

**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)**

June 2, 2022

The Office of the Assistant Secretary for Planning and Evaluation (ASPE) requested the development of 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 \(PFPMs\)*](#) to assist the Physician-Focused Payment Model Technical Advisory Committee (PTAC) in preparing for a series of theme-based discussions on the role that population-based TCOC models can play in optimizing health care delivery and value-based transformation in the context of alternative payment models (APMs) and physician-focused payment models (PFPMs) specifically. As a follow-up to the first theme-based discussion, which took place during the Committee's March 7-8, 2022, public meeting, this supplement¹ provides additional information on innovations and best practices in care delivery for population-based TCOC models.

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Table of Contents

Section I. Introduction	6
Section II. Key Highlights	6
Section III. Framework for Care Delivery Structures in TCOC Models	13
III.A. Features of Population-based TCOC Models and Tradeoffs	13
III.B. Services Covered in Population-based TCOC Models	15
Section IV: Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability	18
IV.A. Options for Defining Accountability.....	18
IV.B. Accountable Care Entities	19
IV.C. Options for Integrating Specialty Care into Population-based TCOC Models	20
Section V: Care Delivery Model Innovations	24
V.A. Innovations in Population-Based TCOC Models and Care Delivery Systems.....	25
V.B. Innovations in Specialty Care Models	26
V.C. Addressing SDOH and Equity in Population-based TCOC Models	29
Section VI. Care Delivery Innovations in Selected PTAC Proposals	29
Section VII: Performance Metrics and Model Evaluation	43
VII.A. Criteria for Relevant Performance Metrics for Cost, Utilization and Quality	43
VII.B. Criteria for Measure Selection	45
VII.C. Unaddressed Issues in Existing Performance Measurement.....	46
VII.D. Importance of Timely Data Sharing in Population-based TCOC Models	49
Section VIII. Conclusion and Next Steps	51
Section IX. Annotated Bibliography	52
Appendix: Additional Definitions of Accountability	84
References	85

List of Exhibits

Exhibit 1.	Goals and Objectives for Population-Based TCOC Models.....	14
Exhibit 2.	Range of Potential Services in the Context of Population-based-TCOC Models to Maximize Patient-Centered Care	16
Exhibit 3.	Integrating Specialty Care in Population-Based TCOC Models.....	21
Exhibit 4.	Summary of the Ten Selected PTAC Proposals by Model Type	30
Exhibit 5.	Summary of the Care Delivery and Payment Model Characteristics of the Ten Selected PTAC Proposals.....	33
Exhibit 6.	Highlights of Care Delivery Innovations in Selected PTAC Proposals with TCOC-Related Components.....	37

List of Acronyms

Abbreviation	Term
ACO	Accountable Care Organizations
ACO REACH	ACO Realizing Equity, Access, and Community Health
AHRQ	Agency for Healthcare Research and Quality
AI	Active intervention
APM	Alternative payment model
AS	Active surveillance
ASPE	Assistant Secretary for Planning and Evaluation
CEC	Comprehensive ESRD Care
CEP	Care payment
CJR	Care Joint Replacement
CKD	Chronic kidney disease
CMMI	Center for Medicare and Medicaid Innovation
CMS	Centers for Medicare & Medicaid Services
CPC	Comprehensive Primary Care
ED	Emergency department
EHR	Electronic health record
ESCO	ESRD Seamless Care Organizations
ESRD	End-stage renal disease
FFS	Fee-for-service
GPDC	Global and Professional Direct Contracting
HCV	Hepatitis C Virus
HF	Heart failure
HIE	Health information exchanges
HIT	Health information technology
HRRP	Hospital Readmissions Reduction Program
IAH	Independence at Home
IDS	Integrated delivery systems
IOM	Institute of Medicine
KCC	Kidney Care Choices
KFHP	Kaiser Foundation Health Plan
MA	Medicare Advantage
MIPS	Merit-based Incentive Payment System
NAMCS	National Ambulatory Medical Care Survey
NGACO	Next Generation ACO
NF	Nursing facility
PAC	Post-acute care
PACE	Programs of All-Inclusive Care for the Elderly
PBP	Population-based payment
PCF	Primary Care First
PCP	Primary care provider
PHE	Public health emergency
PHI	Personal health information
PII	Personally identifiable information
PMG	Permanente Medical Groups

Abbreviation	Term
PMPM	Per member per month
PTAC	Payment Model Technical Advisory Committee
ROI	Return on investment
RPA	Renal Physicians Association
SDOH	Social Determinants of Health
SNF	Skilled nursing facility
SPADE	Standardized patient assessment data elements
TCOC	Total Cost of Care
VTAPM	Vermont All-Payer Model

Section I. Introduction

The Physician-Focused Payment Model Technical Advisory Committee (PTAC) conducted the first of a series of three theme-based discussions focusing on the role that population-based total cost of care (TCOC) models can play in optimizing health care delivery and value-based transformation in the broader context of alternative payment models (APMs) and physician-focused payment models (PFPMs) specifically. during the Committee’s March 7-8, 2022, public meeting. Prior to the public meeting, the Office of the Assistant Secretary for Planning and Evaluation (ASPE) requested the development of 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 \(PFPMs\)](#) (referred to in this document as “the original environmental scan”) to provide background information for Committee members. This supplement provides additional information on innovations and best practices in care delivery for population-based TCOC models for optimizing value-based transformation.ⁱⁱ

The rest of this document is organized as follows: Section II presents key highlights of findings from this supplement. Section III provides the framework for structuring population-based TCOC models, including considering which services to include in these models and how to balance objectives across payer, provider, and patient perspectives. Section IV presents options for defining provider accountability in population-based TCOC models, including integrating specialty care. Section V highlights care delivery innovations not covered in the original environmental scan and discusses additional implementation considerations. Section VI provides additional information about care delivery innovations in selected PTAC proposals that discussed the use of TCOC measures in their payment methodology and performance reporting. Finally, Section VII expands on previous findings about performance measurement in population-based TCOC models and discusses best practices and challenges.

Section II. Key Highlights

PTAC identified a working definition of a population-based TCOC model in the original environmental scan: *“A population-based TCOC model refers to a population-based APM in which participating entities assume accountability for quality and TCOC and receive payments for all covered health care costs for a broadly defined population with varying health care needs during the course of a year (365 days).”*¹ This supplement focuses on additional issues related to improving care delivery and measuring performance in population-based TCOC models.

Framework for Care Delivery Structures in TCOC Models

Features of Population-based TCOC Models and Tradeoffs. Transitioning from traditional fee-for-service (FFS) payment approaches toward population-based models with provider accountability for TCOC involves tradeoffs between various care delivery and payment issues related to model design. Population-based TCOC models seek to achieve delivery system transformation and patient-centered

ⁱⁱ This analysis was prepared under contract #HHSP233201500048IHHSP23337014T 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 May 6, 2022.

care, while addressing factors related to improving provider readiness to participate in these models. A key finding from this supplement is that designing an effective model requires balancing goals and objectives and may involve tradeoffs across these objectives.

- *Care Delivery Factors* include the amount of care coordination, care integration, and accountability; beneficiary choice, and flexibility to innovate.
- *Payment Factors* include financial risks and incentives for the accountable entity, reduction in administrative burden, and reduction in beneficiary cost sharing.

Services Covered in Population-based TCOC Models. While current population-based TCOC Models typically focus on Medicare Parts A and B spending, in many situations, other services are important to achieving value-based care that achieves the objectives noted above. For example, in addition to outpatient and inpatient care, these services may include self-administered prescription drug coverage, home-based care, long-term services and supports, services to address health-related social needs (HRSNs), and behavioral health. Effective coordination across different types of providers is needed to achieve holistic care that is both patient-centered and value-based. The experience to date highlights the importance of:

- Giving accountable entities and providers access to data and analytics to support innovation such as advanced primary care, team-based care that may include community health workers, referral management, shoring up a pipeline of health care workers with necessary training, and use of clinical pathways.
- Understanding that care coordination may vary for different patients. For example, a generally healthy population may benefit from care delivery models centered around primary care, while patients with specific conditions, patients with specific health-related social needs (HSRNs), and patients at higher risk for requiring acute care may benefit most from models centered on specialty care. Care delivery models that emphasize management of transitions are also important because patients may go back and forth across the continuum of care.
- Finding the best way to incorporate prescription drugs. There is concern that population-based TCOC models may result in incentives for accountable entities to shift costs to services covered outside the model such as those covered by Part D; such a shift would transfer cost and responsibilities to other entities and not reduce overall costs or improve beneficiary care.²

Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability

The Center for Medicare and Medicaid Innovation (CMMI) has set the goal of having every Medicare FFS beneficiary with Parts A and B in a care relationship with accountability for quality and TCOC by 2030. One of CMMI’s priorities is to increase coordination between providers responsible for accountable care relationships and find ways to share accountability for coordination with specialty providers that may deliver high-cost episodic and/or complex care, some of whom may be the “main” source of care for patients with specific conditions.

Options for Defining Accountability. Common approaches used in existing population-based TCOC models include holding entities accountable to quality and outcome metrics tied to adoption of improved care processes and engaging patients. Accountable entities and sometimes providers assume

financial risk or rewards based on their ability to provide value-based, patient-centered care, achieve population-wide health and wellness goals, and avoid harming patients.^{3,4,5}

Researchers and experts also propose holding accountable entities and sometimes providers accountable for measures of professional competence, legal and ethical conduct, financial performance, adequate access to needed services, public health promotion, and community benefit, participation in shared decision-making, and adhering to professional standards.⁶ CMMI has noted that accountable care means that all participating providers have the incentives and tools to deliver high-quality, coordinated, team-based care that promotes health, to reduce fragmentation and costs for people and the health system, with patients able to choose who will be responsible for assessing and coordinating their holistic care needs and the cost and quality of their care.⁷

PTAC is using the following working definition of an “accountable care relationship”:

An accountable care relationship is a relationship with a health care provider that focuses on accountability for quality of care and cost of care for an individual patient or group of patients for a defined period-of-time (e.g., 365 days).

Within this context, an accountable care relationship would typically include accountability for quality and cost for all of a patient’s covered health care services. However, in some cases, a provider could potentially be accountable for the quality and cost of a subset of a patient’s health care services for an episode of care (which could be procedure-specific, condition-specific, disease-specific, or related to a medical event).

Options for Identifying Entities that can be Accountable for Patients’ Care in Population-based TCOC Models. There are several types of entities that could potentially be accountable for patients’ care within population-based TCOC models. For example, CMMI has identified several different types of providers and organizations could be accountable for quality and TCOC, including: physician group practices, hospitals, other health care providers, Medicare Advantage (MA) plans, Programs of All Inclusive Care for the Elderly (PACE), or Medicaid managed care plans.

Under population-based TCOC models, accountable entities (especially those that are not integrated delivery systems [IDSs]) face the challenge of defining and implementing overall accountability, particularly given that financial accountability and accountability for patient care may be the responsibility of different parts of a hospital or physician practice.⁸ There are questions of how much accountability individual providers should be subject to, relative to a broader provider organization that they may be more or less tied to, and accountable entities themselves (e.g., ACOs or health plans).

There are also options regarding the level at which accountability for quality and TCOC occurs. Some of the stakeholders who have responded to the Committee’s Population-Based TCOC Models Request for Input (RFI) have expressed a preference for setting accountability for TCOC at the entity level, rather than at the individual provider level. These stakeholders have indicated that individual providers’ ability to manage TCOC varies based on a variety of factors such as: specialty, data availability, prior participation in value-based care arrangements, and the presence of chronic illnesses in the patient population.ⁱⁱⁱ

ⁱⁱⁱ [Public Input on PTAC’s Review of Population-Based TCOC Models as of May 10, 2022.](#)

Options for Integrating Specialty Care into Population-based TCOC Models. Whether a primary care provider or specialist should be primarily responsible for maintaining an accountable care relationship for any given patient may vary depending on the patient’s circumstances or the local health care context. For many patients with basic to moderately complex health care needs, the primary care provider (PCP) is the logical care point of care entity. However, for patients with more complex needs, including those with one or more chronic conditions, a specialist may have a bigger role in directing and coordinating a range of health care services for that patient relative to a PCP. Furthermore, as patient needs and condition change, patients may go in and out of situations where their care is mainly managed by a specialist rather than a PCP.

To date, population-based TCOC models, particularly Accountable Care Organizations (ACOs), have focused on the role of PCPs in delivering value-based care.⁹ Typically, specialists are involved in APMs only through their participation in episode-based or bundled payment models focused on specific services or treatments provided to a specific group of patients for a limited time.¹⁰ This supplement shows both that it is challenging to integrate primary and specialty care, and that there are opportunities for coordination and aligning goals and accountability.

Important considerations included:

- Some experts note the benefits of encouraging patients to receive care from an accountable provider or from providers whose care is being coordinated through a specific accountable entity. However, this can limit patient choice.¹¹
- Provider experts note that some providers are not comfortable assuming overall accountability for patient-centered, value-based care if they provide only a portion of the patient’s overall care and do not have analytic tools necessary for effective coordination of care with other providers.¹² This may be especially true for specialists that address specific health conditions or procedures.
- Integrating specialty and population-based TCOC models will require addressing conflicting incentives in benchmarks and TCOC calculations for shared savings and losses. Currently, literature shows that incentives may conflict across population-based TCOC models and episode-based models that are currently being implemented and tested separately.^{13,14} Consistency in the technical implementation of incentives may help encourage participation in APMs.

Options for incorporating primary and specialty care in population-based TCOC models include:

- Nested models, wherein a payment structure would be hierarchical, with the ACO global budgets operating as an “umbrella” of accountability that encompass both population-wide management and value-based care for episodes payments are applied.¹⁵
- Mandating provider participation, including specialist participation in population-based TCOC models. Some experts suggest mandatory provider participation as a strategy, noting that population-based TCOCs may not be able to create incentives to engage specialists in some cases, due to a limited supply of specialty care in some markets.¹⁶
- In the near term, structuring technical elements of episode-based models so that they are better positioned for integration into population-based TCOC models. Structural modifications that would bring episodic models closer to population-based models include extending the duration of episodes or “care bundles,” making it easier to incorporate longer-term quality of care

measures into provider incentives, and addressing perverse incentives for participation and coordination.¹⁷

Care Delivery Model Innovations in Population-based TCOC Models

Innovations in population-based TCOC Models include:

- PACE is an example of an innovative model for integrating primary care, specialty, and acute care, prescription drugs, LTSS, and social services in a benefit option for older adults that are certified by the state as requiring nursing home level care.¹⁸ Medicare and beneficiaries dually eligible for Medicare and Medicaid receive service through a PACE organization, which can be a non-profit or for profit entity that receives a capitated payment to provide community-based care through a designated site and affiliated providers.¹⁹
- Kaiser Permanente is an IDS that combines health coverage and care delivery. Typically enrollment in Kaiser requires purchasers (Centers for Medicare & Medicaid Services [CMS], states, or employers) provide premiums to access care and services. Kaiser has affiliated MA plans and Medicaid managed care plans. The Kaiser Foundation Health Plan (KFHP) accepts financial risk and facilitates contracts with Permanente Medical Groups (PMGs) and Kaiser Foundation Hospitals (KFH); KFHP and the PMGs share financial risk for the global budget provided by the per member per month (PMPM) payments.
- ChenMed approaches population-based TCOC via advanced primary care practices operating only through MA and serving mainly low-to-moderate income adults. The affiliated practices receive a global capitation payment and bear the full risk and accountability for service, quality, and financial outcomes.²⁰ ChenMed physicians are salaried and after one year of quality service become eligible for partnership, wherein they earn shares of profit on top of their salaries.²¹ ChenMed's care delivery model is centered around small physician patient panels.
- Landmark Health is an innovative health care delivery organization that supplements patients' regular primary care and specialty providers. Landmark staff lead multidisciplinary teams to provide complex chronic care management via home health care and video telehealth services.²² Existing primary care and specialty providers caring for a given patient remain engaged as part of the multidisciplinary team.²³

Innovations in Specialty Care Models

Kidney Care Models. Recognizing the high clinical need and costs for treating end-stage renal disease (ESRD) and chronic kidney disease (CKD), CMS has launched TCOC models to incentivize higher quality and more efficient care for this population. The Comprehensive ESRD Care (CEC) Model allowed nephrologists, dialysis clinics, and other providers to form ESRD Seamless Care Organizations (ESCOs), a type of ACO accountable for clinical quality outcomes and spending on dialysis services and all Parts A and B spending.²⁴ The new Kidney Care Choices (KCC) Model builds off the previous CEC Model and the Primary Care First (PCF) Model and expands to focus on CKD stages 4 and 5.²⁵ In the KCC Model, ACO-based organizations manage patients through dialysis, transplantation, and end-of-life care, with incentives to delay the onset of dialysis and promote kidney transplantation where it is consistent with patient-centered care and clinical recommendations. Additionally, PTAC received a proposal related to kidney disease from the Renal Physicians Association (RPA).²⁶ This proposal, the Incident Dialysis Model, presented a condition-specific, episode-of-care payment model (CEP) that would initiate at the onset of ESRD and last for six months of dialysis therapy.

Specialty models also have been developed to focus on **diabetes and serious illness**. While there are no current diabetes-specific TCOC models, the Maryland Total Cost of Care (MD TCOC) Model provides a Diabetes Outcomes-Based Credit in which Maryland will receive recognition for investing in initiatives.²⁷ Although most population-based TCOC do not include specific incentives to manage serious illness or end-of-life care, some models have experimented with special tracks to address patients requiring these services, including Comprehensive Primary Care Plus (CPC+) and the Independence at Home (IAH) demonstration.^{28,29} Private sector examples of models for serious illness care included Prospero Health and Aspire Health.^{30,31}

Addressing Social Determinants of Health (SDOH) and Equity in Population-based TCOC Models.

Medicare, Medicaid, and commercial payers have developed mechanisms for addressing HSRNs and improving equity in health outcomes. Medicare FFS models have generally focused on clinicians providing referrals and warm handoffs to social service organizations, while some MA plans offer direct services to address HSRNs and recently have been granted the ability to add non-medical supplemental benefits to beneficiaries.³² State Medicaid agencies have used Section 1915 and 1115 waiver authorities to expand services to address SDOH.³³ Commercial insurers are making investments in direct services to address SDOH, such as Kaiser Permanente housing program and Oak Street Health’s provision of transportation, social activities, and exercise classes.^{34,35}

Innovations in Selected PTAC Proposals

Between 2016 and 2020, PTAC received 35 proposals, including 34 proposals that the Committee has reviewed and 28 proposals that PTAC has deliberated and voted on during public meetings. Nearly all of the proposals that have been submitted to PTAC addressed the potential impact on costs, to some degree – including at least 10 proposals that discussed the use of TCOC measures in their payment methodology and performance reporting.^{iv}

None of the ten selected proposals submitted to PTAC included participating providers assuming accountability for quality and TCOC and receiving payments for all covered health care costs for a broadly defined population with varying health care needs during the course of a year (365 days). However, several of the proposals included care delivery innovations for advanced primary care, population-specific, and episode-based models. The proposed models’ care delivery approaches varied depending on the clinical focus, clinical settings and patient populations that were being targeted.

Performance Metrics and Model Evaluation

Criteria for Relevant Performance Metrics for Patients, Providers, and Payers. In TCOC models, identifying relevant measures to assess performance may be challenging as measure sets that focus primarily on costs or utilization may have unintended consequences on quality. Existing cost measures alone may also not reflect high-value care (i.e., care that is lower cost or lower cost over time and higher quality) and tying reimbursement or financial incentives (e.g., through shared savings or losses) to

^{iv} These proposals were identified using TCOC-based keyword searches of key documents related to the Committee’s proposal review process and were selected to include a diversity of provider types, care models and clinical settings, and payment approaches that are relevant for a discussion of the use of TCOC in multiple contexts. For additional information, please see 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 \(PFPMs\)](#).

performance measures in other domains may help ensure that efforts to reduce cost do not inappropriately reduce utilization or restrict access.³⁶

Some cost measures used across multiple APMs are total costs to Medicare, costs to Medicare Part A or Part B of specific service types (e.g., inpatient care, outpatient care), and institutional per episode spending.^{37,38} Notably, these cost measures alone may not sufficiently capture all associated program or Model costs. Other performance measures used in APMs include utilization measures, such as all-cause hospitalizations, ambulatory care-sensitive hospitalizations, 30-day readmissions, emergency department (ED) visits, and post-acute care (PAC) utilization.^{39,40} These measures may reflect avoidable utilization and reducing these events may align with patient preferences to avoid unwanted care and remain in the community. However, tying quality measures to financial incentives without adequate risk adjustment may also penalize providers who serve sicker or disadvantaged patient populations.

To gain a comprehensive view of health care value within an APM, performance measures may also include measures of quality beyond cost and utilization, including measures of patient-centered care and patient-reported outcomes (e.g., patient satisfaction). The Institute of Medicine (IOM) has identified six dimensions of patient-centered care: respect for patients' values, preferences, and expressed needs; care coordination and integration; information, communication, and education; physical comfort; emotional support; and involvement of family and friends.⁴¹ Patient-reported measures, derived from sources such as patient surveys, examine the patient's perspective and are essential to the accurate assessment of patient-centered care.⁴²

Identifying a core set of patient-centered measures may be challenging as experts note that measures should be tailored to the specific needs of the patients being assessed, which is the bedrock of patient-centered care. Some care goals reflecting patient preferences, such as remaining in the community, are more commonly felt across patient populations, while other priorities may vary by population and context.^{43,44,45,46}

Criteria to assess performance include:

- Face validity (the extent to which a measure appears to measure what it is intended to measure) and convergent validity (how closely the new measure is correlated with other measures of the same construct).^{47,48}
- Usability and use, which pertain to the "extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient health care for individuals or populations."⁴⁹
- Performance, assessed by success or failure in meeting a target threshold or by rank on a measure or composite score compared to other providers, or improvement, which examines performance relative to that in a prior year or to a benchmark.

Other issues to consider are that threshold-based payments may create the greatest incentive for those near the threshold, who may have a better chance of meeting the threshold and receiving financial incentives but may also reduce achievement potential as there is no incentive to improve quality above the threshold.^{50,51} In addition, without attention to risk adjustment providers may engage in "cherry-picking," avoiding sicker patients or competing for healthier, lower risk patients to increase their performance scores, or "teaching to the test," focusing on tasks that are measured in order to improve ratings.⁵² Additionally, measures may need to be reevaluated to assess whether they are still viable (e.g.,

if there is variation in performance and meaningful improvement in performance can be measured) and performance thresholds may need to be updated to encourage ongoing improvement.⁵³

Unaddressed Issues in Existing Performance Measurement. Several challenges remain in implementing and assessing performance measures in APMs, including calculating return on investment (ROI),^{54,55} identifying appropriate time periods⁵⁶, addressing disparities,⁵⁷ and emerging health care issues⁵⁸. Data related issues include small sample sizes,^{59,60} and standardization of data elements.⁶¹

Importance of Timely Data Sharing in Population-based TCOC Models. Providing the right information to the right provider at the right time, and sharing information with patients, is critical to the success of population-based TCOC models. At a minimum, effective approaches to sharing data are needed to operationalize patient attribution rules, financial benchmarking, and performance measurement. Data sharing requires robust health information technology (HIT) that produces actionable information from clinical care systems (e.g., EHRs) and payment systems (e.g., billing).

To be effective in achieving better outcomes, data sharing must be timely to enable real-time coordination, for example providers need to know right away when a patient visits and ED, is admitted as an inpatient. Without these additional tools, the use of financial incentives alone may fail. Lack of interoperability among health systems and lack of funding and infrastructure for data sharing can hinder efforts to achieve value-based care. The lag in financial performance data in population-based TCOC models also limits the ability of accountable entities and providers to accurately forecast and benchmark expenditures and reduces the effectiveness of incentives to realize shared savings. Incentives and support for building an effective data sharing infrastructure may itself need to be built into population-based models to achieve their objectives.

Section III. Framework for Care Delivery Structures in TCOC Models

PTAC outlined a working definition of a population-based-TCOC model in the original environmental scan: *“A population-based TCOC model refers to a population-based alternative payment model (APM) in which participating entities assume accountability for quality and TCOC and receive payments for all covered health care costs for a broadly defined population with varying health care needs during the course of a year (365 days).”* This definition will continue to be used for purposes of this supplement to the environmental scan to describe any model intended to lower TCOC and improve quality, whether or not the model is named as such.

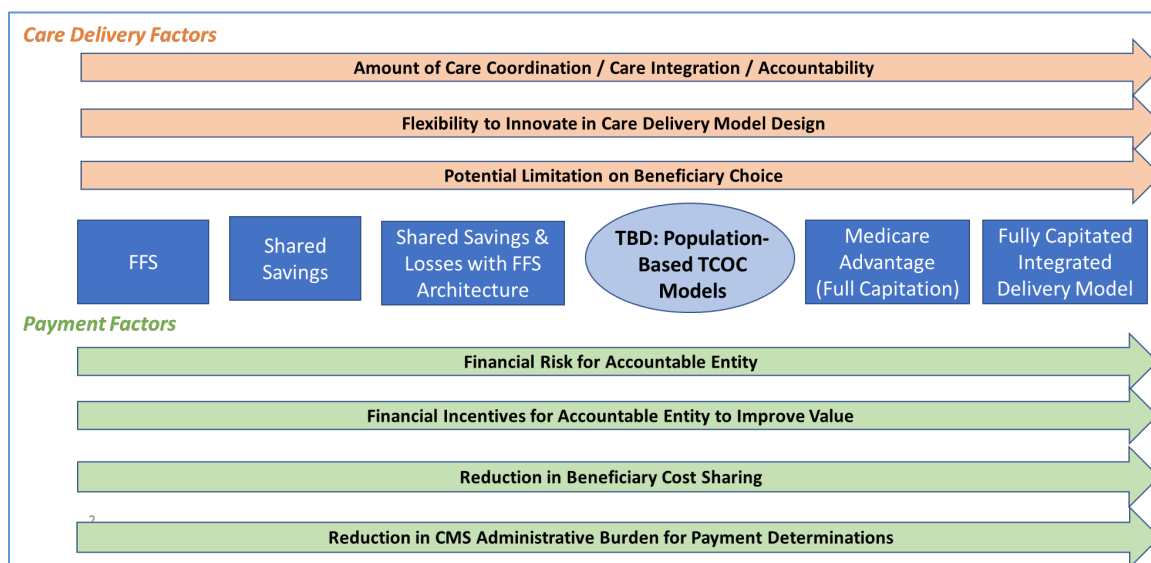
III.A. Features of Population-based TCOC Models and Tradeoffs

Exhibit 1 lists some examples of overall goals for delivery system transformation and payment reform through population-based TCOC models. Transitioning from traditional FFS toward population-based models with more provider accountability for quality and cost—such as ACOs, MA, and IDSeS—can improve care coordination and flexibility to innovate while reducing TCOC. However, this transition often involves tradeoffs between various care delivery and payment issues related to model design.

Population-based TCOC model design requires balancing between these sometimes-competing objectives. For example, the use of provider networks is one of the tools that models with increased accountability have included in order to improve quality while reducing TCOC. Most MA plans have

provider network requirements,^v and differences in provider networks can affect the total costs and quality of care for MA beneficiaries.⁶² Moving toward models with tighter provider networks can also potentially increase out-of-pocket spending for beneficiaries. For example, a 2020 study found that beneficiaries receiving out-of-network primary care in ACOs had higher spending, suggesting that encouraging beneficiary use of in-network providers would improve efficiency, but this would need to be balanced against the result that this approach could limit beneficiary choice.⁶³

Exhibit 1. Goals and Objectives for Population-Based TCOC Models



Similarly, to the extent that the transition from traditional FFS toward population-based models can result in the development of specific requirements related to care coordination, care integration and provider accountability, this transition can potentially reduce the amount of flexibility that providers have in determining how best to deliver care. At the same time, movement toward population-based models with full capitation can also provide opportunities to develop innovative care delivery approaches that would not be feasible within a traditional FFS environment.

Examples of tradeoffs related to payment factors during the transition from traditional FFS toward population-based models include increased financial risk for accountable entities; increased financial incentives for accountable entities to improve value, and reduced beneficiary cost sharing. Additionally, to encourage the flexibility to innovate, TCOC models are often designed to limit the administrative burden associated with payment determinations. Movement toward the use of capitated payments would also reduce the CMS burden associated with making payment determinations for various types of primary and specialty care services and providers because these decisions would be made by the participating accountable entities.

Furthermore, models that seek to achieve balance through nuanced, dynamic, and context-specific rules for accountability, payment, and coordination, may be at risk of increasing complexity. More research

^v In plans with provider network requirements, enrolled beneficiaries have access to in-network providers with cost-sharing responsibilities. For out-of-network providers, beneficiaries have higher out-of-pocket costs.

and subject matter expertise are needed to assist in prioritizing these objectives for effective population-based TCOC model design.

III.B. Services Covered in Population-based TCOC Models

The original environmental scan provided a high-level summary of services that are typically included in and excluded from Medicare population-based TCOC models,^{vi} noting that future models could potentially include a wider array of services.⁶⁴

Issues related to determining what services should be included in TCOC. The following is a summary of some additional insights that have been provided by stakeholders. During PTAC’s March public meeting about issues related to determining what should be included in calculating TCOC benchmarks in the context of population-based models, stakeholders indicated that:

- The amount of control that a given accountable entity (such as a PCP, ACO, or a health plan) has on impacting the spending for certain kinds of services (directly, and/or through network arrangements);
- The amount of resources that a given accountable entity has for supporting the needs of a patient population (such as clinically complex patients);
- The impact of excluding certain conditions or services from the calculation of TCOC on provider accountability and cost-shifting;
- The desirability of having consistent, agreed-upon definitions of the various components that make up TCOC so that it is easier to clarify which components are/are not included in a definition of TCOC;
- The possible need for the services that are included in the TCOC benchmark to vary based on various factors such as the provider’s ability to take on financial risk;
- The potential impact of having multiple definitions of TCOC across different models on financial incentives (e.g., selection, cost-shifting);
- Opportunities to improve pharmaceutical stewardship (such as switching to the use of generic drugs, which can reduce cost sharing for the patient) by including Part D prescriptions in the calculation of TCOC, or including quality metrics related to medication adherence or generic utilization; and
- The need to improve transparency and reduce complexity for beneficiaries.

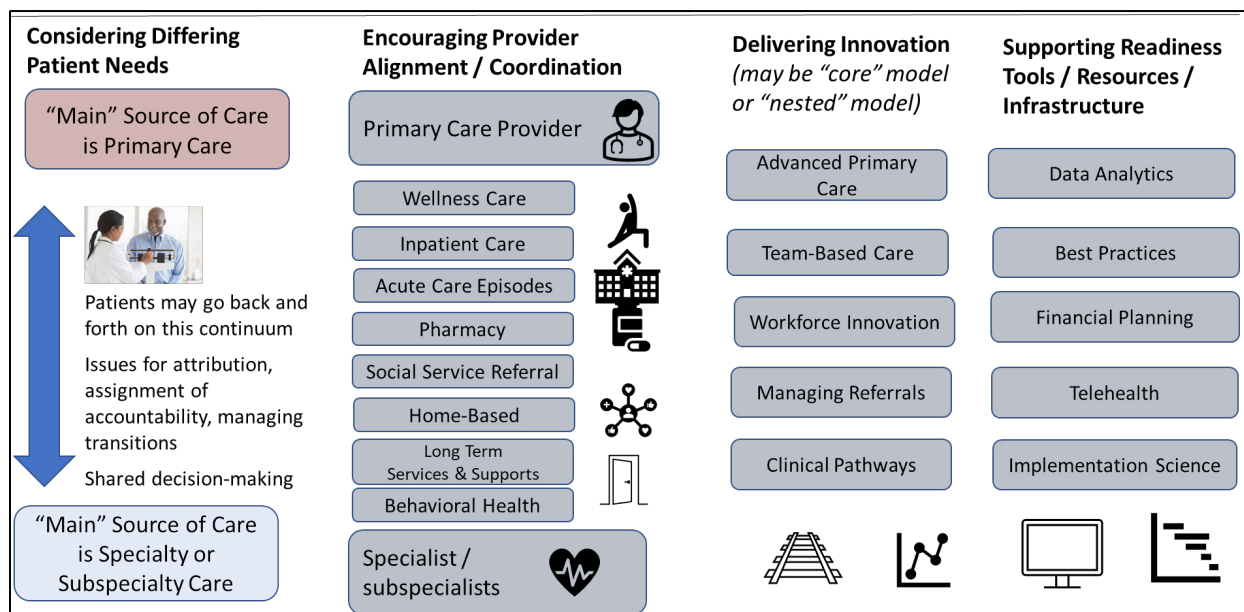
Additionally, the various respondents to PTAC’s [Request for Input](#) on population-based TCOC models disagreed about what services should be included when calculating TCOC in the context of APMs, PFPMs, and population-based TCOC models.⁶⁵

Importance of Patient-Centered Care and Considering Individual Patients’ Needs. The [Environmental Scan on Care Coordination in the Context of Alternative Payment Models \(APMs\) and Physician-Focused Payment Models \(PFPMs\)](#) that was developed for a previous PTAC theme-based discussion indicated that care coordination can be implemented in different contexts based on the needs of patients.

^{vi} Examples of services that are typically included in Medicare population-based TCOC models are: outpatient provider (primary care, specialty care), inpatient (facility costs, provider costs, post-acute services), physician-administered drugs / biologics, and enhanced benefits. Examples of services that are typically excluded from these Medicare models are: self-administered drugs / biologics; behavioral health; long term services and supports (LTSS) / home and community-based services (HCBS); and screening and referral to address social needs.

Different approaches to care coordination may vary depending on whether the goal is population-wide health management, which is typically centered on primary care; care for specific populations (based on conditions or other characteristics); or care during specific episodes such as an acute care stay.⁶⁶ Exhibit 2 depicts the alignment between a patient’s main source of care (primary care or specialty care) and the range of services that patients could potentially receive under a population-based TCOC model. In addition, the exhibit illustrates some care delivery innovations, tools, and resources that can facilitate patient-centered care in population-based TCOC models, recognizing that patients receive usual care from different kinds of providers, and that the mix of care they receive from different provider types often varies with their health status and priorities over time.

Exhibit 2. Range of Potential Services in the Context of Population-based-TCOC Models to Maximize Patient-Centered Care



As noted in the original environmental scan, Medicare FFS-based TCOC models have typically excluded Part D prescription drugs. However, pharmaceutical stewardship that includes accountability for Part D drugs could potentially be useful in a population-based care delivery model that focuses on patient-centered care and accountability for quality and TCOC. The following section discusses some of the options for and challenges related to expanding provider accountability for use of treatments requiring prescription drugs in population-based TCOC models.

Issues Related to the Inclusion of Part B versus Part D drug coverage in TCOC Models

Within Medicare FFS, prescription drug costs are covered under both Medicare Parts B and D.

- Medicare Part B covered drugs are usually administered by a physician or another health care provider. Payments are based on the average sale price or purchase price paid by the private purchaser with a regulated add-on fee for the physician or facility administering the drug.
- Medicare Part D covered drugs are usually retail prescription drugs.⁶⁷ Plans negotiate with manufacturers on the price of drugs.⁶⁸

Medicare beneficiaries incur out-of-pocket expenses in both Part B and D settings, and there is variation in beneficiary expenses depending on whether a beneficiary has supplemental Medicare coverage or Part D coverage.

According to the U.S. Congressional Budget Office, U.S. spending on prescription drugs, excluding drugs that are administered in a physician's office or hospital, was over \$335 billion in 2018.⁶⁹ As such spending continues to grow and contributes to increases in health care expenditures, payers are likely to seek opportunities to better manage prescription drug costs and may consider how to include incentives to find efficiencies in the use of prescription drugs in population-based TCOC models, whether they are self-administered or physician administered.

In 2019, Medicare Part B covered roughly 600 drugs, at a total cost of \$37 billion.⁷⁰ These drugs are delivered in outpatient settings by a physician or other health care provider. Most are infused or injected drugs and are costly compared with many of the drugs that are covered under Medicare Part D. A relatively limited number of Part B drugs account for the majority of Medicare Part B drug spending. Of the top 10 Medicare Part B drugs in terms of sales, most are used to treat cancer, macular degeneration, and rheumatoid arthritis and had a per claim cost of between \$1,300 and \$9,100 in 2019.⁷¹

Medicare Part D is a voluntary prescription drug benefit for individuals with Medicare, offered from private plans that the federal government approves. The Congressional Budget Office estimates that spending on Medicare Part D for 2022 will be \$111 billion.⁷² Medicare Part D plans are required to cover a wide range of prescription drugs commonly prescribed to Medicare beneficiaries. Each Part D plan offers a specific formulary for the drugs covered under that plan. Some Part D plans are integrated with MA plans that offer Medicare Part A and B coverage (known as MA-PD plans).

Some experts have expressed concerns about potential incentives for accountable entities to shift costs from Medicare Part B to Part D if Part D prescription drugs are not included in the definition of TCOC for population-based TCOC models. Such a shift would transfer cost and responsibilities to other accountable entities (e.g., Part D plans or MA plans) while not reducing overall Medicare costs for these patients. This could particularly occur when accountable entities have incentives to tightly manage costs associated with Part B while not having accountability for Part D spending. This kind of incentive could lead to unintended consequences that affect the extent to which patients receive patient-centered care that is consistent with their preferences and good health outcomes.

While this is an important concern that has been raised by experts, a 2021 study comparing the Medicare Part D spending per beneficiary for beneficiaries in ACOs versus FFS found that Part D spending did not increase for beneficiaries in ACOs across three years.⁷³ With respect to cost of medications between Part B and Part D, a 2019 study found that moving some of the most expensive Medicare Part B prescription drugs to Part D may reduce total drug spending. However, such a move could increase out-of-pocket expenses for some beneficiaries.⁷⁴ However, the authors also note that, substituting Part D for Part B medications may or may not be appropriate for a patient's clinical needs.

Section IV: Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability

The original environmental scan on population-based TCOC models included a discussion of CMMI’s strategic objective of having every Medicare beneficiary with Parts A and B in a care relationship with accountability for quality and TCOC by 2030.⁷⁵ Another priority of CMMI is to increase coordination between providers that are responsible for accountable care relationships and specialty providers that are accountable for delivering high-cost episodic and/or complex care. The original environmental scan identified several aspects of accountability in population-based TCOC models that warrant further discussion, such as the features and characteristics of entities that should be accountable (and the extent to which accountability can be shared with providers directly) and the period of time in which measures associated with accountability should be assessed.

During the March 2022 public meeting, PTAC members raised questions about accountability and accountable care relationships in population-based TCOC models, such as:

- What does it mean to have all FFS beneficiaries in an accountable care relationship? How is that different from a goal that all providers assume accountability?
- What are the challenges and paths for encouraging provider participation in accountable care relationships?
- What are the different types of providers and entities that could be in an accountable care relationship with patients to achieve value-based care objectives?
- How can population-based TCOC models encourage specialists to share accountability?

The following is a discussion of options for defining accountability, including shared accountability among primary care and specialty providers.

IV.A. Options for Defining Accountability

The literature generally does not define an accountable care relationship in the context of health care APMs; however, there are several key features of accountable care that are referenced often. The features include holding entities accountable to quality and outcome metrics, for adoption of improved care processes, for creating opportunities for patient engagement, for assuming financial risk, and for working toward achieving population health and wellness.^{76,77}

Options for Defining Accountability. CMMI has set the goal of having every Medicare FFS beneficiary with Parts A and B in a care relationship with accountability for quality and TCOC by 2030. The CMMI Strategy Refresh outlined several facets of accountable care relationships to support this objective. CMMI noted that accountable care means that all participating providers have the incentives and tools to deliver high-quality, coordinated, team-based care that promotes health, to reduce fragmentation and costs for people and the health system.⁷⁸ CMMI emphasized that, under an accountable care relationship, the patient would be able to choose who will be responsible for assessing and coordinating their care needs and the cost and quality of their care. CMMI also adopted a comprehensive vision for accountable care relationships, stating that “...this goal would not only aim to have all beneficiaries in value-based care arrangements, but for them to be in care arrangements where their needs are holistically assessed and their care is coordinated within a broader total cost of care system.”

Researchers and experts also propose holding accountable entities and sometimes providers accountable for measures of professional competence, legal and ethical conduct, financial performance, adequate access to needed services, public health promotion, and community benefit, participation in shared decision-making, and adhering to professional standards.⁷⁹

PTAC is using the following working definition of an “accountable care relationship”:

An accountable care relationship is a relationship with a health care provider that focuses on accountability for quality of care and cost of care for an individual patient or group of patients for a defined period-of-time (e.g., 365 days).

Within this context, an accountable care relationship would typically include accountability for quality and cost for all of a patient’s covered health care services. However, in some cases, a provider could potentially be accountable for the quality and cost of a subset of a patient’s health care services for an episode of care (which could be procedure-specific, condition-specific, disease-specific, or related to a medical event).

The Appendix includes some additional examples of definitions of accountability.

IV.B. Accountable Care Entities

CMMI leadership has identified several different types of providers and organizations that could serve as accountable entities depending on the model or program and its respective requirements. These could include physician group practices, hospitals, and other health care providers, MA plans, PACE, or Medicaid managed care plans. In baseline estimates, CMMI reported that 67 percent of beneficiaries in 2020 were in accountable care relationships, defined as beneficiaries enrolled in MA or aligned to an MSSP ACO or other ACO or ACO-like model.⁸⁰

In population-based TCOC models, one challenge with defining and implementing accountable care concepts is that financial accountability and patient care are not typically managed by the same groups within a given organization. There are questions about how much accountability individual providers are subject to versus an overall accountable entity that may be separate from any provider organization or more closely tied to some provider organizations (e.g., hospital systems or primary care practices) than others. In some MA plans, ACOs, and other entities accountable for TCOC, the provider delivering services to patients receives FFS reimbursement, with minor marginal incentives for improving how care is delivered. For example, in the Next Generation ACO (NGACO) Model, most NGACOs continued to use FFS-based payments rather than population-based payments that partially capitated compensation for providers.⁸¹ This may pose a risk to the concept of accountability as providers engage with patients directly and influencing care decisions.

There are also options regarding the level at which accountability for quality and TCOC occurs. Some of the stakeholders who have responded to the Committee’s Population-Based TCOC Models Request for Input (RFI) have expressed a preference for setting accountability for TCOC at the entity level, rather than at the individual provider level. These stakeholders have indicated that individual providers’ ability to manage TCOC varies based on a variety of factors such as: specialty, data availability, prior

participation in value-based care arrangements, and the presence of chronic illnesses in the patient population.^{vii}

IV.C. Options for Integrating Specialty Care into Population-based TCOC Models

The locus of the accountable care relationship may change depending on the patient’s circumstances or the local health care context. For many patients with basic to moderately complex health care needs, the PCP is the logical point of care. For patients with more complex needs, including those with one or more chronic conditions, a specialist may have a bigger role in directing and coordinating a range of health care services for that patient relative to a PCP. Furthermore, experts note that as patient needs and conditions change, patients may go in and out of situations where their care is mainly being managed by a specialist rather than a PCP.

Analysis of disease-specific costs of care as a proportion of TCOC show a strong correlation with the severity of a condition or even the specific condition for which the patient is receiving care. For example, some specialists provide limited consultation to patients with some conditions that are covered by their specialty but may serve as the main source of care, and costs, for patients with other conditions. In this case, cost may be a proxy for a larger role in overall care being played by specialists for certain conditions and may potentially be a reason to shift accountability for patient-centered care, outcomes, and cost to the specialist.

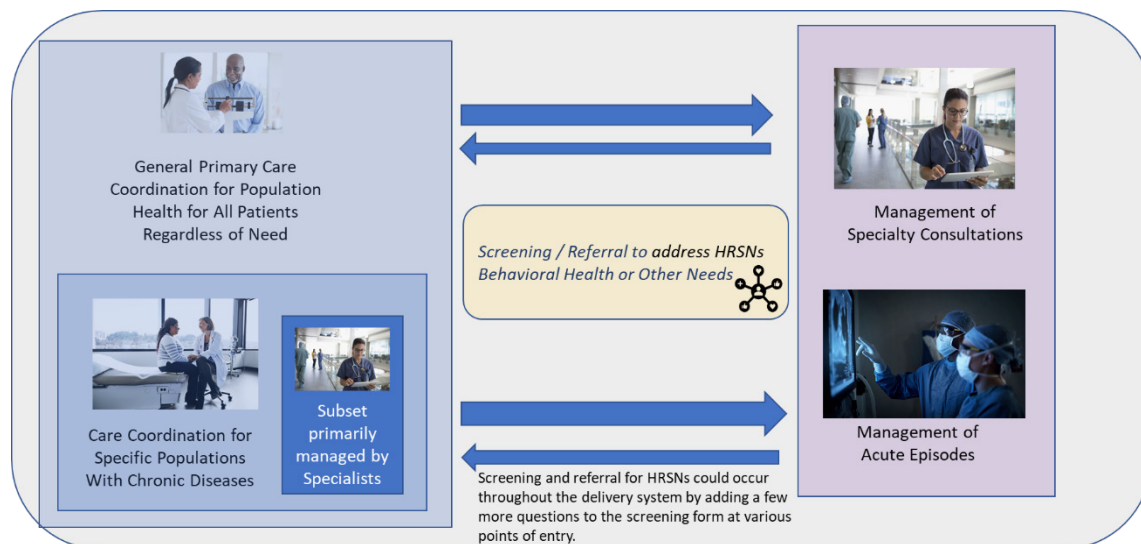
For example, a 2019 study compared the proportion of primary care visits to specialty care visits for diabetes from 2009 to 2015 using National Ambulatory Medical Care Survey (NAMCS) data and found that 54.2 percent of visits were to specialists.⁸² The proportion of visits to specialists increased with the aging of the population. The extent to which specialists are the main source of care can vary substantially even within the same specialty based on specific diagnoses and patient needs. For example, a gastroenterologist noted at PTAC’s March Public Meeting that this ratio is likely to be lower for irritable bowel syndrome versus Crohn’s disease. This raises important questions of accountability not only related to managing health care costs and health care decisions associated with improved outcomes but also regarding who is responsible for the patient’s overall well-being, including, for example, referrals to social services that can address a patient’s HSRNs.

Regardless of the type of provider that is the main source of care at any given time for any given patient, the ability of providers to serve as the accountable care provider may differ along many dimensions, including geography, practice size and ownership, practice specialty, integration with community-based resources, and level of access to infrastructure including encounter data and analytics. Exhibit 3 illustrates the potential kinds of interactions between primary and specialty care providers for different kinds of patients in population-based TCOC models. The exhibit illustrates that there are some patients for whom a PCP is their main source of care and, hence, an appropriate locus for accountability for limited coordination with specialists as needed and referrals to services to address HSRNs. Engagement in care coordination by the accountable provider will vary based on whether the patient has a chronic illness that requires more than minimal use of specialists or leaves the patient at higher risk of requiring hospitalization (with an emphasis on the importance of managing transitions between primary care and specialty care). Finally, there is a group of patients with such complex needs that a specialist is their main source of care. In this instance, it may be best for the patient if that specialist’s team is

^{vii} [Public Input on PTAC’s Review of Population-Based TCOC Models as of May 10, 2022.](#)

accountable for the overall coordination of the patients care (or shared responsibility for coordination of the patient's care) and any necessary referrals to address HSRNs.

Exhibit 3. Integrating Specialty Care in Population-Based TCOC Models



Given the variation in patient needs, particularly for patients whose care represents a high proportion of Medicare costs and who are most likely to suffer from poor health outcomes, integrating specialty care into population-based TCOC models may be particularly important for realizing CMMI's goal of universal participation in accountable care arrangements. To date, population-based TCOC models, particularly ACOs, have focused on the role of PCPs in delivering value-based care.⁸³ Typically, specialist involvement in APMs has been through participation in episode-based models.⁸⁴

Participation in episode-based models, such as through a bundled payment arrangement, can offer specialists an introduction to shared risk models. It may also be important to explore effective methods to share accountability across PCPs and specialists in order to improve care coordination and efficiency in population-based TCOC models, including how these broader population-based models interact with acute and episodic models.⁸⁵ An additional challenge relates to finding opportunities to share accountability across provider types while reducing overall model complexity.

As the number of APMs continues to increase, there has been overlap in services and payments among the existing models (both for programs that have already been implemented and models being tested), some of which have presented conflicts.^{86 87} For example, ACO-attributed beneficiaries may receive treatment via a separate bundled payment program for a particular condition or procedure. In such situations, health care providers and administrators lack clear guidance regarding how to distribute accountability and the resulting savings or losses across the different providers.^{88 89}

Experts note that, despite challenges related to insufficient guidance and the lack of primary and specialty care integration, population-based and episode-based TCOC models can be complementary, and this offers an opportunity to advance accountability and specialty integration using a common framework for incentives and processes.^{90 91} For example, ACO programs generate savings largely by means of reduced acute hospital and outpatient spending, while episode-based, bundled models tend to generate savings in PAC spending.⁹² For this reason, incorporating or nesting episode-based models into population-based TCOC models may expand paths for producing savings and providing more patient-

centered care. In the section that follows, concerns related to model overlap and provider engagement in population-based TCOC models are discussed. First is an exploration of concerns from the patient perspective, followed by a discussion of the provider perspective. Next, the discussion considers ways to integrate episode-based and population-based models.

Integrating Primary and Specialty Care in Population-based TCOC Models: Patient Perspectives

Delivery of patient-centered care is a core feature of population-based TCOC models and other APMs; however, some models do not include the providers that are already addressing specialty care needs for patients assigned to the model. For example, patients attributed to a population-based TCOC model may have preexisting care relationships with specialists that do not participate in the model, or who may fall out of alignment with the model. Encouraging patients to receive care only from aligned (or in the case of MA “in-network”) providers, may reduce beneficiary choice and, in some cases, may result in a care model that is less influenced by patient preferences. Technically, ACOs cannot limit beneficiary access to outside providers. For this reason, an ACO may lose an attributed beneficiary if the beneficiary starts to receive a plurality of their care from a provider outside of the ACO or if a provider leaves the ACO and the patient remains with the provider that no longer participates.⁹³ CMMI also allows for voluntary alignment, in which a beneficiary attests to their usual provider regardless of how a plurality of visits is designated in claims.⁹⁴ In contrast, MA plans have a specific network of providers whose services are covered by the plan. A patient may or may not have access to their usual provider depending on whether the provider can reach an agreement with the relevant MA plan.⁹⁵

For reasons explored above, existing population-based TCOC models may present challenges for patients who see their specialist more frequently than their PCP. This is especially relevant for Medicare and Medicaid, given the prevalence of beneficiaries with chronic conditions that require specialty care.⁹⁶ A 2019 study illustrated the potential benefits of optimizing the balance between primary care and specialty care visits for ACO-attributed beneficiaries. According to the study, ACOs with a specialist encounter proportion (i.e., the ratio of specialist office visits compared with total office visits) between 40 and 45 percent were associated with lower per beneficiary spending than ACOs with specialist encounter proportions either below or above that threshold.⁹⁷ The authors concluded that some specialist involvement in ACOs appears to be necessary to complement PCPs in managing patient needs, but that too much care being delivered by specialists increases costs because specialists do not share the ACO’s incentives to reduce costs.

Integrating Primary and Specialty Care in population-based-TCOC Models: Provider Concerns

Current practices for addressing the overlap of primary and specialty care also raise concerns for providers. Such concerns include how to determine accountability for cost and patient-centered care for different aspects of care delivery or phases of treatment.^{98 99 100} Providers have been hesitant to assume overall accountability for patient care.¹⁰¹ Hesitancy is likely greater among specialists who may believe that the services they provide to a given patient account for only a portion of that patient’s overall care. Therefore, specialists may be especially reluctant to take on risk for overall care delivery and health outcomes that they believe to be outside of their control.

At the same time, some ACOs contend that specialists delivering episodic care, perhaps as part of a bundle, can reap the benefits of an ACO’s overall investments in patient care. For example, an ACO’s investments in PAC management for a procedure performed by a non-ACO-affiliated specialist could

lead to fewer post-procedure complications (e.g., hospital readmissions). Avoiding these complications would generate savings for the specialist participating in the episode-based model, yet given the current system for addressing model overlap, such a scenario would not result in savings for the ACO.¹⁰² This is due to the fact that the bundle participant is financially accountable for the patient's episode and the financial gains during the episode are siphoned off from the ACO during the year-end reconciliation to the bundle participant. In fact, under some models, payment rules are set up such that ACOs may be penalized for cost and outcomes determined by non-participating providers, such as those providing episodic care to an ACO-attributed beneficiary.¹⁰³

Options for Integrating Episodic Models in Population-based TCOC models

Integrating specialty and population-based TCOC models will require addressing conflicting incentives in benchmarks and TCOC calculations for shared savings and losses. Several researchers have expressed concerns over the current policy for determining savings and losses when an ACO-attributed beneficiary receives episodic care from a specialist outside of the ACO. As mentioned above, any net gain in the costs of the episode is attributed to the providers in the episodic model and not to the ACO.

Currently, the benchmark for the ACOs operating alongside an episode-based model includes the target price for the specific episodes rather than the actual claim amount for the episode.^{104,105} In such a situation, irrespective of the performance by the participant in the episodic, there is limited incentive for the ACO to collaborate with the bundle participant for care coordination or care management to achieve any cost savings.

To alleviate this concern some experts suggest that for a particular episode of care, it would be better to use the actual episode costs instead of target price for ACO-attributed beneficiaries when calculating global costs for ACOs.^{106,107} In other words, the payment methodology for incorporating episodic payments for ACO-attributed beneficiaries ought to reflect the true savings or losses related to a particular episode of care and the associated care management and coordination activities between the ACO and episodic model participants. Common approaches to implementing measures that drive incentives could also help encourage participation in APMs across provider types.¹⁰⁸ Since ACOs are accountable for total annual costs of care, they could also exert influence on the number of bundle procedures. The episode-based model participants have no incentive to limit the number of episodes and might even have a reverse incentive to increase the number of episodes.

In addition to supporting appropriate payment policies and effective coordination across models, a future system could begin to move toward nested, rather than overlapping, models.¹⁰⁹ In such a system, payment structure would be hierarchical, with the ACO global budgets operating as an “umbrella of accountability under which episode-based payments are applied.”¹¹⁰ Under this arrangement, ACOs would be responsible for overseeing care management and coordinating with episode-based models.¹¹¹ An effective nested system also requires episode-based models to be truly complementary, with population-based models focusing on conditions for which episode-based models have demonstrated success and that population-based models are less well equipped to address.^{112 113}

The success of a hierarchical system also hinges on the ability of ACOs to engage specialists capable of delivering high-quality, cost-efficient care. With ACOs serving as “umbrellas of accountability,” care delivered by a specialist to whom a PCP referred an attributed beneficiary becomes an extension of the PCP's care.¹¹⁴ The incentives that ACOs create for their providers could likewise shape the behavior of specialists who would risk losing referrals for a failure to provide efficient care.^{115 116} Such a relationship

would align incentives across primary and specialty care providers. The literature suggests that such alignment has been effective in competitive markets; however, ACOs may struggle to influence downstream behavior in less competitive markets.¹¹⁷ For example, in rural settings sparsely populated by specialists, ACOs are likely to have fewer options for referrals and as a result, specialists may have less motivation to compete for referrals.

Some experts have considered the option of mandating provider participation in APMs. For the most part, providers decide on a voluntary basis whether to participate in an APM; however, certain episode-based models have introduced mandatory participation.¹¹⁸ For example, the Comprehensive Care Joint Replacement (CJR) Model implemented mandatory bundled payment within select geographic markets.¹¹⁹ Mandating specialist participation in population-based TCOC models is yet to be tested. In population-based TCOC models where lines around accountability may be blurred, specialists have often elected to forgo the opportunity to share in savings, rather than take on unknown risk.¹²⁰ Additionally, mandating participation could lead to providers dropping out of Medicare and limiting access to some services for Medicare beneficiaries.¹²¹

Ultimately, achieving a fully integrated, hierarchical system may prove too great a challenge for implementation in the next iteration of accountable care models. Some experts note that a more reasonable next step could be to structure episodic models so that they are better positioned for integration into population-based models.¹²² Structural modifications that would bring episodic models closer to population-based models include extending the duration of episodes or “care bundles” and making it easier to incorporate longer-term quality of care measures into provider incentives.¹²³ For example, a maternity bundle could cover prenatal care, delivery, and neonatal care.¹²⁴ Such changes could generate greater incentive among specialists to play a more active role in care coordination, which in turn may help align incentives across provider types and care settings (e.g., inpatient and outpatient facilities).¹²⁵ In addition, maintaining separation between episode- and population-based models may help reduce spending until CMS can find a way to incentivize ACOs integrated with acute care facilities to prioritize savings in acute care spending.¹²⁶ For example, a recent evaluation of the Next Generation ACO (NCGO) Model observed greater reductions in outpatient spending compared with inpatient spending for hospital system-affiliated ACOs, suggesting that providers are more inclined to modify spending practices in ways that do not hurt their financial bottom line.¹²⁷ Global budget models such as the Maryland TCOC Model are also an option for promoting coordination between hospitals and PCPs, and in turns PCPs and specialists. For example, primary care practices in the Maryland TCOC model provide screening and providing brief interventions and referrals to patients with behavioral health needs.¹²⁸

Section V: Care Delivery Model Innovations

Section V.A. of the original environmental scan described the structural features, including provider network composition, and care delivery activities across selected CMS models and programs. This supplement to the original environmental scan expands on care delivery model innovations in population-based and specialty care models. The discussion features four examples: the PACE Model used by large physician groups and IDSeS; the model used by the integrated delivery system Kaiser Permanente; and newer innovations used by providers such as ChenMed and Landmark Health. The following is an overview of innovative specialty care models. Then discussion turns to implementation challenges described in the original environmental scan and in particular, the need for timely data

sharing. The section concludes with discussion of approaches for addressing SDOH in population-based TCOC models.

V.A. Innovations in Population-Based TCOC Models and Care Delivery Systems

PACE is an example of an innovative model for integrating primary care, specialty, and acute care, prescription drugs, LTSS, and social services in a benefit option for older adults that are certified by the state as requiring nursing home level care.¹²⁹ Beneficiaries receive services through a PACE organization, which can be a non-profit or for profit entity that receives a capitated payment to provide community-based care through a designated site and affiliated providers.¹³⁰ Ninety percent of current participants are eligible for both Medicare and Medicaid (i.e., dual eligible).^{131,132} PACE organizations receive fixed monthly payments to provide all Medicare- and Medicaid-covered services and coverage for Part D prescription drugs, transportation, hospital visits, and nursing home stays when required.^{133,134} Dual eligible beneficiaries have a small monthly payment, or no payment, for long-term care benefits under PACE while Medicare-only eligible beneficiaries pay a monthly premium for long-term care and a premium for Part D drugs.¹³⁵

Under the fixed monthly payment structure, PACE organizations assume full financial risk for the quality and cost of health services, including those delivered by contracted hospitals, nursing homes, and specialists.¹³⁶ The PACE care delivery model emphasizes access and communication and coordination among providers, participants, and caregivers over the care lifecycle. All participants receive a comprehensive assessment and review of medical, functional, psychosocial, lifestyle, and individual values. The assessment informs a care plan to address all health and long-term care needs of the participant.¹³⁷ Evaluations of the initial PACE demonstration, which became a permanent program, were conducted in the 1990s, and found that participants have lower rates of nursing facility (NF) utilization and inpatient hospitalizations.^{138, 139} In an evaluation of the PACE model in Massachusetts, participants had a 14 percent reduction in NF residency months compared to a matched control population over a five year follow-up period. PACE participants that are admitted to a NF have a 20 percent reduction in the average episode length compared to the control over the same period.¹⁴⁰ PACE participants also report high levels of satisfaction with the program and their care.^{141, 142}

Kaiser Permanente is an example of an IDS that combines health coverage and care delivery into a single coordinated experience. All services, including services to address HRSNs, are included and providers across the continuum of care are connected in a single network. Members pay premiums to access care and services in the Kaiser network, whether they are referred through employer-sponsored or individual insurance, Medicare, or Medicaid.¹⁴³ The KFHP accepts financial risk and facilitates contracts with PMGs and KFHP. PMGs are self-governed, multi-specialty medical groups throughout the United States that contract exclusively with KFHP and receive fixed PMPM, capitated) payments from the plan. KFHP and the PMGs share financial risk for the global budget provided by the PMPM payments.^{144, 145} Kaiser physicians are salaried employees of the PMG and are eligible to receive incentive payments based on various factors (e.g., patient satisfaction, quality of care) determined by the specific PMG. KFHP may also contract with community facilities to provide services to Kaiser members through a variety of payment mechanisms, including diagnosis related group case rates; per diem hospital care; discounted FFS; and capitation payments.¹⁴⁶

Kaiser physicians coordinate care across inpatient and outpatient settings, pharmacy, lab, imaging, and other ancillary services. Significant investments in technology and data use facilitate care coordination

between providers.¹⁴⁷ For example, Kaiser Permanente maintains a plan-wide EHR with complete ambulatory and hospital medical histories, allowing for accurate and up-to-date information exchange between providers.¹⁴⁸ Kaiser also formed a partnership with *Unite Us*, a technology company that builds coordinated care networks of health and social service providers, to create and implement an EHR-integrated tool to address SDOH. Kaiser has branded their EHR-enabled approach to addressing HRSNs and SDOH as *Thrive Local*. The tool launched in 2019 and allows providers to search social service resource directories and engage with community networks to help patients secure housing, expand economic opportunity, become food secure, and address inequities resulting from racism and discrimination.^{149, 150}

ChenMed approaches population-based TCOC via advanced primary care practices operating only through MA and serving mainly low-to-moderate income adults. The affiliated practices receive a global capitation payment and bear the full risk and accountability for service, quality, and financial outcomes.¹⁵¹ ChenMed physicians are salaried and after one year of quality service become eligible for partnership, wherein they earn shares of profit on top of their salaries.¹⁵² ChenMed's care delivery model is centered around small physician patient panels. Each PCP manages care for an average of 345 patients, with a set maximum of 450 patients.¹⁵³ Each patient is seen monthly at a ChenMed center, where PCPs and specialists practice under the same roof. These centers also include an on-site pharmacy, imaging capabilities, and other ancillary services (e.g., acupuncture).¹⁵⁴ ChenMed further invests in HIT to centralize patient care components into a single platform for physicians (i.e., video capability in EHRs, clinical workflows).¹⁵⁵

Landmark Health is an innovative health care delivery organization that supplements patients' regular primary care and specialty providers. Landmark staff lead multidisciplinary teams to provide complex chronic care management via home health care and video telehealth services.¹⁵⁶ Existing primary care and specialty providers caring for a given patient remain engaged as part of the multidisciplinary team.¹⁵⁷ Landmark social workers are also part of the care team. Following referral by a Landmark provider, a social worker will conduct a comprehensive in-home psychosocial assessment to identify primary non-medical needs of the patient and connect them with community resources or partners for support.¹⁵⁸ The entire multidisciplinary care teams uses regular meetings and a shared electronic medical management system to optimize the coordination of patient care.¹⁵⁹ Landmark operates through value-based contracts with health plans with providers assuming some financial risk for their patient's health care.¹⁶⁰

V.B. Innovations in Specialty Care Models

Kidney Care Models

Recognizing the high clinical need and costs for treating ESRD and CKD, CMS has launched several TCOC models to incentivize higher quality and more efficient care. The first was the CEC Model, a model that allowed nephrologists, dialysis clinics, and other providers to form ESCOs, a type of ACO accountable for clinical quality outcomes and spending on dialysis services and all Parts A and B spending.¹⁶¹ In the CEC Model, dialysis centers served as hub of care since beneficiaries with ESRD receive most of their care in these settings, and generally consult with nephrologists more than PCPs. The intention of ESCOs was to encourage providers to "act outside of their traditional roles" in kidney care delivery toward patient-centered care coordination.¹⁶² The Model ended on March 31, 2021. CEC was associated with an

estimated \$217 million aggregate reduction in gross Medicare Parts A and B spending, primarily driven by a 3 percent decrease in hospitalizations and 2 percent decreased in readmissions.¹⁶³

The new KCC Model leverages the previous CEC Model. KCC integrates ideas from the PCF Model and expands the focus to CKD stages 4 and 5, which progress to ESRD if not treated effectively.¹⁶⁴ In the KCC Model, ACO-based organizations manage patients through dialysis, transplantation, and end-of-life care, with incentives to delay the onset of dialysis and promote kidney transplantation.¹⁶⁵ Under the KCC Model, participating specialists work to improve coordination of care for beneficiaries to reduce TCOC and provide alternative financial risk options to encourage nephrologists and other providers and suppliers to assume greater financial responsibility.¹⁶⁶ Provider incentives include capitated payments, adjusted by performance on utilization and quality measures such as depression screening, patient activation, optimal dialysis initiation, and TCOC.¹⁶⁷ Additionally, bonus payments will be allotted to practices for every aligned beneficiary who receives a successful kidney transplant that is maintained beyond three years following the procedure. The shift to promoting kidney transplantations follows criticisms of the ESCO Model that encouraged only dialysis-dependent beneficiaries and “de facto disincentivized” kidney transplantation as the healthiest treatment option for patients.¹⁶⁸

In addition to CMMI models, PTAC received a proposal related to kidney disease in May of 2017 from the RPA. The proposed Incident Dialysis Model described a condition-specific, episode-of-care payment model (CEP) that would begin within the first six months of dialysis therapy for incident dialysis patients, a critical time in the transition from CKD to ESRD. The RPA stated that the proposed model would be attractive to nephrologists and nephrology groups of all sizes and localities as it requires minimal infrastructure and billing mechanisms such as the Medicare Physician Fee Schedule billing.¹⁶⁹ Financial incentives and penalties would be determined after the termination of the episode of care and would comprise shared savings and losses using a benchmarked risk-adjusted target cost.¹⁷⁰ The proposed model aims to reduce TCOC and improve patient education and patient-centered care with the overall goal of reducing hospitalizations and mortality. PTAC’s assessment was that the model is likely to improve quality of care and reduce costs for patients with ESRD. Additionally, the proposed model can expand access to APMs to many nephrologists and ESRD patients which the CEC precluded.¹⁷¹

A challenge in kidney care models has been managing care between PCPs. One qualitative study found that PCPs reported barriers in comanaging CKD care with nephrologists – describing “lack of timely information exchange,” “unclear roles and responsibilities between PCPs and nephrologists” and limited access to communicate with nephrologists with concerns.¹⁷² In the same study, PCPs expressed a desire for a CKD plan to encourage and arbitrate primary care and nephrology collaboration.¹⁷³ In PTAC’s deliberation on the RPA proposal, Dr. Siddarth P. Shah, an associate clinical professor and attending nephrologist at Perelman School of Medicine at the University of Pennsylvania suggested that PCP involvement is a matter of geographical access.¹⁷⁴ He added that patients in rural areas are more likely to continue seeing PCPs throughout the progression of the disease due to a shortage of nephrologists whereas patients in urban areas are more likely to be referred to nephrologists earlier in their diagnosis. Furthermore, Dr. Shah has observed that patients often see different specialists pre-and post-dialysis due to geographical issues such as access and convenience.¹⁷⁵

Diabetes Care Models

There are no current diabetes-specific TCOC models; however, other population-based models are experimenting with ways to overlay incentives to manage diabetes care. The Maryland TCOC Model provides a Diabetes Outcomes-Based Credit, one of the first being tested by the Centers for Medicare & Medicaid Services (CMS) and Maryland to address diabetes among Medicare beneficiaries.¹⁷⁶ Through the credit, the State of Maryland will receive recognition for investing in initiatives and programs that assist with delaying and preventing the disease. The credit will be paid by CMS and will help offset state investment, benefit hospital budgets, and promote alignment of incentives across health systems and providers. The Model uses a Diabetes Outcomes-Based Credit calculation, estimating the averted cases of diabetes and multiplying the number of averted cases by the projected costs to treat cases. The calculation includes a control group to serve as a counterfactual, representing the performance Maryland would have expected without the TCOC Model in place.¹⁷⁷

Serious Illness Models

Payment models that focus on patients with serious illness—defined as “[a] health condition that carries a high risk of mortality and either negatively impacts a person's daily function or quality of life or excessively strains the caregiver”—could add value to population-based TCOC models.¹⁷⁸ The population of seriously ill Medicare beneficiaries accounts for 4 percent of the Medicare population but 25 percent of Medicare spending.¹⁷⁹ In addition, end-of-life care is responsible for disproportionately high Medicare spending; depending on calculation methods, estimates of the portion of Medicare spending on patients in the last year of life range from 13 percent to 25 percent.^{180,181} Targeting services for patients who are seriously ill and/or at the end of life, can improve quality of care and quality of life and reduce acute care utilization. For example, comprehensive home health programs with physical therapy have been shown to maintain functional status in frail older adults and to decrease the risk of hospitalization.^{182,183} Several randomized control trials (RCTs) demonstrated that robust care coordination programs can improve quality of life and reduce acute care utilization among older,¹⁸⁴ low-income (adults 65 years or older with an annual income less than 200 percent of the federal poverty level),¹⁸⁵ and complex care needs patients.¹⁸⁶ A recent cohort study showed that hospice care can help both payers and patients save costs.¹⁸⁷

Most population-based TCOC models do not include specific incentives to manage serious illness or end-of-life care. However, some models have experimented with special tracks to address patients requiring such services. CPC+, a nationally implemented medical home Model intended to improve primary care, has a track focused on patients with complex needs. CPC+ practices risk-stratify their practice population, providing additional care management and services for patients with high needs, such as for behavioral health services, medication management, and home visits.¹⁸⁸ CMMI's IAH demonstration features home-based primary care teams to provide chronically ill patients with functional limitations a variety of services in the home setting. IAH aims to improve health outcomes and reduce costs for Medicare beneficiaries with multiple chronic conditions. Providers in the demonstration are eligible to earn incentive payments for generating Medicare savings.^{189,190}

Private sector examples of models for serious illness care included Prospero Health, which operates a home-based acute illness model that uses team-based in-home care combined with 24/7 telemedicine support for people living with serious health conditions. Prospero teams consist of physicians, registered nurses, care support specialists, nurse practitioners, social workers, and more.^{191,192} Another example,

Aspire Health, is a community-based palliative care organization specializing in providing in-home care for patients with serious illness.¹⁹³ Both companies contract with health insurers to provide services complementary to a patient's existing primary and specialty care.^{194,195}

V.C. Addressing SDOH and Equity in Population-based TCOC Models

Medicare, Medicaid, and commercial payers have developed means for addressing SDOH and equity broadly and within the context of population-based TCOC models.¹⁹⁶ This section briefly summarizes and updates previous findings on Medicare and Medicaid models and describes innovative approaches in the private sector. While Medicare's approach has been to promote coordination of care with social service agencies, Medicaid and commercial payers have provided direct services to address beneficiaries' HRSNs.

Medicare. As summarized in PTAC's [Background Information Related to Optimizing Efforts to Address Social Determinants of Health and Equity in the Context of Alternative Payment Models and Physician-Focused Payment Models](#), Medicare models have focused generally on clinicians providing referrals and warm handoffs to social service organizations.¹⁹⁷ The newly announced ACO Realizing Equity, Access, and Community Health (ACO REACH) Model, which will replace the Global and Professional Direct Contracting (GPDC) Model in January 2023, will require that all participants build a health equity plan to focus on historically underserved communities and implement programs to reduce health disparities.¹⁹⁸ MA plans have moved beyond referrals to direct services to address SDOH with recent flexibilities to offer non-medical supplemental benefits.

Medicaid. As described in the original environmental scan and [Background Information Related to Optimizing Efforts to Address Social Determinants of Health and Equity in the Context of Alternative Payment Models and Physician-Focused Payment Models](#), state Medicaid agencies have used Section 1915 and 1115 waiver authorities to expand services to address SDOH. Examples include North Carolina's Healthy Opportunity Pilots¹⁹⁹ and Oregon's coordinated care organizations (CCOs).²⁰⁰ Medicaid managed care organizations (MCOs) are also addressing SDOH by coordinating with community-based organizations (CBOs) to assess social needs and link members to resources.²⁰¹

Commercial Insurers. In addition to the example of Aetna's SDOH index described in the [Background Information Related to Optimizing Efforts to Address Social Determinants of Health and Equity in the Context of Alternative Payment Models and Physician-Focused Payment Models](#) report, commercial insurers are making investments in direct services to address SDOH.²⁰² For example, Kaiser Permanente has provided housing assistance, including purchasing an affordable housing complex in Oakland.²⁰³ Oak Street Health, which operates a network advanced primary care practices in Michigan, offers transportation to and from appointments with its affiliated practices as well as social activities and exercise classes for Medicare beneficiaries.²⁰⁴ Oak Street providers participated in the Acorn Network, LLC, MSSP ACO, which is now a direct contracting entity in the GPDC model.²⁰⁵

Section VI. Care Delivery Innovations in Selected PTAC Proposals

Between 2016 and 2020, PTAC received 35 proposals, including 34 proposals that the Committee has reviewed and 28 proposals that PTAC has deliberated and voted on during public meetings. Nearly all of the proposals that have been submitted to PTAC addressed the potential impact on costs, to some

degree—including at least 10 proposals that discussed the use of TCOC measures in their payment methodology and performance reporting.^{viii}

None of the 10 selected proposals submitted to PTAC included participating providers assuming accountability for quality and TCOC and receiving payments for all covered health care costs for a broadly defined population with varying health care needs during the course of a year. However, several of the proposals included care delivery innovations for advanced primary care, population-specific, and episode-based models. Exhibit 4 summarizes the ten selected proposals by model type.

Exhibit 4. Summary of the Ten Selected PTAC Proposals by Model Type

<p>Advanced Primary Care Proposal:</p> <ul style="list-style-type: none"> • American Academy of Family Physicians (AAFP) <p>Population-Specific Proposals:</p> <ul style="list-style-type: none"> • American Academy of Hospice and Palliative Medicine (AAHPM) • Coalition to Transform Advanced Care (C-TAC) • University of Chicago Medicine (UChicago) 	<p>Episode-Based Proposals:</p> <ul style="list-style-type: none"> • American College of Surgeons (ACS) • American Society of Clinical Oncology (ASCO) • Avera Health (Avera) • Large Urology Group Practice Association (LUGPA) • New York City Department of Health and Mental Hygiene (NYC DOHMH) • Illinois Gastroenterology Group and SonarMD, LLC (IGG/SonarMD)
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The proposed models’ care delivery approaches varied depending on the clinical focus, clinical settings and patient populations that were being targeted. Exhibit 5 provides an overview of the clinical focus and settings, patient populations, and payment mechanisms represented in these ten proposed PFPMs.

Care Delivery Innovations for Advanced Primary Care Models. The AAFP proposal included care delivery innovations related to the development of patient-centered primary care medical homes. Under the proposed model, practices would be expected to implement the five functions that guide care delivery in CMMI’s Comprehensive Primary Care Plus (CPC+) model, and to adopt the Joint Principles of the Patient-Centered Medical Home. However, the AAFP proposed model would include fewer care delivery requirements than the CPC+ model, in an effort to increase the number of primary care practices that would be able to participate.

Care Delivery Innovations for Population-Specific Models. Two of the population-specific proposals focused on patients with serious and advanced illness, and included

- The AAHPM and C-TAC proposals sought to target palliative care services to individuals with serious health conditions and deliver palliative care through multidisciplinary palliative care teams. The models identified a comprehensive description of necessary and desirable components of palliative care models, including:

^{viii} These proposals were identified using TCOC-based keyword searches of key documents related to the Committee’s proposal review process, and were selected to include a diversity of provider types, care models and clinical settings, and payment approaches that are relevant for a discussion of the use of TCOC in multiple contexts. For additional information, please see 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 \(PFPMs\)](#).

- Education of the patient and caregiver about the patient’s health conditions and complications;
 - A comprehensive physical, psychosocial, emotional, cultural, functional, and spiritual assessment;
 - Identification of threats to the safety of the patient or caregiver from the physical environment, medication interactions, and other sources;
 - Patient and family engagement through shared decision-making;
 - Establishment of clear goals for care and treatment;
 - Development of a coordinated care plan with input from all of the patient’s physicians and providers that is consistent with the patient’s care goals;
 - Systematic and ongoing advance care planning;
 - Symptom management;
 - Arrangement of services from other providers in order to implement the care plan;
 - Communication with the patient’s other providers to ensure care is being delivered consistent with the care plan;
 - Care coordination and case management of the beneficiary’s total health care needs, both curative and palliative;
 - 24/7 access to clinical support and responses to requests for information and assistance from the patient or caregiver or from other providers;
 - Visits to the patient in all sites of care (home, hospital, nursing home, etc.) as needed to respond appropriately to problems and concerns.²⁰⁶
- Additionally, the C-TAC proposed model would distinguish palliative care from hospice care—targeting palliative care services to individuals with serious health conditions and additional prognostic criteria.
 - The UChicago proposal focused on improving coordination during transitions between inpatient and outpatient settings for highly complex and frail patients by having the same physician follow the patient between the inpatient and outpatient settings; and oversee the patient’s care during the immediate period surrounding the transition between settings. The proposed model includes highly customized clinical workflows that would allow inpatient hospitalists to follow patients into the outpatient clinic setting and vice versa.

Care Delivery Innovations for Episode-Based Models. The six episode-based PFPM proposals cover a range of clinical conditions and episodes, and as a result their care delivery approaches vary. Though focused on Medicare beneficiaries with a particular condition or specific episodes of care, four of the six proposals included monthly per-beneficiary per-month (PBPM) payments to support care management and other services.

- The proposals submitted by ASCO and IGG/SonarMD focused on developing specialty-based medical homes for oncology and Crohn’s disease, respectively. Key features included team-based care and improved care coordination.
- The Avera Health proposal emphasized providing remote geriatric care management in skilled nursing facilities (SNFs) and nursing facilities (NFs) through geriatrician-led care teams that would supplement the SNFs/NFs’ on-site staff via telehealth.
- The LUGPA proposal sought to improve within-condition coordination for patients diagnosed with localized prostate cancer by providing enhanced services such as tracking beneficiaries receiving active surveillance to ensure compliance, tracking lab results longitudinally in a

consistent format, educating beneficiaries about disease progression, social services, and reviewing the care plan.

- The NYC DOHMH proposal includes a proposed care delivery model that includes integrated cross-sector care coordination for patients with chronic hepatitis C virus (HCV), with a particular focus on higher-need patients. Key features include a medical examination, comprehensive psychosocial evaluation, and training of PCPs to take on a greater role in managing patients with HCV Training of PCPs by hepatologists or other gastroenterologists through tele-mentoring.
- The ACS proposal focused on providing data on quality and cost to identified Clinical Affinity Groups (CAGs) who regularly participate in a given type of episode of care, and giving physicians in the CAGs flexibility to collaborate in addressing cost drivers in resource use and variation in care (for example, by increasing integration across specialties through team-based care).

Exhibit 5 provides the overview of the ten proposed models that was included in the original environmental scan. Exhibit 6 includes more detailed information regarding the care delivery approaches and innovations in the ten proposed PFPs.

Exhibit 5. Summary of the Care Delivery and Payment Model Characteristics of the Ten Selected PTAC Proposals

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

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

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

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

Exhibit 6. Highlights of Care Delivery Innovations in Selected PTAC Proposals with TCOC-Related Components

Submitter Name	Type of Care Delivery Innovation	Care Delivery Innovation(s)
American Academy of Hospice and Palliative Medicine (AAHPM)	Serious Illness Model with Team-Based Care	Core components include: <ul style="list-style-type: none"> • Targeting palliative care services to individuals with serious health conditions and distinguishing hospice from palliative care • Delivering palliative care through multidisciplinary palliative care teams (PCTs) that include a physician (adjusting the composition of the care team to meet the needs of the community) • Patient and caregiver education • Distress and safety assessments • Establishing goals of care plans with input from all providers • Home visits
Coalition to Transform Advanced Care (C-TAC)	Serious Illness Model with Team-Based Care	The proposed model features: <ul style="list-style-type: none"> • Care delivery through an interdisciplinary palliative care team comprised of a nurse, social worker, and spiritual care worker • Targeting palliative care services to individuals with serious health conditions and additional prognostic criteria • Care coordination and case management of the beneficiary’s total health care needs • Shared decision-making, addressing patients’ curative along with palliative care needs, and 24/7 access to clinical support • Allowing participation of different types of entities, including physician practices, hospitals, ACOs, health systems, hospices, and home health agencies • Use of 13 quality measures as performance metrics

Submitter Name	Type of Care Delivery Innovation	Care Delivery Innovation(s)
University of Chicago Medicine (UChicago)	Coordination during Transitions between Inpatient and Outpatient Settings	<p>Key features of the proposed model include:</p> <ul style="list-style-type: none"> • Having the same physician follow the patient between the inpatient and outpatient settings, and oversee the patient’s care during the immediate period surrounding a transition between settings • Most participating physicians would be general internal medicine physicians, hospitalists, or family practitioners.; however, some medical subspecialists and physicians from other specialties that provide primary care might be appropriate in some instances (e.g., gynecology) • Capping of patient panels at 300 patients per physician, with a maximum of 10 participating physicians per participating institution or practice • Participating physicians would spend all or the majority of each weekday morning caring for their own patients in the hospital and spend weekday afternoons in clinic • Participating physicians would also be encouraged to see their patients in the home and rehabilitation settings when appropriate • Potential variation in the structure for off-hours coverage (e.g., participating physicians might rotate with other participating physicians serving as the “hospitalist” – covering the inpatient service in the weekday afternoons when their colleagues are in clinic and covering for their colleagues when they are off on the weekend) • Participating physicians interacting with specialists to reduce duplicative consultation and testing • A focus on high-risk patients
American Academy of Family Physicians (AAFP)	Primary Care Medical Home	<p>Requirement for APM entities to:</p> <ul style="list-style-type: none"> • Attest to how they address or plan to address the five key areas (access and continuity, planned care and population health, care management, patient and caregiver engagement, and comprehensiveness) • Adopt the Joint Principles of the Patient-Centered Medical Home • Have at least 50 percent of their participating practices use Certified Electronic Health Record Technology (CEHRT)

Submitter Name	Type of Care Delivery Innovation	Care Delivery Innovation(s)
American College of Surgeons (ACS)	Provide Episode-Specific Data on Quality and Cost to Physicians	<p>The proposed model would:</p> <ul style="list-style-type: none"> • Identify more than one hundred potential procedure and condition episodes of care that would be defined by an episode grouper – including, but not limited to: upper respiratory infection; appendectomy; colonoscopy; cataract surgery; acute simple, benign fibrocystic / dysplastic breast disease; juvenile idiopathic arthritis; lung resection; coronary artery bypass grafting; open heart valve surgery; liver transplant; heart failure; and breast neoplasm (malignant) • Identify Clinical Affinity Groups (teams of providers who regularly participate in a given type of episode of care) • Allow organizational entities (which could consist of single-specialty practices, multispecialty practices or convenor groups of small provider practices with or without ties to particular facilities) to take on risk for an agreed-to set of procedure or condition episodes during an agreed-to performance period • Provide information to providers on quality and total spending on episodes • Encourage physicians in the CAGs to collaborate in addressing cost drivers in resource use and variation in care (potential approaches could include increasing integration across specialties through team-based care) • Encourage reporting of quality measures (to be identified) that are relevant to the specific covered procedures and conditions <p>Participation in the proposed model’s procedural episodes and associated condition episodes would be voluntary for all members of the care team</p>

Submitter Name	Type of Care Delivery Innovation	Care Delivery Innovation(s)
American Society of Clinical Oncology (ASCO)	Oncology Medical Home	<p>Requirements for participating practices:</p> <ul style="list-style-type: none"> • Provide team-based care led by a hematologist/oncologist • Meet 22 “PCOP care delivery requirements,” including having a medical oncologist direct the patient’s care team within the practice, direct care coordination with other pertinent physicians and services, and manage or co-manage inpatient care • Prioritize team-based care with policies and practices that clearly delineate roles and responsibilities; implement and prioritize team huddles for communicating and promoting patient safety; and regularly assess how the practice team is functioning • Additional requirements for Track 2 practices, including patient and family advisory councils, triage and urgent care, patient navigation, risk stratification, and advanced care planning <p>The proposed model would also encourage use of common clinical pathways and performance metrics for all participating payers</p>
Avera Health (Avera Health)	Remote Geriatric Care Management in Skilled Nursing Facilities (SNFs) and Nursing Facilities	<p>Key model features:</p> <ul style="list-style-type: none"> • Geriatrician-led care teams (GCTs) would supplement the SNFs/NFs’ on-site staff via telehealth • Provision of geriatric care management activities such as monitoring beneficiaries’ care, risk stratification of the patient population, development of care plans for high-risk patients, medication reconciliation and management, evidence-based disease management, behavioral health support, advance care planning, and transitional care support • Timely access to care such as 24/7 access via telehealth to a physician or advanced practice provider on the GCT and real-time response to a patient’s change in health status • Provision of facility staff coaching and mentorship, and continuing education targeted at identifying knowledge and skill gaps • The GCT would be expected to have the capability to provide HIPAA-compliant, real-time, two-way audio/visual assessment of the patient, virtual access to health records at the facility, and risk stratification and population health tools • The GCT would work with the PCP, who would retain ultimate oversight and management of a patient’s care

Submitter Name	Type of Care Delivery Innovation	Care Delivery Innovation(s)
Large Urology Group Practice Association (LUGPA)	Coordination within Condition during Episode	<p>The proposed model's features include:</p> <ul style="list-style-type: none"> • Seeking to incentivize increased use of active surveillance (AS) for appropriate patients, as opposed to active intervention • Focusing on urologists as eligible professionals; however, PAs/NPs at participating practices as well as other medical specialists are not excluded from participating • Targeting Medicare patients who are diagnosed with localized prostate cancer after a biopsy as the population eligible for initial episodes and could continue subsequent 12-month episodes on AS • Providing enhanced services such as tracking AS beneficiaries to ensure compliance, tracking lab results longitudinally in a consistent format, educating beneficiaries about disease progression, social services, and reviewing the care plan • Measuring provider performance on quality measures and TCOC during the AS episode
New York City Department of Health and Mental Hygiene (NYC DOHMH)	Integrated Cross-Sector Care Coordination	<p>Features of the proposed model:</p> <ul style="list-style-type: none"> • Coordination of patients with Chronic hepatitis C virus (HCV) to ready them to initiate and adhere to pharmacotherapy – with a particular focus on higher-need patients (i.e., dual-eligible patients, patients with behavioral health and substance abuse disorders, etc.) • A comprehensive psychosocial evaluation to identify barriers to care • A medical evaluation to determine the complexity of liver disease • Assisting patients in overcoming barriers through various means such as: referrals for psychosocial issues or other comorbid conditions; direct counseling services (except those separately billed for by the provider), including health promotion, alcohol counseling and treatment readiness assessment and counseling, or medication adherence measurement and counseling; helping patients navigate appointments; and assistance with prior authorization • Required participation of all employed physicians who treat HCV in hospital outpatient clinics within a given facility • PCPs taking on a greater role in managing the patients with HCV, particularly those without advanced liver disease or other medical complexities • Training of PCPs by hepatologists or other gastroenterologists through tele-mentoring • Inclusion of nurse practitioners, and physician assistants across the specialties of infectious disease, hepatology and other gastroenterology, and mental health in the care team to varying degrees based on patient need • Use of non-clinician staff, especially care coordinators

Submitter Name	Type of Care Delivery Innovation	Care Delivery Innovation(s)
Illinois Gastroenterology Group and SonarMD, LLC (IGG/ SonarMD)		<p>The proposed model includes:</p> <ul style="list-style-type: none"> • Beneficiary participation in an enrollment visit with a nurse care manager (NCM) • Contacting enrolled beneficiaries at least once per month via smartphone or other device of their choice to submit self-assessment data • Providing follow-up from the NCM if the beneficiary’s data indicates a potential health problem requiring intervention • If indicated, engagement of the specialist physician by the NCM • Use of a communications platform, clinical algorithms, clinical decision support tools, and predictive analytics to support these activities <p>The proposed model focuses on treatment of Crohn’s disease, but could also be used for other “high-beta” chronic diseases associated with high cost, high risk, and high variability in outcome and cost</p>

Section VII: Performance Metrics and Model Evaluation

As noted in the original environmental scan, performance measures and domains vary across population-based TCOC models. This is due in part to the level of detail required and the variation in measure specifications that are tailored to for different patient populations or types of services provided. Important objectives that complement measures of TCOC include improving quality of care, improving equity, leveraging innovative payment arrangements, and reducing unnecessary utilization. This section reviews criteria for relevant performance metrics, current gaps in performance metrics, and challenges in data collection for performance measurement. Notably, it includes issues and challenges associated with use of measures in population-based TCOC models as well as gaps in measures that are particularly relevant for the discussion of accountability for care coordination described above.

VII.A. Criteria for Relevant Performance Metrics for Cost, Utilization and Quality

Cost Measures

Some cost measures used across multiple APMs are total costs to Medicare, costs to Medicare Part A or Part B for specific service types (e.g., inpatient care, outpatient care), and institutional per episode spending (e.g., in an acute care hospital or PAC facility).²⁰⁷ For example, in an evaluation of the NGACO Model, researchers examined reductions in total Medicare costs across different care settings as a measure of Model performance.²⁰⁸

Cost measures may also vary depending on their relevance for patients, providers, and payers. For example, cost measures useful to patients and caregivers may include direct costs for a certain service type or episode of care; indirect and intangible costs may also be meaningful but challenging to measure.^{209,210} From the provider perspective, episode-based cost measures may be valuable as they provide information on costs within a specific care window for which they are accountable.²¹¹ Measures valuable to payers may include spending in different care categories. For example, knowledge of the relationship between costs associated with preventive care or diagnostic screening compared with more resource-heavy tertiary care may support both cost reductions and improvement in outcomes.²¹²

Notably, existing cost measures may not capture all associated program or model costs, which is an issue especially relevant for population-based TCOC models. An APM may have program costs associated with model implementation or care coordination, such as costs of specific clinical care or administrative staff, payments to CBOs, or non-personnel costs (e.g., HIT, care management software tools).²¹³

Utilization Measures

Utilization may be measured in different patient populations with different service needs. Utilization may also be measured in different types of care, including preventive care, such as diagnostic screenings and immunizations, and tertiary care, such as all-cause hospitalizations.²¹⁴ Utilization measures commonly used in APMs include ambulatory care-sensitive hospitalizations, 30-day readmissions, ED visits, and PAC utilization.^{215,216} In the NGACO Model evaluation, researchers examined Model impact on performance on several utilization measures, including annual wellness visits, acute care, PAC utilization, and ED visits. They found increases in annual wellness visits and decreases in acute care and PAC utilization, which may reflect providers coordinating care and managing transitions in care.

Similar to cost measures, utilization measures may also capture patient, provider, and payer perspectives on Model performance. For example, reducing avoidable utilization can enhance patient-centeredness of care; preventing avoidable utilization may also align with patient preferences to avoid unwanted care and to remain in the community. From the provider and payer perspective, utilization measures that reflect service volume may help direct resources to more effective care (e.g., from tertiary care to preventive care). Utilization measures may be more meaningful to providers and payers if they can be more comprehensive (e.g., by connecting utilization to productivity by measuring both inputs and outputs).²¹⁷

While utilization is often used as a proxy for costs, the direction of the relationship can vary depending on short- versus long-term costs. For example, increases in annual wellness visits and diagnostic screenings may increase short-term costs but reduce long-term costs associated with more resource intensive care.²¹⁸

With respect to APMs, implementing high-quality, evidence-based care may not yield early cost savings.²¹⁹ For example, efforts to reduce costs may have unintended consequences for quality of care. Cost reductions may be achieved through reducing utilization; if cost reductions encourage inappropriate decreases in utilization, this may limit access to necessary care.²²⁰ Therefore, existing cost and utilization measures alone may not reflect high-value care (i.e., care that is lower cost and higher quality).²²¹

However, APMs may achieve cost savings through care coordination and corresponding changes in utilization. For example, when providers engage in care management, reductions in avoidable/unwanted utilization and increases in preventive services and diagnostic screenings may be observed. These shifts may contribute to reduced costs²²² and may be associated with improved long-term health outcomes, especially for patients with complex and/or chronic conditions.²²³

The discussion above illustrates the complex relationship between cost, utilization, and quality, and underscores the importance of accounting for their interactions in the selection of measures for TCOC models.

Quality of Care and Patient-Centered Measures

To gain a comprehensive view of health care value within an APM, performance measures may also include measures of quality beyond cost and utilization, including measures of patient-centered care and patient-reported outcomes (e.g., patient satisfaction). The IOM has identified six dimensions of patient-centered care: respect for patients' values, preferences, and expressed needs; care coordination and integration; information, communication, and education; physical comfort; emotional support; and involvement of family and friends.²²⁴ Patient-reported measures, derived from sources such as patient surveys, examine the patient's perspective and are essential to the accurate assessment of patient-centered care.²²⁵

Identifying a core set of patient-centered measures may be challenging as experts note that measures should be tailored to the specific needs of the patients being assessed, which is the bedrock of patient-centered care. Some care goals reflecting patient preferences, such as remaining in the community, are more commonly felt across patient populations, while other priorities may vary by population and

context.^{226,227,228,229} For example, in APMs to support collaborative dementia care, the literature notes the following guidance for measures:

- “Maximize patient function, independence, and dignity; minimize caregiver strain; and reduce unnecessary costs through improved care”²³⁰
- Focus on “care quality, unpaid caregiver burden, and care coordination and management”^{231,232}
- Be “developed in congruence with specialists in Alzheimer disease care”²³³

For this population, researchers also describe entry to a long-term care facility as an example of an appropriate measure; the measure may reflect unwanted care or care not aligned with patient preferences to remain in the community.²³⁴ In their development of a framework for a value-based payment model for a patient population with heart failure, researchers tailored measures to the population as well as to acuity within the population; they focused on disease management in higher acuity patients to prevent adverse clinical outcomes and prevention in high-risk lower acuity patients to prevent disease progression.²³⁵

VII.B. Criteria for Measure Selection

When measures developed for and tested in other populations or settings are adopted for use for a particular population/setting, additional evaluation may be warranted to ensure that measurement does not lead to unintended consequences in the new target population/setting. Measures can be assessed in the context of other measures to ensure that they have both face validity (the extent to which a test appears to measure what it is intended to measure)²³⁶ and convergent validity (how closely the new measure is correlated with other measures of the same construct).²³⁷

Measure usability and use may also help inform measure selection. Usability and use pertain to the “extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient health care for individuals or populations.”²³⁸ Measure usability and use may be reflected through pay-for-reporting, pay-for-performance, and value-based purchasing programs. As such, how quality will be measured is a consideration for usability and use.

Quality may be measured based on performance or improvement. Performance is assessed by success or failure in meeting a target threshold or by rank on a measure or composite score compared with other providers. Improvement examines performance relative to that in a prior year or to a benchmark. The way in which performance is evaluated can create different incentives. For example, threshold-based payments may create the greatest incentive for those near the threshold, who may have a better chance of meeting the threshold and receiving payment. Lower-performing providers may have a limited response to incentives if they do not believe they can achieve the target threshold. Threshold-based payments may also blunt the potential for achievement, as there is no incentive to improve quality above the threshold.^{239,240}

Unintended consequences of quality measurement that may impact APM evaluation include gaming and challenges to equity. For example, providers may engage in “cherry-picking,” avoiding sicker patients or competing for healthier, lower risk patients to increase their performance scores or “teaching to the test,” focusing disproportionately on tasks that are measured to improve ratings.²⁴¹ Tying quality measures to financial incentives without adequate risk adjustment or stratification (for not just clinical

risk factors but importantly, also for social risk factors) may also penalize providers who serve sicker or disadvantaged patient populations.

For example, under the Hospital Readmissions Reduction Program (HRRP), payments are reduced to Inpatient Prospective Payment System (IPPS)-participating hospitals with excess readmissions. In the early years of the program, most hospitals that were penalized were large, academic medical centers and safety-net hospitals. The penalties limited already strained financial resources for hospitals that served sicker and low-income patients, potentially worsening disparities.^{242,243} To address this issue, peer group stratifications based on dual eligibility were subsequently implemented.²⁴⁴ When performance measures are tied to financial incentives, ongoing monitoring can inform modifications to avoid negative impacts on health care quality.

Although there are frameworks to develop and assess performance measures across several domains,^{245,246} there are few standards for evaluating performance of the measures themselves both in the near term and over time. Once measures are established, they may need to be reevaluated to assess whether they are still viable (e.g., if there is variation in performance and if meaningful improvement in performance can be measured).²⁴⁷ Performance thresholds may need to be updated to encourage ongoing improvement.

For example, the Nursing Home Five Star Rating System, which was implemented in December 2008, ranks nursing homes on a scale from one to five stars across several domains.²⁴⁸ To continue to incentivize quality, beginning in April 2022, the thresholds for quality measures used in the rankings will be “increased by 50 percent of the average rate of improvement in the QM [quality measure] rating scores every six months.”²⁴⁹ Additionally, when quality performance is part of a composite score, quality measure weights may change over time to reflect changing priorities and experience with the model. For example, under the Merit-based Incentive Payment System (MIPS), composite quality measure performance is part of an overall score; the weighting of the quality performance category in the overall score has ranged from 30-55 percent in recent years. Participants who meet case thresholds for measure inclusion also receive quality points based on performance relative to a benchmark.²⁵⁰

VII.C. Unaddressed Issues in Existing Performance Measurement

Several challenges remain in implementing performance measures in APMs, including identifying appropriate time periods for measurement, addressing disparities, and addressing emerging health care issues.

Identifying Appropriate Time Periods. Cost and utilization measures may not reflect long-term patient care goals or patient-centered care. For example, in a study of payment models for heart failure, researchers noted that episode-based models are often triggered by a hospitalization and assess quality by looking forward, often by 30, 60, or 90 days.²⁵¹ Events in these time windows are likely associated with the index event and may support attribution of outcomes to a particular provider,²⁵² which is useful in developing strategies for performance-based payment. However, such time windows may not be sufficient to capture long-term goals, especially for patients with chronic conditions; measures focused on primary care utilization, care coordination, and longitudinal outcomes may be better suited to certain patient populations of focus in APMs.²⁵³

Addressing Disparities. Performance-based payments may exacerbate disparities if measures do not sufficiently account for variation in the patient populations that providers serve.²⁵⁴ Performance-based payments may widen disparities if lower-performing providers serve higher proportions of disadvantaged patients and are less well able to respond to performance-based incentives.^{255,256,257} However, adjustment for social risk may mask disparities in care. To evaluate this issue, the National Quality Forum conducted a social risk trial from 2014-2021 during which they lifted the ban on including social risk factors and required social risk factor testing for initial endorsement and endorsement maintenance.^{258,259} Overall, recommendations included:

- Committing to “identifying, prioritizing, and implementing evidence-based interventions that eliminate health and health care inequities;”
- Outlining a process to simplify “collection, stratification, and sharing of...clinical, demographic, and social data;”
- Developing policy recommendations to “incentivize social risk data collection and reporting;” and
- Standardizing data elements capturing social risk.²⁶⁰

In their first report on the trial, evaluators noted that one-third of the 303 measures submitted were outcome or intermediate outcome measures, and almost all of those measures (93) were risk adjusted. For more than two-thirds (65) of risk adjusted measures, developers submitted evidence as to a conceptual basis for social risk adjustment, and for 21 of the risk-adjusted measures, developers included one or more social risk factors in model specifications. However, for measures with evidence of a conceptual basis for social risk adjustment, results of testing often did not show an empirical relationship between social risk factors and outcomes.²⁶¹

In their final report, 125 measures (approximately 39 percent of submitted measures), including outcome, structure, process, resource use, and composite measures, were considered for social risk factor adjustment; of these, 38 measures included one or more social risk factors in model specifications. Tested social risk variables included race/ethnicity, insurance, relationship status, socioeconomic status, income, disadvantaged area, gender, home ownership, disability status, health literacy, history of social risks, and regional health care provider shortage.²⁶²

Performance-based payments may need to take both performance and improvement into account or stratify provider rankings by patient characteristics (e.g., dual eligibility) to avoid over-penalizing providers that serve higher proportions of disadvantaged patients.^{263,264}

Addressing Emerging Health Care Issues. As new and potentially unprecedented health care issues arise (e.g., the opioid epidemic, COVID-19), APMs may need to adapt to incorporate or prioritize different performance measures. For example, to improve quality of opioid use disorder care, researchers identified seven existing process measures that reflect care delivery patterns specific to substance use disorder; the measures support a cascade of care model (i.e., a framework for quality measurement based on a stepwise process where future success depends on prior success).²⁶⁵

In addition, existing models have changed during the COVID-19 public health emergency (PHE). As providers prioritize reducing COVID-19 transmission, there may be short-term changes in costs, utilization, and quality that may affect performance measurement.²⁶⁶ For example, the ACO Shared Savings Program added a reporting measure for the measure of beneficiary COVID-19 vaccinations to

enable providers to engage with beneficiaries to encourage vaccinations. In addition, program calculations were adjusted to exclude payment amounts and months associated with COVID-19 episodes of care.²⁶⁷

Further, program impact may be affected by blanket waivers designed for the program itself or for other models, for example, the expansion of the SNF 3-day rule waiver during the PHE.²⁶⁸ The MIPS program also adapted to respond to the PHE. Given concerns that episode-level risk adjustment would not fully account for differences in resource use for cost measures clinically proximate to respiratory disease and COVID-19, and that the volume of COVID-19 episodes might impact scores negatively for some cost measures, the cost performance weighting was reduced to zero percent.²⁶⁹

Return on Investment. ROI may be difficult to assess if the scope of the APM is broad or if associated costs and savings cannot readily be captured.^{270,271,272} APMs implemented on a broader scale may not be able to take into account local factors associated with implementation, especially local variation in costs of labor for both clinical and administrative staff.²⁷³ Evaluation of ROI may need to incorporate a local perspective, including adjustments for market-level differences in costs.

ROI may not be fully achieved in early years of APMs. Performance measure improvement may require upfront investment in care coordination or other quality improvement activities;²⁷⁴ activities may take time to implement, and measurable performance improvements may not be observed in the short-term.^{275,276} When financial incentives are tied to these measures, it may take time for models to achieve consistent improvements²⁷⁷ and, depending on Model design, providers may not be able to fully earn incentives until the Model is more mature. For example, in the fourth evaluation of the NGACO Model, researchers noted that ACO provider networks become more stable over time, which contributed to increases in Model-wide gross spending reductions within and across performance years.²⁷⁸

With respect to SDOH, domains that may be measured to assess ROI include housing, nutrition, transportation, home modification, care management, legal counseling, financial counseling, and social supports.²⁷⁹ Plans report that goals of SDOH programs are to “produce both improved health outcomes...and ROI through lower beneficiary health costs.”²⁸⁰ For example, supportive housing for those who are unhoused or at risk of being unhoused and nutrition benefits are independently associated with reductions in ED visits and hospital admissions, contributing to reductions in health care spending.²⁸¹

Small Sample Sizes. Challenges that influence the feasibility of different performance measures are often related to data collection and reporting burden. Issues with comparison and measurement for a small number of episodes pose a substantial hurdle to performance-based payment tied to performance measures.^{282,283} Without sufficient population size, transferring financial risk may not be viable from an actuarial perspective.²⁸⁴ Small sample sizes also present challenges to establishing appropriate benchmarks and to quality measurement,²⁸⁵ as many measures recommend 20-25 cases per provider for measure stability. Provider-level measure stratification to capture SDOH factors may exacerbate small sample size concerns.

Programs may institute reporting requirements to support performance measures calculation. For example, under the SNF Quality Reporting Program, a pay-for-reporting program, SNFs that do not meet reporting requirements receive a two percentage point reduction in their annual market basket update.²⁸⁶ MIPS participants must report quality data for 70 percent of all patients to which each

measure is applicable, regardless of payer.²⁸⁷ To avoid issues with data collection, researchers have suggested adopting or harmonizing with existing measures and collecting information through previously validated instruments.²⁸⁸ For example, MSSP includes quality measures on admission rates for heart failure (HF) and all-cause unplanned admissions for patients with HF, which could be implemented in HF-specific APMs.²⁸⁹

Standardization of Data Elements. Standardization of data elements, as well as variation in coding uptake and practice, can affect performance measure viability. For example, under the Improving Medicare Post-Acute Care Transformation Act of 2014 (IMPACT Act), standardized patient assessment data elements (SPADEs) must be collected across PAC settings, including SNFs, Inpatient Rehabilitation Facilities (IRFs), and Long-Term Care Hospitals (LTCHs).²⁹⁰ SPADE domains include “cognitive status, mental status (e.g., mood), medical conditions (e.g., pain), impairments (e.g., incontinence and sensory impairments), and other clinical topics (e.g., care preferences and medication reconciliation)”.²⁹¹ This data standardization is intended to improve cross-setting measure development, data exchange, and quality comparison.²⁹²

Coding practices are also subject to local area practice variation. For example, in tests of coding scenarios, researchers noted that some conditions, such as Crohn’s disease, diabetes, substance abuse, and Alzheimer’s disease, had higher rates of inappropriate coding and code variation. Secondary diagnosis codes for immunization, dialysis dependence, and nicotine dependence were often inappropriately omitted from the EHR.^{293,294}

EHR use may help improve data standardization. However, smaller practices may not have the resources to invest in EHR implementation, and different EHRs within and across health systems may not have standardized data fields or be able to transmit information bidirectionally.^{295,296,297,298,299} Addition of EHR fields to capture SDOH may also support performance measurement, though uptake of the CMS z-codes has been low.^{300,301,302}

Although SDOH are important factors in adjusting or stratifying performance measures, there is little consensus on best practices for capturing such factors in EHRs and on whether capturing SDOH provides actionable knowledge (e.g., to address SDOH through referrals or other action plans).³⁰³ To address these challenges, SIREN launched the Gravity Project with the mission to “develop, test, and validate standardized SDOH data for use in patient care, care coordination between health and human services sectors, population health management, public health, value-based payment, and clinical research.”³⁰⁴ Outcomes of this work may support integration of SDOH factors in future APMs and their performance measures.

Another important consideration may be focusing measure development specifically on the issues related to CMMI’s goal of having all Medicare beneficiaries in an accountable care relationship by 2030. Achieving this objective may require attention to simplifying and streamlining measures, while taking appropriate steps to tailor them and risk adjust as needed.³⁰⁵

VII.D. Importance of Timely Data Sharing in Population-based TCOC Models

Regardless of the measures collected, data sharing is critical to the development of population-based TCOC models and their ongoing success. HCP-LAN convened a Population-based Payment Work Group in 2015 to identify facilitators and barriers and produce guidelines for data sharing.³⁰⁶ They noted that

data sharing is needed, at a minimum, to operationalize patient attribution, financial benchmarking, and performance measurement. Data sharing requires robust HIT infrastructure. A recent systematic review summarized the need for HIT capabilities, especially EHRs and health information exchanges (HIE), in ACO models.³⁰⁷ Several studies reviewed established HIT infrastructure as a determinant for ACO formation, and inversely, that ACOs prompt providers to adopt HIT resources for population health management, patient engagement, and quality improvement activities. The authors also found several articles linking increased EHR capabilities and positive outcomes in disease prevention, information exchange and care management processes, integration of medication refill systems, and time and cost savings.

For data sharing to be effective, however, it must be timely. While IDS entities like Kaiser have the capacity for real-time data access to providers about their patients across the continuum of care, participants in ACOs often face delays in receiving data to inform continuous quality improvement and maintain provider incentives.^{308,309,310} This section describes the importance of timely data sharing for coordinating care and managing financial incentives for providers in population-based TCOC models.

Importance of Timely Data Sharing for Care Coordination

Successful coordination of care in population-based TCOC models requires regular exchange of information among organizations and providers. As noted in the HCP-LAN's working Population-based Payment Work Group's 2016 report, "Providers in [population-based payment] PBP models require a 360-degree view of that population because they are accountable for TCOC, quality, and outcomes for that population."³¹¹ Delays in data sharing hinder efforts to coordinate care across settings. For example, ESCOs in the CEC Model noted that delays in alerts about their patients visiting EDs were a barrier to successful implementation of strategies to avoid acute care.³¹²

To facilitate timely data sharing, ACOs, health systems, and other convening entities need the capacity to share information with participating providers to inform risk stratification and continuous quality improvement. For example, in the Vermont All-Payer Model (VTAPM), the statewide ACO provides an online platform for participants to monitor utilization by care setting and condition at the organizational and provider level.³¹³ In the NGACO Model, ACOs leveraged prospective alignment lists and invested in data analytics to enable providers to track beneficiaries and identify those at risk for hospitalization.³¹⁴

There are several challenges to effective and timely data sharing across providers for care coordination in population-based TCOC models. First, interoperability across systems varies across providers and health systems. Lack of interoperability with other organizations was cited as an obstacle by participants in the NGACO Model, while participants in the Maryland All-Payer Model benefited from access to the state's HIE.^{315,316} Additionally, many large health systems rely on proprietary systems that are not integrated with other payers and providers.³¹⁷

A further challenge cited by population-based TCOC model participants is the lack of consistent funding for data collection and sharing.³¹⁸ Similarly, some participants lack resources or in-house expertise to process and interpret data. For example, providers in the VTAPM noted that while OneCare's centralized data system for hospitals has valuable information, smaller hospitals and federally qualified health centers (FQHCs) do not have the capacity to integrate claims, EHR, and quality data.³¹⁹

To address these challenges, the HCP-LAN Work Group recommended shared accountability payment structures that incentivize data sharing across all providers that are accountable for a patient’s care.³²⁰ Sharing responsibility involves building trust among entities and data sharing agreements to preserve to protect patient personal health information (PHI) and personally identifiable information (PII). Secure and seamless data sharing processes are also important to consider when partnering with CBOs to address HSRNs. The Work Group also recommended that identifiable, patient-level data follow the patient so that patients can receive informed and coordinated care regardless of provider, payer, or site of care.

Importance of Timely Financial Data Sharing

Similar to challenges with delays in clinical and utilization data, the lag in financial performance data in population-based TCOC models limits participants ability’ to accurately forecast or benchmark expenditures and tempers the incentives of shared savings. Many NGACOs stated that delays in shared-saving payments made it difficult to use the potential payments to engage providers.³²¹ Some left the Model altogether because they did not have enough information about their financial performance before the deadline for withdrawing for the next performance year.³²² ESCOs cited similar challenges, with one provider explaining, “The hard part is you make decisions now and you do not get a straight answer about what your outcome is, if the decisions that you made actually worked. So, you are basically working blind for years at a time.”³²³ Future research and subject matter expert discussion should focus on means to alleviate financial data lags.

Section VIII. Conclusion and Next Steps

This Supplement to the Environmental Scan on Issues Related to the Development of Population-Based TCOC Models in the Broader Context of APMs and PFPMs provides additional context to the material presented in the original environmental scan and discussions and PTAC’s theme-based discussion on Population-Based Total Cost of Care (TCOC) Models in March 2022. It discusses the objectives of population-based TCOC models and tradeoffs, services that can be covered in population-based TCOC models, and definitions for accountability in population-based TCOC models. It also presents challenges and options for integrating specialty care into population-based TCOC models, innovative examples of population-based and specialty care models, and approaches for addressing SDOH in population-based TCOC Models. Finally, it discusses issues related to measuring performance in population-based TCOC models, including criteria for selecting measures, challenges in measurement, and the importance of timely data sharing. The information in this supplement will inform the next Theme-based Discussion on Population-Based Total Cost of Care (TCOC) Models in June 2022. Future discussions and reports will focus on payment methodologies in population-based TCOC models, including benchmarking and risk adjustment.

Section IX. Annotated Bibliography

Accelerating and Aligning Population-based Payment Models: Data Sharing. The MITRE Corporation. Published 2016. Accessed April 25, 2022. <http://hcp-lan.org/workproducts/ds-whitepaper-final.pdf>.

Subtopic(s): Framework for Delivery Structures in 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 which types of data and with whom.

Generalizability to Medicare Population: Strong; the paper considers data sharing differences from traditional Medicare FFS.

Methods: N/A

Agency for Healthcare Research and Quality. Care Coordination Measures Atlas Update. Published June 2014. Accessed April 26, 2022. <https://www.ahrq.gov/ncepcr/care/coordination/atlas/chapter1.html>

Subtopic(s): Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability

Type of Source: Report

Objective: To further develop an atlas of existing measures to help evaluators identify appropriate measures for assessing care coordination interventions, particularly measures focusing on ambulatory care.

Main Findings: The developed *Atlas* contains measures for assessing care coordination, including measures of patient and caregiver experiences with care coordination. The *Atlas* also incorporates measures aimed at evaluating the experiences of health care professionals and health system managers.

Strengths/Limitations: Difficulty distinguishing between the various definitions of care coordination and a lack of consensus around a single conceptual model impact the original measure Atlas and this Atlas update.

Generalizability to Medicare Population: Strong; the report includes measures for the Medicare population.

Methods: Authors reviewed available care coordination measurement approaches via multiple data sources (e.g., electronic health record systems, consumer surveys, and databases of administrative claims), review of Agency for Healthcare Research and Quality (AHRQ) Health Information Technology portfolio projects, information from national organizations on their care coordination measurement activities, input from expert and stakeholder/informant panels, and a comprehensive literature search.

Allison I. Examining SDOH in a Commercially Insured Health Care Workforce. AJMC. Published April 2021. Accessed May 2022. <https://www.ajmc.com/view/examining-sdoh-in-a-commercially-insured-health-care-workforce>

Subtopic(s): Care Delivery Model Innovations

Type of Source: Blog post

Objective: To describe a presentation given by Aetna at the National Association of Managed Care Physicians Virtual Spring Managed Care Forum.

Main Findings: Aetna designed a social determinants of health (SDOH) index for its own use, consisting of median household income, poverty, diversity, disability, education, physical inactivity, family structure, public transport, and employment. The dataset utilizes U.S. Census tract data and Centers for Disease Control and Prevention (CDC) data.

Strengths/Limitations: This is a brief blog post on a presentation given by Aetna and does not explicitly go into details about the development of their SDOH index. It does, however, provide some information on why the index is useful, including reiterating some interesting trends presented, such as lower-income beneficiaries having more preventable care visits.

Generalizability to Medicare Population: Weak; this source focused on the commercial insurance population.

Methods: The dataset used in the index utilizes U.S. Census tract data and CDC data, however, this blog post does not go into the methods used in developing the index, or details of any calculations associated with the index.

Angela C. Prospero Health Launches in California to Increase Access to Home-Based Medical Care for People With Serious Illness. Business Wire. Published March 2021. Accessed May 2022.

<https://www.businesswire.com/news/home/20210301005064/en/Prospero-Health-Launches-in-California-to-Increase-Access-to-Home-Based-Medical-Care-for-People-With-Serious-Illness>

Subtopic(s): Care Delivery Model Innovations

Type of Source: News article

Objective: To provide information on the expansion of Prospero Health (a Boston-based home health company that provides care to seniors living with serious illness) across Southern California and to provide an overview of the company.

Main Findings: Prospero expanded across Southern California to serve patients in Los Angeles, San Diego, San Bernardino, Orange, and Riverside counties.

Strengths/Limitations: N/A

Generalizability to Medicare Population: High; Prospero Health serves Medicare beneficiaries.

Methods: N/A

Artiga S, Hinton E. Beyond Health Care: The Role of Social Determinants in Promoting Health and Health Equity. KFF. Published May 2018. Accessed May 2022. <https://www.kff.org/racial-equity-and-health-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/>

Subtopic(s): Care Delivery Model Innovations

Type of Source: Issue brief

Objective: To provide an overview of SDOH and discuss emerging efforts to address them.

Main Findings: A growing number of initiatives are emerging to address SDOH. Some of these initiatives seek to increase the focus on health in non-health sectors, while others focus on having the health care system address broader social and environmental factors that influence health. In addition to the growing movement to incorporate health impact/outcome

considerations into non-health policy areas, there are also emerging efforts to address non-medical, SDOH within the context of the health care delivery system.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; the study focuses on a population that may align with the Medicare population.

Methods: N/A

Balio CP, Apathy NC, Danek RL. Health Information Technology and Accountable Care Organizations: A Systematic Review and Future Directions. *EGEMS*. 2019;7(1):24. doi:[10.5334/egems.261](https://doi.org/10.5334/egems.261)

Subtopic(s): Framework for Delivery Structures in TCOC Models

Type of Source: Journal article

Objective: To examine research on relations between health IT and Accountable Care Organizations (ACOs) and identify areas for future research.

Main Findings: Authors grouped studies into three categories based on one of three objectives: 1) health IT as a determinant of ACO participation; 2) health IT as an outcome; and 3) how health IT relates to ACO performance. They found an association between health IT capacity and increased participation in ACOs. Additionally, they observed that ACOs had more health IT capabilities than non-ACO organizations. The authors suggest that future studies pursue quasi-experimental designs, be better grounded in theory, and combine health, quality, cost, and health IT use data across ACO member organizations.

Strengths/Limitations: The authors noted that the studies included in the systematic review did not root their analysis in a theoretical framework. The sample of 33 articles is relatively small—a meta-analysis was not possible due to differing characteristics of the included studies and their search may not have captured all articles relating to the topic. The study did use a snowballing method to further widen the search range.

Generalizability to Medicare Population: Strong; the review includes studies which focus on the Medicare population.

Methods: Systematic review, which used the PubMed database and snowball reference review to identify health IT articles. The type of health IT, how health IT was used in the study, use of theory, population, and findings were extracted from each study.

Barnett ML, McWilliams JM. Changes in Specialty Care Use and Leakage in Medicare Accountable Care Organizations. *Am J Manag Care*. 2018;24(5):e141-e149.

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To assess differences in specialty care leakage and use related to the Medicare Shared Savings Program (MSSP).

Main Findings: Authors found that specialty care leakage decreased minimally between 2010–2014 among ACOs and that contract penetration changed minimally but differed largely by specialty structure. For the most primary care-oriented quartile of ACOs in two out of three entry cohorts, MSSP participation was associated with differential reductions in new specialist visits and for more specialty-oriented ACOs. Changes in specialist visits were not statistically significant.

Strengths/Limitations: First, the study could not assess the clinical appropriateness of specialty visits from claims data. Second, the analysis of leakage, contract penetration, and stability of attribution do not support causal inferences about the outcomes of the MSSP because they were restricted to ACOs.

Generalizability to Medicare Population: Strong; the focus of the article is on Medicare ACOs.

Methods: The study conducted two sets of analyses, a set of descriptive analyses among ACO-attributed beneficiaries and a set of quasi-experimental difference-in-differences analyses that also included beneficiaries attributed to non-ACO providers as a control group.

Blaser R. Renal Physicians Association Incident ESRD Clinical Episode Payment Model May 2017. <https://aspe.hhs.gov/sites/default/files/private/pdf/255731/IncidentESRDClinicalEpisodePaymentModel.pdf>.

Subtopic(s): Care Delivery Model Innovations

Type of Source: PTAC proposal

Objective: For Renal Physicians Association (RPA) to outline their proposal for a Physician-Focused Payment Model for PTAC review centering on care provided to patients with chronic kidney disease (CKD) and end-stage renal disease (ESRD)

Main Findings: RPA proposed a condition-specific, episode-of-care payment model (Clinical Episode Payment—CEP) for incident dialysis patients, for which there are over 100,000 new patients annually across the U.S. This proposed model would commence in the first month of dialysis therapy and would span the initial six months of dialysis for established Medicare primary beneficiaries.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; the proposed model directly applies to Medicare.

Methods: N/A

Boustani M, Alder CA, Solid CA, Reuben D. An Alternative Payment Model to Support Widespread Use of Collaborative Dementia Care Models. *Health Affairs*. 2019;38(1):54-59.

<https://www.healthaffairs.org/doi/10.1377/hlthaff.2018.05154>

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To propose an Alternative Payment Model (APM) for dementia care.

Main Findings: The proposed payment model outlines a per member per month payment for care management services that would target community-dwelling beneficiaries living with dementia. It would also provide evidence-based education and support programs for unpaid caregivers. This payment model aims to align the incentives of payers and providers and increase implementation of cooperative dementia care models across the country.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; the proposed model would include beneficiaries covered by Medicare Parts A and B.

Methods: N/A

The Brookings Institution. Kaiser Permanente – California: A Model for Integrated Care for the Ill and Injured. Published online 2015. Accessed May 2. https://www.brookings.edu/wp-content/uploads/2016/07/KaiserFormatted_150504RH-with-image.pdf

Subtopic(s): Care Delivery Model Innovations

Type of Source: Program overview

Objective: To outline the Kaiser Permanente California (KP-CA) integrated health system.

Main Findings: KP-CA functions as a pre-paid integrated health system that includes a risk-bearing insurance plan, physician groups, and a hospital system. KP-CA is structured to incentivize delivery of affordable, high-quality care and population health management.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; although Medicare beneficiaries can receive care through KP-CA, the care system is not specific to Medicare beneficiaries.

Methods: N/A

Casalino LP, Elster A, Eisenberg A, Lewis E, Montgomery J, Ramos D. Will Pay-For-Performance And Quality Reporting Affect Health Care Disparities? *Health Affairs*. 2007;26(Supplement 2):w405-w414.

<https://www.healthaffairs.org/doi/10.1377/hlthaff.26.3.w405>

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To discuss the potential impacts of pay-for-performance and public quality reporting programs on health care disparities and offer potential solutions to reduce disparities.

Main Findings: The authors note that pay-for-performance and public quality reporting may increase disparities by reducing income for physicians in poor and minority communities, developing programs that minority communities are less likely to benefit from, focusing care only on evaluated quality measures, and encouraging physicians to avoid patients perceived as likely to lower quality scores. The authors suggest six design elements that could prevent the increase of disparities, including rewarding absolute quality scores and improvement over time, using risk adjustment and stratified analyses, rewarding overall quality and reduction in disparities, using a variety of and rotating quality measures, using only pay-for-performance and public reporting when statistically reliable and valid measurement can be done, and paying attention to the effects of programs on disparities.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; the payment programs and designs discussed may be relevant to future Medicare payment models.

Methods: Literature review and policy analysis.

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

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

Subtopic(s): Framework for Delivery Structures in TCOC Models

Type of Source: White Paper

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

Main Findings: N/A

Strengths/Limitations: N/A

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

Methods: Mixed methods review of Medicare/Medicaid payment models, including savings and policy analysis.

Chatterji P, Burstein NR, Kidder D, et al. Evaluation of the Program of All-Inclusive Care for the Elderly (PACE) Demonstration: the Impact of PACE on Participant Outcomes. Abt Associates Inc. 1998.

<https://innovation.cms.gov/files/migrated-medicare-demonstration-x/evalpace-outcomeimpact.pdf>.

Subtopic(s): Care Delivery Model Innovations

Type of Source: Report

Objective: To evaluate the impact of the PACE demonstration on health services utilization and several measures of outcomes, including health and functional status, quality of life, and satisfaction with services.

Main Findings: PACE enrollees had lower rates of nursing home utilization and inpatient hospitalization. Enrollees also reported better health status and quality of life relative to a compared control group.

Strengths/Limitations: PACE sites are variable, but this report does not include a comprehensive sample of all potential site variations and how they could influence outcomes.

Generalizability to Medicare Population: Strong; PACE serves many Medicare beneficiaries.

Methods: Quantitative analysis of health outcomes data.

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

Subtopic(s): Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability

Type of Source: Blog post

Objective: To outline the benefits of ACOs and the need for their continued existence.

Main Findings: The article argues that population-based payment models such as ACOs help to reduce low-value care by way of incentives. They argue that consolidation hikes prices and yields low-value care. The authors note, however, that research on the benefits and drawbacks of ACOs is mixed.

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

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

Methods: N/A

Chien AT, Chin MH, Davis AM, Casalino LP. Pay for performance, public reporting, and racial disparities in health care: how are programs being designed? *Med Care Res Rev MCRR*. 2007;64(5 Suppl):283S-304S. doi:10.1177/1077558707305426

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To systematically review to what extent existing performance incentive programs reduce disparities.

Main Findings: Following literature reviews and interviews, most programs are not designed to address and reduce disparities.

Strengths/Limitations: The article combines literature reviews and interviews with program leaders to determine findings.

Generalizability to Medicare Population: Moderate; the article caters to a higher-level audience but pertains to certain Medicare populations.

Methods: Mixed methods review of literature and semi-structured interviews.

Chin MH, Walters AE, Cook SC, Huang ES. Interventions to Reduce Racial and Ethnic Disparities in Health Care. *Med Care Res Rev MCRR*. 2007;64(5 Suppl):7S-28S. doi:10.1177/1077558707305413

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Report

Objective: To summarize key findings of model interventions to present conclusions of current health disparities in pay-for-performance models.

Main Findings: After reviewing the literature of several outcome-specific interventions, there were several intervention strategies that were promising including culturally-tailored

interventions, nurse-led interventions, and multifactor interventions that simultaneously targeted intervention at the patient, provider, organizations, and community level.

Strengths/Limitations:

Generalizability to Medicare Population: Low; the content is aimed at a higher-level audience.

Methods: Systematic review.

Cross DA, Adler-Milstein J. Investing in Post-Acute Care Transitions: Electronic Information Exchange Between Hospitals and Long-Term Care Facilities. *J Am Med Dir Assoc.* 2017;18(1):30-34. doi:10.1016/j.jamda.2016.07.024

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To analyze the prevalence of electronic information exchange between hospitals and long-term care (LTC) facilities.

Main Findings: Over half of hospitals in the sample reported engaging in electronic information exchange with long-term facilities. Hospitals that participated in electronic information exchange were more likely to attest to its usefulness. Hospitals that were organizationally affiliated with a nursing facility and had a higher 30-day hospital readmission rate were also associated with LTC health information exchange (HIE), but not with an ACO nor bundled payment participation.

Strengths/Limitations: This study benefited from a large sample size.

Generalizability to Medicare Population: Moderate; the improvement of health IT infrastructure can lead to improved care for the Medicare population.

Methods: Cross-sectional analysis of survey data

Cubanski J, Neuman T. Relatively few drugs account for a large share of Medicare prescription drug spending. KFF. <https://www.kff.org/medicare/issue-brief/relatively-few-drugs-account-for-a-large-share-of-medicare-prescription-drug-spending/>. Published April 19, 2021. Accessed April 26, 2022.

Subtopic(s): Framework for Delivery Structures in TCOC Models

Type of Source: Issue brief

Objective: To analyze if limiting the number of drugs subject to government price negotiations will have a negative effect on potential consumer savings.

Main Findings: The most-sold 250 drugs with one manufacturer and no generic or biosimilar counterpart accounted for 60 percent of net total Part D spending while other drugs accounted for 13 percent or 27 percent.

Strengths/Limitations: Analysis is based on 2019 data which may be slightly outdated for assessing current prices.

Generalizability to Medicare Population: High; the contents of this issue brief is informative for Medicare beneficiaries.

Methods: Averaging of Centers for Medicare & Medicaid Services (CMS) drug spending metrics.

Devore S, Champion RW. Driving population health through accountable care organizations. *Health Affairs.* 2011;30(1):41-50. DOI: 10.1377/hlthaff.2010.0935

Subtopic(s): Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability

Type of Source: Journal article

Objective: To outline approaches taken by the Accountable Care Implementation Collaborative in their effort to build ACO models and to highlight best practices for model implementation.

Main Findings: The Accountable Care Implementation Collaborative was created in May 2010 to help providers better position themselves for participation in ACOs. The Collaborative included 25 health systems and over 80 hospitals. To participate in the Collaborative, members had to satisfy several criteria, such as commitment to data transparency, a willingness to accept common cost and quality metrics, and a large enough patient population, among others.

Strengths/Limitations: The article was written in 2011 before the widespread implementation of ACOs and is therefore slightly outdated. Both of the authors participated in the creation and launch of the Collaborative, which offers insider perspective while also introducing the potential for bias.

Generalizability to Medicare Population: Strong; the article addresses the creation of Medicare ACOs following the passing of the Affordable Care Act.

Methods: The paper does not include a methods section.

Donlan A. Payer Credibility Helps Propel Home-Based Care Company Prospero Health into 16 New States. Home Health Care News. Published December 1, 2020. Accessed May 5, 2022.

<https://homehealthcarenews.com/2020/12/payer-credibility-helps-propel-home-based-care-company-prospero-health-into-16-new-states/>.

Subtopic(s): Care Delivery Model Innovations

Type of Source: News article

Objective: To report on Prospero Health's expansion into 16 additional states.

Main Findings: Following their expansion, Prospero Health now operates in 26 states and serves approximately 25,000 patients. At the time of publication of this article, Prospero had plans to expand into an additional nine states with the eventual goal of providing services nationwide. Prospero provides home health services to Medicare-aged patients (average patient age of 83) and makes use of technology to optimize care delivery such as tablets specifically built for older folks.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; Prospero Health serves the Medicare population.

Methods: N/A

Drug coverage under different parts of Medicare. Accessed April 27, 2022.

<https://www.cms.gov/Outreach-and-Education/Outreach/Partnerships/Downloads/11315-P.pdf>.

Subtopic(s): Framework for Delivery Structures in TCOC Models

Type of Source: Fact sheet

Objective: To inform beneficiaries of the type of drugs covered under different parts of Medicare.

Main Findings: Part D of Medicare may cover a patient's self-administered drugs, but patients will likely need to pay out-of-pocket and submit a claim. Part B may cover ESRD drugs if they are in an injectable form.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; the brief directly applies to drug coverage under Medicare.

Methods: N/A

Emanuel EJ, Emanuel LL. What is Accountability in Health Care? *Annals of Internal Medicine*. 1996;124(2):229-239. <https://doi.org/10.7326/0003-4819-124-2-199601150-00007>

Subtopic(s): Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability

Type of Source: Journal article

Objective: To present a model for conceptualizing accountability in health care.

Main Findings: The article outlines three accountability models: 1) the professional model whereby the patient and physician practice shared decision-making, and the provider is held accountable by colleagues and patients; 2) the economic model in which the market drives accountability; and 3) the political model whereby physicians are held accountable by a governing board elected by the community. The authors then propose a “stratified” model of accountability that integrates these three models.

Strengths/Limitations: Although this is a thesis-driven, theoretical article, the authors ground their argument in existing theory-based literature and provide clear visuals outlining their logic.

Generalizability to Medicare Population: Strong; the challenge of defining accountability underpins current debates surrounding Medicare APMs.

Methods: N/A

Famakinwa J. Prospero Health CEO: Health Care System Is Failing Seniors with Serious Illnesses. Home Health Care News. Published May 26, 2020. Accessed May 5, 2022.

<https://homehealthcarenews.com/2020/05/prospero-health-ceo-health-care-system-is-failing-seniors-with-serious-illnesses/>

Subtopic(s): Care Delivery Model Innovations

Type of Source: News article

Objective: To describe Prospero Health’s care coordination strategy.

Main Findings: The article gives information on the founding of Prospero Health, noting the organization started in Boston provide supportive care to seniors with advanced illnesses. The CEO of Prospero, Doug Wengers, stated that they are using a model for home-based care teams to co-manage patients’ care with their existing primary care physicians and other specialists, and gave some reasons why this model is a beneficial strategy for reducing costs.

Strengths/Limitations: This news article provides anecdotal descriptions from the CEO.

Generalizability to Medicare Population: Moderate; Prospero Health provides care coordination to Medicare recipients.

Methods: N/A

French DD, LaMantia MA, Livin LR, Herceg D, Alder CA, Boustani MA. Healthy Aging Brain Center Improved Care Coordination And Produced Net Savings. *Health Affairs*. 2014;33(4):613-618.

doi:10.1377/hlthaff.2013.1221

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To outline the effects of a collaborative primary care model on cost savings, which was implemented at the Healthy Aging Brain Center (HABC), a memory care clinic at an integrated safety-net health system in Indianapolis, Indiana.

Main Findings: The HABC program generated an estimated \$3,474 per patient annual savings. The overall annual savings were \$1.05 million. They also estimated that the total savings would have been \$6.10 million if both the treatment group and the control group were to have participated in the program.

Strengths/Limitations: Analysis used a comparison group comprised of individuals who would have been eligible for the HABC program but were unaware that it was being offered. The control group and treatment group were relatively balanced across key covariates. Additionally, the program data were linked to a statewide health information database to account for care received/expenses accrued outside of the HABC-associated health system. One limitation, however, is that they did not include fees for physician services, home care, or skilled nursing facility (SNF) care in their cost analyses.

Generalizability to Medicare Population: Strong; the program served Medicare patients (average age across treatment and control group was 72).

Methods: Multivariate regression models using a generalized linear model with a gamma distribution and a log-link function.

Goeschel C. Defining and Assigning Accountability for Quality Care and Patient Safety. *Journal of Nursing Regulation*. 2011;2(1)28-35.

Subtopic(s): Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability

Type of Source: Journal article

Objective: To describe how accountability relates to patient safety and care quality, define systems theory and systems thinking, and identify types of accountabilities.

Main Findings: Health care regulators have the ability and knowledge to make regulations but struggle to set forth these regulations because synergistic influences make care delivery difficult. To address this issue, regulators should be open to dialogue and create relationships with other regulators in different disciplines. Accountability in health care settings varies at the organizational level, team level, and individual level. To gain insight into how accountability should be addressed, accountability models have been introduced which help regulate and impose accountability for quality of care measures. Setting safer systems is an essential component that providers should be involved in to help address shared accountability from the individual level to the team level.

Strengths/Limitations: A limitation to this article was that it was conducted through literature reviews rather than through primary data collection and analysis (e.g., qualitative interviews). A strength was that the authors considered all levels of accountability from clinical accountability to political accountability which enhances the validity of their argument and accountability framework.

Generalizability to Medicare Population: Moderate; although Medicare beneficiaries are not directly addressed, the quality of care and patient safety measures are components are applicable to the Medicare population.

Methods: Literature review.

Greer RC, Liu Y, Cavanaugh K, et al. Primary Care Physicians' Perceived Barriers to Nephrology Referral and Co-management of Patients with CKD: a Qualitative Study. *J Gen Intern Med*. 2019;34(7):1228-1235. doi:10.1007/s11606-019-04975-y

Subtopic(s): Care Delivery Model Innovations

Type of Source: Journal article

Objective: To identify primary care providers' (PCP) perceptions of key barriers and facilitators when co-managing chronic disease patients (CKD) with nephrologists.

Main Findings: Improving primary care physicians and nephrologists' relationships can help strengthen co-management between the two to better assist patients with CKD. Key barriers encountered for effective co-management included limited access to nephrologists, poor

working relationships with nephrologists, and lack of timely information exchange. The findings also indicate that unclear roles and responsibilities between the two physicians scrutinize their ability to effectively provide for patients with CKD. Care coordination agreements (CCAs) are written agreements between primary care physicians and specialists that can be implemented to help define care roles and responsibilities more clearly.

Strengths/Limitations: A limitation to this study was that primary care physicians were the only ones who provided their perspective in the study. It would have been beneficial to obtain insight into the barriers and challenges for effective care delivery from the nephrologists and patients with CKD perspective.

Generalizability to Medicare Population: Moderate; while Medicare beneficiaries are not directly mentioned, the study findings are applicable to Medicare beneficiaries.

Methods: A qualitative analysis was conducted with four focus groups, each containing eight PCPs.

Health Care Payment Learning & Action Network. Alternative Payment Model (APM) Framework. 2017. <https://hcp-lan.org/workproducts/apm-refresh-whitepaper-final.pdf>. Accessed April 26, 2022.

Subtopic(s): Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability

Type of Source: White paper

Objective: To create an APM framework that could be used to track payment reform progress.

Main Findings: To obtain sustainable APM success, it is important to have shared goals, shared solutions, and data sharing capacities. To more effectively operationalize the guidance presented in the framework, health care providers should assess the barriers they face and observe the capacity/ability that they have to fill in the gaps.

Strengths/Limitations: Provides an alternative framework that can help health care organizations be better suited to reach payment reform.

Generalizability to Medicare Population: Moderate; the APM framework will be used to address payment reform for which Medicare beneficiaries will experience the changes as they take place.

Methods: Literature review.

Healthy Opportunities Pilot. Impact Health. Published 2022. Accessed May 5, 2022. <https://impacthealth.org/healthy-opportunities/>

Subtopic(s): Care Delivery Model Innovations

Type of Source: Web page

Objective: To describe the Health Opportunities Pilot (HOP), North Carolinas Medicaid Managed Care program.

Main Findings: HOP was developed by the [North Carolina Department of Health and Human Services](#) (NCDHHS) with the aim of addressing SDOH by using nonprofit human services organizations (HSOs) to receive Medicaid reimbursements from the private health plans for the services they provide to Medicaid beneficiaries including housing, transportation, food, or interpersonal safety.

Strengths/Limitations: This web article is a brief overview of the HOP program and does not provide an in-depth description, or evidence base for the HOP Model.

Generalizability to Medicare Population: Weak, HOP is a Medicaid care model.

Methods: N/A

Hinton E, Aug 05 LSP, 2021. Medicaid Authorities and Options to Address Social Determinants of Health (SDOH). KFF. Published August 5, 2021. Accessed May 5, 2022. <https://www.kff.org/medicaid/issue-brief/medicaid-authorities-and-options-to-address-social-determinants-of-health-sdoh/>

Subtopic(s): Care Delivery Model Innovations

Type of Source: Issue brief

Objective: To provide an overview of the methods Medicaid is using to address SDOH and issues and benefits related to those strategies.

Main Findings: Through Medicaid, states can use state plan and waiver authorities like 1905(a), 1915(i), 1915(c), or Section 1115 to include non-clinical services to the Medicaid benefit package. These services include case management, housing supports, employment supports, and peer support services. In the past, non-medical services have been included as part of Medicaid home and community-based services (HCBS) programs for people who need help with self-care or household activities as a result of disability or chronic illness.

Strengths/Limitations: This brief provides a comprehensive overview of Medicaid waivers and other methods of addressing SDOH.

Generalizability to Medicare Population: Moderate, although this brief refers to the Medicaid population, some beneficiaries may be dual-eligible. Additionally, some of these approaches may be transferable to Medicare models.

Methods: N/A

Horsky J, Drucker EA, Ramelson HZ. Accuracy and Completeness of Clinical Coding Using ICD-10 for Ambulatory Visits. AMIA Annu Symp Proc. 2018;2017:912-920.

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To analyze the interactions of diagnostic coding using an electronic health record (EHR) with the query interface for patterns and variations in search strategies and the resulting sets of entered codes for accuracy and completeness.

Main Findings: The accuracy and completeness of the coding was just about 56 percent for all entered diagnostic codes. Some codes were more accurate than others with accuracy rates of about 90 percent or above coming from essential hypertension, streptococcal tonsillitis, and acute upper respiratory infections. More training is necessary to help providers become better equipped to use the new coding system so that financial losses are minimal.

Strengths/Limitations: Limitations to this are that physicians are not adequately equipped to use the coding system and need training to improve the outcomes of accurate coding. This is important because inaccurate coding could impact the reimbursement rates which affects the total financial reimbursement of the given health care organization.

Generalizability to Medicare Population: Low; the study focused on clinical coding used by providers and did not mention Medicare beneficiaries.

Methods: Simulation of a clinical documentation task where clinicians used standardized case scenarios to enter diagnostic codes into the EHR.

Hwang, Thomas J et al. "Analysis of Proposed Medicare Part B to Part D Shift With Associated Changes in Total Spending and Patient Cost-Sharing for Prescription Drugs." *JAMA Internal Medicine*. 2019;374-380. doi:10.1001/jamainternmed.2018.6417

Subtopic(s): Framework for Delivery Structures in TCOC Models

Type of Source: Journal article

Objective: To estimate the association of changes of a shift in Medicare Part B to Part D with total drug spending and patient cost-sharing.

Main Findings: In Medicare Part B, total Medicare spending for 75 brand-name drugs was estimated to be \$21.6 billion annually (using 2018 prices). However, if the proposed policy were to be enacted, they estimated that Part D drug spending for the same 75 brand-name drugs would fall between \$17.6 billion and \$20.1 billion. Under the proposed policy, many of the drugs that were not covered in Part B would be covered in Part D. A shift from Part B drugs to the 2018 standard Part D benefit was projected to reduce out-of-pocket costs by a median of \$860 for beneficiaries that did not have the Part B supplemental insurance or Medicaid.

Strengths/Limitations: Limitations include not accounting for possible effects of the proposed reform on insurance premiums or drug use. Along with this, the study did not consider beneficiaries that have eligibility for both Medicare and Medicaid.

Generalizability to Medicare Population: Strong; the study addresses Medicare Parts B and D.

Methods: Data analysis of Part B drug utilization, patient cost-sharing, and total spending which cover FFS claims. A comparison of 2018 estimated annual drug costs in Part B and Part D and threshold analysis of patient out-of-pocket costs in Part B and Part D.

Jacobson G, Rae M, Neuman T, Orgera K, Boccuti C. Medicare Advantage: How Robust Are Plans' Physician Networks? KFF. October 5, 2017. <https://www.kff.org/medicare/report/medicare-advantage-how-robust-are-plans-physician-networks/>

Subtopic(s): Framework for Care Delivery Structures in TCOC Models

Type of Source: Report

Objective: To examine the size and composition of physician networks associated with different Medicare Advantage (MA) plans.

Main Findings: Approximately one third of all Medicare beneficiaries are in MA plans. About 35 percent of MA enrollees were in plans with a narrow physician network whereas about 22 percent of enrollees were in broad-network plans, which tended to have higher premiums. On average, MA plans included less than half of all physicians in a given county. Access to psychiatrists was often the most restricted.

Strengths/Limitations: The analysis was limited to 20 counties, which accounted for about 15 percent of all MA enrollees in 2015. However, the counties selected span diverse geographic settings and per capita Medicare spending.

Generalizability to Medicare Population: Strong; addresses Medicare Advantage.

Methods: Used MA plan provider directories and a national census of physicians to assess the portion of physicians in a particular county that participated in an MA plan. Counties were then categorized into broad (70 percent or more of the physicians), medium (30-69 percent of the physicians), or narrow (less than 30 percent of the physicians).

Jain G, Weiner DE. Value-Based Care in Nephrology: the Kidney Care Choices Model and Other Reforms. American Society of Nephrology. <https://kidney360.asnjournals.org/content/2/10/1677>. Published October 28, 2021.

Subtopic(s): Care Delivery Model Innovations

Type of Source: Blog post

Objective: To develop educational materials for clinicians and patients, and to discuss the reforms, potential challenges, and possible solutions in regard to the Kidney Care Choices (KCC) Model.

Main Findings: The Kidney Care Model aims to provide patients with the knowledge and tools necessary to help combat kidney failure. The model also has a focus on slowing the progression of CKD and helps patients find kidney failure treatment modalities. Since the KCC model is

designed to be a nephrology clinician focused program, the measures enacted within the model are aimed at improving outcomes for patients with advanced kidney disease.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; Medicare beneficiaries with CKD are eligible for inclusion in the model.

Methods: N/A

JEN Associates, Inc. Massachusetts PACE Evaluation Nursing Facility Residency and Mortality Summary Report. State of Massachusetts. 2015. <https://www.mass.gov/doc/massachusetts-pace-evaluation-nursing-facility-residency-and-mortality-summary-report-112315-0/download>.

Subtopic(s): Care Delivery Model Innovations

Type of Source: Report

Objective: To evaluate the impact of the PACE in Massachusetts on nursing facility residency among participants.

Main Findings: PACE participants had a 14 percent reduction in nursing facility residency months compared to a matched control group over a five-year follow-up period. Among PACE participants who were admitted to a nursing facility, the average episode length was 20 percent shorter than the matched control.

Strengths/Limitations: The study is limited to PACE in Massachusetts, so the same conclusions may not be applicable when assessing PACE in other states.

Generalizability to Medicare Population: Strong; PACE serves many Medicare beneficiaries.

Methods: Quantitative analysis of Medicare claims, Medicaid claims, and Nursing Home Minimum Data Source records.

Jennings LA, Laffan AM, Schlissel AC, et al. Health Care Utilization and Cost Outcomes of a Comprehensive Dementia Care Program for Medicare Beneficiaries. *JAMA Intern Med.* 2019;179(2):161-166. doi:10.1001/jamainternmed.2018.5579

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To determine the health care utilization and cost outcomes of a comprehensive dementia care program for Medicare FFS beneficiaries.

Main Findings: The study observed reductions in long-term care nursing home placements among Medicare FFS beneficiaries. Effective co-management allowed the providers to evenly do their job, having primary care physicians take responsibility for the clinical treatment of dementia while nurse practitioners took care of the comprehensive care of dementia. The study suggests that it is possible to provide high-quality, cost-efficient co-management care to dementia patients in a FFS environment.

Strengths/Limitations: Limitations to the study include the fact that it was a controlled comparison at only one institution and only investigated Medicare FFS beneficiaries. Medicare Advantage beneficiaries were excluded from the study due to a lack of sufficient claims data.

Generalizability to Medicare Population: Strong; Medicare FFS beneficiaries were a focus of the study.

Methods: Case-control study with the use of a quasi-experimental design to compare health care utilization and costs.

Joynt Maddox K, Bleser WK, Crook HL, et al. Advancing Value-Based Models for Heart Failure. *Circ Cardiovasc Qual Outcomes*. 2020;13(5):e006483. doi:10.1161/CIRCOUTCOMES.120.006483

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To describe the efforts and vision of the multi-stakeholder Value-Based Models Learning Collaborative of the Value in Healthcare Initiative and provide insight into the framework developed for a heart failure value-based payment model with a longitudinal focus on disease management and prevention.

Main Findings: There are many gaps that need to be addressed for patients with heart failure given the limitations provided in current value-based payment models. Current models tend to be based on short-term episodes and focus on acute events or procedures. Following a conceptual framework for a payment model will help the stage C heart failure population. More needs to be done for a value-based model that is specific to heart failure treatment—potential next steps could include building more appropriate infrastructure and having a more adequate workforce.

Strengths/Limitations: This is one of the first frameworks that directly addresses the heart failure population and could serve as a steppingstone to building out models that are more specific and can be properly applied to address their needs. Limitations to this are that physicians are not always well positioned to use the coding system and would benefit from more training. Addressing these limitations could lead to more accurate coding.

Generalizability to Medicare Population: Strong; the models pertain to Medicare beneficiaries.

Methods: Literature Review of both peer-reviewed and gray literature as well as a series of interviews and in-person meetings.

Korenda L, Thomas S. Integrating Specialty Care Into Accountable Care Organizations: Perspectives From The Field. *Health Affairs Blog*. January 19, 2016. DOI: 10.1377/hblog20160119.052680

Subtopic(s): Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability

Type of Source: Blog post

Objective: To understand the challenges and opportunities of integrating specialists by interviewing health care leaders who currently work in value-based organizations.

Main Findings: Health care leaders have developed strategies to help primary care physicians’ direct patients to specialists by providing practice patterns that are easier to follow. A lack of incentives for specialists has resulted in them not actively searching for ways to reduce costs or develop care models that help address these issues. The article also highlights the importance of engaging primary care physicians in the process redesign as well as using data to help implement data driven results.

Strengths/Limitations: There is limitations in the number of respondents interviewed as the sample size may be too small and not truly representative of the varying levels of health organizations.

Generalizability to Medicare Population: Strong; the article addresses concerns surrounding physician participation in ACOs, which is a key question for model overlap in Medicare.

Methods: Qualitative interviews with subject matter experts and stakeholders.

Kruse CS, Marquez G, Nelson D, Palomares O. The Use of Health Information Exchange to Augment Patient Handoff in Long-Term Care: A Systematic Review. *Appl Clin Inform.* 2018;09(04):752-771. doi:10.1055/s-0038-1670651

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To provide a framework for future research by identifying themes in the long-term care information technology sector that could function to enable the adoption and use of HIE mechanisms for patient handoff between long-term care facilities and other levels of care to increase communication between providers, shorten length of stay, reduce 60-day readmissions, and increase patient safety.

Main Findings: Barriers to the adoption of HIE mechanisms include organizational structure/culture and workflow integration/augmentation. Along with this, barriers for the implementation of HIE mechanisms were market conditions, inefficiency, and missing or incomplete data.

Strengths/Limitations: Limitations to the study include the literature being reviewed had potential bias, barriers, and a limited number of articles being reviewed.

Generalizability to Medicare Population: Moderate; Medicare beneficiaries are not directly addressed but the utilization of these health information technology mechanisms can be applicable.

Methods: Systematic review.

L&M Policy Research. Evaluation of CMMI Accountable Care Organization Initiatives. 2016.

<https://innovation.cms.gov/files/reports/pioneeraco-finalevalrpt.pdf>. Accessed 26 April 2022.

Subtopic(s): Framework for Delivery Structures in TCOC Models

Type of Source: Report

Objective: To evaluate the effects of the Pioneer ACO model on Medicare spending, utilization, and quality.

Main Findings: Overall spending performance reductions were mainly due to utilization reduction efforts within inpatient settings. There were major savings within the two performance years observed. Ten ACOs saw significant savings in both performance years. Another ten ACOs saw significant savings in only one of the two years. Twelve ACOs had little to no savings or losses. Features of the Pioneer ACO Model such as hospital relationships do not seem to be affecting ACO spending performance within the two performance years observed.

Strengths/Limitations: A key limitation is not controlling for Medicare price differences among providers. Additionally, the time-varying characteristics used to control for selection do not account for all relevant factors.

Generalizability to Medicare Population: High; Medicare beneficiaries are directly impacted by the model.

Methods: The evaluation uses a difference-in-differences design.

Lanham HJ, Leykum LK, McDaniel RR Jr. Same organization, same EHRs system, different use: exploring the linkage between practice member communication patterns and EHR use patterns in an ambulatory care setting. *J Am Med Inform Assoc.* 2012;19(3):382-391. doi:10.1136/amiajnl-2011-000263.

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To explore the linkage between within-practice communication patterns and practice-level EHR use patterns.

Main Findings: In practices with fragmented communication patterns, EHR use was heterogeneous, whereas in practices with cohesive communication patterns, EHR use was

homogenous. Practices that achieved standardized EHR use exhibited high levels of mindfulness and respectful interaction.

Strengths/Limitations: The study was conducted over a small number of clinical sites within a single organization. It is also cross-sectional, which prevents making claims about directionality or causality.

Generalizability to Medicare Population: Moderate; the study is not specific to Medicare, but the clinics included have large Medicare patient populations.

Methods: Semi-structured interviews and direct observation.

Lawrence E, Casler JJ, Jones J, et al. Variability in skilled nursing facility screening and admission processes: implications for value-based purchasing. *Health Care Manage Rev.* 2020;45(4):353-363. doi:10.1097/HMR.0000000000000225.

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To understand how SNF clinicians evaluate hospitalized older adults and make decisions to admit patients to a SNF, and the limitations and benefits of current practices in the context of value-based payment reforms.

Main Findings: Variability in SNF screening and admission processes were influenced by three key external pressures: 1) inconsistent and inadequate transfer of medical documentation, 2) a lack of understanding among hospital staff of SNF processes and capabilities, and 3) payment models that encourage hospitals to discharge patients rapidly.

Strengths/Limitations: The SNFs included in the study are located in a single metropolitan area. The results are also based only on the description provided by SNF staff, not direct observations.

Generalizability to Medicare Population: Weak; the study is not specific to Medicare patients.

Methods: Semi-structured interviews with SNF staff.

Leavitt MO. Interim Report to Congress: The Quality and Cost of the Program of All-Inclusive Care for the Elderly (PACE). United States Department of Health and Human Services. 2009.

<https://www.cms.gov/Medicare/Health-Plans/PACE/Downloads/Report-to-Congress.pdf>.

Subtopic(s): Care Delivery Model Innovations

Type of Source: Report

Objective: To update Congress on the impact of the PACE program on the quality and cost of health services.

Main Findings: PACE enrollees demonstrated better health management outcomes, were more likely to take preventive health measures (e.g., influenza vaccination), and higher levels of self-reported health status compared to a matched control group.

Strengths/Limitations: The report does not include information on methodology.

Generalizability to Medicare Population: Strong; PACE serves many Medicare beneficiaries.

Methods: N/A

Lewin Group. Comprehensive End-Stage Renal Disease Care (CEC) Model: Performance Year 3 Annual Evaluation Report. 2020. <https://innovation.cms.gov/data-and-reports/2020/cec-annrpt-py3>. Accessed April 2022.

Subtopic(s): Framework for Delivery Structures in TCOC Models

Type of Source: Report

Objective: To provide findings on the impact of the CEC Model during the first three performance years.

Main Findings: The CEC Model showed promising results during the first three performance years, however, much of the change was driven by PY1 and PY2. Researchers noted improvements on some quality and health care utilization measures, and a decrease in total Medicare Parts A and B payments. Total dialysis payments and office visit payments increased significantly.

Strengths/Limitations: The evaluation draws on both quantitative and qualitative methods and effectively synthesizes findings from these different methods. Additionally, the model uses a difference-in-differences design, which is an effective model for assessing causal relationships between the model and observed outcomes. Given that the report only captures PY1 through PY3, some long-term model outcomes may not be reported.

Generalizability to Medicare Population: Strong; the CEC Model is specific to Medicare.

Methods: Mixed methods; the report includes data from interviews with ESRD Seamless Care Organizations (ESCOs), difference-in-difference analyses, and beneficiary focus groups.

Lewin Group. Comprehensive End-Stage Renal Disease Care (CEC) Model: Fifth Annual Evaluation Report. 2022. Accessed 25 April 2022. <https://innovation.cms.gov/data-and-reports/2022/cec-annrpt-py5>.

Subtopic(s): Care Delivery Model Innovations; Performance Metrics and Model Evaluation

Type of Source: Report

Objective: To deliver performance results from the CEC Model for October 2015 through March 2021.

Main Findings: The CEC Model demonstrated modest, though statistically significant results over the five performance years. Programmatic effects were larger during the first two performance years as well as for ESRD Seamless Care Organizations (ESCOs) that joined during the first performance year (wave one). For instance, total payments decreased by \$143 per beneficiary per month (PBPM) in PY1 whereas PY5 saw a reduction of only \$78 PBPM for all ESCOs. The Model generated an estimated \$217 million in savings for total Medicare Part A and B payments, which was largely due to reduced hospitalizations and readmissions. Primary care-based ACOs did not experience improved outcomes or reduced payments for ESRD beneficiaries.

Strengths/Limitations: The evaluation's quantitative analysis uses a matched difference-in-differences design, which is an effective method for assessing causal relationships between the model and observed outcomes. This was a voluntary model, meaning that the study results may not be generalizable to all Medicare dialysis providers or beneficiaries.

Generalizability to Medicare Population: Strong; the CEC Model is specific to Medicare.

Methods: Mixed methods; the report includes data from interviews with ESRD Seamless Care Organizations (ESCOs), difference-in-difference analyses, and beneficiary focus groups.

Liao, JM, Dykstra SE, Werner RM, et al. BPCI Advanced Will Further Emphasize The Need To Address Overlap Between Bundled Payments And Accountable Care Organizations. Health Affairs Forefront. Published April 17, 2018. Accessed December 2021.

<https://www.healthaffairs.org/doi/10.1377/forefront.20180409.159181/full/>.

Subtopic(s): Defining "Accountable Care Relationship" and Approaches for Improving Provider Accountability

Type of Source: Blog post

Objective: To understand how the Bundled Payments for Care Improvement Advanced (BPCI Advanced) program interacts with ACO programs such as the MSSP.

Main Findings: The authors argue that Medicare could manage overlap and interactions between MSSP and BPCI Advanced—along with any potential unintended consequences of this overlap – by not collecting payments or “financial recoupment” from the BPCI Advanced provider. The recoupment may allow BPCI Advanced providers to believe that they would lose money from participating in MSSP. The authors concluded that further analysis is needed to understand the benefits and costs associated with bundled payment and ACO overlap.

Strengths/Limitations: The authors do not cite the data or methodologies for the exhibit or research presented in the brief, and therefore methodologies cannot be replicated.

Generalizability to Medicare Population: Strong; the blog focuses on Medicare programs.

Methods: N/A

Liao JM, Pauly MV, Navathe AS. When Should Medicare Mandate Participation In Alternative Payment Models?. *Health Affairs*. 2020;39(2). <https://doi.org/10.1377/hlthaff.2019.00570>.

Subtopic(s): Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability

Type of Source: Blog post

Objective: To compare the advantages and disadvantages of compulsory and voluntary participation, based on clinical versus policy perspectives, and to propose ways to organize mandatory and voluntary APMs based on different clinical settings.

Main Findings: Authors find that both mandatory and voluntary modes are necessary for APMs to achieve the goal of improving value. Mandatory participation helps produce rigorous APM evaluations, while the voluntary component would promote participation among providers ready to assume accountability for quality and cost outcomes.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; the article reviews Medicare policies.

Methods: N/A

Lin SC, Yan PL, Moloci NM, et al. Out-of-Network Primary Care, not Specialty Care, is Associated with Higher Per Beneficiary Spending in Medicare ACOs. *Health Affairs*. 2020;39(2):310–318.

Subtopic(s): Framework for Delivery Structures in TCOC Models

Type of Source: Journal article

Objective: To determine whether the inability of ACOs to prohibit out-of-network care limit spending control by examining the association between out-of-network care and per beneficiary spending using national Medicare data from 2012 through 2015.

Main Findings: There was no association between out-of-network specialty care and ACO spending; however, each percentage-point increase in receipt of out-of-network primary care was associated with an increase of \$10.79 in quarterly total ACO spending per beneficiary. This out-of-network primary care was associated with higher spending in outpatient, SNF, and emergency department settings, but not inpatient settings.

Strengths/Limitations: The study included only MSSP ACOs, so it may not be representative of commercial, Next Generation (NGACO), or ESRD ACOs. It also did not evaluate the associations between out-of-network care and other ACO performance measures.

Generalizability to Medicare Population: Strong; the study uses national data for a random 20 percent sample of Medicare beneficiaries.

Methods: Claims analysis; the authors used claims data and measured per beneficiary spending by summing all price-standardized and inflation-adjusted payments from Medicare Parts A and B claims at the quarter level.

McIlvannan CK, Eapen ZJ, Allen LA. Hospital Readmissions Reduction Program. *Circulation*. 2015;131(20):1796-1803. doi:10.1161/CIRCULATIONAHA.114.010270

Subtopic(s): Performance Metrics and Model Evaluation
Type of Source: Journal article
Objective: To discuss the Hospital Readmissions Reduction Program (HRRP) implementation, the penalties it levied, the impact it had on transitional care and readmissions, and its future.
Main Findings: Early data from 2007 through 2013 demonstrate reduced hospital readmissions for Medicare beneficiaries, suggesting that HRRP may be reducing readmissions. The pros of HRRP identified by the authors include: a focus on care coordination across silos of care, an emphasis on patient outcomes, incentives based on all-cause (versus disease-specific) readmissions, and a shift away from FFS. The cons of HRRP identified include: the potential to disproportionately penalize hospitals for serving indigent populations, avoiding necessary readmissions and increasing mortality, concerns with root cause attribution, the use of an arbitrary time window, and the potential to overlook the impact of hospitalization.
Strengths/Limitations: The article does not provide a description of the inclusion and exclusion criteria for the literature evaluated. The authors do provide detailed descriptions of each pro and con of HRRP that they identified.
Generalizability to Medicare Population: Strong; HRRP was created to provide direct financial incentive to hospitals participating the Medicare Inpatient Prospective Payment System (IPPS).
Methods: Literature review.

McWilliams JM, Chen A, Chernew ME. From vision to design in advancing Medicare payment reform: A Blueprint for Population-Based Payments. Brookings. Published October 13, 2021. Accessed April 12, 2022. <https://www.brookings.edu/research/from-vision-to-design-in-advancing-medicare-payment-reform-a-blueprint-for-population-based-payments/>

Subtopic(s): Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability
Type of Source: White paper
Objective: To provide a sketch of a multi-track population-based payment model designed to serve as a “foundational piece” of a future Medicare alternative payment system. The authors also acknowledge the complementary role of episode-based payment models and provide general considerations for these models.
Main Findings: The authors propose four tracks for a population-based model. These range from primary care spending only, to total Medicare Parts A and B spending in the risk contract. They also range between 50-100 percent of upside and 10-100 percent of downside risk sharing.
Strengths/Limitations: The authors only provide general considerations for complementary episode-based models and do not discuss the methods for integrating these models within the proposed population-based model.
Generalizability to Medicare Population: Strong; the multi-track model proposal is for Medicare beneficiaries.
Methods: N/A

Mechanic RE. When New Medicare Payment Systems Collide. *N Engl J Med*. 2016;374(18):1706-1709. doi:10.1056/NEJMp1601464

Subtopic(s): Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability
Type of Source: Journal article
Objective: To discuss the proliferation of APMs and the challenge that this presents for patient care, evaluations, and financial incentives for providers.

Main Findings: The continued expansion and proliferation of CMS payment models creates numerous conflicts. One common example is the interaction of ACOs and bundled payment models. According to the article, bundle providers maintain accountability for the episode of an ACO-attributed patient, creating the need for year-end financial reconciliations when calculating ACO global budgets.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; the article focuses the discussion on Medicare APMs.

Methods: N/A

Medicare Shared Savings Program: Skilled Nursing Facility 3-Day Rule Waiver Guidance, Version #9. Published May 2021. Accessed May 2022. <https://www.cms.gov/medicare/medicare-fee-for-service-payment/sharedsavingsprogram/downloads/snf-waiver-guidance.pdf>

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: CMS Guidance

Objective: To outline waiver policies for the SNF 3-Day Rule under the MSSP.

Main Findings: The SNF 3-Day Rule Waiver permits eligible beneficiaries to receive Medicare-covered, post-hospital, extended care services without having to fulfill the requirement of a 3-day inpatient hospital stay preceding entry to the SNF. The waiver, however, is limited to ACOs participating in the Shared Savings Program and that currently participate in, or are in the process of applying to, certain Shared Savings Program performance-based risk tracks.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; the document focuses on policies specific to the MSSP.

Methods: N/A

Minemyer P. Kaiser Permanente just invested in a housing complex – Here’s what it’s doing with it. Fierce Healthcare. June 16, 2019. Accessed May 5, 2022. <https://www.fiercehealthcare.com/hospitals-health-systems/kaiser-permanente-aims-to-address-homelessness-by-investing-affordable>.

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: News article

Objective: To report on Kaiser Permanente’s efforts to address housing insecurity and homelessness.

Main Findings: In May 2019, Kaiser Permanente announced that it would invest \$200 million to addressing housing insecurity and homelessness. One of Kaiser’s first contributions was the purchase of an affordable housing complex in Oakland, California. The purchase was made in partnership with two community-based organizations: Enterprise Community Partners and the East Bay Asian Local Development Corporation. The goal of the investment is to maintain affordability despite growing gentrification in the area in order to avoid the displacement of the current residents. In addition to the housing complex purchase, Kaiser also announced that it is “adopting” 500 individuals experiencing homelessness in Oakland with the goal of housing older patients with chronic conditions.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; Kaiser’s moves to address housing insecurity and homelessness may serve Medicare-aged patients.

Methods: N/A

Mostashari F, Sanghavi D, McClellan M. Health Reform and Physician-Led Accountable Care: The Paradox of Primary Care Physician Leadership. *JAMA*. 2014;311(18):1855-1856. doi:10.1001/jama.2014.4086

Subtopic(s): Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability

Type of Source: Journal article

Objective: To discuss the role that primary care physicians can play in the leadership of ACOs and to discuss relevant concerns about their development and implementation.

Main Findings: Physician-led ACOs have had some encouraging results and could play an important role in reducing health care costs. Physician-led ACOs have clearer benefits for reducing costs than hospital-based ACOs and can help limit waste and inefficiency by coordinating care and partnering with specialists. Efforts to expand physician-led ACOs should include increased investment in IT infrastructure, increased dissemination of lessons learned from other ACOs, multiple-payer participation, and increased patient engagement.

Strengths/Limitations: As an opinion piece, the article does not rely on peer-reviewed studies or research to ground their recommendations.

Generalizability to Medicare Population: Moderate; the article discusses issues relevant to ACOs and the MSSP.

Methods: N/A.

Mukamel DB, Weimer DL, Zwanziger J, Gorthy SFH, Mushlin AI. Quality report cards, selection of cardiac surgeons, and racial disparities: a study of the publication of the New York State Cardiac Surgery Reports. *Inq J Med Care Organ Provis Financ*. 2004;41(4):435-446. doi:10.5034/inquiryjrnI_41.4.435

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To evaluate the effectiveness of the New York State Cardiac Surgery Reports on the selection of cardiac surgeons.

Main Findings: Evidence shows that report cards can influence provider selection, and possibly have both direct and indirect effects on selection. After the publication of the report cards, surgeons with higher risk-adjusted mortality ratios (lower quality surgeons) were less likely to be selected by patients of all races and education levels, somewhat leveling the disparity in quality selection among patients. Publication of the surgeon report cards lowered the impact of implicit signals of quality, such as years of experience and cost, on patient selection, but referring physician loyalty did not change.

Strengths/Limitations: One possible limitation of the study is that surgeon selection may be done by patients, referring physicians, or jointly, so it is difficult to interpret whose decisions the report cards impact. Additionally, the results of the study cannot be generalized to other report cards.

Generalizability to Medicare Population: Strong; the report uses Medicare data.

Methods: Conditional logit models to test the effects of the New York State Cardiac Surgery Reports on surgeon choice.

Navathe AS, Dinh C, Dykstra SE, Werner RM, Liao JM. Overlap between Medicare’s voluntary bundled payment and accountable care organization programs. *J Hosp Med.* 2020;15(6):356-359. doi:10.12788/jhm.3288

Subtopic(s): Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability

Type of Source: Journal article

Objective: To define and understand the overlap between MSSP ACOs and BPCI episodes.

Main Findings: From 2013 to 2016, the overlap between MSSP ACO and BPCI patients increased. By the end of the study period, the share of ACO patients receiving care in BPCI episodes increased from 2.7 percent to 10 percent. Conversely, the percentage of patients receiving care under BPCI that were also attributed to MSSP went from 19 percent to 27 percent over the course of the study period. Overlap from the perspectives of both ACO and bundled payments varied by specific episode types.

Strengths/Limitations: The study is limited by the scope of analysis, as the study did not include bundled payment episodes assigned to physician group participants in BPCI or hospitals in mandatory joint replacement bundles under the Medicare Comprehensive Care for Joint Replacement model. Additionally, the study is descriptive and did not evaluate the impact of the overlap on clinical, quality, and cost outcomes.

Generalizability to Medicare Population: Strong; the study focuses on the Medicare population enrolled in MSSP and BPCI.

Methods: Statistical analysis of institutional Medicare data including analysis of trends and logistic regressions.

Navathe AS, Song Z, Emanuel EJ. The Next Generation of Episode-Based Payments. *JAMA.* 2017;317(23):2371–2372. doi:10.1001/jama.2017.5902

Subtopic(s): Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability

Type of Source: Journal article

Objective: To provide suggestions for the improvement of bundled payments and episodes of care in APMs.

Main Findings: The authors emphasize the importance of expanding bundled payment and recommend several key innovations for the next generation of bundled payment models, including 1) extending the duration of bundles; 2) expanding accountable entities beyond hospitals to include PCPs, outpatient health centers, and ambulatory surgery centers; and 3) integrating bundled payments with global budget models within ACOs.

Strengths/Limitations: The article is an opinion piece and does not incorporate external data analysis or research to support assertions.

Generalizability to Medicare Population: Strong; the article addresses existing Medicare APMs as well as potential modifications for improving Medicare APMs.

Methods: N/A.

NEJM Catalyst. Hospital Readmissions Reduction Program (HRRP). *NEJM Catal.* Published online April 26, 2018. Accessed April 13, 2022. <https://catalyst.nejm.org/doi/full/10.1056/CAT.18.0194>

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To discuss Medicare’s HRRP and related penalties, criticisms, and strategies to reduce readmissions.

Main Findings: Data show that the HRRP improved raw and risk-adjusted readmission rates. Criticisms of the HRRP include arguments that payment adjustments are unfair and possibly divert resources away from the neediest hospitals, and that HRRP may unintentionally discourage necessary admissions and lead to preventable deaths. The article also introduces additional strategies to reduce readmissions, including improving patient education; improving care coordination with transitional care nurses and other care coordination professionals; performing thorough medication reconciliations at admission, during stays, and at discharge; addressing SDOH; and strategically leveraging data to identify higher risk patients.

Strengths/Limitations: As a review of existing literature and information, the article helps synthesize existing information but does not contribute new research.

Generalizability to Medicare Population: Strong; the article addresses a Medicare program.

Methods: Literature review.

NORC at the University of Chicago. First Evaluation Report – Evaluation of the Vermont All-Payer Accountable Care Organization. August 2021. <https://innovation.cms.gov/data-and-reports/2021/vtapm-1st-eval-full-report>

Subtopic(s): Framework for Delivery Structures in TCOC Models

Type of Source: Report

Objective: To describe the evaluation approach and early outcomes of the Vermont All-Payer ACOs Model (VTAPM).

Main Findings: The VTAPM did not meet specified all-payer and Medicare-specific scale targets during PY1 (2018) and PY2 (2019). The model generated significant gross savings, driven mostly by large reductions in PY2. Hospital-based utilization and emergency visits decreased in PY2.

Strengths/Limitations: Insufficient post-implementation data and lags in data availability limit the ability to detect any short-term, statewide impacts. The report has only limited findings on the provider perspective.

Generalizability to Medicare Population: Strong; data focused on Medicare FFS population.

Methods: Mixed methods design, including difference-in-differences analyses, systematic document review, and semi-structured interviews.

NORC at the University of Chicago. Fourth Evaluation Report: Next Generation Accountable Care Organization Model Evaluation. NORC at the University of Chicago. 2021. <https://innovation.cms.gov/data-and-reports/2021/nextgenaco-fourthevalrpt>

Subtopic(s): Framework for Delivery Structures in TCOC Models; Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability; Performance Metrics and Model Evaluation

Type of Source: Report

Objective: To evaluate the NGACO model through performance year four (end of 2019).

Main Findings: As of the fourth performance year, the NGACO model was associated with \$667 million in gross savings in Medicare Parts A and B spending. However, after accounting for \$909 million in shared savings and other payments to model ACOs, the model was found to be associated with \$243 million in net losses. NGACOs in markets with higher per capita Medicare Parts A and B expenditures generated more significant reductions, on average. Physician practice-affiliated NGACOs reduced acute care spending, though did not reduce spending associated with professional services. NGACOs affiliated with hospitals or integrated delivery systems (IDS), however, reduced spending for professional services.

Strengths/Limitations: The evaluation draws on both quantitative (e.g., diff-in-diffs models) and qualitative methods and effectively synthesizes findings from these different methods.

However, the evaluation fails to explore model implementation approaches and highlights the challenge of being able to isolate the relative importance of the various factors identified as being associated with spending.

Generalizability to Medicare Population: Strong; NGACO is a Medicare model.

Methods: The evaluation employed a range of quantitative and qualitative methods, including regression modeling such as difference-in-differences modeling to assess causal effects of the model, qualitative comparative analysis to examine NGACO's contextual and structural pathways to reduce Medicare spending, and interviews with ACO leaders.

NORC at the University of Chicago. Third Evaluation Report: Next Generation Accountable Care Organization Model Evaluation. NORC at the University of Chicago; 2020:137.

<https://innovation.cms.gov/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport>

Subtopic(s): Framework for Delivery Structures in TCOC Models

Type of Source: Report

Objective: To evaluate the NGACO model through PY3 (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 greatest reduction in gross spending. In its first year, the 2018 cohort had statistically significant reductions in gross spending. With respect to spending in PY3 specifically, NGACOs decreased gross spending but did not reduce net spending. Additionally, the effect size of the model-wide reduction in gross spending in PY3 was larger than the gross spending reduction in PY2. Regarding utilization, there were no observed model-wide reductions in acute care hospital spending, though there was a 12 percent increase in annual wellness visits across NGACOs. There were no significant changes in quality of care measures detected in PY3 or cumulatively.

Strengths/Limitations: The evaluation draws on both quantitative and qualitative methods and effectively synthesizes findings from these different methods. Additionally, the model employs a difference-in-differences design, which is an effective model for assessing causal relationships between the model and observed outcomes.

Generalizability to Medicare Population: Strong; NGACO is a Medicare model.

Methods: The evaluation used both quantitative and qualitative methods, including regression modeling such as difference-in-differences modeling to assess causal effects of the model, qualitative comparative analysis to examine NGACOs' contextual and structural pathways to reduce Medicare spending, interviews with ACO leaders, and surveys with NGACO leadership and affiliated physicians.

The Oregon Health Authority. Oregon Health Authority: Coordinated Care: the Oregon Difference: Health Policy and Analytics: State of Oregon. Accessed May 5, 2022.

<https://www.oregon.gov/oha/HPA/Pages/CCOs-Oregon.aspx>

Subtopic(s): Care Delivery Model Innovations

Type of Source: Program overview

Objective: To provide information on coordinated care in Oregon's Medicaid program.

Main Findings: Oregon has prioritized coordinated, integrated care for their Medicaid beneficiaries and state employees. Coordinated care is implemented through coordinated care organizations, which effectively operate like ACOs and also tend to provide behavioral health care.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; the coordinated care model serves dual-eligible beneficiaries. Additionally, these approaches may be transferable to implementation in Medicare.

Methods: N/A

Our model: Integrated care and coverage enable high-quality, connected, expert care. Kaiser Permanente. Accessed May 5, 2022. <https://about.kaiserpermanente.org/our-story/news/public-policy-perspectives/integrated-care>

Subtopic(s): Care Delivery Model Innovations

Type of Source: Webpage

Objective: To outline the Kaiser Permanente health care model.

Main Findings: Kaiser Permanente serves over 12.6 million people across eight states and the District of Columbia. Kaiser offers an integrated, accountable care model.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; although available to several patient populations, Kaiser offers care to Medicare patients.

Methods: N/A

Patient Reported Outcome Measures: Supplemental Material to the CMS MMS Blueprint. The Center for Medicare and Medicaid Services. September 2021. Accessed May 5, 2022. <https://www.cms.gov/files/document/blueprint-patient-reported-outcome-measures.pdf>.

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: CMS Guidance

Objective: To provide information about patient-reported outcome measures (PROMs).

Main Findings: PROMs are quality measures that capture outcomes reported by patients and have been identified by CMS as a high priority. To gather PROMs, it is important to have an engaged patient population capable of providing patient-centered feedback.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; the measure design challenges and guidance outlined apply directly to the use and implementation of PROMs for Medicare patients.

Methods: N/A

Perloff J, Sobul S. Use of Electronic Health Record Systems in Accountable Care Organizations. *Am J Manag Care*. 2022;28(1):e31-e34. doi:10.37765/ajmc.2022.88818

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To understand how ACOs use EHR data for quality.

Main Findings: The majority (77 percent) of ACOs use six or more EHR systems, and only 9 percent of ACOs use a single EHR system. Larger ACOs are more likely to have multiple EHR systems, and, as the number of EHR systems in use increases, ACOs are less likely to have EHR integration and aggregation software and are more likely to report concerns with the viability and accuracy of EHR-based quality measures. ACOs with only one EHR have the fewest concerns about moving to EHR-based quality measures.

Strengths/Limitations: The study relied on a more limited population of ACOs, with respondents more likely to be larger MSSP ACOs, which may experience different integration challenges than smaller ACOs. Additionally, it is possible that the integration issues described may be due to other confounding factors, such as size and complexity of ACO, rather than by the increased numbers of EHRs in use.

Generalizability to Medicare Population: Strong; the study focuses on MSSP ACOs.

Methods: Cross-sectional study data gathered from surveys of MSSP ACOs.

Physician-Focused Payment Model Technical Advisory Committee (PTAC). LOI: Environmental Scan and Relevant Literature: Additional Information Analyses. 2017.

<https://aspe.hhs.gov/sites/default/files/private/pdf/255906/RPAAdditionalInfoAnalyses.pdf>

Subtopic(s): Care Delivery Model Innovations

Type of Source: Report

Objective: To summarize the findings and literature surrounding the ESRD and CKD patients.

Main Findings: The report represents findings from over 13 pieces of literature regarding health outcomes of ESRD or CKD patients in different payment models. One finding reported that earlier screening may help reduce the number of patients with diabetes progress to ESRD.

Strengths/Limitations: The environmental scan also includes an interview component.

Generalizability to Medicare Population: High; the report is centered around Medicare.

Methods: N/A

Physician-Focused Payment Model Technical Advisory Committee. Preliminary Review Team Report to the Physician-Focused Payment Model Technical Advisory Committee (PTAC). U.S. Department of Health and Human Services. 2017.

https://aspe.hhs.gov/sites/default/files/private/pdf/259886/RPA_PRT_Report_508.pdf

Subtopic(s): Care Delivery Model Innovations

Type of Source: Report

Objective: To review the findings of PTAC's evaluation of the Incident ESRD CEP Model submitted by the Renal Physician's Association.

Main Findings: The Preliminary Review Team (PRT) evaluated that the model proposed by the RPA has the capability to improve quality of care in ESRD/CKD patients and reduce Medicaid spending. The current ESCO model proposed by CMMI excludes most nephrology and dialysis practices due to a minimum patient requirement. The CEP model will expand the option of an APM to smaller nephrology practices. The PRT found that the shared saving methodology needs improvement to ensure smaller practices are not unfairly rewarded or penalized. The PRT found the transplant bonus component problematic.

Strengths/Limitations: N/A

Generalizability to Medicare Population: High; this is a Medicare-focused model.

Methods: N/A

Physician-Focused Payment Model Technical Advisory Committee (PTAC). Report to the Secretary. 2018.

<https://aspe.hhs.gov/sites/default/files/private/pdf/255906/PTACRecommendationsandCommentsRPA.pdf>

Subtopic(s): Care Delivery Model Innovations

Type of Source: Report to the Secretary

Objective: To inform the Secretary of PTAC's review of the RPA's CEP model.

Main Findings: Corresponding with the PRT review, PTAC believes this model holds potential to improve quality of care for ESRD patients and reduce spending. PTAC believes there should be improvements in the shared savings and quality methodology to encourage accountability.

Strengths/Limitations: N/A

Generalizability to Medicare Population: High; the report directly addresses proposed Medicare APMs.

Methods: N/A

Pilla SJ, Segal JB, Maruthur NM. Primary Care Provides the Majority of Outpatient Care for Patients with Diabetes in the US: NAMCS 2009-2015. *Journal of general internal medicine*. 2019;34(7): 1089–1091. <https://doi.org/10.1007/s11606-019-04843-9>

Subtopic(s): Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability

Type of Source: Journal article

Objective: To estimate the distribution of outpatient diabetes visits across care settings with the goal of informing the delivery of diabetes intervention resources.

Main Findings: The majority of visits for U.S. adults with diabetes (both for patients with diabetes seeking care for any condition and for diabetes patients specifically seeking care for diabetes) were in primary care offices, followed by specialist offices, hospital EDs, and hospital outpatient departments.

Strengths/Limitations: The analysis accounts for the complex survey design (e.g., including weights).

Generalizability to Medicare Population: Moderate; the study includes patients all adult patients, including those covered by Medicare.

Methods: Used 2009 – 2015 National Ambulatory Medical Care Survey to analyze mean counts of visits using survey-weighted Chi-squared tests.

Riley KE, Tsai CT, Figueroa JF, Jha AK. Managing Medicare Beneficiaries with Chronic Conditions During the COVID-19 Pandemic. *The Commonwealth Fund*. Published March 2021. Accessed May 2022. <https://www.commonwealthfund.org/publications/issue-briefs/2021/mar/managing-medicare-beneficiaries-chronic-conditions-covid>.

Subtopic(s): Framework for Delivery Structures in TCOC Models

Type of Source: Issue brief

Objective: To summarize the impact of COVID-19 on Medicare beneficiaries with chronic conditions, outline the existing policy response, and provide options for future policies to protect this population.

Main Findings: Medicare beneficiaries with chronic conditions are at high risk for having essential health services disrupted by the pandemic. Many of these individuals have already experienced substantial disruptions to disease management and reduced access to necessary care.

Strengths/Limitations: In addition to summarizing the impact of COVID-19 on Medicare beneficiaries, the authors also propose policy options to improve care for this population.

Generalizability to Medicare Population: Strong; the review is specific to Medicare beneficiaries.

Methods: Review of the literature on the impact of COVID-19 on people with chronic conditions as well as a review of policies from CMS.

Shaughnessy E, Johnson DC, Lyss A, et al. Oncology Alternative Payment Models: Lessons from Commercial Insurance. *Am J Manag Care*. 2022;28(3). Accessed April 13, 2022. <https://www.ajmc.com/view/oncology-alternative-payment-models-lessons-from-commercial-insurance>

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To share lessons learned from commercial payers and practice partners regarding the development and implementation of APMs in oncology.

Main Findings: Payers and practices working to develop oncology APMs have encountered several difficulties in the design and implementation of models. Challenges noted by the working group included 1) small numbers of episodes make it difficult to develop valid quality measures, baseline data sets, and financial risk sharing methodologies; (2) the high level of resources necessary to collect quality measures; 3) the uncertainty of returns on investment from APMs and the difficulty of achieving short-term cost reductions; and 4) the uncertainty of the value of clinical pathways in treatment. Potential good practices include 1) blending lines of business, beginning with highly targeted APMs when transitioning to two-sided risk models; 2) developing robust clinical data exchange pathways; 3) creating precise and narrow eligibility definitions; 4) allowing payers to define eligibility for episodes; and 5) considering the impacts of using delegated risk models.

Strengths/Limitations: Potential strengths include the article's source material including feedback from a multidisciplinary group of payers and partners with experience in the development of oncology-related APMs. Potential limitations include a lack of specific data sources and evaluations of APMs.

Generalizability to Medicare Population: Strong; lessons identified in the study reference current Medicare models and can also be applied to future Medicare models.

Methods: Review of practices and feedback from a multistakeholder working group.

Shetty VA, Balzer LB, Geissler KH, Chin DL. Association Between Specialist Office Visits and Health Expenditures in Accountable Care Organizations. *JAMA Network Open*. 2019;2(7):e196796. doi:10.1001/jamanetworkopen.2019.6796

Subtopic(s): Defining "Accountable Care Relationship" and Approaches for Improving Provider Accountability

Type of Source: Journal article

Objective: To examine the relationship between ACO specialist encounter proportions (i.e., the ratio of specialist office visits compared to overall office visits) and beneficiary spending.

Main Findings: The authors found that the ACOs with the highest and lowest specialist encounter proportions had the highest expenditure. ACOs with a specialist encounter proportion between 40 and 45 percent demonstrated the lowest per beneficiary spending. ACOs with the lowest specialist encounter proportion had a mean of 14.6 percent higher expenditures and ACOs with the highest specialist encounter proportion had a mean of 11.1 percent higher expenditures. At the same time, ACOs with the lowest specialist encounter proportions had higher emergency department (ED) visits, more hospital discharges, and more SNF discharges, whereas ACOs with the highest specialist encounter group had fewer ED visits, fewer hospital discharges, and fewer SNF discharges.

Strengths/Limitations: Important limitations include the following: the authors analyzed outcomes of MSSP ACOs and may not be able to generalize findings beyond MSSP ACOs; the authors were unable to distinguish office visits from ACO-affiliated and non-ACO-affiliated clinicians and were thus unable to quantify the amount of leakage that occurred; and the authors were unable to account for several possible confounders, including ownership status, market share, and rurality.

Generalizability to Medicare Population: Strong; the study focuses on ACO data from the MSSP.

Methods: Cross-sectional analysis of five years of public-use data on ACOs in the MSSP.

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.

<https://jamanetwork.com/journals/jama/article-abstract/2788255>

Subtopic(s): Defining “Accountable Care Relationship” and Approaches for Improving Provider Accountability

Type of Source: Blog post

Objective: To articulate how to better coordinate and integrate population- and episode-based APMs.

Main Findings: 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 and quality of care as well as 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

Sivashankaran S, Borsi JP, Yoho A. Have ICD-10 Coding Practices Changed Since 2015? AMIA Annu Symp Proc. 2020;2019:804-811. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7153097/>

Subtopic(s): Performance Metrics and Evaluation

Type of Source: Journal article

Objective: To assess patterns in medical coding practices following the mandatory shift to ICD-10 codes in 2015.

Main Findings: The analysis identified 11 statistically significant coding changes. These changes in coding behavior either corresponded with an increase in the use of laterally specific codes (e.g., right knee instead of knee, etc.) or an increase in granularity (e.g., mammogram for breast cancer instead of breast cancer screening, etc.).

Strengths/Limitations: The study was limited to the 20 code header groups with the largest overall patient counts. Additionally, the study attributes the observed changes in coding trends to the mandatory implementation of the ICD-10 codes, yet there may be other external factors influencing coding practices such as developments in diagnostic practices.

Generalizability to Medicare Population: Moderate; although the study is not restricted to the Medicare population, the Median age of the study cohort was 70.

Methods: Used General Equivalence Mappings to identify novel concepts in ICD-10 codes for which no ICD-9 code mapped onto. They then computationally analyzed patterns in ICD-10 code behavior over time using the R forecast package, which aims to minimize the Akaike’s Information Criterion (AIC).

Werner RM, Asch DA. The Unintended Consequences of Publicly Reporting Quality Information. *JAMA*. 2005;293(10):1239-1244. <https://pubmed.ncbi.nlm.nih.gov/15755946/>

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To assess the value of publicly reporting physician quality information on health care quality.

Main Findings: The paper highlights ways in which publicly available quality report cards may be useful for improving care quality (e.g., selection of high-quality providers by patients, referring

physicians, and purchasers). However, the article argues that despite general support for report cards, few actually use them in their decision-making. For example, some have cited concerns over risk adjustment methodologies employed by these report cards as well as the potential for providers to manipulate their ratings. The paper also mentions potential unintended consequences of the report cards, such as providers avoiding higher risk patients.

Strengths/Limitations: The article reviews a substantial body of literature, yet it does not include a methodology section outlining criteria for inclusion/exclusion in the review.

Generalizability to Medicare Population: Moderate; the article's discussion of publicly available quality report cards does not target a specific patient population.

Methods: N/A

Werner RM, Skira M, Konetzka RT. An Evaluation of Performance Thresholds in Nursing Home Pay-for-Performance. *Health Serv Res.* 2016;51(6):2282-2304. <https://pubmed.ncbi.nlm.nih.gov/26932527/>

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To evaluate the effect of performance thresholds on clinical quality performance within the context of nursing home pay-for-performance incentives.

Main Findings: The worst performing nursing homes that were farthest below the threshold demonstrated the greatest improvements as a result of threshold-based pay-for-performance. Performance actually worsened for nursing homes that were farthest above the threshold.

Strengths/Limitations: The difference-in-differences set-up allows for more robust causal claims to be made. That being said, the study period is from 2006 to 2009 and thus slightly dated.

Generalizability to Medicare Population: Strong; the study focuses on nursing homes—i.e., a patient population largely captured by Medicare.

Methods: Difference-in-differences design used to analyze changes in nursing home performance in states that introduced threshold-based pay-for-performance thresholds compared to a comparison group of states that did not implement these thresholds.

Williams AR, Nunes EV, Bisaga A, Pincus HA, Johnson KA, Campbell AN, Remien RH, Crystal S, Friedmann PD, Levin FR, Olfson M. Developing an Opioid Use Disorder Treatment Cascade: A Review of Quality Measures. Epub 2018 Jun 2. Erratum in: *J Subst Abuse Treat.* 2018 Sep;92:99.

<https://pubmed.ncbi.nlm.nih.gov/29910015/>

Subtopic(s): Performance Metrics and Model Evaluation

Type of Source: Journal article

Objective: To review existing quality measures associated with Opioid Use Disorder (OUD) treatment and to assess the utility of these measures.

Main Findings: The analysis identified seven quality measures relevant to OUD treatment, all of which were process-related measures used to evaluate service delivery. The majority of studies reviewed did not include measures applicable to OUD treatment efficacy or patient level outcomes (e.g., overdose). The paper proposes establishing a cohesive quality measurement framework for OUD treatment.

Strengths/Limitations: The review used clearly defined inclusion and exclusion criteria for determining which measures to include in the study. However, the review was limited to two quality measure sources as well as to treatment-related measures rather than prevention-related measures.

Generalizability to Medicare Population: Moderate; although the review is not specific to the Medicare population, the measures identified are applicable to all patient populations experiencing OUD, including those receiving Medicare.

Methods: Systematic search of quality measures using the National Quality Forum and the AHRQ. Measures were included in the study if they could be directly used to assess treatment of OUD and included a defined numerator and denominator. Measures were then classified as structural, process, or outcome measures.

Appendix: Additional Definitions of Accountability

The following are some examples of additional definitions of accountability from the literature.

The Agency for Healthcare Research and Quality (AHRQ) Care Coordination Measures Atlas identified establishing accountability and the negotiation of responsibility as key elements in the framework of care coordination. AHRQ defined this as a process to:

“...make clear the responsibility of participants in a patient's care for a particular aspect of that care. The accountable entity (whether a health care professional, care team, or health care organization) will be expected to answer for failures in the aspect(s) of care for which it is accountable. Specify who is primarily responsible for key care and coordination activities, the extent of that responsibility, and when that responsibility will be transferred to other care participants.”³²⁴

Similar to the AHRQ definition discussing failures in aspects of care, the literature addresses assigning accountability in situations where patients experience avoidable harm.³²⁵ Many different individuals and systems contribute to the care of patients and outcomes. In this context, accountability is important to properly distribute sanctions for patient harm fairly for patients and families, clinicians involved in care delivery, and institutions where the error occurred.³²⁶

Aledade^{ix} offers another definition of accountable care as equivalent to value-based care, describing both terms as efforts that are “designed to help practices achieve the ‘Quadruple Aim’ of health care: producing better patient experiences, improving the clinical experience for providers, and fostering improved population health across communities while reducing the nation’s high health care costs.”³²⁷

A foundational 1996 analysis explored the issue of provider accountability in health care broadly, identifying the key domains of professional competence, legal and ethical conduct, financial performance, adequacy of access, public health promotion, and community benefit.³²⁸ Professional accountability addresses the relationship between providers and patients, requiring that physicians and patients participate in shared decision-making, and requiring physicians are held accountable to professional colleagues (e.g., other providers) and to patients.

^{ix} Aledade is an organization founded in 2014 that works with independent practices, health centers, and clinics to build and lead Accountable Care Organizations (ACOs) anchored in primary care.

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