Environmental Scan on Identifying a Pathway Toward Maximizing Participation in Population-Based Total Cost of Care (PB-TCOC) Models

September 13, 2024

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 theme-based discussion on identifying a pathway toward maximizing participation in population-based total cost of care (PB-TCOC) models. This environmental scan provides background on the goal of having all Medicare beneficiaries with Parts A and B in accountable care relationships by 2030; information on challenges and technical issues related to maximizing participation in PB-TCOC models; and summarizes relevant features in previously submitted PTAC proposals. Appendices include tables summarizing relevant features of selected Center for Medicare and Medicaid Innovation (CMMI) models and selected previously submitted PTAC proposals.[i]

[i] This analysis was prepared under contract #HHSP233201500048IHHS75P00123F37023 between the Department of Health and Human Services' Office of Health Policy of the Assistant Secretary for Planning and Evaluation (ASPE) and NORC at the University of Chicago. The opinions and views expressed in this analysis are those of the authors. They do not reflect the views of the Department of Health and Human Services, the contractor, or any other funding organizations. This analysis was completed on September 13, 2024. It was updated to incorporate an annotated bibliography and finalized on April 18, 2025.

Table of Contents

List of Exhibits

List of Acronyms

ACEP	American College of Emergency Physicians
ACO	Accountable Care Organization
ACO AIM	Accountable Care Organization Investment Model
ACO PC Flex	Accountable Care Organization Primary Care Flex
ACO REACH	Accountable Care Organization Realizing Equity, Access, and Community Health
ADI	Area Deprivation Index
AIP	Advance Investment Payments
AHEAD	States Advancing All-Payer Health Equity Approaches and Development
AHRQ	Agency for Healthcare Research and Quality
APM	Alternative Payment Model
AQS	Aggregate Quality Score
ASPE	Assistant Secretary for Planning and Evaluation
AUCM	Acute Unscheduled Care Model
BPCI-A	Bundled Payments for Care Improvement Advanced
CAHPS	Consumer Assessment of Healthcare Providers and Systems
CBO	Community-based organizations
CDC	Centers for Disease Control and Prevention
CEC	Comprehensive End-Stage Renal Disease Care
CHIP	Children's Health Insurance Program
CHW	Community health workers
CI/SEP	Continuous Improvement and Sustained Exceptional Performance
CKD	Chronic kidney disease
CMMI	Center for Medicare and Medicaid Innovation
CMS	Centers for Medicare & Medicaid Services
CPC	Comprehensive Primary Care
CQS	Composite Quality Score
DCE	Direct Contracting Entity
E&M	Evaluation and management
ED	Emergency department
EHR	Electronic health record
EI	Episode Initiator
EOM	Enhancing Oncology Model
ET3	Emergency Triage, Treat, and Transport
ETC	End-Stage Renal Disease Treatment Choices
ESRD	End-stage renal disease
FFS	Fee-for-service
FHIR	Fast Healthcare Interoperability Resources
GAO	Government Accountability Office
GCT	Geriatrician care team
GDPC	Global and Professional Direct Contracting
GUIDE	Guiding an Improved Dementia Experience
HaH-Plus	Hospital at Home-Plus
HCC	Hierarchical condition categories
HCP-LAN	Health Care Payment Learning & Action Network

HEBA	Health Equity Benchmark Adjustment
HEP	Health Equity Plan
HHS	Health and Human Services
HHVBP	Home Health Value-Based Purchasing
HRSN	Health-related social need
ICM	Intensive care management
I-PaCS	Integrated Primary Care and Community Support
IT	Information technology
KCC	Kidney Care Choices
MA	Medicare Advantage
MACRA	Medicare Access and Children's Health Insurance Program Reauthorization Act
MA VBID	Medicare Advantage Value-Based Insurance Design
MCCM	Medicare Care Choices Model
MCP	Making Care Primary
MD-TCOC	Maryland Total Cost of Care
MedPAC	Medicare Payment Advisory Commission
MEOS	Monthly Enhanced Oncology Services
MSSP	Medicare Shared Savings Program
OCM	Oncology Care Model
P4P	Pay-for-performance
PAC	Post-acute care
PACE	Program of All-Inclusive Care for the Elderly
PBP	Performance-based payment
PBPM	Per beneficiary per month
PBR	Performance-based recoupment
PB-TCOC	Population-based total cost of care
PCDT	Preliminary Comments Development Team
PCF	Primary Care First
PCMH	Patient-Centered Medical Home
PCP	Primary care physician
PFPM	Physician-focused payment model
PIP	Performance Incentive Payment
PRC	Personalized Recovery Care
PROM	Patient-reported outcome measure
PRT	Preliminary Review Team
PTAC	Physician-Focused Payment Model Technical Advisory Committee
RFI	Request for Input
RPA	Renal Physicians Association
RTS	Report to the Secretary
SDOH	Social determinants of health
SME	Subject matter expert
SNF	Skilled nursing facility
SNMHI	Safety Net Medical Home Initiative
TCM	Transitional care management
TEAM	Transforming Episode Accountability Model
UIP	Upfront Infrastructure Payment

U.S.	United States
VA	Veterans Affairs
VBP	Value-Based Purchasing

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 (PFPMs) and created the Physician-Focused Payment Model Technical Advisory Committee (PTAC) to review stakeholder-submitted PFPM 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 PFPMs 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 PFPM proposals based on the extent to which they meet the Secretary's 10 regulatory criteria for PFPMs (specified in federal regulations at 42 CFR § 414.1465).

Among the 35 proposals that were submitted to PTAC between 2016 and 2020, including 28 proposals that PTAC has deliberated and voted on during public meetings, nearly all of the proposals addressed the potential impact on cost and quality, to some degree. Committee members found that 20 of these proposals met Criterion 2 (Quality and Cost), including five proposals that were found to meet all 10 of the regulatory criteria established by the Secretary of Health and Human Services (the Secretary) for PFPMs. Additionally, at least nine other proposals discussed the use of TCOC measures in their payment methodology and performance reporting.

Given the increased emphasis on developing larger, population-based APMs that encourage accountable care relationships, PTAC has been conducting a series of theme-based discussions since 2022 that have examined various care delivery and payment issues related to developing and increasing participation in population-based total cost of care (PB-TCOC) models.

This environmental scan seeks to examine key issues related to identifying pathways toward maximizing participation in PB-TCOC models in order to achieve the Center for Medicare & Medicaid Services Center for Medicare and Medicaid Innovation's (CMMI or the Innovation Center's) goal of having all beneficiaries with Parts A and B in care relationships with accountability for quality and TCOC by 2030. The environmental scan will also examine components in several previously submitted PTAC proposals that are relevant for encouraging accountability for quality and TCOC as part of their proposed model designs.

Topics identified for investigation in this environmental scan include:

- Background on the objective of having all beneficiaries with Parts A and B in accountable care relationships;

[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 (seven, including one proposal that was withdrawn prior to any review by the Committee).

- Challenges and technical issues related to organizational structure, payment, and financial incentives; developing a balanced portfolio of performance measures; and data, benchmarking, and risk adjustment; and
- Relevant features in selected CMMI models and previously submitted PTAC proposals.

This environmental scan provides PTAC members with background information and context reflecting expert perspectives on issues related to identifying a pathway toward maximizing participation in PB-TCOC models. The environmental scan is expected to help PTAC members review strategies 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 that Committee members may submit to the Secretary relating to identifying a pathway toward maximizing participation in PB-TCOC models.

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 provide background on the goal of having all Medicare beneficiaries with Parts A and B in accountable care relationships (Section IV), technical issues in PB-TCOC models (Section V), relevant features in previously submitted PTAC proposals (Section VI), and areas where additional information is needed (Section VII). Additionally, a list of abbreviations can be found at the beginning of the environmental scan, following the Table of Contents.

II. Key Highlights

The following section provides important definitions and highlights key findings from this environmental scan on identifying a pathway toward maximizing participation in PB-TCOC models.

II.A. Definitions

Beginning in 2021, PTAC has conducted a series of theme-based discussions to examine topics relevant to PFPMs, with a focus on issues related to accountable care and PB-TCOC models. Within this context, PTAC has developed the following working definitions:

<u>Accountable Care Relationship</u>

- A relationship between a provider and a patient (or group of patients) that establishes that provider as accountable for quality and total cost of care (TCOC) including the possibility of financial loss/risk for an individual patient or group of patients for a defined period (e.g., 365 days).
- Would typically include accountability for quality and TCOC for all of a patient's covered health care services.

<u>Population-Based Total Cost of Care (PB-TCOC) Model</u>

- Alternative Payment Model (APM) in which participating entities assume **accountability for quality and TCOC** and receive payments for **all covered health care costs**[iii] for a broadly defined population with varying health care needs during the course of a year (365 days).

[iii] For this purpose, all covered health care costs does not include pharmacy-related costs (Medicare Part D).

- Within this context, a PB-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 PB-TCOC model.

These definitions will likely continue to evolve as the Committee collects additional information from stakeholders.

Additionally, based upon the information that the Committee has acquired over the course of its series of theme-based discussions relating to developing and implementing PB-TCOC models, PTAC has identified the following key questions for identifying pathways toward having all Medicare beneficiaries in accountable care relationships:

- Categorizing Medicare beneficiaries by the extent to which they are currently in care relationships with accountability for quality and/or TCOC.
- Characterizing geographic areas by the extent to which their providers are participating in value-based care.
- Identifying model characteristics associated with success.
- Developing approaches, models, target timeframes, and intermediary steps for increasing involvement in accountable care relationships for various categories of Medicare beneficiaries (e.g., by dual eligible status, age).
- Identifying and addressing gaps and challenges.

II.B. Key Findings

Below are highlights of the key findings from the different sections covered in this environmental scan.

Background on the 2030 Goal of Having All Beneficiaries in Accountable Care Relationships

The Centers for Medicare & Medicaid Services (CMS) Center for Medicare and Medicaid Innovation (CMMI; the Innovation Center) has identified a goal to have all Medicare beneficiaries with Parts A and B coverage in a care relationship with accountability for quality and TCOC by 2030.[1] The Medicare Payment Advisory Commission (MedPAC) has estimated that as of 2023, only about half of traditional Medicare beneficiaries were in accountable care relationships (defined within this context as Accountable Care Organizations (ACOs) or ACO-like models).[2]

Through a series of theme-based public meetings, PTAC has examined various issues related to implementing population-based TCOC (PB-TCOC) models and developed comments and recommendations related to designing and increasing provider participation in these models.[3] Some of the topics that have been addressed in PTAC's recommendations include, emphasizing person-centered team-based care, offering multiple participation tracks, integrating specialists, aligning performance metrics across models and payers, providing up-front funding and timely incentives for providers, rewarding improvement and absolute performance, and ensuring that the necessary data infrastructure is in place.

Several challenges exist related to increasing participation in APMs and accountable care relationships, including administrative complexity, the profitability of FFS arrangements, provider hesitancy to take on financial risk, and a need to focus on health equity.[4] A number of approaches to address these risks have been proposed, including reducing the overall number of models, increasing the duration of models,

aligning technical standards across models, increasing financial incentives and using multi-payer models, modifying benchmarking and risk adjustment methods, developing different participation tracks with varying levels of risk-bearing, and ensuring that health equity is a central model component.[5,6,7,8]

CMS has identified several steps to help advance accountable care at the Innovation Center, including developing APMs with varying risk and payment levels, creating incentives and approaches to promote specialty care, providing funding for small practices to implement value-based care, revising risk adjustment and benchmarking methodologies, and coordinating between Medicare and Medicaid.[9] Beginning in 2024, CMMI is initiating several new APMs that may help promote movement to more widespread provider participation in accountable care relationships.[10,11,12,13]

Challenges and Technical Issues in PB-TCOC Models

Challenges Regarding Organizational Structure, Payment, and Financial Incentives

Substantial resources and investments are required to build organizational competencies and ultimately redesign care under value-based models.[14] Due in part to a lack of resources, many challenges to participating in APMs are particularly acute for rural and underserved areas.[15] Generally, practices that operate within a larger medical group or health care system tend to show greater participation in APMs relative to independent practices.[16]

Different factors influence Accountable Care Organizations' (ACOs') success with reducing cost while maintaining or improving quality of care. For example, low-revenue ACOs, usually led by physicians, tend to outperform high-revenue ACOs, typically led by hospitals.[17] Whereas high-revenue ACOs had net per-beneficiary savings of $80 per beneficiary, low-revenue ACOs had a net per-beneficiary savings of $201 per beneficiary in 2019. In addition, ACOs that participate in two-sided risk models tend to generate more savings and receive bonuses than ACOs in one-sided risk models.[18] Despite its benefits, however, downside risk can discourage participation among providers serving rural or underserved populations.[19] These practices may lack the resources required to participate in APMs. For example, a lack of financial resources can prevent practices from investing in the infrastructure needed to improve value, meet quality benchmarks, and/or implement programs that reduce costs.[20]

Performance-based financial incentives can focus on clinical quality or patient safety, total cost of care, patient satisfaction or experience, panel size, access, and efficient utilization of resources.[21] Pay-for-performance (P4P) incentives, larger incentives, more timely incentives, and financial penalties for poor performance may have a positive impact on performance.[22,23,24,25] However, P4P programs can also have unintended consequences. For example, P4P programs can disproportionately penalize providers that treat patients who are high-risk or socially challenging. As a result, providers may cherry-pick patients to avoid penalties.[26]

Setting accountability across provider types poses a challenge to integrating primary and specialty care in PB-TCOC models. Further, the risk of financial loss while participating in TCOC models can deter some specialists from moving into value-based relationships.[27] Nesting specialty care episodes in PB-TCOC models through bundled payments may facilitate the integration of care received by primary care providers and specialists in PB-TCOC models.

Challenges Regarding Developing a Balanced Portfolio of Performance Measures

Many technical challenges exist with measuring performance in PB-TCOC models, including selecting appropriate and relevant measures, specifying how measures are constructed and data on measures are collected across providers with different data systems, capturing health equity considerations in measurement schema, and integrating specialty- or condition-specific performance measures.

To date, specialist integration into PB-TCOC models has been limited, with the most common type of APM – bundled payment models – addressing shorter-term or episodic needs, rather than long-term care and support provided by many specialists.[28] There are several challenges with integrating specialty- or condition-specific performance measures into PB-TCOC models, including selecting actionable and valid performance measures that capture high-value specialty care;[29] the importance of measures constructed using clinical (versus administrative) data, which can increase reporting burden;[30] barriers to data sharing between ACOs, primary care providers, and specialty care providers;[31] determining appropriate benchmarks;[32] and implementing performance measures specific to a subset of patients, including valid and reliable identification of these patients.

Incorporating patient-reported outcome measures (PROMs) that reflect quality of life, symptoms and symptom burden, and health behaviors is important in PB-TCOC models to capture outcomes that cannot be measured by administrative or claims-based data sources.[33] However, challenges remain related to capturing PROMs, including increased burden on providers and patients, measurement challenges, and technological barriers.[34] While patient-reported outcomes are included in current CMS programs and models at a low rate (9 percent of measures across selected CMS programs and models in 2023),[35] there has been an increased focus on integrating these outcomes in recent years.

There has also been an increased focus on using performance measures that evaluate whether PB-TCOC models are addressing health equity; however, lack of data collection and inconsistent measurement of disparities and health-related social needs (HRSNs) have limited efforts to mitigate health disparities and promote health equity to date.[36,37] In recent years, CMMI has intentionally designed models considering health equity, including the ACO Realizing Equity, Access, and Community Health (REACH) Model and the ESRD Treatment Choices Model.[38,39] Broadly, many PB-TCOC models, including ACO REACH, encourage or require participating organizations to develop appropriate data collection strategies to measure disparities; however, PB-TCOC models have not yet tied performance on health equity-related outcomes to payment.[40,41]

Challenges Regarding Benchmarking, Risk Adjustment, Attribution, and Data

Use of appropriate benchmarks, risk adjustment methods, patient attribution rules along with availability of relevant data sources, and access to a robust data infrastructure are essential requirements for achieving success through a PB-TCOC model; however, challenges exist within each of these areas.

Benchmarks that require improvement that is increasingly challenging to achieve during the course of a model, including rebasing benchmarks based on performance and changing benchmarks to be more difficult to achieve, may result in providers or organizations exiting the model.[42,43,44,45] Few risk adjustment methodologies incorporate social and area-level factors outside claims data that impact health. Additionally, the utility of benchmarks is limited by the data used to develop them; for instance,

if benchmarks are developed using data from administrative claims, financial settlements cannot be reliably computed until claims run-out is complete, which can lead to delays in reimbursement.[46]

Developers of patient attribution rules face challenges in determining the appropriate methodology to accurately identify relationships between providers based on historical and/or current patterns of care.[47,48,49] These challenges include determining the appropriate timing for using claims-based attribution algorithms (e.g., prospective or retrospective attribution), selecting an appropriate timeframe to establish historical care patterns, and capturing patients who seek a large proportion of their care from specialty providers.

Technical challenges related to addressing social determinants of health (SDOH) and health equity include collecting standardized data on individual-level social risk factors, incorporating area-level risks into benchmark and risk adjustment methodology, defining disparities and reference groups, and selecting appropriate data elements that capture relevant elements of social risk.[50,51]

Also, a range of data sources are needed to implement performance measures, calculate benchmarks, and accurately risk-adjust measures. Since performance measurement, benchmarking, and risk adjustment are key components of PB-TCOC models, it is essential that data sources are complete, reliable, and valid.

Many challenges remain, especially for smaller practices and/or practices in historically underserved areas, including accurate tracking and reporting for quality and financial metrics, determining the appropriate level of aggregation of results to provide meaningful and actionable data for providers (e.g., plan, provider or provider organizations, practice, geographic unit), sharing data while maintaining privacy and security, and combining often disparate electronic health record (EHR), clinical, and administrative data systems.[52,53] More technical assistance, greater financial resources, a longer "on-ramp" for financial accountability on quality measures, and additional time for establishing relationships with data owners may need to be built into future models for organizations to successfully build their data capacity and infrastructure.[54,55]

Relevant Features in Previously Submitted PTAC Proposals

Among the 35 proposals that were submitted to PTAC between 2016 and 2020, including 28 proposals that PTAC has deliberated and voted on during public meetings, nearly all proposals addressed the potential impact on cost and quality, to some degree. Committee members found that 20 of these proposals met Criterion 2 (Quality and Cost), including five proposals that were found to meet all 10 of the criteria established by the Secretary of Health and Human Services (the Secretary) for PFPMs. Additionally, at least nine other proposals discussed the use of TCOC measures in their payment methodology and performance reporting.

III. Research Approach

This section 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 the Office of the Assistant Secretary for Planning and Evaluation (ASPE) staff and with input from a subset of Committee members known as a Preliminary Comments Development Team (PCDT),[iv] the following high-level research questions were developed to inform this environmental scan:

- What has PTAC learned from the Committee's previous theme-based discussions that is relevant for identifying a pathway toward achieving the 2030 goal?
- What is CMS' plan for achieving the goal of having all traditional Medicare beneficiaries in accountable care relationships by 2030?
- What are the characteristics of beneficiaries who are not currently participating in accountable care relationships (e.g., ACOs, advanced primary care models)?
- What characteristics of different provider organization types (e.g., integrated care delivery system versus independent physician-led) are most conducive to supporting accountable care relationships and PB-TCOC models?
- How do different provider organization types achieve care coordination across multiple providers and settings?
- What types of financial incentives are used in current and planned PB-TCOC models?
- What kinds of financial incentives are used for providers participating in current and planned PB-TCOC models?
- How can nested models and episodes of care be used to better align financial incentives in PB-TCOC models?
- What types of performance measures are most appropriate for a measure portfolio for PB-TCOC models?
- How have PB-TCOC models integrated measures specific to specialty, condition, setting, and/or patient risk level?
- To what extent are patient-reported outcome measures included in current PB-TCOC models?
- What challenges exist with developing APM payment approaches when using multiple performance measures?
- What are current strategies for setting performance benchmarks in PB-TCOC models? Does this vary by performance measure domain (e.g., spending, patient-reported outcomes)? What factors are considered in determining the "appropriateness" of a benchmark?
- What are common risk adjustment frameworks for performance measures used in existing PB-TCOC models? What are the benefits and challenges of using these frameworks?
- What are current challenges in attributing patients to providers in PB-TCOC models?
- How are social determinants of health and/or health-related social needs accounted for in benchmarks or risk adjustment in PB-TCOC models?
- What data sources are needed to implement performance measures, including benchmarking and risk adjustment, in PB-TCOC models?
- What are existing best practices to ensure data interoperability across programs/ models/ settings?

[iv] A Preliminary Comments Development Team (PCDT) comprised five PTAC members: Angelo Sinopoli, MD (Lead); Joshua Liao, MD, MSc; Terry Mills Jr., MD, MMM; Soujanya Pulluru, MD; and James Walton, DO, MBA.

- To what extent is it currently possible for non-integrated provider organizations (such as independent physician-led organizations) to effectively share the necessary data to facilitate participation in PB-TCOC models?

These primary research questions, along with secondary research questions, organized by the environmental scan section, are provided in **Appendix A.**

III.B. Research Methods

The environmental scan includes information gathered from a targeted review of the literature, an analysis of selected previous PTAC proposals, and an analysis of selected CMMI models with a focus on three broad topics (background on the goal of having all Medicare beneficiaries with Parts A and B in accountable care relationships by 2030, technical issues in PB-TCOC models, and relevant features in previously submitted PTAC proposals). Resources most relevant to these topics and the research questions are reviewed and summarized here.

Appendix C, analysis of relevant components of selected previously submitted PTAC proposals, includes information based on a review of the previously submitted proposals themselves, PTAC reports to the Secretary, and content available in other documents related to the PTAC proposal review process documents (e.g., public meeting minutes, Preliminary Review Team [PRT] reports).

The analysis of selected CMMI models (**Appendix D**) is based on a review of publicly available resources, including descriptions on the CMMI website and technical documents related to each selected CMMI model, as well as recent CMMI model evaluation reports when available.

IV. Background on the Goal of Having All Beneficiaries in Accountable Care Relationships by 2030

In 2021, CMS published a white paper outlining its strategy refresh setting priorities for CMMI in its second decade since being established.[56] Driving accountable care was identified as one of five strategic objectives to advance health system transformation in the 2020s.[v] As a way to measure progress to achieving this objective, the Innovation Center specified a key metric as having all traditional Medicare beneficiaries (i.e., those with Medicare Parts A and B coverage) in a care relationship involving accountability for quality and TCOC by 2030.[57]

IV.A. The Accountable Care Relationship Goal and PB-TCOC Models

CMS uses the following definition of accountable care: "A person-centered care team takes responsibility for improving quality of care, care coordination and health outcomes for a defined group of individuals, to reduce care fragmentation and avoid unnecessary costs for individuals and the health system."[58]

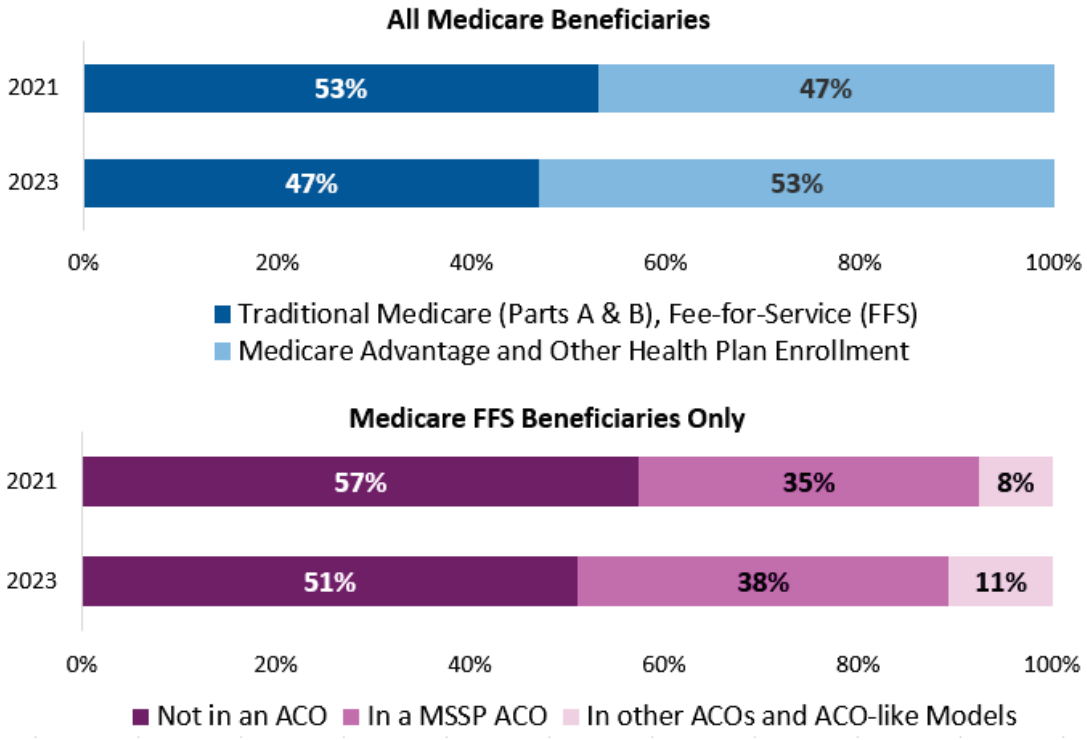
PTAC has developed the following working definition of an accountable care relationship:

[v] The Innovation Center's five strategic objectives are: drive accountable care, advance health equity, support innovation, address affordability, and partner to achieve system transformation.

- A relationship between a provider and a patient (or group of patients) that establishes that provider as accountable for quality and total cost of care (TCOC) including the possibility of financial loss/risk for an individual patient or group of patients for a defined period (e.g., 365 days).
- Would typically include accountability for quality and TCOC for all of a patient's covered health care services.

As of 2023, according to the Medicare Payment Advisory Commission (MedPAC), approximately half of beneficiaries in traditional Medicare were involved in an ACO or an ACO-like relationship, with the majority of those being part of a Medicare Shared Savings Program (MSSP) ACO (see Exhibit 1).[vi,59]

Exhibit 1. Medicare Beneficiaries in ACO or ACO-Like Relationships, 2021 Versus 2023



Source: Based on source data from the July 2021 and July 2023 MedPAC Data Books[60,61]

PB-TCOC models involve design and payment arrangements that promote and reward accountable care relationships. PTAC has developed the following working definition of PB-TCOC models:

- Alternative Payment Model (APM) in which participating entities assume **accountability for quality and TCOC** and receive payments for **all covered health care costs**[vii] for a broadly defined population with varying health care needs during the course of a year (365 days).

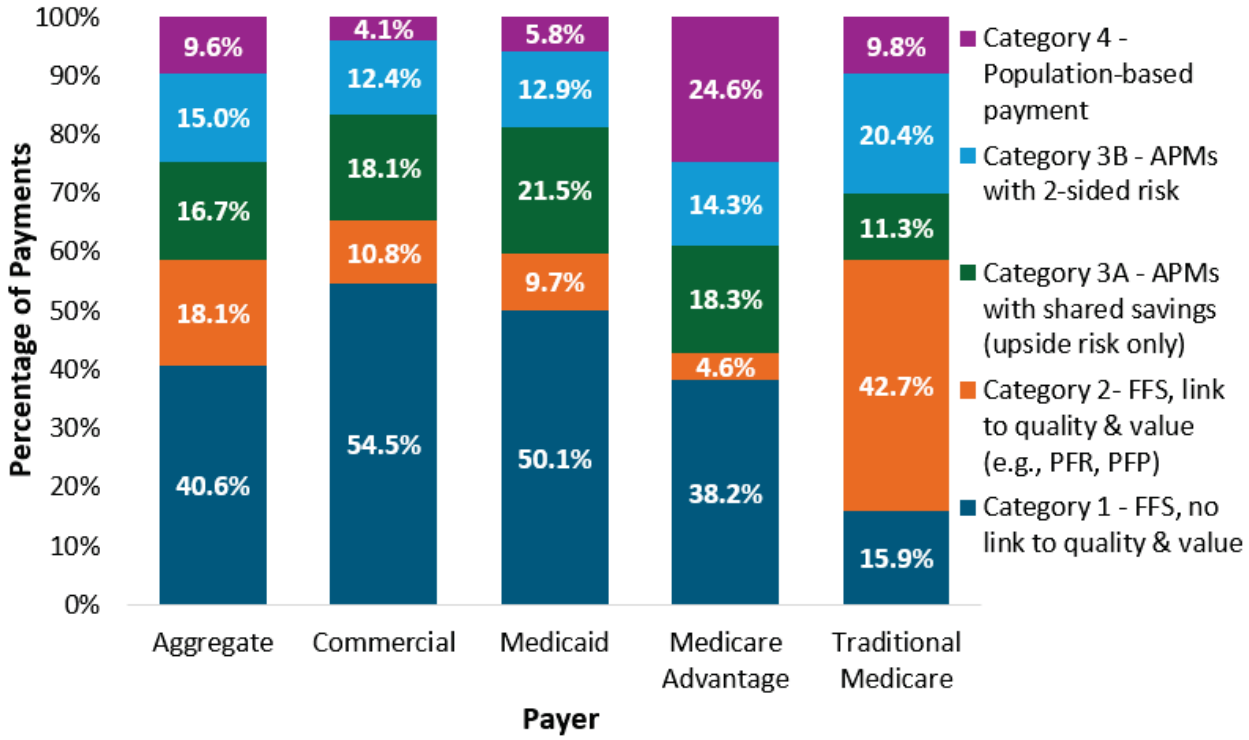
[vi] The remaining beneficiaries in accountable care relationships were part of other ACOs or ACO-like models, including the Next Generation ACO Model or ACO Realizing Equity, Access, and Community Health (REACH), the Maryland TCOC Model, and the Vermont All-Payer Model.

[vii] For this purpose, all covered health care costs does not include pharmacy-related costs (Medicare Part D).

- Within this context, a PB-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 PB-TCOC model.

Through its annual payer survey, the Health Care Payment Learning & Action Network (HCP-LAN) provides information on the percentage of U.S. health care payments that are population-based. HCP-LAN categorizes payments made to health care providers into one of four categories: Category 1: FFS with no link to quality and value; Category 2: FFS linked to quality and value; Category 3: APMs built on FFS architecture (subset as upside rewards only [3A] or both upside and downside risk [3B]); and Category 4: population-based payment.[62] The distribution of 2022 U.S. health care payments by payer and HCP-LAN payment category are shown in Exhibit 2.

Exhibit 2. Percentage of Payment by APM Payment Category and Payer Type, 2022



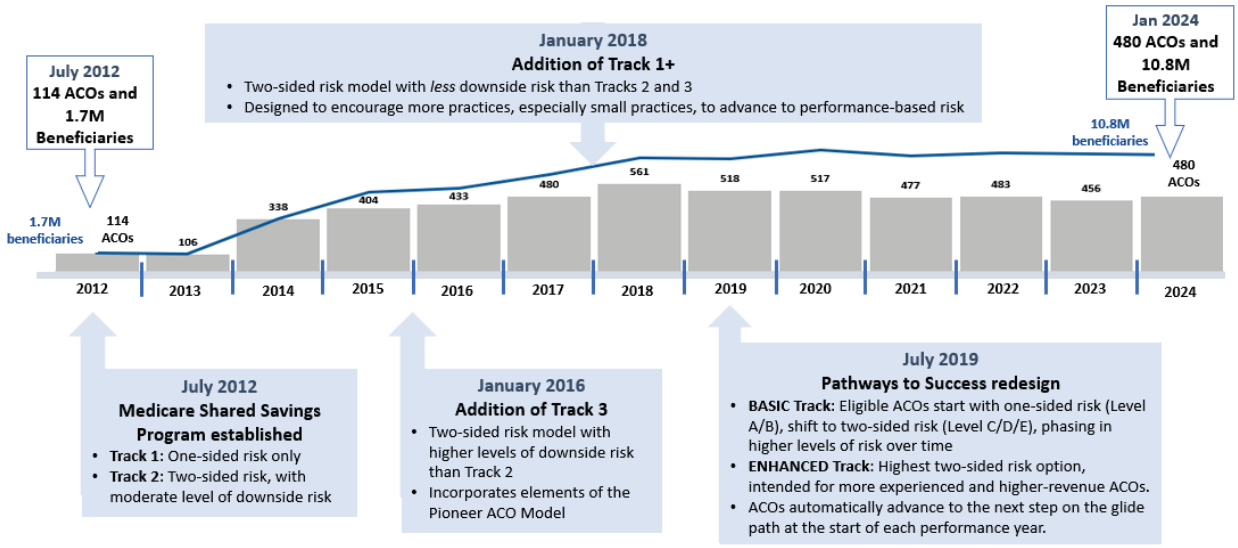
Source: ASPE PTAC September PCDT Findings Presentation, September 2024 (based on source data from HCP-LAN)[63]

As of 2022, less than 10 percent of U.S. health care payments were population-based (see Exhibit 2).[64] By payer, Medicare Advantage (MA) had the highest percentage of payments that were population-based (24.6 percent) whereas commercial payers had the lowest (4.1 percent). Payers are in various stages of shifting to population-based payments. Across payers, MA had the highest percentage of payments (57.2 percent [sum of Categories 3A, 3B, and 4]) associated with APMs involving shared savings or risk, or with population-based models. Traditional Medicare had the highest percentage of payments (84.2 percent [sum of categories 2, 3A, 3B, and 4]) associated with either advanced FFS models, APMs, or population-based models.

IV.B. Factors Affecting Medicare FFS Beneficiary Alignment with APMs

One of the most important factors that affects the number of Medicare FFS beneficiaries that are aligned with APMs relates to provider decisions to participate in these models. For example, Exhibit 3 shows that growth in beneficiary enrollment in the Medicare Shared Savings Program (MSSP) generally increased as the number of ACOs participating in the MSSP program was increasing, but became flat when the number of ACOs began to decrease.

Exhibit 3. The Evolution of the Medicare Shared Savings Program

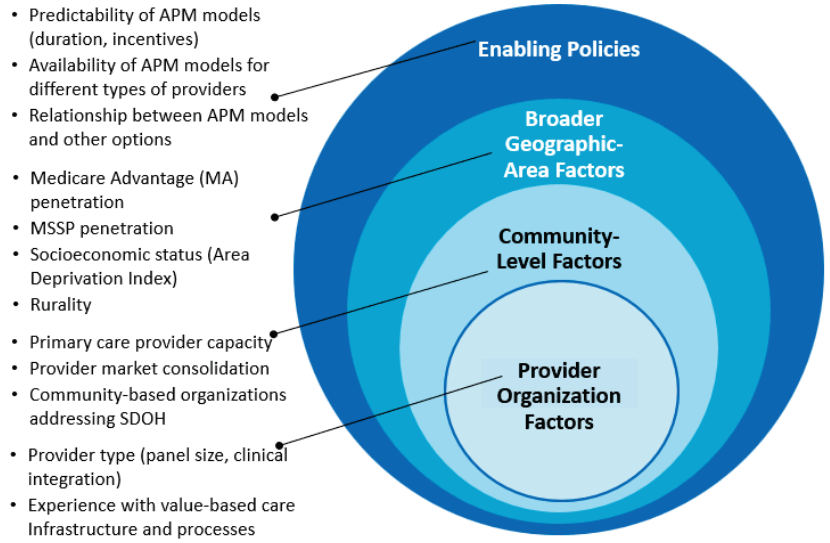


Source: ASPE PTAC September PCDT Findings Presentation, September 2024

More recently, as the proportion of physicians that are employed by hospitals or corporate entities has increased (from 62.2% in January 2019 to 77.6% in January 2024), ACO participation decisions may be primarily being made by non-provider organizations.[65]

Exhibit 4 provides an overview of additional provider organization, community-level, broader geographic area factors, and enabling policies that affect FFS beneficiary alignment with ACOs.

Exhibit 4. Factors Affecting Medicare FFS Beneficiary Alignment with ACOs



Evidence From Published Literature

ACO Participation More Likely	ACO Participation Less Likely
Urban location	Rural location
Northeast, South, Midwest	West
Moderate MA penetration	Lower MA penetration
Multispecialty practice	Single specialty or solo practice
Hospital-owned	Physician-owned
Involves PCPs	Does not involve PCPs
Integrated EHR system	Non-integrated EHR system
Previous risk experience	No previous risk experience

Source: ASPE PTAC September PCDT Findings Presentation, September 2024

IV.C. Summary of PTAC Recommendations Related to PB-TCOC Models

Between 2021 and 2024, PTAC has conducted a series of theme-based discussions to examine topics relevant to PFPMs, with a focus on issues related to accountable care and PB-TCOC models.[66]

Based on review of the literature, as well as expert and stakeholder input, PTAC has submitted comments and recommendations to the Secretary of HHS regarding development and implementation of PB-TCOC models.[67] PTAC's recommendations predominantly fall in four key domains related to PB-TCOC models: model design, performance measurement, financial methodology, and data infrastructure.

First, PTAC identified the importance of designing models that emphasize person-centered multidisciplinary team-based and involve multiple tracks for provider participation, including allowing a phase-in path for providers to begin to take on two-sided financial risk. PTAC has noted the importance of integrating specialists into these models, ensuring clearly defined roles for primary care providers (PCPs) and specialists. PTAC has also pointed to two high-level model design issues that require consideration: balancing whether participation in PB-TCOC models should be voluntary or mandatory, and aligning PB-TCOC models and incentives across multiple payers.

Second, PTAC has recommended that key performance metrics should be identified and that these measures should be aligned across PB-TCOC models. This is an essential step to simplify the requirements for participation in these models for providers who treat a wide range of patients across payers. Moreover, performance metric standardization can reduce the administrative burden associated with collecting and analyzing performance data. The Committee has also discussed the importance of promoting multi-payer alignment, including across data and payment methodology approaches such as patient attribution and risk adjustment.

Third, PTAC has pointed out the need for sufficient up-front funding to be available for practices to invest in resources—including staff and information technology—to create the infrastructure that will be required to promote changes in care delivery. Additionally, the Committee has noted that timely incentives are critical for promoting change at both the individual provider level and the level of the larger provider organizational entity. PTAC also has noted the importance of ensuring that financial incentives reward not only performance improvement but also absolute performance relative to benchmarks.

Finally, PTAC has identified the critical role that data infrastructure plays in the success of PB-TCOC models, reflecting on the necessity of ensuring that data can be readily accessed and exchanged in a timely manner so that providers are able to effectively use the information.

PTAC's examination of issues related to successful implementation of PB-TCOC models has extended to focus in-depth on several topics, including care coordination, SDOH and health equity, specialty integration, care transitions, and rural providers. PTAC has produced a series of reports with comments and recommendations to the Secretary of HHS relating to each of these topics.[68,69,70,71,72] A summary of PTAC's key findings related to these additional topics is provided in **Appendix B**.

Drawing upon previous PTAC recommendations, PTAC has identified the following key questions for identifying pathways toward having all Medicare beneficiaries in accountable care relationships:

- Categorizing Medicare beneficiaries by the extent to which they are currently in care relationships with accountability for quality and/or TCOC.
- Characterizing geographic areas by the extent to which their providers are participating in value-based care.
- Identifying model characteristics associated with success.
- Developing approaches, models, target timeframes, and intermediary steps for increasing involvement in accountable care relationships for various categories of Medicare beneficiaries (e.g., by dual eligible status, age).
- Identifying and addressing gaps and challenges.

IV.D. Challenges and Approaches to Increasing Provider Participation in PB-TCOC Models

Following the varied model testing that occurred during the 2010s, Rachel Werner and colleagues (2021) identified several challenges to achieving accountable care in APMs: administrative complexity, the profitability of FFS arrangements, provider hesitancy to shift to risk-bearing arrangements, and a need to focus on health equity.[73]

First, there is substantial administrative complexity associated with participating in APMs, both in terms of the number of overlapping and potentially competing models, as well as the requirements associated with participation.[74] CMS and CMMI simultaneously administer multiple APMs with multiple participation tracks, and many providers participate in different models concurrently.[75] This overlap can result in confusion for providers regarding focus areas around practice transformation and dilute financial incentives across models.[76,77] MedPAC recommended implementation of a smaller and more harmonized portfolio of APMs.[78] Relatedly, shifting attention from short-term models to more longitudinal models may be useful to allow providers to focus on the necessary infrastructure investments and transformations required to achieve accountable care.[79,80]

Participation in APMs is also made more difficult because of the administrative burden associated with participation. This issue can be exacerbated by differing requirements across models and payers. For example, technical standards and definitions, such as performance measure specifications and risk adjustment methods, can vary substantially across models, even when they are focusing on the same or very similar goals (e.g., definition of a measure of diabetes control).[81] Aligning technical standards across models and payers would simplify the burden to providers participating in APMs.

A second challenge to moving to accountable care relationships is the profitability of traditional FFS.[82] To address this challenge, efforts could be made to make the traditional FFS payment system less attractive by modifying the payment schedule to shift reimbursements away from specialty procedures and toward primary care.[83] On the flip side, the value of the financial incentives could be raised to increase the appeal of participation in APMs.[84] A related approach is to increase multi-payer involvement in APMs (i.e., including Medicaid and commercial/employer plans in addition to Medicare), thereby increasing the number of patients impacted, expanding available revenue, and strengthening incentives associated with participating in these models.[85] Additionally, CMS could consider implementing hybrid payment models, in which reimbursement is based on both FFS and prospective or capitated payments to encourage team-based primary care.[86,87]

From a technical perspective, performance benchmarks and risk adjustment methods can be identified that will be more likely to encourage provider participation in APMs.[88] Current benchmarking approaches commonly use a provider's own performance, either individually or as part of a region, to define the benchmark, which is rebased over time as performance changes. This approach creates a scenario (sometimes referred to as a "ratchet effect") that may penalize already efficient providers and may discourage providers from staying in the model as it becomes increasingly difficult to meet the shifting benchmark when the opportunity for further efficiency improvements diminishes.[89] Risk adjustment approaches also are needed that adequately adjust a provider's performance metrics to account for their patient mix. Methods that rely on provider-reported clinical coding may encourage gaming compared with more independent measures of health risk such as from the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey.[90] Further, adjusting benchmarks for providers who disproportionately treat underserved groups is an important consideration for promoting health equity.[91]

A third challenge to provider participation in APMs is simply that some providers are unable or unwilling to take on the financial risk associated with accountable care relationships.[92] Providers who already are established and financially able to take on risk (e.g., hospital systems or large academic medical centers) may be more inclined to voluntarily shift to accountable care relationships, whereas those without the infrastructure or resources (e.g., smaller independent physician practices unaffiliated with a system), or where the profitability of FFS is strong, may be less willing to participate in APMs.[93] The level of risk-bearing also affects organizations' ability to participate in APMs, as larger organizations have greater ability to hold risk to make system-level changes and further incentivize efficient care with additional financial incentives, as seen in the Next Generation ACO model.[94] A longer ramp-up period to shift to downside risk may also be helpful for some ACOs; a study of MSSP ACOs showed that ACOs may need more than one to three years of upside-only risk to be ready to successfully assume downside risk.[95]

One approach is to shift from voluntary to mandatory participation in APMs. However, mandated participation may meet with substantial stakeholder pushback. An alternative is to develop different

tracks to participation that accommodate providers with varying capability to take on shared risk, such as providing a low-risk option for small practices.[96] As providers begin to transform their practices, they can be shifted to increasingly higher levels of risk sharing.[97]

A final challenge in the shift to accountable care is that APMs have typically not focused on addressing health equity as a goal related to performance.[98] Reducing health disparities and promoting health equity has been identified as a key objective for 2030 by HHS generally and for CMMI APMs specifically.[99,100] Because health equity has not been a focal consideration in the design of many APMs to date, health disparities may remain unchanged or even unintentionally worsened as a result of these models.[101] Well-designed risk adjustment approaches are one method to begin to address health equity issues; providing funding and tying financial incentives directly to care of socially disadvantaged populations is another option.[102,103]

IV.E. CMMI Models and Plans for Accountable Care Relationships

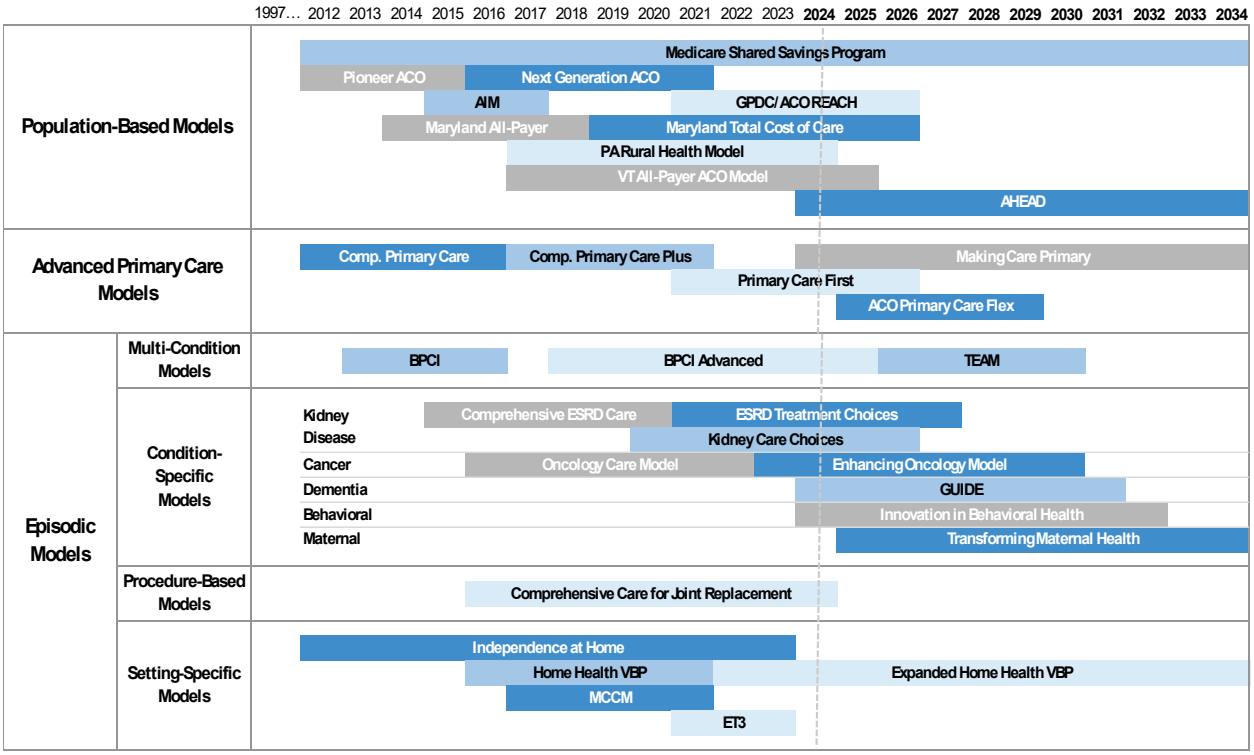
In its 2021 strategy refresh, the CMS Innovation Center outlined steps to achieve the goal of having all beneficiaries with Medicare Parts A and B in accountable care relationships by 2030.[104] Approaches outlined by CMMI that may help with progress toward this goal include:

- Varying risk and payment levels based on provider readiness;
- Using incentives and approaches to promote integration of specialty care;
- Funding small practices to facilitate transition to value-based care;
- Revising risk adjustment and benchmarking methodologies;
- Coordinating among other Medicare and Medicaid programs;
- Using meaningful outcome measures such as PROMs; and
- Addressing issues with beneficiary engagement, alignment, and attribution.

Many of CMMI's proposed steps to increase provider participation in PB-TCOC models align with approaches identified in the literature (see Section IV.D).

In addition to completing and extending several ongoing APMs, CMMI is introducing a number of new models beginning in 2024 and beyond. The history and future of CMMI models are summarized in Exhibit 5.

Exhibit 5. The Evolution of CMS and Innovation Center Models



Abbreviations: Accountable Care Organization (ACO) Investment Model (AIM); Global and Professional Direct Contracting (GDPC) Model/Accountable Care Organization (ACO) Realizing Equity, Access, and Community Health (REACH); States Advancing All-Payer Health Equity Approaches and Development (AHEAD) Model; Bundled Payments for Care Improvement (BPCI) Model; Bundled Payments for Care Improvement Advanced (BPCI Advanced) Model; Comprehensive End-Stage Renal Disease (ESRD) Care (CEC); End-Stage Renal Disease Treatment Choices (ETC); Home Health Value-Based Purchasing (VBP); Medicare Advantage (MA) Value-Based Insurance Design (VBID); Medicare Care Choices Model (MCCM); Guiding an Improved Dementia Experience (GUIDE) Model; Emergency Triage, Treat, and Transport (ET3) Model; Transforming Episode Accountability Model (TEAM)

Source: ASPE PTAC September PCDT Findings Presentation, September 2024

Among the new models scheduled to begin in 2024–2026 are the States Advancing All-Payer Health Equity Approaches and Development (AHEAD) Model, Guiding an Improved Dementia Experience (GUIDE) Model, Transforming Episode Accountability Model (TEAM), and Accountable Care Organization (ACO) Primary Care Flex (ACO PC Flex) Model.

AHEAD, a voluntary state-level model initiated in 2024 and expected to run 11 years through 2034, focuses on improving state population health, advancing health equity, and decreasing the TCOC.[105] With the model's emphasis on health equity, participating states are required to create a Statewide Health Equity Plan, and financial incentives under AHEAD incorporate social risk adjustments. Another core component of AHEAD is its all-payer approach, including Medicare, Medicaid, and private health insurance.

GUIDE, a voluntary provider-level model beginning mid-2024 and expected to run eight years through 2032, focuses on providing coordinated care for people with dementia and support for their unpaid caregivers.[106,107] GUIDE overtly includes a health equity strategy that involves a health equity adjustment

(HEA) to assist providers with treating underserved populations and a lump sum payment to safety net providers to support infrastructure investment.[108]

TEAM, a mandatory episode-based, hospital-level model scheduled to begin in 2026 and run five years through 2030, focuses on promoting accountable care relationships for patients who receive specific types of surgical procedures.[109,110] Hospitals will be responsible for the TCOC for patients from the procedure through 30 days post-discharge. TEAM promotes the integration of specialty and primary care as hospitals performing the specialty procedures must coordinate follow-up care for the patient, including connecting them with a primary care provider. TEAM prioritizes health equity by allowing a lower-risk track for safety net hospitals and including incentive adjustments to account for underserved populations.

ACO PC Flex, a voluntary ACO-level model scheduled to begin in 2025 and run five years through 2030, focuses on promoting innovative, team-based primary care among ACOs.[111,112] ACO PC Flex will operate as part of the MSSP and targets low-revenue ACOs, such as those in rural areas. ACO PC Flex includes a one-time payment to assist practices with administrative costs associated with establishing and participating in an ACO, as well as a non-risk payment enhancement to help the ACO with financial stability.

V. Technical Issues in PB-TCOC Models

Designing and implementing PB-TCOC models that effectively reduce total cost of care while maintaining or improving quality of care can come with challenges. This section summarizes challenges related to organizational structure, payment, and financial incentives for PB-TCOC models; challenges related to developing a balanced portfolio of performance measures; and challenges related to data, benchmarking, attribution, and risk adjustment. Potential opportunities to address the challenges are also presented.

V.A. Challenges Regarding Organizational Structure, Payment, and Financial Incentives

The transition from traditional FFS to population-based models can increase provider accountability for quality and cost; however, it may also be associated with tradeoffs regarding participation, care delivery, and payment. This section highlights some of the challenges different types of organizations face when participating in APMs.

Challenges Regarding Organizational Structure in PB-TCOC Models

The types of providers and organizations that can serve as entities accountable for quality and cost of health care include physician group practices, hospitals, and other health care providers; MA plans; Programs of All-Inclusive Care for the Elderly (PACE); and Medicaid managed care plans.[113] Substantial resources and investments are required to build organizational competencies and ultimately redesign care under value-based models,[114] which can influence APM participation. Physician practices in the Northeast tend to show greater participation in APMs compared with practices in other areas. In addition, ACOs tend to be developed in areas with lower poverty rates, especially ACOs with private payers.[115] Practices that operate within a larger medical group or complex health care system show greater participation in APMs relative to independent practices, and practices that are in many APMs tend to have more than 21 physicians.[116] Greater participation in APMs is also observed among practices

with greater clinical integration (i.e., coordination of care and services) and functional integration (i.e., exchanging information to enable collaboration).[117]

Challenges with participating in population-based payment models can vary by organization type. For example, small and rural practices can be challenged by risk-based payments, which tend to favor larger health systems and physician groups.[118] For example, eligibility requirements to participate in certain risk-based models or programs can favor larger systems. To be eligible to join the MSSP, ACOs must have approximately 5,000 Medicare FFS beneficiaries assigned to the ACO in each benchmark year. Further, the program provides the most favorable financial rules to large organizations (i.e., ACOs with more than 60,000 beneficiaries). In addition, because risk adjustment methods do not always account for patients with greater health care needs, practices with a large quantity of patients with greater needs may be financially penalized in APMs.[119] Thus, requiring small and rural providers to take downside risk can lead practices and hospitals to close or merge with larger health care systems, which can ultimately result in greater costs and lower quality of health care.[120]

Successful Components of Accountable Care Organizations

The transition from FFS to APMs can vary by provider type. In Medicare, provider participation in population-based payment models is concentrated in the MSSP.[121] MSSP ACO arrangements are generally considered to be APMs built on an FFS architecture, where providers are paid on an FFS basis but are incentivized for providing coordinated care, are eligible to share in savings generated, and can be at financial risk if costs are greater than the budget.[122,123] Evaluations of ACO models have identified factors that facilitate and hinder ACO success with maintaining or improving quality of care while reducing cost. The design of financial incentives to promote accountability can influence an ACO's success. ACOs that participate in two-sided risk models tend to generate more savings and receive bonuses compared with ACOs in one-sided risk models.[124] In 2019, ACOs in the MSSP that adopted downside risk had a net per beneficiary savings of $152 compared with $107 per beneficiary among ACOs that did not adopt downside risk.[125] Two-sided risk models can encourage providers to use innovation in care delivery to reduce costs.

Despite its potential benefits, downside risk can discourage model participation among providers, particularly providers serving rural or underserved populations that have smaller margins.[126] Statistics from the U.S. Governmental Accountability Office (GAO) showed that only 11.9 percent of providers in rural and Health Professional Shortage Areas participated in advanced APMs in 2019 compared with 14.8 percent of providers in other areas.[127] Practices located in underserved and rural areas and disproportionately caring for patients with low income and/or from certain racial and ethnic groups may lack the resources required to participate in APMs. A lack of financial resources can prevent practices from investing in the infrastructure needed to improve value, meet quality benchmarks, and/or implement programs that reduce costs, which ultimately can widen racial and ethnic health disparities in health care and outcomes.[128] ACOs in rural areas also have smaller reductions in costs than ACOs in urban areas; in 2019, urban ACOs produced $125 net per beneficiary savings, whereas rural ACOs produced $64 net per beneficiary savings.[129]

Practices serving rural areas and underserved patients may benefit from additional incentives to encourage participation in APMs. For example, the ACO Investment Model (AIM) provided up-front and ongoing monthly payments to small groups of providers in rural and underserved areas to help them build the infrastructure required to participate in the model. Providers participating in AIM showed

reductions in health care utilization and subsequent costs.[130] Specifically, MSSP ACOs serving rural and underserved areas that participated in AIM demonstrated a net reduction of $48.6 million in Medicare spending in the first year.[131] In addition, the MSSP is offering a new payment option in 2024, the Advance Investment Payments (AIP), to encourage providers in rural and underserved areas to form ACOs. AIP provides a one-time, up-front fixed payment of $250,000 and up to two years of quarterly payments to support organizations while building the infrastructure needed to succeed in the MSSP.[132]

The methods used to determine spending targets (i.e., benchmarks) can also impact ACOs' participation. Some benchmarking methods link an ACO's benchmark growth to its own performance, where the benchmarks are periodically rebased, or reset, to the ACO's most recent level of spending. In these cases, ACOs that reduce spending can be penalized with lower benchmarks, and ACOs that perform well can be penalized because they are held to higher savings targets over time. These methods can lead ACOs to avoid engaging in efforts to maintain lower spending because short-term profits could potentially be offset by future loss.[133] Although using benchmarks based on regional spending averages decouple an organization's benchmark growth from its savings, which can incentivize the ACO to lower spending, the use of regional benchmarks can penalize ACOs serving high-need, high-cost patients by penalizing them if they are outperformed by neighboring ACOs.

Governance structure type can also have an influence on an ACO's success with generating savings. Low-revenue ACOs, typically led by physicians, tend to outperform high-revenue ACOs, typically led by hospitals. In 2019, low-revenue ACOs had a net per beneficiary savings of $201, whereas high-revenue ACOs had a net per beneficiary savings of $80.[134] Compared with hospital-led ACOs, physician-led ACOs tend to offer a narrower set of services and typically do not provide services for patients who are not part of the ACO contract. Despite evidence suggesting physician-led ACOs outperform hospital-led ACOs, hospital-led ACOs are less likely to exit ACO programs.[135]

One area in need of additional research is understanding how APMs should be designed to advance health equity.[136] ACOs have the potential to advance health equity through population-based payments and increasing payments for underserved groups. However, health equity has not been a central component of many models. Experts suggest equity must be explicitly built into the payment design as was done for the ACO Realizing Equity, Access, and Community Health (REACH) Model. In addition, future work should identify alternative approaches for risk adjustment that allow considerations of social risk factors. For example, risk adjustment methods that set payments above current levels of FFS spending specifically for groups that experience health disparities could incentivize providers to deliver care to those groups.[137]

Achieving Care Coordination

Effective care coordination is a key component of achieving success through APMs as it supports the management of patients' clinical and social needs. Evidence shows that ACOs foster integration and improved care coordination. Hospitals affiliated with ACOs tend to use more care coordination strategies (e.g., chronic care management, discharge care plans, medication reconciliation) compared with hospitals not affiliated with ACOs.[138] In addition, hospitals affiliated with an ACO that used FFS shared savings payment models and partial or global capitation payments were more likely to use care coordination strategies.[139] The inclusion of advanced primary care in the design of ACOs may contribute to improved quality of care, reduced costs, and better population health outcomes. This design element

can encourage care coordination, manage the needs of complex patients, and address behavioral and social needs.[140]

Achieving care coordination is also crucial in post-acute care settings (inpatient rehabilitation centers, skilled nursing facilities, long-term care hospitals, home health care). Inefficiencies in care coordination (e.g., gaps in information, delays in communication across providers and settings, variability in care standards across care settings) during transitions from acute care settings to post-acute care settings can lead to disjointed care, increased risk of complications, longer recovery times, and increased costs.[141] CMS bundled payment models that include post-acute care services as part of the bundle may encourage models of care coordination because providers are held accountable for financial and patient outcomes. These models have led to the development of care transition protocols and the use of care coordinators to support care in post-acute care settings.[142] Additional strategies may also improve care coordination in post-acute care settings, such as educating providers on the different levels of post-acute care and their services.[143] Technological innovations that promote information sharing, including interoperability and shared EHRs, can also promote care coordination by ensuring providers across settings have access to patients' up-to-date information.[144,145]

Nearly 40 percent of Medicare FFS beneficiaries aged 66 and older had four or more care transitions in their last six months of life.[146] Effective care coordination between physicians and hospice providers during patients' transitions to hospice can help to ensure patients receive the benefits of hospice care earlier and encourage shared decision-making among patients and their teams of clinicians.[147] In addition, evidence suggests care coordination with deliberate advance care planning can transform end-of-life care. For example, fhe Advanced Illness Management (AIM) model is an innovative care coordination model that received a Health Care Innovation Award from CMS in 2012.[148] The model is designed for patients with a high burden of disease who either (1) have a prognosis that meets the requirements for hospice services but are not enrolled in hospice; (2) have shown substantial functional or nutritional decline or recurrent or unplanned hospitalizations; or (3) are considered to die within one year. Key features of the model include advance care planning, early end-of-life conversations, and care coordination across different settings (e.g., hospitals, home health, providers' offices, and on-call triage). The model demonstrated a lower rate of hospitalization and a greater likelihood that patients were in hospice in the last 14 and 30 days of life relative to matched comparison patients. The model also demonstrated a lower total cost of care per patient in the last 30 and 90 days of life. Notably, the AIM model had a $6 million return on investment for Medicare.[149]

Non-physician providers can support care coordination efforts, especially for high-risk patients (e.g., patients with multiple chronic conditions). A review of interventions aimed to reduce racial and ethnic disparities among the Veterans Affairs (VA) integrated health care system highlighted the importance of community health workers (CHWs) in improving care coordination, helping patients manage treatments, and linking patients to resources to address SDOH.[150] The Integrated Primary Care and Community Support (I-PaCS) model, a complementary model to the Patient-Centered Medical Home (PCMH) model, integrates CHWs into primary care settings and includes the management of SDOH. An evaluation of the model showed a 12.6 percent decrease in inpatient hospital, outpatient hospital, and emergency department (ED) costs for patients with high and moderate risk levels. The evaluation also suggested that the model is expected to realize a 7.1 percent savings in its third year.[151] The Safety Net Medical Home Initiative (SNMHI), a five-year demonstration project that helped primary care safety net sites become PCMHs, also promoted care coordination by leveraging community providers and resources. By

making the primary care practice the center of all activities, the initiative promoted care coordination by connecting patients to community resources to provide referrals and respond to social needs; integrating behavioral health and specialty care into care delivery through co-location and referral agreements; tracking patients when services are received outside of the practice; following up with patients following an emergency room visit or hospital discharge in a timely manner; and sharing test results and care plans with patients and families.[152] For additional information on care coordination, see PTAC's *Environmental Scan on Care Coordination in the Context of Alternative Payment Models (APMs) and Physician-Focused Payment Models (PFPMs)* for more information.

Challenges Regarding Financial Incentives in PB-TCOC Models

Different forms of value-based payment described in this section, including shared savings and risk, reference pricing, capitation, and bundled payments, can be combined with performance-based financial incentives to improve quality of care and reduce costs. Performance-based financial incentives can focus on clinical quality or patient safety, panel size, patient satisfaction or experience, efficient utilization of resources, total cost of care, and access,[153] and can use data from electronic clinical quality measures, claims-based measures, and patient-reported experience of care surveys (e.g., CAHPS measures).

Types of Financial Incentives in PB-TCOC Models

Performance can be tied to payment through P4P (i.e., payment is dependent on providers' performance compared with established benchmarks) and pay-for-reporting approaches (i.e., payment is dependent on whether providers report performance measure data). Pay-for-reporting can be considered a step in the transition to APMs and population-based payments where providers can become familiar with quality measures and reporting mechanisms before transitioning to P4P arrangements.[154] Most CMS programs and models use P4P approaches,[155] which utilize existing FFS payment systems. In P4P designs, payers can lower overall FFS payments and use the funds to compensate hospitals based on their performance. Alternatively, hospitals can be penalized for poor performance, and the financial penalties become direct cost savings for payers or used to create an incentive pool.[156]

Research evidence suggests that P4P incentives, larger incentives, more timely incentives, and financial penalties may have a positive impact on performance.[157,158,159,160] However, P4P programs can have unintended consequences, including creating an environment where providers cherry-pick patients to avoid treating those who are high-risk or face challenging social circumstances.[161] P4P programs can also disproportionately penalize providers serving patients of lower socioeconomic status and/or minority status. Use of risk adjustment and stratification, exception reporting, and pay-for-improvement can help reduce disparities in P4P programs.[162,163] In addition to unintended consequences, collecting and reporting quality measures for P4P and other value-based programs can also place administrative burden on providers. Physicians and staff spend approximately 785.2 hours per physician annually managing quality measures, which translates to an average annual cost of $40,069 per physician.[164]

Despite growth in PB-TCOC models and an increased focus on value-based models, physician payment continues to be driven by volume-based incentives (e.g., number of services provided). A focus on volume-based incentives can reduce performance-based incentives on physician payment. Although most PCPs and specialists receive performance-based incentives, these payments can average less than

10 percent of their total compensation.[165] Volume-based compensation remains the most common incentive among both PCPs and specialists, such that it reflected an average of 68.2 percent and 73.7 percent of the total compensation for PCPs and specialists, respectively.[166] Physicians may face difficulty balancing incentives associated with volume versus performance because they are simultaneously receiving payment through PB-TCOC models and through traditional FFS arrangements depending on the patient. Additional information about different payment models, including shared savings, capitation or global payments, and bundled or episode-based payments can be found in PTAC's *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)*.

Incorporating Setting- or Specialty-Specific Episodes in PB-TCOC Models

Most PB-TCOC models have focused on the role of the PCP as the accountable provider for the patient's care rather than the specialist(s) involved in the patient's care. Because diseases are managed differently, there is variation in the extent to which PCPs and specialists share management of different conditions for any given patient. Determining accountability for cost and risk sharing among PCPs and specialists for any given patient poses a challenge to integrating care across different provider types in PB-TCOC models. Financial incentives are currently lacking for specialists to transition to value-based relationships. For example, risk of financial loss with limited upside potential can deter specialists from joining TCOC models if they have small panels of patients in value-based care arrangements.[167] However, CMMI is testing a number of new episode-based, disease-specific models, including the Kidney Care Choices (KCC) Model, Enhancing Oncology Model (EOM), GUIDE, and TEAM.

Nested Models and Episode-Based Payments

Episode-based payments provide a single fixed payment to participating organizations to financially cover a procedure or treatment and all associated services for a clinical episode. This type of payment is a bundled payment because it covers all services related to the procedure or treatment delivered by all providers during the episode of care.[168] Bundled payments align incentives for providers to coordinate care and improve efficiency and quality and can engage specialists in value-based payment models.

Nested models, or hierarchical models, allow the global budget of a population-based model to serve as an umbrella of accountability under which episode payments are applied.[169] Achieving CMS' goal of having every beneficiary in a care relationship with a provider organization accountable for quality and total cost of care by 2030 may require harmonization between population-based models and episode or bundled payment models.[170] Nested models can foster an environment of accountability and shared participation between primary and specialty care. For example, under a hierarchical payment structure, ACOs would be responsible for overseeing care management and coordinating with episode-based models. This structure could promote collaboration among PCPs and specialists and encourage transparency on quality and cost of care. With this structure, episode-based payments have the potential to generate efficiencies and improve cost and/or quality that population-based models may not generate on their own.[171]

Evidence suggests that patients with acute conditions benefit when they receive care under population-based and episode-based models concurrently. Hospitals simultaneously participating in both the MSSP and Bundled Payments for Care Improvement (BPCI) initiative had lower readmission rates compared

with hospitals participating in the BPCI initiative alone.[172] Liao et al. (2018) discussed both advantages and disadvantages of the overlap between MSSP ACOs and bundled payments. Whereas the BPCI initiative assigns accountability for episodes starting with hospitalization and extending through post-acute care, the MSSP uses global accountability for quality and cost across an entire year. The models can work together to improve the quality of care and reduce health care utilization. For example, bundled payments can improve the quality of hospital and post-acute care while ACOs can reduce hospitalizations. Despite these benefits, assigning accountability for quality and cost can be challenged when the models overlap in health care markets and provider organizations.[173] Model overlap can also challenge model testing; separating out the effect of a single model may be difficult if it overlaps with other models.[174]

For additional information on options for integrating episode-based models in PB-TCOC models, see PTAC's *Supplement to the 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)*.

V.B. Challenges Regarding Developing a Balanced Portfolio of Performance Measures

Accurately measuring performance on key quality and health outcomes is an essential component of PB-TCOC models, as participating organizations are financially responsible for their performance on these outcomes to encourage provision of high-quality care. However, there are many technical challenges with measuring performance in PB-TCOC models, including selecting appropriate and relevant measures, implementing data collection and specification across organizations with different data systems, capturing health equity considerations in measurement schema, and integrating specialty- or condition-specific performance measures. With the multitude of performance measures available, streamlining and aligning quality measures has been a focus for CMS in recent years in order to reduce administrative burden, simplify compliance requirements for quality reporting across programs, and align approaches across programs and payers.[175] This effort is reflected in the vision set forth in the 2022 National Quality Strategy[176] (and 2024 update),[177] the Universal Foundation effort,[178] and the Meaningful Measures 2.0 initiative.[179] From 2016 to 2023, these strategies contributed to a 15 percent reduction in measures used by CMS programs, an increase in high-value outcome measures, and use of more outcomes from digital data sources (e.g., EHR records, administrative systems, clinical registries) which have a lower administrative burden to measure.[180]

Selecting Appropriate and Relevant Performance Measures

PTAC has defined four types of performance measures for PB-TCOC models: 1) quality measures (including structure, process, and patient-reported experience); 2) outcome measures that measure health status (including patient-reported outcomes and specialty-specific health outcomes); 3) cost measures; and 4) utilization measures.[181] While each type of measure captures a different domain of success, with the right balance, a mix of these measures will provide a broader picture of implementation success for PB-TCOC models and how components of the model (e.g., processes, structures) may be affecting health outcomes in the desired way. As of 2024, the majority of measures reported by 24 CMS programs/models are process measures (52 percent) or outcome measures (26 percent).[182]

Many frameworks exist for selecting appropriate and relevant performance measures, all having a common understanding of the goals and components of the initiative or program for which measures are being selected. CMS' National Quality Strategy, which includes the Meaningful Measures 2.0 initiative and the Universal Foundation, lays out a strategic framework for measure selection based on program goals and federal guidelines and priorities.[183,184,185] The Agency for Healthcare Research and Quality's (AHRQ's) guide for selecting quality measures focuses on key questions to ask when considering the selection of quality measures, including whether a measure is "good" (e.g., standard, comparable, valid, relevant, credible) and whether a measure is appropriate for the intended audience (e.g., whether the results of a measure can improve decision-making and accountability).[186] PTAC also previously developed five guiding principles related to selecting performance measures for PB-TCOC models: providing proactive, patient-centered, high-touch care; encouraging patient engagement; managing care transitions and care coordination; achieving equity; and improving efficiency.[187]

Integrating Specialty- or Condition-Specific Performance Measures

To date, specialist integration into PB-TCOC models has been limited, with the most common type of APM—bundled payment models—addressing shorter-term or episodic needs, rather than long-term care and support provided by many specialists.[188] CMMI's episodic and bundled payment models (e.g., the BPCI Advanced Model, EOM) integrate quality measures tied to payment, most of which are outcome measures and reported at the level of the entity assuming financial risk in the model (e.g., provider, practice, hospital).[189,190] Although some PB-TCOC models report condition-specific performance measures, these tend to be common conditions managed by primary care practitioners, or reflect a narrow specialty focus of the model.[191] For instance, the Making Care Primary (MCP) model includes performance measures specific to hypertension (Controlling High Blood Pressure) and diabetes (Hba1c Poor Control), and the KCC Model uses quality measures related to kidney disease that incentivize care management strategies that can delay disease progression.[192,193] There are several challenges with integrating specialty- or condition-specific performance measures into PB-TCOC models, including selecting actionable and valid performance measures that capture high-value specialty care;[194] the potential need for clinical (non-administrative) data, which can increase reporting burden;[195] lack of data sharing between primary and specialty care providers;[196] determining appropriate benchmarks;[197] and technical complexities of implementing performance measures that may apply to a subset of the entire model's population (e.g., identifying an eligible subpopulation using available data).

Using Patient-Reported Outcomes

Incorporating PROMs that reflect quality of life, symptoms and symptom burden, and health behaviors is important in PB-TCOC models to capture outcomes that cannot be measured by administrative or claims-based data sources.[198] PROMs should be patient-centered, reliable and valid, and feasible with minimum patient burden; provide useful information to improve quality of care; be culturally competent and able to be translated; and be adaptable to a clinical workflow. [199,200] Although patient-reported outcomes are included in current CMS programs and models at a low rate (9 percent of measures across selected CMS programs/models in 2023),[201] there has been an increased focus on integrating these outcomes in recent years. In its 2022 update on person-centered innovation, CMMI reported that 29 percent of models tracked at least two patient-reported outcomes, with a goal of increasing that to 50 percent of models by 2025 and 75 percent of models by 2030.[202] Many current programs and models use CAHPS data to report on patient experience; the increased focus on PROMs can be an opportunity

to broaden the scope of patient-reported outcomes across models to include mental health, additional health behaviors, functional status, and social health.[203,204] However, challenges remain to capturing PROMs, including increased burden on providers and patients; measurement challenges, including concerns about reliability and accuracy of patient-reported assessments of health status and outcomes; and technological barriers.[205]

Addressing Equity Using Performance Measures

Using performance measures to address health equity in PB-TCOC models is another area in which there has been increased focus in recent years. CMS defines health equity as "the attainment of the highest level of health for all people, where everyone has a fair and just opportunity to attain their optimal health regardless of race, ethnicity, disability, sexual orientation, gender identity, socioeconomic status, geography, preferred language, or other factors that affect access to care and health outcomes."[206] One of the key CMS health equity goals is to close the gaps, or disparities, in health care access, quality, and outcomes for historically underserved beneficiaries.[207] Broadly, many PB-TCOC models encourage or require participating organizations to develop appropriate data collection strategies and measuring disparities; however, models have not yet tied performance on health equity-related outcomes to payment.[208,209] One 2018 study lays out a roadmap for addressing health disparities , implementing evidence-based interventions to reduce disparities, investing in the development and use of health equity performance measures, and incentivizing the reduction of health disparities and achievement of health equity.[210] Many federal and state agencies, including HHS and CMS, have also developed frameworks for measuring health disparities and developing health equity measures.[211,212] As part of its 2021 strategy refresh, CMMI identified advancing health equity as one of five strategic objectives for advancing system transformation.[213] As presented in the strategy refresh and reflected in the design of new models, CMMI is focusing on standardized collection of demographic data (e.g., race, ethnicity, geography, disability) and screening for HRSNs. For instance, in the Making Care Primary model (launched July 1, 2024), participants are required to draft Health Equity Plans for identifying and addressing disparities, screening patients for HRSNs, and collecting data on patient demographics.[214] However, this model includes no financial incentives for performance on health equity-related outcomes (e.g., improving outcomes for historically marginalized groups), which is the ultimate goal.[215]

For additional information on performance measures for PB-TCOC models, see PTAC's *Environmental Scan on Developing and Implementing Performance Measures for Population-Based Total Cost of Care (PB-TCOC) Models*.

V.C. Challenges Regarding Benchmarking, Risk Adjustment, Attribution, and Data

Setting Performance Benchmarks

Benchmarks, or financial and quality targets used in PB-TCOC models, are essential for creating effective incentives for organizations participating in these models to provide more efficient and higher-quality care at a lower cost.[216] Currently, most CMMI models set financial benchmarks empirically, basing targets on historical spending, projected changes in payments over the course of a model (e.g., accounting for projected trends in national Medicare FFS spending), and appropriate risk adjustment.[217,218] Some models also use a blended approach in which benchmarks incorporate both historical and regional spending targets. For quality performance, CMMI sets benchmarks based on

factors that best define quality in a specific model, including health outcomes (e.g., how effective a treatment is) and care provided (e.g., preventive screenings).[219] For example, in ACO REACH, quality performance benchmarks are determined using data from non-ACO REACH provider organizations of a similar size as REACH ACOs (e.g., physicians, group practices, or hospitals).[220] In some cases, benchmarks are modified for high-cost populations, including separately calculating benchmarks for end-stage renal disease (ESRD) beneficiaries, removing COVID-19 episodes from benchmark calculations during the public health emergency, and separately calculating benchmarks by organization type in ACO REACH.[221,222,223]

There is also evidence that providers and organizations are more likely to exit a model if changes are made to the benchmark that make it less likely that their participation will result in savings, including rebasing benchmarks during the course of a model, changing the benchmark to be more difficult to achieve, and paying penalties in previous performance periods.[224,225,226,227] McWilliams and others have indicated that a key feature of a successful benchmark would be to "decouple" the benchmark from actual spending trends, which creates stronger incentives to deliver more efficient care.[228,229]

Risk Adjustment Approaches

Risk adjustment in PB-TCOC models is used to determine appropriate adjustments to the benchmarks and financial targets based on the needs of patients who an organization or provider serves.[230] There are a number of risk adjustment models used for this purpose across plans and regions, including the Chronic Illness and Disability Payment System, the Adjusted Clinical Groups system, and 3M's Clinical Risk Groupers; the most commonly used risk adjustment model for Medicare beneficiaries is the CMS-Hierarchical Condition Category (HCC) model.[231,232,233,234] The CMS-HCC risk adjustment model is calculated prospectively and uses demographics and major medical conditions to predict Medicare expenditures for the subsequent year, using Medicare FFS data.[235] While this type of risk adjustment can better account for beneficiaries with higher acuity, one potential drawback is that these models can be "gamed" by participating organizations attempting to increase observed patient acuity, and thus, revenue; PB-TCOC models must take precautions to guard against this.[236,237] Data sources used by CMS to adjust PPS payments for specific settings in addition to administrative claims (e.g., the Outcome and Assessment Information Set [OASIS] instrument for home health) are not commonly incorporated into PB-TCOC models because of their limited scope among patients attributed to those models; however, these types of data sources could be considered if relevant for the a specific model's patient population.[238]

Risk adjustment for non-financial measures is less common, although it can be applied to some quality measures as determined appropriate; for example, the ACO REACH model risk-adjusts two of the five quality measures tied to financial incentives.[239] Recent literature suggests that it may be more appropriate to adjust payments tied to quality measures rather than the quality measure scores directly.[240] To date, few risk adjustment methodologies take into account social and area-level factors outside claims data that impact health. Although there are some measures that could be used as a proxy (e.g., percentage of dual-eligible beneficiaries in a county), better data on these types of risk are needed to be able to appropriately adjust for these measures.[241]

Patient Attribution Methodologies

In PB-TCOC models, patient attribution is the process of how patients are assigned, or attributed, to the model for purposes of determining financial accountability.[242] Broadly, patients can be attributed to PB-TCOC models either voluntarily (i.e., the patient self-reports an existing care relationship with a provider), or via a claims-based algorithm that aims to identify relationships between providers and patients based on historical and/or current patterns of care.[243,244,245] Since attribution approaches are designed to address model-specific goals, there is no standard approach for patient attribution in PB-TCOC models. For example, while both MCP and ACO REACH have a lookback period of 24 months in which patterns of care are analyzed for claims-based attribution, MCP conducts attribution quarterly based on the number (plurality) and recency of eligible primary care visits to MCP clinicians, while ACO REACH attribution is conducted annually based on plurality of allowable charges for qualified primary care services to ACO REACH participating providers.[246,247,248]

There are several challenges with designing and accurately implementing a patient attribution methodology, including:

- Determining appropriate timing for using claims-based attribution algorithms. These can be implemented prospectively or retrospectively. Prospective attribution involves assigning patients based on historical care patterns but may miss patients with low utilization or new patients who have recently established a care relationship with a provider. Retrospective attribution involves assigning patients based on care patterns within the performance year, which may make it difficult for providers to target care interventions to attributed patients.[249,250]
- Selecting an appropriate timeframe to establish historical care patterns. Providers may be held financially responsible for patients whom they did not see during a performance period, for instance, if a patient was aligned to them prospectively based on historical care but did not seek care during a performance period.[251]
- Capturing patients who seek a large proportion of their care from specialty, rather than primary, care providers.[252] An HCP-LAN working group on attribution recommends that evaluation and management (E&M) codes for specialty care furnished by selected specialty providers be included in the claims-based algorithm.[253] For certain models, it may be more appropriate to use voluntary alignment (i.e., the patient self-reports an existing care relationship with a provider), rather than attributing these patients from claims data; the GUIDE model is taking this approach.[254]

Accounting for Social Determinants of Health and Health-Related Social Needs

PB-TCOC models can be important levers for addressing SDOH and HRSNs for patients by better allocating resources to historically underserved populations.[255] Currently, many PB-TCOC models incorporate some aspects related to SDOH and HRSNs, with most efforts focused on building infrastructure and capacity (e.g., setting up screening and referral processes, building relationships with community organizations that directly address SDOH and HRSNs) rather than assessing outcomes and improvements.[256,257,258]

Because accounting for SDOH and HRSNs is a relatively novel effort in PB-TCOC models, there are many technical challenges to implementing these approaches, including being able to accurately identify needs and how they are related to barriers to accessing care, collecting standardized data on individual-level social risk factors, incorporating area-level risks into benchmark and risk adjustment

methodologies, defining disparities, and selecting the appropriate area-level approximation of social risk.[259,260] Models (especially those that do not prioritize reaching underserved beneficiaries) may be underpowered to assess disparities in small subpopulations of historically underserved beneficiaries or have incomplete data on HRSNs that limits the usability of those data in evaluation.[261] Recent publications have suggested that a paradigm shift is necessary to address SDOH and HRSNs within PB-TCOC models, and propose "equity-motivated adjustments" rather than risk adjustment and a shift to "invest-for-equity" rather than pay-for-performance to incentivize improvements and reverse decades of underinvestment for some populations and areas.[262,263]

The ACO REACH model introduced a Health Equity Benchmark Adjustment (HEBA) in 2023 that adjusts the benchmark to incentivize ACOs to include historically underserved areas in their service areas.[264] The benchmark adjustment incorporates four elements (national Area Deprivation Index [ADI] ranking, state ADI ranking, dual eligibility status, and low-income subsidy status) and ranges from +$30 for ACOs that serve beneficiaries in the 90th percentile of most underserved areas, to -$10 for ACOs that serve beneficiaries in the lowest 30th percentile of underserved areas.

Data Sources

A range of data sources are needed to implement performance measures, calculate benchmarks, and accurately risk-adjust in PB-TCOC models. As described in the PCDT presentation at the March 2024 PTAC meeting, key data sources include administrative data, claims and encounter data, registry data, electronic clinical data, paper medical records, EHR data, patient-reported data and surveys, and patient assessment data.[265] Since performance measurement, benchmarking, and risk adjustment are key components of PB-TCOC models, it is essential that data sources are complete, reliable, and valid.

Depending on an organization's existing data infrastructure and capacity, it can encounter various technical challenges when participating in a PB-TCOC model. Many organizations participating in PB-TCOC models may enter with relatively sophisticated data systems and analytic capacity, which may reflect the voluntary nature of participation in these models; that is, organizations participating are self-selecting due in part to their ability to track complex financial and quality measures for attributed beneficiaries.[266] However, many challenges remain, especially for smaller practices and/or practices in historically underserved areas, including accurate tracking and reporting for quality and financial metrics, determining the appropriate level of aggregation of results to provide meaningful and actionable data for providers (e.g., plan, provider, or provider organizations; practice; geographic unit), sharing data while maintaining privacy and security, and combining often disparate EHR, clinical, and administrative data systems.[267,268] The varied levels of capacity may require a staged, or stepped, approach to onboarding some practices into PB-TCOC models.[269,270] More technical assistance, financial resources, a longer "on-ramp" for financial accountability on quality measures, and additional time allocated for building relationships with data owners may be required in future models for organizations to successfully build their data capacity and infrastructure.[271,272]

Additionally, PB-TCOC models typically consider data for a beneficiary across multiple providers (e.g., tracking hospital stays for patients attributed to primary care providers), necessitating an additional level of data sharing from the payer or model convener back to providers who have financial responsibility for those patients.[273] For instance, delays in sharing lists of attributed patients with providers can complicate efforts to provide model services and benefits to those patients.[274]

Data Interoperability

Interoperability across data sources, owners, and systems is essential for the success of PB-TCOC models and to achieve the goals of value-based care.[275] While researchers note a trend toward more robust data sharing between provider organizations, the lack of widely accepted standards for data interoperability, the high cost of retrofitting systems to be interoperable, legal concerns, and workforce challenges are key barriers to achieving high levels of data integration and interoperability across models.[276] Additionally, the level of data interoperability needed varies by data type and element depending on the intended use; not all data need to be fully integrated into one location to maximize their use in PB-TCOC models.[277] Examples of various levels of interoperability include hospitals providing real-time or near real-time alerts on admissions, discharges, and transfers to primary care physicians; facilitating EHR data integration through Fast Healthcare Interoperability Resources (FHIR), which can be very resource-intensive; and viewing data from outside sources by using a single sign-on function in an EHR.[278,279]

VI. Relevant Features in Previously Submitted PTAC Proposals

This section summarizes findings from an analysis of components in previously submitted PTAC proposals that are relevant for encouraging care relationships with accountability for quality and TCOC . Among the 35 proposals that were submitted to PTAC between 2016 and 2020, including 28 proposals that PTAC has deliberated and voted on during public meetings, nearly all of the proposals addressed the potential impact on cost and quality, to some degree. Committee members found that 20 of these proposals met Criterion 2 (Quality and Cost), including five proposals that were found to meet all 10 of the criteria established by the Secretary of Health and Human Services (the Secretary) for PFPMs. Additionally, at least nine other proposals discussed the use of TCOC measures in their payment methodology and performance reporting. **Exhibit 6** includes the results of an analysis of relevant value-based care and technical components of the following five previously submitted proposals that were found to meet all 10 of the criteria established by the Secretary for PFPMs:

- American College of Emergency Physicians (ACEP): Acute Unscheduled Care Model (AUCM): Enhancing Appropriate Admissions
- Avera Health: Intensive Care Management in Skilled Nursing Facility Alternative Payment Model (ICM SNF APM)
- Icahn School of Medicine at Mount Sinai: “HaH-Plus (Hospital at Home-Plus)” Provider-Focused Payment Model
- Personalized Recovery Care (PRC): Home Hospitalization: An Alternative Payment Model for Delivering Acute Care in the Home
- Renal Physicians Association (RPA): Incident ESRD Clinical Episode Payment Model

Exhibit 6. Selected PTAC Proposals that Included Components Relevant for Establishing Relationships with Accountability for Quality and TCOC

Proposal	Clinical Focus	Value-Based Care and Technical Components
American College of Emergency Physicians (ACEP) (*Provider association/ specialty society*) **Acute Unscheduled Care Model (AUCM): Enhancing Appropriate Admissions**	Emergency department (ED) services	**Overall Model Design Features:** AUCM aims to coordinate care post-discharge from ED. **Approaches to Improve Specialty Integration:** Ensure follow-up care when barriers exist to primary or specialty care access; mandated physician-to-physician communication when patients are discharged from the ED, or admitted or placed on observation status **Approaches to Address Health Equity:** Not specified **Financial Methodology:** Episode-based, bundled payment; if spending for eligible and attributed episodes is less than the bundled payment target price, the participant is eligible for a positive reconciliation payment; if it is more, the participant will have to reimburse CMS. Also includes payment waivers for ED acute care transition services, telehealth services, and post-discharge home visits.
Avera Health (*Regional/local multispecialty practice or health system*) **Intensive Care Management in Skilled Nursing Facility Alternative Payment Model (ICM SNF APM)**	Primary care (geriatricians) in skilled nursing facilities (SNFs)	**Overall Model Design Features:** The ICM SNF APM aims to provide care for nursing facility residents through 24/7 access to a geriatrician care team (GCT) using telemedicine. **Approaches to Improve Specialty Integration:** Addresses multidisciplinary care in SNFs following an acute event, establishing accountability or negotiating responsibility; geriatrician-led, multidisciplinary team where GCT responsible for medication reconciliation, and medication management is handled in coordination with the PCP **Approaches to Address Health Equity:** Not specified **Financial Methodology:** Two-tier payment: one-time payment for new admission care and an ongoing monthly payment for post-admission care. It also discusses an option to make this a shared savings model.

Proposal	Clinical Focus	Value-Based Care and Technical Components
Icahn School of Medicine at Mount Sinai (Mount Sinai) (*Academic institution*) **"HaH-Plus" (Hospital at Home-Plus): Provider-Focused Payment Model**	Inpatient services in home setting	**Overall Model Design Features:** HaH-Plus aims to provide hospital-level services in a home setting for beneficiaries with certain acute conditions. **Approaches to Improve Specialty Integration:** Multidisciplinary care around an acute care event providing pre-acute, acute, and transition services **Approaches to Address Health Equity:** HaH-Plus serves underserved populations and provides culturally sensitive health care. **Financial Methodology:** Prospective, episode-based payment replacing FFS and with flexibility to support non-covered services; shared risk through retrospective reconciliation
Personalized Recovery Care (PRC) (*Regional/local single specialty practice*) **Home Hospitalization: An Alternative Payment Model for Delivering Acute Care in the Home**	Inpatient services in home setting	**Overall Model Design Features:** Home Hospitalization APM is an operational program in Marshfield, Wisconsin, where participants provide treatment to commercial and MA patients with certain acute conditions in their home or SNF instead of in the hospital. **Approaches to Improve Specialty Integration:** Multidisciplinary care around an acute care event **Approaches to Address Health Equity:** Not specified **Financial Methodology:** Retrospective bundled payment with two components: 1) risk payment compared with the target cost of care (i.e., the "Target Bundled Rate"); and 2) per episode payment ("Home Hospitalization Payment"). If total costs are more than the Target Bundled Rate, participants are 100% liable (up to 10% of the benchmark rate).
Renal Physicians Association (RPA) (*Provider association and specialty society*) **Incident ESRD Clinical Episode Payment Model**	End- stage renal disease (ESRD)	**Overall Model Design Features:** The Incident ESRD Clinical Episode Payment Model proposes care coordination and renal transplantation, if applicable, for dialysis patients transitioning from chronic kidney disease (CKD) to ESRD (six-month episodes of care). **Approaches to Improve Specialty Integration:** Coordination among medical specialists and dialysis providers **Approaches to Address Health Equity:** Not specified **Financial Methodology:** Episode-based model with continued FFS payments and an additional payment for transplant; one- and two-sided risk options

Appendix C includes additional information about the relevant components of the five selected proposals that were found by Committee members to meet all 10 of the Secretary's criteria for PFPMs.

Additionally, at least nine other proposals discussed the use of TCOC measures in their payment methodology and performance reporting:

- American Academy of Hospice and Palliative Medicine (AAHPM),
- Coalition to Transform Advanced Care (C-TAC),
- University of Chicago Medicine (UChicago),
- American Academy of Family Physicians (AAFP),
- American College of Surgeons (ACS),
- American Society of Clinical Oncology (ASCO),
- Large Urology Group Practice Association (LUGPA),
- New York City Department of Health and Mental Hygiene (NYC DOHMH), and
- Illinois Gastroenterology Group and SonarMD, LLC (IGG/ SonarMD).

VII. Areas Where Additional Information is Needed

This section includes a summary of some areas for consideration to guide future research on identifying a pathway toward maximizing participation in PB-TCOC models. **Appendix E** further describes areas for future exploration and research.

Characteristics of Beneficiaries and Providers Not Participating in ACOs

Additional research is needed to identify characteristics of both beneficiaries and providers who are not currently participating in an ACO or an accountable care relationship. While some studies have looked at provider characteristics, more research is needed to determine strategies that would effectively promote ACO participation, and minimal to no studies have been conducted looking at beneficiary characteristics.

Designing APMs to Advance Health Equity

Additional research is needed around understanding how APMs should be designed to advance health equity.[280] Health equity has not been a central component of many models. In addition, future work should identify alternative approaches for risk adjustment that allow considerations of social risk factors.

Appendix A. Research Questions by Environmental Scan Section

Section	Research Questions

Section IV. Overview of the 2030 Goal of Having All Beneficiaries in Accountable Care Relationships	• What has PTAC learned from the Committee's previous theme-based discussions that is relevant for identifying a pathway toward achieving the 2030 goal?
	  ○ What challenges exist related to achieving the 2030 goal?
	  ○ What approaches have been identified during previous theme-based discussions for addressing these challenges?
	  ○ What steps or milestones have been identified by subject matter experts (SMEs) and/or Committee members during previous theme-based discussions that would be important for achieving the 2030 goal?
	  ○ What additional information is needed for achieving the 2030 goal?
	• What is CMS' plan for achieving the goal of having all traditional Medicare beneficiaries in accountable care relationships by 2030?
	  ○ What information is included in CMMI's Innovation Center Strategy Refresh and other CMS publications regarding CMS' plan for achieving the CMS 2030 goal?
	  ○ How do CMS and CMMI's recently announced models contribute to achieving the 2030 goal?
	• What are the characteristics of beneficiaries who are not currently participating in accountable care relationships (e.g., ACOs, advanced primary care models)?

Section V. Technical Issues in PB-TCOC Models	• What characteristics of different provider organization types (e.g., integrated care delivery system versus independent physician-led) are most conducive to supporting accountable care relationships and PB-TCOC models?
	  ○ What are successful components of current ACOs?
	• How do different provider organization types achieve care coordination across multiple providers and settings?
	• What types of financial incentives are used in current and planned PB-TCOC models?
	  ○ How do payment approaches in PB-TCOC models differ as a function of type of provider organization?
	  ○ How are performance-based financial rewards earned by PB-TCOC models aligned with opportunities for cost savings for payers?
	• What kinds of financial incentives are used for providers participating in current and planned PB-TCOC models?
	  ○ Are there examples of PB-TCOC models that are using value-based payment incentives for participating providers? If so, which approaches are most effective?
	  ○ Is it possible for PB-TCOC models to be effective in encouraging accountability for quality, outcomes, and TCOC while primarily reimbursing providers on an FFS basis?
	• How can nested models and episodes of care be used to better align financial incentives in PB-TCOC models?
	• What types of performance measures are most appropriate for a measure portfolio for PB-TCOC models?
	  ○ What benefits and challenges exist with using process and outcome measures in PB-TCOC models?

Section	Research Questions
	○ What benefits and challenges exist with using organizational-level, provider-level, and patient-level measures in PB-TCOC models? • How have PB-TCOC models integrated measures specific to specialty, condition, setting, and/or patient risk level? ○ What types of measure domains are represented? ○ At what level are those measures reported (e.g., provider, organization)? ○ What challenges exist with integrating these more specific types of measures in PB-TCOC models? • To what extent are patient-reported outcome measures included in current PB-TCOC models? ○ What kinds of PROMs are included in current PB-TCOC models? ○ What kinds of additional PROMs are appropriate for inclusion in PB-TCOC models? ○ What barriers exist related to implementing PROMs in PB-TCOC models? • What challenges exist with developing APM payment approaches when using multiple performance measures? • What are current strategies for setting performance benchmarks in PB-TCOC models? Does this vary by performance measure domain (e.g., spending, patient-reported outcomes)? What factors are considered in determining the "appropriateness" of a benchmark? ○ Using national benchmarks versus regional benchmarks ○ Using performance thresholds versus measuring relative improvement over time ○ Implications of rebasing a performance benchmark mid-way through a program ○ Impact of high-cost beneficiaries on performance benchmarks for different kinds of provider organizations • What are common risk adjustment frameworks for performance measures used in existing PB-TCOC models? What are the benefits and challenges of using these frameworks? ○ What types of performance measures are typically risk-adjusted in PB-TCOC models? What are key considerations when deciding whether to risk-adjust performance measures? • What are current challenges in attributing patients to providers in PB-TCOC models? ○ What are effective strategies for dealing with current attribution challenges? ○ How should attribution be determined when considering patients who receive care from multiple specialty providers? • How are social determinants of health and/or health-related social needs accounted for in benchmarks or risk adjustment in PB-TCOC models? ○ What is the rationale and theory of change for how incorporating these measures in performance benchmarks would affect the performance of organizations in these models? Are there other considerations when incorporating social determinants of health and/or health-related social needs into model benchmarks?

Section	Research Questions
	○ How has the Area Deprivation Index been used to benchmark or risk-adjust in PB-TCOC models? • What data sources are needed to implement performance measures, including benchmarking and risk adjustment, in PB-TCOC models? ○ What challenges exist for practices to obtain and use these data? At what point in the data collection, processing, and/or analysis workstreams are there major barriers or gaps in capacity to do that work? ○ What infrastructure is needed to support practices in securing and using data for calculating performance metrics (including benchmarks and risk adjustment) for PB-TCOC models? • What are existing best practices to ensure data interoperability across programs/models/settings? ○ What are the current standards/guidelines (if any), and who is responsible for ensuring that standards are being met? ○ What are the challenges with ensuring data interoperability across programs/models/settings? • To what extent is it currently possible for non-integrated provider organizations (such as independent physician-led) to effectively share the necessary data to facilitate participation in PB-TCOC models? ○ What approaches are currently being used for data sharing among non-integrated provider organizations? ○ What steps are needed in the short term to support data sharing among non-integrated provider organizations in order to facilitate their ability to participate in PB-TCOC models?

Appendix B. Summary of Key Takeaways from Previous PTAC Theme-Based Public Meeting Discussions

Exhibit B1. Key Takeaways from the PTAC Committee's Ongoing Series of Theme-based Discussions

Theme-based Discussion	Key Takeaways
Telehealth and Alternative Payment Models *(September 2020)*	• APMs may be an efficient way to incorporate important payment components such as risk adjustment, risk sharing, service payment differentials based on location, and multi-payer alignment; and to test the efficacy of various telehealth interventions. • APMs could support a cultural shift from using telehealth in a discrete encounter to viewing health holistically as part of an interdisciplinary team-based care model. • Avoiding the exacerbation of disparities is important, as issues such as language, access to and ease of use of technology, and type of technology could adversely affect the potential benefits of telehealth for vulnerable populations.
Care Coordination and Alternative Payment Models *(June 2021)*	• APMs can help incentivize the provision of multispecialty and interdisciplinary care coordination throughout the patient's journey; and provide opportunities for testing the effectiveness and scalability of new care delivery models. • There is a need to move beyond traditional outcome measures when measuring the value and return on investment of patient-centered care coordination. • Having a "toolkit" of care coordination models could be a useful resource for different kinds of providers who want to implement patient-centered care coordination, particularly for small or independent practices that have limited resources or infrastructure.
Social Determinants of Health (SDOH) and Equity and Alternative Payment Models *(September 2021)*	• Multidisciplinary teams are central for addressing the association between non-medical factors and health outcomes. There is a need to acknowledge the importance of coordination among traditional and non-traditional care team members and provide adequate reimbursement for the full range of patient-centered activities. • There is a need for greater collaboration between health care providers and community-based organizations (CBOs) in implementing SDOH- and equity-related initiatives. • Innovations that could be embedded into future payment models include adjusting payments for social risk factors; incorporating SDOH- and equity-related performance metrics; expanding participation criteria; and considering the potential value of hybrid and/or multi-payer approaches within the same model.
Population-Based Total Cost of Care (TCOC) Models *(March, June, and September 2022)*	• Providing upfront resources to support desired care delivery transformation can help to increase participation in PB-TCOC models, particularly in cases where risk is based on retrospective rewards for savings. • Placing financial accountability for TCOC at the entity or organization level is appropriate to manage risks for individual clinicians or smaller groups of clinicians, but incentives should be focused at the level of the provider. • It is essential to 1) develop a comprehensive strategy that includes producing models with multiple tracks and phase-in periods for taking on two-sided risk; 2) balance providing incentives for voluntary participation with the potential for requiring mandatory participation in certain cases; and 3) consider multi-payer alignment.

Theme-based Discussion	Key Takeaways
Specialty Integration in Population-Based Models *(March 2023)*	• Provision of timely data on quality, cost, and utilization is essential for facilitating patient care management and identifying high-value providers. • Payment for care delivered by specialists should be "carved in," or nested within population-based APMs, instead of being "carved out." • Participation in nested, condition-specific models could evolve from being voluntary to being mandatory for certain types of providers (e.g., hospital-affiliated ACOs) to increase participation in value-based care and encourage sustainable improvement.
Care Transitions in Population-Based Models *(June 2023)*	• Managing transitions in care requires an interdisciplinary team. • Improving the management of care transitions requires the development of information technology (IT) solutions that can notify providers when a patient is admitted to a hospital or discharged to home or another setting. • Payment models should explore linking financial incentives for managing care transitions with outcomes. • Nested models should extend beyond inpatient care and incorporate multiple specialists, as well as longitudinal and transitional care across settings. • Increasing uptake of current Medicare Transitional Care Management (TCM) codes can help to support the transition from FFS to value-based care.
Encouraging Rural Participation in PB-TCOC Models *(September 2023)*	• An effective model of care for rural health should include four main components: 1) high-touch, proactive, team-based care; 2) a holistic approach to rural value-based care; 3) screening for medical care, behavioral health, and SDOH needs; and 4) support for hospitals as conveners. • Models using glide paths that increase financial risk for rural providers over time as they gain more experience can encourage their engagement in value-based care arrangements. • APM design can support rural health provider engagement in value-based care by considering subsidies to support innovation in care delivery, tailoring performance measures to reflect value in a rural context, investing in team-based care and primary care, using prospective payment or other up-front payment approaches, and aligning financial incentives and value-based objectives across all providers in a rural area. • Resolving the "rural glitch" is necessary to ensure that rural providers are not disadvantaged in models with regional benchmarking and to adequately differentiate rural and non-rural health care providers' performance.

Appendix C. Summary of Relevant Components for Selected PTAC Proposals Reviewed by PTAC

Overview of Methodology Used to Review the Proposals

The following information was reviewed for each submitter's proposal, where available: proposal and related documents, PRT Report, and Report to the Secretary (RTS). Information found in these materials was used to summarize the proposals' main design features, including approaches to improve specialty integration, provision of specialist consultations, approaches to address health equity, financial methodology, how payment is adjusted for performance, performance measures related to improving coordination, attribution, risk adjustment, and benchmarking.

Among the 35 proposals that were submitted to PTAC between 2016 and 2020, nearly all proposals addressed the potential impact on cost and quality, to some degree. Committee members found that 20 of these proposals met Criterion 2 (Quality and Cost), including five proposals that were found to meet all 10 of the criteria established by the Secretary of Health and Human Services (the Secretary) for PFPMs. Additionally, at least nine other proposals discussed the use of TCOC measures in their payment methodology and performance reporting.

Findings from the review of value-based care and technical components that are relevant for establishing relationships with accountability for quality and TCOC in the five proposals that were found to meet all 10 of the Secretary's criteria are summarized in the following table.

Exhibit C1. Key Value-Based Care Components of Selected PTAC PFPM Proposals

Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, Setting, Patient Population	Value-Based Care Components	Technical Components
American College of Emergency Physicians (ACEP) (*Provider association/ specialty society*) Acute Unscheduled Care Model (AUCM): Enhancing Appropriate Admissions **Recommended for implementation, 9/6/2018**	**Clinical Focus:** Emergency department (ED) services **Providers:** ED physicians **Setting:** ED **Patient Population:** Patients with qualifying ED visits	**Overall Model Design Features:** AUCM aims to coordinate care post-discharge from ED. **Approaches to Improve Specialty Integration:** Ensure follow-up care when barriers exist to primary or specialty care access; mandated physician to physician communication when patients are discharged from the ED, or admitted or placed on observation status **Provision of Specialist Consultations:** As needed on discharge from the ED **Approaches to Address Health Equity:** Not specified	**Financial Methodology:** Episode-based, bundled payment; if spending for eligible and attributed episodes is less than the bundled payment target price, the participant is eligible for a positive reconciliation payment; if it is more, the participant will have to reimburse CMS. Also includes payment waivers for ED acute care transition services, telehealth services, and post-discharge home visits. **How Payment is Adjusted for Performance:** Performance on a set of quality measures determines eligibility for reconciliation payments and the size of discount built into each episode's target price. **Performance Measures Related to Improving Coordination:** Yes; Shared Decision-Making (process of care coordination) **Attribution:** Episodes are attributed to the ED physician based on a qualifying ED visit. All Medicare services (except those identified in BPCI Advanced) that occur in 30 days post-ED visit are included. **Risk Stratification or Adjustment:** Uses CMS-HCC methodology to adjust target prices annually **Benchmarking:** Based on participants' historical performance, risk-adjusted for factors that impact the admission decision

Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, Setting, Patient Population	Value-Based Care Components	Technical Components
Avera Health (*Regional/local multispecialty practice or health system*) Intensive Care Management in Skilled Nursing Facility Alternative Payment Model (ICM SNF APM) **Recommended for implementation, 3/27/2018**	**Clinical Focus:** Primary care (geriatricians) in skilled nursing facilities (SNFs) **Providers:** Geriatrician Care Teams (GCTs) **Setting:** SNFs and NFs **Patient Population:** SNF residents	**Overall Model Design Features:** The ICM SNF APM aims to provide care for nursing facility residents through 24/7 access to a geriatrician care team (GCT) using telemedicine. **Approaches to Improve Specialty Integration:** Addresses multidisciplinary care in SNFs following an acute event, establishing accountability or negotiating responsibility; geriatrician-led, multidisciplinary team where GCT responsible for medication reconciliation, and medication management is handled in coordination with the (PCP **Provision of Specialist Consultations:** Telemedicine consultations **Approaches to Address Health Equity:** Not specified	**Financial Methodology:** Two-tier payment: one-time payment for new admission care and an ongoing monthly payment for post-admission care. It also discusses an option to make this a shared savings model. **How Payment is Adjusted for Performance:** Quality performance will be measured against performance criteria; quality scores determine whether regular payments will be reduced by some amount. **Performance Measures Related to Improving Coordination:** Yes; SNF 30-day All-Cause Readmission Measure **Attribution:** Based on trigger event being the beneficiary's admission to a participating SNF/NF; beneficiaries are aligned to the facility throughout their stay, and the alignment period ends 30 days following facility discharge. **Risk Stratification or Adjustment:** The Shared Savings Model option will use the CMS HCC risk score to adjust target bundle prices. **Benchmarking:** Measure-specific performance criteria for achievement and improvement

Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, Setting, Patient Population	Value-Based Care Components	Technical Components
Icahn School of Medicine at Mount Sinai (Mount Sinai) (*Academic institution*) "HaH-Plus" (Hospital at Home-Plus): Provider-Focused Payment Model **Recommended for implementation, 9/17/2017**	**Clinical Focus:** Inpatient services in home setting **Providers:** Physicians; HaH-Plus providers **Setting:** Patient home **Patient Population:** Eligible patients in one of 44 diagnosis-related groups (DRGs) for acute conditions	**Overall Model Design Features:** HaH-Plus aims to provide hospital-level services in a home setting for beneficiaries with certain acute conditions. **Approaches to Improve Specialty Integration:** Multidisciplinary care around an acute care event providing pre-acute, acute, and transition services **Provision of Specialist Consultations: C**are team initiates referral to appropriate services as needed. **Approaches to Address Health Equity:** HaH-Plus serves underserved populations and provides culturally sensitive health care.	**Financial Methodology:** Prospective, episode-based payment replacing FFS and with flexibility to support non-covered services; shared risk through retrospective reconciliation **How Payment is Adjusted for Performance:** Need to attain quality targets; will not receive shared savings if quality targets are not attained. If a participant's costs exceed the financial benchmark, participant is responsible for excess even if quality targets are achieved. **Performance Measures Related to Improving Coordination:** Yes; Post-acute ED visits, Measures of Care Plan, and Adverse Events (e.g., hospital-acquired infections, complications) **Attribution:** Claims-based **Risk Stratification or Adjustment:** A comparison group of patients admitted to non-participating hospitals in the same region will be used to find a spending target for the amount Medicare would have spent without the HaH-Plus program. **Benchmarking:** Separate achievement thresholds for each of 10 quality metrics linked to payment

Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, Setting, Patient Population	Value-Based Care Components	Technical Components
Personalized Recovery Care (PRC) (*Regional/local single specialty practice*) Home Hospitalization: An Alternative Payment Model for Delivering Acute Care in the Home **Recommended for implementation, 3/26/2018**	**Clinical Focus:** Inpatient services in home setting **Providers:** Admitting physician at facility receiving PRC payments; On-Call Physician; Recovery Care Coordinators **Setting:** Patient home **Patient Population:** Commercial and Medicare Advantage patients with acute conditions, based on approximately 150 DRGs	**Overall Model Design Features:** Home Hospitalization APM is an operational program in Marshfield, Wisconsin, where participants provide treatment to commercial and MA patients with certain acute conditions in their home or SNF instead of in the hospital. **Approaches to Improve Specialty Integration:** Multidisciplinary care around an acute care event **Provision of Specialist Consultations:** Through the PRC operator **Approaches to Address Health Equity:** Not specified	**Financial Methodology:** Retrospective bundled payment with two components: 1) risk payment compared with the target cost of care (i.e., the "Target Bundled Rate"); and 2) per episode payment ("Home Hospitalization Payment"). If total costs are more than the Target Bundled Rate, participants are 100% liable (up to 10% of the benchmark rate). **How Payment is Adjusted for Performance:** To be eligible for shared savings, providers must meet or exceed benchmarks for performance measures. Participants are eligible to receive 20% of savings for each measure that meets or exceeds the benchmark. Participants receive 100% of savings if all five performance measures are met (0% if none are met). **Performance Measures Related to Improving Coordination:** Yes; Percentage of Episodes with Follow-Up PCP Appointment Scheduled Within 7 Days, Percentage of Episodes with Medication Reconciliation, and Percentage of Episodes with Adverse Events (Deep Vein Thrombosis [DVT], Pressure Ulcer, Fall with Injury) **Attribution:** Claims-based **Risk Stratification or Adjustment:** Yes, for patient clinical characteristics. Participants also propose excluding beneficiaries with the following: end-stage renal disease, hospice enrollment, or initial admissions to intensive care unit. **Benchmarking:** Based on historical, episodic expenditures for each condition plus a three percent discount to derive target prices

Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, Setting, Patient Population	Value-Based Care Components	Technical Components
Renal Physicians Association (RPA) (*Provider association and specialty society*) Incident ESRD Clinical Episode Payment Model **Recommended for implementation, 12/18/2017**	**Clinical Focus:** End- stage renal disease (ESRD) **Providers:** Nephrologists, PCPs **Setting:** Dialysis centers **Patient Population:** Patients with chronic condition (incident ESRD)	**Overall Model Design Features:** The Incident ESRD Clinical Episode Payment Model proposes care coordination and renal transplantation, if applicable, for dialysis patients transitioning from chronic kidney disease (CKD) to ESRD (six-month episodes of care). **Approaches to Improve Specialty Integration:** Coordination among medical specialists and dialysis providers **Provision of Specialist Consultations:** Yes **Approaches to Address Health Equity: Not specified**	**Financial Methodology:** Episode-based model with continued FFS payments and an additional payment for transplant; one- and two-sided risk options **How Payment is Adjusted for Performance:** Quality scores based on performance on patient-centered quality measures (0-100) determine the percentage of overall shared savings the physician receives. The higher the quality score, the higher amount of shared savings to the participant. Further, physicians choosing to participate in Merit-based Incentive Payment System (MIPS) APM versus Advanced APM will determine the total upside shared savings and downside risk. There is also a one-time financial incentive/bonus payment for patient receiving a kidney transplantation. **Performance Measures Related to Improving Coordination:** Yes; Emergency Department Utilization Continuous Improvement, and Person-Centered Primary Care Measure **Attribution:** Claims-based **Risk Stratification or Adjustment:** Medicare beneficiary's most recent HCC risk score normalized so that an average risk patient would have a score of 1; values greater than 1 would indicate comorbidities associated with higher costs of care; values less than 1 would indicate lower costs of care. Benchmarking: **Based on risk-adjusted target expenditures**

Appendix D. Summary of Key Value-Based Care Components for Selected CMMI Models

Overview of Methodology Used to Review the Selected CMMI Models

Available information on selected CMMI models' summary pages on the CMMI website was reviewed. This included model overviews, informational webinars, evaluation reports and findings (as applicable), summaries, fact sheets, and press releases. Information found in these materials was used to summarize the models' main design features, including approaches to improve specialty integration, provision of specialist consultations, approaches to address health equity, financial methodology, how payment is adjusted for performance, performance measures related to improving coordination, attribution, risk adjustment, and benchmarking.

Five CMMI models were selected ensuring two population-based models (ACO REACH and Maryland TCOC), two episode-based or condition-specific models (BPCI-A and EOM), and one advanced primary care model (MCP). Findings from the review of these five models are summarized in the following table.

Exhibit D1. Key Value-Based Care Components of Selected CMMI Models

Model Name	Clinical Focus, Providers, Setting, Patient Population	Value-Based Care Components	Technical Components	Lessons Learned
Global and Professional Direct Contracting (GPDC)**/Accountable Care Organization Realizing Equity, Access, and Community Health** (ACO REACH) *Participants Announced* Years active: 2021-present[viii]	**Clinical Focus:** Primary and specialty care **Providers:** Direct Contracting Entities (DCEs) under GPDC, ACOs under ACO REACH; Participating and Preferred Providers **Setting:** Broad applicability **Patient Population:** Medicare FFS beneficiaries; patients with complex chronic diseases and serious illnesses	**Overall Model Design Features:** ACO REACH brings together health care providers, including PCPs, specialty providers, and hospitals, to form an ACO. **Approaches to Improve Specialty Integration:** Higher risk sharing arrangements and risk-adjusted monthly payments for all covered costs under total care capitation option (which includes payment for specialty care services). **Provision of Specialist Consultations:** Yes **Approaches to Address Health Equity:** ACO REACH requires health equity plans, benchmark adjustments, data collection, nurse practitioner services benefit enhancement, and scoring for health equity experience.	**Financial Methodology:** Two risk-sharing options: 1) Professional: 50% savings/losses; participants receive a primary care capitation payment (risk-adjusted monthly payment for primary care services; 2) Global: 100% savings/losses; participants can receive either a primary care capitation payment or a total care capitation payment (risk-adjusted monthly payment for all covered services, including specialty care). **How Payment is Adjusted for Performance:** ACOs earn a quality score (0-100%) based on performance across all measures compared to the benchmark; 2% of ACO benchmark is withheld to be earned back based on quality score. Additionally, there is a Continuous Improvement and Sustained Exceptional Performance (CI/SEP) component. ACOs that meet or exceed the CI/SEP criteria can receive up to the full (2%) based on quality score; ACOs that do not meet the CI/SEP criteria can receive only half (1%) based on quality score. **Performance Measures Related to Improving Coordination:** Yes; All-Cause Unplanned Admissions for Patients with Multiple Chronic Conditions, Risk-Standardized All Condition Readmission, and Timely Follow-up After Acute Exacerbation of Chronic Conditions **Attribution:** Voluntary; Prospective, claims-based **Risk Stratification or Adjustment:** Adjusts the benchmark for ACOs that have a higher percentage of underserved beneficiaries. These ACOs are identified using a measure that combines the ADI and dual Medicaid status. **Benchmarking:** Based on historical baseline expenditures and/or ACO REACH/KCC rate book or a blend of historical and regional expenditures or regional expenditures, depending on DCE/ACO type and alignment	Model evaluations have not been completed yet for ACO REACH. According to an evaluation report under GPDC, DCE strategies for population health management focused on avoidable utilization (90%), complex or population-specific care management (90%), and investments in primary care (63%). While there was no significant impact on gross or net expenditures for Standard or New Entrant DCEs in PY2021, Standard DCEs significantly reduced acute care hospitalizations and skilled nursing facility days, and both Standard and New Entrant DCEs significantly reduced ED visits. Standard DCEs also reduced hospitalizations for ambulatory care sensitive conditions.

[viii] The transition from the GPDC Model to the ACO REACH Model was announced on February 24, 2022. The ACO REACH Model began on January 1, 2023.

Model Name	Clinical Focus, Providers, Setting, Patient Population	Value-Based Care Components	Technical Components	Lessons Learned
Bundled Payments for Care Improvement Advanced (BPCI-A) *Ongoing* Years active: 2018-present	**Clinical Focus:** Cross-clinical focus **Providers:** Acute care hospitals, physician group practices, ACOs **Setting:** Inpatient and outpatient services **Patient Population:** Medicare beneficiaries with certain clinical episodes (29 inpatient, three outpatient)	**Overall Model Design Features:** BPCI-A requires participants to coordinate care across all providers/settings for the duration of the clinical episode, which begins at the start of an admission or procedure and ends 90 days after hospital discharge or completion of a procedure. **Approaches to Improve Specialty Integration:** Establishes an "accountable party" and shifts emphasis from individual services to clinical episodes **Provision of Specialist Consultations:** N/A **Approaches to Address Health Equity:** Not specified	**Financial Methodology:** Participants (or Episode Initiators [EIs]) receive a retrospective bundled payment or are required to pay a Repayment Amount based on reconciliation against the benchmark/target price. **How Payment is Adjusted for Performance:** EIs receive a Composite Quality Score (CQS) based on selected quality measures, and payment is adjusted by up to 10% for positive reconciliation amounts (where EI receives a payment) or negative reconciliation amounts (where EI is required to pay back). **Performance Measures Related to Improving Coordination:** Yes; All-Cause Unplanned Hospital Readmissions, Advance Care Plan, Excess Days in Acute Care after Hospitalization for Acute Myocardial Infarction, Hospital-Level Risk-Standardized Complication Rate Following Elective Primary Total Hip Arthroplasty, Cardiac Rehabilitation Patient Referral from an Inpatient Setting, In-Person Evaluation Following Implantation of a Cardiovascular Implantable Electronic Device, Patient-Centered Surgical Risk Assessment and Communication, and Time to Intravenous Thrombolytic Therapy **Attribution:** Claims-based (note: clinical episodes, and not the patient, are attributed to providers). **Risk Stratification or Adjustment:** Adjusts target prices based on HCCs, HCC interactions, HCC severity, recent resource use, demographics, long-term institutional care, dementia, Medicare Severity (MS)-DRGS/Ambulatory Payment Classifications (APCs), clinical episode category-specific adjustments, and COVID-19 infection rate. **Benchmarking:** Prospective; based on historical expenditures, patient characteristics, and characteristics and trends of the hospital's peer group for the episode; rebased annually and updated to reflect changes in Medicare FFS payment rates	The model reduced total episode payments, institutional post-acute care (PAC) payments, discharges to institutional PAC settings, and the number of SNF days among patients who received SNF care relative to the comparison group.[ix]

[ix] https://www.cms.gov/priorities/innovation/data-and-reports/2024/bpci-adv-ar5

Model Name	Clinical Focus, Providers, Setting, Patient Population	Value-Based Care Components	Technical Components	Lessons Learned
Enhancing Oncology Model (EOM) *Ongoing* Years active: 2022-present	**Clinical Focus:** Oncology **Providers:** Oncologists **Setting:** Oncology practices **Patient Population:** Medicare beneficiaries with cancer	**Overall Model Design Features:** EOM participants coordinate care for cancer patients across all their providers and services needed, including health-related social needs and psychosocial health needs. **Approaches to Improve Specialty Integration:** Participants are incentivized to provide additional/enhanced services via Monthly Enhanced Oncology Services (MEOS) payments; additionally, each patient receives a detailed care plan, specifying engagement and preferences surrounding prognosis, treatment options, symptom management, quality of life, and psychosocial health needs. **Provision of Specialist Consultations:** Yes **Approaches to Address Health Equity:** EOM requires health equity plans, risk adjustments by dual-eligible status and Low-Income Subsidy eligibility, and collection and reporting of beneficiary sociodemographic data. Further, participants are provided dashboards displaying metrics stratified by sociodemographic data in order to identify applicable health disparities.	**Financial Methodology:** Participants are responsible for total cost of care for six-month episodes; based on total episode costs and quality performance, participants will earn a performance-based payment (PBP) or owe a performance-based recoupment (PBR). Participants also have the option to bill an MEOS payment per beneficiary per month during six-month episodes for the provision of Enhanced Services. Additional MEOS payments for dually eligible beneficiaries may also be provided to participants. **How Payment is Adjusted for Performance:** Participants receive an Aggregate Quality Score (AQS) based on their quality performance. PBP and PBR amounts are adjusted based on participants' AQS scores. **Performance Measures Related to Improving Coordination:** Yes; Admissions and Emergency Department Visits for Patients Receiving Outpatient Chemotherapy, Proportion of Patients who Died who Were Admitted to Hospice for 3 Days or More, and Percentage of Patients who Died from Cancer Receiving Chemotherapy in the Last 14 Days of Life **Attribution:** Based on first qualifying E&M service after chemotherapy initiation if that practice provides at least 25 percent of cancer-related E&M services during the episode OR the majority of E&M visits **Risk Stratification or Adjustment:** Cost benchmarks/target amounts are adjusted based on cancer type, dual-eligible status, and Low-Income Subsidy eligibility. **Benchmarking:** Based on predicted episode amounts from trended forward baseline expenditures	EOM builds on lessons learned from the Oncology Care Model (OCM). The EOM Model performance period began in July 2023. Model evaluations have not been completed yet.

Model Name	Clinical Focus, Providers, Setting, Patient Population	Value-Based Care Components	Technical Components	Lessons Learned
Making Care Primary (MCP) Model *Ongoing* Years active: Launched in July 2024	**Clinical Focus:** Primary care **Providers:** PCPs **Setting:** Primary care practices **Patient Population:** All Medicare beneficiaries in participating regions	**Overall Model Design Features:** MCP provides participants with three options that build upon past primary care models (Comprehensive Primary Care [CPC], CPC+, and Primary Care First [PCF]) to take on prospective, population-based payments; build infrastructure to integrate specialty care and behavioral health; and improve access to care. **Approaches to Improve Specialty Integration:** CMS provides Upfront Infrastructure Payments (UIPs) for participants to build infrastructure needed to integrate specialty care, such as partnering with specialists and social service providers and implementing care management services. **Provision of Specialist Consultations:** Yes **Approaches to Address Health Equity:** MCP requires health equity plans, payment adjustments, and implementation of HRSN screening and referrals. Additionally, participants can reduce cost-sharing for certain patients, as applicable.	**Financial Methodology:** Varies depending on the three options, or tracks: Track 1) FFS; however, participants may earn financial rewards for improving patient outcomes; Track 2) 50% FFS and 50% prospective, population-based payments; and Track 3) 100% prospective, population-based payments. **How Payment is Adjusted for Performance:** Participants may receive a Performance Incentive Payment (PIP) (upside-only risk), determined by their performance on quality measures. PIPs are calculated as a percentage of the sum of the participants' FFS and prospective primary care payment revenue; percentages are determined based on performance on quality measures and track: Track 1 may receive PIP percentage bonus of up to 3%; Track 2, up to 45%; and Track 3, up to 60%. **Performance Measures Related to Improving Coordination:** Yes; Emergency Department Utilization Continuous Improvement, and Person-Centered Primary Care Measure **Attribution:** Voluntary; Prospective, claims-based **Risk Stratification or Adjustment:** Some performance measures used for MCP are risk-adjusted; however, the model does not employ additional adjustments. **Benchmarking:** Continuous Improvement Measures assess performance against participants' own historical performance. Other measures use regional or national benchmarks.	Model evaluations have not been completed yet.

Model Name	Clinical Focus, Providers, Setting, Patient Population	Value-Based Care Components	Technical Components	Lessons Learned
Maryland Total Cost of Care (TCOC) Model *Ongoing* Years active: 2019-present	**Clinical Focus:** Hospital and primary care **Providers:** Hospitals and PCPs **Setting:** Hospitals and primary care practices **Patient Population:** All Medicare beneficiaries in Maryland	**Overall Model Design Features:** The Maryland TCOC Model expands on the Maryland All-Payer Model by providing incentives for providers to coordinate care and holding the state accountable for a sustainable growth rate in per capita TCOC spending. It includes three programs: 1) Hospital Payment Program 2) Care Redesign Program; and 3) Maryland Primary Care Program. **Approaches to Improve Specialty Integration:** Implementation of care coordination plans and patient-centered care teams **Provision of Specialist Consultations:** Not specified **Approaches to Address Health Equity:** Little information is available on how the program addresses health equity; however, payment incentives could improve care management.	**Financial Methodology:** Payments differ among the three programs: 1) Hospital Payment Program - each hospital receives population-based payment amount for all hospital services; 2) Care Redesign Program - hospitals may make incentive payments to non-hospital providers who perform care redesign activities for the hospital; hospitals may give incentive payments only if they have achieved savings under its fixed global budget; and 3) Maryland Primary Care Program - participating primary care practices receive an additional per beneficiary per month payment for care management services. **How Payment is Adjusted for Performance:** Hospitals receive additional payments for meeting quality metrics (as long as the cost across all settings for 90 days after discharge falls below the benchmark). **Performance Measures Related to Improving Coordination:** Yes; All-Cause Admissions, Preventable Admissions, 30-day Unplanned Readmissions, Timely Follow-up After Acute Exacerbation **Attribution:** The Primary Care Program attributes patients based on primary care visits to participating practices. The Hospital Payment Program and Care Redesign Program do not attribute patients. **Risk Stratification or Adjustment:** For the Primary Care Program, care management fees are adjusted based on beneficiary risk tiers assessed using HCC. **Benchmarking:** Based on actual Medicare spending in Maryland trended forward at the national Medicare spending growth rates	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.[281] 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.

Appendix E. Areas for Future Exploration and Research

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

- Identifying characteristics of beneficiaries and providers who are not currently participating in an ACO or an accountable care relationship
- Understanding how APMs should be designed to advance health equity
- Gaining various stakeholder perspectives (e.g., ACOs, small/rural practices, primary care providers, specialty care providers, beneficiaries) on the key steps or milestones needed to achieve the 2030 goal of having all beneficiaries in care relationships with accountability for quality, outcomes, and TCOC
- Exploring necessary components of CMMI models or CMS programs for success
- Developing multiple pathways for different types of PB-TCOC organizations to achieve the 2030 goal
- Integrating specialty care into PB-TCOC models (e.g., through bundles or nested models)
- Exploring mandatory versus voluntary requirements or other alternatives for participation in PB-TCOC models
- Structuring payment models based on the types of organizations (e.g., integrated delivery system versus independent physician-led)
- Balancing organizational versus provider-level measures
- Effectively integrating PROMs into current technologies to promote increased adoption
- Exploring best practices for establishing benchmarks and appropriate risk adjustment methods in PB-TCOC models
- Developing approaches to close the gap between existing data source needs for PB-TCOC models and current infrastructure
- Ensuring data interoperability across programs, models, and/or settings

Appendix F. Annotated Bibliography

Anderson AC, Chen J. ACO affiliated hospitals increase implementation of care coordination strategies. *Med Care*. 2019;57(4):300-304. doi:10.1097/MLR.0000000000001080

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To assess differences between ACO-affiliated and unaffiliated hospitals in implementing care coordination strategies and to determine if hospital payment model types influenced the use of coordination strategies.
Main Findings: ACO-affiliated hospitals had a higher care coordination index score and were more likely to be not-for-profit, large (<200 beds) teaching hospitals with more primary care providers and federally qualified health centers compared with unaffiliated hospitals.
Strengths/Limitations: The limitations include only examining health care quality through care coordination and the cross-sectional study design. ACO subtypes (e.g., Medicare, Medicaid, commercial) were not investigated.
Generalizability to Medicare Population: Strong; this study supports that ACO-affiliated hospitals invest more in care coordination strategies.
Methods: To understand hospital care coordination strategies, data from the 2015 American Hospital Association Annual Survey and Survey of Care Systems and Payments were examined using T-tests and multivariable linear regression models.

Anderson AC, O'Rourke E, Chin MH, Ponce NA, Bernheim SM, Burstin H. Promoting health equity and eliminating disparities through performance measurement and Payment. *Health Aff*. 2018;37(3):371-377. doi:10.1377/hlthaff.2017.1301

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To apply the National Quality Forum's roadmap on promoting equity care through measurement toward reducing racial disparities in hypertension among African Americans.
Main Findings: Tying stratified performance measures to payment incentives can encourage health care settings' leadership to invest in the resources needed to achieve equitable outcomes.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Moderate; findings from this article are generalizable to organizations that work with Medicare beneficiaries.
Methods: The report applied the National Quality Forum's roadmap to organizations caring for African American patients with hypertension.

Association of State and Territorial Health Officials. Measuring health equity: an assessment of equity metrics in performance management and planning. Published February 2023. Accessed October 15, 2024. https://www.astho.org/globalassets/report/measuring-health-equity.pdf

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Report
Objective: To describe challenges and present recommendations for identifying and developing the health equity standards metrics across states and territories.

Main Findings: Recommendations include addressing data limitations, building workforce capacity, developing meaningful, community-driven metrics, and committing to human-centered communication and community engagement.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Moderate; the lessons learned and recommendations for establishing health equity standards and measures can be applied across the health care continuum.
Methods: An environmental scan was conducted, and an advisory group was held to inform the report's recommendations with stakeholder perspectives.

Bailit Health. Measuring health equity: a state measure set to assess and improve equity. Robert Wood Johnson Foundation. Published June 2023. Accessed October 16, 2024. https://www.rwjf.org/content/dam/farm/reports/issue_briefs/2023/rwjf473929

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Report
Objective: To establish a state health equity measure set, including health status and healthcare measures, that encourages monitoring and comparing progress across states.
Main Findings: The final health equity measure set contains two types of measures: population-level measures representing health status and measures that assess access to, receipt of, cost of, and outcomes associated with healthcare services. The set includes ten health status and 19 healthcare measures.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Moderate; the selected measures to monitor health equity can inform alignment efforts across government programs.
Methods: To identify candidate measures, measure selection criteria were developed, and measure topics with disparities in performance by race and ethnicity were identified. An advisory group was also consulted.

Bardach NS, Wang JJ, De Leon SF, et al. Effect of pay-for-performance incentives on quality of care in small practices with electronic health records: a randomized trial. *JAMA*. 2013;310(10):1051-9. doi:10.1001/jama.2013.277353

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To investigate changes in the quality of cardiovascular care process and outcomes from pay-for-performance (P4P) incentives among EHR-enabled small practices.
Main Findings: The intervention clinics had statistically significantly higher improvement rates than the control clinics across all cardiovascular care processes and outcomes.
Strengths/Limitations: Sensitivity analysis confirmed the effects of the intervention.
Generalizability to Medicare Population: Moderate; results support using P4P incentives among small EHR-enabled practices to improve care quality.
Methods: A cluster-randomized trial of small primary care clinics (n=84) made up the study sample.

Blavin F, Smith LB, Ramos C, Ozanich G, Horn A. Opportunities to improve data interoperability and integration to support value-based care: lessons from stakeholder interviews. Published July 2022. Accessed October 16, 2024. https://aspe.hhs.gov/sites/default/files/documents/700d388ad0c7887c4ed7bb41adc73a2b/data-interoperability-value-based-care.pdf

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Report
Objective: To learn from health care organizations and stakeholders about their experiences, challenges, and recommendations for data integration across value-based care arrangements.
Main Findings: Generalizing data interoperability across health care organizations is challenging because of inconsistent definitions and level of interest in integrating. Data interoperability is often used for point of care, care coordination, quality measurement reporting, and population health.
Strengths/Limitations: The methodology was comprehensive and informed by the literature, technical experts in the field, and health care organizations and stakeholders.
Generalizability to Medicare Population: Strong; data interoperability is a high priority for transitioning to value-based payment in the Medicare program.
Methods: Literature reviews, consultation with a technical expert panel, and qualitative case study interviews with 21 organizations spanning seven states were conducted.

Bleser WK, Saunders RS, Muhlestein DB, McClellan M. Why do accountable care organizations leave the Medicare Shared Savings Program? *Health Aff*. 2019;38(5):794-803. doi:10.1377/hlthaff.2018.05097

Subtopic(s): Background on the Goal of Having All Beneficiaries in Accountable Care Relationships by 2030
Type of Source: Journal Article
Objective: To understand the factors influencing accountable care organizations (ACOs) staying in the Medicare Shared Savings Program (MSSP).
Main Findings: In the first five years of the MSSP, the highest rate of program exit was in the third year. Four preventative factors of ACOs leaving MSSP included achieving a shared-savings bonus payment, having a higher benchmark per capita, being in a market with higher Medicare cost growth, and offering more care coordination services. Two factors that increased exiting were bearing downside risk and having a sicker patient population, as indicated by higher Hierarchical Condition Categories risk scores.
Strengths/Limitations: The ACOs in the MSSP are not representative of all ACOs, and the study's results were not causal.
Generalizability to Medicare Population: Strong; results from this study can inform strategy and policy to encourage greater participation and length of tenure of ACOs in value-based payment programs.
Methods: A survival analysis was performed to determine the length of time, in years, that an ACO remained in the MSSP.

Bryan AF, Duggan CE, Tsai TC. Advancing health equity through federal payment and delivery system reforms. The Commonwealth Fund. Published online June 15, 2022. doi:10.26099/emga-aj89

Subtopic(s): Technical Issues in PB-TCOC Models

Type of Source: Blog Post
Objective: To identify five areas where the Centers for Medicare & Medicaid Services (CMS) can advance health equity through health care payment and delivery system reform.
Main Findings: The five areas in which CMS can advance health equity include: (1) improve data collection; (2) monitor the impact of payment programs on health equity; (3) shift from pay-for-performance to invest-for-equity; (4) ensure innovative models reach under-resourced communities; and (5) align incentives across programs.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; this blog post focused on advancing health equity among Medicare and Medicaid beneficiaries.
Methods: N/A

Casalino LP, Gans D, Weber R, et al. US physician practices spend over $15.4 billion annually to report quality measures. *Health Aff*. 2016;35(3):401-406. doi:10.1377/hlthaff.2015.1258

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To discuss the time that physicians spend on administrative activities related to quality measures.
Main Findings: Per physician and staff spent an average of 785 hours annually and 15 hours weekly on administrative activities related to external quality measures. This time spent on each physician's quality measurement equates to an average cost of $40,069 annually. Eighty-one percent of physicians reported spending more time on external quality measures than three years ago, and 27 percent believe that the current measures represent their quality of care.
Strengths/Limitations: The sample was limited to members of the Medical Group Management Association; response bias may have occurred given practices that have stronger negative feelings about quality measures are more likely to respond; the cost estimates did not include costs to practices of information technology or office space used for dealing with quality measures; and the estimates came from one representative from each practice which may result in inaccuracies with time and cost estimations.
Generalizability to Medicare Population: Moderate; some of the physicians in the study likely care for Medicare beneficiaries.
Methods: Randomly selected practices from the Medical Group Management Association database (n=1,000) participated in a web-based survey.

Centers for Medicare & Medicaid Services (CMS). 2024 National impact assessment of the Centers for Medicare & Medicaid Services (CMS) quality measures report. Published February 2024. Accessed July 17, 2024. https://www.cms.gov/files/document/2024-national-impact-assessment-report.pdf

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Report
Objective: To summarize the quality and efficiency impacts of endorsed and not endorsed quality measures used in 26 CMS quality and value-based incentive payment programs.
Main Findings: The analysis included 371 measures with three or more years of reliable data from 2016 to 2019. For select CMS programs, improvements in measure performance were associated with patient impacts and avoided costs. The improvements were greatest before the

COVID-19 public health emergency (PHE). During the PHE, many of the measures had worse than expected performance. Many measures showed gaps in health equity for historically disadvantaged groups. Findings from focus groups suggested a need to develop equity measures that address topics including bias in care delivery, cultural competency, health-related social needs, access, and health literacy.
Strengths/Limitations: There was limited data availability during the COVID-19 PHE.
Generalizability to Medicare Population: Strong; the report summarized quality measures used in CMS programs.
Methods: The report used quantitative methods, including regression models, to understand the quality and efficiency impacts of the measures used in CMS programs. Focus groups were also conducted.

Centers for Medicare & Medicaid Services (CMS). Assessing equity to drive health care improvements: learnings from the CMS Innovation Center. Published 2023. Accessed October 16, 2024. https://www.cms.gov/priorities/innovation/data-and-reports/2023/assessing-equity-hc-improv-wp

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: White Paper
Objective: To examine how health equity is incorporated into CMS Innovation Center model designs and evaluations.
Main Findings: Innovation Center models designed to address the needs of underserved communities reached a more significant proportion of racial and ethnic minorities, included the largest proportion of Medicaid enrollees, and screened for health-related social needs. Challenges to addressing health equity included small population sizes and incomplete data. Moving forward, the authors recommended incorporating health equity priorities into model design and requiring model participants to collect specific types of data. In addition, the authors suggested developing measures and protocols that account for health equity.
Strengths/Limitations: One limitation relates to the large amount of incomplete data on critical populations (e.g., race and ethnicity, sexual orientation, and gender identity) in Medicare and Medicaid data sets.
Generalizability to Medicare Population: Strong; the analysis focused explicitly on CMS Innovation Center models.
Methods: The authors retrospectively evaluated CMS Innovation Center models. Seventeen models underway or recently completed between January 2018 and June 2022 were included in the analysis.

Centers for Medicare & Medicaid Services (CMS). Innovation Center strategy refresh. Published October 2021. Accessed October 16, 2024. https://www.cms.gov/priorities/innovation/strategic-direction-whitepaper

Subtopic(s): Key Highlights; Background on the Goal of Having All Beneficiaries in Accountable Care Relationships by 2030; Technical Issues in PB-TCOC Models; Appendix A. Research Questions by Environmental Scan Section
Type of Source: White Paper

Objective: To describe The CMS Innovation Center'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; the white paper focused on value-based care delivery plans for Medicare beneficiaries.
Methods: The authors conducted a mixed methods review of Medicare/Medicaid payment models, including savings and policy analysis.

Centers for Medicare & Medicaid Services (CMS). Person-centered innovation – an update on the implementation of the CMS Innovation Center's strategy. Published November 2022. Accessed October 16, 2024. https://www.cms.gov/priorities/innovation/data-and-reports/2022/cmmi-strategy-refresh-imp-report

Subtopic(s): Key Highlights; Background on the Goal of Having All Beneficiaries in Accountable Care Relationships by 2030; Technical Issues in PB-TCOC Models
Type of Source: White Paper
Objective: To assess the Innovation Center's progress in implementing its new strategy and identify target areas for improvement in the coming years. The paper also presents initial findings of the Center's progress in achieving the five strategy goals, including driving accountable care, advancing health equity, supporting innovation, addressing affordability, and partnering to achieve system transformation.
Main Findings: Accomplishments include resigning the Accountable Care Organization Realizing Equity, Access, and Community Health (ACO REACH) model, introducing the Enhancing Oncology Model (EOM) model, requiring health equity plans from EOM model participants, and developing a strategy to increase patient-reported outcome measures (PROMs) in models.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; the paper focused on CMS and CMMI's objectives to expand health care access and coverage equitably.
Methods: N/A

Centers for Medicare & Medicaid Services (CMS). Report to Congress: risk adjustment in Medicare Advantage. Published 2021. Accessed July 17, 2024. https://www.cms.gov/files/document/report-congress-risk-adjustment-medicare-advantage-december-2021.pdf

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Report
Objective: To fulfill the 21st Century Cures Act requirement to report revisions to the CMS Hierarchical Condition Categories (HCC) risk adjustment model and the End-Stage Renal Disease (ESRD) risk adjustment model under the Medicare Advantage (MA) program to Congress every three years.
Main Findings: The CMS-HCC model uses a predictive ratio to determine accuracy, and the model phased in additional factors accounting for the number of conditions a beneficiary has during the 2020-2020 payment years. Predictive ratios used in the ESRD models incorporated

three model segments to improve prediction during this same period, including medical expenditures, individual conditions, and chronic condition counts.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; this report informs policymakers and interested parties about adjustments to risk adjustment models used with the MA program.
Methods: CMS's standard metric for evaluating risk adjustment models was based on predictive ratios for fee-for-service Medicare beneficiaries.

Chen A, McWilliams M. How benchmarks affect participation in accountable care organizations: prospects for voluntary payment models. *Am J Health Econ*. 2023. doi:10.1086/726748
Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To investigate changes in accountable care organization (ACO) participation in the Medicare Shared Savings Program (MSSP) related to benchmark changes resulting from the POS-31 exclusion that removed evaluation and management services provided by clinicians in skilled nursing facilities (SNFs).
Main Findings: The 470 active ACOs reported wide variation in benchmark changes (both positive and negative) resulting from the POS-31 exclusion. In unadjusted comparisons, the 2018 MSSP dropout rate was higher among ACOs disadvantaged by the policy change than among advantaged ACOs (13.3% versus 6.0%). Findings suggest that each $100 decrease in effective benchmarks is associated with a 0.5 percentage-point increase in the share of ACO dropout.
Strengths/Limitations: The study estimates of participant sensitivity to benchmarks were based on benchmark changes created by the POS-31 exclusions, and other variables in ACO models that contribute to this effect were not included in this study.
Generalizability to Medicare Population: Strong; ACO participation is critical for value-based payment success, and this article describes how benchmark changes influence participation decisions.
Methods: Administrative Medicare claims data for a random 20% sample of fee-for-service (FFS) beneficiaries was used from 2009 to 2017 with the Provider-level Research Identifiable File for ACOs in 2017. The POS-31 exclusion effect was calculated by comparing how the policy affected performance year spending relative to baseline spending in 2017.

Chernew M, McWilliams M, Shah S. The case for administrative benchmarks (and some challenges). *NEJM Catal*. 2023;4(10). doi:10.1056/CAT.23.0194
Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To provide an overview of different methods used for benchmarking.
Main Findings: Whereas empirical benchmarks are tied to actual spending or forecasts based on lagged spending in traditional Medicare, administrative benchmarks are set by taking a base rate and expanding it by an administrative factor reflecting goals, anticipated volume, and intensity growth. Using administrative benchmarks may allow one to avoid the shortcomings of using empirical benchmarks, such as the ratchet effect.
Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; the article discusses challenges in calculating benchmarks for CMS programs and models, including Accountable Care Organizations (ACOs).
Methods: N/A

Congressional Budget Office (CBO). Medicare accountable care organizations: past performance and future directions. Published April 2024. Accessed July 17, 2024. https://www.cbo.gov/system/files/2024-04/59879-Medicare-ACOs.pdf

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: White Paper
Objective: To describe the current state of ACOs and present facilitating factors and barriers that have influenced the ability of ACOs to achieve savings in the Medicare program.
Main Findings: The types of ACOs that achieve savings include those led by independent physician groups, those with a large proportion of primary care providers, and those with higher baseline spending compared with the regional average. Reasons that hinder savings include weak incentives, lack of resources, and provider's ability to enter and leave an ACO based on their financial benefit.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; increasing the number of Medicare beneficiaries in accountable care relationships is a high priority for the Medicare program, and this paper summarizes factors that help or hinder ACO success.
Methods: A literature review was conducted.

Conway A, Satin D. The role of pay-for-performance in reducing healthcare disparities: a narrative literature review. *Prev Med*. 2022;164. doi:10.1016/j.ypmed.2022.107274

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To conduct a literature review to identify the effect of Pay-for-Performance (P4P) on health care disparities and identify design features most likely to reduce these disparities.
Main Findings: Six P4P design features, categorized as direct or indirect, were identified to help reduce disparities by addressing clinical and socioeconomic characteristics. Combining design features and fitting them into the overall payment system would ensure decreasing disparities in health care.
Strengths/Limitations: The type of literature supporting each design feature varied significantly. Studies for Risk/Case Mix typically had outcome studies, while some design features had studies that discussed them in a theoretical context. Another design feature was discussed in a quasi-experimental context using different stratification methods.
Generalizability to Medicare Population: Strong; the report focuses on P4P and value-based payment models.
Methods: A systematic literature review was conducted.

Crook H, Saunders R, Roiland R, Higgins A, McClellan M. A decade of value-based payment: lessons learned and implications or the Center for Medicare and Medicaid Innovation, part 2. *Health Affairs Forefront.* Published online 2021. doi:10.1377/forefront.20210607.230763

Subtopic(s): Key Highlights; Background on the Goal of Having All Beneficiaries in Accountable Care Relationships by 2030; Technical Issues in PB-TCOC Models
Type of Source: Blog Post
Objective: To discuss lessons learned about value-based payment (VBP) model improvement and expansion.
Main Findings: Recommendations include gaining more specialist involvement in payment models, such as developing longitudinal models for common conditions, encouraging collaboration between primary and specialty care, and creating more outcome measures specific to specialty care. The authors also emphasized the need to reduce provider participation burden through multi-payer alignment and consistent use of technical standards such as risk adjustment.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; the evidence presented can support the continued development and success of VBP models in the Medicare program.
Methods: A literature review was performed to support this blog post.

Finkel C, Worsowicz G. Changing payment models: shifting focus on post acute care. *Mo Medicine*. 2017;114(1):57-60. Published 2021. Accessed October 17, 2024. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6143563/pdf/ms114_p0057.pdf

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To explain the types of services provided by post acute care (PAC) to health care providers and describe PACs' role in the future of value-based payment.
Main Findings: Physicians must deeply understand PAC options that match patient needs, and health systems must develop integrated PAC rehabilitative programs as payment transitions to value-based.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; this article is informative and provides insights for health care providers and systems unfamiliar with navigating PAC options to support patient choice and quality of services.
Methods: A review of the literature was conducted.

Fowler L, Rawal P, Fogler S, Waldersen B, O'Connell M, Quinton J. The CMS Innovation Center's strategy to support person-centered, value-based specialty care. Published November 7, 2022. Accessed October 17, 2024. https://www.cms.gov/blog/cms-innovation-centers-strategy-support-person-centered-value-based-specialty-care

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Blog Post
Objective: To introduce the Innovation Center's new specialty strategy and implementation timeline supporting beneficiary access to high-quality specialty care.
Main Findings: Four strategy elements were presented, with short- and long-term goals for each described. The four anchor elements include enhancing specialty care performance data transparency, maintaining momentum for acute episode payment models and condition-based models, creating financial incentives within primary care for specialist engagement, and creating

financial incentives for specialists to affiliate with population-based models and value-based care.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; the post describes the Innovation Center's strategy to increase value-based specialty care in the Medicare program.
Methods: N/A

Greiner A, Pham HH, Gaus C. An option For Medicare ACOs to further transform care. *Health Affairs Forefront*. Published online 2022. doi:10.1377/forefront.20220713.922286
Subtopic(s): Background on the Goal of Having All Beneficiaries in Accountable Care Relationships by 2030
Type of Source: Blog Post
Objective: To present the Medicare Shared Savings Program (MSSP) to bring accountable care relationships to Medicare beneficiaries.
Main Findings: The authors presented recommendations for increasing participation, such as allowing MSSP accountable care organizations (ACOs) in primary care hybrid models and offering MSSP partial capitation payments within total cost of care models. Increased growth in MSSP remains inhibited by issues with rebasing benchmarks, lowering shared savings rates, and mandatory two-sided risk in models.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; this post presents an option for increasing accountable care relationships in Medicare through the MSSP program.
Methods: N/A

Health Care Payment Learning & Action Network. Alternative payment model framework. Published 2017. Accessed July 23, 2024. https://hcp-lan.org/workproducts/apm-refresh-whitepaper-final.pdf
Subtopic(s): Background on the Goal of Having All Beneficiaries in Accountable Care Relationships by 2030
Type of Source: White Paper
Objective: To update the previous Alternative Payment Model (APM) Framework.
Main Findings: The APM Framework is used to implement APMs and evaluate progress toward health care payment reform. A multi-stakeholder advisory group met to update the 2016 APM Framework's principles based on changes that have occurred since the framework's original publication. The previous version of the framework needed to be updated due to several changes that took place since its publication, such as the publication of CMS' final rule on the Merit-based Incentive Payment System (MIPS) and Advanced APMs under the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA).
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; the white paper discussed a framework that supports the implementation and evaluation of APMs, which are directly relevant to Medicare beneficiaries.
Methods: N/A

Health Care Payment Learning & Action Network (HCPLAN). Accelerating and aligning population-based payment models: data sharing. Published 2016. Accessed July 17, 2024. https://hcp-lan.org/workproducts/ds-whitepaper-final.pdf

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: White Paper
Objective: To outline principles and recommendations that should guide approaches to data sharing in population-based payment models.
Main Findings: The high-level principles identified include data sharing in population-based payment needs to be different than data sharing in fee-for-service (FFS) models, personal data should follow the patient, population-level data should be treated as a public good, and widespread data sharing may necessitate third-party intermediates.
Strengths/Limitations: The white paper considers five use cases for data sharing, which provides concrete examples of who will share and with which types of data.
Generalizability to Medicare Population: Strong; the paper considers data sharing differences from traditional Medicare FFS**.**
Methods: N/A

Health Care Payment Learning & Action Network (HCPLAN). Alternative Payment Model (APM) framework. Published 2016. Accessed July 23, 2024. https://www.milbank.org/wp-content/uploads/2017/11/HCP-LAN-White-Paper-APM-Framework.pdf

Subtopic(s): Background on the Goal of Having All Beneficiaries in Accountable Care Relationships by 2030; Technical Issues in TB-TCOC Models
Type of Source: White Paper
Objective: To develop an alternative payment model (APM) framework that tracks progress toward payment reform and supports person-centered care delivery.
Main Findings: The APM framework includes seven principles, including empowering patients to be partners in health care transformation, shifting U.S. health care spending towards population-based payments, providing providers with value-based incentives, requiring quality as part of APMs, incentivizing providers to invest in and adopt a new approach to care delivery, classifying APMs according to the dominant form of payment, and recognizing categorizing centers of excellence, accountable care organizations, and patient-centered care homes as delivery systems that can be applied to a variety of payment models.
Strengths/Limitations: Participation in the LAN study was voluntary, and the study did not capture the entire population.
Generalizability to Medicare Population: Strong; this work supports value-based payment reform by designing an APM framework that categorizes different APMs and measures progress in adopting APMs across the U.S.
Methods: The Alternative Payment Models Framework and Progress Tracking Work Group developed the white paper, which built upon the CMS payment model classification scheme for this framework.

Health Care Payment Learning & Action Network (HCPLAN). APM measurement: progress of alternative payment models – 2023 methodology and results report. Published 2023. Accessed October 29, 2024. https://hcp-lan.org/workproducts/apm-methodology-2023.pdf

Subtopic(s): Background on the Goal of Having All Beneficiaries in Accountable Care Relationships by 2030
Type of Source: Report
Objective: To report results from the annual alternative payment model (APM) survey, including retrospective data on dollars paid to providers during CY 2022.
Main Findings: In 2022, 36.1% of patients represented in the survey were covered in accountable care arrangements across all lines of business. There were 86.7% of the commercial, Medicare Advantage, Medicaid, and Traditional Medicare markets represented in the survey.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; this paper informs progress on achieving the Medicare goals of having 100% of traditional Medicare beneficiaries in an accountable care relationship by 2030. This report further informs progress in
Methods: Sixty-four health plans, four fee-for-service Medicaid states, and Traditional Medicare participated in the survey. HCP-LAN collects surveys and other aggregated data in collaboration with AHIP, BCBS Association, and CMS.

Health Care Payment Learning & Action Network (HCPLAN). Exploring APM success factors: insights from a focused review. Published 2018. Accessed July 17, 2024. https://hcp-lan.org/workproducts/APM-Success-Factors-Report.pdf

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Report
Objective: To gather and disseminate advanced payment model (APM) best practices for lowering cost and improving care quality.
Main Findings: Design components that support APMs include investments in infrastructure, flexibility in risk frameworks, provider knowledge of risk-based contracting, and high-value networks. Implementation strategies linked to success include leadership, health information technology, provider engagement, and patient-centeredness. Multi-payer arrangements support success, although competing interests, anti-trust concerns, and local markets are barriers to collaboration. Lastly, hospital integration was not found to be necessary to achieve savings.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; this report supports the development of APM by aggregating factors associated with successful practices that improve quality and reduce health care costs.
Methods: To identify successful APM design and implementation elements, a target literature search and interviews with stakeholders were conducted.

Horstman C, Lewis C, Abrams M. Designing accountable care: lessons from CMS accountable care organizations. Commonwealth Fund. Published online November 10, 2022. doi:10.26099/8fvg-cw28

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC
Type of Source: Blog Post
Objective: To identify factors facilitating and hindering CMS accountable care organizations' (ACOs') success.

Main Findings: Factors that impact ACOs' success include the design of financial incentives to promote accountability; the design of benchmarks; an explicit focus on equity; whether the ACO is physician-led or hospital-led; the inclusion of advanced primary care models in the design; and a culture of collaboration. Findings can be used to inform CMS' efforts to scale up ACO programs.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; the blog focused on synthesizing evidence on CMS ACOs, which coordinate patient care while being held responsible for the quality and cost of care.
Methods: N/A

Horstman C, Bryan A, Lewis C. How the CMS Innovation Center's payment and delivery reform models seek to address the drivers of health. The Commonwealth Fund. Published online August 8, 2022. doi:10.26099/eznf-0850

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Report
Objective: To synthesize lessons learned from the way CMS Innovation Center (CMMI) models have addressed needs related to social, economic, and location-based drivers of health (DOH).
Main Findings: Twenty-three of 40 CMMI models addressed DOH-related needs. Addressing these needs was required in some but not all models. Strategies to address DOH needs included screening and referring beneficiaries to community-based organizations. Participants reported that financial support, financial incentives, and technical assistance would help them better address patients' needs.
Strengths/Limitations: One strength of the study was the summary of policy implications and recommendations to enable model participants to better address patient needs.
Generalizability to Medicare Population: Strong; this report focused on addressing DOH needs among Medicare and Medicaid beneficiaries.
Methods: The authors reviewed 40 CMMI model evaluations, applications, and memos. The models were categorized based on activities and requirements for addressing DOH. The three categories included (1) no evidence of model and participants addressing DOH, (2) evidence of participants addressing DOH through screening and navigation services, and (3) CMMI formally required DOH to be addressed as part of the model.

Horstman C, Lewis C. The basics of risk adjustment (explainer). The Commonwealth Fund. Published April 11, 2024. doi:10.26099/8xtk-c387

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Report
Objective: To provide an overview of risk adjustment methods in capitated payment models.
Main Findings: Risk adjustment is a method used to modify provider payments based on the characteristics (e.g., age, sex) and health (e.g., chronic health conditions) of their patients. Risk adjustment encourages health care providers to deliver services to all patients, regardless of their health care needs. Despite the impact of social needs on health, social needs have generally not been included in risk adjustment methods. If not appropriately designed and implemented, risk adjustment could exacerbate health inequities.
Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; the report described risk adjustment methods used in CMS Innovation Center models and programs and may apply to some Medicare beneficiaries.
Methods: N/A

Hostetter M, Klein S. The perils and payoffs of alternative payment models for community health centers. The Commonwealth Fund. Published online 2022. doi:10.26099/2ncb-6738

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Report
Objective: To profile federally qualified health centers (FQHCs) participating in alternative payment models (APMs) and describe lessons learned.
Main Findings: FQHCs have increased their adoption of APMs, including those with downside risk. To participate successfully in APMs, FQHCs need reliable partners, collaboration with other health care providers, and payment models designed to cover all patients. The transition from FQHCs to APMs may require a stepped approach that involves upfront funding and flexibility to run pilots.
Strengths/Limitations: The report described the experiences and lessons learned for several specific FQHCs, and the findings may not represent all FQHCs.
Generalizability to Medicare Population: Moderate; although the report is not focused specifically on Medicare beneficiaries, the findings are relevant to them.
Methods: N/A

Huber K, Gonzalez-Smith J, Wang A, et al. Engaging specialists in accountable care: tailoring payment models based on specialties and practice contexts. *Health Affairs Forefront*. Published online 2023. doi:10.1377/forefront.20231219.115250

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC
Type of Source: Blog Post
Objective: To describe how different specialists can be engaged in accountable care organizations (ACOs) and present potential policy solutions to increase participation.
Main Findings: Goals for engaging specialists were presented for whole-person, acute episode, longitudinal, and chronic specialty care. The authors recommended refining population models with corresponding condition-level measures for whole-person specialty care. For acute episode specialty care, the authors note that quality and safety systems measures should be included to encourage high-performance care and coordination. Specific to longitudinal specialty care, the authors recommend shifting toward person-level payments, per-patient patients, and substantiation payments to reduce acute episodes and increase provider coordination.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; increasing specialists' engagement in ACOs is a high Medicare policy priority that would benefit beneficiaries with improved care management.
Methods: N/A

Jaffery JB, Safran DG. Addressing social risk factors in value-based payment: adjusting payment not performance to optimize outcomes and fairness. *Health Affairs Forefront*. Published online 2021. doi:10.1377/forefront.20210414.379479

Subtopic(s): Technical Issues in PB-TCOC

Type of Source: Blog Post
Objective: To present two policy approaches that help satisfy proponents for and against adjusting performance scores for social risk factors within socially disadvantaged populations.
Main Findings: The authors recommend adjusting payment rather than performance scores to account for populations with higher social risk factors using one of two options. The first approach is to adjust payments to organizations prospectively based on medical needs. The second policy approach includes adding a multiplier for performance incentive payments for organizations serving populations with more social risk factors.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; this post discusses Medicare payment policy solutions for supporting health care providers who treat patients with social risk factors.
Methods: N/A

Japinga M, Jayakumar P, de Brantes F, Bozic K, Saunders R, McClellan M. Strengthening specialist participation in comprehensive care through condition-based payment reforms. Duke Margolis Center for Health Policy. Published November 7, 2022. Accessed July 17, 2024. https://healthpolicy.duke.edu/sites/default/files/2022-11/Strengthening%20Specialist%20Participation%20in%20Comprehensive%20Care%20through%20Condition-Based%20Payment%20Reforms.pdf

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Report
Objective: To recommend strengthening specialist participation in comprehensive care through condition-based payment reforms.
Main Findings: The report highlights various steps that can be taken to support the infrastructure needed to improve specialty care, such as increased data sharing between primary and specialty providers. The report also notes that providers are at different readiness levels to implement condition-based payment reforms, and CMS should, therefore, accommodate providers based on their degree of readiness.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; the report focuses on strategies for specialty engagement and Medicare payment reform.
Methods: Economic analysis.

Kazungu JS, Barasa EW, Obadha M, Chuma J. What characteristics of provider payment mechanisms influence health care providers' behaviour? A literature review. *Int J Health Plann Manage*. 2018; 33(4): e892-e905. doi:10.1002/hpm.2565

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC
Type of Source: Journal Article
Objective: To investigate if provider payment mechanisms (PPMs) influence health care practitioners' behavior and to understand the characteristics of the PPMs.
Main Findings: Seven characteristics influencing provider behavior were identified. They include, in order of importance, payment rate, accountability mechanisms, payment schedule, performance requirements, the building of services, the sufficiency of payment rates to cover the cost of services, and timeliness of payment.

Strengths/Limitations: Although multiple databases were searched for the systematic literature review, some articles related to this topic could have been missed.
Generalizability to Medicare Population: Moderate; the characteristics identified as influencing provider behavior could be notable for the Medicare program, although this study focused on reaching the goal of universal health care in countries outside of the U.S.
Methods: A systematic review of the literature with thematic analysis was performed.

KM, Max W, White JS, Chapman SA, Muench U. Do penalty-based pay-for-performance programs improve surgical care more effectively than other payment strategies? A systematic review. *Ann Med Surg*. 2020; 60:623-630. doi:10.1016/j.amsu.2020.11.060

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To determine the impact of pay-for-performance (P4P) penalty design on quality and cost outcomes on surgical care, compared with a reward design or a combination of reward and penalty design.
Main Findings: The authors found that P4P programs that utilize a penalty design could be more effective than programs that use a reward or combination of reward and penalty design. A higher proportion of studies showed positive effects due to a penalty design, whereas reward or combination designs showed null or non-significant effects. The authors attribute this to the behavioral economics theory of loss aversion, showing that organizations respond to losses more than gains.
Strengths/Limitations: Few studies evaluated the same studies, meaning a meta-analysis could not be performed. The studies reviewed for this article varied significantly in design features, and the findings are not generalizable to all surgical procedures, as the P4P programs in this study primarily targeted coronary artery bypass graft, total hip arthroplasty, and total knee arthroplasty.
Generalizability to Medicare Population: Strong; many P4P programs were launched by the Centers for Medicare & Medicaid Services to address the quality and cost of care for their populations.
Methods: A systematic review of the literature focused on P4P programs that targeted surgical care, with the primary outcomes of interest being quality and cost of care.

Kushner P, Cavender M, Mende C. Role of primary care clinicians in the management of patients with type 2 diabetes and cardiorenal diseases. *Clin Diabetes*. 2022;40(4):401-142. doi:10.2337/cd21-0119

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To illustrate the multidisciplinary care needed in partnership with primary care clinicians (PCCs) for patients with type 2 diabetes at risk for renal and cardiovascular complications, such as chronic kidney disease (CKD) and heart failure.
Main Findings: All type 2 diabetes patients should receive CKD screening regardless of their treatment plan. Patients with CKD are labeled as high risk for heart failure. PCCs can support early diagnosis and treatment before advanced disease develops.
Strengths/Limitations: This article was a case study incorporating clinical insights.

Generalizability to Medicare Population: Strong; collaborative health care teams and early diagnosis and treatment would benefit Medicare beneficiaries with type 2 diabetes.
Methods: This article summarizes a case study with recommended treatment plans and intervention opportunities. Clinical insights regarding a patient with type 2 diabetes were obtained from a PCC, a nephrologist, and a cardiologist.

Lavallee D, Chenok K, Love R, et al. Incorporating patient-reported outcomes into health care to engage patients and enhance care. *Health Aff*. 2016;35(4):575-582. doi:10.1377/hlthaff.2015.1362

Subtopic(s): Key Findings; Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To present opportunities, challenges, and future goals of incorporating patient-report outcome measures during health care delivery to ensure patients' voices and experiences are captured.
Main Findings: Guidance for incorporating patient-reported outcomes is available from many organizations and sources (e.g., National Quality Forum, Professional Societies, National Institute of Health). Providers see value in using patient-reported outcome measures. Still, implementation has been challenging due to provider burden and added time to interpret and add patient data to health care systems. Potential solutions include engaging patients before or after a visit or using digital devices during the patient encounter.
Strengths/Limitations: A literature review and real-world examples were presented, but the literature was not systematically gathered.
Generalizability to Medicare Population: Strong; incorporating patient-reported outcomes measures across programs and within health care settings is a priority in the Medicare program.
Methods: The article summarized applicable literature related to patient-reported outcome measures.

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. doi:10.1111/1475-6773.12102

Subtopic(s): Technical Issues in PB-TCOC
Type of Source: Journal Article
Objective: To determine how many ACOs are in the United States, where they are located, and what characteristics are associated with ACO formation.
Main Findings: The article identified 227 ACOs across the United States, with 55 percent of the population residing in areas served by these ACOs. ACOs are more likely to form in high-cost areas that perform higher on quality measures and have fewer primary care physician groups. They are less likely to form in high-poverty regions and rural areas.
Strengths/Limitations: Many characteristics related to ACO formation are likely more critical at a provider or organizational level than at the regional level.
Generalizability to Medicare Population: Strong; the study focused specifically on Medicare ACOs and their location.
Methods: A cross-sectional study of all ACOs established by August 2012 was conducted using multivariate logistical regression.

Li X, Evans JM. Incentivizing performance in health care: a rapid review, typology and qualitative study of unintended consequences. *BMC Health Serv Res*. 2022; 22:690. doi:10.1186/s12913-022-08032-z

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To examine the negative and positive unintended consequences associated with health care performance management (PM) programs.
Main Findings: Forty-eight unintended consequences were identified, categorized by who was impacted and whether the result was negative or positive. They were grouped into six subcategories: increased work, poor design or use of performance data, breaches of trust, increased work environmental toxicity, exacerbation of inequalities, politicization of performance management, and positive unintended consequences.
Strengths/Limitations: A strength of the study was the mixed method approach, utilizing both peer-reviewed literature and qualitative interviews.
Generalizability to Medicare Population: Moderate; lessons of unintended consequences of PM programs are valuable for the Medicare program, although the study was conducted in the Canadian health care system.
Methods: A rapid literature review was conducted to develop a typology, followed by semi-structured interviews of 147 participants involved in a PM system across 40 care delivery networks.

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*. Published online 2018. doi:10.1377/forefront.20180409.159181

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Blog Post
Objective: To investigate how the Bundled Payment for Care Improvement (BPCI) Advanced program compares to existing bundled payment programs and how it may interact with accountable care organizations (ACOs).
Main Findings: ACOs and bundled payments may work together for health care organizations because ACOs emphasize global accountability for care and quality. In contrast, bundled payments focus on accountability for episodes from hospitalization to post-acute care. Hospitals that participated in an ACO and bundled payment had lower readmission rates, supporting collaboration between the initiatives. Challenges are noted in assigning accountability and overlap in providers.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; this article discusses the relationship between bundled payment and ACOs, highlighting solutions to increase care coordination and accountability.
Methods: N/A

Machta R, Peterson G, Rotter J, et al. Evaluation of the Maryland Total Cost of Care Model: implementation report. Mathematica. Published July 2021. Accessed October 22, 2024. https://innovation.cms.gov/data-and-reports/2021/md-tcoc-imp-eval-report

Subtopic(s): Appendix D. Summary of Key Value-Based Care Components for Selected CMMI Models
Type of Source: Report
Objective: To evaluate the Maryland Total Cost of Care (TCOC) Model.
Main Findings: In its first two years (2019 and 2020), the Maryland TCOC Model has engaged a wide range of providers and begun to transform care outside the hospital. This engagement and care transformation can potentially improve targeted outcomes, capitalizing on the substantial room for improvement at the start of the model. Although the state made progress in reducing avoidable hospital use and hospital spending growth during the Maryland Alternative Payment Models, there remains meaningful room to reduce avoidable acute care further. There are substantial opportunities for improvement in areas newly targeted in the model, including reducing non-hospital spending, improving care coordination across providers, improving ambulatory care to reduce avoidable admissions, and reducing BMI and diabetes incidence. Future evaluation efforts will assess whether the model achieves these aims.
Strengths/Limitations: This is the first report.
Generalizability to Medicare Population: Strong; the report focuses primarily on Medicare Parts A and B.
Methods: Matched comparison group; interviews; Medicare Parts A and B Claims Data; CMS/HSCRC Implementation datasets; savings targets; fixed spending percentage; national spending growth; hospital spending growth.

McCauley L, Phillips RL, Meisnere M, Robinson SK. Implementing high-quality primary care: rebuilding the foundation of health care. National Academies of Sciences, Engineering, and Medicine. Washington, DC: The National Academies Press. Published 2021. doi:10.17226/25983

Subtopic(s): Background on the Goal of Having All Beneficiaries in Accountable Care Relationships by 2030
Type of Source: Book
Objective: To develop an implementation plan for recommendations to improve the quality of primary care, beginning with the recommendations provided in The Institute of Medicine's (IOM's) 1996 report, Primary Care: American's Health in a New Era.
Main Findings: Many of the recommendations in the IOM's 1996 report were not implemented. An implementation plan was developed for high-quality primary care in the U.S. The implementation plan had five objectives: pay for primary care teams to care for people, not doctors; ensure that high-quality primary care is available to all individuals across all communities; train primary care teams where people live and work; design information technology that serves the patient and interprofessional care team; and ensure that high-quality primary care is implemented in the U.S. The strategy includes an implementation framework, an accountability framework, and a public policy framework.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Moderate; the book's objective is to develop an implementation plan to improve the quality of primary care in the U.S. The book's recommendations and proposed plans apply to the Medicare population.
Methods: N/A

McCoy RG, Bunkers KS, Ramar P, et al. Patient attribution: why the method matters. *Am J Manag Care*. 2018;24(12):596-603. Accessed October 22, 2024. https://pmc.ncbi.nlm.nih.gov/articles/PMC6549236/pdf/nihms-1032062.pdf

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To assess the impact of patient attribution methods on cost, quality, and utilization.
Main Findings: The proportion of patients correctly attributed to their paneled provider ranged from 22 percent to 45 percent. Utilization and cost, but not quality, varied substantially among patients, attributed to the different methods and between patients who were paneled and those who were not. The authors suggested that standardized attribution methods are essential to improving value.
Strengths/Limitations: The impact of attribution methods on cost, quality, and utilization was assessed within a single integrated health system. Findings may not be generalizable to other types of settings.
Generalizability to Medicare Population: Moderate; the Dartmouth attribution method used by CMS accountable care organization attribution and the Medicare Sharing Savings Program was assessed in the study. However, because the study examined attribution methods within a single integrated health system, findings may not be generalizable to other settings.
Methods: Administrative data were analyzed for patients attributed and paneled to a primary care provider at the Mayo Clinic Rochester in 2011. Patients attributed to each of the five attribution methods were compared based on their concordance with primary care provider empanelment, quality measures, utilization, and total costs of care.

McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf

Subtopic(s): Key Highlights; Background on the Goal of Having All Beneficiaries in Accountable Care Relationships by 2030; Technical Issues in PB-TCOC; Areas Where Additional Information Is Needed
Type of Source: White Paper
Objective: To review payment reform to date and to describe a multi-track population-based payment model as a potential future direction.
Main Findings: The authors had six recommendations, including defining a parsimonious set of model tracks, establishing stronger participation incentives, setting benchmarks to provide an "on-ramp" for high-spending ACOs, improving risk adjustment, promoting health equity, and revising the definition of ACOs.
Strengths/Limitations: The paper did not discuss the role of episode-based payment beyond general considerations.
Generalizability to Medicare Population: Strong; this white paper informs Medicare policy and supports population-based payment reform.
Methods: N/A

McWilliams JM, Chen AJ. Understanding the latest ACO "savings": curb your enthusiasm and sharpen your pencils—part 1. *Health Affairs Forefront*. Published November 11, 2020. Accessed October 23,

2024. https://www.healthaffairs.org/content/forefront/understanding-latest-aco-savings-curb-your-enthusiasm-and-sharpen-your-pencils-part-1

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Blog Post
Objective: To investigate the $2.6 billion in gross savings from the Medicare Shared Savings Program (MSSP).
Main Findings: Savings growth was likely related to the entry and exit of ACOs due to their updated benchmarks rather than program success. Benchmarks should be viewed as part of a model design and not as an indicator of the model's success. Further, there is no evidence that downside risk has accelerated savings in the MSSP.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; this post examines factors contributing to MSSP savings rates and presents policy recommendations to strengthen the MSSP program.
Methods: N/A

McWilliams JM, Weinreb G, Ding L, Ndumele CD, Wallace J. Risk adjustment and promoting health equity in population-based payment: concepts and evidence. *Health Aff*. 2023;42(1):105-14. doi:10.1377/hlthaff.2022.00916

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To investigate the impact of using social risk factors as predictors to risk adjustment models on spending levels and to provide guidance for solutions to enhance funding to achieve advanced equity.
Main Findings: Attempts to support more equitable care by improving the predictive accuracy of risk adjustment models using social risk factors are flawed because historical and current spending levels are insufficient to address health inequities in historically underserved populations. Medicare spending was lower among groups at higher risk for social disadvantage, and adding social factors to the risk adjustment model lowered future population-based payments.
Strengths/Limitations: Fee-for-service Medicare claims were used, but the availability of Medicare Advanced data would have improved the precision of the study estimates.
Generalizability to Medicare Population: Strong; the paper analyzed outcomes of differing risk adjustment approaches on advancing equity.
Methods: Medicare claims data from 2012-2017 was analyzed using a linear regression model of total annual per beneficiary Medicare spending.

Medicare Payment Advisory Commission (MedPAC). Health care spending and the Medicare program: a data book. Published July 2021. Accessed October 23, 2024. https://www.medpac.gov/wp-content/uploads/import_data/scrape_files/docs/default-source/data-book/july2021_medpac_databook_sec.pdf

Subtopic(s): Background on the Goal of Having All Beneficiaries in Accountable Care Relationships by 2030.
Type of Source: Report

Objective: To provide information on national health care spending and Medicare spending; Medicare beneficiary demographics; Medicare beneficiary and other payer financial liability; dual-eligible beneficiaries; Alternative Payment Models; acute inpatient services; ambulatory care; post-acute care; Medicare Advantage; prescription drugs; and other services (e.g., dialysis, hospice, clinical laboratory).
Main Findings: N/A
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; the Data Book is focused on the Medicare population.
Methods: MedPAC's annual Data Book, developed by MedPAC, contains information from its March and June reports to Congress, as well as other information.

Medicare Payment Advisory Commission (MedPAC). Health care spending and the Medicare Program: a data book. Published July 2023. Accessed October 23, 2024. https://www.medpac.gov/wp-content/uploads/2023/07/July2023_MedPAC_DataBook_SEC_v2.pdf

Subtopic(s): Background on the Goal of Having All Beneficiaries in Accountable Care Relationships by 2030.
Type of Source: Report
Objective: To provide information on national health care spending and Medicare spending; Medicare beneficiary demographics; Medicare beneficiary and other payer financial liability; dual-eligible beneficiaries; Alternative Payment Models; acute inpatient services; ambulatory care; post-acute care; Medicare Advantage; prescription drugs; and other services (e.g., dialysis, hospice, clinical laboratory).
Main Findings: N/A
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; the Data Book is focused on the Medicare population.
Methods: MedPAC's annual Data Book, developed by MedPAC, contains information from its March and June reports to Congress, as well as other information.

Medicare Payment Advisory Commission (MedPAC). Report to the Congress Medicare and the health care delivery system: chapter 2 streamlining CMS's portfolio of alternative payment models. Published June 2021. Accessed November 1, 2024. https://www.medpac.gov/wp-content/uploads/import_data/scrape_files/docs/default-source/default-document-library/jun21_ch2_medpac_report_to_congress_sec.pdf

Subtopic(s): Key Highlights; Background on the Goal of Having All Beneficiaries in Accountable Care Relationships by 2030
Type of Source: Report
Objective: To review the current state of Alternative Payment Models (APMs) and provide recommendations supporting the future success of value-based payment models.
Main Findings: The report described the impacts of alternative payment models, why APMs are pursued, factors that may limit their success, unintended consequences of implementing multiple concurrent APMs, and recommendations for a smaller set of harmonized models with consistent incentives and precise parameters.

Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; this report describes improving existing APMs to provide more efficient and less costly 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): Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To predict the effects and cost at the provider level for the Patient-Centered Medical Home (PCMH) and the Integrated Primary Care and Community Support (I-PaCS) models over 3 years.
Main Findings: The anticipated annual savings by the third year was 1.4% for PCMH and 7.0% for the I-PaCS model. Models like I-PaCS that include community health works (CHW) complement PCMH models by addressing patient SDOH needs.
Strengths/Limitations: The study formulated its cost savings models based on assumptions about cost savings and the Medicaid-managed care population in New Mexico.
Generalizability to Medicare Population: Moderate; both care models contribute to favorable health care outcomes for older patients through enhanced care coordination.
Methods: Estimates of PCMH and I-PaCS were derived from the literature. Cost estimates were obtained from the Patient-Centered Primary Care Collaborative annual report and community health worker cost studies.

Navathe AS, Liao JM, Wang E, et al. Association of patient outcomes with bundled payments among hospitalized patients attributed to accountable care organizations. *JAMA Health Forum*. 2021;2(8):e212131-e212131. doi:10.1001/jamahealthforum.2021.2131

Subtopic(s): Technical Issues in PB-TCOC
Type of Source: Journal Article
Objective: To evaluate whether outcomes in the Bundled Payment for Care Improvement (BPCI) program differed depending on whether patients were attributed to accountable care organizations (ACOs) in the Medicare Shared Savings Program (MSSP).
Main Findings: The association between bundled payments and changes in post-discharge institutional spending was larger among patients attributed to ACOs for medical episodes but not surgical episodes. Attribution to an ACO also increased the strength of the association between bundled payments and changes in 90-day readmissions for both medical and surgical episodes.
Strengths/Limitations: Findings are subject to residual confounding and selection bias. Additionally, given the lack of ACO attribution in the pre-period and time-varying nature of participation, the study design could not definitively rule out pre-trends, which were more apparent for surgical episodes.
Generalizability to Medicare Population: Strong; this study focused on a Medicare APM.
Methods: Retrospective cohort study.

NEJM Catalyst. What Is pay for performance in healthcare? *NEJM Catalyst*. 2018;4(2). doi:10.1056/CAT.18.0245

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To describe pay-for-performance approaches, pay-for-performance models, CMS programs, and pros and cons.
Main Findings: CMS has developed several pay-for-performance (P4P) models and programs, including the Hospital Value-Based Purchasing Program, the Hospital Readmissions Reduction Program, the Hospital-Acquired Condition Reduction Program, the End-Stage Renal Disease Quality Initiative Program, the Skilled Nursing Facility Value-Based Program, the Home Health Value-Based Program, and the Value Modifier or Value-Based Modifier Program. Benefits of P4P include an emphasis on quality over quantity of care, the use of transparent metrics that improve accountability, the use of existing FFS payment systems, and proven cost savings for some programs. Criticisms of P4P include reductions in access for disadvantaged populations, reductions in job satisfaction, requirements for expensive administrative systems, and challenges related to accurate provider attribution.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; the article discusses Medicare pay-for-performance programs in-depth.
Methods: N/A

NORC at the University of Chicago and the Department of Health and Human Services' Office of Health Policy of the Assistant Secretary for Planning and Evaluation (ASPE). Environmental scan on developing and implementing performance measures for population-based total cost of care (PB-TCOC) models. Accessed July 17, 2024. https://aspe.hhs.gov/sites/default/files/documents/24622a3892de021ffa9f130db91d34e1/PTAC-Mar-25-Escan.pdf

Subtopic(s): Technical Issues in PB-TCOC
Type of Source: Environmental Scan
Objective: To provide the Physician-Focused Payment Model Technical Advisory Committee (PTAC) background information on developing and implementing performance measures.
Main Findings: Challenges with performance measurement include a lengthy developmental timeline, which can increase provider administrative burden after implementation. Delays in actionable feedback are another cited challenge, along with a proliferation of performance measures leading to confusion and burden. Opportunities to increase the success of performance measures include developing measures alongside patients and interested parties, providing incentives for meeting performance goals, and adding additional reporting options to existing models.
Strengths/Limitations: This environmental scan summarizes existing literature and findings and does not introduce new research findings.
Generalizability to Medicare Population: Strong; the environmental scan describes the current state, challenges, and opportunities to incorporate performance measures to PB-TCOC models in the Medicare program.
Methods: A list of research questions related to developing and implementing performance measures was created. A literature review was conducted to investigate the research questions.

NORC at the University of Chicago. Evaluation of the Vermont All-Payer Accountable Care Organization Model: 2018–2022. Published June 2024. Accessed July 17, 2024. https://www.cms.gov/priorities/innovation/data-and-reports/2024/vtapm-4th-eval-full-report

Subtopic(s): Technical Issues in PB-TCOC Models

Type of Source: Report

Objective: To evaluate the Vermont All-Payer Accountable Care Organization (ACO) Model (VTAPM) between 2018 and 2022.

Main Findings: Regarding spending, the VTAPM Medicare ACO initiative reduced gross spending for attributed beneficiaries compared with beneficiaries attributed to providers participating in Medicare Shared Savings Program (MSSP) ACOs during the first five performance years. Medicaid spending was stable between 2017 and 2019, declined in 2020, and dropped in 2021. Regarding utilization and quality, VTAPM-attributed Medicare beneficiaries showed a reduction in acute care utilization. Regarding population health, primary care visits increased for Medicare ACO-attributed beneficiaries between 2014 and 2022, and attribution-eligible Medicaid enrollees showed an increase in substance use disorder diagnoses and treatment from 2016 to 2022.

Strengths/Limitations: The evaluation results should be interpreted considering health care reform efforts in Vermont before model implementation. The results could reflect the longer-term effects of those efforts.

Generalizability to Medicare Population: Moderate; risk-bearing entities can participate in all three ACO initiatives: Medicare, Medicaid, and commercial.

Methods: A difference-in-differences analysis was conducted on spending, utilization, and quality of care outcomes for Medicare beneficiaries attributed to the VTAPM Medicare ACO. Trends were compared with a comparison group of beneficiaries attributed to MSSP ACOs. A cross-sectional analysis was conducted on spending and utilization patterns for enrollees attributed to the VTAPM Medicaid ACO.

NORC at the University of Chicago. Global and Professional Direct Contracting Model Evaluation: annual report 1. Published October 2023. Accessed October 23, 2024. https://www.cms.gov/priorities/innovation/data-and-reports/2023/gpdc-1st-ann-report

Subtopic(s): Technical Issues in PB-TCOC Models

Type of Source: Report

Objective: To evaluate the performance of the first year of the Global and Professional Direct Contracting (GDPC) Model with Direct Contracting Entities (DCEs).

Main Findings: There were no impacts on gross or net Medicare expenditures in the model's first performance year. Standard DCEs showed a reduction in acute care hospital spending and utilization, and both standard and new entrant DCEs showed a decrease in emergency department visits. A reduction in hospitalizations for ambulatory care-sensitive conditions was also observed among standard DCEs. Financial factors motivated DCE leaders to join the model.

Strengths/Limitations: The model's first performance year may have been affected by contextual factors, including the COVID-19 pandemic. The authors suggested they will continue to explore contextual, structural, and implementation factors that could impact utilization and cost outcomes over time.

Generalizability to Medicare Population: Strong; the model evaluated directly served Medicare beneficiaries and providers.
Methods: A systematic review was conducted on 2021 DCE applications. A 2022 GPDC Pulse Check Survey was administered online to identify the status and evolution of activities described in the DCE's applications. Administrative and claims data were analyzed to examine model elections and generate DCE information and provider and beneficiary counts. A difference-in-differences design was used to assess the impact of providers on total Medicare spending, utilization, and quality of care outcomes compared with expected outcomes if the model did not exist.

NORC at the University of Chicago. Third evaluation report: Next Generation Accountable Care Organization Model evaluation. Published 2020. Accessed October 23, 2024. https://www.cms.gov/priorities/innovation/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport

Subtopic(s): Background on the Goal of Having All Beneficiaries in Accountable Care Relationships by 2030
Type of Source: Report
Objective: To evaluate the Next Generation Accountable Care Organization (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 demonstrating the most significant reduction in gross spending. In its first year, the 2018 cohort had statistically significant reductions in gross spending. Concerning spending in the third performance year, NGACOs decreased gross but did not reduce net spending. Additionally, the effect size of the model-wide reduction in gross spending in PY3 was more significant 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. No significant changes in quality of care measures were detected in PY3 or cumulatively.
Strengths/Limitations: The evaluation draws on quantitative and qualitative methods and effectively synthesizes findings from these different methods. The model employs a difference-in-differences design, effectively 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 to isolate better organizational and structural characteristics associated with improved outcomes. Additionally, the evaluation captures only the first three performance years; some outcomes may take longer 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 the 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.

Ouayogodé MH, Fraze T, Rich EC, Colla CH. Association of organizational factors and physician practices' participation in alternative payment models. *JAMA Netw Open*. 2020;3(4): e202019. doi:10.1001/jamanetworkopen.2020.2019

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models

Type of Source: Journal Article

Objective: To examine the association of organizational characteristics, ownership, and integration with the intensity of participation in alternative payment models (APMs) among physician practices.

Main Findings: Nearly half (49.2 percent) of practices reported participating in 3 or more APMs, most participating in pay-for-performance and accountable care organization models. The study found that operating within a health care system, greater clinical and function integration, and being in the Northeast were associated with greater APM participation.

Strengths/Limitations: The study relied on practices serving more than three primary care physicians, limiting its generalizability outside this population. The analysis specifically targeted the benefits/challenges of APMs.

Generalizability to Medicare Population: Moderate; Medicare population is not specifically mentioned, but many of the terms and concepts apply

Methods: Cross-sectional descriptive study, covariate-adjusted logistic and proposal odds regression models, sensitivity analyses

Pollack CE, Armstrong K. Accountable care organizations and health care disparities. *JAMA*. 2011;305(16):1706-1707. doi:10.1001/jama.2011.533

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models

Type of Source: Journal Article

Objective: To describe the unintended consequences of reinforcing health disparities among accountable care organizations (ACOs).

Main Findings: Careful consideration is needed to ensure programs such as pay-for-performance do not widen racial and ethnic disparities in health care and health outcomes. Hospitals that disproportionately care for individuals from certain groups may not participate in demonstration projects due to limited resources. The authors recommended requiring the reporting of quality indicators by race and ethnicity within ACOs, examining whether there are differences between ACOs in the quality of care among patients by race and ethnicity, monitoring clinicians and patient populations that are excluded, and taking steps to avoid patient and practice cherry-picking in ACO creation.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; the commentary focused on the unintended consequences of reinforcing health disparities among ACOs. Findings may be generalizable to some Medicare beneficiaries.

Methods: N/A

Quinones AR, Talavera GA, Castaneda SF, Saha S. Interventions that reach into communities – promising directions for reducing racial and ethnic disparities in healthcare. *J of Racial and Ethn Health Disparities*. 2015;2(3):336-340. doi:10.1007/s40615-014-0078-3

Subtopic(s): Technical Issues in PB-TCOC Models

Type of Source: Journal Article

Objective: To review evidence for interventions to reduce racial and ethnic disparities in health care and propose a conceptual framework to describe the root causes of health disparities.
Main Findings: Care coordination, culturally tailored health education, and community health workers positively impact health outcomes and equity. These interventions extend the reach of health care systems into the communities and social and cultural contexts in which patients live. A social-ecological model was proposed to show that interventions with extended reach positively address health disparities. The model mapped key interventions onto factors that affect individual health and health care.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Moderate; the article focused on interventions to reduce health disparities. Findings may be generalizable to some Medicare beneficiaries.
Methods: N/A

RAND Health Care. Developing health equity measures. Published May 2021. Accessed October 16, 2024. https://aspe.hhs.gov/sites/default/files/migrated_legacy_files//200651/developing-health-equity-measures.pdf

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Report
Objective: To identify and evaluate existing approaches to measuring health equity and determine which, if any, merited consideration for inclusion in Medicare's Value-Based Purchasing (VBP) programs.
Main Findings: Three programs met the ten approaches the Technical Expert Panel developed to evaluate health equity measures. The National Quality Forum (NQF) Disparities-Sensitive Measure Assessment was determined to have the most favorable approach for measure identification; the Minnesota Healthcare Disparities Report had the most favorable approach for measure-by-measure comparisons; and the Centers for Medicare & Medicaid Services Office of Minority Health's Health Equity Summary Score (CMS OMH HESS) approach was most favorable for summary indices. Overall, the HESS was deemed the best approach, coming the closest to meeting the full scope of goals outlined by ASPE to incorporate a measure of health equity into a Medicare VBP or quality reporting program.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; the developed measures are intended for use by Medicare's VBP programs to improve health equity.
Methods: A formal definition of a health equity measure was developed to guide a thorough literature review, which resulted in 11 articles and reports that were selected as fitting the eligibility criteria, which was to exclude any reports that (1) did not describe a specific health equity measurement approach developed or (2) were focused on risk adjustment.

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): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Journal Article

Objective: To outline primary care and specialist compensation arrangements across U.S. health system-affiliated physician organizations and to assess the portion of total physician compensation based on quality and cost performance.
Main Findings: Volume-based compensation structures were the primary and specialty practitioners' most common base compensation incentive component. The percentage of performance-based compensation structures (based on quality and cost) was relatively rare. The most frequently cited method used by physicians to increase compensation was to increase the volume of services, which was reported as the top action by 22 physician organizations. The study also observed a weak association between the percentage of revenue of physician organizations from FFS and the PCP and specialist volume-based compensation percentage.
Strengths/Limitations: The study examined only four states, which may not represent the country at large, thus requiring caution when assessing external validity. Additionally, data collection focused on physician organization leaders rather than doctors.
Generalizability to Medicare Population: Moderate; while this study does not explicitly focus on Medicare populations, the findings are relevant to them.
Methods: The study employed a mixed-methods design that included 31 physician organizations and 22 health systems across four states (California, Minnesota, Washington, and Wisconsin). Specific methods included compensation document review, interviews with physician organization directors, and survey research.

Riley W, Love K, Wilson C. Patient attribution—a call for a system redesign. *JAMA Health Forum*. 2023;4(3):e225527. doi:10.1001/jamahealthforum.2022.5527

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To describe shortcomings in patient attribution systems and propose strategies to improve patient attribution to advance the goals of alternative payment models.
Main Findings: Shortcomings related to patient attribution methods include the following: attributed patients may not correctly reflect the established relationship between patients and physicians in a specific clinic; the timing of attribution (e.g., prospective versus retrospective attribution) is of critical importance; quality and cost measures can include patients that physicians have not seen or treated; physicians commonly serve a patient panel consisting of multiple payers with different attribution methods; attribution methods are not designed to identify equity gaps; and attribution methods can be insensitive to patient preferences. The authors proposed six recommendations to improve the patient attribution system.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Moderate; comments presented in the article are based on experiences in the Arizona Medicaid program. Shortcomings and recommendations may not apply to the Medicare population.
Methods: Comments are based on lessons learned from a six-year initiative working with a physician network in the Arizona Medicaid program.

Ruiz S, Snyder LP, Giuriceo K, et al. Innovative models for high-risk patients use care coordination and palliative supports to reduce end-of-life utilization and spending. *Innovation in Aging*. 2017;1(2). doi:10.1093/geroni/igx021

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Journal Article

Objective: To assess the total cost of care and utilization outcomes at the end-of-life for three models that received Health Care Innovation Awards from CMS: Sutter Health Corporation's Advanced Illness Management (AIM) Model; Brookdale Senior Living Transitions of Care (BSLTOC) Program; and Vanderbilt University Medical Center's Improved Post-Acute Care Transitions and Interventions to Reduce Acute Care Transfers (IMPACT-INTERACT) Program.
Main Findings: Care coordination and deliberate advance care planning can help to reduce end-of-life costs and utilization. Specifically, the AIM and BSLTOC models were associated with lower costs in the last 90 days of life. The AIM model also had a lower rate of hospitalizations. The AIM and IMPACT-INTERACT models encouraged early hospice entry in the previous 30 days of life.
Strengths/Limitations: Estimates across the three models cannot be compared because the comparison groups were tailored to each model individually. Medicare claims data were used in the analysis, and only covariates observed in claims could be used as covariates in the models.
Generalizability to Medicare Population: Moderate; although Medicare claims data were used in the analysis, CMS awarded the three models of interest a Health Care Innovation Award, which could indicate that the providers were mainly motivated to improve care and reduce costs.
Methods: Regression modeling was used to examine the impact of the three models on costs and utilization for high-risk Medicare beneficiaries participating in the models during the study period (2013 to 2016). Medicare beneficiaries participating in these models were compared to a set of matched comparison patients.

Ryan A, Linden A, Maurer K, Werner R, Nallamothu B. Attribution methods and implications for measuring performance in health care. National Quality Forum. Published July 15, 2016. Accessed October 30, 2024. https://www.qualityforum.org/Projects/a-b/Attribution_2015-2016/Commissioned_Paper.aspx

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Environmental Scan
Objective: To evaluate attribution models in health care.
Main Findings: The following attribution models were identified: retrospective and prospective attribution, whole and partial attribution, attribution for acute and chronic episodes, and primary care-based and specialty-agnostic models. Among implemented attribution models, most approaches were for accountable care organizations (ACOs), used prospective attribution, applied to all health services, and were payer agnostic. Many identified challenges with attribution were related to the high dispersion of health care in the U.S. Better data on the relationship between patients and providers, standardization in attribution approaches, and patient and provider engagement are key considerations for improving attribution in health care.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Moderate; most attribution models identified in the environmental scan were studied among Medicare patients, and findings may be generalizable to the Medicare population.
Methods: An environmental scan was conducted to identify attribution models in health care that are either in use or proposed but not used. The environmental scan described challenges and lessons learned from the review of attribution models.

Scott A, Liu M, Yong J. Financial incentives to encourage value-based health care. *Med Care Res Rev*. 2018;75(1):3-32. doi:10.1177/1077558716676594

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To review the empirical literature on financial incentives in value-based care.
Main Findings: The review included 80 empirical studies conducted in 10 countries. The studies included 44 incentive schemes, 26 from the United States. Incentive schemes that reward performance improvements over time were less likely to be effective than schemes that did not reward performance improvements. The size of financial incentives as a percentage of revenue was not associated with the size of their effects.
Strengths/Limitations: This study was not a systematic review. The authors also noted that other factors may influence the likelihood of an incentive scheme having an effect that is not captured quantitatively in the study.
Generalizability to Medicare Population: Moderate; studies outside of the United States were included in the review, and results may not be generalizable to the Medicare population.
Methods: The literature search focused on identifying journal articles on value-based purchasing, pay-for-performance, and accountable care organizations. It was conducted between March and July 2015, and all studies included in the review were published between 2010 and July 2015.

Shakir M, Armstrong K, Wasfy JH. Could pay-for-performance worsen health disparities? *J Gen Intern Med.* 2018; 33(4): 567-569. doi:10.1007/s11606-017-4243-3

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To provide an overview of the impact of pay-for-performance (P4P) on health disparities at the population and individual levels.
Main Findings: There is mixed evidence on P4P programs. The impact of P4P may vary across settings. Safety-net hospitals are more likely to incur financial penalties compared to non-safety-net hospitals, which can increase the risk of perpetuating health disparities. The long-term effect of P4P programs on health disparities is an important area for future research.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Moderate; P4P is used in Medicare programs to achieve better quality and value.
Methods: N/A

Shrank WH, Chernew ME, Navathe AS. Hierarchical payment models—a path for coordinating population-and episode-based payment models. *JAMA*. 2022;327(5):423-424. doi:10.1001/jama.2021.23786

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To articulate how to coordinate better and integrate population- and episode-based APMs.
Main Findings: The post argues that payment reform should be centered around a core population-based model that can serve as an umbrella of accountability. Under this hierarchical system, the population-based model would be accountable for total cost, quality of care, and

other care management and coordination activities. The article also highlights the importance of capturing key features of episodic models and integrating them into the broader population-based models.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; the paper focuses on integrating Medicare APMs.
Methods: N/A

Staloff J, Morenz A. Making equity primary in the Making Care Primary model. *Health Affairs Forefront*. Published August 21, 2023. Accessed July 17, 2024. https://www.healthaffairs.org/content/forefront/making-equity-primary-making-care-primary-model

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Blog Post
Objective: To describe the health equity strategy in a new CMS Innovation Center (CMMI) model, Making Care Primary (MCP).
Main Findings: The MCP model uses the following mechanisms to support health equity: social risk adjustment, health equity strategic planning, health-related social needs screening and referrals, and data collection on demographic information. The authors suggested that the MCP model fails to incentivize primary care practices to reduce health disparities or hold participants accountable for achieving equitable outcomes. The authors recommended that CMMI consider incorporating two additional strategies into the model to advance health equity, including tying upfront payments to health equity strategy implementation and incorporating stratified quality measure performance in performance-based payments.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; this blog post focused on advancing health equity in CMMI models.
Methods: N/A

The Office of the National Coordinator for Health Information Technology. Improving hospital transitions and care coordination using automated Admission, Discharge and Transfer (ADT) alerts: learning guide executive summary. Published 2013. Accessed October 30, 2024. https://www.healthit.gov/sites/default/files/playbook/pdf/learning-guide-executive-summary-adt-alerts.pdf

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Report
Objective: To summarize lessons learned from nine communities implementing automated admission, discharge, and transfer (ADT) alert systems.
Main Findings: Lessons learned included confirming that the ADT system supports the community's goals and is feasible; establishing the project scope, design, and implementation plans; evaluating ongoing performance; obtaining ADT information to ensure alerts are clinically meaningful; and integrating ADT alerts into provider workflows.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Weak; IT-enabled interventions such as ADT alerts may not apply to many Medicare beneficiaries.

Methods: Nine communities in the US reported their experiences with implementing ADT alert systems.

Trombley MJ, Fout B, Brodsky S, McWilliams JM, Nyweide DJ, Morefield B. Early effects of an accountable care organization model for underserved areas. *N Engl J Med*. 2019;381(6):543-551. doi:10.1056/NEJMsa1816660

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To understand spending and utilization among Investment Model Accountable Care Organizations (AIM ACOs) in their first performance year.
Main Findings: The model was associated with an aggregate net reduction in spending of $48.6 million, corresponding to a net of $10.46 per beneficiary per month. Decreases in hospitalizations and the use of post-acute care contributed to reduced spending.
Strengths/Limitations: The study focused on outcomes in only the model's first performance year and, therefore, did not examine whether the findings are sustainable after that year or after funding ends.
Generalizability to Medicare Population: Moderate; the analysis focused on AIM, a model designed to encourage the growth of Medicare Shared Savings Program (MSSP) ACOs in rural and underserved areas. Findings may not be generalized to Medicare beneficiaries not in rural or underserved areas.
Methods: Medicare claims data were analyzed. Fee-for-service beneficiaries attributed to AIM ACOs were compared with beneficiaries who resided in ACO markets but were served by non-ACO providers. A difference-in-differences design was used to compare group differences in outcomes from baseline to the performance period. The main outcomes included spending and utilization.

United States Government Accountability Office (GAO). 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. Accessed October 30, 2024. https://www.gao.gov/assets/gao-22-104618.pdf

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Report
Objective: To describe participation in Advanced Alternative Payment Models (APMs) among providers in rural or shortage areas, challenges the providers face when transitioning to APMs, and actions CMS has taken to support the providers in their transition to APMs.
Main Findings: A smaller proportion of providers in rural or health professional shortage areas participated in Advanced APMs from 2017 through 2019 compared with providers not in these areas. Providers in rural or underserved areas face financial (e.g., lack of capital to finance costs of transitioning to an APM), technological (e.g., challenges with meeting requirements related to data analysis), and other challenges when transitioning to APMs, including Advanced APMs.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; the report focused on provider participation in CMS payment models, including APMs and Advanced APMs. Medicare beneficiaries are included in APMs.

Methods: The Government Accountability Office used CMS data to assess participation in APMs among providers in rural areas, shortage areas, or medically underserved areas. Interviews were conducted with CMS officials and 18 representatives from stakeholder organizations.

Verma S. 2019 Medicare Shared Savings Program ACO performance: lower costs and promising results under 'Pathways to Success.' *Health Affairs Forefront*. Published online 2020. doi:10.1377/forefront.20200914.598838

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Blog Post
Objective: To examine Accountable Care Organization (ACO) financial and quality performance in the Medicare Shared Savings Program (MSSP) in the performance year 2019.
Main Findings: Over 11.2 million fee-for-service Medicare beneficiaries are served by providers in ACOs. Five hundred forty-one ACOs in the MSSP generated $1.19 billion in total net savings for Medicare in 2019. 2019 was the third year in a row that the program achieved net program savings. New ACOs are interested in electing the Pathways to Success policies.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; the article focused on financial and quality performance in ACOs delivering care to Medicare beneficiaries.
Methods: N/A

Wang A, Huber K, Gonzalez-Smith J, McStay F, McClellan MB, Saunders RS. Next steps for engaging specialty care in ACO models. *Health Affairs Forefront*. Published online December 22, 2023. doi:10.1377/forefront.20231219.247207

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Blog Post
Objective: To outline steps for accountable care models to achieve effective specialty care engagement.
Main Findings: Design levers for specialty care engagement include providing data and facilitating data sharing for enhanced specialty and primary care coordination; expanding financial levers to support specialty care participation in population-based models; and implementing non-financial reforms to reduce burdens for specialist engagement in accountable care.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Strong; recommendations were intended to strengthen CMMI pilot reforms in the traditional Medicare program.
Methods: N/A; the authors described three strategic directions to help expand specialist participation in population-based models.

Wang SY, Aldridge MD, Gross CP, Canavan M, Cherlin E, Bradley E. End-of-Life care transition patterns of Medicare beneficiaries. *JAGS*. 2017;65(7):1406-1413. https://doi.org/10.1111/jgs.14891

Subtopic(s): Technical Issues in PB-TCOC Models
Type of Source: Journal Article
Objective: To assess patterns of care transitions and factors related to multiple care transitions in the last six months of life.

Main Findings: Over 80 percent of the decedents had at least one care transition within the last six months of life. Approximately one-third of the decedents had four or more care transitions within the previous six months of life. People who were women, black, younger than 85 years old, and without dementia were more likely to have four or more care transitions in the last six months of life.
Strengths/Limitations: The study was observational, so the authors cannot make causal inferences. Results cannot be generalized to beneficiaries enrolled in Medicare Advantage plans as the analysis focused on Medicare fee-for-service Medicare beneficiaries.
Generalizability to Medicare Population: Strong; the analysis was focused on fee-for-service Medicare beneficiaries.
Methods: Data were analyzed from Medicare fee-for-service beneficiaries aged 66 years and older who died between July 1, 2011, and December 31, 2011. Multivariable analyses were used to identify predictors of having four or more care transitions in the last six months of life.

Welch J, Weiss A, Ahmed A, Moiduddin A, McDowell A. Overview of current performance measures included in selected Medicare payment programs. NORC at the University of Chicago and the Department of Health and Human Services' Office of Health Policy of the Office of the Assistant Secretary for Planning and Evaluation (ASPE). Published 2024. Accessed October 30, 2024. https://aspe.hhs.gov/sites/default/files/documents/8c2ca9395d740c409e14234f8b97b93d/PTAC-Mar-25-Perf-Meas-Report.pdf

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models
Type of Source: Report
Objective: To provide an overview of the number and characteristics of current performance measures included in 31 selected Medicare payment programs and CMMI models.
Main Findings: There are 618 active, in-development, pending, or suspended performance measures in the CMS Measures Inventory Tool (CMIT) for 24 selected programs and models. Of those measures, 455 are distinct. There are seven performance measures: process, outcome, intermediate outcome, patient-reported, cost/resource use, structure, and composite measures. More than half of the total performance measures are process measures followed by outcome measures. The 24 programs and models were categorized as pay-for-performance (n=15), pay-for-reporting (n=8), or not related to payment (n=1).
Strengths/Limitations: Measure-specific requirements can change frequently, and measures may be used differently across programs and models.
Generalizability to Medicare Population: Strong; the analysis explicitly focused on selected Medicare payment programs and CMMI models, which can impact Medicare patients.
Methods: Performance measure data for 24 selected programs and models were analyzed. The method to link performance with payment was examined using information from the CMS program and CMMI model websites for 18 selected programs and models. Potential gaps in current performance measures were assessed using publicly available evaluation reports for 18 selected programs and models.

Werner RM, Emanuel E, Pham HH, Navathe AS. The future of value-based payment: A road map to 2030. Published February 2021. Accessed October 30, 2024. https://ldi.upenn.edu/wp-

content/uploads/2021/07/PennLDI-Future-of-Value-Based-Payment-WhitePaper.pdf?_ga=2.53978600.1784586575.1693339128-1626887975.1693339128

Subtopic(s): Key Highlights; Background on the Goal of Having All Beneficiaries in Accountable Care Relationships by 2030; Technical Issues in PB-TCOC Models
Type of Source: White Paper
Objective: To assess the impact of alternative-based payment models on the US health care system and provide recommendations for future value-based payment models.
Main Findings: Over the ten years since the passage of the Affordable Care Act, many alternative payment models (APMs) have been piloted across the country to transform the US health care system to prioritize value over volume. These models have yet to be widely adopted and many of their methodologies overlap, causing administrative burden. Additionally, the models have yet to reduce health disparities among racial or socioeconomic lines successfully. To improve and continue the progress of prioritizing value, the authors recommended enhancing the alignment of models, simplifying the payment landscape, encouraging risk-bearing models, providing incentives to move providers away from fee-for-service payment, setting a goal for achieving health equity, and integrating social services into health care delivery.
Strengths/Limitations: The white paper used lessons learned from the models to inform recommendations for future models.
Generalizability to Medicare Population: Strong; APMs arise from CMS initiatives, and thus, many Medicare patients participate in these models.
Methods: The white paper included an analysis and review of the APM landscape.

Wiler JL, Kosinski LR, Mills TL, Walton J. Where are all the specialists? Current challenges of integrating specialty care into population-based total cost of care payment models. *Ann Intern Med*. 2024;177:375-382. doi:10.7326/M23-2991

Subtopic(s): Key Highlights
Type of Source: Journal Article
Objective: To summarize current challenges with integrating specialists into total cost of care models.
Main Findings: Payment models could be designed to address seven challenges: defining and measuring systems for high-value specialty care; improving financial incentives to move specialists into value-based care relationships; ensuring attribution methods are appropriate for primary care and specialty care; determining the amount of flexibility accountable entities should have; determining the structure of entity-level and provider-level risk; identifying how to increase participation of safety net and rural providers; and creating meaningful measures and benchmarks for evaluation.
Strengths/Limitations: N/A
Generalizability to Medicare Population: Moderate; the authors suggested that creating payment models to address the seven challenges outlined in the article could help CMMI achieve its goal of having 100 percent of traditional Medicare beneficiaries in an accountable care relationship by 2030.
Methods: N/A; the authors reviewed the current landscape of integrating specialists into TCOC models.

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 Aff*. Published online 2021. doi:10.1377/forefront.20211008.785640

Subtopic(s): Key Highlights; Technical Issues in PB-TCOC Models

Type of Source: Blog Post

Objective: To summarize key findings related to the Medicare Shared Savings Program (MSSP) performance during the COVID-19 public health emergency.

Main Findings: The Pathways to Success redesign was implemented during the 2020 performance year. In 2020, there was a five percent decrease in accountable care organization (ACO) participation in the MSSP, but there was an increase in the number of lives covered. The program exceeded $1.86 billion in net savings compared to benchmarks. Compared with the previous year, a greater proportion of the ACOs received the shared savings bonus in 2020.

Strengths/Limitations: The authors noted that CMS implemented multiple flexibilities in 2020 to help the health system during the pandemic. These flexibilities have led to challenges in comparing and interpreting performance results in 2020 with results in prior years.

Generalizability to Medicare Population: Strong; the article focused on the performance of the CMS MSSP in 2020.

Methods: N/A

Appendix G. References

[1] Centers for Medicare & Medicaid Services (CMS). Person-centered innovation – an update on the implementation of the CMS Innovation Center's strategy. Published November 2022. Accessed October 16, 2024. https://www.cms.gov/priorities/innovation/data-and-reports/2022/cmmi-strategy-refresh-imp-report

[2] Medicare Payment Advisory Commission (MedPAC). Health care spending and the Medicare Program: a data book. Published July 2023. Accessed October 23, 2024. https://www.medpac.gov/wp-content/uploads/2023/07/July2023_MedPAC_DataBook_SEC_v2.pdf

[3] Physician-Focused Payment Model Technical Advisory Committee. Report to the Secretary: optimizing PB-TCOC models in the context of APMs and PFPMs. Published March 10, 2023. Accessed October 31, 2024. https://aspe.hhs.gov/sites/default/files/documents/4b65476c58e363735aa9065a82a35df4/PTAC-TCOC-RTS.pdf

[4] Werner RM, Emanuel E, Pham HH, Navathe AS. The future of value-based payment: a road map to 2030. Published February 2021. Accessed October 30, 2024. https://ldi.upenn.edu/wp-content/uploads/2021/07/PennLDI-Future-of-Value-Based-Payment-WhitePaper.pdf?_ga=2.53978600.1784586575.1693339128-1626887975.1693339128

[5] Werner RM, Emanuel E, Pham HH, Navathe AS. The future of value-based payment: a road map to 2030. Published February 2021. Accessed October 30, 2024. https://ldi.upenn.edu/wp-content/uploads/2021/07/PennLDI-Future-of-Value-Based-Payment-WhitePaper.pdf?_ga=2.53978600.1784586575.1693339128-1626887975.1693339128

[6] Medicare Payment Advisory Commission (MedPAC). Report to the Congress Medicare and the health care delivery system: chapter 2 streamlining CMS's portfolio of alternative payment models. Published June 2021. Accessed November 1, 2024. https://www.medpac.gov/wp-content/uploads/import_data/scrape_files/docs/default-source/default-document-library/jun21_ch2_medpac_report_to_congress_sec.pdf

[7] Crook H, Saunders R, Roiland R, Higgins A, McClellan M. A decade of value-based payment: lessons learned and implications or the Center for Medicare and Medicaid Innovation, part 2. *Health Affairs Forefront*. Published online 2021. doi:10.1377/forefront.20210607.230763

[8] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf

[9] Centers for Medicare & Medicaid Services (CMS). Innovation Center strategy refresh. Published October 2021. Accessed October 16, 2024. https://www.cms.gov/priorities/innovation/strategic-direction-whitepaper

[10] States Advancing All-Payer Health Equity Approaches and Development (AHEAD) Model. Accessed July 12, 2024. https://www.cms.gov/priorities/innovation/innovation-models/ahead

[11] Centers for Medicare & Medicaid Services (CMS). Guiding an Improved Dementia Experience (GUIDE) Model. Accessed July 12, 2024. https://www.cms.gov/priorities/innovation/innovation-models/guide

[12] Centers for Medicare & Medicaid Services (CMS). Transforming Episode Accountability Model (TEAM). Accessed July 16, 2024. https://www.cms.gov/priorities/innovation/innovation-models/team-model

[13] Centers for Medicare & Medicaid Services (CMS). ACO Primary Care Flex Model. Accessed July 16, 2024. https://www.cms.gov/priorities/innovation/innovation-models/aco-primary-care-flex-model

[14] Crook H, Saunders R, Roiland R, Higgins A, McClellan M. A decade of value-based payment: lessons learned and implications for The Center for Medicare and Medicaid Innovation, part 2. *Health Affairs Forefront*. Published online 2021. doi:10.1377/forefront.20210607.230763

[15] United States Government Accountability Office (GAO). 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. Accessed October 30, 2024. https://www.gao.gov/assets/gao-22-104618.pdf

[16] Ouayogodé MH, Fraze T, Rich EC, Colla CH. Association of organizational factors and physician practices' participation in alternative payment models. *JAMA Netw Open*. 2020;3(4): e202019. doi:10.1001/jamanetworkopen.2020.2019

[17] Verma S. 2019 Medicare Shared Savings Program ACO performance: lower costs and promising results under 'Pathways to Success.' *Health Affairs Forefront*. Published online 2020. doi:10.1377/forefront.20200914.598838
[18] 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 Aff*. Published online 2021. doi:10.1377/forefront.20211008.785640
[19] Horstman C, Lewis C, Abrams M. Designing accountable care: lessons from CMS Accountable Care Organizations. Commonwealth Fund. Published November 10, 2022. doi:10.26099/8fvg-cw28
[20] Pollack CE, Armstrong K. Accountable care organizations and health care disparities. *JAMA*. 2011;305(16): 1706-1707. doi:10.1001/jama.2011.533
[21] 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
[22] Bardach NS, Wang JJ, De Leon SF, et al. Effect of pay-for-performance incentives on quality of care in small practices with electronic health records: a randomized trial. *JAMA*. 2013;310(10):1051-9. doi:10.1001/jama.2013.277353
[23] Scott A, Liu M, Yong J. Financial incentives to encourage value-based health care. *Med Care Res Rev.* 2018;75(1):3-32. doi:10.1177/1077558716676594
[24] Kazungu JS, Barasa EW, Obadha M, Chuma J. What characteristics of provider payment mechanisms influence health care providers' behaviour? A literature review. *Int J Health Plan Manage*. 2018; 33(4): e892-e905. doi:10.1002/hpm.2565
[25] Kim KM, Max W, White JS, Chapman SA, Muench U. Do penalty-based pay-for-performance programs improve surgical care more effectively than other payment strategies? A systematic review. *Ann Med Surg*. 2020; 60:623-630. doi:10.1016/j.amsu.2020.11.060
[26] Li X, Evans JM. Incentivizing performance in health care: a rapid review, typology and qualitative study of unintended consequences. *BMC Health Serv Res*. 2022; 22:690. doi:10.1186/s12913-022-08032-z
[26] Shakir M, Armstrong K, Wasfy JH. Could pay-for-performance worsen health disparities? *J Gen Intern Med*. 2018; 33(4): 567-569. doi:10.1007/s11606-017-4243-3
[27] Wiler JL, Kosinski LR, Mills TL, Walton J. Where are all the specialists? Current challenges of integrating specialty care into population-based total cost of care payment models. *Ann Intern Med*. 2024;177:375-382. doi:10.7326/M23-2991
[28] Huber K, Gonzalez-Smith J, Wang A, et al. Engaging specialists in accountable care: tailoring payment models based on specialties and practice contexts. *Health Affairs Forefront*. Published online 2023. doi:10.1377/forefront.20231219.115250
[29] Fowler L, Rawal P, Fogler S, Waldersen B, O'Connell M, Quinton J. The CMS Innovation Center's strategy to support person-centered, value-based specialty care. Published November 7, 2022. Accessed October 17, 2024. https://www.cms.gov/blog/cms-innovation-centers-strategy-support-person-centered-value-based-specialty-care
[30] Centers for Medicare & Medicaid Services. 2024 National impact assessment of the Centers for Medicare & Medicaid Services (CMS) quality measures report. Published February 2024. Accessed July 17, 2024. https://www.cms.gov/files/document/2024-national-impact-assessment-report.pdf
[31] Wang A, Huber K, Gonzalez-Smith J, McStay F, McClellan MB, Saunders RS. Next steps for engaging specialty care in ACO models. *Health Affairs Forefront*. Published online December 22, 2023. doi:10.1377/forefront.20231219.247207
[32] Japinga M, Jayakumar P, de Brantes F, Bozic K, Saunders R, McClellan M. Strengthening specialist participation in comprehensive care through condition-based payment reforms. Duke Margolis Center for Health Policy. Published November 7, 2022. Accessed July 17, 2024. https://healthpolicy.duke.edu/sites/default/files/2022-11/Strengthening%20Specialist%20Participation%20in%20Comprehensive%20Care%20through%20Condition-Based%20Payment%20Reforms.pdf
[33] Centers for Medicare & Medicaid Services (CMS). Patient reported outcome measures. Published 2021. Accessed November 1, 2024. https://edit.cms.gov/files/document/blueprint-patient-reported-outcome-measures.pdf

[34] Lavallee D, Chenok K, Love R, et al. Incorporating patient-reported outcomes into health care to engage patients and enhance care. *Health Aff*. 2016;35(4):575-582. doi:10.1377/hlthaff.2015.1362
[35] Welch J, Weiss A, Ahmed A, Moiduddin A, McDowell A. Overview of current performance measures included in selected Medicare payment programs. NORC at the University of Chicago and the Department of Health and Human Services' Office of Health Policy of the Office of the Assistant Secretary for Planning and Evaluation (ASPE). Published 2024. Accessed October 30, 2024. https://aspe.hhs.gov/sites/default/files/documents/8c2ca9395d740c409e14234f8b97b93d/PTAC-Mar-25-Perf-Meas-Report.pdf
[36] Health Care Payment Learning & Action Network (HCPLAN). Advancing health equity through APMs: guidance on social risk adjustment. Published 2021. Accessed July 17, 2024. https://hcp-lan.org/workproducts/APM-Guidance/Advancing-Health-Equity-Through-APMs-Social-Risk-Adjustment.pdf
[37] Centers for Medicare & Medicaid Services (CMS). Assessing equity to drive health care improvements: learnings from the CMS Innovation Center. Published 2023. Accessed October 16, 2024. https://www.cms.gov/priorities/innovation/data-and-reports/2023/assessing-equity-hc-improv-wp
2023. https://www.cms.gov/priorities/innovation/data-and-reports/2023/assessing-equity-hc-improv-wp
[38] Centers for Medicare & Medicaid Services. ESRD Treatment Choices (ETC) Model. Accessed September 13, 2024. https://www.cms.gov/priorities/innovation/innovation-models/esrd-treatment-choices-model
[39] Centers for Medicare & Medicaid Services. ACO REACH. Accessed September 13, 2024. https://www.cms.gov/priorities/innovation/innovation-models/aco-reach
[40] Association of State and Territorial Health Officials. Measuring health equity: an assessment of equity metrics in performance management and planning. Published February 2023. Accessed October 15, 2024. https://www.astho.org/globalassets/report/measuring-health-equity.pdf
[41] Bailit Health. Measuring health equity: a state measure set to assess and improve equity. Robert Wood Johnson Foundation. Published June 2023. Accessed October 16, 2024. https://www.rwjf.org/content/dam/farm/reports/issue_briefs/2023/rwjf473929
[42] Chen A, McWilliams M. How benchmarks affect participation in accountable care organizations: prospects for voluntary payment models. *Am J Health Econ*. 2023. doi:10.1086/726748
[43] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf
[44] Congressional Budget Office. Medicare accountable care organizations: past performance and future directions. Published April 2024. Accessed July 17, 2024. https://www.cbo.gov/system/files/2024-04/59879-Medicare-ACOs.pdf
[45] Health Care Payment Learning & Action Network (HCPLAN). Exploring APM success factors: insights from a focused review. Published 2018. Accessed July 17, 2024. https://hcp-lan.org/workproducts/APM-Success-Factors-Report.pdf
[46] Centers for Medicare & Medicaid Services (CMS). Calculating and reporting claims-based measures within the Hospice Quality Reporting Program: questions and answers. Accessed September 13, 2024. https://www.cms.gov/files/document/questionsandanswersclaims-basedmeasuresfeb2022.pdf
[47] Health Care Payment Learning & Action Network (HCPLAN). Accelerating and aligning population-based payment models: data sharing. Published 2016. Accessed July 17, 2024. https://hcp-lan.org/workproducts/ds-whitepaper-final.pdf
[48] McCoy RG, Bunkers KS, Ramar P, et al. Patient attribution: why the method matters. *Am J Manag Care*. 2018;24(12):596-603. Accessed October 22, 2024. https://pmc.ncbi.nlm.nih.gov/articles/PMC6549236/pdf/nihms-1032062.pdf
[49] Ryan A, Linden A, Maurer K, Werner R, Nallamothu B. Attribution methods and implications for measuring performance in health care. National Quality Forum. Published July 15, 2016. Accessed October 30, 2024. https://www.qualityforum.org/Projects/a-b/Attribution_2015-2016/Commissioned_Paper.aspx

[50] Health Care Payment Learning & Action Network (HCPLAN). Advancing health equity through APMs: guidance on social risk adjustment. Published 2021. Accessed July 17, 2024. https://hcp-lan.org/workproducts/APM-Guidance/Advancing-Health-Equity-Through-APMs-Social-Risk-Adjustment.pdf
[51] Centers for Medicare & Medicaid Services (CMS). Assessing equity to drive health care improvements: learnings from the CMS Innovation Center. Published 2023. Accessed October 16, 2024. https://www.cms.gov/priorities/innovation/data-and-reports/2023/assessing-equity-hc-improv-wp
[52] Health Care Payment Learning & Action Network (HCPLAN). Accelerating and aligning population-based payment models: data sharing. Published 2016. Accessed July 17, 2024. https://hcp-lan.org/workproducts/ds-whitepaper-final.pdf
[53] Hostetter M, Klein S. The perils and payoffs of alternative payment models for community health centers. The Commonwealth Fund. Published 2022. doi:10.26099/2ncb-6738
[54] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf
[55] Hostetter M, Klein S. The perils and payoffs of alternative payment models for community health centers. The Commonwealth Fund. Published 2022. doi:10.26099/2ncb-6738
[56] Centers for Medicare & Medicaid Services (CMS). Innovation Center strategy refresh. Published October 2021. Accessed October 16, 2024. https://www.cms.gov/priorities/innovation/strategic-direction-whitepaper
[57] Centers for Medicare & Medicaid Services (CMS). Person-centered innovation – an update on the implementation of the CMS Innovation Center's strategy. Published November 2022. Accessed October 16, 2024. https://www.cms.gov/priorities/innovation/data-and-reports/2022/cmmi-strategy-refresh-imp-report
[58] Centers for Medicare & Medicaid Services (CMS). Accountable care and accountable care organizations. Accessed July 5, 2024. https://www.cms.gov/priorities/innovation/key-concepts/accountable-care-and-accountable-care-organizations
[59] Medicare Payment Advisory Commission (MedPAC). Health care spending and the Medicare Program: a data book. Published July 2023. Accessed October 23, 2024. https://www.medpac.gov/wp-content/uploads/2023/07/July2023_MedPAC_DataBook_SEC_v2.pdf
[60] Medicare Payment Advisory Commission (MedPAC). Health care spending and the Medicare Program: a data book. Published July 2023. Accessed October 23, 2024. https://www.medpac.gov/wp-content/uploads/2023/07/July2023_MedPAC_DataBook_SEC_v2.pdf
[61] Medicare Payment Advisory Commission (MedPAC). Health care spending and the Medicare program: a data book. Published July 2021. Accessed October 23, 2024. https://www.medpac.gov/wp-content/uploads/import_data/scrape_files/docs/default-source/data-book/july2021_medpac_databook_sec.pdf
[62] Health Care Payment Learning & Action Network (HCPLAN). Alternative Payment Model (APM) framework. Published 2017. Accessed July 23, 2024. https://hcp-lan.org/workproducts/apm-refresh-whitepaper-final.pdf
[63] Health Care Payment Learning & Action Network (HCPLAN). APM measurement: progress of alternative payment models – 2023 methodology and results report. Published 2023. Accessed October 29, 2024. https://hcp-lan.org/workproducts/apm-methodology-2023.pdf
[64] Health Care Payment Learning & Action Network (HCPLAN). APM measurement: progress of alternative payment models – 2023 methodology and results report. Published 2023. Accessed October 29, 2024. https://hcp-lan.org/workproducts/apm-methodology-2023.pdf
[65] Physicians Advocacy Institute (PAI). Updated report: hospital and corporate acquisition of physician practices and physician employment 2019-2023. Published April 2024. Accessed November 1, 2024. https://www.physiciansadvocacyinstitute.org/Portals/0/assets/docs/PAI-Research/PAI-Avalere%20Physician%20Employment%20Trends%20Study%202019-2023%20Final.pdf?ver=uGHF46u1GSeZgYXMKFyYvw%3d%3d
[66] Office of the Assistant Secretary for Planning and Evaluation (ASPE). PTAC Meetings. Accessed July 5, 2024. https://aspe.hhs.gov/collaborations-committees-advisory-groups/ptac/ptac-meetings

[67] Physician-Focused Payment Model Technical Advisory Committee (PTAC). Report to the Secretary: optimizing PB-TCOC models in the context of APMs and PFPMs. Published March 10, 2023. Accessed October 31, 2024. https://aspe.hhs.gov/sites/default/files/documents/4b65476c58e363735aa9065a82a35df4/PTAC-TCOC-RTS.pdf
[68] Physician-Focused Payment Model Technical Advisory Committee (PTAC). Report to the Secretary: the role of care coordination in optimizing health care. Published 2021. Accessed November 1, 2024. https://aspe.hhs.gov/sites/default/files/documents/977f6749b962680aee430b8da1f2eac2/RTSCareCoordination.pdf
[69] Physician-Focused Payment Model Technical Advisory Committee (PTAC). Report to the Secretary: addressing SDOH and equity in APMs and PFPMs. Published 2021. November 1, 2024. https://aspe.hhs.gov/sites/default/files/documents/0087a6d146003a211402f024981a005e/RTSSDOHandEquity.pdf
[70] Physician-Focused Payment Model Technical Advisory Committee (PTAC). Report to the Secretary: improving care delivery and specialty integration in PB-TCOC models. Published 2023. Accessed November 1, 2024. https://aspe.hhs.gov/sites/default/files/documents/81a8cb6b6ab60c70528c229dd42ef5f6/PTAC-Specialty-Integration-RTS.pdf
[71] Physician-Focused Payment Model Technical Advisory Committee (PTAC). Report to the Secretary: improving management of care transitions in PB-TCOC models. Published 2024. Accessed November 1, 2024. https://aspe.hhs.gov/sites/default/files/documents/bf1fe41726539c8bbbd4e818a2be3431/PTAC-Transitions-in-Care-RTS.pdf
[72] Physician-Focused Payment Model Technical Advisory Committee (PTAC). Report to the Secretary: encouraging rural participation in PB-TCOC models. Published 2023. Accessed November 1, 2024. https://aspe.hhs.gov/sites/default/files/documents/ea7223dd88e35b9c6f8e0c4bbbddc853/PTAC-Rural-Participation-RTS.pdf
[73] Werner RM, Emanuel E, Pham HH, Navathe AS. The future of value-based payment: A road map to 2030. Published February 2021. Accessed October 30, 2024. https://ldi.upenn.edu/wp-content/uploads/2021/07/PennLDI-Future-of-Value-Based-Payment-WhitePaper.pdf?_ga=2.53978600.1784586575.1693339128-1626887975.1693339128
[74] Werner RM, Emanuel E, Pham HH, Navathe AS. The future of value-based payment: A road map to 2030. Published February 2021. Accessed October 30, 2024. https://ldi.upenn.edu/wp-content/uploads/2021/07/PennLDI-Future-of-Value-Based-Payment-WhitePaper.pdf?_ga=2.53978600.1784586575.1693339128-1626887975.1693339128
[75] Medicare Payment Advisory Commission (MedPAC). Report to the Congress Medicare and the health care delivery system: chapter 2 streamlining CMS's portfolio of alternative payment models. Published June 2021. Accessed November 1, 2024. https://www.medpac.gov/wp-content/uploads/import_data/scrape_files/docs/default-source/default-document-library/jun21_ch2_medpac_report_to_congress_sec.pdf
[76] Werner RM, Emanuel E, Pham HH, Navathe AS. The future of value-based payment: A road map to 2030. Published February 2021. Accessed October 30, 2024. https://ldi.upenn.edu/wp-content/uploads/2021/07/PennLDI-Future-of-Value-Based-Payment-WhitePaper.pdf?_ga=2.53978600.1784586575.1693339128-1626887975.1693339128
[77] Medicare Payment Advisory Commission (MedPAC). Report to the Congress Medicare and the health care delivery system: chapter 2 streamlining CMS's portfolio of alternative payment models. Published June 2021. Accessed November 1, 2024. https://www.medpac.gov/wp-content/uploads/import_data/scrape_files/docs/default-source/default-document-library/jun21_ch2_medpac_report_to_congress_sec.pdf
[78] Medicare Payment Advisory Commission (MedPAC). Report to the Congress Medicare and the health care delivery system: chapter 2 streamlining CMS's portfolio of alternative payment models. Published June 2021. Accessed November 1, 2024. https://www.medpac.gov/wp-content/uploads/import_data/scrape_files/docs/default-source/default-document-library/jun21_ch2_medpac_report_to_congress_sec.pdf

[79] Werner RM, Emanuel E, Pham HH, Navathe AS. The future of value-based payment: A road map to 2030. Published February 2021. Accessed October 30, 2024. https://ldi.upenn.edu/wp-content/uploads/2021/07/PennLDI-Future-of-Value-Based-Payment-WhitePaper.pdf?_ga=2.53978600.1784586575.1693339128-1626887975.1693339128
[80] Crook H, Saunders R, Roiland R, Higgins A, McClellan M. A decade of value-based payment: lessons learned and implications or the Center for Medicare and Medicaid Innovation, part 2. *Health Affairs Forefront*. Published online 2021. doi:10.1377/forefront.20210607.230763
[81] Crook H, Saunders R, Roiland R, Higgins A, McClellan M. A decade of value-based payment: lessons learned and implications or the Center for Medicare and Medicaid Innovation, part 2. *Health Affairs Forefront.* Published online 2021. doi:10.1377/forefront.20210607.230763
[82] Werner RM, Emanuel E, Pham HH, Navathe AS. The future of value-based payment: A road map to 2030. Published February 2021. Accessed October 30, 2024. https://ldi.upenn.edu/wp-content/uploads/2021/07/PennLDI-Future-of-Value-Based-Payment-WhitePaper.pdf?_ga=2.53978600.1784586575.1693339128-1626887975.1693339128
[83] Werner RM, Emanuel E, Pham HH, Navathe AS. The future of value-based payment: A road map to 2030. Published February 2021. Accessed October 30, 2024. https://ldi.upenn.edu/wp-content/uploads/2021/07/PennLDI-Future-of-Value-Based-Payment-WhitePaper.pdf?_ga=2.53978600.1784586575.1693339128-1626887975.1693339128
[84] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf
[85] Crook H, Saunders R, Roiland R, Higgins A, McClellan M. A decade of value-based payment: lessons learned and implications or the Center for Medicare and Medicaid Innovation, part 2. *Health Affairs Forefront.* Published online 2021. doi:10.1377/forefront.20210607.230763
[86] McCauley L, Phillips RL, Meisnere M, Robinson SK. Implementing high-quality primary care: rebuilding the foundation of health care. National Academies of Sciences, Engineering, and Medicine. Washington, DC: The National Academies Press. Published 2021. doi:10.17226/25983
[87] Greiner A, Pham HH, Gaus C. An option For Medicare ACOs to further transform care. *Health Affairs Forefront*. Published online 2022. doi:10.1377/forefront.20220713.922286
[88] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf
[89] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf
[90] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf
[91] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf
[92] Werner RM, Emanuel E, Pham HH, Navathe AS. The future of value-based payment: A road map to 2030. Published February 2021. Accessed October 30, 2024. https://ldi.upenn.edu/wp-content/uploads/2021/07/PennLDI-Future-of-Value-Based-Payment-WhitePaper.pdf?_ga=2.53978600.1784586575.1693339128-1626887975.1693339128
[93] Crook H, Saunders R, Roiland R, Higgins A, McClellan M. A decade of value-based payment: lessons learned and implications or the Center for Medicare and Medicaid Innovation, part 2. *Health Affairs Forefront.* Published online 2021. doi:10.1377/forefront.20210607.230763

[94] NORC at the University of Chicago. Third evaluation report: Next Generation Accountable Care Organization Model evaluation. Published 2020. Accessed October 23, 2024. https://www.cms.gov/priorities/innovation/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport
[95] Bleser WK, Saunders RS, Muhlestein DB, McClellan M. Why do accountable care organizations leave the Medicare Shared Savings Program? Health Aff. 2019;38(5):794-803. doi:10.1377/hlthaff.2018.05097
[96] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf
[97] Werner RM, Emanuel E, Pham HH, Navathe AS. The future of value-based payment: A road map to 2030. Published February 2021. Accessed October 30, 2024. https://ldi.upenn.edu/wp-content/uploads/2021/07/PennLDI-Future-of-Value-Based-Payment-WhitePaper.pdf?_ga=2.53978600.1784586575.1693339128-1626887975.1693339128
[98] Werner RM, Emanuel E, Pham HH, Navathe AS. The future of value-based payment: A road map to 2030. Published February 2021. Accessed October 30, 2024. https://ldi.upenn.edu/wp-content/uploads/2021/07/PennLDI-Future-of-Value-Based-Payment-WhitePaper.pdf?_ga=2.53978600.1784586575.1693339128-1626887975.1693339128
[99] Office of Disease Prevention and Health Promotion (OASH). Health equity in healthy people 2030. Accessed July 11, 2024. https://health.gov/healthypeople/priority-areas/health-equity-healthy-people-2030
[100] Centers for Medicare & Medicaid Services (CMS). Innovation Center strategy refresh. Published October 2021. Accessed October 16, 2024. https://www.cms.gov/priorities/innovation/strategic-direction-whitepaper
[101] Werner RM, Emanuel E, Pham HH, Navathe AS. The future of value-based payment: A road map to 2030. Published February 2021. Accessed October 30, 2024. https://ldi.upenn.edu/wp-content/uploads/2021/07/PennLDI-Future-of-Value-Based-Payment-WhitePaper.pdf?_ga=2.53978600.1784586575.1693339128-1626887975.1693339128
[102] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf
[103] Werner RM, Emanuel E, Pham HH, Navathe AS. The future of value-based payment: A road map to 2030. Published February 2021. Accessed October 30, 2024. https://ldi.upenn.edu/wp-content/uploads/2021/07/PennLDI-Future-of-Value-Based-Payment-WhitePaper.pdf?_ga=2.53978600.1784586575.1693339128-1626887975.1693339128
[104] Centers for Medicare & Medicaid Services (CMS). Innovation Center strategy refresh. Published October 2021. Accessed October 16, 2024. https://www.cms.gov/priorities/innovation/strategic-direction-whitepaper
[105] States Advancing All-Payer Health Equity Approaches and Development (AHEAD) Model. Accessed July 12, 2024. https://www.cms.gov/priorities/innovation/innovation-models/ahead
[106] Centers for Medicare & Medicaid Services (CMS). Guiding an Improved Dementia Experience (GUIDE) Model. Accessed July 12, 2024. https://www.cms.gov/priorities/innovation/innovation-models/guide
[107] Centers for Medicare & Medicaid Services (CMS). Guiding an Improved Dementia Experience (GUIDE) Model Participant Incentives to Participate Factsheet. Accessed July 12, 2024. https://www.cms.gov/files/document/guide-participant-incentives-fs.pdf
[108] Centers for Medicare & Medicaid Services (CMS). Guiding an Improved Dementia Experience (GUIDE) Model Participant Incentives to Participate Factsheet. Accessed July 12, 2024. https://www.cms.gov/files/document/guide-participant-incentives-fs.pdf
[109] Centers for Medicare & Medicaid Services (CMS). Transforming Episode Accountability Model (TEAM). Accessed July 16, 2024. https://www.cms.gov/priorities/innovation/innovation-models/team-model
[110] Centers for Medicare & Medicaid Services (CMS). Transforming Episode Accountability Model Infographic. Accessed July 16, 2024. https://www.cms.gov/files/document/team-model-infographic.pdf
[111] Centers for Medicare & Medicaid Services (CMS). ACO Primary Care Flex Model. Accessed July 16, 2024. https://www.cms.gov/priorities/innovation/innovation-models/aco-primary-care-flex-model

[112] Centers for Medicare & Medicaid Services (CMS). ACO Primary Care Flex Model: model overview factsheet. Accessed July 16, 2024. https://www.cms.gov/files/document/aco-pc-flex-fs.pdf
[113] Centers for Medicare & Medicaid Services (CMS). Innovation Center strategy refresh. Published October 2021. Accessed October 16, 2024. https://www.cms.gov/priorities/innovation/strategic-direction-whitepaper
[114] Crook H, Saunders R, Roiland R, Higgins A, McClellan M. A decade of value-based payment: lessons learned and implications or the Center for Medicare and Medicaid Innovation, part 2. *Health Affairs Forefront*. Published online 2021. doi:10.1377/forefront.20210607.230763
[115] 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. doi:10.1111/1475-6773.12102
[116] Ouayogodé MH, Fraze T, Rich EC, Colla CH. Association of organizational factors and physician practices' participation in alternative payment models. *JAMA Netw Open*. 2020;3(4): e202019. doi:10.1001/jamanetworkopen.2020.2019
[117] Ouayogodé MH, Fraze T, Rich EC, Colla CH. Association of organizational factors and physician practices' participation in alternative payment models. *JAMA Netw Open*. 2020;3(4): e202019. doi:10.1001/jamanetworkopen.2020.2019
[118] Center for Healthcare Quality & Payment Reform. 5 Fatal Flaws in Total Cost of Care & Population-Based Payment Models. Accessed November 1, 2024. https://chqpr.org/downloads/Flaws_in_TCOC_and_Population-Based_Payments.pdf
[119] Center for Healthcare Quality & Payment Reform. 5 Fatal Flaws in Total Cost of Care & Population-Based Payment Models. Accessed November 1, 2024. https://chqpr.org/downloads/Flaws_in_TCOC_and_Population-Based_Payments.pdf
[120] Center for Healthcare Quality & Payment Reform. 5 Fatal Flaws in Total Cost of Care & Population-Based Payment Models. Accessed November 1, 2024. https://chqpr.org/downloads/Flaws_in_TCOC_and_Population-Based_Payments.pdf
[121] Werner RM, Emanuel E, Pham HH, Navathe AS. The future of value-based payment: A road map to 2030. Published February 2021. Accessed October 30, 2024. https://ldi.upenn.edu/wp-content/uploads/2021/07/PennLDI-Future-of-Value-Based-Payment-WhitePaper.pdf?_ga=2.53978600.1784586575.1693339128-1626887975.1693339128
[122] Health Care Payment Learning & Action Network (HCPLAN). Alternative Payment Model (APM) framework. Published 2016. Accessed July 23, 2024. https://www.milbank.org/wp-content/uploads/2017/11/HCP-LAN-White-Paper-APM-Framework.pdf
[123] Bailit Health. State health policy highlights: categorizing value-based payment models according to the LAN alternative payment model framework. Published February 2018. Accessed November 1, 2024. https://www.shvs.org/wp-content/uploads/2018/02/SHVS_APM-Categorization_Highlights-Final.pdf
[124] 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 Aff*. Published online 2021. doi:10.1377/forefront.20211008.785640
[125] Verma S. 2019 Medicare Shared Savings Program ACO performance: lower costs and promising results under 'Pathways to Success.' *Health Affairs Forefront*. Published online 2020. doi:10.1377/forefront.20200914.598838
[126] Horstman C, Lewis C, Abrams M. Designing accountable care: lessons from CMS Accountable Care Organizations. Commonwealth Fund. Published online November 10, 2022. doi:10.26099/8fvg-cw28
[127] United States Government Accountability Office (GAO). 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. Accessed October 30, 2024. https://www.gao.gov/assets/gao-22-104618.pdf
[128] Pollack CE, Armstrong K. Accountable care organizations and health care disparities. *JAMA*. 2011;305(16): 1706-1707. doi:10.1001/jama.2011.533
[129] Verma S. 2019 Medicare Shared Savings Program ACO performance: lower costs and promising results under 'Pathways to Success.' *Health Affairs Forefront*. Published online 2020. doi:10.1377/forefront.20200914.598838
[130] Trombley MJ, Fout B, Brodsky S, McWilliams JM, Nyweide DJ, Morefield B. Early effects of an accountable care

organization model for underserved areas. *N Engl J Med*. 2019;381(6):543-551. doi:10.1056/NEJMsa1816660
[131] Trombley MJ, Fout B, Brodsky S, McWilliams JM, Nyweide DJ, Morefield B. Early effects of an accountable care organization model for underserved areas. *N Engl J Med*. 2019;381(6):543-551. doi:10.1056/NEJMsa1816660
[132] Medicare Shared Savings Program Advance Investment Payments (AIP). Medicare Shared Savings Program. https://www.cms.gov/files/document/mssp-aip-glance.pdf
[133] McWilliams JM, Chen AJ. Understanding the latest ACO "savings": curb your enthusiasm and sharpen your pencils—part 1. *Health Affairs Forefront*. Published November 11, 2020. Accessed October 23, 2024. https://www.healthaffairs.org/content/forefront/understanding-latest-aco-savings-curb-your-enthusiasm-and-sharpen-your-pencils-part-1
[134] Verma S. 2019 Medicare Shared Savings Program ACO performance: lower costs and promising results under 'Pathways to Success.' *Health Affairs Forefront*. Published online 2020. doi:10.1377/forefront.20200914.598838
[135] Horstman C, Lewis C, Abrams M. Designing accountable care: lessons from CMS Accountable Care Organizations. Commonwealth Fund. Published online November 10, 2022. doi:10.26099/8fvg-cw28
[136] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf
[137] McWilliams JM, Weinreb G, Ding L, Ndumele CD, Wallace J. Risk adjustment and promoting health equity in population-based payment: concepts and evidence. *Health Affairs*. 2023;42(1):105-14. doi:10.1377/hlthaff.2022.00916
[138] Anderson AC, Chen J. ACO affiliated hospitals increase implementation of care coordination strategies. *Med Care*. 2019;57(4):300-304. doi:10.1097/MLR.0000000000001080
[139] Anderson AC, Chen J. ACO Affiliated hospitals increase implementation of care coordination strategies. *Med Care*. 2019;57(4):300-304. doi:10.1097/MLR.0000000000001080
[140] Horstman C, Lewis C, Abrams M. Designing accountable care: lessons from CMS Accountable Care Organizations. Commonwealth Fund. Published online November 10, 2022. doi:10.26099/8fvg-cw28
[141] Care Coordinations. The quality quandary: addressing inefficient care coordination to elevate post-acute care quality. Published May 21, 2024. Accessed September 16, 2024.https://carecoordinations.com/blog/addressing-inefficient-care-coordination-to-elevate-post-acute-care-quality.
[142] Finkel C, Worsowicz G. Changing payment models: shifting focus on post acute care. *Mo Med*. 2017;114(1):57-60. Published 2021. Accessed October 17, 2024. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6143563/pdf/ms114_p0057.pdf
[143] Finkel C, Worsowicz G. Changing payment models: shifting focus on post acute care. *Mo Med*. 2017;114(1):57-60. Published 2021. Accessed October 17, 2024. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6143563/pdf/ms114_p0057.pdf
[144] Care Coordinations. The quality quandary: addressing inefficient care coordination to elevate post-acute care quality. Published May 21, 2024. Accessed September 16, 2024.https://carecoordinations.com/blog/addressing-inefficient-care-coordination-to-elevate-post-acute-care-quality.
[145] VITAS Healthcare. Care coordination and hospice: a cornerstone of person-centered care. Published March 30, 2022. Access September 16, 2024. https://www.vitas.com/for-healthcare-professionals/making-the-rounds/2022/march/care-coordination-and-hospice.
[146] Wang SY, Aldridge MD, Gross CP, Canavan M, Cherlin E, Bradley E. End-of-Life care transition patterns of Medicare beneficiaries. *JAGS*. 2017;65(7):1406-1413. https://doi.org/10.1111/jgs.14891
[147] VITAS Healthcare. Care coordination and hospice: a cornerstone of person-centered care. Published March 30, 2022. Access September 16, 2024. https://www.vitas.com/for-healthcare-professionals/making-the-rounds/2022/march/care-coordination-and-hospice.
[148] Centers for Medicare & Medicaid Services (CMS). Health care innovation awards: suttercare corporation project profile. Accessed November 1, 2024. https://www.cms.gov/priorities/innovation/innovation-models/Participant/Health-Care-Innovation-Awards/Suttercare-Corporation
[149] Ruiz S, Snyder LP, Giuriceo K, et al. Innovative models for high-risk patients use care coordination and palliative supports to reduce end-of-life utilization and spending. *Innovation in Aging*. 2017;1(2). doi:10.1093/geroni/igx021

[150] Quinones AR, Talavera GA, Castaneda SF, Saha S. Interventions that reach into communities – promising directions for reducing racial and ethnic disparities in healthcare. *J of Racial and Ethn Health Disparities*. 2015;2(3):336-340. doi:10.1007/s40615-014-0078-3
[151] 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
[152] Safety Net Medical Home Initiative. Care coordination. Accessed November 1, 2024. https://www.safetynetmedicalhome.org/change-concepts/care-coordination
[153] 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
[154] Health Care Payment Learning & Action Network. Alternative Payment Model (APM) framework. Published 2016. Accessed July 23, 2024. https://www.milbank.org/wp-content/uploads/2017/11/HCP-LAN-White-Paper-APM-Framework.pdf
[155] Centers for Medicare & Medicaid Services (CMS). Measure Inventory Tool. Accessed November 1, 2024. https://cmit.cms.gov/cmit/#/MeasureInventory
[156] NEJM Catalyst. What Is pay for performance in healthcare? *NEJM Catalyst*. 2018;4(2). doi:10.1056/CAT.18.0245
[157] Bardach NS, Wang JJ, De Leon SF, et al. Effect of pay-for-performance incentives on quality of care in small practices with electronic health records: a randomized trial. *JAMA*. 2013;310(10):1051-9. doi:10.1001/jama.2013.277353
[158] Scott A, Liu M, Yong J. Financial incentives to encourage value-based health care. *Med Care Res Rev*. 2018;75(1):3-32. doi:10.1177/1077558716676594
[159] Kazungu JS, Barasa EW, Obadha M, Chuma J. What characteristics of provider payment mechanisms influence health care providers' behaviour? A literature review. *Int J Health Plann Manage*. 2018; 33(4): e892-e905. doi:10.1002/hpm.2565
[160] Kim KM, Max W, White JS, Chapman SA, Muench U. Do penalty-based pay-for-performance programs improve surgical care more effectively than other payment strategies? A systematic review. *Ann Med Surg*. 2020; 60:623-630. doi:10.1016/j.amsu.2020.11.060
[161] Li X, Evans JM. Incentivizing performance in health care: a rapid review, typology and qualitative study of unintended consequences. *BMC Health Serv Res*. 2022; 22:690. doi:10.1186/s12913-022-08032-z
[162] Shakir M, Armstrong K, Wasfy JH. Could pay-for-performance worsen health disparities? J Gen Intern Med. 2018; 33(4): 567-569. doi:10.1007/s11606-017-4243-3
[163] Conway A, Satin D. The role of pay-for-performance in reducing healthcare disparities: a narrative literature review. *Prev Med*. 2022;164. doi:10.1016/j.ypmed.2022.107274
[164] Casalino LP, Gans D, Weber R, et al. US physician practices spend more than $15.4 Billion annually to report quality measures. *Health Aff*. 2016;35(3):401-406. doi:10.1377/hlthaff.2015.1258
[165] 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
[166] 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
[167] Wiler JL, Kosinski LR, Mills TL, Walton J. Where are all the specialists? Current challenges of integrating specialty care into population-based total cost of care payment models. *Ann Intern Med*. 2024;177:375-382. doi:10.7326/M23-2991
[168] American Medical Association and Center for Healthcare Quality and Payment Reform. A guide to physician-focused alternative payment models. Accessed November 1, 2024. https://www.ama-assn.org/system/files/corp/media-browser/specialty%20group/washington/alternative-payment-models-physician-guide.pdf
[169] Shrank WH, Chernew ME, Navathe AS. Hierarchical payment models—a path for coordinating population-and episode-based payment models. *JAMA*. 2022;327(5):423-424. doi:10.1001/jama.2021.23786

[170] Shrank WH, Chernew ME, Navathe AS. Hierarchical payment models—a path for coordinating population-and episode-based payment models. *JAMA*. 2022;327(5):423-424. doi:10.1001/jama.2021.23786
[171] Shrank WH, Chernew ME, Navathe AS. Hierarchical payment models—a path for coordinating population-and episode-based payment models. *JAMA*. 2022;327(5):423-424. doi:10.1001/jama.2021.23786
[172] Navathe AS, Liao JM, Wang E, et al. Association of patient outcomes with bundled payments among hospitalized patients attributed to accountable care organizations. *JAMA Health Forum*. 2021;2(8):e212131-e212131. doi:10.1001/jamahealthforum.2021.2131
[173] 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*. Published online 2018. doi:10.1377/forefront.20180409.159181
[174] Shrank WH, Chernew ME, Navathe AS. Hierarchical payment models—a path for coordinating population-and episode-based payment models. *JAMA*. 2022;327(5):423-424. doi:10.1001/jama.2021.23786
[175] Centers for Medicare & Medicaid Services (CMS). Quality in motion: acting on the CMS National Quality Strategy. Published April 2024. Accessed November 1, 2024. https://www.cms.gov/files/document/quality-motion-cms-national-quality-strategy.pdf
[176] Centers for Medicare & Medicaid Services (CMS). CMS National Quality Strategy. Accessed July 17, 2024. https://www.cms.gov/medicare/quality/meaningful-measures-initiative/cms-quality-strategy
[177] Centers for Medicare & Medicaid Services (CMS). Quality in motion: acting on the CMS National Quality Strategy. Published April 2024. Accessed November 1, 2024. https://www.cms.gov/files/document/quality-motion-cms-national-quality-strategy.pdf
[178] Centers for Medicare & Medicaid Services (CMS). Aligning quality measures across CMS - the Universal Foundation. Published March 2, 2023. Accessed July 17, 2024. https://www.cms.gov/medicare/quality/cms-national-quality-strategy/aligning-quality-measures-across-cms-universal-foundation
[179] Centers for Medicare & Medicaid Services (CMS). Meaningful Measures 2.0: moving from measure prioritization and modernization. Accessed July 17, 2024. https://www.cms.gov/medicare/quality/meaningful-measures-initiative/meaningful-measures-20
[180] Centers for Medicare & Medicaid Services (CMS). 2024 National impact assessment of the Centers for Medicare & Medicaid Services (CMS) quality measures report. Published February 2024. Accessed July 17, 2024. https://www.cms.gov/files/document/2024-national-impact-assessment-report.pdf
[181] NORC at the University of Chicago and the Department of Health and Human Services' Office of Health Policy of the Assistant Secretary for Planning and Evaluation (ASPE). Environmental scan on developing and implementing performance measures for population-based total cost of care (PB-TCOC) models. Accessed July 17, 2024. https://aspe.hhs.gov/sites/default/files/documents/24622a3892de021ffa9f130db91d34e1/PTAC-Mar-25-Escan.pdf
[182] Welch J, Weiss A, Ahmed A, Moiduddin A, McDowell A. Overview of current performance measures included in selected Medicare payment programs. NORC at the University of Chicago and the Department of Health and Human Services' Office of Health Policy of the Office of the Assistant Secretary for Planning and Evaluation (ASPE). Published 2024. Accessed October 30, 2024. https://aspe.hhs.gov/sites/default/files/documents/8c2ca9395d740c409e14234f8b97b93d/PTAC-Mar-25-Perf-Meas-Report.pdf
[183] Centers for Medicare & Medicaid Services (CMS). Quality in motion: acting on the CMS National Quality Strategy. Published April 2024. Accessed November 1, 2024. https://www.cms.gov/files/document/quality-motion-cms-national-quality-strategy.pdf
[184] Centers for Medicare & Medicaid Services (CMS). Aligning quality measures across CMS - the Universal Foundation. Published March 2, 2023. Accessed July 17, 2024. https://www.cms.gov/medicare/quality/cms-national-quality-strategy/aligning-quality-measures-across-cms-universal-foundation
[185] Centers for Medicare & Medicaid Services (CMS). Meaningful Measures 2.0: moving from measure reduction to modernization. Accessed July 17, 2024. https://www.cms.gov/medicare/quality/meaningful-measures-initiative/meaningful-measures-20

[186] Agency for Healthcare Quality and Research (AHRQ). Key questions when choosing health care quality measures. Accessed July 17, 2024. https://www.ahrq.gov/talkingquality/measures/measure-questions.html
[187] ASPE PTAC September Preliminary Comments Development Team Findings Presentation. Published March 25, 2024. Accessed November 1, 2024. https://aspe.hhs.gov/sites/default/files/documents/eac0bb1786eb07cb3b4bdae71de525ca/PTAC-Mar-25-PCDT-Findings.pdf
[188] Huber K, Gonzalez-Smith J, Wang A, et al. Engaging specialists in accountable care: tailoring payment models based on specialties and practice contexts. *Health Affairs Forefront*. Published online 2023. doi:10.1377/forefront.20231219.115250
[189] Centers for Medicare & Medicaid Services (CMS). BPCI Advanced: quality measures. Accessed July 17, 2024. https://www.cms.gov/priorities/innovation/innovation-models/bpci-advanced/quality-measures
[190] Centers for Medicare & Medicaid Services (CMS). Enhancing Oncology Model. Accessed July 17, 2024. https://www.cms.gov/priorities/innovation/innovation-models/enhancing-oncology-model
[191] Kushner P, Cavender M, Mende C. Role of primary care clinicians in the management of patients with type 2 diabetes and cardiorenal diseases. *Clin Diabetes*. 2022;40(4):401-142. doi:10.2337/cd21-0119
[192] Centers for Medicare & Medicaid Services (CMS). Making Care Primary (MCP) Model overview factsheet. Accessed November 1, 2024. https://www.cms.gov/priorities/innovation/media/document/mcp-ovw-fact-sheet
[193] Centers for Medicare & Medicaid Services (CMS). Kidney Care Choices (KCC) Model: PY2023 Request for Applications (RFA). Accessed November 1, 2024. https://www.cms.gov/priorities/innovation/media/document/kcc-py23-rfa
[194] Fowler L, Rawal P, Fogler S, Waldersen B, O'Connell M, Quinton J. The CMS Innovation Center's strategy to support person-centered, value-based specialty care. Published November 7, 2022. Accessed October 17, 2024. https://www.cms.gov/blog/cms-innovation-centers-strategy-support-person-centered-value-based-specialty-care
[195] Centers for Medicare & Medicaid Services (CMS). 2024 National impact assessment of the Centers for Medicare & Medicaid Services (CMS) quality measures report. Published February 2024. Accessed July 17, 2024. https://www.cms.gov/files/document/2024-national-impact-assessment-report.pdf
[196] Wang A, Huber K, Gonzalez-Smith J, McStay F, McClellan MB, Saunders RS. Next steps for engaging specialty care in ACO models. *Health Affairs Forefront*. Published online December 22, 2023. doi:10.1377/forefront.20231219.247207
[197] Japinga M, Jayakumar P, de Brantes F, Bozic K, Saunders R, McClellan M. Strengthening specialist participation in comprehensive care through condition-based payment reforms. Duke Margolis Center for Health Policy. Published November 7, 2022. Accessed July 17, 2024. https://healthpolicy.duke.edu/sites/default/files/2022-11/Strengthening%20Specialist%20Participation%20in%20Comprehensive%20Care%20through%20Condition-Based%20Payment%20Reforms.pdf
[198] Centers for Medicare & Medicaid Services (CMS). Patient reported outcome measures. Published 2021. Accessed November 1, 2024. https://edit.cms.gov/files/document/blueprint-patient-reported-outcome-measures.pdf
[199] Centers for Medicare & Medicaid Services (CMS). Patient reported outcome measures. Published 2021. Accessed November 1, 2024. https://edit.cms.gov/files/document/blueprint-patient-reported-outcome-measures.pdf
[200] Johns Hopkins University. Users' guide to integrating patient-reported outcomes in electronic health records. Published May 2017. Accessed July 17, 2024. https://www.pcori.org/sites/default/files/PCORI-JHU-Users-Guide-To-Integrating-Patient-Reported-Outcomes-in-Electronic-Health-Records.pdf
[201] Welch J, Weiss A, Ahmed A, Moiduddin A, McDowell A. Overview of current performance measures included in selected Medicare payment programs. NORC at the University of Chicago and the Department of Health and Human Services' Office of Health Policy of the Office of the Assistant Secretary for Planning and Evaluation (ASPE). Published 2024. Accessed October 30, 2024. https://aspe.hhs.gov/sites/default/files/documents/8c2ca9395d740c409e14234f8b97b93d/PTAC-Mar-25-Perf-Meas-Report.pdf

[202] Centers for Medicare & Medicaid Services (CMS). Person-centered innovation – an update on the implementation of the CMS Innovation Center's strategy. Published November 2022. Accessed October 16, 2024. https://www.cms.gov/priorities/innovation/data-and-reports/2022/cmmi-strategy-refresh-imp-report
[203] HealthMeasures. Intro to PROMIS. Accessed July 17, 2024. https://www.healthmeasures.net/explore-measurement-systems/promis/intro-to-promis
[204] Centers for Medicare & Medicaid Services (CMS). The CMS Innovation Center's approach to person-centered care: engaging with beneficiaries, measuring what matters. Published September 20, 2022. Accessed November 1, 2024. https://www.cms.gov/priorities/innovation/media/document/cmmi-strategy-pcc-webinar-slides
[205] Lavallee D, Chenok K, Love R, et al. Incorporating patient-reported outcomes into health care to engage patients and enhance care. *Health Aff*. 2016;35(4):575-582. doi: https://doi.org/10.1377/hlthaff.2015.1362
[206] Centers for Medicare & Medicaid Services (CMS). Health Equity. Published February 22, 2024. Accessed November 1, 2024. https://www.cms.gov/pillar/health-equity
[207] Centers for Medicare & Medicaid Services (CMS). CMS Strategic Plan: Health Equity. Published 2024. Accessed July 24, 2024. https://www.cms.gov/files/document/health-equity-fact-sheet.pdf
[208] Association of State and Territorial Health Officials. Measuring health equity: an assessment of equity metrics in performance management and planning. Published February 2023. Accessed October 15, 2024. https://www.astho.org/globalassets/report/measuring-health-equity.pdf
[209] Bailit Health. Measuring health equity: a state measure set to assess and improve equity. Robert Wood Johnson Foundation. Published June 2023. Accessed October 16, 2024. https://www.rwjf.org/content/dam/farm/reports/issue_briefs/2023/rwjf473929
[210] Anderson AC, O'Rourke E, Chin MH, Ponce NA, Bernheim SM, Burstin H. Promoting health equity and eliminating disparities through performance measurement and payment. *Health Aff*. 2018;37(3):371-377. doi:10.1377/hlthaff.2017.1301
[211] RAND Health Care. Developing health equity measures. Published May 2021. Accessed October 16, 2024. https://aspe.hhs.gov/sites/default/files/migrated_legacy_files//200651/developing-health-equity-measures.pdf
[212] Centers for Medicare & Medicaid Services (CMS). CMS quality measurement action plan. Published March 2021. Accessed November 1, 2024. https://www.cms.gov/files/document/2021-cms-quality-conference-cms-quality-measurement-action-plan-march-2021.pdf
[213] Centers for Medicare & Medicaid Services (CMS). Innovation Center strategy refresh. Published October 2021. Accessed October 16, 2024. https://www.cms.gov/priorities/innovation/strategic-direction-whitepaper
[214] Centers for Medicare & Medicaid Services (CMS). Making Care Primary (MCP) Model. Accessed July 17, 2024. https://www.cms.gov/priorities/innovation/innovation-models/making-care-primary
[215] Staloff J, Morenz A. Making equity primary in the Making Care Primary model. *Health Affairs Forefront*. Published online August 21, 2023. Accessed July 17, 2024. https://www.healthaffairs.org/content/forefront/making-equity-primary-making-care-primary-model
[216] Centers for Medicare & Medicaid Services (CMS). Benchmarking. Accessed July 17, 2024. https://www.cms.gov/priorities/innovation/key-concepts/benchmarking
[217] Chernew M, McWilliams M, Shah S. The case for administrative benchmarks (and some challenges). *NEJM Catal*. 2023;4(10). doi:10.1056/CAT.23.0194
[218] Centers for Medicare & Medicaid Services (CMS). Benchmarking. Accessed July 17, 2024. https://www.cms.gov/priorities/innovation/key-concepts/benchmarking
[219] Centers for Medicare & Medicaid Services (CMS). Benchmarking. Accessed July 17, 2024. https://www.cms.gov/priorities/innovation/key-concepts/benchmarking
[220] RTI International. ACO Realizing Equity, Access, and Community Health (REACH) Model: PY2024 quality measurement methodology. Published September 2024. Accessed November 1, 2024. https://www.cms.gov/files/document/aco-reach-quality-msr-meth-py24.pdf
[221] RTI International. ACO Realizing Equity, Access, and Community Health (REACH) Model PY2024 financial operating guide: overview. Accessed July 17, 2024. https://www.cms.gov/files/document/aco-reach-py24-financial-operating-guide.pdf

[222] Centers for Medicare & Medicaid Services (CMS). CMS Innovation Center Models COVID-19 related adjustments. Published 2020. https://www.cms.gov/files/document/covid-innovation-model-flexibilities.pdf
[223] RTI International. ACO Realizing Equity, Access, and Community Health (REACH) and Kidney Care Choices Models PY2024 ACO REACH/KCC rate book development. Accessed July 17, 2024. https://www.cms.gov/files/document/aco-reach-and-kcc-models-py24-rate-book-development.pdf
[224] Chen A, McWilliams M. How benchmarks affect participation in accountable care organizations: prospects for voluntary payment models. *Am J Health Econ*. 2023. doi:10.1086/726748
[225] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf
[226] Congressional Budget Office (CBO). Medicare accountable care organizations: past performance and future directions. Published April 2024. Accessed July 17, 2024. https://www.cbo.gov/system/files/2024-04/59879-Medicare-ACOs.pdf
[227] Health Care Payment Learning & Action Network (HCPLAN). Exploring APM success factors: insights from a focused review. Published 2018. Accessed July 17, 2024. https://hcp-lan.org/workproducts/APM-Success-Factors-Report.pdf
[228] Chen A, McWilliams M. How benchmarks affect participation in accountable care organizations: prospects for voluntary payment models. *Am J Health Econ*. 2023. doi:10.1086/726748
[229] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf
[230] Centers for Medicare & Medicaid Services (CMS). Risk Adjustment. Accessed July 17, 2024. https://www.cms.gov/priorities/innovation/key-concepts/risk-adjustment
[231] Centers for Medicare & Medicaid Services (CMS). Report to Congress: risk adjustment in Medicare Advantage. Published 2021. Accessed July 17, 2024. https://www.cms.gov/files/document/report-congress-risk-adjustment-medicare-advantage-december-2021.pdf
[232] University of California San Diego. Chronic Illness and Disability Payment System (CDPS). Accessed July 17, 2024. https://hwsph.ucsd.edu/research/programs-groups/cdps.html
[233] 3M. 3M™ Grouper Plus Content Services. Accessed July 17, 2024. https://www.3m.com/3M/en_US/health-information-systems-us/drive-value-based-care/patient-classification-methodologies/grouper-plus-content-services/
[234] Johns Hopkins Medicine. Johns Hopkins ACG® System. Accessed July 17, 2024. https://www.hopkinsacg.org/
[235] Centers for Medicare & Medicaid Services (CMS). Report to Congress: risk adjustment in Medicare Advantage. Published 2021. Accessed July 17, 2024. https://www.cms.gov/files/document/report-congress-risk-adjustment-medicare-advantage-december-2021.pdf
[236] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf
[237] Horstman C, Lewis C. The basics of risk adjustment (explainer). The Commonwealth Fund. Published online April 11, 2024. doi:10.26099/8xtk-c387
[238] Centers for Medicare & Medicaid Services (CMS). Home Health PPS. Accessed September 13, 2024. https://www.cms.gov/medicare/payment/prospective-payment-systems/home-health
[239] RTI International. ACO Realizing Equity, Access, and Community Health (REACH) Model: PY2024 Quality Measurement Methodology. https://www.cms.gov/files/document/aco-reach-quality-msr-meth-py24.pdf
[240] Jaffery JB, Safran DG. Addressing social risk factors in value-based payment: adjusting payment not performance to optimize outcomes and fairness. *Health Affairs Forefront*. Published online 2021. doi:10.1377/forefront.20210414.379479
[241] Jaffery JB, Safran DG. Addressing social risk factors in value-based payment: adjusting payment not performance to optimize outcomes and fairness. *Health Affairs Forefront*. Published online 2021. doi:10.1377/forefront.20210414.379479

[242] Riley W, Love K, Wilson C. Patient attribution—a call for a system redesign. *JAMA Health Forum*. 2023;4(3):e225527. doi:10.1001/jamahealthforum.2022.5527
[243] Health Care Payment Learning & Action Network (HCPLAN). Accelerating and aligning population-based payment models: data sharing. Published 2016. Accessed July 17, 2024. https://hcp-lan.org/workproducts/ds-whitepaper-final.pdf
[244] McCoy RG, Bunkers KS, Ramar P, et al. Patient attribution: why the method matters. *Am J Manag Care*. 2018;24(12):596-603. Accessed October 22, 2024. https://pmc.ncbi.nlm.nih.gov/articles/PMC6549236/pdf/nihms-1032062.pdf
[245] Ryan A, Linden A, Maurer K, Werner R, Nallamothu B. Attribution methods and implications for measuring performance in health care. Published 2016. Accessed November 1, 2024. https://www.qualityforum.org/Projects/a-b/Attribution_2015-2016/Commissioned_Paper.aspx
[246] Centers for Medicare & Medicaid Services (CMS). Making Care Primary: payment and attribution methodologies. Published 2024. Accessed July 24, 2024. https://www.cms.gov/files/document/mcp-pymt-att-methodologies.pdf
[247] RTI International. ACO Realizing Equity, Access, and Community Health (REACH) Model PY2024 financial operating guide overview. Accessed July 17, 2024. https://www.cms.gov/files/document/aco-reach-py24-financial-operating-guide.pdf
[248] Health Care Payment Learning & Action Network (HCPLAN). Exploring APM success factors: insights from a focused review. Published 2018. Accessed July 17, 2024. https://hcp-lan.org/workproducts/APM-Success-Factors-Report.pdf
[249] Riley W, Love K, Wilson C. Patient attribution—a call for a system redesign. *JAMA Health Forum*. 2023;4(3):e225527. doi:10.1001/jamahealthforum.2022.5527
[250] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf
[251] McCoy RG, Bunkers KS, Ramar P, et al. Patient attribution: why the method matters. *Am J Manag Care*. 2018;24(12):596-603. Accessed October 22, 2024. https://pmc.ncbi.nlm.nih.gov/articles/PMC6549236/pdf/nihms-1032062.pdf
[252] McCoy RG, Bunkers KS, Ramar P, et al. Patient attribution: why the method matters. *Am J Manag Care*. 2018;24(12):596-603. Accessed October 22, 2024. https://pmc.ncbi.nlm.nih.gov/articles/PMC6549236/pdf/nihms-1032062.pdf
[253] Health Care Payment Learning & Action Network (HCPLAN). Accelerating and aligning population-based payment models: data sharing. Published 2016. Accessed July 17, 2024. https://hcp-lan.org/workproducts/ds-whitepaper-final.pdf
[254] Centers for Medicare & Medicaid Services (CMS). Guiding an Improved Dementia Experience (GUIDE) Model. Accessed July 17, 2024. https://www.cms.gov/priorities/innovation/innovation-models/guide
[255] Health Care Payment Learning & Action Network (HCPLAN). Advancing health equity through APMs: guidance on social risk adjustment. Published 2021. Accessed July 17, 2024. https://hcp-lan.org/workproducts/APM-Guidance/Advancing-Health-Equity-Through-APMs-Social-Risk-Adjustment.pdf
[256] Horstman C, Bryan A, Lewis C. How the CMS Innovation Center's payment and delivery reform models seek to address the drivers of health. The Commonwealth Fund. Published online August 8, 2022. doi:10.26099/eznf-0850
[257] Centers for Medicare & Medicaid Services (CMS). CMS Framework for health equity 2022–2032. Published 2022. Accessed November 1, 2024. https://www.cms.gov/files/document/cms-framework-health-equity-2022.pdf
[258] Centers for Medicare & Medicaid Services (CMS). Assessing equity to drive health care improvements: learnings from the CMS Innovation Center. Published 2023. Accessed October 16, 2024. https://www.cms.gov/priorities/innovation/data-and-reports/2023/assessing-equity-hc-improv-wp
[259] Health Care Payment Learning & Action Network (HCPLAN). Advancing health equity through APMs: guidance on social risk adjustment. Published 2021. Accessed July 17, 2024. https://hcp-lan.org/workproducts/APM-Guidance/Advancing-Health-Equity-Through-APMs-Social-Risk-Adjustment.pdf

[260] Centers for Medicare & Medicaid Services (CMS). Assessing equity to drive health care improvements: learnings from the CMS Innovation Center. Published 2023. Accessed October 16, 2024. https://www.cms.gov/priorities/innovation/data-and-reports/2023/assessing-equity-hc-improv-wp
[261] Centers for Medicare & Medicaid Services (CMS). Assessing equity to drive health care improvements: learnings from the CMS Innovation Center. Published 2023. Accessed October 16, 2024. https://www.cms.gov/priorities/innovation/data-and-reports/2023/assessing-equity-hc-improv-wp
[262] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf
[263] Bryan AF, Duggan CE, Tsai TC. Advancing health equity through federal payment and delivery system reforms. The Commonwealth Fund. Published online June 15, 2022. doi:10.26099/emga-aj89
[264] RTI International. ACO Realizing Equity, Access, and Community Health (REACH) Model PY2024 financial operating guide: Overview. Accessed July 17, 2024. https://www.cms.gov/files/document/aco-reach-py24-financial-operating-guide.pdf
[265] ASPE PTAC September Preliminary Comments Development Team Findings Presentation. Published March 25, 2024. Accessed November 1, 2024. https://aspe.hhs.gov/sites/default/files/documents/eac0bb1786eb07cb3b4bdae71de525ca/PTAC-Mar-25-PCDT-Findings.pdf
[266] NORC at the University of Chicago. Global and Professional Direct Contracting Model Evaluation: annual report 1. Published October 2023. Accessed October 23, 2024. https://www.cms.gov/priorities/innovation/data-and-reports/2023/gpdc-1st-ann-report
[267] Health Care Payment Learning & Action Network (HCPLAN). Accelerating and aligning population-based payment models: data sharing. Published 2016. Accessed July 17, 2024. https://hcp-lan.org/workproducts/ds-whitepaper-final.pdf
[268] Hostetter M, Klein S. The perils and payoffs of alternative payment models for community health centers. The Commonwealth Fund. Published online 2022. doi:10.26099/2ncb-6738
[269] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf
[270] Hostetter M, Klein S. The perils and payoffs of alternative payment models for community health centers. The Commonwealth Fund. Published online 2022. doi:10.26099/2ncb-6738
[271] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf
[272] Hostetter M, Klein S. The perils and payoffs of alternative payment models for community health centers. The Commonwealth Fund. Published online 2022. doi:10.26099/2ncb-6738
[273] Health Care Payment Learning & Action Network (HCPLAN). Accelerating and aligning population-based payment models: data sharing. Published 2016. Accessed July 17, 2024. https://hcp-lan.org/workproducts/ds-whitepaper-final.pdf
[274] NORC at the University of Chicago. Evaluation of the Vermont All-Payer Accountable Care Organization Model: 2018–2022. Published June 2024. Accessed July 17, 2024. https://www.cms.gov/priorities/innovation/data-and-reports/2024/vtapm-4th-eval-full-report
[275] Blavin F, Smith LB, Ramos C, Ozanich G, Horn A. Opportunities to improve data interoperability and integration to support value-based care: lessons from stakeholder interviews. Published July 2022. Accessed October 16, 2024. https://aspe.hhs.gov/sites/default/files/documents/700d388ad0c7887c4ed7bb41adc73a2b/data-interoperability-value-based-care.pdf
[276] Blavin F, Smith LB, Ramos C, Ozanich G, Horn A. Opportunities to improve data interoperability and integration to support value-based care: lessons from stakeholder interviews. Published July 2022. Accessed October 16, 2024. https://aspe.hhs.gov/sites/default/files/documents/700d388ad0c7887c4ed7bb41adc73a2b/data-interoperability-value-based-care.pdf

[277] Blavin F, Smith LB, Ramos C, Ozanich G, Horn A. Opportunities to improve data interoperability and integration to support value-based care: lessons from stakeholder interviews. Published July 2022. Accessed October 16, 2024. https://aspe.hhs.gov/sites/default/files/documents/700d388ad0c7887c4ed7bb41adc73a2b/data-interoperability-value-based-care.pdf

[278] The Office of the National Coordinator for Health Information Technology. Improving hospital transitions and care coordination using automated Admission, Discharge and Transfer (ADT) alerts: learning guide executive summary. Published 2013. Accessed October 30, 2024. https://www.healthit.gov/sites/default/files/playbook/pdf/learning-guide-executive-summary-adt-alerts.pdf

[279] Blavin F, Smith LB, Ramos C, Ozanich G, Horn A. Opportunities to improve data interoperability and integration to support value-based care: lessons from stakeholder interviews. Published July 2022. Accessed October 16, 2024. https://aspe.hhs.gov/sites/default/files/documents/700d388ad0c7887c4ed7bb41adc73a2b/data-interoperability-value-based-care.pdf

[280] McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: a blueprint for population-based payments. Brookings Institution. Published October 2021. Accessed October 23, 2024. https://www.brookings.edu/wp-content/uploads/2021/10/Medicare-ACO.pdf

[281] Machta R, Peterson G, Rotter J, et al. Evaluation of the Maryland Total Cost of Care Model: implementation report. Mathematica. Published July 2021. Accessed October 22, 2024. https://innovation.cms.gov/data-and-reports/2021/md-tcoc-imp-eval-report