients to come for a clinic visit.	Evaluation of model suggests that the quality of care was maintained among vulnerable populations studied (beneficiaries with dementia, dual eligible and beneficiaries with recent PAC use).
Coordination of Care	MA plans' approach to care coordination varies and often includes a focus on disease management. Research shows MA plans offer better care management and coordination compared to FFS Medicare. ²⁹⁴	Specific approaches to care coordination by NGACOs vary. Some NGACOs have effectively reduced hospitalizations and readmission using care coordination programs focusing on top 10% of beneficiaries at risk of hospitalization, and use of chronic care management (CCM), and transitional care management (TCM) services. ²⁹⁵	It is anticipated that specific approaches to care coordination will vary by DCE and participating providers. The model allows the participating DCEs to provide gift cards to beneficiaries with complex, chronic conditions to participate in disease management programs. ²⁹⁶	More than 50% of hospitals had implemented care coordination plans to reduce spending and hospitalizations.	In addition to the care management programs targeting high risk population, MSSP ACOs have financial incentives under Pathways to Success to support rural ACOs in delivering better coordinated care and more efficient care for beneficiaries and encourage providers to enter into value-based care.	Accountability for patient care coordination and spending has increased under advanced BPCI models program, which holds hospitals accountable for spending during the 90-day post-discharge period ²⁹⁷ BPCI recognizes the importance of care coordination and efficiency by including services from multiple healthcare providers within the fixed target price

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Quality of Care	<ul style="list-style-type: none"> MA uses a five-star rating system to rate each contract based on 46 measures of clinical quality, patient experience, and administrative performance. MedPAC has expressed concerns about the current state of quality reporting in MA.²⁹⁸ Some research shows that enrollment in MA was associated with more preventive care visits, fewer hospital admissions and emergency department visits, shorter hospital and skilled nursing facility lengths-of-stays.²⁹⁹ 	NGACOs are given a quality score based on their performance on three quality measures: hospitalizations for ambulatory care sensitive conditions (ACSC), 30-day hospital readmissions, and 30-day hospital readmission from a SNF. NGACOs are subject to quality withholds (2%) from their shared savings if they do not meet quality benchmarks. The evaluation did not find any impact of the NGACO Model on quality-of-care outcomes overall, though some groups of NGACOs achieved improvements. ³⁰⁰	<p>DCEs are assessed on performance on five quality measures:³⁰¹</p> <ul style="list-style-type: none"> Risk-Standardized All-Condition Readmission All-Cause Unplanned Admissions for Patients with Multiple Chronic Conditions Days at Home for Patients with Complex, Chronic Conditions Timely Follow-Up After Acute Exacerbations of Chronic Conditions Consumer Assessment of Healthcare Providers & Systems (CAHPS®) Survey. <p>DCEs are subject to a quality withhold of 5% of their benchmark based on performance on the quality measures. The quality of care for GPDC has not been evaluated to date.</p>	<p>There are nine quality measures used in Maryland's quality-based incentive program.^{xxx} Some of these measures are included for performance calculations, rewarding hospital improvement, attainment of high level of quality or both.</p> <p>Research shows a reduction in hospital readmissions from 1.22% above the national average to 0.19 percentage points below the national average. The model also saw a 53% reduction in the rate of hospital acquired conditions across all payers.³⁰²</p>	MSSP ACOs are required to report on 31 quality measures. MSSP ACOs are given a quality score based on their performance on three quality measures related to care coordination/patient safety, preventive health, and control of diabetes, depression, and hypertension. ACOs are subject to quality withholds from their shared savings if they do not meet quality benchmarks. ³⁰³ In 2019 and 2020 hospitals met performance standards for these quality measures. ³⁰⁴	Quality measures for BPCI evaluation are all cause mortality, unplanned admissions and ED visits within post discharge period within 90 days of the initial hospital stay. BPCI models maintained or did not impact the quality of care for these measures.

^{xxx} The nine measures are part of a) Readmission Reduction Incentive Program (1); b) Maryland Hospital Acquired Conditions Program (1); c) Quality Based Reimbursement Program (4); and d) Potentially Avoidable Utilization Program (3)

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Issues and Challenges	CMS pays MA plans based on HCC scores. The HCC score is based on the health status of MA enrollees. As a result, MA plans have strong incentives (not as present in FFS Medicare) to identify and report as many diagnoses as can be supported by the medical record. CMS has investigated the extent to which MA plans work to inappropriately inflate HCC scores. However, many legitimate strategies are available to MA to increase risk scores. ³⁰⁵	NGACO did not achieve sufficient savings to justify making it a permanent Center for Medicare and Medicaid Innovation (CMMI) program.	The benchmarking methodology for claims-aligned beneficiaries in a Standard DCE uses a three-year weighted baseline of historical expenditures. Because the base years are weighted very heavily toward the most recent base year, it will be difficult for experienced organizations to succeed in Direct Contracting.	The model allowed Maryland to retain its rate-setting authority for Medicare expenditure despite shifting 80% of hospital revenue into a facility based global budget payment model.	Beneficiaries who exited MSSP ACOs with the highest shared savings per PCP had unusually high relative spending compared to beneficiaries exiting other MSSP ACOs. The correlation between shared savings and favorable selection is problematic. Using a provider tax-ID number (TIN) to identify clinicians could result in unwarranted savings as this allows ACOs to replace high-cost clinicians with low-cost clinicians.	Increasingly, BPCI hospitals and MSSP ACOs are in the same markets. When patients attributed to an MSSP ACO trigger an episode at an unrelated BPCI provider, the BPCI provider's target price is functionally counted in the MSSP ACO's cost performance. In this situation, there is no obvious incentive or mechanism for the MSSP and BPCI providers to coordinate care. ³⁰⁶

Appendix D.2. Side by Side Comparison of Additional CMMI Models

Characteristic (Appendix D.2)	Accountable Health Communities (AHC) Model	Financial Alignment Initiative (FAI) for Medicare-Medicaid Enrollees	Oncology Care Model (OCM)	Comprehensive Primary Care Plus (CPC+)	Primary Care First (PCF) Model
Brief Model Overview	The AHC model provides funding to “bridge organizations” to help facilitate referrals for Medicare and Medicaid enrollees across health care and social service providers. Bridge organizations use multidisciplinary care teams to coordinate services between providers and community-based organizations to increase access to social services. CMMI launched the model with the goal of evaluating whether connecting Medicare and Medicaid beneficiaries with community resources can help address HRSNs, improve health outcomes, and reduce total cost of care. ³⁰⁷ The model funds do not pay directly or indirectly for any community services. ³⁰⁸	The FAI is designed to help align the financial incentives of the Medicare and Medicaid programs with the goal of improving care. The model includes either capitated or managed fee-for-service (MFFS) payment methodologies that are adopted by individual states to align programs and services like primary, acute, behavioral health and long-term services and supports (LTSS) for these dual eligible. Each state has participating Medicare-Medicaid Plan(s) (MMPs) that provide health coverage for the target population. As of January 2022, 11 states have adopted the model and tailored it to their specific state’s needs. ³⁰⁹	The OCM is a multi-payer, episode-based model with the goal of supporting higher-quality, lower cost care to patients undergoing chemotherapy. Under OCM, physician agree to take part in two-part payment arrangements that provide funding for participating in care coordination activities and incentivize lowering the total cost of care. ³¹⁰	CPC+ was a national advanced primary care medical home model that used regionally-based multi-payer payment reform and care delivery innovation with the aim of improving primary care. In 2017 the model was launched in 14 regions. The five-year model includes two primary care practice tracks with incrementally advanced care delivery requirements and payment options. The CPC+ model includes two tracks – with more advanced care delivery requirements and financial support under Track 2. ³¹¹	PCF is a five-year payment model that is designed to reward value and quality with an innovative payment structure to support advanced primary care delivery. PCF builds off of the existing CPC_ model design and is designed as a multi-payer model. ³¹²

Characteristic (Appendix D.2)	Accountable Health Communities (AHC) Model	Financial Alignment Initiative (FAI) for Medicare-Medicaid Enrollees	Oncology Care Model (OCM)	Comprehensive Primary Care Plus (CPC+)	Primary Care First (PCF) Model
Beneficiary Participation and Total Covered Population	High-risk Medicare and Medicaid beneficiaries. Beneficiaries are eligible to receive navigation assistance if they live within the Geographic Target Area of a participating bridge organization, have one or more of five core HRSNs (housing instability, food insecurity, transportation problems, utility difficulties, and/or interpersonal violence), and self-report having two or more ED visits in the 12 months prior to screening. ³¹³ Bridge organizations partner with clinical delivery sites, such as hospitals, primary care providers, and behavioral health providers, to reach beneficiaries. Consenting potentially eligible beneficiaries are screened in-person or over the phone by bridge organization-trained screeners before, during, or after clinical visits using the AHC HRSN Screening Tool. ³¹⁴ After screening, navigation-eligible beneficiaries receive a community referral summary form, are contacted by navigators, and are given the choice to receive navigation.	Dually-eligible beneficiaries enrolled in both Medicare and Medicaid in the participating states are part of the target population. Specific eligibility requirements vary from state to state. States participating in the capitated model provide an opt-in enrollment period during which beneficiaries can select a health plan. In most states, any remaining individuals who have not chosen a plan are automatically assigned to one. Enrollees can opt out of the demonstration at any time. ³¹⁵	Medicare FFS beneficiaries with cancer undergoing chemotherapy treatment whose health care providers join the program are eligible to participate. Beneficiaries are automatically enrolled in the program if their provider chooses to take part in the OCM and must choose a different health care provider not participating in the OCM if they do not wish to receive care under the OCM. ³¹⁶ Between 2014 and 2019, over 1,000,000 episodes were included in the OCM. ³¹⁷ The program covers approximately ¼ of Medicare FFS chemotherapy-related cancer care, and over 200,000 unique beneficiaries per year. ³¹⁸	CPC+ focused on Medicare FFS beneficiaries served by CPC+ practices. By 2019, over 17 million patients were served under CPC+ in 18 regions. ³¹⁹	Medicare FFS beneficiaries served by PCF practices in 26 regions. The first performance period for Cohort 1 in PCF began on January 2021 (with Cohort 2 beginning in January 2022) so information on the beneficiary population is unavailable at this time.

Characteristic (Appendix D.2)	Accountable Health Communities (AHC) Model	Financial Alignment Initiative (FAI) for Medicare-Medicaid Enrollees	Oncology Care Model (OCM)	Comprehensive Primary Care Plus (CPC+)	Primary Care First (PCF) Model
Provider Participation / Network	Currently, there are 28 organizations participating in the AHC model. ³²⁰ Bridge organizations include health systems, health networks, single-site hospitals, independent nonprofits, public health agencies, payers, academic medical systems, consulting firms, and health information technology firms. ³²¹ Bridge organizations partner with clinical delivery sites such as physician practices, behavioral health providers, clinics, and hospitals to conduct HRSN screenings and make referrals to community services. ³²² Screenings can be conducted by existing clinical staff, dedicated screeners, or volunteers. ³²³	Providers of primary, acute, prescription drug, behavioral health, and long-term supports and services who serve Medicare-Medicaid enrollees are eligible to participate in the program. MMPs must establish a network of providers across specialties that meet time and distance standards to ensure there is an adequate provider network for beneficiaries.	As of July 2, 2021, 126 oncology or multispecialty practices providing chemotherapy and 5 commercial payers are currently participating in the OCM ³²⁴ . Over 7,000 practitioners participate in the OCM each year. ³²⁵	2,610 primary care or multispecialty practices operate as a CPC+ practice site within one of the 18 CPC+ regions.	Eligible care providers include those in internal medicine, general medicine, geriatric medicine, family medicine, and/or hospice and palliative medicine. The first performance period for Cohort 1 in PCF began on January 2021 (with Cohort 2 beginning in January 2022) so information on the participating provider network is unavailable at this time.

Characteristic (Appendix D.2)	Accountable Health Communities (AHC) Model	Financial Alignment Initiative (FAI) for Medicare-Medicaid Enrollees	Oncology Care Model (OCM)	Comprehensive Primary Care Plus (CPC+)	Primary Care First (PCF) Model
Geography / Access	28 organizations participating in 21 states: AZ, CO, CT, HI, IL, IN, KY, MD, MI, MN, NJ, NM, NY, OH, OK, OR, PA, TN, TX, VA, and WV. ³²⁶	<p>Currently 11 states are participating in the Financial Alignment Initiative. Nine states are currently participating in the capitated model: CA, IL, MA, MI, NY, OH, RI, SC, and TX. One state, WA, is currently participating in the MFFS model. One state, MN, is currently participating in the FAI solely under administrative alignment activities and therefore is not under the capitated nor the MFFS model.</p> <p>CO ended participation in its MFFS model on December 31, 2017. VA ended participation in its capitated model on December 31, 2017.³²⁷</p>	126 participating practices located in 27 states. Practices are located in AL, AR, AZ, CA, CO, CT, FL, GA, IL, IN, KY, MA, MI, NJ, NM, NY, OH, OK, OR, PA, SC, TN, TX, UT, VA, WA, WI, and WV. ³²⁸	18 regions: Arkansas, Colorado, Hawaii, Greater Kansas City Region of Kansas and Missouri, Louisiana, Michigan, Montana, Nebraska, North Dakota, Greater Buffalo Region of New York, North Hudson-Capital Region of New York, New Jersey, Ohio and Northern Kentucky Region, Oklahoma, Oregon, Greater Philadelphia Region of Pennsylvania, Rhode Island, and Tennessee.	<p>PCF is offered in 26 regions including:</p> <ul style="list-style-type: none"> - Statewide: AK, AR, CA, CO, DE, FL, HI, LA, ME, MA, MI, MT, NE, NH, NJ, ND, OK, OR, RI, TN, VA. - Regional-specific: Greater Buffalo region (NY), Greater Kansas City region (KA and MO), Greater Philadelphia region (PA), North Hudson-Capital region (NY), Ohio and Northern Kentucky region (statewide in OH and partial state in KY),

Characteristic (Appendix D.2)	Accountable Health Communities (AHC) Model	Financial Alignment Initiative (FAI) for Medicare-Medicaid Enrollees	Oncology Care Model (OCM)	Comprehensive Primary Care Plus (CPC+)	Primary Care First (PCF) Model
Overview of Covered Services	<p>Funds for this model do not pay directly for medical or community services. Funds do not go towards addressing HRSNs, but are specifically distributed to support the infrastructure and staffing needs of bridge organizations offering navigation and screening services to connect beneficiaries with community services and other providers offering HRSN-related services.³²⁹</p> <p>The AHC model has two tracks. Organizations in the Assistance Track provide care navigation services to high-risk beneficiaries. Organizations in the Alignment Track provide care navigation services and help develop partnerships between services and supports.</p>	<p>State demonstrations pursuing either the Capitated Model or the MFFS Model must ensure the provision of all traditional Medicare- and Medicaid-covered services, including primary, acute, prescription drug, behavioral health, and long-term services and supports. They must also ensure the provision of care coordination (e.g., comprehensive health assessments, development of individualized care plans, and management of care transitions).</p> <p>In the Capitated Model, plans must also cover all services included in their state's Medicaid state plan and Medicare Part D benefits.³³⁰</p>	<p>OCM covers oncology care through an episode-based process.,</p> <p>OCM episodes begin on the date of an initial Part B or Part D chemotherapy claim and includes all Medicare Part A and Part B services that FFS beneficiaries receive during the episode period, as well as selected Part D expenditures. Episodes last six months, and the same beneficiary can participate in multiple episodes.³³¹</p>	<p>Primary care services, including Medicare Part A and B covered services, with flexible reimbursement for services to be delivered inside or outside of an office visit. These flexible/enhanced payments go beyond what is typically covered under traditional FFS payment arrangements.</p>	<p>Primary care services, including clinical services that are traditionally billable under Part B along with services to improve care coordination and target patient support by enabling practitioners to furnish services in a way that best meets their patients' needs.</p>
<i>Rx Benefits^{xxxxi}</i>	<i>N/A.</i>	<i>Both Capitated and MFFS cover Medicare Part D benefits. In the Capitated Model, MMPs must cover all Medicare Part D benefits. In the MFFS Model, all Medicare Part D benefits are covered by traditional Medicare.</i>	<i>Includes Medicare Part B payments for chemotherapy drugs, non-chemotherapy drugs, and select Medicare Part D drug payments (the Low Income Cost Sharing Subsidy (LICS) amount and 80% of the Gross Drug Cost above the Catastrophic (GCDA) threshold).³³²</i>	<i>Comprehensive medication management and screening for health-related social needs under Track 2</i>	<i>N/A</i>

^{xxxxi} Including both physician-administered drugs (e.g., Medicare Part B) and drugs prescribed by primary care and specialists, but obtained through pharmacies (e.g., Medicare Part D).

Characteristic (Appendix D.2)	Accountable Health Communities (AHC) Model	Financial Alignment Initiative (FAI) for Medicare-Medicaid Enrollees	Oncology Care Model (OCM)	Comprehensive Primary Care Plus (CPC+)	Primary Care First (PCF) Model
<i>Post-Acute Care (PAC) Benefits</i>	<i>N/A.</i>	<i>Integrating and coordinating care for people with long-term services and supports (LTSS) is a key feature and aspect of the FAI. Some participants also offer enhanced PAC benefits.</i>	<i>Total episode payments include payments to post-acute care and hospice facilities.³³³</i>	<i>N/A</i>	<i>N/A</i>
<i>Benefit Enhancement</i>	<i>N/A.</i>	<p><i>Each state provides ombudsman and one-on-one counseling programs as part of the Financial Alignment Initiative. The ombudsman programs provide beneficiaries with assistance and help solving problems. One-on-one counseling programs conduct outreach and provide education and assistance to beneficiaries regarding their insurance options.³³⁴</i></p> <p><i>Benefits offered through the FAI vary from state-to-state and from program-to-program. Some additional benefits offered include expanded vision coverage, palliative care benefits, expanded inpatient and outpatient psychiatric services, and coordination with community-based organizations.³³⁵</i></p>	<i>Patients participating in the OCM receive enhanced care management services covered by the Monthly Enhanced Oncology Service (MEOS) fee. These services include: 24/7 access to clinicians with real-time access to patient medical records, patient navigation, and documented care plans.³³⁶ The care plan includes advanced care plans, plans for addressing psychosocial needs, and a survivorship plan.³³⁷</i>	<i>waiver for telehealth.</i>	<i>Beginning in 2022, PCF will implement a telehealth benefit enhancement that waives originating site requirements.</i>

Characteristic (Appendix D.2)	Accountable Health Communities (AHC) Model	Financial Alignment Initiative (FAI) for Medicare-Medicaid Enrollees	Oncology Care Model (OCM)	Comprehensive Primary Care Plus (CPC+)	Primary Care First (PCF) Model
Overall Payment Model	Funding provided by this model supports bridge organizations in developing approaches and navigation services to link beneficiaries to community services. The funds cover the infrastructure and staffing of bridge organizations, including developing and implementing training programs and paying screening, referral, and navigation staff. The model funds do not pay directly or indirectly for any community services. ³³⁸	<p>The Financial Alignment Initiative has two payment model types, including MFFS Model and the Capitated Model. Under both, payment to providers aligns with standard Medicare and Medicaid services payments.</p> <ul style="list-style-type: none"> Under the MFFS model, CMS and a state enter into an agreement through which the state is eligible to receive a performance-based payment dependent on shared savings stemming from initiatives improving quality and reducing costs for Medicaid and Medicare.³³⁹ Under the capitated model, CMS, a state, and a health plan enter into a three-way contract to provide comprehensive, coordinated care. Both CMS and the state will pay each health plan a prospective capitation payment.³⁴⁰ Payments to plans include one payment from CMS for Medicare Parts A and B, another from CMS for Medicare Part D, and a third from the state for Medicaid. Payment rates are developed using projected baseline spending, applied savings percentages, risk adjustments, risk mitigation techniques, and withhold percentages.³⁴¹ <p>The model allows for state-by-state variation in payment rules.</p>	<p>OCM is a multi-payer model that includes Medicare FFS as well as commercial payers. The payment model incorporates a two-part payment approach, including:</p> <ul style="list-style-type: none"> MEOS payments: Practices may bill Medicare a \$160 per month MEOS fee to support enhanced care management services in addition to usual Medicare FFS payments. Performance Based Payment (PBP): A PBP is calculated retrospectively on a semiannual basis based on the practice's achievement on quality measures and reductions in Medicare expenditures below a target price. <p>OCM FFS includes all Medicare A and B services that FFS beneficiaries receive during the episode, as well LICS and GDCA Part D expenditures.³⁴²</p>	<p>Multi-payer Model For Tracks 1 and 2:</p> <ul style="list-style-type: none"> Care Management Fee (CMF) is a non-visit-based fee paid to both practices quarterly, and is determined by: the number of beneficiaries per practice per month, case mix, and CPC+ track. Performance-based incentive payments (PBIPs) are based on patient experience, clinical quality, and utilization; practices retain all or a portion of the PBIP based on performance. Track 1 practices under regular Medicare Physician Fee Schedule <p>For Track 2:</p> <ul style="list-style-type: none"> Reduced FFS with prospective "Comprehensive Primary Care Payment" (CPCP) paid prospectively on a quarterly basis; Medicare FFS claim is submitted normally but paid at reduced rate <p>Practices that do not meet the annual performance thresholds for clinical quality/patient experience or utilization are "at risk" for repaying all or a portion of the PBIP.</p> <ul style="list-style-type: none"> PBIP is paid prospectively for the entire subsequent year based on the prior year's performance 	<p>PCF is a multi-payer model that includes a simple payment structure with:</p> <ul style="list-style-type: none"> a flat primary care visit fee (FVF) for all face-to-face primary care visits. a prospective, monthly professional population-based payment (PBP) that is paid quarterly for each beneficiary attribute to the practice. PBP amounts are based on the practice's average CMS hierarchical condition category (HCC) risk score of attributed beneficiaries, as stratified into one of four practice risk groups. a performance-based adjustment providing an upside risk of up to 50 percent of model payments as well as a small downside risk (10 percent of model payments) incentive

Characteristic (Appendix D.2)	Accountable Health Communities (AHC) Model	Financial Alignment Initiative (FAI) for Medicare-Medicaid Enrollees	Oncology Care Model (OCM)	Comprehensive Primary Care Plus (CPC+)	Primary Care First (PCF) Model
<i>Overall Financial Risk</i>	N/A.	<i>Some states include risk mitigation techniques to share risk between plans and the state, including medical loss ratio (MLR) requirements, requiring plans to meet a certain ratio of premium revenues spent on patient care and quality improvement, or risk paying a fine or the excess back to the state; risk pools, wherein the state withholds a portion of the Medicaid capitated payment and puts it in a risk pool to be distributed among plans based on their share of total costs above the threshold amount for high-cost members; and risk corridors, where plans receive a payment from or make a payment to CMS and the state if their loss or gains exceed a certain threshold.³⁴³</i>	<i>Participating OCM practices can participate in one-sided or two-sided risk through the PBPs. Under two-sided risk, practices can earn higher PBPs when expenditures are less than the discounted target price and quality targets are met. If expenditures are more than 2.75% above the target, practices must return payments. With one-sided risk, participants earn smaller PBPs, but do not have to repay PBPs when expenditures exceed the target.³⁴⁴</i>	<i>For performance-based incentive payments, CPC+ practices are at risk for the amounts that are prepaid, and CMS recoups unearned payments.³⁴⁵</i>	<i>A performance-based adjustment is a quarterly adjuster to both the performance-based payment and the flat visit fee (FVF) or total primary care payment (TPCP) with the potential downside risk of 10 percent of TPCP revenue and potential upside of 50 percent of TPCP revenue. ³⁴⁶</i>

Characteristic (Appendix D.2)	Accountable Health Communities (AHC) Model	Financial Alignment Initiative (FAI) for Medicare-Medicaid Enrollees	Oncology Care Model (OCM)	Comprehensive Primary Care Plus (CPC+)	Primary Care First (PCF) Model
<i>Implications of Cost Benchmarks in Payment</i>	N/A.	N/A.	<p>CMS calculates the retrospective PBP by comparing all expenditures during an episode to risk-adjusted historical benchmarks and subtracting a discount maintained by CMS.³⁴⁷</p> <p>Because benchmarks are based on trended historical data, they may not reflect the relative expense of newly approved oncology therapies. If practices meet certain criteria, they may receive a potential adjustment based on the proportion of expenditures related to new oncology therapies.³⁴⁸</p>	The PBIP retained is calculated by comparing a CPC+ practice's performance with benchmark thresholds derived using a reference population. CPC+ practices may set goals by comparing their performance with benchmark performance thresholds on measures of utilization, cost of care, and quality. Practices may also use these benchmarks to track their performance over time.	To be eligible for a positive regional performance-based adjustment, practices must pass the national benchmark. Practice performance against their peer region group also determine the level of regional performance adjustment practice receive.
<i>Use of Risk Adjustment for Payment</i>	N/A.	In the capitated model, payments to plans are risk-adjusted according to the unique health needs of beneficiaries participating in the program using the CMS HCC risk adjustment model. Risk-adjusted payments are applied separately to Medicare Parts A, B, and D components as well as to the Medicaid payment component. ³⁴⁹	<p>Cost measures are risk-adjusted and adjusted for variation. CMS sets benchmarks based on historical data trended to the applicable performance period: a discount (4% for one-sided risk, 2.75% for two-sided risk, and 2.5% for alternative two-sided risk) is applied to the benchmark to determine a target price for OCM FFS episodes.</p> <ul style="list-style-type: none"> Cost measures are not assessed relative to a comparator population No specific measure for supportive drug care costs.³⁵⁰ 	All Medicare FFS beneficiaries attributed to a CPC+ practice are assigned to one of four risk tiers for Track 1 or one of five risk tiers for Track 2. Risk score tier thresholds are defined separately for each CPC+ region. Each risk tier corresponds to a specific monthly CMF payment. Higher risk tiers are associated with higher beneficiary risk and higher CMFs. Beneficiary risk is generally determined by the CMS HCC risk adjustment model. For Track 2 beneficiaries, risk tier is also determined by a diagnosis of dementia, as described in greater detail below.	At the beginning of each performance year, CMS will assign participating practices to one of four risk groups using the CMS-HCC risk scores of their attributed Medicare beneficiaries. Each risk group is associated with a PBPM performance-based payment.

Characteristic (Appendix D.2)	Accountable Health Communities (AHC) Model	Financial Alignment Initiative (FAI) for Medicare-Medicaid Enrollees	Oncology Care Model (OCM)	Comprehensive Primary Care Plus (CPC+)	Primary Care First (PCF) Model
<i>Beneficiary Cost-Sharing</i>	<i>N/A.</i>	<i>Cost sharing rules align with traditional cost sharing for Medicare-Medicaid enrolled beneficiaries. Medicare serves as the primary payer and Medicare remaining responsible for additional beneficiary cost-sharing.³⁵¹</i>	<i>Beneficiary cost-sharing does not change under the OCM. The model exempts beneficiaries from additional costs associated with the additional patient-focused services provided by the OCM.³⁵²</i>	<i>For office visit E&Ms, typical cost-sharing requirements for beneficiaries are still in place. The model exempts beneficiaries from being responsible for coinsurance for non-office-visit care funded through the CPC+.</i>	<i>CMS applies beneficiary cost-sharing to all services submitted on the claim under the standard FFS rules and rates.³⁵³</i>
Health Equity and Access to Care	<i>The AHC model specifically targets high-need Medicare and Medicaid beneficiaries to help connect them to community resources with the hopes of addressing HRSNs, reducing utilization, and reducing health care costs. Most bridge organizations developed and provided comprehensive, structured training for individuals in screening, referral, and navigation roles, including racial inequity and cultural competency training to provide training on the root causes of health disparities. This training helped staff better assist beneficiaries and increased understanding of health disparities in the community.³⁵⁴</i>	<i>The increased focus on care coordination and expanding coordinated care among dual-eligibles helps to expand health equity and access to care among a vulnerable population.</i>	<i>MEOS payments allow for enhanced services to improve access to patient-centered care and help address social and behavioral health needs, including food insecurity, transportation problems, mental health, psychosocial conditions, and substance use.</i>	<i>The hybrid payment model (i.e., combination of a CMF, PBIP, and Medicare FFS payment) is intended to increase beneficiary access and improve efficiency in addressing health issues and patient experience.</i>	<i>PCF aims to improve patient access to advanced primary care services and practices will be incentivized to deliver patient-centered care that reduces acute hospital utilization.</i>

Characteristic (Appendix D.2)	Accountable Health Communities (AHC) Model	Financial Alignment Initiative (FAI) for Medicare-Medicaid Enrollees	Oncology Care Model (OCM)	Comprehensive Primary Care Plus (CPC+)	Primary Care First (PCF) Model
Coordination of Care	<i>The model helps develop screening programs and partnerships to support the coordination of care between health care providers, bridge organizations, and social resources.</i>	<i>Under the capitated model demonstrations, participating Medicare-Medicaid Plans are required to offer care coordination services to each beneficiary, including: access to an assigned care coordinator; a health risk assessment taking into account the beneficiary's needs, goals, and preferences; a person-centered, individualized care plan; an interdisciplinary care team that works to maintain the care plan; and data system tracking of care coordination.³⁵⁵ Measures of beneficiary access to and satisfaction with care coordination were assessed at between 85-90% from 2015-2019.³⁵⁶ All state models differ in their application of care coordination requirements and methods.</i>	<ul style="list-style-type: none"> • Providers can bill a MEOS fee to support care coordination • Enhanced services include patient navigation • Advanced care planning and survivorship plans are reflected in care plan components 	<p>Core functions include comprehensiveness and coordination as well as care management</p> <ul style="list-style-type: none"> • Engages a subpopulation of beneficiaries and caregivers in advanced care planning • Practices provide multi-disciplinary services to patients with complex medical, behavioral, and psychosocial needs (Track 2)³⁵⁷ 	<i>By linking patient health outcomes to payments that the participating practices receive, the model is intended to incentivize clinicians to provide coordinated and comprehensive care. The PCF is oriented around five comprehensive primary care functions, including comprehensiveness and coordination.³⁵⁸ Since the model was implemented in 2021, any findings associated with care coordination are still pending evaluation.</i>

Characteristic (Appendix D.2)	Accountable Health Communities (AHC) Model	Financial Alignment Initiative (FAI) for Medicare-Medicaid Enrollees	Oncology Care Model (OCM)	Comprehensive Primary Care Plus (CPC+)	Primary Care First (PCF) Model
Quality of Care	<p>AHC hubs are developed with the goal of reducing inpatient and outpatient health care use and total costs by addressing unmet HRSNs through referral and connection to community services. CMS tracks the frequency of each HRSN, resolution of needs, and the number of unique beneficiaries navigated to understand the impact of the model.³⁵⁹</p>	<p>FAI measures consumer experience through beneficiary surveys, including the Consumer Assessment of Health Care Providers and Systems (CAHPS®) Survey. Measures include rating of health plan, rating of health care quality, getting needed care, getting appointments and care quickly, doctors who communicate well, customer service, care coordination composite, care coordination supplemental, and getting needed prescription drugs.³⁶⁰</p> <p>In the Capitation model, CMS and states also withhold between 1-3% of capitation payments that plans can earn back upon meeting certain quality thresholds for select HEDIS, CAHPS, and other state-specific data measures. Withhold amounts are repaid to plans retrospectively.³⁶¹</p>	<p>OCM quality measure include:</p> <ul style="list-style-type: none"> • Proportion of patients with ED visits or observation stays that did not result in hospital admission • Proportion of patients who died and had been admitted to hospice for three days or more • Medical and Radiation – pain intensity quantified • Medical and Radiation – plan of care for pain • Preventive Care and Screening: screening for depression and follow-up plan • Patient-reported experience of care³⁶² 	<p>The 2019 CPC+ Measure Set contains two electronic clinical quality measures (eCQMs): controlling high blood pressure and hemoglobin</p> <p>A1c poor control >9%.</p> <ul style="list-style-type: none"> • All practices report and are assessed on the same quality measures, set by CMS.³⁶³ 	<p>To be eligible for a positive payment-based adjustment, practices must meet a minimum performance threshold on a set of quality measures, including hemoglobin A1c; controlling high blood pressure; colorectal cancer screening; advance care plan; patient experience of care survey (CAHPS); and days at home.³⁶⁴</p>

Characteristic (Appendix D.2)	Accountable Health Communities (AHC) Model	Financial Alignment Initiative (FAI) for Medicare-Medicaid Enrollees	Oncology Care Model (OCM)	Comprehensive Primary Care Plus (CPC+)	Primary Care First (PCF) Model
Issues and Challenges	<i>The AHC Model has shown promise in effectively identifying high-need and higher-cost and utilization beneficiaries, with eligible beneficiaries accepting navigation services at rates higher than expected. However, current evidence does not show high rates of effectiveness of the https://innovation.cms.gov/data-and-reports/2021/ocm-ar4-eval-payment-impacts actual navigation intervention, with less than one-fifth of beneficiaries resolving HRSNs or connecting with a community service provider.³⁶⁵</i>	<i>Cost savings outcomes under the FAI for Medicare and Medicaid are mixed, with mixed results for Medicare cost savings and limitations due to a lack of complete Medicaid data (as of 2019) to conduct complete evaluation savings reports.³⁶⁶</i>	<i>Increasing costs of cancer treatment broadly have hindered the possible reductions in total episode payments (TEP) achievable through the OCM. While OCM has led to a relative reduction in TEP, the model overall has generated net losses for Medicare, for both higher-risk and lower-risk episodes, with greater losses for lower-risk episodes.³⁶⁷</i>	<i>Specialists and hospitals operating in a largely FFS payment system are incentivized to deliver high-volume, high-cost care. Other contextual factors like SDOH and patient preferences could limit the degree that patients engage with improved primary care and therefore alter their behavior and outcomes.³⁶⁸</i>	<i>The PCF was implemented in January 2021 for the first cohort and January 2022 for the second cohort. Since the model was implemented in 2021, any findings associated with issues or challenges are still pending evaluation.</i>

Appendix D.3. Side by Side Comparison of Selected Medicaid Section 1115 Waiver Programs

Model Type	Description	Examples
Medicaid accountable care organizations (ACO)	A network of providers who are jointly responsible for administering the full range of care for a specified patient population. They are held responsible for the quality of care provided as well as cost.	Massachusetts ACO
Medicaid Episode of Care (EOC) or Bundled Payments	Provide a lump-sum payment for all health care services delivered to a patient for a particular illness, procedure, or condition (episode). In theory, EOCs can improve predictability, reduce cost variation, and provide financial incentives to improve care coordination among providers and across health care settings. (Copeland et al., 2017)	Arkansas Payment Improvement Initiative (APII)
Patient Centered Medical Homes (PCMH)	PCMH organizes organizing primary care so that patients obtain care that is coordinated by a primary care physician, provided by a multi-disciplinary team of affiliated health professionals, following evidence-based practice guidelines. (Keckley et al., 2012) In some states it is required that providers participating in PCMH programs be certified by a verifying organization such as the National Committee for Quality Assurance (NCQA).	Michigan SIM PCMH initiative
Medicaid Medical Homes	<p>The Health Home model adds to the PCMH model but enhances it with integrating physical and behavioral health services. It also includes social and community supports. The model is aimed at certain high-risk populations (e.g., patients with multiple chronic conditions and/or severe and persistent mental illness). States can restrict Health Home benefits to certain regions and can change the types of benefits offered to different types of Medicaid beneficiaries without needing a waiver. There are three dominant Health Home organizational structures: (<i>Evaluation of the Medicaid Health Home Option for Beneficiaries with Chronic Conditions</i>, 2016)</p> <ul style="list-style-type: none"> • Medical home-like programs that are variations or extensions of the PCMH model • Specialty-provider-based programs (e.g., mental health providers) • Care management networks 	Michigan SIM PCMH initiative

State (Appendix D.3)	Model Overview	Payment Mechanism	Provider Incentives & Participation	Quality Outcomes & Reporting
Oregon	<ul style="list-style-type: none"> Oregon (OR) established Coordinated Care Organizations (CCOs - community-based Managed Care Organizations that operate similarly to ACOs). CCOs are geographically defined and are characterized by having formal partnerships with local county public health departments and community representatives. Oregon credits its CCOs for reducing overall Medicaid spending growth below the 3.4 percent per year target established as a condition of its 1115 Medicaid demonstration waiver (Phelps et al., n.d.). CCOs include health plans, providers, county public health, and community-based organizations 	<ul style="list-style-type: none"> CCOs dispense a single global budget covering physical, mental, and dental healthcare for low-income Oregon beneficiaries. CCOs have freedom within the global budget to carry out reforms that might improve cost and quality of care (Broffman et al., 2016). 	<ul style="list-style-type: none"> A percentage of the global budget is withheld by the Oregon Health Authority and linked to 17 quality incentive metrics. CCOs are allowed to decide how best to engage patients, manage care, improve outcomes, and reduce costs in their communities (Broffman et al., 2016). The global budget model sets CCOs apart from most other ACOs, which use upside risk contracts (Song et al., 2014). 	<p>OR CCO Incentive measures are selected by the Metrics & Scoring Committee each year. CCOs can earn quality pool dollars based on performance on these metrics. 2022 incentive measures include some mental and behavioral health screenings as well as child and adolescent health measures (<i>Oregon Health Authority : CCO Metrics : Office of Health Analytics : State of Oregon</i>, n.d.).</p> <p>One study (Oakley et al., 2017) found that following Oregon's implementation of an innovative Medicaid coordinated care model, that women on Medicaid experienced a significant increase in receiving timely prenatal care. Another study found that, after the CCO model was implemented, researchers observed significant increases in early prenatal care initiation and a reduction in disparities across insurance types but no difference in care adequacy (Muoto et al., 2016).</p> <p>A 2017 study found that the change to CCOs was associated with a 7 percent relative reduction in expenditures across the sum of services, attributable primarily to reductions in inpatient utilization (McConnell et al., 2017).</p>

State (Appendix D.3)	Model Overview	Payment Mechanism	Provider Incentives & Participation	Quality Outcomes & Reporting
Minnesota	<ul style="list-style-type: none"> Minnesota (MN) developed an accountable care organization (ACO) model, called the Integrated Health Partnerships (IHPs). IHP requires its Managed Care Organizations (MCOs), to participate in the shared savings/risk payment model with IHPs participating in the program (Leddy et al., 2016). Minnesota designates eligible Medicaid enrollees to IHPs with a retrospective attribution methodology using patient claims (Blewett et al., 2017). IHPs agree to deliver the full scope of primary care services, coordinate access to specialty providers and hospitals, and develop ties with community organizations and social service agencies to integrate into care delivery (Blewett et al., 2017). MN uses another ACO model, the Integrated Care System Partnerships (ICSPs) to improve access, coordination, and outcomes for dual eligible beneficiaries by forming partnerships across MCOs, primary, acute, long-term care, and mental health providers. Medicaid MCOs submit ICSP proposals, including specified quality measures, to the state for approval. ICSP providers serve seniors and people with disabilities for people enrolled in MSHO, Minnesota Senior Care Plus (MSC+) and Special Needs Basic Care (SNBC). 	<ul style="list-style-type: none"> MN IHPs use a shared savings/risk payment methodology resembling the Medicare Shared Savings Program (Leddy et al., 2016). IHP includes 2 tracks (Linville, n.d.). <ul style="list-style-type: none"> Track 1: non-risk bearing contract for smaller organizations Track 2: providers enter a risk arrangement with the Department of Human Services (DHS), so they are held accountable for costs and the quality of care given. Providers showing an overall savings across their population, while maintaining or improving the quality of care, receive a portion of the savings. Providers who cost more over time must sometimes pay back a portion of the losses. 	<ul style="list-style-type: none"> IHP is voluntary program for provider-based systems of care that uses a shared savings/shared risk financing model. IHP works alongside but separate from the Medicaid program's capitated payment arrangement with MCOs in the state. Providers can receive a population-based payment for care coordination and are required to design an intervention to address specific health care disparities observed in the IHP's population. 	<ul style="list-style-type: none"> Provider performance in IHP is assessed on meeting negotiated total cost of care (TCOC) targets and quality measurement benchmarks (Blewett et al., 2017). Medicaid MCOs submit (ICSP) proposals, including specified quality measures, to the state for approval (Leddy et al., 2016), including ambulatory care sensitive conditions, and preventable re-admissions (Kvendru, S., n.d.).

Appendix E. Comparison of PTAC Proposals

The following tables provide specific details on model characteristics (i.e., clinical focus, providers, setting, and general payment mechanisms); proposal objectives related to total cost of care, characteristics of the payment methodology related to total cost of care (i.e., benchmarking, risk adjustment); performance measures specific to total cost of care; and a summary of PTAC comments related to total cost of care for the ten selected proposals that were reviewed by PTAC. Proposals are organized into two separate tables: proposals focused on advanced primary care or with a population-based focus not specific to a particular health care condition or episode, and episode-based proposals.^{xxxii} Each table is listed alphabetically by submitter.

Overview of Methodology Used to Review the Proposals

The following information was reviewed for each submitter's proposal, where available: proposal and related documents, Preliminary Review Team (PRT) Report, and report to the Secretary (RTS). This information was used to summarize the proposal's main themes related to total cost of care.

Appendix E.1. Proposals Focused on Advanced Primary Care or Population-Specific Focus (4 Proposals)

Characteristic (Appendix E.1)	<i>AAFP</i>	<i>AAHPM</i>	<i>C-TAC</i>	<i>UChicago</i>
Submitter (Abbreviation) and Submitter Type	American Academy of Family Physicians (AAFP) <i>(Provider association and specialty society)</i>	American Academy of Hospice and Palliative Medicine (AAHPM) <i>(Provider association and specialty society)</i>	Coalition to Transform Advanced Care (C-TAC) <i>(Coalition)</i>	University of Chicago Medicine (UChicago) <i>(Academic Institution)</i>
Proposal Focus	Advanced Primary Care	Population-Based	Population-Based	Population-Based

^{xxxii}The definitions of advanced primary care, population-specific proposals, and episode-based proposals draw from the Center for Medicare and Medicaid Innovation (CMMI) and MedPAC. The advanced primary care proposal would potentially enroll beneficiaries on the basis of attribution to participating primary care practices and focuses on the delivery of comprehensive primary care services. Advanced primary care practices—also called "medical homes"—utilize a team-based approach, while emphasizing prevention, health information technology, care coordination, and shared decision making among patients and their providers. The population-specific proposals in this table focus on a subset of Medicare beneficiaries (advanced/serious illness and frail, medically complex beneficiaries), but the scope is broader than a particular health care condition or episode. Under episode-specific proposals, health care providers are held accountable for the cost and quality of care beneficiaries receive during an episode of care, which usually begins with a triggering health care event (such as a hospitalization or chemotherapy administration) and extends for a limited period of time thereafter.

Characteristic (Appendix E.1)	<i>AAFP</i>	<i>AAHPM</i>	<i>C-TAC</i>	<i>UChicago</i>
Proposal Name	Advanced Primary Care: A Foundational Alternative Payment Model (APC-APM) for Delivering Patient-Centered, Longitudinal, and Coordinated Care	Patient and Caregiver Support for Serious Illness (PACSSI)	Advanced Care Model (ACM) Service Delivery and Advanced Alternative Payment Model	Comprehensive Care Physician Payment Model (CCP-PM)
PTAC Recommendation and Date	2/28/2018: Recommended for limited-scale testing	5/7/2018: Recommended for limited-scale testing	5/7/2018: Recommended for limited-scale testing	10/20/2018: Recommended for limited-scale testing
Clinical Focus, Providers, and Setting	<p>Clinical Focus: Primary Care</p> <p>Providers: Primary care providers (PCPs)</p> <p>Setting: Primary care practices</p>	<p>Clinical Focus: Serious illness and palliative care</p> <p>Providers: Palliative care teams (PCTs)</p> <p>Setting: Inpatient; outpatient; other palliative care settings</p>	<p>Clinical Focus: Serious illness and palliative care</p> <p>Providers: ACM care team (registered nurse, licensed social worker, provider with board-certified care expertise); other ancillary collaborator organizations</p> <p>Setting: All sites of care during treatment for advanced illness, including the home</p>	<p>Clinical Focus: Frequently hospitalized patients</p> <p>Providers: Inpatient and outpatient providers</p> <p>Setting: Transitions between inpatient and outpatient care, including home care and rehabilitation</p>

Characteristic (Appendix E.1)	<i>AAFP</i>	<i>AAHPM</i>	<i>C-TAC</i>	<i>UChicago</i>
Overall Payment Mechanism	<ul style="list-style-type: none"> • Per-beneficiary per-month (PBPM) global payment (Level 1: Ambulatory, office-based, face-to-face evaluation and management [E&M] services; Level 2: All E&M services regardless of site of service) • PBPM population-based payment (covers non-face-to-face services such as increased staffing) • Quarterly performance-based incentive payments • Fee-for-service (FFS) limited to services not covered by the global payment (primarily non-E&M) 	PBPM payment with opportunity for shared risk/savings	Capitated PBPM payment with downside risk for TCOC and upside bonus for quality performance, subject to maximum payment and loss amounts	Supplemental PBPM payment with shared risk
Objectives related to TCOC	Increase percentage of total spending allocated to primary care with goal of decreasing specialty and hospital services spending. By shifting the balance of spending, the model seeks to reduce TCOC.	<ul style="list-style-type: none"> • Reduce per capita end of life care costs by providing coordinated palliative care and support services (to patients who are not eligible for or have chosen not to receive hospice services) • Ensure that PCTs do not provide services for longer than necessary and that they do not receive payments for a higher level of services than necessary 	Reduce TCOC for enrollees in their last 12 months of life using PCTs and PBPMs	Reduce overall spending on high-cost patients (high-risk Medicare beneficiaries) by improving inpatient-outpatient care coordination through payment of a care continuity fee

Characteristic (Appendix E.1)	<i>AAFP</i>	<i>AAHPM</i>	<i>C-TAC</i>	<i>UChicago</i>
Payment Elements Specific to TCOC	<ul style="list-style-type: none"> • Prospective, risk-adjusted population-based global payment for primary care • Practice prospectively awarded incentive payments that may have to be repaid based on performance 	<ul style="list-style-type: none"> • Tier 1: Up-front base PBPM payments with performance-based incentives/penalties • Tier 2: Up-front base PBPM payments with performance-based shared savings/losses linked to TCOC 	<ul style="list-style-type: none"> • Wage-adjusted per-member per-month (PMPM) payments for the last 12 months of life • Quality bonus payments or shared losses based on the TCOC for the last 12 months of life with a 4 percent minimum shared savings/loss rate. Upside quality bonus payments would be operational in Years 1-2; shared loss would begin in Year 3. 	PBPM care continuity fee (for physicians who meet benchmarks for providing their patients with both inpatient and outpatient care)
Use of Risk Adjustment for Payment	PBPM payments risk-adjusted based on patient complexity, demographics, and social determinants of health (SDOH). The proposed model proposes assessing patient complexity using the Minnesota Complexity Assessment Method , though it indicates an openness to considering alternatives.	<ul style="list-style-type: none"> • Base monthly payment amounts adjusted based on geography and primary site of care (domiciliary versus facility-based) • Patients categorized into one of two complexity tiers, which is tied to their corresponding monthly payment 	Applies episode-based regression modeling to determine risk-adjusted spending targets	The model does not use risk-adjustment; the proposal notes that this is in part due to the fact that the model exclusively targets high-risk patients (patients must have been hospitalized at least once in the year prior to enrollment).

Characteristic (Appendix E.1)	<i>AAFP</i>	<i>AAHPM</i>	<i>C-TAC</i>	<i>UChicago</i>
Participating Provider Financial Risk	The model does not incorporate provider financial risk. However, the model includes performance risk. Alternative Payment Model (APM) entities that meet quality and cost benchmarks would retain their incentive payments and maintain their standing in the APM. Failure to meet agreed upon benchmarks would involve an APM entity repaying all or part of their incentive payments and potentially exiting the APM and returning to traditional FFS.	Two tracks: 1. PCTs subject to positive and negative payment incentives of up to 4% of total PACSSI care management fees received for a year, based on quality and spending performance. Base PBPMs set to \$400. 2. PCTs subject to shared savings and shared losses based on a combination of quality and TCOC performance. Base PBPMs set to \$650.	ACM entities continue to be accountable for a beneficiary's last 12 months of life cost if the ACM beneficiary is served by the ACM entity at any point during the ACM beneficiary's last 12 months of life. For example, if a beneficiary is enrolled and disenrolls in the third month to enroll in hospice and then dies nine months later, all costs for the last 12 months of life will be included in the model's episode costs even though the patient disenrolled after the third month. Similarly, if an enrollee dies after being enrolled in the ACM model after only one month, the ACM entity is accountable for the costs of the month of enrollment and the preceding 11 months.	Participating physicians receive a payment of \$40 per new and renewed enrolled patient per month and \$10 per continued enrolled patient per month payable at the end of each year if they meet care continuity benchmarks, determined by the provision of inpatient and outpatient care. If not, participating physicians are subject to a penalty of \$10 per enrolled patient due at the end of the month.

Characteristic (Appendix E.1)	<i>AAFP</i>	<i>AAHPM</i>	<i>C-TAC</i>	<i>UChicago</i>
Methodology of Cost Benchmarks in Payment	<ul style="list-style-type: none"> • Primary care global payment: at least 12 percent of total spending (not based on historical FFS amounts—this model views these historical amounts as undervalued) • Population-based payment: capitated, monthly PBPM payments without risk similar to Comprehensive Primary Care Plus (CPC+) methodology (CPC+ Track 1 = \$15 PMPM; CPC+ Track 2 = \$28 PBPM) • Incentive payments: structured similar to the CPC+, except that the APC-APM would use the core measure sets of the Core Quality Measure Collaborative rather than the electronic clinical quality and utilization measures used in CPC+ (CPC+ Track 1 = \$1.25 PBPM quality/utilization; CPC+ Track 2 = \$2 PBPM quality/utilization) 	<p>PBPM amounts based on evaluation of cost delivery for palliative care services under a separate but related project funded by a CMMI Health Care Innovation Award, the Four Seasons Compassion for Life project, as well as input from several AAHPM APM Task Force members who provided feedback on cost-of-service delivery at their institutions.</p>	<p>Uses regression analyses of prior advanced illness care episodes to determine risk-adjusted spending targets based on a set of variables that affect spending during the last year of life.</p>	<p>The care continuity fee and penalty were derived from an analysis of the degree of continuity attained by the University of Chicago CCP-PM program; care continuity fees were determined to be large enough to be meaningful but not more than needed to motivate change.</p>

Characteristic (Appendix E.1)	AAFP	AAHPM	C-TAC	UChicago
Performance Measures Related to TCOC	<ul style="list-style-type: none"> • The APM Entity would select six performance measures, including at least one outcome measure, from the Accountable Care Organization (ACO), Patient-Centered Medical Home (PCMH), and Primary Care Measure Set developed by the Core Quality Measure Collaborative • Hospital utilization per 1,000 attributed beneficiaries • Emergency department (ED) utilization per 1,000 attributed beneficiaries 	<ul style="list-style-type: none"> • Patient-reported outcomes for experience of care • Completion of care processes (e.g., screening for pain, dyspnea, nausea, and constipation within 15 days of program enrollment) • Utilization of health care services: percentage of patients who died who received hospice care, percentage of patients who died and were enrolled in hospice more than 7 days before death, percentage of patients who died and did not have any days in an intensive care unit (ICU) during the 30 days before death 	<ul style="list-style-type: none"> • Measures for determining bonus payments: access and timeliness of care; getting help for pain, trouble breathing and anxiety/sadness; medication reconciliation post hospital discharge; utilization of ICU and hospice care; communication; ACM provider attestation that the patient's care plan is consistent with their preferences; care coordination; and, overall satisfaction with care. Five additional measures are proposed for use beginning in Year 3 after testing in Years 1 and 2. • Additional quality measures for monitoring program: all-cause unplanned admissions, ambulatory sensitive conditions, hospice enrollment, and proportion of ACM enrollees with more than 12 months of enrollment. 	<ul style="list-style-type: none"> • Physicians would continue to be responsible for both the financial and quality measures associated with their umbrella payment model (e.g., Medicare Shared Savings Program [MSSP], Merit-based Incentive Payment System [MIPS]), though these outcomes would not affect care continuity payments • Patient and provider satisfaction • Self-rated patient mental health • Rates of rehospitalization • TCOC (Medicare) reduction • See "Participating Provider Financial Risk" section above on details regarding care continuity incentive payment

Characteristic (Appendix E.1)	AAFP	AAHPM	C-TAC	UChicago
Summary of PTAC Comments and Recommendations related to TCOC	<ul style="list-style-type: none"> PTAC noted that to avoid previous challenges experienced by primary care capitation payment systems, this proposed model includes performance measures and risk adjustment to address these concerns. PTAC expressed concern that several elements of the model are overly complex and burdensome, specifically the multi-step attribution methodology, use of two PBPMs, and inclusion of two levels of payments for E&M services. PTAC indicated that the proposed model lacks a mechanism for assuring proportionate savings take place. 	<ul style="list-style-type: none"> PTAC noted that the model provides for multi-disciplinary care teams and PBPM care management payments to allow patients to receive wholistic care. PTAC indicated that the model could incentivize high quality care and decrease TCOC; however, PTAC had concerns regarding the extent to which financial incentives for cost savings should be used in palliative care models. PTAC also had concerns surrounding quality measurement and monitoring. PTAC highlighted the challenges associated with establishing risk-adjustment categories and PBPM amounts. 	<ul style="list-style-type: none"> PTAC had concerns about the inclusion of hospices in the model. Using TCOC measures for a patient population with a high-risk of dying could create perverse incentives and unintended consequences. PTAC had concerns about the aspect of the model that would hold APM Entities accountable for the TCOC for enrollees in their last 12 months of life, even when the enrollees are not enrolled for the entirety of this period. PTAC commented on the monthly care management payments, noting that they could be used to pay for services not otherwise reimbursable, which would increase flexibility in care delivery. 	<ul style="list-style-type: none"> Some PTAC members thought that testing a PMPM payment to incentivize care coordination for high-risk patients would provide important information on how to improve care for this population, especially if payment could be tied to outcomes such as quality or cost. Other PTAC members questioned whether a monthly payment model of an add-on to FFS payment was needed to incentivize comprehensive physician care. These members felt that modifications to billing codes, including possibly higher payment amounts for existing codes, could incentivize physicians to provide comprehensive care to high-risk patients in both inpatient and outpatient settings. The RTS noted that a separate evaluation with a randomized design that found that the model was successful in better meeting the needs of the high-risk population with serious illness. However, the analysis did not find statistically significant reductions in costs or hospitalizations.

Appendix E.2. Episode-Based Proposals (6 Proposals)

Characteristic (Appendix E.2)	ACS	ASCO	Avera Health	LUGPA	NYC DoHMH	ICG/SonarMD
Submitter and Submitter Type	American College of Surgeons (ACS) <i>(Provider association and specialty society)</i>	American Society of Clinical Oncology (ASCO) <i>(Provider association and specialty society)</i>	Avera Health (Avera Health) <i>(Regional/ local multispecialty practice or health system)</i>	Large Urology Group Practice Association (LUGPA) <i>(Provider association and specialty society)</i>	New York City Department of Health and Mental Hygiene (NYC DoHMH) <i>(Public health department)</i>	Illinois Gastroenterology Group and SonarMD, LLC (IGG/SonarMD) <i>(Regional/local single specialty practice; Device/technology company)</i>
Proposal Focus	Episode-based	Episode-based	Episode-based	Episode-based	Episode-based	Episode-based
Proposal Name	The ACS-Brandeis Advanced APM	Patient-Centered Oncology Payment Model (PCOP)	Intensive Care Management in Skilled Nursing Facility Alternative Payment Model (ICM SNF APM)	LUGPA Advanced Payment Model for Initial Therapy of Newly Diagnosed Patients with Organ-Confining Prostate Cancer	Multi-provider, bundled episode-of-care payment model for treatment of chronic hepatitis C virus (HCV) using care coordination by employed physicians in hospital outpatient clinics	Project Sonar
PTAC Recommendation and Date	5/31/2017: Recommended for limited-scale testing	11/19/2020: Referred for other attention by the Department of Health and Human Services (HHS)	5/7/2018: Recommended for implementation	2/28/2018: Not recommended	2/28/2018: Not recommended	5/31/2017: Recommended for limited-scale testing

Characteristic (Appendix E.2)	ACS	ASCO	Avera Health	LUGPA	NYC DoHMH	ICG/SonarMD
Clinical Focus, Providers, and Setting	<p>Clinical Focus: Cross-clinical focus</p> <p>Providers: Single/multi-specialty practices; groups of small provider practices</p> <p>Setting: Inpatient, outpatient, ambulatory</p>	<p>Clinical Focus: Oncology</p> <p>Providers: Practices / physicians providing hematology / oncology services; partners</p> <p>Setting: Oncology practices</p>	<p>Clinical Focus: Primary care (geriatricians) in skilled nursing facilities (SNFs)</p> <p>Providers: Geriatrician Care Teams</p> <p>Setting: SNFs and nursing facilities (NFs)</p>	<p>Clinical Focus: Urology/oncology (prostate cancer treatment)</p> <p>Providers: Urologists and other coordination physicians</p> <p>Setting: Urology practices</p>	<p>Clinical Focus: Hepatitis C virus</p> <p>Providers: PCPs (trained by hepatologists / gastroenterologists); specialists; nurse practitioners; physician assistants; and non-clinician staff</p> <p>Setting: Primary care/hospital-based outpatient clinics</p>	<p>Clinical Focus: Chronic disease (Crohn's Disease)</p> <p>Providers: Gastroenterology practices; community-based physicians and specialists</p> <p>Setting: Patient home</p>
Overall Payment Mechanism	<p>Episode-based model with continued FFS and shared risk/savings</p>	<ul style="list-style-type: none"> Track 1 practices receive FFS payments Track 2 practices have option to bundle a portion (either 50% or 100%) of what would otherwise be reimbursed via FFS payments Both tracks receive add-on care management payments worth 2-3% of TCOC Both tracks receive add-on performance payments worth 2-3% of TCOC 	<p>One-time payment for new admission and a PBPM payment with two separate shared risk options (Performance-Based Payment and the Shared Savings Model)</p>	<ul style="list-style-type: none"> Monthly care management fee (PBPM payment) Performance-based payment for enhancing utilization of active surveillance (AS) 	<p>Bundled episode-based payment replacing FFS, with shared risk/savings</p>	<ul style="list-style-type: none"> PBPM payment with two-sided risk Additional monthly payment to support ongoing monitoring

Characteristic (Appendix E.2)	ACS	ASCO	Avera Health	LUGPA	NYC DoHMH	ICG/SonarMD
Episode definition	Identifies more than 100 procedures and conditions (APM-specific)	Per treatment (including single procedure treatments, multi-procedure treatments such as chemotherapy, and up to 12 months of post-treatment care—e.g., palliative care)	Comprehensive for all services delivered (patients experience the model as a wraparound service for their nursing facility and primary care)	<ul style="list-style-type: none"> Initial 12-month episodes of care, beginning with prostate biopsy and a diagnosis of prostate cancer, for both beneficiaries receiving AS and those receiving active intervention (AI) Subsequent 12-month episodes of care for beneficiaries who remain on AS at the end of an initial 12-month AS episode 	Episode includes three phases: <ol style="list-style-type: none"> 1. Pre-treatment assessment involving care coordination 2. Treatment period 3. Report of SVR12 (blood test used to evaluate if patient is “cured”) (Average episode of care is 10 months)	Begins with diagnosis or entrance into program
Objectives related to TCOC	Reduce TCOC for a specific episode	Reduce TCOC by decreasing costs associated with drugs, monitoring activities, and emergency/acute/post-acute care	Reduce TCOC through the prevention of avoidable escalation of illness for residents living in skilled nursing homes	Defer AI and avoid overutilization of services while reducing morbidity and costs	Lower costs by reducing expenses from preventable hospitalizations, ED visits, and complications associated with hepatitis C infection	Incentivize proactive (as opposed to reactive) care in order to improve patient quality of life and decrease total costs (through reductions in avoidable complications, ED visits, and inpatient admissions)

Characteristic (Appendix E.2)	ACS	ASCO	Avera Health	LUGPA	NYC DoHMH	ICG/SonarMD
Payment Elements Specific to TCOC	Incentive payments made retrospectively based on difference between observed and expected episode spending	<ul style="list-style-type: none"> • Prospective care management payments • Bundled payments (50% - 100% of the value of specified services) 	Prospective “Regular Payments” (\$252 one-time payment for new admissions and \$55 PBPM payment) that are dependent on quality and financial performance	<ul style="list-style-type: none"> • Prospective care management payment • Retrospective performance payment based on the difference between the target amount and actual episode spending amount 	Prospective bundled payment	<ul style="list-style-type: none"> • Prospective PMPM payment model with retrospective reconciliation • Additional monthly payment for non ‘face-to-face’ services by clinical staff, overseen by the physician
Use of Risk Adjustment for Payment	Risk adjustment is determined using the Society of Thoracic Surgeons (STS) National Database and the STS Risk Calculator, which is then used to inform performance feedback.	Risk-adjusted based on: <ul style="list-style-type: none"> • Cancer type • Presence of a secondary malignancy • Clinical trial participation • Stage of care • Age and sex • Non-cancer comorbidities • Castrate-sensitive versus resistant prostate cancer • Low- versus high-risk bladder cancer • Other metrics (e.g., genomic markers) • Adjustments for missing cost data (e.g., prescription drug data) 	<ul style="list-style-type: none"> • Performance-Based Payment option does not require payments to be risk-adjusted • Shared Savings option uses the Centers for Medicare & Medicaid Services’ (CMS) prospective hierarchical condition category (HCC) risk score to adjust the “target bundle price” 	Benchmarks established using HCC scores and geographic/ experience-based (e.g., academic hospital versus physician office) risk-adjustments	Risk-adjustments calculations account for hospital- and patient-level effects (calculated using a hierarchical model), including patient age and disease stage	Patients are initially assessed using the risk assessment tool embedded in the American Gastrological Association Crohn’s Disease Clinical Decision Tool, which includes 26 biopsychosocial risk metrics. Regression analyses of each risk measure against the Crohn’s Related Cost of Care is used to identify which measures hold predictive value.

Characteristic (Appendix E.2)	ACS	ASCO	Avera Health	LUGPA	NYC DoHMH	ICG/SonarMD
Participating Provider Financial Risk	The difference between the observed and expected cost will represent the net saving/loss for that episode, with adjustments made based on quality performance. The model includes stop-loss provisions and other outlier protections similar to those currently used in CMS models. Risk and stop-loss provisions vary based on size, resources, and capitalization of APM entity.	<ul style="list-style-type: none"> Track 1: Only at risk of losing performance incentive payment Track 2: Practices may lose up to 10% of bundled amounts or earn up to a 4% increase based on performance. Practices also at risk of losing performance incentive payment 	<p>The model offers two payment options, each with different levels of risk/savings:</p> <ul style="list-style-type: none"> Performance-Based Payment: participants evaluated annually—if they fail to meet performance criteria, the following year’s regular payments are reduced Shared Savings: “Target bundle price” is compared to “actual experience” with the difference resulting in either savings or losses 	Performance payments tied to target spending benchmarks in order to retrospectively reconcile TCOC against a risk-adjusted target amount	<ul style="list-style-type: none"> Providers may be able to retain savings from bundle payment through efficient delivery of services; providers may also be required to absorb extra costs. Providers can also acquire additional savings from achieving sustained virological response (SVR) to offset program setup costs and enhance physician compensation structures. 	Monthly payments adjusted based on performance—adjustments range from a maximum loss of 5% up to a maximum saving of 10%

Characteristic (Appendix E.2)	ACS	ASCO	Avera Health	LUGPA	NYC DoHMH	ICG/SonarMD
Methodology of Cost Benchmarks in Payment	<p>Cost benchmarks are established using historical data:</p> <ul style="list-style-type: none"> • Applies the CMS Episode Grouper for Medicare within a single or multi-payer environment to evaluate Medicare Parts A and B claims data to capture costs associated with team-based care for a given episode/time period, which is then used to calculate cost targets • The model also proposes taking the target price for the first year that is based on the risk-adjusted expected cost with discounts set by observed quality tiers, and then trend that forward into one or more future years prospectively 	Benchmarks based on previous FFS amounts	Site-specific comparison to three years pre-program implementation	<ul style="list-style-type: none"> • Site-specific comparison for model years 1-3 calculated using initial 12-month episodes; later model year benchmarks also calculated using episodes from proceeding years. • Practice-specific experience blended with regional historical experience to establish benchmark for practices that lack historical volume. 	A facility's SVR score will be calculated, risk-adjusted and compared to a representative benchmark of all payment model participants	To incentive value-based care, providers are prospectively compensated \$600 per year compared to the \$490 per year amount that a physician would receive for billing the usual chronic care management code.

Characteristic (Appendix E.2)	ACS	ASCO	Avera Health	LUGPA	NYC DoHMH	ICG/SonarMD
Performance Measures Related to TCOC	Total savings = [number of episodes x (expected cost – actual cost)]	<ul style="list-style-type: none"> • Unplanned hospital admissions per treatment month • Emergency and observation care visits per treatment month • Supportive and maintenance care drug costs per treatment month 	<ul style="list-style-type: none"> • The model includes 11 scored metrics for determining losses/savings (such as the percent of short-stay residents who had an outpatient ED visit and an SNF 30-day all-cause readmission measure. • The model monitors 13 additional quality metrics (e.g., percent residents who made improvement in functioning) 	<ul style="list-style-type: none"> • Proportion of performance year beneficiaries receiving AI shortly after an initial episode versus the analogous proportion from the historical period and at other LUGPA APM entities • Efficiency and cost reduction: Avoidance of overuse of bone scan for staging low risk prostate cancer • Communication and care coordination: Biopsy follow-up • Patient-reported outcomes: Prostate cancer shared decision-making process • Cost of care: All Medicare Part A and B payments in initial episodes 	<ul style="list-style-type: none"> • Risk-adjusted facility-based SVR score • Matched cohort study analyzing the impact of care coordination on TCOC for Medicare and Medicaid FFS beneficiaries 	TCOC, which includes costs related to outpatient visits, inpatient visits, ED visits, and infusion/injection biological costs

Characteristic (Appendix E.2)	ACS	ASCO	Avera Health	LUGPA	NYC DoHMH	ICG/SonarMD
Summary of PTAC Comments and Recommendations related to TCOC	<ul style="list-style-type: none"> PTAC recommended that the proposed model develop and implement a quality measurement and payment system to measure and incentivize provider performance on quality measures as opposed to measuring and rewarding the reporting of quality measures. PTAC commented that reducing costs within individual episodes does not necessarily result in TCOC savings—the proposed model could therefore benefit from methods for controlling the number of services provided or ensuring the appropriateness of a given service. 	<p>PTAC had concerns that there might not be sufficient reductions in TCOC under the proposed PCOP model to achieve cost neutrality or net savings; features of the proposed model with the greatest potential to reduce costs are optional, and any savings may ultimately be offset by care management and performance incentive payments to practices.</p>	<ul style="list-style-type: none"> PTAC indicated that providing beneficiaries and SNF/NF facility staff with 24/7 access to a geriatrician-led care team via telehealth (a key feature of the model) seemed likely to accomplish the proposed model's goals of reducing TCOC through reduced ED visits and hospitalizations. PTAC had concerns about the proposed model's ability to work for smaller NFs. Some PTAC members had reservations about using a shared savings model for this population. PTAC indicated that performance should begin to impact payment by the second year rather than by the third year. PTAC had concerns regarding the lack of robust risk-adjustment mechanisms. 	<ul style="list-style-type: none"> PTAC determined that a model with shared risk based on TCOC did not accurately reflect the urologist's role in managing AS for newly diagnosed patients with prostate cancer. PTAC identified the potential for unintended consequences to result from requiring cost accountability only for the first year-long clinical episode. This could incentivize physicians to postpone AI to just after the 12-month episode ends, even for patients who should receive treatment, because it would both increase the likelihood of shared savings and provide the care management fee for 12 months. 	<ul style="list-style-type: none"> PTAC felt that the proposed payment model would not appropriately address the various services components included in the model, particularly the role of tele-monitoring. PTAC highlighted the fact that HCV beneficiaries often have significant comorbidities, meaning that they would likely benefit from pre- and post-program care coordination. However, the proposed model only calls for care coordination during drug treatment. PTAC expressed concern that the proposed model rewards facilities for cost savings that are most attributable to pharmacotherapy services, and not the high standards of care proposed by the model. PTAC indicated that the bundled payments lack adequate risk-adjustment and that patient attribution is unclear. 	<ul style="list-style-type: none"> PTAC indicated that specialists are often financially rewarded for the number of procedures they perform whereas the proposed model rewards the management of complex patients. PTAC raised concerns as to whether the proposed model is structured appropriately for holding providers accountable for TCOC. Medicare beneficiaries are more likely than the commercial population in which the model had been tested to have multiple chronic conditions and may therefore be under the care of several different types of specialists; these other conditions and physicians could have a significant impact on the TCOC.

Appendix F. Areas for Future Exploration and Research

Please note the items listed below may be better addressed through the RFI, SME discussions or listening sessions, roundtable panel discussions, or another research approach. They are captured here for further exploration.

- Identifying potential participants for accountable care relationships
- Types of providers / entities that could be in an accountable care relationship with patients
- Defining what is included in TCOC (services, etc.)
- Examples of different definitions of TCOC that are used in various contexts (what is, and is not included; how the definition differs across payers, etc.)
- Pros and cons of using a broader definition or a narrower definition of TCOC, and the potential desirability of having a single definition of TCOC in future population-based TCOC models
- Anticipated structural elements for population-based TCOC models
- Services that are appropriate for inclusion in future population-based TCOC models in order to optimize patient-centered care
- Relationship between broader population-based TCOC models and episode-based or condition-specific models
- Options for assessing provider readiness to participate in population-based TCOC models
- Barriers affecting provider readiness / ability to participate in models (administrative burden associated with differing requirements across various payers, awareness of value-based arrangements, etc.)
- Payer-related barriers to implementing value-based arrangements
- How providers balance/meet the requirements of a variety of payers
- How providers address operational issues related to improving coordination of care for a broad, diverse patient population (primary care, specialty care, etc.)
- Collecting and reporting data on quality measurement, including patient-centered measures
- Best practices for evaluating population-based TCOC models
- Potential feasibility of using proxy data for measuring the proportion of providers that are ready to participate in population-based TCOC models (e.g., participation in ACOs, MA network models, etc.), and how this may vary by specialty
- Options for identifying and defining safety net providers that serve a high proportion of underserved beneficiaries / vulnerable populations
- Key design features for operationalizing population-based TCOC models and improving integration in Medicare FFS
- Addressing equity and reducing disparities
- Incentivizing person-centered care, including efforts to address behavioral health, and screening and referrals for addressing HRSNs and SDOH
- Opportunities for reducing duplication of services
- Opportunities and best practices for improving multi-payer alignment / reducing complexity / reducing burden / accelerating transformation
- Issues related to equity (impact on safety net providers and underserved populations, potential for stinting on care, risk for penalizing providers serving certain populations)

Appendix G. Annotated Bibliography

Abt Associates. Evaluation of the Oncology Care Model: Performance Periods 1-5. Abt Associates; 2021:98. <https://innovation.cms.gov/data-and-reports/2021/ocm-evaluation-pp1-5>

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Report

Objective: To report on the findings of the first five years of the Oncology Care Model (OCM) demonstration.

Main Findings: Total episode payments increased for both OCM and comparison episodes, but rose \$297 less in OCM episodes. Relative payment reductions were concentrated in certain types of higher-risk episodes. There was no impact of the demonstration on emergency department (ED) visits or hospitalizations. The demonstration did not impact hospice use or timing, but did result in fewer hospitalizations at the end of life.

Strengths/Limitations: It is possible that non-OCM practices were also focused on reducing ED and hospital use, making it difficult for the evaluation to elicit the effects of OCM.

Generalizability to Medicare Population: Strong; demonstration focused on Medicare beneficiaries.

Methods: Evaluation methods included analyses of claims data, patient surveys, practice leader surveys, and case study interviews.

Abt Associates. Evaluation of the Oncology Care Model: Performance Periods 1-6 - OCM Impacts on Payments. 2021. <https://innovation.cms.gov/data-and-reports/2021/ocm-ar4-eval-payment-impacts>

Subtopic(s): Findings from Research Related to Potential TCOC Models

Type of Source: Report

Objective: This report focuses on updating payment-related impacts and examines Medicare payments to practices that volunteered to participate in the Oncology Care Model (OCM) and compare changes over time in this group versus a comparison group.

Main Findings: The study found that OCM led to increased total episode payments (TEP) for lower-risk episodes by \$130. OCM did not appear to have an impact on Part A payments for acute care hospitalizations, hospice services, or post-acute care.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; the report serves as an evaluation of the OCM, which provides enhanced services for eligible Medicare beneficiaries with cancer diagnoses.

Methods: Difference-in-differences evaluation approach is used to help measure any changes over the course of the model in the comparison group or the OCM group.

Agarwal D, Werner RW. Effect of Hospital and Post-Acute Care Provider Participation in Accountable Care Organizations on Patient Outcomes and Medicare Spending. Health Serv Res. 2018;53(6):5035-5056. doi: 10.1111/1475-6773.13023.

Subtopic(s): Findings from Research Related to Potential TCOC Models

Type of Source: Journal Article

Objective: To test for differences in patient outcomes when hospital and post-acute care (PAC) providers participate in Accountable Care Organizations (ACOs).

Main Findings: Patients that were discharged from an ACO-participating hospital and skilled nursing facility (SNF) in the Medicare Shared Savings Program (MSSP) had lower readmission

rates than before ACO and model participation and non-participants in the comparison group. These patients also saw lower spending and a shorter length of stay than from hospitals and SNFs that were non-ACO affiliated or participants. Patient outcomes or spending were not impacted by discharge from an ACO-participating hospital and rehabilitation facility.

Strengths/Limitations: Given that the MSSP ACO programs are voluntary, there could be a difference observed between participating ACO providers and non-participating providers.

Generalizability to Medicare Population: Strong; the study focuses on the effects that ACOs can have on patient outcomes and spending for Medicare beneficiaries.

Methods: Difference-in-differences analyses to examine the effect of hospital/PAC participation in ACOs on patient outcomes and spending

Alderwick H, Hood-Ronick CM, Gottlieb L. Strategies for Supporting Medicaid Beneficiaries' Social Needs: A Look at Oregon and California. The Commonwealth Fund. 2019.

<https://www.commonwealthfund.org/publications/journal-article/2019/may/medicaid-beneficiaries-social-needs-oregon-california>

Subtopic(s): Findings from Research Related to Potential TCOC Models

Type of Source: Journal Article

Objective: To present the strategies being implemented in Oregon and California for supporting Medicaid beneficiaries and addressing their social needs through various strategy implementations.

Main Findings: Oregon and California launched pilot programs to help address the social needs of Medicaid beneficiaries but came across some challenges. They noted that partnerships between community-based organizations and health care can be difficult to create due to the difference in approaches they take to address social needs of beneficiaries. Limited funding and not enough resource availability was one of the major concerns.

Strengths/Limitations: A limitation for this is that boundaries between the social services and health care will become more difficult to assess given the fact that Medicaid funds are being used to help address social needs.

Generalizability to Medicare Population: Low; the journal article focuses on Medicaid beneficiaries who have low incomes and receive support. Although dual-eligible beneficiaries could be included in this group, the main focus of the article is on Medicaid beneficiaries.

Methods: Literature review

Antos JR, Capretta JC, Treat ACOs And MA Plans Equally? By All Means, Health Affairs Forefront, July 13, 2019

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Issue Brief

Objective: To establish a comparison between ACOs and Medicare Advantage (MA) plans and provide background information on each one through the lens of one serving as an enrollment model and the other as an attribution model.

Main Findings: Providers have a better opportunity to have more financial rewards when it comes to using the ACO model. Leveling the competition between ACOs and MA plans would allow them to reach their full potential because it allows beneficiaries the ability to choose to participate in whichever program they prefer. Equal competition between the two plans could result in lower costs and better care for beneficiaries.

Strengths/Limitations: The post does not specify which ACOs and MA plans are included in the comparison, and therefore does not elaborate on any biases or limitations of the representativeness of the selected ACOs or MA plans.

Generalizability to Medicare Population: Strong; the focus of this article is on ACOs and MA plans, which include a subset of participating Medicare beneficiaries.

Methods: Literature review

Axene JW. What Is The “Total Cost Of Care” And Why Does It Matter? Published online 2021.

<https://axenehp.com/total-cost-care-matter/>

Subtopic(s): Background: Defining Population-Based TCOC Models and Related Terms

Type of Source: Blog Post

Objective: To define the term “total cost of care.”

Main Findings: Total cost of care can incorporate utilization and cost metrics and is often reviewed on the population level to account for the costs incurred to provide medical care for that population.

Strengths/Limitations: The post does not contain any references to peer-reviewed literature or substantial real-world examples.

Generalizability to Medicare Population: Moderate; the Medicare program uses many related TCOC metrics in its payment programs.

Methods: N/A

Bailit Health. Final Report on State Strategies to Promote Value-Based Payment through Medicaid

Managed Care. March 2020. <https://www.macpac.gov/wp-content/uploads/2020/03/Final-Report-on-State-Strategies-to-Promote-Value-Based-Payment-through-Medicaid-Managed-Care-Final-Report.pdf>

Subtopic(s): Findings from Research Related to Potential TCOC Models

Type of Source: Report

Objective: The report reviews findings from interviews and perspectives from national experts and staff that reflect on a variety of approaches about the implementation of value-based payment (VBP) through managed care.

Main Findings: Many state Medicaid payment and delivery system reform efforts come from already built models that are used in commercial and Medicare markets. Multi-payer alignment is not a common strategy among states, which can be due to differences in populations and payment rates. The level to which states monitor a Managed Care Organization (MCO)’s progress toward payment reform varies across states, and some can have more follow-ups while others have fewer.

Strengths/Limitations: The researchers conducted structured interviews with a subset of state officials, MCOs, and other stakeholders in just five states. While these interviews reflect the range of approaches within these states, they are not representative of Medicaid value-based payment nationally.

Generalizability to Medicare Population: Weak: Report focuses on Medicaid beneficiaries and programs, which can include dual-eligible beneficiaries, but is not specific to Medicare.

Methods: Structure interviews and policy analysis

Better Medicare Alliance. The Use of Benchmarks for Payment in Medicare Advantage and Necessary Adjustments. 2021. Accessed January 14, 2022. <https://bettermedicarealliance.org/publication/the-use-of-benchmarks-for-payment-in-medicare-advantage-and-necessary-adjustments/>

Subtopic(s): Comparison of Relevant Features in Selected CMMI Models and Other CMS Demonstrations and Programs

Type of Source: Fact Sheet

Objective: To provide insight into the use of benchmarks for payment in MA and necessary adjustments.

Main Findings: Rural counties with low Medicare spending typically have a higher benchmark than average, and urban districts with higher Medicare spending typically have lower benchmarks. If the bids are lower than the benchmark, the health plans will receive a rebate for a portion of the difference that is used for supplemental benefits.

Strengths/Limitations: Provides strong knowledge on the uses and benefits of benchmarks for payment in MA and focuses on the ways in which they are implemented.

Generalizability to Medicare Population: Strong; fact sheet goes into detail about Medicare benchmarks by county impacting Medicare beneficiaries.

Methods: N/A

Bindman AB, Cox DF. Changes in Health Care Costs and Mortality Associated With Transitional Care Management Services After a Discharge Among Medicare Beneficiaries. JAMA Internal Medicine. 2018;178(9):1165-1171. doi:10.1001/jamainternmed.2018.2572

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To investigate whether the receipt of Transitional Care Management (TCM) services was associated with the subsequent health care costs and mortality of the beneficiaries in the month after the service was provided.

Main Findings: TCM services were billed following eligible discharges in 3.1 percent of cases in 2013, 5.5 percent in 2014, and 7.0 percent in 2015. The adjusted total Medicare costs and mortality were higher for beneficiaries who did not receive TCM services compared to those who did in the 31 to 60 days after discharge.

Strengths/Limitations: Follow-up period was only one month after the potential provision of TCM services; results could differ with a longer observation period.

Generalizability to Medicare Population: Strong; study focused on Medicare beneficiaries.

Methods: Retrospective cohort analysis of all Medicare fee-for-service (FFS) claims

Blewett LA, Spencer D, Huckfeldt P. Minnesota Integrated Health Partnership Demonstration: Implementation of a Medicaid ACO Model. Journal of Health Politics, Policy and Law. 2017;42(6): 1127-1142. doi: 10.1215/03616878-4193666

Subtopic(s): Findings from Research Related to Potential TCOC Models

Type of Source: Journal Article

Objective: To describe the origins, implementation, and early results of Minnesota's Medicaid ACO payment model, the Integrated Health Partnership (IHP) demonstration project.

Main Findings: The program appears to have early success, but more work needs to be done to investigate the true cause of improvement and savings within the Minnesota ACO program. A comparison between the IHP and other ACO programs may be useful in helping to understand the discrepancies if any.

Strengths/Limitations: The study is limited to the state of Minnesota and may not be representative of the whole country, but other states can look at this model and implement it to their state.

Generalizability to Medicare Population: Low; Medicaid beneficiaries are the main focus within this study, but Medicare beneficiaries may benefit from this as well.

Methods: Literature view and qualitative interviews

Breckenridge ED, Kite B, Wells R, Sunbury TM. Effect of Patient Care Coordination on Hospital Encounters and Related Costs. *Popul Health Manag.* 2019;22(5):406-414. doi:10.1089/pop.2018.0176

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To assess whether the number of hospital encounters and related costs decreased for patients who received care coordination services funded through Texas' 1115(a) Medicaid waiver incentive-based payment model.

Main Findings: Patients receiving waiver-funded care coordination had a 19 percent lower probability of hospitalization after receiving care coordination relative to patients who received usual care, for a mean savings of approximately \$1,500 per year per patient. Receiving care coordination was not associated with a change in length of stay.

Strengths/Limitations: The study did not randomize patients to waiver-funded sites. Additionally, the study sample was drawn from only four hospitals. However, the sample did reflect the demographics of the state.

Generalizability to Medicare Population: Limited; the study focused on care coordination funded using a Medicaid waiver; however, the results of care coordination activities may be applicable to the Medicare population.

Methods: Pre-post comparative analysis to compare hospital records for patients who were frequent ED users at four urban safety-net hospitals in Texas

Brooks, D., Reyes, C. and Chien, A., 2021. Time To Set Aside The Term 'Low-Value Care'—Focus On Achieving High-Value Care For All. *Health Affairs Forefront.* Healthaffairs.org. Available at: <https://www.healthaffairs.org/doi/10.1377/forefront.20210518.804037/full/>. Accessed February 2022

Subtopic(s): Findings from Research Related to Potential TCOC Models

Type of Source: Issue Brief

Objective: To inform on the implications that some medical terminology can have on communities, specifically Black and Latinx, and to persuade the cease of the term "low-value care" for the benefit of health care.

Main Findings: The term "low-value care" can impact the way that some communities receive health care and the level to which they trust the health care system. The term can be easily misconstrued and be volatile, so it is important to create an environment that provides patient populations the ability to receive proper medical care.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Low; the article focuses on medical terminology and the implications that it can have on historically disadvantaged communities.

Methods: Informal literature review

Brooks-LaSure C, Fowler E, Seshamani M, Tsai D. Innovation At The Centers For Medicare And Medicaid Services: A Vision For The Next 10 Years. Health Affairs. August 12, 2021.

<https://www.healthaffairs.org/doi/10.1377/forefront.20210812.211558/full/>. Accessed January 2022.

Subtopic(s): Findings from Research Related to Potential TCOC Models

Type of Source: Issue Brief

Objective: To provide an overview of the work that has been done by the Center for Medicare and Medicaid Innovation (CMMI) and report findings, as well as steps the Innovation Center plans to take to increase access to care.

Main Findings: Equity should be the centerpiece of every model being made and a re-evaluation of the financial incentives for providers to help ensure proper participation. Giving providers the proper tools to accept downside risk is essential in helping to enhance change in care delivery. The Innovation Center needs to set financial benchmarks that help address overpayment and risk adjustment.

Strengths/Limitations: The post itself focuses on the Innovation Center's models and is not necessarily representative of the innovation and care delivery transformation happening outside of CMMI.

Generalizability to Medicare Population: Strong; the article focuses on value-based care CMMI models with Medicare beneficiary participation.

Methods: Literature review

Broussard B, Shrank WH, Medicare Advantage And The Future Of Value-Based Care, Health Affairs, July 3, 2019.

Subtopic(s): Relevant Features in Selected Models; Findings from Research Related to Potential TCOC Models

Type of Source: Issue Brief

Objective: To provide background information on Medicare Advantage and the value-based care approach while addressing the benefits of both programs.

Main Findings: Medicare Advantage has been proven to have stark benefits by improving the quality of care and reducing costs while also providing a consumer-centric experience. MA has also proven to decrease taxpayer spending for health care, and the implementation of value-based care will allow the Center for Medicare and Medicaid Innovation to examine the effectiveness of it.

Strengths/Limitations: Researchers did not specifically measure how MA plans may be coordinating post-discharge care; while researchers tried to control for comorbidities and health status, unobserved health selection between MA and traditional Medicare may still influence results.

Generalizability to Medicare Population: Moderate; health care programs were the topic of discussion, but Medicare patients were the beneficiaries.

Methods: Estimated linear probability models with hospital fixed effects, including a wide array of patient-level characteristics relating to health status and sociodemographic characteristics; standard errors were adjusted for clustering at the area level.

Brown Jr. EG, Lightbourne W, Douglas T, Connolly L. Proposal to the Center for Medicare and Medicaid Innovation: Coordinated Care Initiative: State Demonstration to Integrate Care for Dual Eligible Beneficiaries. Published online May 31, 2012. Accessed February 2, 2022.

<https://www.cms.gov/files/document/caproposal.pdf>

Subtopic(s): Relevant Features in Selected Models; Criteria for Identifying Relevant PTAC Proposals

Type of Source: Proposal

Objective: To design a demonstration proposal that describes how it would structure, implement, and monitor an integrated delivery system and payment model aimed at improving quality, coordination, and cost-effectiveness of services for dual eligible individuals.

Main Findings: The state of California provides an overview of the proposed care model, stakeholder engagement, financial and payment plans, anticipated outcomes, infrastructure and implementation, and feasibility and sustainability over time for public input and comment.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; some Medicare beneficiaries are eligible for both Medicare and Medi-Cal benefits, which the report addresses.

Methods: Methodology used to define the demonstration's proposed structure is not specified in the proposal.

California Health Care Foundation. Managing Cost of Care: Lessons from Successful Organizations. 2016.

<https://www.chcf.org/wp-content/uploads/2017/12/PDF-ManagingCostofCare.pdf>

Subtopic(s): Background: Defining Population-based TCOC Models and Related Terms; Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Report

Objective: To gain insight from organizations that successfully managed cost of care.

Main Findings: The study found that to succeed in reducing costs, organizations should assess their cultural and leadership foundation, decide between primary care-based versus organizationally-based strategies, target inpatient and facility costs, and initiate the work from a strong foundation.

Strengths/Limitations: Qualitative interviews may be subject to participant bias where responses may be more what the participant believes is more socially acceptable rather than what is true.

Generalizability to Medicare Population: Weak; a majority of participating organizations are in California. Additionally, although most of the organizations interviewed served Medicare populations, some responded to questions with examples from commercial and Medicaid populations.

Methods: Qualitative interviews were conducted after assessment of Medicare and Integrated Healthcare Association (IHA) data to select organizations for participation. The study includes interviews with 15 health care organizations around the country with demonstrated results in reducing the TCOC.

Caswell KJ, Long SK. The Expanding Role of Managed Care in the Medicaid Program: Implications for Health Care Access, Use, and Expenditures for Nonelderly Adults. Inquiry. 2015;52:0046958015575524. Published 2015 Apr 16. doi:10.1177/0046958015575524

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To examine the relationship between Medicaid managed care (MMC) penetration and health care outcomes among nonelderly disabled and nondisabled enrollees.

Main Findings: Increased MMC penetration is not associated with reduced expenditures, but is associated with higher probability of ED visits, difficulty seeing a specialist, and unmet need for prescription drugs among nonelderly, non-Supplemental Security Income (SSI) Medicaid adults. The study shows no association between MMC penetration and health care outcomes for disabled adults.

Strengths/Limitations: Limitations of the study include that study results are correlations, but do not necessarily identify causal effects. Similarly, the study focuses on adults with full-year-long access to Medicaid, but a number of Medicaid-enrolled beneficiaries cannot continuously access Medicaid, so it is possible that the results may not be generalizable to the full Medicaid population. Additionally, the sample reports only average effects across the nation, and may not be applicable to individual states or counties.

Generalizability to Medicare Population: Weak; the study specifically focused on the Medicaid population and reviews outcomes for nonelderly adults.

Methods: Statistical analysis of Medical Expenditure Panel Survey–Household Component (MEPS-HC) data, county-level MMC penetration rates, and county- and state-level information

Center for Medicare and Medicaid Innovation. 2020 Report to Congress: Center for Medicare and Medicaid Innovation. 2021:192. Accessed January 14, 2022. <https://innovation.cms.gov/data-and-reports/2021/rtc-2020>

Subtopic(s): Comparison of Relevant Features in Selected CMMI Models and Other CMS Demonstrations and Programs

Type of Source: Report

Objective: To report to Congress on CMMI's current activities and provide results from evaluations and recommendations for legislative action.

Main Findings: Five models, including the Maryland All-Payer Model, Repetitive Scheduled Non-Emergent Ambulance Transport (RSNAT), Home Health Value-Based Purchasing (HHVBP), Pioneer Accountable Care Organizations (ACOs), and the ACO Investment Model (AIM), have delivered statistically significant savings. Other models, including Bundled Payments for Care Improvement (BPCI), Next Generation Accountable Care Organization (NGACO), Comprehensive End Stage Renal Disease Care (CEC), and Comprehensive Primary Care Plus (CPC+) have not produced significant net savings to Medicare, but have provided relevant insights to improve the design and development of subsequent models and other common approaches.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; report focused on Medicare beneficiaries.

Methods: N/A

Center for Medicare and Medicaid Innovation. BPCI Advanced Clinical Episodes to Quality Measures Correlation Table – MY5. 2021. <https://innovation.cms.gov/media/document/bpci-adv-my5-clin-ep-qual-meas>. Accessed February 2, 2022.

Subtopic(s): Findings from Research Related to Potential TCOC Models

Type of Source: Table

Objective: To provide a correlation table and aid participants in their selections by providing the data source for each quality measure in the BPCI Model.

Main Findings: BPCI Model year 5 clinical episodes by code and quality measure sets

Strengths/Limitations: N/A

Generalizability to Medicare Population: Low; correlation table that focuses on quality measures for participants

Methods: N/A

Center for Medicare and Medicaid Innovation. CPC+ Payment and Attribution Methodologies for Program Year 2021. March 2021. <https://innovation.cms.gov/media/document/cpc-plus-payment-methodology-cy2021>. Accessed February 2, 2022.

Subtopic(s): Relevant Features in Selected Models

Type of Source: Model Overview Document

Objective: To explain the attribution methodology and the technical specifications used to identify the Medicare fee-for-service (FFS) beneficiaries for whom participating primary care practices are responsible, and provide details of CPC+ payments.

Main Findings: The CPC+ is a primary care medical home model that can be used to strengthen primary care delivery through the use of a multi-payer payment reform and care delivery transformation.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; CPC+ model includes participation by Medicare beneficiaries and Medicare providers.

Methods: N/A

Center for Medicare and Medicaid Innovation. Direct Contracting Model: Professional and Global Options- Model Overview Webinar. December 11, 2019. <https://innovation.cms.gov/files/slides/dc-model-options-overviewalignment-slides.pdf>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Model Overview Webinar

Objective: To provide an overview of the professional and global options in the Direct Contracting Model.

Main Findings: N/A

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; model involves Medicare beneficiaries.

Methods: N/A

Center for Medicare and Medicaid Innovation. Direct Contracting Model: Professional and Global Options- Benefit Enhancements and Patient Engagement Incentives. December 18, 2019. <https://innovation.cms.gov/files/slides/dc-model-options-benefit.pdf>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Model Overview Webinar

Objective: To describe the benefit enhancements and patient engagement incentives of the Direct Contracting Model.

Main Findings: N/A

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; model involves Medicare beneficiaries.

Methods: N/A

Center for Medicare and Medicaid Innovation. Direct Contracting Model: Global and Professional Options- Payment Part Two Webinar. January 22, 2020. <https://innovation.cms.gov/files/slides/dc-model-options-paymenttwo-slides.pdf>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Model Overview Webinar

Objective: To provide an overview of the Direct Contracting Model, including the financial goals, risk options, the performance year benchmark, and the model timeline.

Main Findings: N/A

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; model involves Medicare beneficiaries.

Methods: N/A

Center for Medicare and Medicaid Innovation. Global and Professional Direct Contracting (GPDC) Model: Finance-Focused Frequently Asked Questions. Published online April 2021.

<https://innovation.cms.gov/media/document/gpdc-model-finance-faqs>. Accessed February 2, 2022.

Subtopic(s): Relevant Features in Selected Models

Type of Source: Model Overview Document

Objective: To provide answers to frequently asked questions that give insight and are related to the GPDC and CMS.

Main Findings: N/A

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; report focuses on frequently asked questions for a model with Medicare participation.

Methods: N/A

Center for Medicare and Medicaid Innovation. Global and Professional Direct Contracting (GPDC) Model: Frequently Asked Questions. April 2021. <https://innovation.cms.gov/media/document/gpdc-model-general-faqs>. Accessed February 2, 2022.

Subtopic(s): Relevant Features in Selected Models

Type of Source: Model Overview Document

Objective: To provide answers to frequently asked questions that give insight into and around the GPDC.

Main Findings: N/A

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; report focuses on frequently asked questions for a model with Medicare participation.

Methods: N/A

Center for Medicare and Medicaid Innovation. Maryland Total Cost of Care Model: Maryland Primary Care Program Request for Applications. <https://innovation.cms.gov/files/x/mdtcocm-rfa.pdf>. Accessed February 2, 2022.

Subtopic(s): Defining Potential TCOC Models and Related Terms; Relevant Features in Selected Models

Type of Source: Model Overview Document

Objective: To transform primary care in Maryland, increasing practitioners' capacity to provide comprehensive primary care.

Main Findings: N/A

Strengths/Limitations: The model is being implemented only in the state of Maryland, and the results may not be comprehensive of the U.S. population.

Generalizability to Medicare Population: Moderate; the model can be used by Medicare providers to help improve primary care in the state of Maryland.

Methods: N/A

Center for Medicare and Medicaid Innovation. Medicare Shared Savings Program Shared Savings and Losses And Assignment Methodology Specifications Version #8. August 2020.

<https://www.cms.gov/files/document/shared-savings-losses-assignment-spec-v8.pdf-0>

Subtopic(s): Relevant Features in Selected Models

Type of Source: Model Overview Document

Objective: To provide information that can be beneficial to participants and to supplement and further explain the regulations' text.

Main Findings: N/A

Strengths/Limitations: Makes the agreements and regulations more understandable for participants by providing further explanation.

Generalizability to Medicare Population: Moderate; the report focuses on the specifications under the Medicare Shared Savings Program for Medicare beneficiaries and providers.

Methods: N/A

Center for Medicare and Medicaid Innovation. Next Generation ACO: Cost Sharing Support for Part B Services Benefit Enhancement. <https://innovation.cms.gov/files/x/nextgenaco-costsharing-partb.pdf>. Accessed January 2022.

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Model Overview Document

Objective: To describe reduced or eliminated cost sharing amounts for certain Medicare Part B services under the Next Generation ACO Model.

Main Findings: N/A

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; NGACOs serve Medicare beneficiaries.

Methods: N/A

Center for Medicare and Medicaid Innovation. Next Generation ACO Model: Calculation of the Performance Year Benchmark: Performance Year 2021.

<https://innovation.cms.gov/media/document/ngaco-py6-benchmark-meth>. Accessed January 2022.

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Model Overview Document

Objective: To describe the method of calculating the Performance Year (PY) Benchmark and Shared Savings/Losses for a Next Generation Accountable Care Organization (NGACO) in PY 2021.

Main Findings: N/A

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; NGACOs serve Medicare beneficiaries.

Methods: N/A

Center for Medicare and Medicaid Innovation. Next Generation ACO Model: Frequently Asked Questions April 2019. <https://innovation.cms.gov/files/x/nextgenacofaq.pdf>. Accessed January 2022.

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Model Overview Document

Objective: To answer frequently asked questions related to the Next Generation ACO (NGACO) Model.

Main Findings: Provides CMS answers to questions about the general model, NGACO financial modeling, alignment, and quality and program reporting.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; NGACOs serve Medicare beneficiaries.

Methods: N/A

Center for Medicare and Medicaid Innovation. Next Generation ACO Model: Request for Applications. <https://innovation.cms.gov/files/x/nextgenacorfa.pdf>.

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Model Overview Document

Objective: To explain the Next Generation Model's goals, expectations, and testing metrics to Accountable Care Organization (ACO) applicants.

Main Findings: The Centers for Medicare & Medicaid Services is evaluating the effectiveness of ACOs in improving beneficiaries' health outcomes and driving down costs of fee-for-service (FFS) populations.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; the intended audience of this report is prospective ACOs. However, the ACO model is expected to improve health outcomes and access to care for beneficiaries and can introduce new improvements to the FFS population.

Methods: N/A

Center for Medicare and Medicaid Innovation. Oncology Care Model Beneficiary Notification Letter. <https://innovation.cms.gov/files/x/ocm-beneletter.pdf>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Model Overview Document

Objective: To brief and notify an identified Medicare beneficiary/oncology patient of the Oncology Care Model.

Main Findings: N/A

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; the contents of the letter directly impact beneficiaries who choose to participate in the initiative.

Methods: N/A

Center for Medicare and Medicaid Innovation. Oncology Care Model Other Payer (OCM-OP) Core Measure Set. <https://innovation.cms.gov/files/x/ocm-otherpayercoremeasure.pdf>.

Subtopic(s): Section VIII. Findings from Research Related to Population-Based TCOC Models

Type of Source: Model Overview Brief

Objective: To describe and illustrate the Oncology Care Model Other Payer (OCM-OP) Core Measure Set.

Main Findings: The OCM seeks to link quality of care with payments for FFS and other payers' beneficiaries, in addition to reducing reporting burden for participating OCM practices.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Low; the contents on the brief are aimed toward OCM participating practices.

Methods: Methodology is outlined in a linked document in the appendix of the brief.

Center for Medicare and Medicaid Innovation. Oncology Care Model Overview. 2022. <https://innovation.cms.gov/files/slides/ocm-overview-slides.pdf>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Model Overview Slide Deck

Objective: To provide an overview of the Oncology Care Model (OCM).

Main Findings: The Oncology Care Model aims to improve health care outcomes and lower costs through a six-year oncology payment model.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Medium; the slide deck aims to provide information to practices but can indirectly affect beneficiaries who participate in the OCM.

Methods: The OCM uses risk adjustments, quality measures, and Z51 coding to monitor and evaluation the initiative.

Center for Medicare and Medicaid Innovation. Primary Care First: Payment and Attribution Methodologies PY 2022. December 2021. <https://innovation.cms.gov/media/document/pcf-py22-payment-meth-vol1>.

Subtopic(s): Selection VII: Relevant Performance and Outcome Measures used in Reporting and Evaluation

Type of Source: Model Overview Document

Objective: To describe policies, eligibilities, and methodologies of the new Alternative Payment Model (APM), Primary Care First (PCF).

Main Findings: The PCF model is to become an APM that will provide more flexibility and transparency to primary care practices by means of payment-based payments (PBPs).

Strengths/Limitations: The APM is offered only to eligible beneficiaries who meet certain criteria.

Generalizability to Medicare Population: Strong; among other criteria, the APM is eligible to those who are enrolled in Medicare A and B, which is most of the Medicare population.

Methods: The report states several methodologies for attributing beneficiaries and ensuring quality, including determining risk groups, calculating PBP rewards, and examining Patient Experience of Care Survey (PECS) benchmarks, to name a few.

Centers for Medicare & Medicaid Services. A Guide to Using the Accountable Health Communities Health-Related Social Needs Screening Tool: Promising Practices and Key Insights. 2021:57.

<https://innovation.cms.gov/media/document/ahcm-screeningtool-companion>

Subtopic(s): Appendix D.2. Side by Side Comparison of Additional CMMI Models

Type of Source: Model Overview Document

Objective: To describe the purpose, methodology, and practices of the health-related social needs screening tool.

Main Findings: The tool aims to streamline and simplify universal screening. The tool can be used in a variety of clinical settings and can be self-administered or answered by proxy. Health-related needs are different from social determinants of health in that they focus on individual circumstances as opposed to systemic issues.

Strengths/Limitations: The tool can be taken by proxy in several languages.

Generalizability to Medicare Population: Strong; the tool aims to be universally administered to Medicare and Medicaid beneficiaries in virtually all clinical settings.

Methods: N/A

Centers for Medicare & Medicaid Services. ACO Quality Measures.

<https://www.cms.gov/medicare/medicare-fee-for-service-payment/sharedsavingsprogram/downloads/aco-shared-savings-program-quality-measures.pdf>

Subtopic(s): Section VII. Relevant Performance and Outcome Measures used in Reporting and Evaluation

Type of Source: Model Overview Table

Objective: To visualize MSSP ACO quality measure domain metrics and their description by Performance Year.

Main Findings: N/A

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; the ACO quality measures are used in the MSSP model and are used to evaluate participating Medicare beneficiaries.

Methods: N/A

Centers for Medicare & Medicaid Services. California Medicare-Medicaid Plan Quality Withhold Analysis Results. 2019. <https://www.cms.gov/files/document/qualitywithholdresultsreportcady5.pdf>.

Subtopic(s): Section VII. Relevant Performance and Outcome Measures used in Reporting and Evaluation

Type of Source: Model Report

Objective: To share the results of the quality withhold analysis in California Medicare-Medicaid Plan for Demonstration Year 2019.

Main Findings: The quality withhold analysis is a process under the Financial Alignment Initiative to utilize capitation rates for dually eligible population. Medicare-Medicaid Plans (MMPs) are eligible for repayments subject to their performance in a determined year. To benchmark performance, MMPs use the Healthcare Effectiveness Data and Information Set (HEDIS). Due to the COVID-19 pandemic, the HEDIS was not required to report.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Low; the report focuses on results for the California Medicaid demonstration, which can include dual eligible beneficiaries.

Methods: N/A

Centers for Medicare & Medicaid Services. CMS Innovation Center Episode Payment Models. Published online January 2020. <https://innovation.cms.gov/files/reports/episode-payment-models-wp.pdf>

Subtopic(s): Background: Defining Population-Based TCOC Models and Related Terms

Type of Source: Report

Objective: To summarize results and lessons learned from evaluation reports of CMMI episode payment models.

Main Findings: After considering reconciliation payments to participants, episode payment models have not shown significant net savings to Medicare, despite some models showing reductions in Medicare FFS payments. Reviewing lessons learned from episode payment models highlights that balancing target prices is key to encouraging participation and achieving cost savings; voluntary models require appropriate incentives, risk, and reward; and straightforward and simple beneficiary attribution methods help participants manage care. CMMI can continue to incorporate strategies and lessons learned from existing models to improve methodologies, target pricing, and strike the balance between engaging participants and achieving net savings to Medicare.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; the report focuses specifically on CMMI models for Medicare beneficiaries.

Methods: N/A

Centers for Medicare & Medicaid Services. Enrollee Experiences in the Medicare-Medicaid Financial Alignment Initiative: Results through the 2019 CAHPS Surveys. 2020.

<https://www.cms.gov/files/document/faicahpsresults.pdf>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS Demonstrations

Type of Source: Model Report

Objective: To summarize the findings of the 2019 Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey.

Main Findings: The respondents of the survey were asked to reflect on the quality of care in the past six months. The demographic of the respondents reflects a broad range of individual health

needs. Overall, the respondents noticed an improvement of quality of care, but expressed dissatisfaction with accessing quick appointments.

Strengths/Limitations: This survey was taken before the COVID-19 pandemic. The number and demographic of respondents were not numerated.

Generalizability to Medicare Population: Medium; the findings may be generalized to eligible enrollees.

Methods: Case-adjustments were applied as certain patients score metrics higher or lower.

Centers for Medicare & Medicaid Services. Innovation Center Strategy Refresh. 2021:32.

<https://innovation.cms.gov/strategic-direction-whitepaper>

Subtopic(s): Background: Defining Population-Based TCOC Models and Related Terms, Promising Strategies for Developing Population-Based TCOC Models and Reducing TCOC

Type of Source: White Paper

Objective: To describe CMMI's 10-year plan for value-based care delivery, including driving accountable care, increasing equity, supporting care innovation, addressing affordability, and achieving system transformation.

Main Findings: N/A

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; white paper included Medicare beneficiaries.

Methods: Mixed methods review of Medicare/Medicaid Payment Models, including savings and policy analysis

Centers for Medicare & Medicaid Services. MA Summit 2021: The Future of Care Delivery with CMMI's Dr. Purva Rawal. www.youtube.com. <https://www.youtube.com/watch?v=OYYxPQOFtSw>. Accessed February 2, 2022.

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Conversation from Video Summit

Objective: To answer questions and discuss the future of care delivery with Dr. Purva Rawal, Chief Strategy Officer at CMMI, including providing a background of the CMMI Strategic Refresh.

Main Findings: N/A.

Strengths/Limitations: N/A.

Generalizability to Medicare Population: Strong; the conversation focuses on CMMI and efforts focused on Medicare beneficiaries.

Methods: N/A.

Centers for Medicare & Medicaid Services. Maryland Total Cost of Care Model State Agreement. Published online 2018. <https://hscrc.maryland.gov/Documents/Modernization/TCOC-State-Agreement-CMMI-FINAL-Signed-07092018.pdf>

Subtopic(s): Background: Defining Population-Based TCOC Models and Related Terms

Type of Source: State Agreement with Oversight Agency

Objective: To confirm CMS's oversight activities on Maryland's TCOC Model.

Main Findings: N/A

Strengths/Limitations: N/A

Generalizability to Medicare Population: N/A

Methods: N/A

Centers for Medicare & Medicaid Services. Medicare Shared Savings Program: Shared Savings and Losses and Assignment Methodology Specifications. 2021. <https://www.cms.gov/files/document/medicare-shared-savings-program-shared-savings-and-losses-and-assignment-methodology-specifications.pdf-0>.

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS Demonstrations

Type of Source: Model Overview Document

Objective: To describe the methodology specifications of the Shared Savings Program.

Main Findings: ACOs are required to be eligible to participate in certain tracks. These tracks include the Basic track and the Enhanced track. The tracks are distinguished by their agreement timelines.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Low; the contents of the document are relevant to ACOs only.

Methods: Methodologies include beneficiary assignment criteria using primary care and specialty, outpatient, and past PY benchmarks.

Centers for Medicare & Medicaid Services. Partnering for Impact: Early Insights from the Accountable Health Communities Model. 2019. <https://innovation.cms.gov/media/document/ahcm-earlyinsights-brief>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS Demonstrations

Type of Source: Meeting Summary

Objective: To capture the highlights of the second annual Accountable Health Communities (AHC) Meeting.

Main Findings: Addressing health-related social needs (HRSNs) and providing a space for organizations to network were the main themes of the conference. Cost challenges and sustainability were major sub-themes of many sessions. The conference was attended and facilitated by a broad range of organizations, partners, and federal agencies from across the nation.

Strengths/Limitations: The conference was well-attended by stakeholders.

Generalizability to Medicare Population: Medium; the attendees reflected and advocated for beneficiaries at this conference.

Methods: N/A

Centers for Medicare & Medicaid Services Office of Minority Health, RAND Corporation. Racial, Ethnic, and Gender Disparities in Health Care in Medicare Advantage. April 2018. <https://www.cms.gov/About-CMS/Agency-Information/OMH/Downloads/2018-National-Level-Results-by-Race-Ethnicity-and-Gender.pdf>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Report

Objective: To describe the quality of health care received in 2016 by Medicare beneficiaries enrolled in Medicare Advantage and highlight the racial, ethnic, and gender disparities present in MA.

Main Findings: Researchers found that the quality of care for Medicare Advantage beneficiaries in racial and ethnic minority groups was reported to be either worse or similar to experiences

reported by white beneficiaries. The quality of care was deemed the worst by Asian or Pacific Islander beneficiaries who reported a worse experience than white individuals in seven of the eight performance measures. The quality of care received by women and men was reported as similar. Women and men reported similar experiences of care for all eight measures of patient experience.

Strengths/Limitations: The report focuses on two sources of information – the Medicare Consumer Assessment of Healthcare Providers and Systems (CAHPS) Survey and Healthcare Effectiveness Data and Information Set (HEDIS) – and is limited to the patient experiences and quality measures included in these surveys. In addition, there are typical biases associated with surveys – e.g., social desirability bias, respondent fatigue.

Generalizability to Medicare Population: Strong; report focuses on Medicare beneficiaries enrolled in Medicare Advantage plans.

Methods: The information in this report is from the Medicare CAHPS Survey, conducted annually by CMS, and the HEDIS.

Centers for Medicare & Medicaid Services. Shared Savings Program Participation Options for Performance Year 2022. <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/ssp-aco-participation-options.pdf>. Accessed December 2021.

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Model Overview Document

Objective: To compare MSSP participation options (tracks).

Main Findings:

Strengths/Limitations: N/A

Generalizability to Medicare Population: N/A

Methods: Tracks are across characteristics of the participation options, such as shared savings and losses, and annual election to enter high risk.

Chattopadhyay S. Cost-efficiency in the patient centered medical home model: New evidence from federally qualified health centers. *Int J Health Econ Manag.* 2021;21(3):295-316. doi:10.1007/s10754-021-09295-5

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To assess the cost-efficiency of the Patient-Centered Medical Home (PCMH) model versus traditional care delivery in Federally Qualified Health Centers (FQHCs).

Main Findings: Estimated models and simulations show significant cost advantages and cost savings associated with PCMH status among FQHCs. Estimated analyses reveal an estimated aggregate cost-saving impact of \$1.05 billion of PCMHs across all FQHCs in 2014.

Strengths/Limitations: The chosen methods and variables preclude a longitudinal analysis.

Generalizability to Medicare Population: Moderate; the article does not explicitly focus on the Medicare population, but the intervention studied has been applied to the Medicare population.

Methods: Three-stage least squares modeling approach on 2014 Uniform Data System (UDS) data to assess per-visit and per-patient cost functions

Chernew ME, Cutler DA, Shah SA. Reducing Health Care Spending: What Tools Can States Leverage? Commonwealth Fund; 2021. doi:10.26099/dyp4-2t03

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Report

Objective: To review and examine how states and state health policy commissions can work together on strategies to control spending across all payers.

Main Findings: State strategies to control spending growth can include promoting competition, regulation to reduce prices, incentives to reduce low-value care, spending targets, and payment reform. State health policy commissions can implement change by supporting state agency initiatives or directly implementing policies.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; the study discusses how states can incorporate Medicare payment policy and approaches.

Methods: Literature review and policy analysis

Chernew ME, Hicks AL, Shah SA. Wide State-Level Variation In Commercial Health Care Prices Suggests Uneven Impact Of Price Regulation. 2020;39(5). <https://doi.org/10.1377/hlthaff.2019.01377>

Subtopic(s): Section VI. Relevant Features in Selected PTAC Proposals

Type of Source: Journal Article

Objective: To present findings that support the cost commercial professional care outprice Medicare and Medicaid fees.

Main Findings: Researchers found average commercial prices for inpatient and outpatient facility services were about double Medicare fees, while commercial prices for professional services were about 60 percent higher. Finally, average hospital revenue would fall about 35 percent if commercial prices were limited to Medicare rates, but this would vary widely by state. If Medicaid rates were also increased to match Medicare rates, hospital revenue would likely fall by about 30 percent. Given the potentially large impact, policies to address the market failures that lead to high and variable prices in the commercial insurance sector are needed, but they should be structured to avoid the large disruptions that could occur if there were a very rapid transition to Medicare rates in the commercial market.

Strengths/Limitations: Researchers used data from a non-random sample of commercial claims that are therefore not necessarily representative. Results were reported at the state level, and results were averages that do not reflect variation within states. Price ratios were based on how spending would change if prices were standardized to the Medicare level, and are not the same as looking at price differences based on a fixed market basket. Estimates of revenue share were subject to error because the data included in MA and MMC claims are in the same category as nonpublic commercial claims. Finally, Medicare patients and commercial patients may differ in terms of cost of delivering care to them.

Generalizability to Medicare Population: Moderate; researchers compared state-level variation in commercial market, relative to Medicare, for a broader set of states and a wider set of services, and assessed the potential impact on provider revenue of setting commercial prices at Medicare rates.

Methods: Health care price analysis, including comparing inpatient facility, professional, and outpatient facility prices across states by focusing on the ratio of commercial to Medicare prices and the measurement of revenue shares and the impact of provide reductions

Chernew ME, Frakt AB. The Case for Downside Risk (Or Not). Health Affairs 2018.

<https://www.healthaffairs.org/doi/10.1377/forefront.20181011.442864/full/>

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Journal Article

Objective: To discuss the benefits, limitations, and possible results of upside-only and two-sided risk payment models.

Main Findings: The authors note that both upside-only and two-sided risk are not perfect models and have drawbacks, ultimately proposing a hybrid downside-risk model. They do not recommend moving to a system with mandated, strictly two-sided risk because of the possibility that significant downside risk may discourage participation by smaller practices and lead to provider consolidation. They recommend continuing to monitor participation, with a specific eye on possible revisions to the structure of two-sided models for smaller practices, so that providers can continue to be engaged.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; the authors discuss CMS payment models applicable to the Medicare population.

Methods: N/A

Chernew ME, McWilliams JM. The Case For ACOs: Why Payment Reform Remains Necessary. Health Affairs. 2022. <https://www.healthaffairs.org/doi/10.1377/forefront.20220120.825396>.

Subtopic(s): Section X. Opportunities for Improving and Optimizing Efforts to Develop and Implement Population-Based TCOC Models and Reduce TCOC in APMs and PFPs

Type of Source: Journal Article

Objective: To present the merits of ACOs and arguments for why ACOs should not be halted.

Main Findings: Chernew and McWilliams state that population-based payments such as ACOs help to reduce low-value care by way of incentives. They argue that consolidation hikes prices and yields low-value care, although the research is mixed.

Strengths/Limitations: The article presents hypotheticals. For example, for ACOs to operate on lower costs, the GPDC model will need to be re-designed by CMMI.

Generalizability to Medicare Population: Moderate; this article is designated toward a higher-level audience but does present on Medicare models.

Methods: Literature review

Chun R. Integrated Health Partnerships Demonstration. MN House Research. 2018.

<https://www.house.leg.state.mn.us/hrd/pubs/ihpdemo.pdf>.

Subtopic(s): Section V. Comparison of Relevant Features in Selected CMMI Models and Other CMS Demonstrations and Programs

Type of Source: Model Overview Document

Objective: To describe the Integrated Health Partnerships (IHP) program in the Minnesota Department of Human Services (DHS) in calendar years 2018 and 2019.

Main Findings: The IHP utilizes a value-based payment and risk-sharing model that is determined by quality of care and costs. To be selected, a provider must have a designation as an MA as per DHS.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Low; although the model has wide eligibility, it applies to residents of Minnesota.

Methods: N/A

Claire T. Dinh, Joshua M. Liao, Amol S. Navathe. Implications of coding and risk-adjustment in primary care payment reform. *Journal of Hospital Management and Health Policy*. 2019;(3). doi: 10.21037/jhmhp.2019.05.02

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Journal Article

Objective: To comment on Markovitz et al.'s analysis of risk adjustment in the MSSP, summarize risk adjustment in select Medicare payment models, and propose policy changes.

Main Findings: The authors note that ensuring fair and appropriate risk adjustment is critical to the success of Alternative Payment Models (APMs) and serves many functions. The authors suggest changing from retrospective to prospective attribution, to encourage predictability and protect against providers avoiding higher-risk beneficiaries before attribution. The authors also suggest adjusting for risk-score growth instead of risk-score levels before attribution, to prevent providers from dropping chronically or acutely ill patients in APMs. They highlight that developing a mechanism for risk adjustment could give the opportunity to compare risk regionally and nationally.

Strengths/Limitations: N/A.

Generalizability to Medicare Population: Strong; the authors discuss the impacts of payment reform within the context of the Medicare population.

Methods: N/A

Cole MB, Galárraga O, Wilson IB. The Impact of Rhode Island's Multipayer Patient-centered Medical Home Program on Utilization and Cost of Care. *Med Care*. 2019;57(10):801-808. doi:10.1097/MLR.0000000000001194

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To estimate the effect of PCMH participation on cost and utilization of care for patients in Rhode Island's statewide, multi-payer PCMH program.

Main Findings: All PCMH cohorts experienced statistically significant reductions in utilization, but there was no evidence of effects on total costs of care, although it is possible that total costs may be reduced over a longer term than the study. PCMH patients showed evidence of reduced ED visits, preventable ED visits, and inpatient admissions. High-risk patients often experienced the greatest reduction in ED visits.

Strengths/Limitations: The study contained several limitations. Analyses were conducted at the patient level, which made practice-level analyses and comparisons between Care Transformation Collaborative (CTC) practices and non-CTC practices impossible. The shorter period of post-period observation time may limit the possibility of detecting meaningful impacts on costs, and there were no reliable quality data to contextualize results. Data from the first five CTC practices were excluded from analyses due to time of intervention, but the results may not be generalizable to those practices. Similarly, patients were not assigned to intervention and control groups randomly, so there may be some confounding factors. The attribution methodology may have misattributed some patients, and approximately 14 percent of the population was unattributed and not included in the analysis.

Generalizability to Medicare Population: Moderate; the article covers results from all payers, including Medicare Advantage and Medicare FFS.

Methods: Difference-in-differences analysis of 2009-2014 claims data from all payers in Rhode Island to estimate the effect of PCMH on cost and utilization

Conrad DA. The Theory of Value-Based Payment Incentives and Their Application to Health Care. *Health Serv Res.* 2015;50 Suppl 2(Suppl 2):2057-2089. doi:10.1111/1475-6773.12408

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To apply microeconomic and behavior economics theories to different methods of value-based payment in health care; to use those methods to develop research questions and policy recommendations.

Main Findings: Agency theory and behavioral economics can be applied to help design value-based payment in health care. They can be used to develop incentives to target improved care processes, patient experiences, and health outcomes, and they can help develop benchmarks. Different forms of value-based payment, such as shared savings and risk, reference pricing, capitation, and bundled payment, can be coupled with adjunct incentives for quality and efficiency to address different market conditions and organizational settings.

Strengths/Limitations: The paper relies on theoretical arguments and conceptual frameworks and does not incorporate significant application of existing models and evaluations.

Generalizability to Medicare Population: Moderate; the article's analysis of value-based payment models relates to and references existing Medicare programs and demonstrations.

Methods: Conceptual analysis and review of theoretical research and empirical literature relevant to value-based payment in health care

Counts NZ, Smith JD, Crowley DM. (Expected) value-based payment: From total cost of care to net present value of care. *Healthc (Amst).* 2019;7(1):1-3. doi:10.1016/j.hjdsi.2018.12.005

Subtopic(s): Opportunities for Improving and Optimizing Efforts to Develop and Implement Population-Based TCOC Models and Reduce TCOC in APMs and PFPs

Type of Source: Journal Article

Objective: To introduce the concept of Net Present Value of Care (NPVoC) and outline an approach to apply the concept to APMs.

Main Findings: NPVoC is a way of incorporating past and future savings into TCOC calculations. The authors assert that NPVoC can help develop cost-neutral APMs and incentivize investment in interventions that will develop into lower total spending for payers, greater revenue for providers, and better health. To develop successful NPVoC-based APMs at scale, payers need to be careful to choose appropriate performance measures, develop appropriate auditing methodologies, set standard incentives, and utilize regulations to set standard penalties.

Strengths/Limitations: N/A.

Generalizability to Medicare Population: Moderate; the study suggests a new form of payment modeling for APMs that could be applied to Medicare-focused programs

Methods: N/A.

Counts, N. Z., N. Halfon, K. J. Kelleher, J. D. Hawkins, L. K. Leslie, T. F. Boat, M. A. McCabe, W. R. Beardslee, J. Szapocznik, and C. H. Brown. 2018. Redesigning Provider Payments to Reduce Long-Term Costs by Promoting Healthy Development. *NAM Perspectives. Discussion Paper*, National Academy of Medicine, Washington, D.C. <https://doi.org/10.31478/201804b>

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Discussion Paper

Objective: To discuss how to incorporate interventions for cognitive, affective, and behavioral (CAB) health conditions into future health care system spending.

Main Findings: Future health care reform efforts will need to redesign incentives by developing quality measures of CAB developmental outcomes for accountability, creating payment

methodologies based on the expected value of changes in these outcomes, and ensuring sufficient reimbursement. These three changes would allow for timely incentives for effectively promoting life course CAB health and potentially reducing future health system spending. Health care reforms will also need to engage other sectors that contribute to and help optimize CAB health, including child care and education.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Weak; much of the article focuses on CAB interventions for children and families and does not address the issues of the Medicare population.

Methods: N/A

Crook HL, Saunders RS, Roiland R, Higgins A, McClellan MB. A Decade of Value-Based Payment: Lessons Learned And Implications For The Center For Medicare And Medicaid Innovation, Part 2. Health Affairs Blog. Published online June 10, 2021.

<https://www.healthaffairs.org/doi/10.1377/hblog20210607.230763/full/>

Subtopic(s): Comparison of Relevant Features in Selected CMMI Models and Other CMS Demonstrations and Programs; Opportunities for Improving and Optimizing Efforts to Develop and Implement Population-Based TCOC Models and Reduce TCOC in APMs and PFPs

Type of Source: Blog Post

Objective: To discuss lessons learned regarding the refinement and expansion of value-based payment (VBP) models and to describe implications for CMS and CMMI.

Main Findings: The authors describe lessons learned around expanding system-wide impact, including: achieving system-wide impact will require CMMI to clarify a specific model framework; models should use consistent technical standards; CMMI should continue to work toward multi-payer approaches and collaborate with states, Medicaid, employer coalitions, and employer health plans; achieving savings in voluntary models is more challenging than in mandatory models; and evaluations should be focused on synthesizing a wide range of evidence sources given the heterogeneity of models.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; the piece specifically focuses on the relevance of lessons learned to CMMI and the Medicare population.

Methods: N/A

Cuellar A, Helmchen LA, Gimm G, et al. The CareFirst Patient-Centered Medical Home Program: Cost and Utilization Effects in Its First Three Years. J Gen Intern Med. 2016;31(11):1382-1388. doi:10.1007/s11606-016-3814-z

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To test the impact of the CareFirst PCMH program on spending, hospital admissions, and ED visits.

Main Findings: The CareFirst PCMH program was associated with lower annual adjusted total claims payments. Forty-two percent of the overall reduction in spending could be attributed to lower inpatient care, emergency care, and prescription drug spending, of which most of the reduction spending could be attributed to reduced inpatient and emergency care utilization.

Strengths/Limitations: The study uses only data from the CareFirst insured population 18 to 64 years old in Washington, D.C., Maryland, and Virginia and does not incorporate Medicaid or Medicare beneficiaries. The population included in the study may not be generalizable to the broader U.S. population.

Generalizability to Medicare Population: Moderate; the intervention could have lessons learned that could inform future Medicare APMs.

Methods: Difference-in-difference analysis of CareFirst medical and prescription drug claims data

Cutler DM, Ghosh K. The Potential for Cost Savings through Bundled Episode Payments. N Engl J Med. 2012;366(12):1075-1077. doi:10.1056/NEJMp1113361

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3325104/>

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To estimate the cost savings associated with episode-based and patient-based bundled payments.

Main Findings: Episode-based bundled payments would save 83 percent of the amount that would be saved with the use of a patient-based bundling system if the 25th-percentile standard were used and 82 percent if the 50th-percentile standard were used. Bundled payments for episodes of care can achieve substantial health care savings whether in a stand-alone program or as a component of an overall global-payment model.

Strengths/Limitations: Does not account for heterogeneity in the complexity of disease within episode types that may affect the average costs in a hospital region.

Generalizability to Medicare Population: Strong; study focused on Medicare beneficiaries.

Methods: Analysis of inpatient claims data for a random sample of 5 percent of the elderly population in FFS Medicare in 2007 followed by a cost-distribution analysis

Damberg CL, Sorbero ME, Lovejoy SL, Martsolf GR, Raaen L, Mandel D. Measuring Success in Health Care Value-Based Purchasing Programs. Rand Health Q. 2014;4(3):9.

Subtopic(s): Relevant Performance and Outcome Measures used in Reporting and Evaluation

Type of Source: Journal Article

Objective: To summarize the current state of information around value-based purchasing (VBP) from published literature, publicly available documentation, and discussions with an expert panel of VBP program sponsors, health care providers/health systems, and academic researchers.

Main Findings: The article concludes that there is still much to be learned about how to implement VBP programs, even though there has been a rise in studies around performance-

based payment models, such as P4P (Pay for Performance) models. There is currently limited evidence on the impact of ACOs and bundled payment programs that include clinical quality measures, and there is a lack of ACO evaluation studies. The authors determine that more publicly available information is needed on the lessons learned from VBP programs.

Strengths/Limitations: This article was published in 2014 and could be slightly outdated.

Generalizability to Medicare Population: Strong; Medicare has begun implementing VBP in many health care settings.

Methods: The authors reviewed findings from an environmental scan, literature review, and expert panel discussions.

Decker SL. No Association Found Between The Medicaid Primary Care Fee Bump And Physician-Reported Participation In Medicaid. *Health Aff (Millwood)*. 2018;37(7):1092-1098.

doi:10.1377/hlthaff.2018.0078

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To evaluate whether the Medicaid “fee bump” requirement of the Affordable Care Act (ACA) increased physician-reported measures of participation in Medicaid.

Main Findings: There was no significant change in the percentage of physicians accepting new Medicaid patients during the 2011-2015 study period. Primary care physicians had a higher rate of acceptance of patients with Medicare or private insurance compared to patients with Medicaid. Specialists were more likely than primary care physicians to report accepting new Medicaid patients.

Strengths/Limitations: Physician-reported values are not the most reliable measure of increasing Medicaid participation. The National Electronic Health Records Survey (NEHRS) has a smaller sample size relative to other well-regarded physician surveys. Additional policies correlated to the Medicaid fee bump were implemented between 2013 and 2014.

Generalizability to Medicare Population: Weak; data pertain to Medicaid beneficiaries.

Methods: Multivariate analysis of 2011-2015 data from the NEHRS; 2014 was considered the implementation year for the Medicaid fee bump. The analysis included only survey responses from physicians in general/family practice, internal medicine, and pediatrics.

Devers K, Skopec L, Williams G, Berenson R. A Review of Physician-Focused Payment Model Technical Advisory Committee (PTAC) Voting Patterns and Comments on Proposed Physician-Focused Payment Models as of December 2019.; 2020:40.

<https://aspe.hhs.gov/sites/default/files/private/pdf/252376/VotingPatternsandCommentsonProposedModelsasofDec2019.pdf>

Subtopic(s): Introduction and Purpose

Type of Source: Report

Objective: To describe patterns in how members of PTAC assessed payment models submitted to the Committee.

Main Findings: PTAC comments on scope and scalability were positive, noting the opportunity for new specialties to participate in APMs. PTAC supported linking payment to quality. Payment models across the physician-focused payment model (PFPM) proposals varied widely. Key insights related to evidence and evaluability included suggestions for incorporating existing evidence for the proposed model, assessment of the strength of evidence for the proposed model, and guidance for developing a feasible evaluation plan. Care coordination/care integration and shared decision-making insights included emphasizing the level of specificity for

care integration and coordination, as well as aspects of patient engagement and shared decision-making. PTAC supports the use of innovative health information technology.

Strengths/Limitations: The analysis is limited to voting patterns and written comments in the report to the Secretary (RTS) for each PFP and may not represent all Committee members' views.

Generalizability to Medicare Population: Strong; report focused on Medicare beneficiaries.

Methods: Qualitative analysis of Committee members' votes on PFP proposals deliberated on by PTAC and Committee members' comments regarding how the proposals related to the 10 criteria for PFPs as conveyed in each RTS

Doucette WR, DeVolder R, Heggen T. Evaluation of financial outcomes under a value-based payment program for community pharmacies. *Journal of Managed Care + Specialty Pharmacy*. 2021. 27(9):1198-1208. <https://www.jmcp.org/doi/full/10.18553/jmcp.2021.27.9.1198>

Subtopic(s): Relevant Performance and Outcome Measures used in Reporting and Evaluation; Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To evaluate financial outcomes of a value-based pharmacy program (VBPP) implemented in 73 community pharmacies for about 40,000 commercial beneficiaries of Wellmark, Inc.

Main Findings: Per beneficiary per month total costs of care for the beneficiaries going to the VBPP pharmacies was \$30.48 (4.5 percent) lower than that of the non-VBPP group and statistically significant. Hospital admission and ED rates were also lower in the VBPP group, though these results did not reach statistical significance.

Strengths/Limitations: Beneficiaries were not randomized as to whether they would receive the services associated with the VBPP, potentially creating a self-selection bias.

Generalizability to Medicare Population: Moderate; Medicare beneficiaries are not the focus of this study, but the intervention can be applied to them.

Methods: Financial outcome variables were analyzed for the calendar year 2018, including total cost of care, hospital admissions, and ED visits. Hospital admissions and ED visits were identified through claims data. In addition to the 2018 claims data, other variables were measured using data from Wellmark.

Duggan M, Hayford T. Has the Shift to Managed Care Reduced Medicaid Expenditures? Evidence from state and local-level mandates. *J Policy Anal Manag J Assoc Public Policy Anal Manag*. 2013;32(3):505-535. doi:10.1002/pam.21693

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To evaluate whether the shift from FFS into managed care results in an increase or a reduction in Medicaid spending.

Main Findings: Shifting Medicaid recipients into managed care plans did not reduce Medicaid spending in the typical state. Ordinary least squares (OLS) results for the extended 19-year period suggest that MMC increased Medicaid spending, particularly when states contracted out to health maintenance organization (HMO) plans.

Strengths/Limitations: Study does not incorporate county-level variations in Medicaid enrollment.

Generalizability to Medicare Population: Moderate; Medicare beneficiaries are not the focus of this study, but the intervention can be applied to them.

Methods: Quantitative analysis of Medicaid data from all 50 states and the District of Columbia

Eggbeer B, Bowers K, Morris D. Dual-eligible reform a step toward population health management. *Healthc Financ Manag*. 2013;67(4):90-96.

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To describe costs and pilot programs regarding care coordination for Medicare-Medicaid dual beneficiaries.

Main Findings: The size and costs associated with dual eligible beneficiaries are difficult to measure exactly – various estimates of these statistics do not agree. The experience of pilot programs indicates that large savings for more coordinated care for dual eligible beneficiaries have so far been hard to come by, and that the cost of care management for this complex population has balanced out savings achieved through reduced hospitalization.

Strengths/Limitations: The authors do not reference any studies in their article.

Generalizability to Medicare Population: Moderate; the study focuses on Medicare-Medicaid dual beneficiaries.

Methods: N/A

Elwell D, Jones A, Morgan G, Perlin S. Finance: A Guide to Safety Net Provider Reimbursement. Health Management Associates. 2013. <https://www.healthmanagement.com/wp-content/uploads/ACI-Finance-Tool-Final3.pdf>

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Report

Objective: To explore the implications of moving toward integrated care and reimbursement systems that reward providers on the basis of value provided, measured by quality and cost-effectiveness, for safety-net providers.

Main Findings: Previous special reimbursement strategies for safety-net providers are inconsistent with cost-effective, outcomes-based payment and have reinforced siloed care. New incentives must promote improved outcomes and enhanced member satisfaction. There must be a gradual progression of provider accountability from the organization level down to the practice level that encourages innovative approaches to care. Provider groups should be restricted to budgets that grow more slowly each year. A multi-payer approach that applies to as much of a provider's practice as possible is best.

Strengths/Limitations: Study focused specifically on safety-net provider reimbursement.

Generalizability to Medicare Population: Strong; study analyzed Medicare as a payer.

Methods: Qualitative analysis of reimbursement methodologies for major FQHC payers (Medicare, Medicaid, private insurance, and self-payment)

Emmert M, Eijkenaar F, Kemter H, Esslinger A, Schöffski O. Economic evaluation of pay-for-performance in health care: a systematic review. *Eur J Health Econ*. 2012;13(6):755-767. doi: 10.1007/s10198-011-0329-8

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To identify and analyze the existing literature regarding economic evaluations of pay-for-performance (P4P).

Main Findings: Identified three full economic evaluations and six partial economic evaluations of P4P. None of the studies demonstrated P4P efficiency. The ranges of costs and consequences were typically narrow, and programs differed considerably in design.

Strengths/Limitations: Small number and high variability in the economic evaluations were included in this review.

Generalizability to Medicare Population: Weak; study not focused on Medicare beneficiaries.

Methods: Systematic literature review of peer-reviewed English, German, Spanish, and Turkish language literature

Franco Montoya D, Chehal PK, Adams EK. Medicaid Managed Care's Effects on Costs, Access, and Quality: An Update. *Annu Rev Public Health*. 2020;41(1):537-549. doi:10.1146/annurev-publhealth-040119-094345

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To critically review peer-reviewed studies on MMC from 2011 through 2019.

Main Findings: Quality of care can be improved for high-risk populations with a transition to managed care, though many caveats exist. Six studies reported cost savings for Medicaid. Studies reported variable impacts on Medicaid access (increased, no change, and decreased all reported). Studies reported variable impacts on quality of care. Studies specific to high-risk populations found improvements in quality that were specific to the state or population of interest.

Strengths/Limitations: Study identified major gaps in MMC research.

Generalizability to Medicare Population: Moderate; Medicare beneficiaries are not the focus of this study, but the intervention can be applied to them.

Methods: Systematic review of peer-reviewed literature published since the Sparer review in 2011 (32 total studies)

Fraze TK, Fisher ES, Tomaino MR, Peck KA, Meara E. Comparison of populations served in hospital service areas with and without comprehensive primary care plus medical homes. *JAMA Netw Open* 2018;1:e182169

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Journal Article

Objective: To describe practices that joined the CPC+ model and compare hospital service areas with and without CPC+ practices.

Main Findings: Primary care practices located in areas with higher income and educational levels and lower use of inpatient services were more likely to join the CPC+ model compared with practices in other areas. Practices located in areas with more health care resources per capita were also more likely to join the CPC+ program.

Strengths/Limitations: Relied on secondary data sources that may not reflect the current characteristics of health care practices. Use of aggregate Medicare measures required the omission of some of the CMS requirements for CPC+ participation.

Generalizability to Medicare Population: Strong; the CPC+ program is focused on Medicare beneficiaries.

Methods: Comparative cross-sectional study using publicly available CMS data and IMS Health Care Organization Services data

Frean M, Covington C, Tietschert M, Bahadurzada H, So J, Singer SJ. Patient Experiences of Integrated Care in Medicare Accountable Care Organizations and Medicare Advantage Versus Traditional Fee-for-Service. *Med Care*. 2021;59(3):195-201. doi:10.1097/MLR.0000000000001463

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To characterize patient experiences of integrated care within Medicare and identify whether Medicare Advantage (MA) or ACO beneficiaries perceive greater integration than FFS beneficiaries.

Main Findings: Patient perceptions of integrated care were largely similar between MA, ACO, and traditional FFS beneficiaries.

Strengths/Limitations: Correlational analysis only. Unable to control for multiple variables (i.e., unobservable demographic differences, varying tenure, and experience with Medicare).

Generalizability to Medicare Population: Strong; study focused on Medicare beneficiaries.

Methods: Retrospective cross-sectional analysis of the 2015 Medicare Current Beneficiary Survey (MCBS), a nationally representative sample of 11,978 Medicare beneficiaries

Freed M, Damico A, Neuman T. A Dozen Facts About Medicare Advantage in 2020. KFF.

<https://www.kff.org/medicare/issue-brief/a-dozen-facts-about-medicare-advantage-in-2020/>. Accessed January 2022.

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Issue Brief

Objective: To highlight the trends around Medicare Advantage (MA) enrollment, premiums, and out-of-pocket limits, and to describe changes to MA in response to COVID-19.

Main Findings: The article provides 12 facts about MA, including that enrollment in MA has doubled over the past decade; the share of Medicare beneficiaries in MA plans ranges by state from 1 percent to 40 percent and county by 1 percent to 70 percent; most MA enrollees are in plans operated by United Healthcare, Humana, or Blue Cross Blue Shield (BCBS) affiliates; and half of all MA enrollees incur higher costs than beneficiaries in traditional Medicare for a five-day hospital stay.

Strengths/Limitations: Researchers refined their methods this year (relative to previous years) to use the Medicare Enrollment Dashboard to calculate the number of Medicare beneficiaries because it includes only Medicare beneficiaries with either Part A or Part B coverage, which is a more accurate estimate of the Medicare population. Enrollment counts in publications by firms operating in the Medicare Advantage market, such as company financial statements, might differ from the researchers' estimates due to inclusion or exclusion of certain plan types, such as Special Needs Plans (SNPs) or employer plans.

Generalizability to Medicare Population: Strong; analysis involves Medicare beneficiaries.

Methods: This analysis uses data from the Centers for Medicare & Medicaid Services (CMS) MA enrollment files.

Freed M, Fuglesten Biniek J, Damico, Neuman T. Medicare Advantage in 2021: Premiums, Cost Sharing, Out-of-Pocket Limits and Supplemental Benefits. KFF. June 21, 2021.

<https://www.kff.org/medicare/issue-brief/medicare-advantage-in-2021-premiums-cost-sharing-out-of-pocket-limits-and-supplemental-benefits/>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Journal Article

Objective: To describe the premiums, post sharing, out-of-pocket limits, and supplemental benefits of Medicare Advantage (MA) in 2021.

Main Findings: MA plans do not always result in lower costs than traditional Medicare plans. More than half of MA enrollees pay higher costs than traditional Medicare beneficiaries with no

supplemental coverage for a six-day hospital stay. Additional data are needed on service utilization and out-of-pocket spending patterns for MA to determine the value and quality of the MA program.

Strengths/Limitations: The analysis does not take into account deductibles that some MA enrollees face or the maximum out-of-pocket limits under MA, which would cap the amount enrollees pay for their care, including hospitalizations. It is possible that some MA enrollees would reach their out-of-pocket limit during their inpatient stay, particularly if they had incurred high expenses prior to an inpatient admission.

Generalizability to Medicare Population: Strong; analysis involves Medicare beneficiaries.

Methods: Internal Kaiser Family Foundation (KFF) analysis

Friedberg MW, Chen PG, Simmons MM, et al. *Effects of Health Care Payment Models on Physician Practice in the United States: Follow-Up Study*. RAND Corporation; 2018.

https://www.rand.org/pubs/research_reports/RR2667.html

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Report

Objective: To describe the effects that alternative health care payment models have on physicians, physician practices, and hospital systems in the United States.

Main Findings: Payment models are changing at an accelerating pace, and some physician practices, health systems, and consultants have found it difficult to keep up with the proliferation of new models. As alternative payment models have become increasingly complex, practices that have invested in understanding more complex APMs have found opportunities to earn financial awards for their preexisting quality. Physician practices were more likely to be risk-averse, and risk-averse practices sought to avoid or offload downside risk to partners, such as hospitals and device manufacturers, whenever possible.

Strengths/Limitations: Limitations of the study primarily related to data collection and sampling. Data collection methods required voluntary investment of time and effort, which may have resulted in an underrepresentation of practices struggling the most with new payment models. Similarly, as the study relied on semi-structured interviews, the data may have been compromised by social desirability bias. The study's reliance on market observers to nominate practices for inclusion in the study may have resulted in a bias towards practices with perspectives similar to those of the market observers. Finally, the study sample was not nationally representative, so findings may not be generalizable to other markets not included in the study.

Generalizability to Medicare Population: Moderate; Medicare beneficiaries are not the sole focus of the analysis, but the report does address a number of Medicare models and conclusions may be applied to future potential Medicare APMs.

Methods: Qualitative case studies of physician practices, including semi-structured interviews with physician practice leaders, physicians, and other observers

Fuglesten Biniek J, Bloeschichak A, Rodriguez, Tumlinson A, Fuller B. Comparing Medicare Advantage and Fee-For-Service Medicare Suggests Opportunities For Savings in Hospitalization, Postacute Care. Health Affairs. April 9, 2020. <https://www.healthaffairs.org/doi/10.1377/hblog20200331.18859/full/>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Issue Brief

Objective: To describe how Medicare Advantage (MA) and fee-for-service Medicare can provide opportunities for cost savings in hospital visits and post-acute care.

Main Findings: There is need for further research on care delivery to Medicare beneficiaries who need clinical interventions, rehabilitation, and restoration of function following a hospitalization. There is opportunity to study the use of MA and Medicare fee-for-service in post-acute settings of care. Possible solutions include expanding bundled payments and ACOs or broader changes to the post-acute care payment system.

Strengths/Limitations: Strong; analysis involves Medicare beneficiaries.

Generalizability to Medicare Population: Strong; analysis involves Medicare beneficiaries.

Methods: Internal analysis

Fullerton CA, Henke RM, Crable EL, Hohlbauch A, Cummings N. The Impact Of Medicare ACOs On Improving Integration And Coordination Of Physical And Behavioral Health Care. Health Affairs. 2016; 35(7). <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2016.0019>

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To determine whether and how Medicare ACOs focused on behavioral health care.

Main Findings: Most ACOs initiated or expanded programs to provide behavioral health care for their beneficiaries and to improve the coordination of that care between primary care and behavioral health care providers. Approaches ranged from implementing integrated care models to improving relationships with behavioral health care providers outside the ACO. Most ACOs used licensed clinical social workers instead of nurse practitioners to treat mental, behavioral, and emotional issues, especially depression. Multiple ACOs adjusted their referral networks to better serve beneficiaries with behavioral health needs by improving connections to community resources, partnering with a behavioral health facility to improve access to care, and reorganizing internal behavioral health resources to improve access to and coordination with primary care providers.

Strengths/Limitations: Interviewers varied in the breadth of their questioning about behavioral health issues, and respondents varied in the comprehensiveness of the information they shared. The accuracy of the answers depended on the knowledge of the individuals at the ACOs who were participating in the interviews.

Generalizability to Medicare Population: Strong; study focused on Medicare ACOs.

Methods: Qualitative assessment of site visits (semi-structured interviews) at 90 ACOs, which an independent team conducted to evaluate the Pioneer and Advance Payment ACO models between 2012 and 2015

Fung V, McCarthy S, Price M, et al. Payment Discrepancies and Access to Primary Care Physicians for Dual-eligible Medicare-Medicaid Beneficiaries. *Med Care*. 2021; Publish Ahead of Print. doi:10.1097/MLR.0000000000001525

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To examine how dual payment policy impacts primary care providers (PCPs)' acceptance of duals.

Main Findings: In 2012, 81 percent of PCPs had dual caseloads of less than 10 percent, and this was less likely among PCPs in states with lower versus full dual reimbursement. The proportion of PCPs with dual caseloads of more than 10 percent or 20 percent decreased significantly between 2012 and 2017, and the fee bump was not consistently associated with increases in dual caseloads.

Strengths/Limitations: Study does not include nurse practitioners or physician assistants in the primary care setting. Additional years of pre-policy data before 2012 were not available to assess whether there were parallel trends in dual caseloads between PCPs and specialists and between the states with larger versus smaller fee increases.

Generalizability to Medicare Population: Moderate; study focused on Medicare-Medicaid dual eligible beneficiaries.

Methods: Quantitative analysis using linear probability models adjusted for physician and area-level traits and a triple-difference approach

Gilfillan RJ, Tomcavage J, Rosenthal MB, Davis DE, Graham J, Roy JA, Pierdon SB, Bloom FJ, Graf TR, Goldman R, Weikel KM, Hamory BH, Paulus RA, Steele GD. Value and the Medical Home: Effects of Transformed Primary Care. *The American Journal of Managed Care*. 2010; 16(8).

https://www.ajmc.com/view/ajmc_10auggilfillan607to614

Subtopic(s): Findings from Research Related to Population-Based TCOC Models; Opportunities for Improving and Optimizing Efforts to Develop TCOC Models and Reduce TCOC in APMs and PFPs

Type of Source: Journal Article

Objective: To evaluate the ability of a medical home model (ProvenHealth Navigator [PHN]) to improve the efficiency of care for Medicare beneficiaries.

Main Findings: Investing in the capabilities of primary care practices to serve as medical homes may increase health care value by improving the efficiency of care. Demonstrates that the PHN model is capable of significantly reducing admissions and readmissions for MA members.

Strengths/Limitations: Limited to a single medical home model that is situated in an integrated payer—provider environment (i.e., the payer and provider are part of the same corporate entity) with long-standing use of an ambulatory electronic health record (EHR) and a Medicare population with high baseline spending and relatively little patient turnover. Measure of medical spending excluded the cost of prescription drugs.

Generalizability to Medicare Population: Strong; study focused on Medicare beneficiaries.

Methods: Observational study using regression modeling based on preintervention and postintervention claims data and a propensity-selected control cohort

Glassman B. The Multidimensional Deprivation Index Using Different Neighborhood Quality Definitions. U.S. Census Bureau. 2020. <https://www.census.gov/content/dam/Census/library/working-papers/2020/demo/SEHSD-WP2020-08.pdf>

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Report

Objective: To evaluate alternative measures of neighborhood quality for the Multidimensional Deprivation Index (MDI).

Main Findings: This analysis provides alternative quality measures to measure neighborhood quality in the MDI. The neighborhood quality measure from the MDI was based on crime, pollution, and food availability at the county level. However, this proved to be an unreliable measure because the county was found to be too large of a population, and food, crime, and pollution may not be an appropriate measure for the overall quality. The author concluded that the original county-level MDI measure for neighborhood quality performs the worst of the measures examined, and the national Area Deprivation Index (ADI) measure performs the best of all the measures reviewed.

Strengths/Limitations: Author does not clarify how the six alternative neighborhood quality measures discussed in the report are selected and whether these measures are representative of the full range of available measures for review.

Generalizability to Medicare Population: Weak; analysis does not involve Medicare.

Methods: Six measures are discussed, including sources from the American Community Survey; the ADI from the University of Wisconsin-Madison; the social deprivation index (SDI) from the Robert Graham Center; a generational mobility measure produced by Raj Chetty and Opportunity Insights at Harvard University; and two measures are based on a state ADI and SDI.

Granata RL, Hamilton K. Exploring the effect of at-risk case management compensation on hospital pay-for-performance outcomes: tools for change. *Prof Case Manag.* 2015;20(1):14-27; quiz 28-29. doi:10.1097/NCM.0000000000000067

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To inform leaders in the field of case management about tools to facilitate the alignment of case management systems with hospital pay-for-performance measures.

Main Findings: The implementation of an at-risk compensation model using key performance indicators, Lean Six Sigma methodology, and Creative Health Care Management's Relationship-Based Care framework demonstrated reduced length of stay and hospital readmissions, and improved patient experiences.

Strengths/Limitations: Study focused on only one quality improvement project implemented at a hospital in Alabama, so findings may not be applicable outside this specific setting.

Generalizability to Medicare Population: Moderate; study does not focus on the Medicare population, but findings may be applicable to Medicare beneficiaries.

Methods: Researchers conducted a case study and evaluated outcomes at an inpatient acute care hospital in Alabama.

Haber S, Beil H, Morrison M, et al. Evaluation of the Maryland All-Payer Model: Volume I: Final Report. RTI International; 2019:278. <https://downloads.cms.gov/files/md-allpayer-finalevalrpt.pdf>

Subtopic(s): Comparison of Relevant Features in Selected CMMI Models and Other CMS Demonstrations and Programs; Opportunities for Improving and Optimizing Efforts to Develop and Implement Population-Based TCOC Models and Reduce TCOC in APMs and PFPMs

Type of Source: Report

Objective: To report on the findings from the completed Maryland All-Payer Model.

Main Findings: Total expenditures and total hospital expenditures for Medicare beneficiaries were reduced; however, total hospital expenditures declined only for commercial plan members. Reduced expenditures for outpatient hospital services drove Medicare hospital cost savings. Medicare beneficiaries had reduced inpatient admissions, but expenditures for inpatient facility services did not decrease. Inpatient admissions trended downward for commercial plan members and Medicaid beneficiaries. Hospital strategies to reduce avoidable utilization had mixed effects. Coordination with community providers following a hospitalization did not improve. Hospital service costs were not shifted to other parts of the health care system outside of the global budgets. Beneficiaries with multiple chronic conditions and dual eligible beneficiaries had greater reductions in expenditures and utilization than their subgroup counterparts.

Strengths/Limitations: The study provides a correlational perspective only. There was survey response bias and small samples for some sub-questions. Researchers were unable to create a comparison group for the Medicaid analyses.

Generalizability to Medicare Population: Strong; study included Medicare beneficiaries.

Methods: Mixed methods design incorporating qualitative and quantitative methods and data

Hasselt M van, McCall N, Keyes V, Wensky SG, Smith KW. Total Cost of Care Lower among Medicare Fee-for-Service Beneficiaries Receiving Care from Patient-Centered Medical Homes. Health Services Research. 2015;50(1):253-272. doi:<https://doi.org/10.1111/1475-6773.12217>

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To compare health care utilization and payments between PCMH practices recognized by the National Committee for Quality Assurance (NCQA) and practices without such recognition.

Main Findings: Relative to the comparison group, total Medicare payments, acute care payments, and the number of ED visits declined after practices received NCQA PCMH recognition. The decline was larger for practices with sicker than average patients, primary care practices, and solo practices.

Strengths/Limitations: Only 32 percent of NCQA-recognized PCMH practices agreed to participate in the study, which could lead to selection bias. Researchers noted that the practices evaluated seemed to be more advanced than the average PCMH.

Generalizability to Medicare Population: Strong; study focused on Medicare beneficiaries.

Methods: Study involved a longitudinal, non-experimental design.

Health Care Transformation Task Force. Accountable Care Financial Arrangements: Options and Considerations. 2016. https://hcttf.org/wp-content/uploads/2018/01/HCTTF_ACOFinancialArrangementsWhitePaper.pdf

Subtopic(s): Background: Defining Population-Based TCOC Models and Related Terms

Type of Source: White Paper

Objective: To discuss existing financial models used by ACOs, identify alignment among payers and providers, and outline associated challenges and opportunities.

Main Findings: Current accountable care payment models include one-sided risk on total cost of care; at-risk care management payments; two-sided risk on total cost of care; capitation on limited cost of care; capitation on limited cost of care with one-sided risk on total cost of care; capitation on limited cost of care with two-sided risk on total cost of care; and capitation on total cost of care. Each payment arrangement has its own opportunities and challenges, and decisions on which model to employ should focus on the goals of each ACO and the market it serves.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; paper focused on ACOs and includes a focus on Medicare demonstrations.

Methods: N/A

HealthPartners. HealthPartners Total Cost of Care and Resource Use Overview & National Quality Forum Endorsement. Published online September 21, 2017.

<https://www.healthpartners.com/content/dam/brand-identity/pdfs/plan/tcoc-executive-summary.pdf>

Subtopic(s): Relevant Performance and Outcome Measures used in Reporting and Evaluation

Type of Source: Press Release

Objective: To provide an overview of the HealthPartners Total Cost of Care measurement and analytical framework.

Main Findings: HealthPartners Total Cost of Care is the only nationally accepted, standardized TCOC measure endorsed by a major standards-setting body.

Strengths/Limitations: The model would need to be adapted for Medicare populations.

Generalizability to Medicare Population: Moderate; developed for a commercial population but can be adapted to Medicare populations.

Methods: N/A

HealthPartners. Total Cost of Care (TCOC) and Total Resource Use. 2017:8.

<https://www.healthpartners.com/content/dam/brand-identity/pdfs/plan/tcoc-total-resource-use.pdf>

Subtopic(s): Relevant Performance and Outcome Measures used in Reporting and Evaluation

Type of Source: White Paper

Objective: To provide a detailed overview of the HealthPartners TCOC measurement and analytical framework.

Main Findings: The HealthPartners Total Cost of Care model considers both the cost of care provided to patient (or “Total Cost Index”) and the resources used in providing that care (or “Total Resource Use Index”). It also supplies a reporting suite to support multiple levels of analysis.

Strengths/Limitations: The model would need to be adapted for Medicare populations.

Generalizability to Medicare Population: Moderate; developed for a commercial population but can be adapted to Medicare populations.

Methods: N/A

Hertler AA, Khetarpal R, Wade JL, Bassin E, Chau S, Damarla VK. Can utilization of clinical pathways (CPs) effectively reduce drug spending (DS) within the Oncology Care Model (OCM)? Journal of Clinical Oncology 2019 37:27_suppl, 269-269. https://ascopubs.org/doi/abs/10.1200/JCO.2019.37.27_suppl.269

Subtopic(s): Findings from Research Related to Population-Based TCOC Models; Opportunities for Improving and Optimizing Efforts to Develop and Implement Population-Based TCOC Models and Reduce TCOC in APMs and PFPs

Type of Source: Journal Article

Objective: To evaluate where the use of a value-based CP can reduce DS for Cancer Care Specialists of Illinois (CCSI), a community-based oncology private practice spread throughout rural Illinois that is participating in the OCM.

Main Findings: From October 2017 to January 2019, CCSI achieved a 13.5 percent reduction in overall DS, which is equivalent to approximately \$250K per physician. This contributed to an overall reduction in TCOC by 5 percent as compared to the OCM median. Important factors contributing to the reduction in DS include physician adherence rates, real-time identification of high-cost drugs/regimens, availability of immediate peer-to-peer discussion, and rapid desktop access to a catalog of higher-value alternate therapies.

Strengths/Limitations: Study limited to a single OCM participant.

Generalizability to Medicare Population: Strong; study included Medicare beneficiaries.

Methods: Mixed methods analysis of treatment plans, CP performance metrics, and drug utilizations

Hoffman GJ, Nuliyalu U, Bynum J, Ryan AM. Alzheimer's Disease and Related Dementias and Episode Spending Under Medicare's Bundled Payment for Care Improvements Advanced (BPCI-A). J Gen Intern Med. 2021;36(8):2499-2502. doi: 10.1007/s11606-020-06348-2

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Journal Article

Objective: To evaluate the successes of the Bundled Payments for Care Improvement (BPCI) initiative and its successor program, the BPCI Advanced Model.

Main Findings: Lower extremity joint replacement (LEJR) is the most common issue for participants in the BPCI initiative and the BPCI Advanced Model. This study found that participants involved in the BPCI initiative spent 1.6 percent less for LEJR episodes compared to participants not involved in BPCI. There were no reported differences in quality of care for the participants involved in this model.

Strengths/Limitations: One limitation is the researchers' lack of access to spending related to home health.

Generalizability to Medicare Population: Strong; analysis involves Medicare beneficiaries.

Methods: Researchers used a 20 percent sample of Medicare fee-for-service claims and then estimated generalized linear models, adjusted for hospital and patient characteristics, to evaluate the association between Alzheimer's disease and related dementias and total 90-day spending, 90-day spending for skilled nursing facilities, and 90-day spending for inpatient rehabilitation.

Hwang A, Keohane LM, Sharma L. Improving Care for Individuals Dually Eligible for Medicare and Medicaid. The Commonwealth Fund; 2019. doi:10.26099/0g1s-7n26

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Issue Brief

Objective: To review the findings from the Financial Alignment Initiative (FAI) and identify key themes and lessons learned.

Main Findings: Researchers found mixed reviews on cost savings from FAI on Medicare beneficiaries. They noted that the FAI evaluations are negatively impacted by a lack of Medicaid data, and FAI could benefit from the support of policymakers advocating for additional Medicaid data. They found that FAI focuses on improving care coordination, but many FAI beneficiaries reported that they did not receive care coordination.

Strengths/Limitations: NORC at the University of Chicago is currently partnered with CMS to support FAI. The authors of this issue brief acknowledged that they did not research all states with FAI evaluation reports. They did not focus on the models in Colorado, Minnesota, or Washington, but only in California, Illinois, Massachusetts, Ohio, and Texas.

Generalizability to Medicare Population: Strong; FAI involves individuals dually eligible for Medicare and Medicaid.

Methods: The authors reviewed the RTI International evaluations of FAI in California, Illinois, Massachusetts, Ohio, and Texas.

Institute for Healthcare Improvement (IHI). Care Coordination Model: Better Care at Lower Cost for People with Multiple Health and Social Needs.

<http://www.ihc.org:80/resources/Pages/IHIWhitePapers/IHICareCoordinationModelWhitePaper.aspx>

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: White Paper/Issue Brief

Objective: To outline methods and opportunities to better coordinate care for people with multiple health and social needs, and review ways that organizations have allocated resources to better meet the range of needs of this population.

Main Findings: Care coordination reframes complexity is one posed by care systems, not by individuals, and offers a solution in the form of individualized, wrap-around planning and supports. When done effectively, care coordination holds the promise of helping individuals take on more of their own health-fostering activities.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; the white paper includes some discussion of Medicare specifically, and the population focus—people with multiple health and social needs—applies to many Medicare beneficiaries.

Methods: N/A

Jacobson G, Cicchiello A, Sutton JP, Shah A. Medicare Advantage vs. Traditional Medicare: How Do Beneficiaries' Characteristics and Experiences Differ. The Commonwealth Fund. October 14, 2021.

<https://www.commonwealthfund.org/publications/issue-briefs/2021/oct/medicare-advantage-vs-traditional-medicare-beneficiaries-differ>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Issue Brief

Objective: To compare the health care experiences of beneficiaries in Medicare Advantage (MA) and traditional Medicare.

Main Findings: Researchers found similar experiences reported by beneficiaries in Medicare Advantage and traditional Medicare, excluding beneficiaries in Special Needs Plans (SNPs). MA beneficiaries have historically been healthier than those in the traditional program, but researchers now notice similar characteristics and experiences for both types of coverage. Both MA and traditional Medicare beneficiaries reported cost to be a significant barrier to obtaining quality care. The authors concluded that there is still work to be done by policymakers to ensure high quality of care for both MA and traditional Medicare beneficiaries.

Strengths/Limitations: Analysis of beneficiaries in SNPs is limited due to lack of sufficient sample sizes.

Generalizability to Medicare Population: Strong; analysis involves beneficiaries in Medicare Advantage and traditional Medicare.

Methods: The authors examined data from the 2018 Medicare Current Beneficiary Survey and the Commonwealth Fund 2021 International Health Policy Survey of Older Adults. They also analyzed data from beneficiaries in SNPs.

Jacobson G, Rae M, Neuman T, Orgera K, Boccuti C. Medicare Advantage: How Robust Are Plans' Physician Networks? KFF. October 5, 2017. <https://www.kff.org/medicare/report/medicare-advantage-how-robust-are-plans-physician-networks/>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Report

Objective: To provide information on the size and structure of different Medicare Advantage (MA) plans' physician networks.

Main Findings: The authors found that MA plans' networks vary across the country and within counties. This analysis is important because different provider networks affect the costs and quality of care for MA beneficiaries when choosing a plan. Policymakers should be aware of the variance of MA plans and the lack of resources that Medicare beneficiaries have to compare MA plans themselves.

Strengths/Limitations: Where possible, the authors did their best to reduce match errors and test the validity of text-matching program, but noted that the error in the text analysis method may work to both overestimate and underestimate the percentage of doctors.

Generalizability to Medicare Population: Strong; researchers analyzed Medicare Advantage plans.

Methods: Researchers analyzed data from 391 plans, offered by 55 insurers in 20 counties, accounting for 14 percent of all Medicare Advantage enrollees nationwide in 2015.

Johnston KJ, Wen H, Hockenberry JM, Joynt Maddox KE. Association Between Patient Cognitive and Functional Status and Medicare Total Annual Cost of Care: Implications for Value-Based Payment. JAMA Intern Med. 2018;178(11):1489–1497. doi:10.1001/jamainternmed.2018.4143

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To determine whether factors not included in Medicare risk adjustment are associated with Medicare total annual cost of care (TACC) and evaluate whether accounting for these factors is associated with improved total annual cost of care performance by outpatient safety-net clinicians.

Main Findings: Adding neuropsychological and functional factors, as well as local residence area factors, to risk adjustment calculations reduced outpatient safety-net clinicians' underperformance on Medicare TACC relative to non-safety-net clinicians by 52 percent.

Strengths/Limitations: The authors were unable to identify outpatient safety-net clinicians who were not FQHCs or rural health clinics (RHCs). As a result, the unidentified outpatient clinicians' patients were counted as non-safety-net utilizers, likely biasing results toward the null.

Generalizability to Medicare Population: Moderate; authors were able to identify only patients who participated in the MCBS.

Methods: Retrospective observational study using MCBS

Joynt Maddox KE. Financial Incentives and Vulnerable Populations—Will Alternative Payment Models Help or Hurt? *New England Journal of Medicine*. 2018. March 15;378(11):977–9

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To make the case for moving toward APMs with financial incentives that drive providers to innovate, address social needs impacting health, and change the way care is provided.

Main Findings: Making a shift toward APMs will be better for vulnerable populations. However, APMs should be carefully designed to incentivize providers, adjust for risk, and be linked to quality measures.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; article focused on Medicare-Medicaid dual eligible beneficiaries, and the MSSP.

Methods: N/A

Kaiser Family Foundation (KFF). Data Note: Medicaid Managed Care Growth and Implications of the Medicaid Expansion. Published April 24, 2017. Accessed January 10, 2022.

<https://www.kff.org/medicaid/issue-brief/data-note-medicare-managed-care-growth-and-implications-of-the-medicare-expansion/>

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Data Note

Objective: To discuss the current role of managed care in Medicaid and address differences in managed care growth between states that expanded Medicaid to low-income adults under the Affordable Care Act (ACA) and states that did not expand Medicaid.

Main Findings: Risk-based managed care is the dominant delivery system in Medicaid. Most newly eligible low-income adults are enrolled in Managed Care Organizations (MCOs). MCO enrollment growth has been greater in Medicaid expansion states compared to non-expansion states.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Weak; the data pertain to Medicaid beneficiaries with no reference to Medicare or dual eligible beneficiaries.

Methods: Analysis of Medicaid enrollment data

Kaplan RS, Porter ME. The Big Idea: How to Solve the Cost Crisis in Health Care. Harvard Business Review. Published online September 1, 2011. Accessed December 16, 2021.

<https://hbr.org/2011/09/how-to-solve-the-cost-crisis-in-health-care>

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Newspaper Article

Objective: To discuss the challenges in defining costs and the resulting barriers to addressing them.

Main Findings: Correctly measuring costs and outcomes is the best way toward transforming the economics of health care. As health care leaders obtain more accurate and appropriate costing numbers, they can make bold and politically difficult decisions to lower costs while sustaining or improving outcomes. The complex path of care is worsened by the fragmented way in which health care is delivered today. An accurate costing system must account for the total costs of all the resources used by a patient as they move through the system, including tracking the sequence and duration of clinical and administrative processes used by individual patients, something that most hospital information systems today are unable to do.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Weak; the authors do not discuss Medicare costs at length.

Methods: N/A

Khullar D, Chokshi DA. Can Better Care Coordination Lower Health Care Costs? JAMA.

2018;1(7):e184295-e184295. doi:10.1001/jamanetworkopen.2018.4295

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To evaluate cost and utilization changes for Medicare and Medicaid beneficiaries in a care management initiative funded by CMS.

Main Findings: When comparing an acute care intervention (ACI) and a community intervention (CI), Medicaid patients receiving the ACI had lower ED use and fewer follow-up visits, resulting in savings of \$4295 per beneficiary-episode (inpatient stay plus 90 days following hospitalization) compared with a control group drawn from neighboring hospitals. By contrast, Medicare patients experienced a reduction in follow-up visits but an increase in hospitalization and readmission rates. Despite increased utilization, the authors calculate savings of \$1,115 per episode. The CI was successful for Medicaid patients but not for Medicare patients. The intervention was associated with statistically significant reductions in avoidable hospitalizations, ED utilization, and readmissions for Medicaid patients—resulting in savings of \$1,643 per beneficiary per quarter compared with a control group. There were no significant utilization or cost improvements for Medicare patients.

Strengths/Limitations: The study is not a formal cost-benefit, cost-effectiveness, or return-on-investment analysis. Additionally, the study was in Maryland, where there were hospital global budgeting efforts during the study period, potentially limiting the study's implications for states not engaging in similar reforms.

Generalizability to Medicare Population: Moderate; the study includes Medicare beneficiaries, but only from Maryland.

Methods: Authors used a difference-in-differences design to evaluate cost and utilization changes for Medicare and Medicaid beneficiaries in the Johns Hopkins Community Health Partnership.

Knudson A. The Pennsylvania Rural Health Model: First Annual Report. NORC at the University of Chicago; 2021:97. <https://innovation.cms.gov/data-and-reports/2021/parhm-ar1-full-report>

Subtopic(s): Comparison of Relevant Features in Selected CMMI Models and Other CMS Demonstrations and Programs; Opportunities for Improving and Optimizing Efforts to Develop and Implement Population-Based TCOC Models and Reduce TCOC in APMs and PFPMs

Type of Source: Report

Objective: To provide an overview of and evaluate the Pennsylvania Rural Health Model (PARHM).

Main Findings: The Rural Health Redesign Center Authority (RHRCA)'s establishment may improve communication and alignment among stakeholders and participating hospitals and payers. The model contributes to short-term financial stability, but independent rural hospitals still grapple with long-term sustainability.

Strengths/Limitations: The report was published during the early stages of the evaluation, and presents only emerging hypotheses that will be fully tested later as data are collected and analyzed.

Generalizability to Medicare Population: Weak; though a Medicare model, the PARHM deals with rural hospitals in Pennsylvania and is not generalizable to the broader Medicare population.

Methods: Descriptive assessment of financial performance and interim Medicare spending

Koodun S, Dudhia R, Abifarin B, Greenhalgh N. Racial and ethnic disparities in mental health care. *Pharmaceutical Journal*. 2021. <https://pharmaceutical-journal.com/article/research/racial-and-ethnic-disparities-in-mental-health-care>

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To review evidence of how race affects mental health care, including access to services, diagnoses, and treatments in the United Kingdom (UK), and to provide recommendations for pharmacy practice.

Main Findings: Black, Asian and minority ethnic (BAME) patients experience different routes into services and different treatments, particularly with antipsychotics, when compared with white British patients. Overall, the evidence shows that Black patients are more likely to receive polypharmacy, older antipsychotics, and combinations of antipsychotics than white patients. BAME patients often experience fear and stigma surrounding mental health services, and removing the related barriers is central to supporting patients achieve the best outcomes.

Strengths/Limitations: There is no compelling reason to justify differences in antipsychotic choices across ethnicities; however, it is not possible to account for the reasons as to why BAME patients are more likely to be prescribed older generation antipsychotics at higher doses that increase the risk of significant adverse effects and likely non-compliance.

Generalizability to Medicare Population: Weak; while the disparities and strategies that the article discusses are likely relevant to the Medicare population, the article does not explicitly discuss these issues in the Medicare population.

Methods: Literature review

Kronick R. Why Medicare Advantage Plans Are Being Overpaid by \$200 Billion And What To Do About It. Health Affairs. January 29, 2020.

<https://www.healthaffairs.org/doi/10.1377/hblog20200127.293799/full/>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Issue Brief

Objective: To explain why the Centers for Medicare & Medicaid Services (CMS) will overpay Medicare Advantage (MA) plans by \$200 billion over the next 10 years and solutions to avoid this overpayment.

Main Findings: In 2005, Congress instructed CMS to implement a “coding intensity adjustment” for MA plans. This adjustment aims to account for the differences in coding between MA and traditional Medicare. The overpayment is caused by the political gain that the political appointees at CMS, the Department of Health and Human Services (HHS), and the White House gain from implementing a smaller coding intensity adjustment. If CMS increased the adjustment, MA plans may raise problems with their members of Congress, and a larger coding intensity adjustment may result in higher MA premiums or fewer benefits for enrollees. To fix this problem, the author suggests that Congress create a regulatory statute for a method of computing coding intensity. Congress could also use the \$200 billion in avoided MA overpayments to fund other priorities and save taxpayer money.

Strengths/Limitations: This article includes the author’s opinions and suggestions.

Generalizability to Medicare Population: Strong; this article addresses MA beneficiaries.

Methods: Literature review

Landman, J. H., Moore, K., Muhlestein, D. B., Smith, N. J., Winfield, L. D., Smith, N. J., Partners, L., Winfield, L. D., & Partners, L. (2018). What is Driving Total Cost of Care? (p. 40).

<https://www.hfma.org/topics/hfm/2018/may/60461.html>

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Report

Objective: To analyze factors influencing TCOC in U.S. health care markets.

Main Findings: The quantitative analysis identified 23 factors that had a statistically significant impact on differences in baseline TCOC across local markets. In conjunction, these factors predicted 82 percent of the variation in baseline costs. The greatest factor in predicting baseline costs was the prevalence of chronic diseases within a local market. Other noteworthy factors included hospital quality (including readmission rates and mortality rates), the percentage of costs related to inpatient care, factors relating to the physical environment, and socioeconomic conditions (including the prevalence of dual eligible beneficiaries in the market and the proportion of individuals with insurance coverage). Cost of living also affected TCOC, as a comparison of actual costs and standardized costs for the nine qualitative markets revealed.

Strengths/Limitations: The 2012-2014 period studied was too early for effects on total cost of care to be realized. Participation in programs such as the Medicare Shared Savings Program (MSSP) was just beginning.

Generalizability to Medicare Population: Weak; the study does not explicitly address Medicare.

Methods: Mixed methods; quantitative and qualitative analysis of factors that may be influencing total cost of care in health care markets across the United States

LaPointe J. Exploring Two-Sided Financial Risk in Alternative Payment Models. Recycle Intelligence. 2017. <https://revcycleintelligence.com/features/exploring-two-sided-financial-risk-in-alternative-payment-models>

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Newspaper Article

Objective: To review how APMs incorporate two-sided financial risk, what payer expectations are for providers accepting the risk structure, and what providers need to know about implementing two-sided risk APMs.

Main Findings: Discusses the role of cost and claims data to allow payers and providers to work together in alignment in risk-sharing models. Many providers are not incentivized to align with risk-based payments, and about 86 percent of primary care providers and specialists are still primarily compensated under FFS or salary arrangements.

Strengths/Limitations: Since this feature is an informal literature review and interview, there is no methods section. It is therefore possible the review as an informal scan, and results may not be generalizable to the larger Medicare population.

Generalizability to Medicare Population: Weak; literature review did not focus on Medicare beneficiaries or Medicare APMs.

Methods: The writer interviewed subject matter experts and performed some form of literature review.

Lewis VA, Colla CH, Carluzzo KL, Kler SE, Fisher ES. Accountable care organizations in the United States: market and demographic factors associated with formation. *Health Serv Res* 2013;48(6 Pt 1): 1840 – 1858

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Journal Article

Objective: To determine the number of Accountable Care Organizations in the United States, where they are located, and characteristics associated with ACO formation.

Main Findings: The study identified 227 ACOs located in 27 percent of local areas where 55 percent of the U.S. population resides. A substantial part of the U.S. population resides in areas where ACOs have been established. Health Service Area (HSA)-level characteristics associated with ACO presence include higher performance on quality, higher Medicare per capita spending, fewer primary care physician groups, better managed care penetration, lower poverty rates, and urban location.

Strengths/Limitations: The study examines only publicly identified ACOs, likely excluding some commercial payer ACO contracts from the data. Additionally, many characteristics examined may be more important at the provider/organizational level rather than a regional level. The study is also unable to examine some other potential factors of ACO formation that would operate at the organizational level, such as care coordination capabilities and experience with quality improvement (Fisher et al. 2012).

Generalizability to Medicare Population: Strong; the study includes all ACOs in the United States.

Methods: Cross-sectional study of all ACOs in the United States

Liao et al. The Effect of Hospital Safety Net Status on the Association Between Bundled Payment Participation and Changes in Medical Episode Outcomes. Journal of Hospital Medicine. 2021. <https://doi.org/10.12788/jhm.3722>

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To evaluate whether hospital safety-net status affected the association between bundled payment participation and medical episode outcomes.

Main Findings: When under medical condition bundles, safety-net hospitals operate differently from other hospitals in terms of post-acute care utilization, but not spending. BPCI safety-net hospitals had differentially greater discharge to institutional post-acute care and lower discharge with home health than BPCI non-safety-net hospitals.

Strengths/Limitations: The observational study design means findings are subject to confounding and selection bias.

Generalizability to Medicare Population: Strong; the study focuses on Medicare populations.

Methods: An observational difference-in-differences analysis conducted in safety-net and non-safety-net hospitals participating in BPCI for medical episodes (BPCI hospitals). Data from 2011-2016 Medicare FFS beneficiaries hospitalized for acute myocardial infarction, pneumonia, congestive heart failure, and chronic obstructive pulmonary disease were used for this study.

Liao JM, Pauly MV, and Navathe AS. When Should Medicare Mandate Participation In Alternative Payment Models?, Health Affairs Vol. 39, No. 2

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Journal Article

Objective: To compare the advantages and disadvantages of compulsory and voluntary participation, based on clinical versus policy perspectives, and to propose ways to organize mandatory and voluntary APMs based on different clinical settings.

Main Findings: Authors find that both mandatory and voluntary modes are necessary for APMs to achieve the goal of improving value.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; the article reviews Medicare policies.

Methods: Policy comparison

Liao, JM, Dykstra SE, Werner RM, Navathe AS. BPCI Advanced Will Further Emphasize The Need To Address Overlap Between Bundled Payments And Accountable Care Organizations. Health Affairs. April 17, 2018. <https://www.healthaffairs.org/doi/10.1377/forefront.20180409.159181/full/>. Accessed December 2021.

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Issue Brief

Objective: To understand how the Bundled Payments for Care Improvement Advanced (BPCI Advanced) program interacts with Accountable Care Organization (ACO) programs such as the Medicare Shared Savings Program (MSSP).

Main Findings: The authors found that Medicare could manage overlap and interactions between MSSP and BPCI Advanced – along with any potential unintended consequences of this overlap – by not collecting payments or “financial recoupment” from the BPCI Advanced provider. The recoupment may allow BPCI Advanced providers to believe that they would lose

money from participating in an MSSP. The author concluded that further analysis is needed to understand the benefits and costs for interacting bundled payments and ACOs.

Strengths/Limitations: The author does not cite the data or methodologies for the exhibit or research presented in the brief, and therefore methodologies cannot be replicated.

Generalizability to Medicare Population: Strong; programs involve Medicare beneficiaries.

Methods: Informal literature review

Lipson DJ, Lakhmani EW, Tourtellotte A, Chelminsky D. The Complex Art of Making It Simple: Factors Affecting Enrollment in Integrated Care Demonstrations for Dually Eligible Beneficiaries. Medicare and CHIP Payment and Access Commission; 2019:54. Accessed February 2, 2022.

<https://www.macpac.gov/publication/the-complex-art-of-making-it-simple-factors-affecting-enrollment-in-integrated-care-demonstrations-for-dually-eligible-beneficiaries/>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations.

Type of Source: Report

Objective: To examine possible explanations for varying state-by-state enrollment in integrated Medicare-Medicaid plans (MMPs) under the Financial Alignment Initiative (FAI).

Main Findings: The study noted several primary factors associated with higher enrollment: passive enrollment; alignment of the FAI demonstration with managed long-term services and supports programs; and positive beneficiary relationships with care coordinators, including specific care coordination techniques such as welcome calls and encouraging face-to-face visits. The study also noted that insufficient long-term supportive services provider support and engagement with MMPs was a primary factor associated with lower enrollment.

Strengths/Limitations: The study makes conclusions across the 10 participating states, but some findings may not be generalizable across all states. Similarly, the study conducted interviews with higher-enrolling MMPs, but conversations with other stakeholders may have elicited different relevant points. The study also did not examine all aspects of each state's health care market, Medicaid delivery and payment systems, political environment, and support/opposition from providers and beneficiary advocates, which may also have had direct or indirect effects on enrollment.

Generalizability to Medicare Population: Strong; the report is focused on the FAI, which is a program targeted toward Medicare-Medicaid dually eligible beneficiaries.

Methods: Qualitative semi-structured interviews with state officials and senior executives from successful MMPs, coupled with quantitative analysis of participation and enrollment data

Lyss AJ, Supalla SN, Schleicher SM. The Oncology Care Model—Why It Works and Why It Could Work Better: Accounting for Novel Therapies in Value-Based Payment. *JAMA Oncology*. 2020;6(8):1161-1162. doi:10.1001/jamaoncol.2019.4385

Subtopic(s): Relevant Performance and Outcome Measures used in Reporting and Evaluation; Opportunities for Improving and Optimizing Efforts to Develop and Implement Population-based TCOC Models and Reduce TCOC in APMs and PFPs

Type of Source: Journal Article

Objective: To discuss some of the challenges in using value-based reimbursements in oncology and to review the OCM, a cancer-specific, experimental value-based payment model (VBPM) implemented by CMMI.

Main Findings: Authors advise that commercial payers and other publicly funded VBPMs in oncology should incentivize suitable drug use based on adherence to pathways as opposed to the cost of agents, because they are not under the clinician's control. This would incentivize the most evidence-based and high-value therapy, without limiting patient access to innovative treatments.

Strengths/Limitations: This is an opinion article.

Generalizability to Medicare Population: Weak; this article discussed only oncology care.

Methods: N/A

Marek KD, Stetzer F, Adams SJ, Bub LD, Schlidt A, Colorafi KJ. Cost Analysis of a Home-Based Nurse Care Coordination Program. *Journal of the American Geriatrics Society*. 2014;62(12):2369-2376. doi:https://doi.org/10.1111/jgs.13162

Subtopic(s): Findings from Research Related to Population-based TCOC Models

Type of Source: Journal Article

Objective: To determine whether a home-based care coordination program focused on medication self-management would impact the cost of care to the Medicare program and whether the addition of technology, a medication-dispensing machine, would further reduce cost.

Main Findings: Nurse care coordination plus a pill organizer is a cost-effective intervention for frail, older Medicare beneficiaries. The medication machine did not improve the cost-effectiveness of the intervention.

Strengths/Limitations: Authors noted that older adults were hesitant to participate in the study. They also noted that healthier older adults may have been less likely to participate in the two intervention groups and more likely to consent to be in the control group, because it had only quarterly visits for data collection. Additionally, many participants assigned to the interventions groups never received any intervention.

Generalizability to Medicare Population: Moderate; the study focused on Medicare participants, but only in an urban area in the Midwest.

Methods: Randomized, controlled, three-arm longitudinal study of older adults in a large Midwestern urban area where a team of advanced practice nurses (APNs) and registered nurses (RNs) coordinated care for two groups: home-based nurse care coordination (NCC) plus a pill organizer group and NCC plus a medication-dispensing machine group. Participant claims data from 2005 to 2011 from Medicare Part A and B Standard Analytical Files were used to measure cost.

Mariétou H. Ouayogodé, Taressa Frazee, PhD, Eugene C. Rich, MD, and Carrie H. Colla, PhD, Association of Organizational Factors and Physician Practices' Participation in Alternative Payment Models, JAMA Netw Open. 2020 Apr; 3(4): e202019

Subtopic(s): Provider-Level Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Journal Article

Objective: To examine the association of organizational characteristics, ownership, and integration with level of participation in APMs among physician practices.

Main Findings: A total of 49.2 percent of the 2,061 practices included reported participating in three or more APMs; most participated in pay-for-performance and ACO models. The study's analysis found that operating within a health care, greater clinical and functional integration, and being in the Northeast were associated with greater APM participation.

Strengths/Limitations: The authors stated that the integration measures are not comprehensive. For example, when measuring functional integration, they were unable to measure strategic planning activities that may vary by both organization size and financial means.

Generalizability to Medicare Population: Moderate; evaluation includes a distribution of ACOs with contracts with Medicare, Medicaid, and commercial payers.

Methods: A cross-sectional descriptive study, adjusted for sampling and nonresponse weights conducted in U.S. physician practice respondents to the National Survey of Healthcare Organizations and Systems conducted between June 16, 2017, and August 17, 2018; of 2,333 responses received (response rate, 46.9 percent) and after exclusion of ineligible and incomplete responses, the number of practices included in the analysis was 2,061. Data analysis was performed from April 1, 2019, to August 31, 2019.

Maroko AR, Doan TM, Arno PT, Hubel M, Yi S, Viola D. Integrating Social Determinants of Health With Treatment and Prevention: A New Tool to Assess Local Area Deprivation. Centers for Disease Control. 2016. https://www.cdc.gov/pcd/issues/2016/16_0221.htm. Accessed December 2021.

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Research Brief

Objective: To assess the appropriate geographic scale to apply the Area Deprivation Index (ADI) at which to identify and screen patients for social determinants of health (SDOH).

Main Findings: A locally-sensitive ADI is the best measure to identify and screen for health-related social needs, with 10-km local ADI estimates having the strongest associations with all hospitalization rates.

Strengths/Limitations: The study focused only on analysis of the Hudson Valley region, so additional research should be done to test the ADI using other regions of the United States. Additionally, the ecological nature of the study made it impossible to disentangle contextual and compositional factors that may contribute to the findings of the study.

Generalizability to Medicare Population: Moderate; the study does not directly address the Medicare population, but the technique could be useful in efforts to address SDOH underway in the Medicare program.

Methods: Comparison of locally calibrated ADI measures with hospitalization rates, with added indirect age adjustment and data mapping and spatialization. Metrics were validated using age-adjusted odds ratios.

Mathematica Policy Research, Inc. CPC+ Third Annual Report. Mathematica Policy Research; 2021. Accessed January 29, 2021. <https://innovation.cms.gov/data-and-reports/2021/cpc-plus-third-annual-eval-report>

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Report

Objective: To review how CPC+ has been implemented and its effects on patients enrolled in Medicare FFS in regions that joined in 2017; present findings for Program Year (PY) 3 in 2019, and new findings and changes from PYs 1 and 2.

Main Findings: Participating primary care practices made impactful changes to care delivery during the first three years of CPC+. However, practices have more work to do to further improve care. There were small favorable impacts of CPC+ on measures of service use, quality of care, and patient experience for Medicare FFS beneficiaries during the first three years. However, CPC+ increased total Medicare expenditures with CMS's enhanced payments.

Strengths/Limitations: CPC+ has been in operation only since 2017. This report looks only at PYs 1 through 3. It is still too early to draw conclusions about the likely longer-term effects of CPC+.

Generalizability to Medicare Population: Moderate; the report focuses on CPC+, which is a primary care payment reform effort.

Methods: Mixed methods ongoing evaluation using CMS program data and financial data; interviews with data aggregators; CMS data feedback tool usage data; interviews with learning contractors; and interviews with health IT vendors

Mathematica Policy Research, Inc. Evaluation of the Maryland Total Cost of Care Model: Implementation Report. Mathematica Policy Research; 2021. <https://innovation.cms.gov/data-and-reports/2021/md-tcoc-imp-eval-report>

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Report

Objective: To evaluate the design and implementation of the Maryland (MD) TCOC Model in its first two years of use (2019 and 2020) and to assess whether the MD TCOC Model succeeds in reducing total Medicare spending while improving, or at least preserving, quality of care and population health.

Main Findings: In 2019 and 2020, the MD TCOC Model attracted a wide range of providers and began to transform care throughout the state. The hospital global budgets continued to provide hospitals with strong incentives to reduce avoidable and low-value acute care. New incentives to reduce TCOC have encouraged hospitals to partner with post-acute care facilities, home health agencies, and other agencies to improve the quality and efficiency of episodes of care. These activities throughout the state can potentially lead to desired outcomes, especially given the available room to improve on targeted outcomes.

Strengths/Limitations: The COVID-19 pandemic prevented interviews with primary care practices, hospitals, and other providers. Therefore, this report relies primarily on secondary data (Medicare claims or monitoring data from CMS and Maryland) to describe model implementation.

Generalizability to Medicare Population: Moderate; the evaluation includes Medicare beneficiaries but only in Maryland.

Methods: Mixed methods analysis of interviews with officials at CMS and Maryland state agencies to understand the logic of the MD TCOC Model and to identify the state's strategies to meet savings targets, health care quality, and population health goals, Medicare Part A and B claims data, and implementation datasets from CMS and the Health Services Cost Review Commission (HSCRC).

Mathematica Policy Research, Inc. Final Evaluation Report: Evaluation of the Community-Based Care Transitions Program. Mathematica Policy Research; 2017:233.

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Report

Objective: To evaluate the Community-Based Care Transitions Program (CCTP), including evaluating the possible association with lower readmission rates and lower Medicare expenditures for the beneficiaries, how CCTP characteristics may be associated with lower readmission rates, which components were associated with lower readmission rates, and if CCTP had an impact on readmission rates and Medicare expenditures.

Main Findings: CCTP participants from all 101 sites combined had lower readmission rates and Medicare Part A and Part B expenditures when these sites were active in the program, relative to non-participants.

Strengths/Limitations: Findings came from cross-sectional regression models that spanned the CCTP period of performance for either all 101 sites or the 44 extended sites. These findings cannot be used to show the impact of the CCTP due to the inability to observe participant-level pre-CCTP outcomes or consistently identify a baseline cohort of potential CCTP participants. Despite limitations, cross-sectional regression models provided valuable insight into risk-adjusted performance on readmission and Medicare expenditures.

Generalizability to Medicare Population: Strong; the evaluation focuses on CCTP, which is a Medicare program aimed at reducing readmissions among Medicare FFS beneficiaries.

Methods: This report used Medicare Part A and Part B claims and administrative data to calculate 30-day all-cause readmission rates and Medicare Part A and Part B expenditure measures, covering the one-month post-hospitalization discharge period during which most of the sites focused their care transitions (CTs) interventions. The data were used to compare differences in outcomes between participants and comparable non-participants over the CCTP performance period. The study also reviewed CCTP applications, detailing site characteristics and proposed intervention strategies, and data collected from telephone interviews and site visits over the implementation period to identify how sites perceived success and program implementation pain points.

McConnell KJ. Oregon's Medicaid Coordinated Care Organizations. JAMA. 2016;315:869-870. doi: 10.1001/jama.2016.0206

Subtopic(s): Comparison of Relevant Features in Selected CMMI Models and Other CMS Demonstrations and Programs

Type of Source: Journal Article

Objective: To discuss Oregon's transformation of its Medicaid program through Coordinated Care Organizations (CCOs) and summarize evidence on the associated quality and outcomes.

Main Findings: The CCO model appears to be robust, with the program meeting yearly spending targets and reducing per-member per-month spending on inpatient and outpatient care. CCOs also have improved on several quality measures related to incentive payments, with substantial improvements in the rate of screening, intervention, and referral to treatment for alcohol and substance abuse and patients enrolled in patient-centered primary care homes.

Strengths/Limitations: The author does not cite the methodologies for the research presented in the brief, and therefore methodologies cannot be replicated.

Generalizability to Medicare Population: Moderate; the article focuses on Medicaid, but lessons can be applied to ACOs for the Medicare population.

Methods: Literature review

McDowell A, Nguyen CA, Chernew ME, et al. Comparison of Approaches for Aggregating Quality Measures in Population-based Payment Models. *Health Serv Res.* 2018;53(6):4477-4490. doi:10.1111/1475-6773.13031

Subtopic(s): Relevant Performance and Outcome Measures used in Reporting and Evaluation

Type of Source: Journal Article

Objective: To assess the impact of alternative methods of aggregating individual quality measures on ACO overall scores.

Main Findings: The study found that measures grouped into domains and weighting these domains to generate overall scores can have important implications for ACOs' shared savings payments. Alternative grouping and weighting methods based on statistical criteria produced overall quality scores like those generated using CMS' approach ($\kappa = 0.80$ to 0.95). Scores derived from giving specific domains greater weight were less similar ($\kappa = 0.51$ to 0.93).

Strengths/Limitations: The authors noted several limitations, including that the study focuses on measuring quality, and it is beyond its scope to assess whether financial incentives or other strategies should be used to improve it. Additionally, the statistical methods they investigate include ex post calculations, while the CMS methods were clearly delineated ex ante. Thus, ACOs can react to the current measurement approach in a different manner than under ex post approaches. However, the statistical weights could be derived with lagged data, and thus, an ex ante approach is feasible. Third, there is no way to assess the impact of alternative approaches in all settings. Conclusions apply only to the data analyzed.

Generalizability to Medicare Population: Strong

Methods: Using publicly available CMS files containing 2014 quality scores for Medicare Pioneer and Shared Savings Program (SSP) ACOs on 33 measures, the study compared ACO overall scores using CMS' aggregation approach with alternative approaches to grouping and weighting measures. In place of using CMS' clinical domains, the study grouped measures based on their empirical relationships to one another using exploratory factor analysis (EFA). This EFA approach differs from the CMS approach of grouping based on common clinical focus. Grouping quality measures into domains based on their clinical relevance to one another may mask important aspects of underlying quality.

McGuire TG, Miranda J. New Evidence Regarding Racial and Ethnic Disparities in Mental Health: Policy Implications. *Health Aff (Millwood)*. 2008;27(2):393-403. doi:10.1377/hlthaff.27.2.393

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To review evidence for mental health and mental health care disparities, and to discuss these findings as they pertain to policy.

Main Findings: Although minorities tend to have poorer physical health and health outcomes than whites, this review found that members of minority groups often have lower or equivalent rates of mental health disorders. For minorities who do experience mental illness, their mental health disorders tend to be more persistent and/or debilitating. The review also cited significant disparities in minority communities with respect to access to quality mental health care and a lack of insurance and noted that efforts to address these disparities have had limited success. The paper highlighted the importance of increasing the proportion of minority providers and working to deliver culturally appropriate care.

Strengths/Limitations: The paper clearly articulates the authors' version of disparity within the context of health care, explaining why they ruled out alternative definitions. The paper fails to provide a methodology regarding the researchers' selection criteria and review approach.

Generalizability to Medicare Population: Moderate; Medicare beneficiaries referenced in the findings, though they are not the focus of the paper.

Methods: N/A

Medicare and CHIP Payment and Access Commission. Financial Alignment Initiative for Beneficiaries Dually Eligible for Medicaid and Medicare; 2018:36. <https://www.macpac.gov/wp-content/uploads/2015/09/Financial-Alignment-Initiative-for-Beneficiaries-Dually-Eligible-for-Medicaid-and-Medicare.pdf>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations.

Type of Source: Issue Brief

Objective: To explain the design of the Financial Alignment Initiative (FAI) and compare unique state approaches in capitated model demonstrations, including providing information on payment methodologies, enrollment, and plan and state participation in the demonstration.

Main Findings: Although evaluation results are not yet available on the financial viability of these models and their effect on quality of care, early results from the managed FFS models have found some initial savings. Washington's managed FFS model demonstrated \$67 million for Medicare from July 2013 to December 2015 due to decreased spending for inpatient hospital services, home health agency costs, and professional services costs. A two-year study of Colorado's managed FFS model demonstrated savings of \$120 per member per month, with other funded initiatives accounting for approximately 20 percent of those savings.

Strengths/Limitations: Authors noted that there are limited data and published evaluation findings, to date.

Generalizability to Medicare Population: Strong; the brief is focused on the FAI, a program targeted toward Medicare-Medicaid dually eligible beneficiaries.

Methods: Literature review

Medicare-Medicaid Coordination Office. Financial Models to Support State Efforts to Integrate Care for Medicare-Medicaid Enrollees. Published online July 8, 2011. Accessed February 2, 2022.

https://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/Downloads/Financial_Models_Supporting_Integrated_Care_SMD.pdf

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Letter

Objective: To provide guidance and general information on the proposed capitated and managed fee-for-service model types in the Financial Alignment Initiative.

Main Findings: N/A.

Strengths/Limitations: N/A.

Generalizability to Medicare Population: Strong; the letter is focused on proposed model types to align financing between Medicare and Medicaid to provide care for dual eligibles.

Methods: N/A.

Medicare-Medicaid Coordination Office. Medicare-Medicaid Financial Alignment Initiative Care Coordination Data Snapshot for the Capitated Model.

<https://www.cms.gov/files/document/capitatedmodelcarecoordinationdatasnapshot.pdf>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Model Overview Document

Objective: To present trend data on the Medicare-Medicaid Financial Alignment Initiative (FAI) capitated model demonstrations.

Main Findings: Includes trends in the percent of members with an initial health risk assessment (HRA) completed within 90 days of enrollment, percent of members with an initial care plan completed within the timeframe or with documented discussion of care goals, percent of members with an annual reassessment, percent of hospital discharges with follow-ups within 30 days, and number of members per full time equivalent care coordinator.

Strengths/Limitations: Limitations includes the typical biases associated with surveys – e.g., social desirability bias, respondent fatigue.

Generalizability to Medicare Population: Strong; data focused on Medicare-Medicaid dual beneficiaries.

Methods: CAHPS survey results for Medicare-Medicaid Plans (MMPs) and quarterly data reported by MMPs in care measures and state-specific measures

MedPAC. March 2021 Report to the Congress: Medicare Payment Policy. March 2021.

https://www.medpac.gov/wp-content/uploads/import_data/scrape_files/docs/default-source/reports/mar21_medpac_report_to_the_congress_sec.pdf. Accessed January 25, 2022.

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Report

Objective: To provide the Congress with MedPAC's annual March report on the Medicare FFS payment system, the MA program, and the Medicare prescription drug program, paying particular attention to the impact that the COVID-19 pandemic has had on Medicare beneficiaries.

Main Findings: The MedPAC recommends payment rate updates for nine FFS payment systems for 2022. Additionally, the MedPAC indicated that it is important to distill the effects of the COVID-19 pandemic in order to determine whether these effects are temporary or permanent. If permanent, then these effects are best addressed via targeted, temporary funding policies rather than sweeping, permanent changes to 2020 payment rates. The MedPAC also noted that there continue to be issues associated with FFS systems (e.g., providers are paid more when they deliver more services). To address these issues, the MedPAC suggested that payment reforms be made in coordination across care settings and that delivery system reforms be made to encourage efficient, high-quality care.

Strengths/Limitations: The report notes that a fuller discussion of the pandemic's effects requires data that were yet to be collected at the time of publication.

Generalizability to Medicare Population: Strong; the report directly addresses Medicare beneficiaries and payment structures.

Methods: Actuarial analysis of historical data, which is also used for predictive modeling.

MedPAC. June 2021 Report to the Congress: Medicare and the Health Care Delivery System. 2021.

<https://www.medpac.gov/document/june-2021-report-to-the-congress-medicare-and-the-health-care-delivery-system/>. Accessed December 21, 2021.

Subtopic(s): Background: Defining Population-based TCOC Models and Related Terms; Opportunities for Improving and Optimizing Efforts to Develop TCOC Models and Reduce TCOC in APMs and PFPs

Type of Source: Report

Objective: To provide the Congress with MedPAC's annual June report on the Commission's refinements made to Medicare payment systems and other issues impacting the Medicare program.

Main Findings: The Commission's recommended Medicare policy approach would reduce MA benchmarks to obtain efficiencies created by MA with relatively few disruptions to supplemental benefits. The Commission recommends that Medicare move toward implementing a smaller portfolio of APMs and identifies gaps in Medicare's ability to collect information about private equity investments in health care. It also recommends making changes to policies that govern which drugs are paid separately to allow a better balance of promoting access to expensive treatment and to apply pressure on providers to be more efficient.

Strengths/Limitations: Data and resource limitations played a role in some of the work included in this report. However, the report has representative data to show that the outcomes provide insight into the recommendations made.

Generalizability to Medicare Population: Strong; the report directly addresses Medicare beneficiaries and payment structures.

Methods: Actuarial and statistical modeling in addition to document review of CMMI model evaluations

Minnesota Department of Human Services. Minnesota Medicaid Managed Care Comprehensive Quality Strategy. July 2020. <https://www.leg.mn.gov/docs/2020/mandated/200836.pdf>. Accessed January 31, 2022.

Subtopic(s): Comparison of Relevant Features in Selected CMMI Models and Other CMS Demonstrations and Programs

Type of Source: Model Overview Document

Objective: To provide an overview of the different methods the Department of Human Services (DHS) uses to assess the performance of Minnesota's Medicaid managed care program, including program improvement activities, results, achievements, and opportunities.

Main Findings: N/A

Strengths/Limitations: Synthesizes DHS initiatives from The Managed Care Quality Strategy, the quality framework for Minnesota's five home- and community-based services waivers, and the DHS evaluations of Minnesota's two section 1115 demonstration waivers.

Generalizability to Medicare Population: Weak; report focused on Medicaid managed care.

Methods: N/A

Moffett ML, Kaufman A, Bazemore A. Community Health Workers Bring Cost Savings to Patient-Centered Medical Homes. *J Community Health*. 2018;43(1):1-3. doi:10.1007/s10900-017-0403-y

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Journal Article

Objective: To simulate the effects of the PCMH model and the Integrated Primary Care and Community Support (I-PaCS) model (a community health worker model) over a three-year period, from program initiation to maturity.

Main Findings: The report estimated a 12.6 percent decrease in the inpatient hospital, outpatient hospital, and ED costs for high- and moderate-risk patients. The PCMH model is predicted to generate about a two percent savings in the third year, whereas the I-PaCS program is expected to save about seven percent by year three.

Strengths/Limitations: The study used an MMC population based in New Mexico to serve as the population for the study; however, there is limited information supporting the decision to do so. Given the assumptions associated with the study population, the external validity of these findings is limited.

Generalizability to Medicare Population: Low; the study focuses on Medicaid with no mention of Medicare.

Methods: Actuarial estimates using published literature

Moore LG, DeBuono B. Total Cost of Care: A Discipline That Leads to Better Care. *The Journal of Ambulatory Care Management*. 2013;36(3):193-198. doi:10.1097/JAC.0b013e3182955b4b

Subtopic(s): Relevant Performance and Outcome Measures used in Reporting and Evaluation; Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Editorial

Objective: To provide a definition for TCOC and explore the relationship between various TCOC approaches and care outcomes, as well as how TCOC performance metrics can lead to better care.

Main Findings: This paper defines TCOC as the total cost of "all services rendered in the delivery of care for an individual or group, including amounts paid by the insurer and by the individual in the form of copayments, deductibles, and other cost-sharing mechanisms and utilization (inpatient admissions, outpatient visits, physician visits, prescriptions, etc.) for a person or a population." The paper goes on to highlight the importance of assessing TCOC in relation to care

access, quality, cost, and utilization. Metrics used to evaluate these various dimensions of TCOC should incorporate sophisticated risk adjustment methods (such as 3M's Clinical Risk Groups method) and appropriately stratify patient populations while ensuring the use of readily available, standardized data (e.g., claims data). The paper points to ACOs as a potential approach to reducing TCOC while maintaining or improving care.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; the paper does not reference Medicare; specifically, however many of the definitions, performance metrics, and higher-level approaches outlined in the paper are applicable within the context of Medicare (e.g., Medicare ACOs).

Methods: N/A

Navathe AS, Emanuel EJ, Bond A, et al. Association Between the Implementation of a Population-Based Primary Care Payment System and Achievement on Quality Measures in Hawaii. JAMA. 2019;322(1):57-68. doi:10.1001/jama.2019.8113

Subtopic(s): Relevant Performance and Outcome Measures used in Reporting and Evaluation

Type of Source: Journal Article

Objective: To evaluate whether the Primary-based Payments for Primary Care (3PC) program was associated with changes in care quality and/or spending during the first year.

Main Findings: During the program's first year, the 3PC program was associated with small improvements in quality and a reduction in primary care visits; however, there was no significant difference in the TCOC.

Strengths/Limitations: The study employed a difference-in-differences design with a reference group positioning the study to assess causal claims more effectively. However, the study was limited to Blue Cross Blue Shield insured individuals in Hawaii; caution is therefore required when assessing external validity of the intervention. Additionally, the evaluation accounts for only the first year of the program—further research is therefore needed to determine longer-term outcomes.

Generalizability to Medicare Population: Moderate; about one-quarter of patients included in the study were receiving Medicare during the intervention period.

Methods: The study used claims and clinical registry data and a propensity-weighted difference-in-differences design to model outcomes for patients exposed to the 3PC program compared to a reference group of patients who continued in a FFS payment model.

Nelson L. Lessons from Medicare's Demonstration Projects on Disease Management and Care Coordination. Congressional Budget Office. Published online 2012.

https://cbo.gov/sites/default/files/cbofiles/attachments/WP2012-01_Nelson_Medicare_DMCC_Demonstrations.pdf

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Report

Objective: To summarize the results of Medicare demonstrations pertaining to disease management and care coordination programs.

Main Findings: Of the 34 programs reviewed, few were able to successfully reduce hospital admissions. Programs in which care managers had greater amounts of direct interaction with physicians and in-person contact with patients were more likely to reduce hospital admissions compared to programs lacking these elements. Medicare spending remained the same or increased in almost all of the programs.

Strengths/Limitations: The paper does not include a methods sections. Additionally, two of the six demonstrations cited in the report are still underway and are therefore able to be only preliminarily evaluated.

Generalizability to Medicare Population: High; the report directly pertains to Medicare.

Methods: The report limited review to the six major Medicare demonstrations (34 total programs) related to disease management and care coordination for FFS beneficiaries. The report summarizes the different demonstrations/programs along a number of characteristics and focuses on hospital admissions and Medicare expenditures as the key evaluation measures; however, the report does not provide a formal methodology section.

Network for Regional Healthcare Improvement. Technical Resource for Measurement of Total Cost of Care Using Multi-Payer Data Sets. 2016. Accessed January 7, 2022.

<https://www.nrhi.org/uploads/technical-resource-4-tcoc-multi-payer-dataset-final-web.pdf>

Subtopic(s): Relevant Performance and Outcome Measures used in Reporting and Evaluation

Type of Source: Report

Objective: To provide other users of All-Payer Claims Databases (APCDs) the benefit of experience gained by project participants in creating TCOC on multi-payer commercial claim data and to provide step-by-step instructions to follow and implement.

Main Findings: The technical resource offers guidance and practices that can be followed and implemented. Some of those topics include initial data quality checks, preparing the data, selection of members and claims, assigning risk scores, assessing the output of the HealthPartners software, and minimum data requirements.

Strengths/Limitations: A strength from this technical guide is that it provides participant experience and examples that would allow anyone who is trying to make use of this innovation initiative to hear first-hand from someone who has already used it and has experience with it.

Generalizability to Medicare Population: Weak; although it is an innovative initiative that is useful, it is mostly geared toward practicing physicians and health care workers who could be affiliated with Medicare and affect Medicare beneficiaries.

Methods: N/A

Nguyen TN, Trocio J, Kowal S, Ferrufino CP, Munakata J, South D. Leveraging Real-World Evidence in Disease-Management Decision-Making with a Total Cost of Care Estimator. *Am Health Drug Benefits*. 2016;9(9):475-485.

Subtopic(s): Relevant Performance and Outcome Measures used in Reporting and Evaluation

Type of Source: Journal Article

Objective: To establish a real-world, evidence-based estimator for assessing the effects of disease management interventions on the TCOC for a patient population with nonvalvular atrial fibrillation (NVAf).

Main Findings: The model estimated the total annual direct health care costs of managing patients with NVAf in a hypothetical plan with one million covered individuals to be about \$185 million. The model found that a potential 25 percent improvement from the base-case disease burden and disease management could generate TCOC savings via the reduction of costs associated with hypertension and the use of an antithrombotic treatment that prevents stroke and reduces bleeding events.

Strengths/Limitations: The estimator supports analysis across multiple regions across the U.S., ages, and care settings. However, there are several limitations associated with the estimator. For example, the TCOC estimator does not explicitly account for differences in treatment

performance. Additionally, the estimator does not account for non-commercially insured individuals, such as those receiving Medicare or Medicaid.

Generalizability to Medicare Population: Low; although patients aged 65 years or older with supplemental commercial coverage were included in the study, traditional Medicare claims were not.

Methods: Data collected from a patient claims database were collected and combined into longitudinal cohorts. Descriptive statistics of these data were then used to establish base-case estimates within the TCOC estimator, an exploratory economic model that was designed to estimate the potential impact of several disease management activities on the TCOC for a patient population with NVAf.

Nielsen M, Bult L, Patel K, Nichols LM. The Patient-Centered Medical Home's Impact on Cost and Quality. Annual Review of Evidence 2014-2015. Millbank Memorial Fund. 2016.

https://www.milbank.org/wp-content/uploads/2016/02/PCPCC_2016_Report.pdf

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Report

Objective: To summarize PCMH cost and utilization results from peer-reviewed literature, state government evaluations, independent evaluations of federal initiatives, and industry reports published between October 2014 and November 2015.

Main Findings: Key takeaways highlighted by the report include: 1) advanced primary care is foundational to delivery system transformation; medical home initiatives continue to reduce health care costs and unnecessary utilization of services; 2) payment reform is necessary to sustain delivery system changes, but alignment across payers is critical for health care provider buy-in; and 3) measurement for PCMHs must be aligned and focused on value for patients, providers, and payers.

Strengths/Limitations: The report synthesizes a wide range of information and sources; however, the report is slightly dated. Additionally, the report does not include non-statistically significant outcomes, which, although statistically null, can provide valuable information. Finally, the report does not include studies that focused on quality of care or patient experience.

Generalizability to Medicare Population: Moderate; although Medicare is not the central focus of the report, results pertaining to Medicare models and beneficiaries are addressed.

Methods: PCMH model environmental scan that included studies that assessed cost and/or utilization (study types were those that are mentioned above in the objectives section). The authors' search used PubMed, in addition to other internet search engines and included the following search terms: PCMH, medical home, and advanced primary care.

NORC at the University of Chicago. First Evaluation Report – Evaluation of the Vermont All-Payer Accountable Care Organization. August 2021. <https://innovation.cms.gov/data-and-reports/2021/vtapm-1st-eval-full-report>

Subtopic(s): Comparison of Relevant Features in Selected CMMI Models and Other CMS Demonstrations and Programs

Type of Source: Report

Objective: To describe the evaluation approach and some outcomes of the Vermont All-Payer Accountable Care Organization Model (VTAPM).

Main Findings: The VTAPM did not meet specified all-payer and Medicare-specific scale targets during PY1 (2018) and 2 (2019). The model generates significant gross savings, driven mostly by large reductions in PY2. Hospital-based utilization and emergency visits decreased in PY2.

Strengths/Limitations: Insufficient post-implementation data and lags in data availability limit the ability to detect any short-term statewide impacts. The report has only limited findings on the provider perspective.

Generalizability to Medicare Population: Strong; data focused on Medicare FFS population.

Methods: Mixed methods design, including difference-in-differences analyses, systematic document review, and semi-structured interviews

NORC at the University of Chicago. Fourth Evaluation Report: Next Generation Accountable Care Organization Model Evaluation. NORC at the University of Chicago. 2021.

<https://innovation.cms.gov/data-and-reports/2021/nextgenaco-fourthevalrpt>

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Report

Objective: To evaluate the NGACO model through performance year four (end of 2019).

Main Findings: As of the fourth performance year, the NGACO model was associated with \$667 million in gross savings in Medicare Parts A and B spending. However, after accounting for \$909 million in shared savings and other payments to model ACOs, the model was found to be associated with \$243 million in net losses. NGACOs in markets with higher per capita Medicare Parts A and B expenditures generated more significant reductions, on average. NGACOs primarily saw reductions in spending in settings other than their own organizational setting. Physician practice-affiliated NGACOs reduced acute care spending, though did not reduce spending associated with professional services. NGACOs affiliated with hospitals or integrated delivery systems (IDS), however, reduced spending for professional services. The evaluation also observed variations in the timing of spending reductions, with physician practice-affiliated NGACOs and physician-hospital partnerships lowering spending earlier in the model compared to hospital/IDS-affiliated NGACOs.

Strengths/Limitations: The evaluation draws on both quantitative and qualitative methods and effectively synthesizes findings from these different methods. Additionally, the model employs a difference-in-differences design, which is an effective model for assessing causal relationships between the model and observed outcomes. However, the evaluation fails to explore model implementation approaches; differing approaches regarding implementation could have been an important factor in differing outcomes across ACOs. Additionally, the evaluation report notes that it was unable to isolate the relative importance of the various factors identified as being associated with spending outcomes. Lastly, given that the evaluation accounts for only the first four (out of five) model years, there is the potential that some model-induced effects will not occur until later in the model, especially for more long-term effects.

Generalizability to Medicare Population: Strong; the model evaluated directly served Medicare beneficiaries and providers.

Methods: The evaluation employed a range of quantitative and qualitative methods, including regression modeling such as difference-in-differences modeling to assess causal effects of the model, qualitative comparative analysis to examine NGACOs' contextual and structural pathways to reduce Medicare spending, and interviews with ACO leaders.

NORC at the University of Chicago. The Pennsylvania Rural Health Model (PARHM) First Annual Report. August 2021. <https://innovation.cms.gov/data-and-reports/2021/parhm-ar1-full-report>

Subtopic(s): Comparison of Relevant Features in Selected CMMI Models and Other CMS Demonstrations; Opportunities for Improving and Optimizing Efforts to Develop and Implement Population-Based TCOC Models and Reduce TCOC in APMs and PFPMs

Type of Source: Report

Objective: To evaluate the implementation experience of participating hospitals during the first year of the model. The report also provides descriptive analysis of participating hospitals with respect to baseline financial performance, spending, and utilization.

Main Findings: In regard to implementation, stakeholders indicated that the Rural Health Redesign Office was integral in supporting hospitals and in recruiting participants. Hospitals also note that the biweekly Medicare payments were helpful. However, participating hospitals also noted difficulties associated with staffing, adapting to shifts in patient volume, and other operational adjustments related to implementation. Regarding descriptive analysis of financial performance in the baseline period, the financial viability of the hospitals in the first cohort worsened during the baseline period. Additionally, before final reconciliation of Medicare reimbursements, interim global budget payments surpassed the interim Medicare reimbursement amount that the Cohort 1 hospitals would have received under FFS and cost-based reimbursement methods.

Strengths/Limitations: This is only a preliminary evaluation with descriptive analysis of program year one. The evaluation was also limited by the small size of the first-year cohort, which included only five hospitals. Additionally, the model was implemented during the COVID-19 pandemic.

Generalizability to Medicare Population: Moderate; the model is unique in that it allows for participation by all payers with Medicare being one of the payer types and patient populations specifically analyzed in the report.

Methods: The evaluation conducted exploratory, descriptive analysis of baseline trends. Additionally, the evaluation incorporated model document reviews and interviews carried out with hospital staff and other model stakeholders to better understand the model implementation process.

NORC at the University of Chicago. Third Evaluation Report: Next Generation Accountable Care Organization Model Evaluation. NORC at the University of Chicago; 2020:137.

<https://innovation.cms.gov/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport>

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Report

Objective: To evaluate the NGACO model through performance year three (end of 2018).

Main Findings: Across the first three performance years, gross Medicare expenditures decreased; however, net Medicare spending did not decrease. Cumulative net and gross spending patterns differed across cohort years with the 2016 cohort demonstrating the highest net spending increase and the 2017 cohort demonstrated the greatest reduction in gross spending. In its first year, the 2018 cohort had statistically significant reductions in gross spending. With respect to spending in the third performance year specifically, NGACOs decreased gross spending but did not reduce net spending. Additionally, the effect size of the model-wide reduction in gross spending in PY3 was larger than the gross spending reduction in PY2. Regarding utilization, there were no observed model-wide reductions in acute care hospital spending, though there was a 12 percent increase in annual wellness visits across NGACOs. There were no significant changes in quality of care measures detected in PY3 or cumulatively.

Strengths/Limitations: The evaluation draws on both quantitative and qualitative methods and effectively synthesizes findings from these different methods. Additionally, the model employs a difference-in-differences design, which is an effective model for assessing causal relationships between the model and observed outcomes. The evaluation notes that in future reports, researchers plan to further categorize NGACOs according to their care management/coordination/delivery and risk stratification approaches so as to better isolate organizational and structural characteristics associated with improved outcomes. Additionally, the evaluation captures only the first three performance years; some outcomes may take more time to see changes.

Generalizability to Medicare Population: Strong; the model evaluated directly served Medicare beneficiaries and providers.

Methods: The evaluation used both quantitative and qualitative methods, including regression modeling such as difference-in-differences modeling to assess causal effects of the model, qualitative comparative analysis to examine NGACOs' contextual and structural pathways to reduce Medicare spending, interviews with ACO leaders, and surveys with NGACO leadership and affiliated physicians.

Oakley LP, Harvey SM, Yoon J, Luck J. Oregon's Coordinated Care Organizations and Their Effect on Prenatal Care Utilization Among Medicaid Enrollees. *Matern Child Health J.* 2017;21(9):1784-1789. doi:10.1007/s10995-017-2322-z

Subtopic(s): Findings from Research Related to Population-Based TCOC Models

Type of Source: Journal Article

Objective: To evaluate the impact of Oregon's ACOs (Coordinated Care Organizations [CCOs]) on prenatal care utilization for reproductive-age Medicaid beneficiaries.

Main Findings: CCO implementation was associated with a 13 percent increase in the odds of Medicaid-enrolled mothers receiving first trimester care. Non-Hispanic, white, and Asian women were more likely to receive initial prenatal care in the first trimester following the CCO intervention. Additionally, women located in urban settings were more likely to initiate prenatal care during the first trimester.

Strengths/Limitations: The model uses a robust causal design (difference-in-differences model) and stratifies along a range of factors for a more granular assessment of CCO implementation. Though the evaluation includes a diversity of geographic settings and demographic populations (particularly race and ethnicity), the results are specific to Oregon and for lower-income groups (i.e., Medicaid eligible women)—caution is therefore required when evaluating the external validity of the study. The study also captures only the first year of post-CCO data.

Generalizability to Medicare Population: Low; the study focuses on reproductive-age women enrolled in Medicaid.

Methods: The evaluation used Medicaid eligibility data linked to unique birth records to employ a difference-in-differences model. Additional stratified analyses were also conducted to assess CCO implementation effects in relation to a variety of factors (e.g., race, rurality).

Osarogiagbon RU, Mullangi S, Schrag D. Medicare Spending, Utilization, and Quality in the Oncology Care Model. JAMA. 2021;326(18):1805. doi:10.1001/jama.2021.18765\

Subtopic(s): Relevant Performance and Outcome Measures used in Reporting and Evaluation; Opportunities for Improving and Optimizing Efforts to Develop and Implement Population-Based TCOC Models and Reduce TCOC in APMs and PFPs

Type of Source: Editorial

Objective: To outline the results from the evaluation of the first three years of OCM.

Main Findings: The model failed to achieve net cost savings; after accounting for the model's \$160 PBPM and performance payments, the evaluation estimated a net loss to Medicare of over \$315 million. Nor did the model demonstrate significant improvements in quality. The model was associated with moderate reductions in chemotherapy-related ED visits and a decrease in the number of beneficiaries hospitalized at the end of life.

Strengths/Limitations: The evaluation cited several policy-level secular changes that could present challenges when assessing the causal impact of the model. Examples include the 2005 Medicare Part B payment reform that reduced reimbursement for chemotherapy drugs, the expansion of the 340B Drug Discount Program under the ACA, and a broader post-ACA trend toward integrated health care systems. Additionally, the study evaluated only the first three years of the five-year model; it may have been too early at publication to detect the effects of the model, especially those with more long-term impacts.

Generalizability to Medicare Population: Strong; the article directly addresses Medicare.

Methods: The evaluation employed a difference-in-differences model that used propensity matching to assess treatment and comparison group differences.

Palmer M, Marton J, Yelowitz A, Talbert J. Medicaid Managed Care and the Health Care Utilization of Foster Children. Inquiry. 2017;54:46958017698550. doi:10.1177/0046958017698550

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Journal Article

Objective: To evaluate the impact of the transition of foster children from FFS Medicaid coverage to MMC coverage on outpatient health care utilization.

Main Findings: The study found that that transition to MMC led to a 4 percentage point reduction in the probability of having any monthly outpatient utilization. Prior to the transition from FFS to MMC coverage in June of 1999, those that transitioned coverage (i.e., the treatment group) and those that remained in FFS Medicaid coverage (i.e., the control group) saw very similar levels of outpatient average spending.

Strengths/Limitations: The study provided the first analysis of MMC coverage transition among foster children in the state of Kentucky. Although it is not the whole country, similar research could look at this issue at the country level to provide more insight into the effects that MMC coverage has caused. Another limitation is that the researchers were not able to differentiate between reductions in wasteful and unnecessary outpatient care. Along with this, the study used foster children who were continuously enrolled for 12 months, but they are not fully representative of the foster population in general given the amount of turnover in the population.

Generalizability to Medicare Population: Low; the model evaluated a younger population of Medicaid served beneficiaries.

Methods: The study used a difference-in-difference regression framework to determine the causal effect of the passport MMC plan on health utilization for foster children.

Parekh N, McClellan M, Shrank WH. Payment Reform, Medication Use, and Costs: Can We Afford to Leave Out Drugs? J Gen Intern Med. 2019;34(3):473-476. doi:10.1007/s11606-018-4794-y

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Journal Article

Objective: To synthesize evidence about the impact of three prominent models—primary care-based redesign, ACOs, and bundled payment programs-- on medication use, adherence, and costs.

Main Findings: Commercial models that integrate pharmacy and medical spending show promise and may serve as a guide for further model development. Payment models that incorporate pharmacy benefit managers (PBMs) could leverage more meaningful manufacturer discounts based on the impact on outcomes and total costs.

Strengths/Limitations: The article explains the three types of models and succinctly evaluates them to provide some insight into what they look like in a health care setting. While there are just the three analyzed in this article, the article also mentions other models that could work but lacks depth and information on them.

Generalizability to Medicare Population: Weak; although these are models that could be used by Medicare beneficiaries, they are not directly addressed in the paper.

Methods: N/A

Park S, Langellier BA, Burke RE, Figueroa JF, Coe NB. Association of Medicare Advantage Penetration With Per Capita Spending, Emergency Department Visits, and Readmission Rates Among Fee-for-Service Medicare Beneficiaries With High Comorbidity Burden. Med Care Res Rev. 2021;78(6):703-712. doi:10.1177/1077558720952582

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Journal Article

Objective: To assess whether MA growth from 2010 to 2017 spilled over to county-level per capita spending, ED visits, and readmission rates among FFS beneficiaries, and how much this varied by the comorbidity burden of the beneficiary.

Main Findings: MA growth was associated with decreased FFS spending among beneficiaries with 11 of the 20 chronic conditions. This suggests that MA growth may drive improvements in efficiency of health care delivery for high-need, high-cost beneficiaries.

Strengths/Limitations: Researchers could not account for all potential confounding, and they examined only three outcomes because no other outcomes were reported in the file used.

Generalizability to Medicare Population: Strong; focuses on Medicare beneficiaries and the per capita spending associated across several conditions, ED visits, and more.

Methods: Linear regression model with fixed effects was used. The fixed effect models are to control for the all time-invariant unobserved factors.

Patient-Centered Primary Care Collaborative. Investing in Primary Care: A State-Level Analysis. 2019. https://www.pcpcc.org/sites/default/files/resources/pcmh_evidence_report_2019_0.pdf

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Report

Objective: To analyze primary care spending across states and payer types, and to examine how these variations are related to patient outcomes.

Main Findings: The report determined the national average for primary care investment to fall between 5.6 percent and 10.2 percent depending on the definition used to capture primary care. Minnesota was found to have the highest investment rate, whereas Connecticut and New

Jersey had the lowest rates. The report also noted an inverse association between primary care investment and total hospitalizations, hospitalizations for ambulatory care sensitive conditions, and emergency department visits.

Strengths/Limitations: Limitations presented by the MEPS data resulted in the inclusion of only 29 states. Additionally, the study design did not employ a causal set-up—the observed relationships should therefore be understood as associative rather than causal.

Generalizability to Medicare Population: Moderate; the report included Medicare as one of the five payer types analyzed in the study.

Methods: The study combined 2011 to 2016 data from the Medical Expenditures Panel Survey (MEPS) to conduct cross-sectional analyses of primary care investment at the state level.

Paustian ML, Alexander JA, El Reda DK, Wise CG, Green LA, Feters MD. Partial and Incremental PCMH Practice Transformation: Implications for Quality and Costs. *Health Serv Res.* 2014;49(1pt1):52-74. doi:10.1111/1475-6773.12085

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Journal Article

Objective: To examine the associations between partial and incremental implementation of the PCMH model and measures of cost and quality of care.

Main Findings: Full implementation of the PCMH model is associated with a 3.5 percent higher quality composite score, a 5.1 percent higher preventive composite score, and \$26.37 lower per member per month medical costs for adults. The full PCMH implementation also results in a 12.2 percent higher preventive composite score, but pediatric populations see no reductions.

Strengths/Limitations: A strength of this study is that these practices encompass nearly two-thirds of primary care physicians practicing in Michigan, span 82 of the 83 counties in Michigan, represent both small and large practices, urban and rural practices, practices with integrated systems, and practices loosely affiliated in independent physician associations. A limitation to the study is that the PCMH evaluation was limited to a one-year period, so it cannot be determined whether the results reflect true causal relationships or preexisting practice patterns.

Generalizability to Medicare Population: Moderate; the study focuses on the PCMH model and the effectiveness of this model for Medicare beneficiaries.

Methods: Quantitative and qualitative analysis

Peikes D, Chen A, Schore J, Brown R. Effects of Care Coordination on Hospitalization, Quality of Care, and Health Care Expenditures Among Medicare Beneficiaries: 15 Randomized Trials. JAMA. 2009;301(6):603-618. doi:10.1001/jama.2009.126

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Journal Article

Objective: To determine whether care coordination programs reduced hospitalizations and Medicare expenditures and improved quality of care for chronically ill Medicare beneficiaries.

Main Findings: Thirteen of the 15 programs showed no significant differences in hospitalizations, but Mercy had fewer hospitalizations per person per year while Charleston had more hospitalizations per person per year. The programs had favorable effects on none of the adherence measures and only a few of the many quality of care indicators examined.

Strengths/Limitations: The strengths of the study are the use of a randomized design in each program and considerably longer follow-up than any prior care coordination studies identified, as well as the evaluation of 15 different interventions in different settings. The main limitation is that the large variance in Medicare expenditures and (for some programs) low program fees resulted in only four sites having adequate power to detect reductions in standard Medicare expenditures large enough to offset the program fees.

Generalizability to Medicare Population: Strong; the paper evaluated Medicare beneficiaries.

Methods: Analysis of patient surveys

Peterson CL, Schumacher DN. How Maryland's Total Cost of Care Model Has Helped Hospitals Manage The COVID-19 Stress Test. Health Affairs. 2020.

<https://www.healthaffairs.org/doi/10.1377/forefront.20201005.677034/full/>

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Journal Article

Objective: To take an in-depth look into Maryland's policy changes in collaboration with the Center for Medicare and Medicaid Innovation (CMMI) in response to COVID-19 that would support hospitals to obtain proper financial stability.

Main Findings: COVID-19 has brought about various challenges to the Maryland health care system, but it has been able to manage the challenges in collaboration with CMMI, the hospitals, and other stakeholders. COVID-19 has elevated the level of attention to health care access, quality, and cost. Policy adjustments have proved to be useful in helping produce better outcomes.

Strengths/Limitations: The limitations present within this study were related to the way that COVID-19 has impacted and influenced how health care is being viewed. The pandemic brought about a greater level of attention to the issues going on at hospitals, and improvements have been made since. Limitations to this study are related to the way hospitals will maintain high levels of maintenance when the pandemic is over.

Generalizability to Medicare Population: Moderate; the model served Medicare beneficiaries, but the focus was on hospital management.

Methods: N/A

Reid RO, Tom AK, Ross RM, Duffy EL, Damberg CL. Physician Compensation Arrangements and Financial Performance Incentives in US Health Systems. JAMA Health Forum. 2022;3(1):e214634. doi:10.1001/jamahealthforum.2021.4634

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Journal Article

Objective: To outline primary care and specialist compensation arrangements across U.S. health system-affiliated physician organizations (POs), and to assess the portion of total physician compensation based on quality and cost performance.

Main Findings: Volume-based compensation structures were the most common base compensation incentive component for primary and specialty practitioners. The percentage of performance-based compensation structures (based on quality and cost) were relatively rare. The most frequently cited method used by physicians to increase compensation was to increase the volume of services, reported as the top action by 22 POs. The study also observed a weak association between the percentage of revenue of POs from FFS and the PCP and specialist volume-based compensation percentage.

Strengths/Limitations: The study examined only four states, which may not be representative of the country at large, thus requiring caution when assessing external validity. Additionally, data collection focused on PO leaders rather than doctors.

Generalizability to Medicare Population: Moderate; health systems included in the study serve Medicare beneficiaries in addition to many other patient populations.

Methods: The study employed a mixed methods design that included 31 POs and 22 health systems across four states (California, Minnesota, Washington, and Wisconsin). Specific methods used included compensation document review, interviews with PO directors, and survey research.

Rosenthal MB, Landrum MB, Robbins JA, Schneider EC. Pay for Performance in Medicaid: Evidence from Three Natural Experiments. Health Serv Res. 2016;51(4):1444-1466.

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Journal Article

Objective: To examine the impact of pay-for-performance in Medicaid based on the quality and utilization of care.

Main Findings: Two programs saw reductions in hospital admissions with no measurable quality improvement across the three states. In Pennsylvania, there was a statistically significant reduction of 88 ambulatory visits per 1,000 enrollee months compared with Florida. In Minnesota, there was a significant decrease of 7.2 hospital admissions per thousand enrollee months compared with Wisconsin. There were no significant quality improvements in intervention relative to control states.

Strengths/Limitations: This study examined natural experiments using a quasi-experimental approach that is subject to bias if the comparison groups are not well matched. Along with this, the researchers have only claims data to assess impact and the well-known churning of Medicaid eligibility.

Generalizability to Medicare Population: Moderate; the paper examined the Medicaid population, but findings could be applicable to Medicare.

Methods: Difference-in-difference analysis

RTI International. Accountable Health Communities (AHC) Model Evaluation First Evaluation Report. 2020. <https://innovation.cms.gov/data-and-reports/2020/ahc-first-eval-rpt>

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Report

Objective: To test whether connecting Medicare and Medicaid beneficiaries to community resources can improve health outcomes and reduce costs by addressing health-related social needs (HRSNs) – adverse social conditions that affect health and health care expenditures.

Main Findings: There was a high acceptance of navigation and some utilization reductions among the high-need population targeted by the AHC Model, but evidence at this early evaluation stage that indicates that HRSNs were resolved can be limited. Of all issues, food insecurity was reported the most common HRSN.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; the report directly addresses Medicare beneficiaries and the implementation of the AHC model.

Methods: A variety of methods were used in this report, ranging from in-person and telephone communication to difference-in-differences impact analyses.

RTI International. Early Findings on Care Coordination in Capitated Medicare-Medicaid Plans under the Financial Alignment Initiative. 2017:52. <https://innovation.cms.gov/files/reports/fai-carecoordination-issuebrief.pdf>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS Demonstrations

Type of Source: Report

Objective: To provide an update on the status of care coordination activities, and to report on preliminary findings related to care coordination in nine demonstrations with capitated payment plans implemented under the CMS Financial Alignment Initiative.

Main Findings: Medicare and Medicaid models included in the report are implementing new care coordination activities designed to integrate care across physical, behavioral, and long-term care settings. This is exemplified by increases in hirings of care coordinators tasked with implementing these changes. Medicare and Medicaid beneficiaries have expressed their support for the services provided by these new care coordinators. The report also indicated, however, that participating programs continue to face challenges associated with hiring and retaining sufficient numbers of care coordinators, completing health risk assessments in a timely fashion, and ensuring that all care team providers effectively share information, especially physicians.

Strengths/Limitations: The report includes only preliminary findings; the full effects of the models, especially those aimed at influencing population health, will likely require more time to materialize.

Generalizability to Medicare Population: Moderate; although the report includes analysis of models affecting Medicare and Medicaid beneficiaries, Medicare is a central focus of the publication.

Methods: The report employed a range of quantitative and qualitative methodologies, including site visit interviews with a variety of stakeholders, patient focus groups, document review, and analysis of state administrative data.

RTI International. Evaluation of the Maryland All-Payer Model Volume I: Final Report. November 2019.
<https://downloads.cms.gov/files/md-allpayer-finalevalrpt.pdf>

Subtopic(s): Comparison of Relevant Features in Selected CMMI Models and Other CMS Demonstrations and Programs; Opportunities for Improving and Optimizing Efforts to Develop and Implement Population-Based TCOC Models and Reduce TCOC in APMs and PFPs

Type of Source: Report

Objective: To evaluate the Maryland All-Payer Model.

Main Findings: The evaluation found that the model reduced both total expenditures and total hospital expenditures for Medicare beneficiaries without shifting costs to other parts of the health care system outside of the global budgets. Medicare expenditures for ED visits that did not result in an admission declined, though the rate of ED visits did not change relative to the comparison group. The evaluation also observed statistically significant reductions in inpatient admissions for Maryland residents enrolled in Medicare. Medicare admissions for ambulatory care sensitive conditions declined in comparison to the comparison group; however, reductions in unplanned readmission rates remained similar to the comparison group. Medicare payments for inpatient hospital services also remained relatively constant; evaluators speculate that this was due to the change in utilization being offset by an increase in payment per inpatient admission. Finally, dual-eligible beneficiaries and beneficiaries with multiple chronic conditions demonstrated more favorable outcomes when compared to other Medicare beneficiaries.

Strengths/Limitations: The evaluation incorporated several methodologies to provide a holistic analysis of the model. Additionally, the difference-in-differences model allows for increased confidence when making causal claims about model effects. Some of the analyses lacked a comparison group; however, analysis of the Medicare group did use a comparison group.

Generalizability to Medicare Population: Moderate; the model targets all Maryland residents receiving services, including Medicare beneficiaries. The All-Payer Model began with a Medicare waiver that exempted Maryland hospitals from Medicare's Inpatient Prospective Payment System (IPPS) and Outpatient Prospective Payment System (OPPS).

Methods: The evaluation used a mixed methods design, employing qualitative and quantitative methods to assess model implementation and outcomes. Qualitative methods included key informant interviews, hospital site visits, and focus groups with physicians and other stakeholders. Quantitative analyses primarily relied on difference-in-differences modeling of hospital financial data and claims data. The evaluation also conducted a survey with accompanying descriptive analysis.

RTI International. Evaluation of the Multi-Payer Advanced Primary Care Practice (MAPCP) Demonstration: Final Report. 2017:1214. <https://downloads.cms.gov/files/cmmi/mapcp-finalevalrpt.pdf>

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Report

Objective: To assess the impacts of the MAPCP Demonstration and determine how contextual factors influenced these impacts.

Main Findings: Medicare expenditures for the MAPCP Demonstration beneficiaries were \$227 million less than the PCMH comparison beneficiaries after accounting for the MAPCP Demonstration practice payments. More than half the savings relative to the PCMH comparison practices was due to lower expenditures on acute care.

Strengths/Limitations: Some limitations of this report include the limited number of data available to identify PCMH status.

Generalizability to Medicare Population: Strong; the study focused on Medicare and Medicaid services and its beneficiaries.

Methods: The evaluation used a mix of qualitative and quantitative methods to capture each state's unique features and to develop an in-depth understanding of the transformative processes occurring within and across the states' health care systems and participating PCMH practices.

RTI International. Global and Professional Direct Contracting Model: Quality Measurement Methodology Version 2.1. November 30, 2021. <https://innovation.cms.gov/media/document/gpdc-py2022-qual-meas-meth>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS Demonstrations

Type of Source: Model Overview Document

Objective: To outline the quality measurement and performance evaluation methodology for Direct Contracting Entities (DCEs) participating in the CMMI Global and Professional Direct Contracting (GPDC) Model.

Main Findings: In project year 2022, DCEs will be assessed based on five key quality measures: risk-standardized all-condition readmission, all-cause unplanned admissions for patients with multiple chronic conditions, days at home for patients with complex chronic conditions, timely follow-up after acute exacerbations of chronic conditions, and Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; the model focusses on Medicare beneficiaries and provider entities.

Methods: N/A

RTI International. OCM Performance-Based Payment Methodology. Center for Medicare and Medicaid Innovation; 2021. Accessed February 2, 2022. <https://innovation.cms.gov/files/x/ocm-pp3beyond-pymmeth.pdf>

Subtopic(s): Relevant Performance and Outcome Measures used in Reporting and Evaluation

Type of Source: Model Overview Document

Objective: The report describes the technical details for the methodology that the Centers for Medicare & Medicaid Services (CMS) use to determine a practice's or pool's performance-based payment or recoupment in the Oncology Care Model (OCM).

Main Findings: N/A

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; the report focuses on a Medicare oncology payment model.

Methods: N/A

Ruiz D, McNeal K, Corey K, et al. Evaluation of the Community-Based Care Transitions Program; 2017:233. <https://downloads.cms.gov/files/cmmt/cctp-final-eval-rpt.pdf>

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Report

Objective: To assess the impacts of the CCTP.

Main Findings: Many sites struggled with building community-based organization (CBO)-hospital partner relationships, operationalizing care transitions (CT) interventions and program administration, and maintaining appropriate staffing. Sites that had relatively high enrollment were able to build successful relationships with community-based service providers and develop mechanisms to reach beneficiaries in post-acute care (PAC) settings after hospitalization. Participants from all 101 sites combined experienced lower readmission rates.

Strengths/Limitations: Each analysis has limitations that preclude definite estimates of the effects of the CCTP, but the triangulation of the data and analyses offered insight into the value of the CCTP.

Generalizability to Medicare Population: Strong; the study focused directly on Medicaid and Medicare beneficiaries.

Methods: A variety of datasets and methods were used such as administrative data to calculate 30-day all-cause readmission rates and Medicare Part A and Part B expenditure measures.

Sapra KJ, Yang W, Walczak NB, Cha SS. Population Health Management. Feb 2020. 23(1): 12-19.<http://doi.org/10.1089/pop.2019.0016>

Subtopic(s): Relevant Performance and Outcome Measures used in Reporting and Evaluation; Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Journal Article

Objective: To investigate whether using data on neighborhood socioeconomic disadvantage in addition to individual clinical risk data improves identification of high-cost Medicare beneficiaries.

Main Findings: Area Deprivation Index (ADI) is associated with clinical risk and that on its own, ADI is greatly associated with TCOC. When there is no individual-level clinical risk information, it can be possible to identify populations in the state of Maryland that may best benefit from this.

Strengths/Limitations: This is the first type of study in the U.S. to use empirical data to examine the association between neighborhood socioeconomic disadvantage and future health care spending. A limitation of this study is that it focuses only on Maryland Medicare beneficiaries, so it may not be representative of Medicare beneficiaries across the country.

Generalizability to Medicare Population: Strong; the study looks at identifying high-cost Medicare beneficiaries.

Methods: Descriptive and multivariate analyses were performed to examine the relationship of residency in neighborhoods with high ADI and subsequent year health care spending.

Shartz A, Berenson R, Zuckerman S. Common Alternative Payment Model (APM) Approaches: Reference Guide. Published online January 2021. <https://aspe.hhs.gov/sites/default/files/private/aspe-files/207901/common-apms-reference-guide-2021.pdf>

Subtopic(s): Background: Defining Potential TCOC Models and Related Terms

Type of Source: Report

Objective: To identify an APM or model elements that could be an appropriate fit for an innovative care delivery idea. To better describe key aspects of the proposed APM methodology and find resources for additional information about the major types of APMs that are currently being used.

Main Findings: Various major types of APM approaches were created, and details on how they can be followed and implemented were made available. While it can be useful to follow one of these models, there is not guarantee of a specific outcome from PTAC review for individuals or stakeholders that intend to submit a proposal for review.

Strengths/Limitations: This guide does not provide a comprehensive review of all the possible approaches present within the VBP methods that could be used. Potential submitters should know that evidence for APMs is limited at this time and evolving in some areas of the payment methodology realm. The guide is helpful because it provides insight into how other payers and proposal submitters have gone about implementing a payment approach after following one of the APM models and is intended to be informational.

Generalizability to Medicare Population: Moderate; Medicare physicians can benefit from these APM models and introduce new payment methods.

Methods: N/A

She Z, Gaglioti AH, Baltrus P, et al. Primary Care Comprehensiveness and Care Coordination in Robust Specialist Networks Results in Lower Emergency Department Utilization: A Network Analysis of Medicaid Physician Networks. *Journal of Primary Care & Community Health*. 2020;11:2150132720924432.

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Journal Article

Objective: To assess the impact of network characteristics in primary/specialty physician networks on ED visits for patients with chronic ambulatory care sensitive conditions (ACSCs).

Main Findings: PCPs providing comprehensive care for their patients with chronic ACSCs have lower ED utilization rates than those coordinating care with specialists. A good mixture of the three components being primary care, care coordination, and specialty availability in physician networks is essential for driving outcomes.

Strengths/Limitations: The study has some limitations such as being a cross-sectional study in the association between PCP network characteristics and patient health outcomes (ED rates). This study is also limited to Texas Medicaid patients who have a diagnosis of chronic ACSC and may not be a representation of other states.

Generalizability to Medicare Population: Strong; Medicaid beneficiaries with chronic ACSC diagnosis were examined in the paper, and these findings could be applicable to Medicare programs.

Methods: Cross-sectional network analysis

Shrank WH, DeParle NA, Gottlieb S, et al. Health Costs And Financing: Challenges And Strategies For A New Administration. *Health Affairs*. 2021;40(2). doi:<https://doi.org/10.1377/hlthaff.2020.01560>

Subtopic(s): Comparison of Relevant Features in Selected CMMI Models and Other CMS Demonstrations and Programs; Opportunities for Improving and Optimizing Efforts to Develop and Implement Population-based TCOC Models and Reduce TCOC in APMs and PFPMs

Type of Source: Journal Article

Objective: To organize recommendations around five policy priorities: expanding insurance coverage; accelerating the transition to value-based care; advancing home-based care; improving the affordability of drugs and other therapeutics; and developing a high-value workforce.

Main Findings: Policy priorities were centered around access, affordability, and equity. In order to implement policy changes, reforms must happen under restrained federal and state budgets. Due to limited resources and attention, disciplined prioritization and efforts will be needed to create progress within these recommendations.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; journal article focused more on five key policy recommendations than Medicare beneficiaries.

Methods: N/A

Smith KW, Bir A, Freeman NL, Koethe BC, Cohen J, Day T. Impact Of Health Care Delivery System Innovations On Total Cost Of Care. *Health Affairs*. 2017.

<https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2016.1308>

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Journal Article

Objective: To analyze the results of 43 ambulatory care programs funded by the first round of CMMI's Health Care Innovations Awards.

Main Findings: Innovations that used health information technology or community health workers achieved the greatest cost savings. In programs that targeted clinically fragile patients,

savings were relatively large, but none of the effects obtained conventional levels of significance.

Strengths/Limitations: A limitation to the analysis is that it contained a small number of subjects, which can affect the precision of the results. Along with this, the rigor which each evaluator used in conducting their analyses could have varied, which would affect the reported TCOC effects.

Generalizability to Medicare Population: Moderate; Medicaid beneficiaries were the subjects, but the effectiveness of the ambulatory care programs was the main focus.

Methods: Meta-regression analysis, multivariable difference-in-difference models

Song Z, Rose S, Chernew ME, Safran DG. Lower- Versus Higher-Income Populations In The Alternative Quality Contract: Improved Quality And Similar Spending. *Health Affairs*. 2017;36(1):74-82. doi: 10.1377/hlthaff.2016.0682

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Journal Article

Objective: To test how population-based payment models affect health disparities. The authors evaluated health care quality and spending among enrollees in areas with lower versus higher socioeconomic status in Massachusetts before and after providers entered into the Alternative Quality Contract (AQC), a two-sided population-based payment model with large incentives tied to quality.

Main Findings: The study found that care quality increased for all enrollees in the Alternative Quality Contract after their provider organizations entered the contract. Process measures improved 1.2 percentage points per year more among those in areas with lower socioeconomic status than among those in areas with higher socioeconomic status. Larger or comparable improvements in quality among enrollees in areas with lower socioeconomic status suggest a potential reduction in disparities. Strong pay-for-performance incentives within a population-based payment model could encourage providers to focus on improving quality for more vulnerable populations.

Strengths/Limitations: Authors noted that assignment of enrollees to subgroups of lower and higher socioeconomic status using geographic data might involve assignment error.

Generalizability to Medicare Population: Weak; the study was conducted with beneficiaries in Blue Cross Blue Shield of Massachusetts.

Methods: Retrospective cohort study focused on comparisons between subgroups in areas with lower and higher socioeconomic status. One cohort included enrollees whose primary care physicians belonged to organizations that joined the AQC in 2009. In secondary analyses of process measures and spending, authors used a cohort whose primary care physicians belonged to organizations not in the AQC as a control group, to test whether trends by income group varied outside of the contract. The secondary analyses used national and New England Healthcare Effectiveness Data and Information Set (HEDIS) average performance scores as an unadjusted comparison benchmark.

Sparer M. Medicaid Managed Care: Costs, access, and quality of care. RWJF. Published September 4, 2012. <https://www.rwjf.org/en/library/research/2012/09/medicaid-managed-care.html>. Accessed January 10, 2022.

Subtopic(s): Findings Related to Potential Population-Based TCOC Models

Type of Source: Report

Objective: To synthesize literature that explores the role of managed care within the context of Medicaid, paying particular attention to care access, quality, and costs/savings in relation to MMC.

Main Findings: There is limited evidence of MMC resulting in national savings; however, a select number of states have generated savings through managed care, particularly those that offer higher reimbursement FFS rates. Findings related to MMC and improved access to care are mixed with one notable finding being evidence, limited though it may be, regarding the relationship between managed care and increased likelihood of an established source of care and decreased ED visits. The report found there to be limited research surrounding MMC and care quality. Finally, the report points to a disconnect between the criteria used by states to assess the success of MMC programs versus the methodologies applied by academics to publish peer-reviewed evaluations of these same programs.

Strengths/Limitations: The report cites several challenges to evaluating the state of MMC programs across the U.S. with the overarching challenge being that each state operates its own Medicaid program. There is a lack of consistency in terms of programmatic criteria, organizational structure, and conceptions of what managed care consists of within the context of Medicaid.

Generalizability to Medicare Population: Moderate; although Medicare is not the focus of the report, the report cites findings pertaining to Medicare.

Methods: The report reviews literature on MMC; however, it does not detail the criteria used for inclusion in the report or search terms used to gather sources.

The Commonwealth Fund. Guide to Evidence on the Health Care Impacts of Interventions to Address the Social Determinants of Health. 2019. <https://www.commonwealthfund.org/sites/default/files/2019-06/ROI-Calculator-Evidence-Guide%20-%20FINAL.pdf>

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Report

Objective: To summarize the assessment of the best available evidence of health care impact for interventions related to addressing HRSNs for high-need adults.

Main Findings: The guide provides relevant evidence from peer-reviewed and grey literature addressing the costs of social service interventions and/or health care utilization outcomes for adult patients and clients. This evidence is divided into six separate categories: housing, nutrition, transportation, home modification, care management, and counseling on legal, financial, and social aspects.

Strengths/Limitations: The authors of this guide were able to form a planning tool/framework to help create sustainable partnerships that help address the social determinants of health. A strength of this guide is that it addresses all social determinants of health and provides solutions for how these issues can be addressed.

Generalizability to Medicare Population: Moderate; given that Medicare beneficiaries could be suffering from one of the six social determinants of health, it can be useful for providers or community-based organizations to know how they can help address such issues, and following this guide can make that easier.

Methods: Literature review

The Commonwealth Fund. Medicaid Pay-for-Performance: Ongoing Challenges, New Opportunities. Accessed January 9, 2022. <https://www.commonwealthfund.org/publications/newsletter-article/medicaid-pay-performance-ongoing-challenges-new-opportunities>

Subtopic(s): Research Related to Population-Based TCOC Models

Type of Source: Newsletter Article

Objective: To review Medicaid pay-for-performance programs, paying particular attention to challenges and trends in the use of quality incentives while also highlighting a few specific strategies currently employed by states.

Main Findings: Pay-for-performance programs began in the private sector, though they were soon introduced into Medicare and Medicaid—as of 2006, over half of state Medicaid programs had implemented at least one pay-for-performance program. These programs use a mix of monetary (e.g., bonus payments) and non-monetary (e.g., rewarding health plans with more enrollees) incentives. Some of the challenges cited include: when and which providers/communities should be engaged for these programs, whether performance benchmarks should be relative or standardized, how these programs will be funded, which data should be used to inform program design and functioning, and how these programs will be implemented and evaluated.

Strengths/Limitations: The information in the article is from the early 2000s—some of the challenges, opportunities, and data points cited in the article are no longer relevant.

Generalizability to Medicare Population: Moderate; although Medicare is not the focus of the article, Medicare’s efforts to phase in pay-for-performance approaches are cited in the article.

Methods: N/A

The Lewin Group, Inc. CMS Bundled Payments for Care Improvement Initiative Models 2-4: Year 5 Evaluation & Monitoring Annual Report. October 2018. <https://downloads.cms.gov/files/cmimi/bpci-models2-4-yr5evalrpt.pdf>

Subtopic(s): Appendix D. Summary of Model and TCOC-Related Characteristics of Selected CMMI Models, and Other CMS and Demonstrations

Type of Source: Report

Objective: To evaluate the Bundled Payments for Care Improvement Initiative (BPCI) Models’ impact on participation levels and quality of care.

Main Findings: BPCI Model 2 accounted for nearly 90 percent of the approximately 796,000 episodes initiated during the first 13 quarters of the initiative. Though many more Episode Initiators (EIs) participated in Model 3 than Model 2, episode volume was lower than in Model 2. Participation in Model 4 waned. Additionally, Medicare payments went down for 75 percent of the clinical episode combinations evaluated with little change in quality of care.

Strengths/Limitations: Authors noted that in some instances, there were differences in baseline levels of the outcome, which raised questions about whether the BPCI and matched comparison group had the same underlying trend in that outcome, a key assumption for the validity of the difference-in-differences. They also noted that the evaluation of the BPCI initiative was not complete and, at the time of publication, there were seven more quarters of claims and assessment data to evaluate.

Generalizability to Medicare Population: Strong; report focuses on analysis of a Medicare payment model.

Methods: Mixed-method; analyses of Medicare claims and enrollment data, post-acute care (PAC) provider patient assessments, Awardee-submitted data, beneficiary surveys, participant interviews, and site visits

The MITRE Corporation. APM Framework. Published online 2017. <https://hcp-lan.org/workproducts/apm-refresh-whitepaper-final.pdf>

Subtopic(s): Background: Defining Potential TCOC Models and Potential Terms

Type of Source: Report

Objective: To provide information on payment approaches across the public and private sectors of the U.S. health care system and create a framework to track progress toward payment reform.

Main Findings: Transitioning from FFS to a population-based payment model would be beneficial for health care transformation. The APM framework provides solid approaches that can help with the mapping of payment approaches and serve as a pathway to payment reform. Stakeholders can use the framework by implementing the strategies relevant to them. Changes will occur with new developments, but the APM framework should be robust enough to accommodate future changes.

Strengths/Limitations: The framework can serve as a very useful guide to stakeholders, such as patient advocacy groups to payers. The framework is detailed enough to provide enough information and guidance to help address payment reform, new developments, and more.

Generalizability to Medicare Population: Moderate; although the framework is not directly set to Medicare beneficiaries specifically, it is a model that can be used by Medicare physicians, advocacy groups, and others to help address the challenges within financial aspects of care of the health care system.

Methods: N/A

Timbie JW, Bogart A, Damberg CL, et al. Medicare Advantage and Fee-for-Service Performance on Clinical Quality and Patient Experience Measures: Comparisons from Three Large States. *Health Serv Res.* 2017;52(6):2038-2060. doi:10.1111/1475-6773.12787

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Journal Article

Objective: To compare performance between MA and FFS Medicare during a time of policy change affecting both programs.

Main Findings: MA outperformed FFS on all 16 clinical quality measures, and Medicare Advantage enrollees reported better experiences, but FFS beneficiaries reported having better access to care overall. Performance gaps were wider for HMOs than they were for preferred provider organizations (PPOs) when it came to the FFS beneficiaries/program.

Strengths/Limitations: The study had various limitations. One was that although the analyses covered about 25 percent of the MA enrollee population in 2012, the data collected consisted of mainly three states. Because of this, the sample may not be representative of all the MA enrollees.

Generalizability to Medicare Population: Strong; study focuses on Medicare and Medicare beneficiaries.

Methods: Case mix-adjusted analyses were used to explore the effect of case mix on MA/FFS differences.

Tricco AC, Antony J, Ivers NM, et al. Effectiveness of quality improvement strategies for coordination of care to reduce use of health care services: a systematic review and meta-analysis. 2014;11.

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Journal Article

Objective: To conduct a meta-analysis of the effectiveness of interventions to improve the coordination of care to reduce health care utilization in this patient group.

Main Findings: Quality improvement strategies directly correlated to a reduction in hospital admissions among patients with chronic conditions other than mental illness, and also helped with the reduction of ED visits among older patients.

Strengths/Limitations: Some limitations to the study include the small number of details about the intensity and “dose” of quality improvement strategies, and the duration of intervention could have been too short to show any impact. In some studies, the duration follow-up was also short, and in other studies the definition of frequent user varied.

Generalizability to Medicare Population: Weak; although the improvements can serve beneficial to Medicare beneficiaries, the study focused on interventions to improve care coordination.

Methods: The researchers developed a protocol according to the PRISMA-P statement.

U.S. Government Accountability Office. Information on the Transition to Alternative Payment Models by Providers in Rural, Health Professional Shortage, or Underserved Areas. GAO-22-104618, Published: Nov. 17, 2021. Publicly Released: Nov. 17, 2021.

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Report

Objective: To describe: 1) participation in Advanced APMs by providers in rural or shortage areas; 2) challenges providers in rural, shortage, or underserved areas face in transitioning to APMs, including Advanced APMs; and 3) actions CMS has taken to help these providers transition to APMs.

Main Findings: A smaller percentage of providers eligible to participate in Advanced APMs (eligible providers) in rural or health professional shortage areas participated in them each year from 2017 through 2019 compared to providers not located in these areas. Providers in rural, shortage, or medically underserved areas face financial, technology, and other challenges in transitioning to APMs, including Advanced APMs.

Strengths/Limitations: The most recent data analyzed were from 2019.

Generalizability to Medicare Population: Strong; Medicare beneficiaries are included in Advanced APMs.

Methods: Mixed methods analysis, including interviews with CMS officials and representatives from 18 stakeholder organizations

van Hasselt M, McCall N, Keyes V, Wensky SG, Smith KW. Total Cost of Care Lower among Medicare Fee-for-Service Beneficiaries Receiving Care from Patient-Centered Medical Homes. Health Serv Res. 2015;50(1):253-272. doi:10.1111/1475-6773.12217

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Research Article

Objective: To compare health care utilization and payments between NCQA-recognized PCMH practices and practices without such recognition.

Main Findings: Total Medicare payments, acute care payments, and the number of emergency room visits declined after practices received NCQA PCMH recognition, relative to the

comparison group. A larger decline was observed for practices with sicker than average patients, primary care patients, and solo practices.

Strengths/Limitations: Strength of this study is the use of a large, longitudinal sample of medical practices. The study was limited to Medicare FFS beneficiaries and the practices that serve them, which may differ from the general population.

Generalizability to Medicare Population: Strong; TCOC among Medicare FFS beneficiaries was examined in the paper.

Methods: Quasi-experimental study design

Verma S. 2019 Medicare Shared Savings Program ACO Performance: Lower Costs and Promising Results Under 'Pathways to Success.' Health Affairs. 2020.

<https://www.healthaffairs.org/doi/10.1377/forefront.20200914.598838/full/>

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Website

Objective: To provide insight into how ACOs have been able to produce better quality of care and lower costs through programs like the MSSP and Pathways to Success.

Main Findings: In 2019, the MSSP generated \$1.19 billion in savings to Medicare, setting a record high number. ACOs in the Pathways to Success program had better outcomes than those not affiliated with the program. ACOs considered "low revenue" with physicians that mostly provide outpatient services performed better than "high revenue" ACOs.

Strengths/Limitations: The Pathways to Success program appears to be promising and a beneficial implementation to those that have become involved with it. The program has brought in larger savings to Medicare and will likely continue to be at the forefront of health care programs.

Generalizability to Medicare Population: Strong; Medicare beneficiaries and providers are associated with these programs.

Methods: N/A

Webb AR, Liaw W, Chung Y, Petterson S, Bazemore A, Accountable Care Organizations Serving Deprived Communities Are Less Likely to Share in Savings, J Am Board Fam Med 2019;32:913–922.

Subtopic(s): Challenges and Opportunities Related to Implementing Population-Based TCOC Models

Type of Source: Journal Article

Objective: To examine the relationship between ACO savings rates and ACO service area characteristics.

Main Findings: ACOs serving deprived communities generate less savings. After adjusting for ACO and beneficiary characteristics, ACOs serving the most deprived had a savings rate that was 2.3 percentage points lower than those serving the least deprived.

Strengths/Limitations: The study could not account for individual characteristics or measure the strength of relationships between beneficiaries and ACOs. The ACO service area calculated in the study may not coincide with the ACO's actual service area, and the authors could not incorporate more specific details on payer mix and electronic health record (EHR) capabilities that could affect ACOs' abilities to provide coordinated care to patients.

Generalizability to Medicare Population: Strong; study incorporated Medicare data.

Methods: Cross-sectional analysis of Medicare Shared Savings Program (MSSP) ACO provider and beneficiary data, public use files of ACO and beneficiary characteristics, and American Community Survey data

Zaresani A, Scott A. Is the evidence on the effectiveness of pay for performance schemes in healthcare changing? Evidence from a meta-regression analysis. BMC Health Serv Res. 2021;21(1). doi:10.1186/s12913-021-06118-8

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models

Type of Source: Journal Article

Objective: To investigate if the evidence on the success of the Pay-for-Performance (P4P) schemes in health care is changing as the schemes continue to evolve by updating a previous systematic review.

Main Findings: Countries are adopting P4P schemes, and there was weak evidence that the proportion of studies with statistically significant effects has increased. P4P schemes have managed to gain traction, and not much is being learned from countries that already have these in place.

Strengths/Limitations: This study used meta-regression analysis for Pay-for-Performance schemes. Data extraction was limited because other studies varied in how they reported the payment and study designs.

Generalizability to Medicare Population: Low; the paper analyzes the Pay-for-Performance schemes and the level at which they have continued to evolve.

Methods: Meta-regression analysis

Zhu M, Saunders RS, Muhlestein D, Bleser WK, McClellan MB. The Medicare Shared Savings Program In 2020: Positive Movement (And Uncertainty) During A Pandemic. Health Affairs 2021.

<https://www.healthaffairs.org/doi/10.1377/forefront.20211008.785640/full/>

Subtopic(s): Findings from Research Related to Potential Population-Based TCOC Models; Opportunities for Improving and Optimizing Efforts to Develop TCOC Models and Reduce TCOC in APMs and PFPs

Type of Source: Journal Article

Objective: To provide insight into the MSSP and analyzing the yearly performance of the program considering the COVID-19 pandemic.

Main Findings: The number of overall covered lives increased, but the number of ACOs that participated in MSSP in 2020 decreased by 5 percent. The program saw savings exceeding \$1.86 billion in net savings to CMS compared to benchmarks. ACOs with a larger number of contracts achieved savings at higher rates, and all types and sizes of ACOs achieved net savings per capita.

Strengths/Limitations: Strengths of the report include being able to provide valuable insight but also account for the impacts of the pandemic on the MSSP program. Limitations include the inability to observe the level of positive gains that could have been observed without the pandemic.

Generalizability to Medicare Population: Strong; Medicare beneficiaries are subjects of this matter and play an active role in the findings of the MSSP report.

Methods: N/A

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<https://aspe.hhs.gov/sites/default/files/private/pdf/252376/VotingPatternsandCommentsonProposedModelsasofDec2019.pdf>

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<https://hscrc.maryland.gov/Documents/Modernization/TCOC-State-Agreement-CMMI-FINAL-Signed-07092018.pdf>

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