

**Environmental Scan on Care Coordination in the Context of
Alternative Payment Models (APMs) and
Physician-Focused Payment Models (PFPMs)
May 25, 2021**

This environmental scan was prepared at the request of the Office of the Assistant Secretary for Planning and Evaluation (ASPE) as background information to assist the Physician-Focused Payment Model Technical Advisory Committee (PTAC) in preparing for a theme-based discussion on the role care coordination can play in optimizing health care delivery and value-based transformation. The discussion will consider care coordination in the context of Alternative Payment Models (APMs) and physician-focused payment models (PFPMs).¹ The environmental scan is based on information that was publicly available relating to this topic in the literature and from discussions with previous PTAC proposal submitters and subject matter experts, current as of the time that the analysis was completed.

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Section I. Introduction and Purpose

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

Since its inception, PTAC has received 35 proposals for PFPMs from a diverse set of physician payment stakeholders, including professional associations, health systems, academic groups, public health agencies, and individual providers.ⁱⁱ PTAC evaluates the PFPM proposals based on the extent to which they meet the Secretary’s 10 regulatory criteria for PFPMs (specified in federal regulations at 42 CFR § 414.1465), including “Integration and Care Coordination” (which is also referred to as Criterion 7). Consistent with the definition of this criterion as established in regulation, PTAC evaluates proposals on the extent to which they “encourage greater integration and care coordination among practitioners and across settings where multiple practitioners or settings are relevant to delivering care to the population treated under the PFPM.”ⁱ

Some proposed models submitted to PTAC have identified care delivery and payment gaps in the current Medicare FFS program, including fragmented and duplicative care resulting from suboptimal care coordination. Of the 28 proposals that PTAC has deliberated and voted on during public meetings, the Committee’s rating for Criterion 7 was “Meets and Deserves Priority Consideration” for one proposed model, and “Meets” for 15 proposed models. In this environmental scan, these 16 proposed models will be referred to as proposals that were found to “Meet” Criterion 7, “Integration and Care Coordination.”ⁱⁱⁱ

PTAC has provided comments and recommendations regarding the strengths and weaknesses of the care coordination components of various proposals in the Committee’s reports to the Secretary. Additionally, stakeholders have given PTAC feedback regarding the importance of incentivizing care coordination and determining which interventions and care coordination strategies are most effective at improving patient outcomes and satisfaction while managing cost of care.^{iv}

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

ⁱⁱⁱ The Committee’s rating for Criterion 7 was “Does Not Meet” for ten proposed models, and “Not Applicable” for the remaining two proposed models.

^{iv} On June 22, 2020, the Physician-Focused Payment Model Technical Advisory Committee (PTAC) requested input from the public on information that could help inform the Committee’s review of future proposals. PTAC received seven responses, which are posted on the ASPE PTAC public-facing website:

https://aspe.hhs.gov/system/files/pdf/255731/Responses_InformingPTACsReviewofPFPMs.pdf

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

This environmental scan summarizes and analyzes information from PTAC's review of proposals from previous submitters; in addition, the environmental scan synthesizes findings from relevant literature and highlights themes from discussions with previous PTAC proposal submitters. Section II provides key highlights of the findings from the environmental scan. Section III describes the research questions and methods used in the environmental scan. The subsequent sections explore: definitions, functions, and activities related to care coordination (Section IV); trends in access, utilization, and reimbursement (Section V); care coordination in payment and care delivery models implemented by the Center for Medicare & Medicaid Innovation (CMMI) (Section VI) and in PFPs proposed to PTAC (Section VII); performance and outcome metrics (Section VIII); evidence of effectiveness of care coordination (Section IX); barriers to effective care coordination (Section X); and opportunities for improving and optimizing care coordination in APMs and PFPs (Section XI).

Section II. Key Highlights

This section summarizes findings from this environmental scan, describing opportunities to optimize care coordination in APMs and PFPs.

Definitions, Context, and Functions of Care Coordination

There is no consensus on the definition of care coordination. This environmental scan uses the following working definition from the Agency for Healthcare Research and Quality (AHRQ) as a starting point:

“Care coordination involves deliberately organizing patient care activities and sharing information among all of the participants concerned with a patient's care to achieve safer and more effective care. This means that the patient's needs and preferences are known ahead of time and communicated at the right time to the right people, and that this information is used to provide safe, appropriate, and effective care to the patient.”²

Multiple terms and definitions exist for care coordination. Related terms include coordinated care, care integration, and care management. Variation and overlap among the meaning of these terms often depend on implementing provider type, whether implementation targets certain patient populations, or both. Care coordination may focus on the full population, the needs of specific populations (e.g., those with a common condition or vulnerable groups), or a specific period of time (e.g., acute care or transition).

AHRQ's Care Coordination Measures Atlas outlines several specific functional domains that are associated with care coordination, including: establish accountability or negotiate responsibility; communicate; facilitate transitions; assess needs and goals; create a proactive plan of care; monitor,

follow up, and respond to change; support self-management goals; link to community resources; and align resources with patient and population needs. This environmental scan also identifies various activities that are associated with these functions (e.g., use of care coordinators, communication, monitoring, and self-management goals).³

Trends in Care Coordination Accessibility, Utilization, and Reimbursement

Until recently, the Medicare Physician Fee Schedule did not reimburse directly for care coordination outside of a medical encounter. In 2013, Medicare introduced codes for transitional care management (TCM) to assist patients transferring from hospital to home.⁴ The Centers for Medicare & Medicaid Services (CMS) received approximately 5.3 million TCM claims in 2018; 80 percent of these came from primary care providers (PCPs).⁵ In 2015, Medicare initiated chronic care management (CCM) codes for ongoing management of chronic conditions. Over 684,000 Medicare FFS beneficiaries received CCM services in 2015 and 2016, with the majority of patients seen by independent practitioners and PCPs.⁶ A 2018 study showed that less than 10 percent of beneficiaries had claims for TCM or CCM, the median practice provided these services to under 15 percent of their patients, and the median practice received under \$1,000 per year for these claims.⁴

States differ in their approaches to care coordination in Medicaid/Medicare programs. Medicaid has moved toward capitated payment, often with the intent of supporting care coordination. By 2019, all but four state Medicaid programs used comprehensive risk-based managed care organizations and/or primary care case management programs that pay PCPs a monthly fee.⁷ Payment models to support care coordination vary across states. Most commonly, Medicaid agencies use patient-centered medical homes (PCMH) and Health Homes. Some states also aim to improve integration of Medicare and Medicaid services for dual eligibles with initiatives offering financial support for care coordination.⁸

Care Coordination in CMMI Models

Since its inception in 2010, CMMI has designed and launched APMs with mechanisms to support care coordination in Medicare and Medicaid. Payment mechanisms include population-based and performance-based payments, one-time upfront funding, full capitation, and FFS-based payments to promote care coordination in both primary and specialty care. Care delivery models often encourage participation in Accountable Care Organizations (ACOs) to incentivize provider collaboration.

Most CMMI payment models embed care coordination. Most CMMI models and implementing entities have employed some form of care coordination that aims to reduce health care costs while improving quality of care. This environmental scan analyzed 19 CMMI models with a care coordination component that are ongoing, under development, or recently completed. Common care coordination functions and activities across the selected CMMI models have included facilitating care transitions through home visits after hospitalization and bundled payments to promote efficiency in post-acute care (PAC). In addition, many CMMI models use risk stratification to target care coordination to patients with the

greatest need.^v CMMI model participants (e.g., ACOs) also have used specific approaches for achieving accountability, negotiating responsibility, and enhancing communication across providers.

CMMI models vary in how care coordination services are reimbursed. Most of the selected CMMI models did not, or do not, include explicit or stand-alone payment mechanisms or payment incentives for care coordination specifically. Of the models that do explicitly address care coordination in their proposed payment approach, only two models that were reviewed include care management fees, and both of these focused on chronic condition management. A few models include upfront or one-time funding to enhance care coordination, while some models use FFS payments, sometimes with additional payment flexibilities. Other payment approaches include:

- Bundled payment models that reimburse all physicians involved in care coordination and integration across an episode (e.g., post-acute care) or condition.
- Per beneficiary per month (PBPM) payments intended to include care coordination among other activities; payments are quarterly in some cases.
- Performance-based payments using evaluation of care coordination and other performance metrics.
- Population-based incentive payments.

Care Coordination in PTAC Proposals

Between 2016 and 2020, PTAC received 35 distinct proposals, including 34 proposals that received any review by the Committee. The Committee deliberated and voted on 28 of these proposals in public meetings. With respect to Criterion 7, “Integration and Care Coordination” (“encourage greater integration and care coordination among practitioners and across settings where multiple practitioners or settings are relevant to delivering care to the population treated under the PFPM”), one proposal was rated as “Meets and Deserves Priority Consideration” and 15 proposals were rated as “Meets” for this criterion. These 16 proposed models (which are also referred to the proposals that were found to “Meet” Criterion 7) varied in their use of care coordination. Some focused on population-wide health management; some focused on populations with specific diseases or chronic conditions; and others focused on emergency or acute care events, hospital-at-home, or hospitalizations for medically frail patients.

The PTAC proposals specified different care coordination objectives based on stakeholder group (patients, providers, and health care systems). A central goal for most of the proposals reviewed by PTAC has been to “meet patient needs and preferences in the delivery of high-quality, high-value care.”^{vi} The proposals varied in their care coordination objectives across: (1) patient/family-focused objectives, including improving patient experience, patient engagement, and care navigation; (2) provider-focused objectives, including addressing gaps in patients’ health or social needs and, in some cases, empowering interdisciplinary care teams and team communication; and (3) health care system objectives, including

^v This document uses the present verb tense to refer to CMMI models, irrespective of their status as ongoing, under development, or recently completed.

^{vi} This is consistent with the goal of care coordination that has been identified in AHRQ’s Care Coordination Measures Atlas (2014).

goals of reducing costs, readmissions, care escalation, and complications.³ In some proposals, the health care system objectives also addressed care coordination for specialty care in underserved areas, as well as coordination between primary care and specialty care practices and across specialties. Proposed models that were found to “Meet” Criterion 7 were more likely to address health care system-related objectives regarding continuity of care compared to proposed models found to “Not Meet” Criterion 7.

Proposals that were reviewed by PTAC often sought to establish accountability or to negotiate responsibility through: use of designated interdisciplinary care teams or care coordinators; facilitation of transitions and coordination across settings via home health care, post-discharge visits, and assistance with referrals; support of communications through electronic health record (EHR) integration or specific mechanisms to notify providers upon patient hospital admission; and documentation of patient needs and goals through patient surveys and use of patient-centered care protocols. Proposed models that were found to “Meet” Criterion 7 were more likely to focus on facilitating transitions and coordinating care across settings when compared to proposed models that were found to “Not Meet” Criterion 7.

Some stakeholders who submitted the 16 PFPM proposals to PTAC that were found to “Meet” Criterion 7 highlighted barriers and promising practices for optimizing care coordination. Examples of potential barriers and promising practices that were identified include:

- Payment policy. Some of these previous proposal submitters noted that aligning financial incentives across settings, sectors, and payers is critical for effective care coordination.
- Health information technology (HIT). Some of these previous submitters noted that timely, efficient, and comprehensive data sharing is challenging, especially across different provider EHR systems.
- Equity and social determinants of health (SDOH). One of these previous submitter recommended that future APMs and PFPMs require social risk assessments and include social risk adjustment for payment.
- Lessons learned from the COVID-19 Public Health Emergency (PHE). Many of these previous submitters observed that increased telehealth utilization during the PHE proved valuable for reaching patients. Some of these previous submitters also expressed a belief that the PHE made disparities in access to coordinated care more evident.

Committee members have expressed general concerns relating to care coordination and payments for care coordination in some PTAC proposals. Previous submitters proposed a variety of payment models. Most of the proposed models did not include an explicit or stand-alone payment mechanism or incentive for care coordination. Only two proposals included care management fees; two proposals included add-on or shared savings performance payments determined by performance measures related to care coordination; and one proposal included an additional payment to support remote monitoring.

In addition to providing comments on care coordination related to specific proposals, Committee members have also identified general concerns relating to care coordination in the context of APMs and PFPMs. For example, they have noted that few proposals considered a specific payment component to address care coordination. They expressed concern regarding: the ability of models to address fragmentation of care across settings and clinician types; insufficient incentives for care continuity

between phases of care (e.g., outpatient, acute, or post-acute settings); and lack of attention to equity and patient preferences in models.

Performance and Outcome Metrics for Evaluating Care Coordination

Numerous published instruments assess care coordination structures and processes directly or assess provider or patient experiences with care coordination. In practice, stakeholders often evaluate care coordination indirectly using utilization, quality, and cost of care outcomes. A systematic review of care coordination measures conducted in 2013 studied 96 measurements that captured information across three perspectives: patient/family, health care professional, and the health care system.⁹ Some survey items assessed the effectiveness of information transfer and communication across providers, particularly from the patient perspective. Despite extensive work, evaluators encounter a number of practical challenges in isolating and measuring the effects of care coordination. Reported barriers include variation in whether and how care coordination is documented in claims and EHRs, and challenges in measuring care coordination using electronic data.

A menu of care coordination-related performance measures exists across CMMI models and PTAC proposed models. The 19 CMMI models that were reviewed in this environmental scan use a variety of performance measures to assess the impact of care coordination. Most of these measures focus on outcomes to avoid (such as hospitalizations and readmissions) rather than outcomes to be achieved with effective care coordination. Some of the CMMI models measure beneficiary and family caregiver satisfaction, while other models used practice-level process measures. Some of the proposed models reviewed by PTAC included direct process measures of care coordination (e.g., completed care plans). However, other PTAC proposals primarily included measures of cost, utilization, and quality to assess the impact of their care coordination initiatives.

Evidence of Effectiveness of Care Coordination

Mixed evidence on care coordination interventions' effectiveness on health care utilization and quality of care. Evaluations of care coordination interventions have yielded mixed results with respect to impact on avoidable health care utilization. On the one hand, the selected CMMI models that included care coordination components that were analyzed in this environmental scan have shown minimal impact on emergency department (ED) visits, hospitalizations, and readmissions.^{10,11,12,13,14,15,16,17} Two exceptions were the Community-Based Care Transitions Program (CCTP) and the Maryland All-Payer Model.^{13,18} Some studies in the literature have shown an association between certain functions of care coordination and positive utilization outcomes. These functions include targeting high-risk patients, facilitating care transitions, and coordinating primary care.^{13,19,20,21,22} The literature also suggests that APMs show promise in improving specific performance metrics when they create incentives for care coordination. At-risk compensation models have demonstrated reductions in length of stay and hospital readmissions, as well as improved patient experience in single-system settings.²³

Evidence linking care coordination to quality of care is mixed. Among selected CMMI models that included a care coordination component, Comprehensive Primary Care Plus (CPC+) model practices did not score significantly better than non-CPC+ practices on measures of care continuity, fragmentation, and comprehensiveness.¹⁶ In contrast, relative to comparisons, Multi-Payer Advanced Primary Care

Practice (MAPCP) demonstration practices showed more likelihood to improve continuity of care and scored higher for “comprehensiveness” measurements on beneficiary surveys.¹⁷

Research shows that the use of referral templates and e-consults can lead to increased clarity and completeness of referrals. PCPs perceive direct communication with specialists as preferable to relying on an EHR to coordinate care, and patients appreciate help with navigating referrals that was provided through care coordinators, often separate from the medical team.²⁴ Care coordination may improve patient health and experience with care. While evaluations of the selected CMMI models did not show improvement in these outcomes, research finds that other care coordination interventions have been effective at improving quality of care and quality of life for older patients.^{25,26}

Mixed evidence on cost-effectiveness of care coordination interventions. Effectively coordinating care, especially for high-cost patients, may present an opportunity to improve care while reducing costs. Few large rigorous studies have evaluated the cost-effectiveness of care coordination or return on investment, and existing studies have conflicting results.^{10,27,28} Evaluations of selected CMMI models found minimal Medicare net savings after accounting for shared savings and additional payments.^{12,14,16}

However, some promising findings exist related to PAC. Next Generation ACOs (NGACOs) showed reduced spending on skilled nursing facilities (SNFs) and other PAC facilities.¹² The Comprehensive Care for Joint Replacement (CJR) model realized Medicare savings, partially by reductions in institutional PAC use.¹¹ The Maryland All-Payer model showed slower growth in total expenditures than the comparison group, partially due to reduced inpatient admissions and, therefore, reduced PAC spending.¹³

Peer-reviewed research on reduced spending from care coordination relative to its cost is limited. Some research shows returns for interventions targeting high-risk beneficiaries.^{19,20} Interventions focused on care transitions also show promising results for reducing cost of care.^{18,29}

Provider- and Patient-level Barriers Hinder Effective Care Coordination.

For providers, research identified challenges related to defining staff roles, communicating across providers (including lack of EHR interoperability), and facing resource constraints that impede adoption of effective care coordination.^{12,13,16,17,18,30,31,32,33}

For patients, barriers include lack of familiarity with the role of care coordination staff; frustration navigating care across providers, particularly when providers are not adequately communicating among themselves; and lack of ability or willingness to engage in self-management of their conditions.^{30,31,34}

At the system level, the widely documented disparities in health care among racial and ethnic minorities, rural, and low-income communities extend to care coordination services.^{35,36,37,38}

Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs

Models focused on high-risk patients, robust transitional care after hospitalizations, or primary care were more likely to achieve reductions in avoidable utilization and health care expenditures compared with other models. Several specific strategies have been associated with positive impacts on quality, health, utilization, and/or cost outcomes, including:

- Frequent (at least one per month) in-person contacts between care coordinators and patients to develop trust, as well as between care coordinators and providers;
- Evidence-based education and medication self-management programs for patients;
- Registries for identifying patients for preventive services, pre-visit planning, clinician reminders, patient outreach, population health monitoring, and promoting preventive health services;
- Risk stratification to target reductions in readmissions, hospital visits, and ED visits, with a focus on transitional care for patients with chronic conditions;
- Formal care teams (e.g., PCMH) or informal care teams with a structured process for provider and patient communication and systematic monitoring of patients with chronic conditions;
- Use of social workers as members of an interdisciplinary care team, to help provide social support to address needs of patients and ensure successful transition from hospital to home;
- Effective communication and information and data-sharing between providers;
 - Telehealth and EHR interoperability to improve patient communication, follow-up, provider-to-provider communication, and data sharing;
 - Co-location of a physician with a care coordinator to improve communication;
 - Clear consult request templates to facilitate referrals to specialists or e-consultations; and
 - Use of non-physician providers and community-based organizations in care coordination to facilitate referrals and respond to social service needs.

While care coordination has been incorporated in interventions across populations, settings, and contexts, additional research is needed. To date, the evidence shows limited impact of care coordination interventions except when they target specific patients (typically those with high need) or aim to improve transitions in care. Additional research is also needed to understand costs associated with adopting care coordination, assess return on investment, and identify impactful payment approaches. Future research could potentially evaluate interventions over a longer time, focus on accountability for care coordination, address SDOH, and consider equity in access to care coordination.

Section III. Research Approach

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

III.A. Research Questions

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

- What is care coordination? How is it defined? What does it include?

^{vii} A Care Coordination Preliminary Comments Development Team (PCDT) comprised of three PTAC members (Terry [Lee] Mills, Jr., MD, MMM; Angelo Sinopoli, MD; and Luran Hardin, MSN, FAAN) also provided feedback relating to the research approach used in this environmental scan.

- What are the current trends in care coordination utilization, reimbursement, and accessibility?
- What are recommended performance and outcome metrics to measure improvements in care coordination and long-term or short-term outcomes of care coordination?
- How has care coordination been incorporated into CMMI Models?
- What are the common characteristics of the 35 previously submitted proposals, including 16 proposals that PTAC has received that were found to “Meet” or “Meet and Deserve Priority Consideration” for the “Integration and Care Coordination” Criterion?
- What is current evidence on the effectiveness of care coordination and the impact of care coordination on total cost of care?
- What are key issues or barriers found in models submitted to PTAC, CMMI models, related demonstrations, and recent literature?
- What is the current evidence regarding including those interventions that improve access, quality, and patient experience, and reduce or control cost?
- What are promising ideas for new and improved APMs or PFPMs to support appropriate care coordination that improves quality and reduces or controls cost to the Medicare FFS program?

Appendix A includes a more detailed list of research questions for each section.

III.B. Research Methods

The environmental scan presents information from a literature review, review of PTAC documents, and content analysis of discussions with previous PTAC submitters and subject matter experts (SMEs). The literature review synthesizes information from existing peer-reviewed publications and gray literature from organizations focused on health care delivery transformation. The literature review was conducted in two phases. First, Google Scholar, PubMed, and Cochrane databases were searched using search strings that began with one of the following care coordination terms:

- “care coordination”
- “coordinated care”
- “care integration”
- “care management”
- “integration and care coordination”

Appendix B provides the full list of associated search terms. The inclusion criteria focused the search on literature published between 2011 and the present, in the English language, and based in the United States. In addition to peer-reviewed publications, meta-analyses, systematic reviews, and gray literature from health care agencies and research organizations were included. The first 50 abstracts for each search string result were selected for full-text review. The literature review included a chain (or snowball) search, a method where the references within a reviewed article lead to additional related sources to expand on the topic.

In addition to the literature review, care coordination approaches were analyzed in: 1) selected models implemented by CMMI; and 2) previous PTAC proposal submissions, including 16 proposals that were found by PTAC to have “Met” or “Met and Deserved Priority Consideration” the “Integration and Care Coordination” Criterion. The analysis of previous PTAC proposals included a thorough review of past

proposals, PTAC reports to the Secretary, and content available in other PTAC process documents (e.g., public meeting minutes, Preliminary Review Team [PRT] reports).

Finally, discussions were conducted with several previous PTAC proposal submitters, as well as some SMEs. These discussions provide additional insights regarding the previous PTAC proposal submissions and provide input on promising ideas and approaches related to care coordination. A senior member of the contractor team conducted each discussion, while a junior team member took notes. The notes were thematically analyzed, and findings were incorporated into this environmental scan. Appendix C provides a list of the previous PTAC submitters and SMEs that participated in the discussions.

Section IV. Background: Care Coordination, Contexts, and Related Activities

This section discusses the definition of care coordination, the different contexts in which care coordination interventions are implemented, and common activities or functions related to care coordination.

IV.A. Defining Care Coordination

The literature defines the concept of care coordination in various ways, and there is no consensus on the definition. Definitions differ based on the care setting, providers and other stakeholders involved, and the number of staff included in care coordination efforts. AHRQ conducted a systematic review of care coordination literature in 2007 to help produce a working definition of the term. The systematic review found over 40 different operational definitions of care coordination. AHRQ synthesized these approaches to develop a working definition. This environmental scan uses a working definition drawn from AHRQ’s description of care coordination:

“Care coordination involves deliberately organizing patient care activities and sharing information among all of the participants concerned with a patient’s care to achieve safer and more effective care. This means that the patient’s needs and preferences are known ahead of time and communicated at the right time to the right people, and that this information is used to provide safe, appropriate, and effective care to the patient.”²

AHRQ has identified three perspective that are relevant for perceiving and measuring care coordination: patient/family, health care professional, and health care systems representative. Exhibit 1 outlines how AHRQ defines these three perspectives.

Exhibit 1. AHRQ’s Three Perspectives on Care Coordination

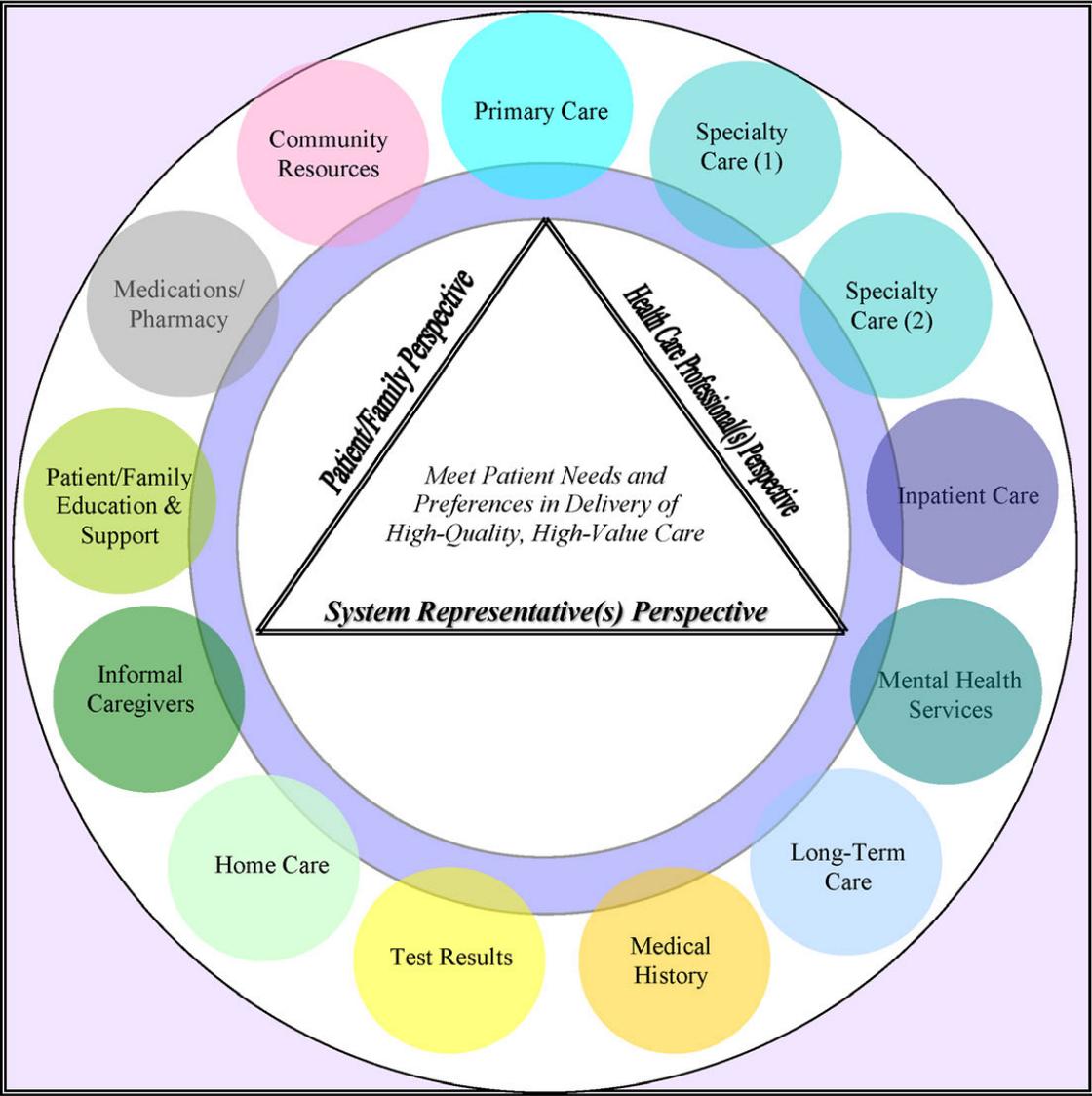
Perspective	Description
Patient/Family	Considers how the patient's needs and preferences are met related to health services and information-sharing across people, functions, and sites of care.
Health Care Professional	Considers team-based approaches to assess and meet patient needs and help them navigate through the health care system; considers where to send the patient next, what information about the patient is necessary to transfer, and how accountability and responsibility are managed among health care professionals.

Perspective	Description
Systems Representative	Considers the responsibility of any system of care to integrate information, personnel, and other resources to provide appropriate and efficient care both within and across systems.

Source: AHRQ Care Coordination Measures Atlas Update:
<https://www.ahrq.gov/ncepcr/care/coordination/atlas/chapter2.html>

AHRQ also presented a diagram of care coordination, reproduced in Exhibit 2, to illustrate the participants and functions involved in care coordination. This model shows the relationship between the goal of care coordination, which is in the center; and the three key perspectives on care coordination (which are shown in a triangle around the goal). Care coordination (depicted by the blue ring) represents the activities or approaches that improve coordination of care, while the colored circles depict the various roles, services, and information that comprise care coordination.

Exhibit 2. Care Coordination Ring, from AHRQ’s Care Coordination Measures Atlas (2014)



In addition to AHRQ's definition, the academic literature uses the term care coordination to encompass a variety of objectives. Broadly, care coordination is described as a means to achieve improved health outcomes by eliminating fragmented care or reducing care delivered in provider "silos." Care coordination may focus on transitions of care across settings, care teams, and encounters or episodes.^{2,3,39,40} Care coordination efforts often target certain utilization goals, such as a reduction in avoidable health care utilization. Such efforts generally focus on deliberate synchronization of care among all invested parties and providers to better address patient needs and provide effective care.^{41,42}

IV.B. Differences Between Care Coordination and Related Terms

In addition to the lack of consensus regarding the definition of care coordination, multiple terms are used to describe interventions related to care coordination. For example, the literature review revealed that the terms "coordinated care," "care coordination," "care integration," and "care management" are used interchangeably across many settings and models. While the definitions of these terms overlap, there are differences in how these terms are used.

- **Coordinated care** is generally viewed as the overall objective of improving health outcomes by providing high-quality care, ensuring that care from disparate providers is not delivered in silos, and eliminating redundant health care system costs.^{40,43}
- **Care coordination** is viewed as a means of achieving coordinated care focused on integrating and synchronizing care across providers, organizations, and settings.^{2,3,40,44}
- **Care integration** has been defined as the objective of achieving interdisciplinary coordination, or a specific system of policies implemented within a health system that can be categorized into specific subtypes or typologies (e.g., structural, functional, normative, interpersonal, and process).^{45,46} Care integration has also been defined as having two main components: clinical and financial integration.⁴⁷ Clinical integration includes four domains: coordination of patient services; use of protocols; individual clinician measures; and access to information. Financial integration involves financial management and planning across operational units.
- **Care management** is considered to be an overarching framework that includes care coordination work across providers, with a goal of helping patients to manage chronic conditions.⁴⁸ Care management is sometimes the name given to a program fostering engagement between patients and their support systems using a collaborative process to manage chronic conditions effectively.^{49,50}
- **Integration and Care Coordination**, the Secretary's criterion that is used for PTAC's review of proposals, is defined as "encourage greater integration and care coordination among practitioners and across settings where multiple practitioners or settings are relevant to delivering care to the population treated under the PFPM" (42 CFR 414.1465).

Appendix D includes additional information about differences in the definitions of various terms in various sources.

IV.C. Contexts in Which Care Coordination Can Occur

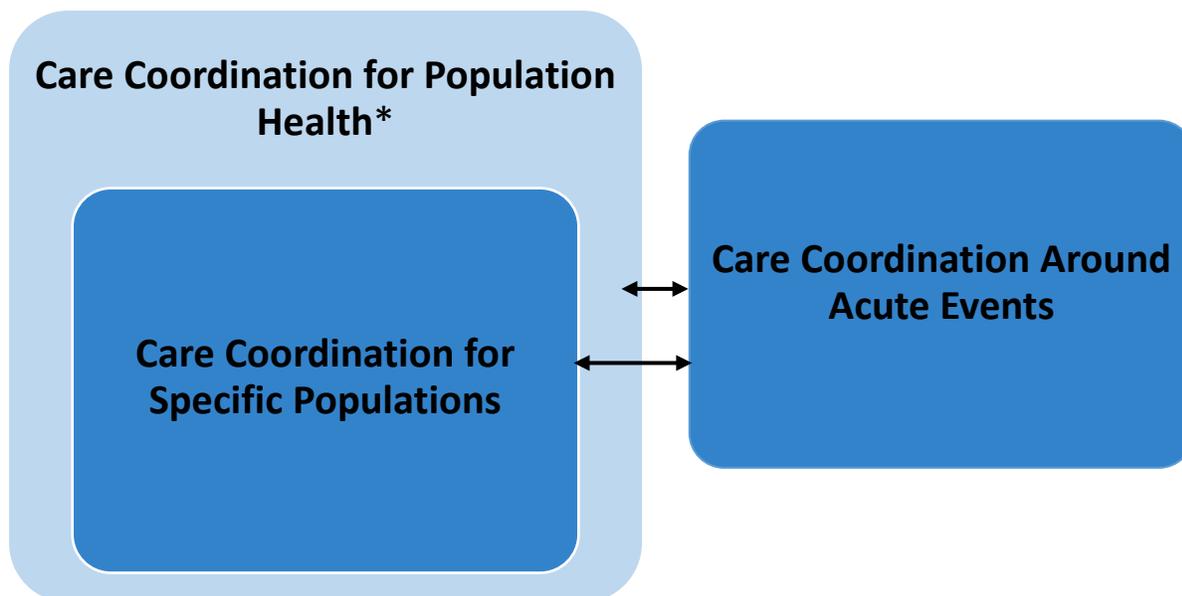
Care coordination activities have been implemented in different contexts based on both the organizations involved and the patient populations being targeted. For purposes of this environmental scan, the contexts in which care coordination activities can occur are described in three ways: care

coordination for population-wide health management, care coordination for specific populations, and care coordination around an acute care event. These categories are then used to organize a discussion of relevant CMMI models and proposed models previously submitted to PTAC.

- **Care coordination for population-wide health management** includes general care coordination for all patients regardless of need, as opposed to care coordination that is focused on patients with specific conditions. Models use care coordination designed to strengthen and streamline care for the whole population of patients associated with participating practices. This can also include coordination across sectors to address health-related social needs and SDOH.
- **Care coordination for specific populations, such as populations with chronic diseases or vulnerable populations**, focuses on patients with specific needs. In this context, care coordination typically includes performing an initial assessment, working with PCPs to develop a care plan, and coordinating needed care with other providers. These models can be based on clinical episodes of care such as chemotherapy regimens or ongoing treatment for chronic conditions such as dialysis care for patients with end-stage renal disease (ESRD). They may focus on specific vulnerable populations who might benefit from coordination between health care and social services.
- **Care coordination related to an acute care event** includes communication between providers and with patients during and after an acute care stay. It includes efforts to confirm proper transition of care after the patient is discharged. Such care coordination typically requires review of follow-up instructions with the patient's family at the time of discharge and follow-up with patients a few days after discharge to check on progress and answer questions. This care coordination step may involve ensuring that follow-up visits are scheduled, and prescriptions filled.

Exhibit 3 depicts the relationship between these care coordination contexts. As shown in the diagram, care coordination focused on specific populations is a subset of the broader context for care coordination related to population-wide health management, and patients included in either category can transition into care coordination efforts related to acute care events if they experience a hospitalization. In addition, when patients require care coordination around acute care events, they may still receive care coordination under general or population-specific programs, though the focus may temporarily shift to managing their immediate needs related to a hospitalization and PAC.

Exhibit 3. Care Coordination Contexts



* This can also include coordination across sectors to address health-related social needs and SDOH.

IV.D. Types of Patients That Can Potentially Benefit the Most from Care Coordination

Some care coordination interventions are more effective for specific types of patients over others. For example, AHRQ recommends that providers identify patients with modifiable risk factors, or patients with risk factors that the individual can control. The presence of modifiable risk factors increases the likelihood that care coordination activities can impact health care costs or utilization trends.⁴⁸ As a result, stakeholders frequently view users of health care services, including those with chronic conditions, as patients who are likely to benefit from care coordination.

Due to the variation in care coordination activities, variation in patient attributes present in a population, and limitations in measurement tools available, it is difficult to identify which care coordination activities will be particularly useful for a given patient population. Section IX provides available information about the effectiveness of various care coordination activities in meeting the objectives of value-based care for specific patient populations.

IV.E. Common Functions and Activities Related to Care Coordination

Care coordination can involve a wide range of functions depending on the needs of individual patients. AHRQ's Care Coordination Measures Atlas outlines several mechanisms, domains, and activities for achieving care coordination, including:

- Establish accountability or negotiate responsibility
- Communicate
- Facilitate transitions
- Assess needs and goals
- Create a proactive plan of care
- Monitor, follow up, and respond to change

- Support self-management goals
- Link to community resources
- Align resources with patient and population needs^{viii}

Based on this information, Exhibit 4 presents a taxonomy of functions and activities related to care coordination.³ The information in this taxonomy builds on the domains identified by AHRQ. The taxonomy includes additional activities that were identified in the literature review and the analysis of relevant CMMI models and proposed models previously submitted to PTAC, as well as input from the PCDT. Exhibit 4 lists functional domains, their definitions, and examples of care coordination activities related to each domain. These functions are used throughout the environmental scan to classify activities in relevant CMMI models and PTAC proposals, describe measures that are used to assess the effects of care coordination (using the perspectives delineated in Exhibit 1), and evaluate evidence regarding the effectiveness of care coordination.

^{viii} AHRQ's full list of care coordination functions was divided into two categories: 1) Coordination Activities (Establish Accountability or Negotiate Responsibility; Communicate; Facilitate Transitions; Assess Needs and Goals; Create a Proactive Plan of Care; Monitor, Follow Up, and Respond to Change; Support Self-Management Goals; Link to Community Resources; Align Resources with Patient and Population Needs); and 2) Broad Approaches (Teamwork Focused on Coordination, Health Care Home, Care Management, Medication Management, and Health IT-Enabled Coordination).

Exhibit 4. Taxonomy of Functions and Activities Related to Care Coordination

AHRQ Functional Domains	Summary of AHRQ Definition	Examples of Related Activities
Establish Accountability or Negotiate Responsibility	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.	<ul style="list-style-type: none"> • Use of care coordinators^a • Refinement of the roles of nurse care managers and other staff • Establishment of executive accountability and identification of the project management team
Communicate	Share knowledge among participants in a patient's care, including interpersonal communication (e.g., give-and-take of ideas, preferences, goals) or information transfer (e.g., flow of information, medical history, test results).	<ul style="list-style-type: none"> • Communication protocols between providers and care managers • Meetings to discuss solutions for managing patients • Transfer of data (orally, in writing, or via EHR)
Facilitate Transitions	Facilitate specific transitions, which occur when information about or accountability for some aspect of a patient's care is transferred between two or more health care entities or is maintained over time by one entity. Facilitation may be achieved through activities designed to ensure timely and complete transmission of information or accountability. Transitions include those of care across settings, such as transitions from the inpatient (hospital) setting to the outpatient setting, or transitions as coordination needs change.	<ul style="list-style-type: none"> • Coordinate treatment and care activities across settings, provider types, and sectors^a • Follow-up on patient hospitalizations • Comprehensive management of care setting transitions • Health care home • Behavioral health integration^a • Expanded referral networks • Palliative care integration • Medication management • Hospital-to-home • Home visits • Timely sharing of necessary information across care providers^a

AHRQ Functional Domains	Summary of AHRQ Definition	Examples of Related Activities
Assess Needs and Goals	Determine the patient's needs for care and for coordination, including physical, emotional, and psychological health; functional status; current health and health history; self-management knowledge and behaviors; current treatment recommendations, including prescribed medications; and need for support services.	<ul style="list-style-type: none"> • Psychosocial needs assessment • Enhanced behavioral health screening • Documentation of patient needs and preferences^a
Create a Proactive Plan of Care	Establish and maintain a plan of care, jointly created and managed by the patient/family and health care team, which outlines the patient's current and longstanding needs and goals for care and/or identifies coordination gaps. The plan is designed to fill gaps in coordination, establish patient goals for care, and, in some cases, set goals for the patient's providers. Ideally, the care plan anticipates routine needs and tracks current progress toward patient goals.	<ul style="list-style-type: none"> • Use of shared decision-making, as well as evidence regarding the effectiveness of care, to create a proactive plan of care that structures care to address patient needs and preferences^a • Sharing of care plans among providers
Monitor, Follow Up, and Respond to Change	Jointly with the patient/family, assess progress toward care and coordination goals. Monitor for successes and failures in care and coordination. Refine the care plan as needed to accommodate new information or circumstances and to address any failures. Provide necessary follow-up care to patients.	<ul style="list-style-type: none"> • Frequent face-to-face contact with patients to build rapport
Support Self-Management Goals	Tailor education and support to align with patients' capacity for and preferences about involvement in their own care. Education and support include information, training, or coaching provided to patients or their informal caregivers to promote patient understanding of and ability to carry out self-care tasks, including support for navigating their care transitions, self-efficacy, and behavior change.	<ul style="list-style-type: none"> • Disease management/chronic care programs • Patient activation • Patient education to promote self-management^a • Shared decision-making • Self-management programs for chronic conditions • Wellness initiative

AHRQ Functional Domains	Summary of AHRQ Definition	Examples of Related Activities
Link to Community Resources	Provide information on the availability of resources and, if necessary, coordinate services with additional resources available in the community that may help support patients' health and wellness or meet their care goals. Community resources are any service or program outside the health care system that may support a patient's health and wellness.	<ul style="list-style-type: none"> • Referrals to community service providers • Assessment of beneficiaries' health-related social needs • Creation of an inventory of resources in the community to meet health-related social needs^a
Align Resources with Patient and Population Needs	Within the health care setting, assess the needs of patients and populations and allocate health care resources according to those needs. At the population level, this includes developing system-level approaches to meet the needs of particular patient populations. At the patient level, it includes assessing the needs of individual patients to determine whether they might benefit from the system-level approach.	<ul style="list-style-type: none"> • Risk stratification • Identification of high-volume/high-cost specialists serving population • Inventory of resources and supports • “Panel management” with a focus on high-risk, high-cost patients • Provision of tools and resources to physicians to support care coordination and population management • Provision of relevant spending and utilization data to hospitals

^a Note: During a preliminary review of identified functions, the PCDT identified these activities as particularly important for optimizing patient-centered care coordination in the context of APMs and PFPs.

Sources: AHRQ Care Coordination Measures Atlas Update <https://www.ahrq.gov/ncepcr/care/coordination/atlas/chapter3.html>, and original analysis based on information from the literature review, and discussions with previous submitters and subject matter experts.

Health care systems and providers can apply any combination of these care coordination functions and activities across contexts but may prioritize based on patient needs or resource constraints. For example, some integrated delivery systems have the capacity to perform a broad range of functions and activities, while independent practices may directly perform certain functions and activities and coordinate with other entities for other functions.

Some activities are conducted differently depending on setting. Furthermore, similar activities may be conducted by staff with different credentials or named roles. For example, a “care coordinator” can be responsible for helping patients coordinate care across multiple providers or helping patients coordinate health care with social services. However, stakeholders often use terms other than “care coordinator” to describe the individual that performs this activity (e.g., care navigator, patient coordinator). Furthermore, across different interventions and settings, staff described as “care coordinators” or “care navigators” may be accountable for different functions and activities. This environmental scan focuses on specific functions and activities, acknowledging the importance of clear accountability and role definition for any given intervention, and recognizing that the title and credentials of individuals carrying out these activities will vary.

There is growing recognition of the need to understand the impact of structural determinants of health inequities within the context of care coordination, such as disparities in the funding of public services.⁵¹ As strategies to address structural inequity and other SDOH evolve, AHRQ’s taxonomy may be updated to incorporate these activities. The list of related activities identifies care coordination activities that are likely to be important in the context of value-based care. Strategies for optimizing some of these functions could also involve structural changes (such as financial management and planning across operational units); however, the environmental scan focuses on strategies for improving clinical coordination.

Section V. Trends in Care Coordination Access, Utilization, and Reimbursement

Health care policy and delivery transformation efforts across payers have emphasized care coordination. However, use of care coordination is difficult to track. Many of the functions and activities related to care coordination are not directly reimbursable or consistently documented in available data sources. This section reviews trends in reimbursement for care coordination across payers and describes examples of reimbursement and payment structures in Medicare FFS, traditional Medicaid, Medicare-Medicaid dual eligible coverage, and APMs. This section also summarizes the use of care coordination activities reflecting recent changes in payment policy that compensate providers for specific services.

Reimbursement and payment structures for care coordination activities differ based on the payer and care delivery model. It is important to note that outcomes of effective care coordination activities, such as reduced outpatient visits, can run counter to provider FFS reimbursement incentives.⁵² Upfront costs for payers or providers can also present a barrier to implementing care coordination programs.

V.A. Trends in Care Coordination in Medicare FFS

Until recently, care coordination outside of a medical encounter was not directly reimbursable under the Medicare Physician Fee Schedule. In 2013, CMS created two new billing codes (Current Procedural

Terminology [CPT] 99495 and 99496)—entitled transitional care management (TCM)—which reimburse providers for certain care coordination services provided to Medicare FFS beneficiaries.⁴ TCM codes reimburse providers for assisting patients during the transition from a hospital stay to the home.⁵² TCM codes have the following requirements: 1) communicating with the patient or caregiver within two business days of discharge; 2) making a medical decision of at least moderate complexity for CPT 99495/high complexity for CPT 99496; and 3) having a face-to-face visit within 14 days for CPT 99495/seven days for CPT 99496.⁵³ Allowable TCM activities include a post-discharge office visit and other communication activities (over phone, email, or in-person) with the patient or caregiver regarding complex medical decision discussions within two business days of discharge (or seven days for an in-person visit). Approximately 5.3 million TCM claims were submitted in 2018.⁵ PCPs submitted over 80 percent of these claims.⁵³

In 2015, CMS created the CCM code (CPT 99490) to support providers who offered CCM services to Medicare beneficiaries outside of the office setting.^{4,54} The CCM code can be used by both primary and specialty care providers offering ongoing, monthly care management to patients with chronic conditions.⁴ The CCM code has the following requirements: 1) the patient should have two or more chronic conditions expected to last 12 months or until the end of life; 2) the chronic conditions place the patient at significant risk of death, decompensation, or functional decline; and 3) a comprehensive care plan is established, implemented, revised, or monitored and accessible to the patient.⁵⁵ Research evaluating the CCM policy in its first two years of implementation was published in 2017. This analysis reported that over 684,000 Medicare FFS beneficiaries received CCM services in 2015 and 2016 combined, with the majority of patients being seen by independent practitioners and PCPs.⁶ Beneficiaries receiving CCM services had lower spending growth compared to matched beneficiaries who did not receive CCM services.⁶ The research largely attributes this lower growth to substitution of care delivery away from higher cost acute care settings to ambulatory care settings.⁶

The CCM code aims to support ongoing care management. However, research shows that 19 percent of beneficiaries with a CCM claim received only one month of billed CCM services.⁵⁵ Stakeholders noted barriers with maintaining and using the comprehensive care plan in a timely way when providers are using different EHRs. Respondents also noted limitations on who qualifies as clinical staff to bill. While medical assistants most commonly do care coordination work, the codes require that clinical staff perform the work.⁵⁵ Providers noted challenges with the upfront investments required to support the care management services (e.g., hiring necessary staff and developing comprehensive care plans). Unlike PBPM payments, providers under Medicare FFS are required to bill Medicare for each beneficiary and receive retroactive reimbursements.⁵⁴ A 2018 study on a random sample of Medicare claims revealed that less than 10 percent of beneficiaries had claims for TCM or CCM, that the median practice provided these services to under 15 percent of their patients, and that the median practice received under \$1,000 per year for these claims.⁴

CMS has developed several additional codes for care management in the past five years that cover functions of care coordination. These include Prolonged Evaluation and Management without Direct Patient Contact (CPT codes 99358 and 99359) in 2017 and Interprofessional Consultation (CPT Codes 99446-99449, 99451, and 99452) in 2019.⁵⁶ To date, there are no published reports on the uptake of these codes.

V.B. Trends in Care Coordination in Medicaid

Medicaid has long employed alternatives to traditional FFS payment structures to reimburse providers for care coordination. In 2019, all but four states had transitioned toward capitated payments for Medicaid beneficiaries through comprehensive risk-based managed care organizations (MCOs) and/or primary care case management (PCCM) programs that pay PCPs a monthly fee in addition to FFS payments to support case management.⁷ Payment models to support care coordination vary across states. For example, Arkansas developed the Provider-led Arkansas Shared Savings Entity (PASSE) program, a risk-based model that offers monthly per beneficiary capitated payments for high-need Medicaid beneficiaries with behavioral health conditions or intellectual and developmental disabilities. Under this model, Arkansas expanded the definition of care coordination, and pays for services were not eligible for payment under traditional FFS.⁵⁷

Additionally, many states use multiple initiatives to support care coordination, most commonly, PCMHs and Health Homes. At least 30 state Medicaid agencies use the PCMH model. Though payments vary across states, providers may receive a combination of PBPM payments, upfront grants to cover the initial implementation, or performance-based incentive payments to support care coordination.⁷ Additionally, under the Affordable Care Act (ACA), CMS implemented “Health Homes for Enrollees with Chronic Conditions.” This provision granted states flexibility to implement payment mechanisms that support care coordination for Medicaid enrollees with two or more physical or mental health conditions.⁵⁸ For example, Maryland’s Behavioral Health Home (BHH) model provides PBPM payments to community mental health programs to promote care coordination.⁵⁹ To address coordination between behavioral health and primary care, Vermont’s Medicaid Health Home program offers reimbursement to substance use treatment programs implementing Health Homes (considered hubs) and other providers such as a PCP team (considered spokes).⁶⁰

V.C. Trends in Care Coordination for Medicare-Medicaid Dual Eligibles

States also have the opportunity to improve the financial alignment and coordination of services for Medicare-Medicaid dual eligibles. Several states have developed initiatives to support the integration of Medicare and Medicaid financing, working with health plans to finance care coordination activities. Five states have already issued Requests for Proposals (RFPs) for health plans to participate in care coordination initiatives or have incorporated care coordination language and financial structures into their Medicaid managed care contracts. The definitions of care coordination used in contracts and RFPs across these five states vary. However, reimbursement plans for care coordination were similar. In three states (Arizona, Tennessee, and Texas), health plan contracts did not include specific plans for care coordination reimbursement but accounted for care coordination services in a capitated rate. In Massachusetts and Minnesota, however, contracts stipulated requirements for “care coordinators” and offer reimbursement for specific services provided by these individuals.

Nationally, the Federal Coordinated Health Care Office (Medicare-Medicaid Coordination Office) implemented the Financial Alignment Initiative (FAI) demonstration in 2013 to test financial models that integrate primary care, acute care, behavioral health care, and long-term services and supports (LTSS) for Medicare-Medicaid dually eligible enrollees. The objective of FAI is to use care coordination activities as the centerpiece for achieving positive outcomes in spending, utilization, and quality of care. The model, which includes a capitated or managed FFS option, includes the following services:⁸

- Using care coordinators that facilitate care coordination services;
- Using health risk assessments (HRAs) conducted to assign enrollees risk categories;
- Using individualized care plans, which include the enrollee’s goals and strategies to meet goals;
- Convening interdisciplinary care teams based on the enrollees’ needs and goals; and
- Using care coordination data systems.

As of 2021, 11 states are participating in the FAI demonstration, including 10 states that operate capitated payment models and one state that operates within the managed FFS payment model.⁶¹The percentage of members with HRAs, initial care plans, initial plans with goals of care documented, and follow-up visits within 30 days of a hospital discharge increased between 2014 and 2019 in the FAI capitated model.⁶²

V.D. Trends in Care Coordination in Alternative Payment Models

Since its inception in 2010, CMMI has designed and launched numerous APMs with mechanisms to support care coordination in Medicare and Medicaid. Both within and beyond CMMI, Medicaid, Medicare, and commercial plans have begun participating in ACOs that incentivize health care provider collaboration to improve care coordination. ACOs are groups of providers, hospitals, physician practices, and other health care providers that commit to coordinating care for their collective patients.⁶³ ACOs vary in how providers are compensated. For example, a study of ACO-affiliated hospitals found the following payment models in use across hospitals: FFS diagnosis-related groups, FFS per diem, FFS shared savings, bundled payments, and partial or global payments.⁶⁴

Health plans across public and private payers have adopted other programs to support care coordination, such as PCMHs. These models also vary with regard to reimbursement strategies, based on the payer implementing the model. For example, some commercial plans have started offering incentives for providers to participate in PCMH programs with additional reimbursement options based on cost and quality measures.⁶⁵

V.E. Trends in Care Coordination During the COVID-19 Public Health Emergency

This section reviews trends in care coordination over the last year in the context of the PHE. The information comes from discussions with SMEs representing providers and other stakeholders. SMEs described a number of ways in which the PHE has affected care coordination activities. One SME noted that it has become harder for patients to engage in care during the PHE due to competing priorities (e.g. childcare), transportation barriers, and decreased access. These challenges were especially salient for low-income populations and patients in rural communities. They also described how isolation during the PHE makes patients less likely to engage with their health care provider, making it challenging to address immediate clinical care needs or effectively coordinate care. SMEs noted that the PHE led to an increased reliance on telehealth. In some cases, this increase in remote care facilitated care coordination by removing barriers to access (e.g., transportation barriers) and facilitating communication between providers and patients. However, an increased reliance on telehealth has also posed challenges for some providers, including long-term care facilities or smaller practices that did not have the necessary infrastructure in place to transition to virtual coordination activities.

SMEs emphasized the role care coordination plays in mitigating the challenges of the PHE and proactively reaching out to patients. For example, one SME described a number of care coordination activities designed specifically to address challenges that arose during the pandemic. A broad understanding of care coordination activities in this context may include facilitating neighborhood check-ins to provide food and prescriptions, advocating for audio-only visits in rural areas, and providing tablets for shelters to conduct telehealth visits.

The American Rescue Plan Act (ARPA), passed in March 2021, included several provisions on mental health and substance use disorder, one of which specifically encourages care coordination. Section 2707 offers funding for State, local, Tribal, and territorial governments to address community behavioral health needs and calls upon grantees to promote care coordination among local entities.⁶⁶ Looking forward, health care researchers and policymakers can explore the extent to which this and other ARPA provisions increase care coordination, particularly among physical and mental health care providers and social service organizations.

V.F. Trends in Care Coordination Related to SDOH

SMEs noted the importance of addressing SDOH in care coordination, particularly in disadvantaged and rural communities. However, they acknowledged that this is a rapidly growing area of emphasis, and indicated that many challenges remain. The SMEs cautioned that resource constraints create significant barriers to optimizing cross-sector care coordination, including inadequate reimbursement for community organizations and inadequate funding for needed infrastructure (e.g., HIT, care coordination workforce).

One SME discussed the use of community health workers (CHWs) as being essential for promoting equity among high-needs populations. Being from the communities they serve, CHWs have a unique perspective on how to address patient needs. CHWs connect patients to social services such as food stamps and housing support services. Some CHWs also support medical care services like medication reconciliation. To address SDOH, SMEs also emphasized the importance of collecting information directly from the patient. This includes information on the patient's household and caregivers, cultural preferences, and their ability to pay for their prescriptions and healthy food.

Payment models are emerging to combine funding for health care and social services, including braiding and blending. Braiding involves bringing together funds from public and private sources to support a common goal, such that funding streams are still tracked individually from the planning to final evaluation.⁶⁷ In a blending approach, which typically requires statutory authority, funding streams are combined into a budget to support a common goal and not tracked individually, though overall outcomes are reported.⁶⁷

Section VI. Care Coordination in Center for Medicare & Medicaid Innovation (CMMI) Models

CMMI has implemented models using population-based and performance-based payments, one-time or upfront funding, capitation, and FFS-based payments to promote care coordination in both primary and specialty care. In a 2019 Report to Congress, CMS noted that an estimated 967,800 providers and 26.6

million patients across all payers were affiliated with one or more CMMI models.⁶⁸ While most of CMMI's models focus on the Medicare or Medicaid population, initiatives like the Vermont and Maryland All-Payer Models have introduced a common payment approach across multiple payers.

Most past and current CMMI models and the entities implementing them have incorporated some form of care coordination to reduce health care costs while improving quality of care. These models include flexible payments and waivers to support care coordination activities for managing chronic conditions, managing care around acute care events, and in some cases, addressing SDOH. This section provides an overview of 19 CMMI models with a care coordination component that are ongoing, under development, or recently completed. These 19 CMMI models were selected to represent a range of past, current, and developing models that coordinate care for population health management, for specific populations, and around acute care events. The 19 models are meant to be illustrative and do not represent the full portfolio of CMMI models that feature care coordination. Exhibit 5 lists these CMMI models, which have been grouped using the contexts for care coordination described in Section IV.C (Background):

- Ten of the models feature **care coordination for population-wide health management**, including across sectors to address SDOH and unspecified scopes of care.
- Five of the models focus on **care coordination for specific populations** such as persons with chronic conditions or vulnerable groups.
- Four of the models focus on **care coordination related to an acute care event**.

Exhibit 5 also lists the start dates, and where applicable, the end dates of the selected models. Several models that were expected to end in 2020 have been extended due to the COVID-19 PHE, and several ongoing models were granted additional flexibilities to respond to the PHE.⁶⁹

Exhibit 5. 19 Selected CMMI Models/Demonstrations by Care Coordination Context*

Context	CMMI Model	Status and Years Active
Care coordination for population-wide health management (10 models)	Maryland All-Payer Model	Completed 2014 – 2018
	Medicare Coordinated Care Demonstration (MCCD)	Completed 2002 – 2012
	Multi-payer Advanced Primary Care Practice (MACPC) Demonstration	Completed 2011 – 2016
	Pioneer ACO Model	Completed 2012 – 2016
	Comprehensive Primary Care Plus (CPC+) Model	Ongoing 2017 – current
	Maryland Total Cost of Care Model	Ongoing 2019 – current
	Next Generation ACO (NGACO) Model	Ongoing 2016 – current
	Vermont All-Payer ACO Model	Ongoing 2017 – current

Context	CMMI Model	Status and Years Active
	Global and Professional Direct Contracting (GPDC) Model	Under Development <i>April 2021</i>
	Primary Care First (PCF) Model	Under Development <i>April 2021</i>
Care coordination for specific populations (5 models)	Accountable Health Communities (AHC) Model	Ongoing <i>2017 - current</i>
	Independence at Home Demonstration^{ix}	Ongoing <i>2012 - current</i>
	Integrated Care for Kids (InCK) Model	Ongoing <i>2020 – current</i>
	Oncology Care Model (OCM)	Ongoing <i>2016 - current</i>
	Kidney Care Choices (KCC) Model	Under Development <i>2021</i>
Care coordination related to an acute care event (4 models)	Community-based Care Transitions Program (CCTP)^x	Completed <i>2012 – 2017</i>
	Bundled Payments for Care Improvement (BPCI) Advanced	Ongoing <i>2018 – current</i>
	Comprehensive Care for Joint Replacement (CJR) Model	Ongoing <i>2016 – current</i>
	Emergency Triage, Treat, and Transport (ET3) Model	Ongoing <i>2021 – current</i>

*Categorizations are based on areas emphasized or highlighted within the model summary documents and reports and may not represent an exhaustive review of all model components. See Appendix E for a full description of the methodology used to categorize these models.

The following section describes how care coordination was incorporated into the selected 19 CMMI models. For models that have evaluation reports available, findings are described related to care coordination and model outcomes. While some CMMI model participants and awardees have published self-evaluations, this section exclusively reports findings from CMMI’s independent evaluation contractors.

^{ix} IAH is a congressionally mandated demonstration covered in Section 3024 of the Affordable Care Act as amended by the Bipartisan Budget Act of 2018.

^x CCTP was a congressionally mandated program covered in Section 3026 of the Affordable Care Act.

VI.A. Population-Wide Care Coordination in Selected CMMI Models

The paragraphs below describe 10 CMMI models that coordinate care at a population-wide level. In some cases, these models focus on building from primary care. In other cases, these models offer financial incentives but provide stakeholders flexibility to design their own care coordination approach.

Primary Care Transformation models enable PCPs and practices to coordinate care by providing payment mechanisms to support services not covered under FFS.

1. **Medicare Coordinated Care Demonstration (MCCD).**^{xi} Under Section 4016 of the Balanced Budget Act of 1997, CMS was authorized to develop the MCCD to support care coordination efforts for chronically ill beneficiaries eligible for Medicare. To support these efforts, CMS provided PBPM payments to participating programs.⁷⁰ MCCD programs varied widely in how they implemented their care coordination interventions.⁷¹ Most programs sought to improve communication between patients and providers by training patients or their caregivers to “act as their own care coordinators,” rather than coordinating care on behalf of patients. About two-thirds of treatment group patients reported receiving care coordination services; however, this varied between 30 and 80 percent, depending on the program.⁷¹ Comparatively, 15 percent of control group members reported receiving care coordination, ranging from 3 to 28 percent across comparator programs.

Of the 15 MCCD programs, a few achieved cost neutrality and only one, Health Quality Partners (HQP), reduced total Medicare expenditures when care coordination fees were included.⁷¹ HQP’s reduced expenditures were concentrated in the high-risk subgroup and may be attributable to the program’s effectiveness in reducing hospitalizations and ED visits.²¹ HQP lowered ED visits and hospitalizations for its high-risk subgroup by 28 percent and 25 percent, respectively, over the program’s 10 years.

2. **Multi-Payer Advanced Primary Care Practice (MAPCP) Demonstration.**^{xii} Under this demonstration, CMS provided PBPM care management fees to primary care practices to reduce financial constraints and support care coordination for chronically ill patients through PCMHs.⁷² As part of their evolving approach to care coordination, participating providers reported defining staff roles and responsibilities clearly, developing protocols to target care coordination to patients who would benefit the most, and using external resources to improve their ability to coordinate care.¹⁷ By the third year of the demonstration, practices described improvements in information exchange with hospitals and other providers, and more sophisticated data analytics to identify patients in need of care management. For the Medicare population, MAPCP practices showed improvements in continuity of care, which the evaluation noted likely

^{xi} More information on MCCD is available on the Innovation Model’s summary page: <https://innovation.cms.gov/innovation-models/medicare-coordinated-care>

^{xii} More information on MAPCP Demonstration is available on the Innovation Model’s summary page: <https://innovation.cms.gov/innovation-models/multi-payer-advanced-primary-care-practice>

reflected care managers' responsibility for increasing coordination with specialists, particularly for high-risk patients.¹⁷

Evaluation results were mixed for MAPCP. Demonstration states often reported challenges operationalizing HIT infrastructure and sharing data with other providers, which affected their ability to identify high-risk patients and be informed about patient care by other providers. The lack of all-payer participation also proved to be difficult as practices had to differentiate between patients aligned and not aligned to the demonstration. Overall, expenditures were lower for MAPCP beneficiaries than comparison beneficiaries in PCMHs but higher for MAPCP beneficiaries than for Medicare beneficiaries not in PCMHs. As in MCCD, results varied by state, with two states achieving net savings, two states achieving net losses, one state achieving gross savings but net losses, and two states achieving cost neutrality.¹⁷

- 3. Comprehensive Primary Care Plus (CPC+) Model.**^{xiii} The PCPs in this model receive non-visit-based PBPM care management fees in addition to performance-based incentive payments. These payments are intended to support care management and improve patient experience and quality while reducing costs.⁷³ CPC+ practices are required to implement stratification to support high-risk beneficiaries, short- and long-term care management, and PAC follow-up. Many CPC+ practices enact collaborative care agreements with specialists, and nearly all report supporting coordinated referral management. Many participants also integrate behavioral health care into their practices, most commonly by locating behavioral health specialists at the same physical location as medical providers.¹⁶ The most recent evaluation report found that the CPC+ program did not impact Medicare expenditures.¹⁶
- 4. Primary Care First (PCF) Model.**^{xiv} The PCF model began in 2021 and is currently designed to provide flat payments and population-based payments for primary care practices to support the delivery of advanced primary care in and outside of the physician office. This model includes performance-based adjustments that incentivize providers to reduce hospitalization and total cost of care while meeting quality metrics. The PCF model also offers a payment track for practices providing care to Seriously Ill Populations (SIP).^{xv} This track includes a one-time per beneficiary payment for patient outreach and engagement, to help practices engage with SIP patients and begin coordinating care to support long-term care management.⁷⁴
- 5. Global and Professional Direct Contracting (GPDC) Model.**^{xvi} The GPDC model offers two participation tracks—the professional and global options—that present risk-sharing arrangements with 50 percent shared savings/losses and 100 percent shared savings/losses,

^{xiii} More information on CPC+ Model is available on the Innovation Model's summary page:

<https://innovation.cms.gov/innovation-models/comprehensive-primary-care-plus>

^{xiv} More information on the PCF Model is available on the Innovation Model's summary page:

<https://innovation.cms.gov/innovation-models/primary-care-first-model-options>

^{xv} As of April 2021, the PCF model's Seriously Ill Population component is under review and will not begin on the previously scheduled date of April 1, 2021. More information on this component can be found on the Innovation Model's summary page:

<https://innovation.cms.gov/innovation-models/primary-care-first-model-options>

^{xvi} More information on the GPDC Model is available on the Innovation Model's summary page:

<https://innovation.cms.gov/innovation-models/gpdc-model>

respectively. Both options include capitated monthly payments to direct contracting entities to support primary care for Medicare beneficiaries. Under the model, providers are also able to leverage flexibility with respect to SNF stays, telehealth, post-discharge home visits, and care management home visits. These payments and waivers are meant to increase access to care and incentivize good communication and care planning between providers.

CMMI ACO models that coordinate care at a population-wide level. As noted in Section V.D above (Trends in Care Coordination Access, Utilization, and Reimbursement), ACO models are designed to facilitate appropriate use of care coordination through payment incentives. CMMI has developed and tested multiple models built on the ACO framework.

6. The **Pioneer ACO model**^{xvii} was developed to provide additional financial supports for health care organizations and providers with experience coordinating care. The model included varying levels of two-sided risk; population-based payments have been included as the model progressed.⁷⁵ Pioneer ACO practices' care management structures have varied; some embedded care managers within practices, while others used care managers working across ACO practices.³³

In addition, Pioneer ACOs used different strategies to identify patients who would benefit from care management, including focusing on particular populations (e.g., beneficiaries with chronic conditions), identifying trigger events (e.g., inpatient stay), and predictive modeling. Finally, Pioneer ACOs reported partnering with behavioral health facilities and incorporating social workers into their care management teams to increase coordination between behavioral health and primary care.

7. In the **Next Generation ACO (NGACO) model**^{xviii}, participating organizations assume greater financial risk than under the Pioneer ACO in return for potential shared savings. They also receive some forms of capitated payments. CMMI offers some ACO model flexibilities not available under Medicare FFS, including those related to telehealth, use of SNFs, and the ability to conduct care management home visits. NGACOs build on existing care coordination approaches by increasing the presence of care managers in primary care practices and helping practices expand care management services.¹² ACO leaders view care coordination to be effective in reducing utilization, changing provider culture toward proactive prevention, and improving patient self-management and care transitions. However, to date, the NGACO evaluation has not linked particular care coordination activities to outcomes. Medicare expenditures for NGACOs increased slightly compared with comparison groups after payouts to participants. However, NGACOs did reduce spending on SNF and other PAC facilities, which may be attributable to providers improving care transitions and strengthening relationships with SNFs.¹²

^{xvii} More information on the Pioneer ACO Model is available on the Innovation Model's summary page:

<https://innovation.cms.gov/innovation-models/pioneer-aco-model>

^{xviii} More information on the NGACO Model is available on the Innovation Model's summary page:

<https://innovation.cms.gov/innovation-models/next-generation-aco-model>

State-level all-payer models. In addition to national and regional models, CMMI also offers waivers to states to design their own state-specific all-payer APMs that include care coordination. Two states have developed all-payer models: Vermont and Maryland.

8. In the **Vermont All-Payer ACO model**^{xix}, like the NGACO model, organizations assume greater financial risk in return for potential shared savings. As part of the model, the state of Vermont also received \$9.5 million in 2017 to support investments in care coordination activities.⁷⁶
9. The **Maryland All-Payer model**^{xx} implemented a hospital annual global budget designed to set limits on hospital revenue and encourage coordination of inpatient and outpatient hospital services to reduce cost. The model also included two “care redesign” program tracks to incentivize coordination of hospitals with hospital-based specialists or PCPs, respectively, to coordinate care both inside and outside of the hospital.

Nearly all Maryland hospitals reported investing in additional care coordination staff as a result of the model. These staff members are considered integral to achieving more timely hospital discharges, coordinating patient needs in the hospital and post-discharge settings, reducing readmissions, and supporting patient education.¹³ Over 80 percent of Maryland hospitals also used CHWs as a strategy to manage complex patients with social needs and to address primary care access limitations.

In addition, Maryland hospitals implemented a number of initiatives aimed at caring for patients after their hospital stay, including improving coordination with PAC facilities, providing a 30-day supply of medications at discharge, and using discharge clinics as an alternative to ED visits for post-discharge issues. Hospital leaders noted that building community partnerships was a priority for Maryland hospitals. However, these leaders also noted that a lack of provider engagement and provider shortages posed barriers to improving care coordination.¹³

The Maryland All-Payer model evaluation found 2.8 percent slower growth in total expenditures relative to the comparison group, partially due to reduced inpatient admissions and, therefore, reduced post-acute spending.¹³ The evaluation noted that PAC savings could reflect hospital investments in post-discharge spending. The model reduced hospitalizations and expenditures for beneficiaries with multiple chronic conditions and dual eligible beneficiaries (compared with their respective comparison groups), suggesting that hospitals were prioritizing care management for these high-risk patients who would most benefit from the services.¹³

10. **Maryland Total Cost of Care Model.**^{xxi} The Maryland Total Cost of Care model builds on the Maryland All-Payer model, using a global budget so that hospitals can invest in care coordination activities without relying on typical FFS reimbursement. The model also includes

^{xix} More information on the Vermont All-Payer Model is available on the Innovation Model’s summary page: <https://innovation.cms.gov/innovation-models/vermont-all-payer-aco-model>

^{xx} More information on the Maryland All-Payer Model is available on the Innovation Model’s summary page: <https://innovation.cms.gov/innovation-models/maryland-all-payer-model>

^{xxi} More information on the Maryland Total Cost of Care Model is available on the Innovation Model’s summary page: <https://innovation.cms.gov/innovation-models/md-tccm>

three program options that provide incentives for different care providers. First, the hospital payment program offers population-based payments for all hospital services provided during a year. A second program option allows hospitals to make incentive payments, less than the savings obtained under the fixed global budget, to non-hospital providers to support collaboration. Finally, a third program option offers incentives to PCPs who provide advanced primary care services. These incentives include PBPM payments to support care management services, performance-based incentives tied to reductions in hospitalization rates, and improved quality of care for attributed Medicare beneficiaries.⁷⁷

VI.B. Population-Specific Care Coordination in Selected CMMI Models

This section describes five CMMI models that focus on addressing a broad set of care needs for a specific population, such as vulnerable populations, as well as coordination of care across health care and other sectors. This section also includes models that focus on populations with specific chronic conditions.

Vulnerable Populations and SDOH. CMMI has implemented multiple national models focused on the needs of vulnerable populations.

1. For example, the **Accountable Health Communities (AHC) model**^{xxii} provides funding to “bridge organizations” to help them facilitate referrals for Medicaid enrollees across health care and social service providers. Bridge organizations use multidisciplinary care teams to coordinate services between Medicaid providers and community-based organizations to increase access to social services.⁷⁸
2. Under the **Integrated Care for Kids (InCK) model**,^{xxiii} CMS funds awardees to design state-specific APMs to identify and better coordinate care for children covered under Medicaid and the Children’s Health Insurance Program (CHIP).⁷⁹
3. **Independence at Home Demonstration.**^{xxiv} The Independence at Home Demonstration , authorized under Section 3024 of the Affordable Care Act and amended by the Bipartisan Budget Act of 2018, offers incentive payments for primary care practices to deliver in-home care to patients with at least two chronic conditions and one deficit in activities of daily living. Practices earn incentives based on cost and quality measures.⁸⁰ Many practices added care coordinators to their care teams to expand their capacity to manage care transitions.⁸¹ They may monitor hospital admissions and provide timely post-discharge follow-up to help prevent readmissions. Many practices report improved relationships with outside providers, such as home health, hospice, pharmacy, and transportation services. Some practices hired staff to

^{xxii} More information on the AHC Model is available on the Innovation Model’s summary page:

<https://innovation.cms.gov/innovation-models/ahcm>

^{xxiii} More information on the InCK Model is available on the Innovation Model’s summary page:

<https://innovation.cms.gov/innovation-models/integrated-care-for-kids-model>

^{xxiv} More information on the Independent at Home Demonstration is available on the Innovation Model’s summary page:

<https://innovation.cms.gov/innovation-models/independence-at-home>

coordinate care better within their own systems and with outside providers. The most recent demonstration evaluation found minimal impacts on ED visits, hospitalizations, and unplanned readmissions.⁸²

4. **Oncology Care Model (OCM).**^{xxv} The OCM uses “monthly enhanced oncology services” PBPM payments and performance-based payments to incentivize and support coordination of cancer care with and between specialty providers.⁸³ OCM participants are required to provide care coordination functions, including patient navigation, medication management, referral coordination, transition management, and palliative care integration. Specific activities include responding to patients’ phone calls and conducting proactive outreach to high-risk patients.¹⁴ The most recent evaluation report found that OCM achieved reductions in gross spending, but that the reductions were offset by additional payouts to participants.¹⁴
5. **Kidney Care Choices Model.**^{xxvi,xxvii} The Kidney Care Choices model offers financial incentives for providers to coordinate care for patients with ESRD. Payments include adjusted monthly capitated payments, quarterly capitated payments, kidney transplant bonuses based on outcomes, performance-based adjustments based on quality and utilization measures, and participation in shared savings/shared losses. This model also allows flexibilities relative to Medicare FFS in terms of coverage for home health, hospice, and use of SNFs.⁸⁴

VI.C. Acute Care Event-Focused Care Coordination in Selected CMMI Models

Four CMMI models support care coordination specifically in the context of an acute care event and subsequent post-discharge care and follow-ups.

1. **Community-Based Care Transitions Program (CCTP).**^{xxviii} Under the CCTP program, created by Section 3026 of the Affordable Care Act, community-based organizations were offered a “per discharge” payment to improve coordination of care as patients transition from hospitals to other settings (e.g., long-term care facilities or the patient's home).⁸⁵ Successful participants used a “hospital-field worker” model that divided coordination work between hospital-based and field-based care transition staff.¹⁸ Having a consistent set of hospital personnel involved in coordination helped community organizations to build relationships with hospitals’ CCTP sites, identify beneficiary needs, link beneficiaries to community-based services, and communicate with PAC providers. The most recent CCTP evaluation found that more than half of practices

^{xxv} More information on the OCM is available on the Innovation Model’s summary page:

<https://innovation.cms.gov/innovation-models/oncology-care>

^{xxvi} More information on the Kidney Care Choices Model is available on the Innovation Model’s summary page:

<https://innovation.cms.gov/innovation-models/kidney-care-choices-kcc-model>.

^{xxvii} As of April 2021, the date of the first performance year for the Kidney Care Choices Model has been delayed until January 2022. More information on this component can be found on the Innovation Model’s summary page:

<https://innovation.cms.gov/innovation-models/kidney-care-choices-kcc-model>.

^{xxviii} More information on the CCTP is available on the Innovation Model’s summary page:

<https://innovation.cms.gov/innovation-models/cctp>

significantly reduced unplanned readmissions, while the remaining practices had statistically insignificant differences in readmission rates relative to matched comparisons.⁵

2. **Bundled Payments for Care Improvement (BPCI) Advanced Model.**^{xxix} In the BPCI Advanced model (built on the original BPCI model), awardees assume financial liability for episode spending. The BPCI Advanced model includes 35 clinical episodes, including 31 inpatient episodes (e.g., spinal fusion; renal failure; seizures/strokes; sepsis; cardiac arrhythmia; chronic obstructive pulmonary disease [COPD]; bariatric surgery) and four outpatient episodes (cardiac defibrillator; back and neck; major joint replacement of the lower extremity; and percutaneous coronary intervention). Using a retrospective bundled payment approach, participants are incentivized to coordinate care throughout an episode to reduce costs and avoidable utilization.⁸⁶ Some episodes are based on procedures while others are based on conditions.
3. **Comprehensive Care for Joint Replacement (CJR) Model.**^{xxx} The CJR model holds hospitals financially accountable for the quality and cost of an episode of care associated with hip and knee replacement. The model's payment approach facilitates increased coordination of care among hospitals, physicians, and PAC providers. To support these efforts, CMS offers flexibility around use of SNFs, telehealth, and home health. The model also encourages participating hospitals to share best practices with each other.⁸⁷ While care coordination may not be uniform across awardees, some CJR participants have noted using care coordination activities, such as patient activation, discharge planning, risk stratification to identify high-risk patients, cross-provider data-sharing, collaboration with PAC providers, and patient follow-up.¹¹ The most recent evaluation report found that the CJR model achieved Medicare savings per episode in part due to reductions in the use of institutional PAC.¹¹
4. **Emergency Triage, Treat, and Transport (ET3) Model.**^{xxxi} Under the ET3 model, emergency care teams have increased flexibility to receive Medicare reimbursement for the transportation and care delivered to patients outside of the ED. This may occur through use of approved alternative destinations like primary care offices or by providing treatment on location or via telehealth. This flexibility encourages coordination between emergency services and other providers.⁸⁸

VI.D. Common Care Coordination Functions and Activities Across the Selected CMMI Models

CMMI models feature some common care coordination functions, including facilitating care transitions through home visits after hospitalization and bundling payment for PAC transitions. Many CMMI models also focus on the needs of patient subgroups, through use of risk stratification to target care coordination to patients that need it the most. CMMI model provider participants also use specific approaches to setting accountability, negotiating responsibility, and enhancing communication across providers. Some CMMI models also refer patients to community resources to address social needs,

^{xxix} More information on the BPCI Advanced Model is available on the Innovation Model's summary page:

<https://innovation.cms.gov/innovation-models/bpci-advanced>

^{xxx} More information on the CJR Model is available on the Innovation Model's summary page:

<https://innovation.cms.gov/innovation-models/cjr>

^{xxxi} More information on the ET3 Model is available on the Innovation Model's summary page:

<https://innovation.cms.gov/innovation-models/et3>

support self-management of care, and use screeners to identify patient needs. Specific details on care coordination objectives and functions across these models are provided in Appendix E.

VI.E. Common Payment Approaches Across the Selected CMMI Models

The selected CMMI models used various alternative payment approaches for addressing care coordination objectives and functions. Across the various types of CMMI models, performance-based payments and PBPM payment models that reimburse all physicians involved in care coordination and integration across an episode or condition were the most common payment model methodology. Exhibit 6 includes a summary of the payment methodologies associated with each of the 19 CMMI models, and Appendix E includes additional details on payment methodologies found in these models.

Exhibit 6. Common Payment Methodologies Used in 19 Selected CMMI Models with a Care Coordination Component*

CMMI Model	PBPM payments intended to cover care coordination, among other activities (n=7)	Performance-based payments, with providers evaluated on care coordination and other quality metrics (n=9)	Monthly or quarterly capitated payments (n=4)	Population-based payments (n=4)	FFS payments as a reimbursement mechanism, with additional payments or payment flexibilities (n=4)	Upfront or one-time initial payment (n=2)
Care coordination for population-wide health management						
MCCD	✓					
MAPCP	✓					
CPC+	✓	✓				
PCF		✓		✓		✓
Pioneer ACO Model				✓		
NGACO	✓		✓	✓	✓	
GPDC			✓			
Vermont All-Payer	✓		✓		✓	✓
Maryland All-Payer		✓				
Maryland Total Cost of Care	✓	✓		✓	✓	
Care coordination for specific populations						
AHC						
InCK						
Independence at Home Demonstration		✓				
OCM	✓	✓				
Kidney Care Choices Model		✓	✓			
Care coordination related to an acute care event						
CCTP						
BPCI Advanced		✓				
CJR		✓				
ET3					✓	

*Categorizations are based on areas emphasized or highlighted within the model summary documents and reports and may not represent an exhaustive review of all model components. See Appendix E for a full description of the methodology used to categorize these models.

Most of the selected CMMI models do not include explicit or stand-alone care coordination payment mechanisms or payment incentives. Only two of the selected models include care management fees, both of which use care coordination to improve the management of primary care-based chronic conditions. In some of the other selected models, care coordination services are not reimbursed separately from other care activities, but may be incorporated into payment in different ways. However, as noted above, eight of the selected models include incentive payments based on performance measures related to care coordination.

In global or capitated payment models, providers assume increased financial risk. To ensure that providers can take on this risk, several of the selected CMMI models offer multiple levels of risk-sharing to support providers with different ability to take on risk. The Maryland Total Cost of Care model uses a global budget to support care transformation organizations. These organizations focus attention on helping small practices that would otherwise struggle to make the necessary investments in care coordination services to improve care quality.

Section VII. Care Coordination in PTAC Proposals

Between 2016 and 2020, PTAC received 35 proposals,^{xxxii} including 34 proposals that have received any review by the Committee, and 28 proposals that PTAC has deliberated and voted on during public meetings. PTAC evaluates PFPM proposals based on the extent to which they meet the Secretary’s 10 regulatory criteria for PFPMs, including “Integration and Care Coordination” (“encourage greater integration and care coordination among practitioners and across settings where multiple practitioners or settings are relevant to delivering care to the population treated under the PFPM”), which is also referred to as Criterion 7. This section reviews the role that care coordination has played in previously submitted PTAC proposals within the context of related evidence from current literature.

The analysis begins with a review of the care coordination components and themes that were addressed in proposals that were submitted to PTAC (Section VII.A), followed by a summary of strengths and weaknesses that were identified by PTAC in the proposals’ approaches to care coordination during the Committee’s deliberations (Section VII.B); other comments that Committee members have made relating to care coordination (Section VII.C); and additional insights regarding care coordination from discussions with previous submitters (Section VII.D).

VII.A. Care Coordination Themes from PTAC Proposals

This section provides an overview of care coordination components that were included in the 34 proposed models that were submitted to and reviewed by PTAC. Of the 28 proposals that PTAC has deliberated and voted on during public meetings, the Committee’s rating for Criterion 7 was: “Meets and Deserves Priority Consideration” for one proposed model, “Meets” for 15 proposed models, “Does not Meet” for ten proposed models, and “Not Applicable” for two proposed models. The 16 proposed

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

models that were rated as “Meets and Deserves Priority Consideration” or “Meets” for Criterion 7 are referred to as proposals that were found to “Meet” Criterion 7 in this Environmental Scan (see Exhibit 7 for a list of these proposals). Topics that are addressed include the care coordination contexts, care coordination objectives, and payment approaches that are associated with the PTAC proposals.

Variation in care coordination context. The proposed models that were submitted to PTAC addressed a variety of care coordination contexts in their proposed APMs. Among the 34 proposed models that were reviewed by PTAC:

- 21 percent of the proposed models focused on coordinating care for **population-wide health management**, including primary care-focused models.
- 62 percent of the proposed models focused on coordinating **population-specific care**, including 15 proposals that focused on an ongoing chronic condition (e.g., cancer, palliative care, asthma).
- 18 percent of the proposed models focused on coordinated care for an **acute care event** (e.g., ED visits, eye-related emergencies, neurological emergencies, and hospitalizations for medically frail patients).

The 16 proposed models that were found to “Meet” Criterion 7 “Integration and Care Coordination” were more likely to address care coordination in the context of acute events (31 percent vs. 10 percent for the 10 proposed models that were found to “Not Meet” Criterion 7 and 18 percent for the 34 proposed models that have been reviewed by PTAC). One of these proposals focused on coordinating care after discharge from the emergency department. Another proposal focused on promoting continuity between traditional inpatient and outpatient settings for frequently hospitalized patients. Two proposals focused on providing multidisciplinary inpatient services in the home; and the remaining proposal addressed coordinating care with specialty providers in underserved communities.

Exhibit 7 provides a list of the proposals that were found to “Meet” Criterion 7. Exhibit 8 provides an overview of the care delivery and payment methodology approaches for these proposals. Appendix F includes more detailed information regarding care coordination elements in all of the proposed models that were reviewed by PTAC.^{xxxiii}

^{xxxiii} This analysis excludes information for one proposal that was withdrawn prior to any review by the Committee.

Exhibit 7. List of Proposals Submitted to PTAC for Review that were Found to “Meet” Criterion 7, “Integration and Care Coordination”*

Submitter Name, and Submitter Type	Proposal Name	Abbreviated Submitter Name
American Academy of Family Physicians <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	AAFP
American Academy of Hospice and Palliative Medicine <i>(Provider association and specialty society)</i>	Patient and Caregiver Support for Serious Illness (PACSSI)	AAHPM
American College of Emergency Physicians <i>(Provider association and specialty society)</i>	Acute Unscheduled Care Model (AUCM): Enhancing Appropriate Admissions	ACEP
American College of Physicians-National Committee for Quality Assurance <i>(Provider association and specialty society/other)</i>	The “Medical Neighborhood” Advanced Alternative Payment Model (AAPM) (Revised Version)	ACP-NCQA
American College of Surgeons <i>(Provider association and specialty society)</i>	ACS–Brandeis Advanced Alternative Payment Model	ACS
American Society of Clinical Oncology <i>(Provider association and specialty society)</i>	Patient-Centered Oncology Payment (PCOP) Model	ASCO
Avera Health <i>(Regional/local multispecialty practice or health system)</i>	Intensive Care Management in Skilled Nursing Facility Alternative Payment Model (ICM SNF APM)	Avera
Coalition to Transform Advanced Care <i>(Coalition)</i>	Advanced Care Model (ACM) Service Delivery and Advanced Alternative Payment Model	C-TAC
Hackensack Meridian Health and Cota, Inc. <i>(Regional/local multispecialty practice or health system; Device/technology company)</i>	Oncology Bundled Payment Program Using CAN-Guided Care	HMH/Cota
Icahn School of Medicine at Mount Sinai <i>(Academic institution)</i>	HaH Plus (Hospital at Home Plus) Provider-Focused Payment Model	Mount Sinai*

Submitter Name, and Submitter Type	Proposal Name	Abbreviated Submitter Name
Innovative Oncology Business Solutions, Inc. <i>(For-profit corporation)</i>	Making Accountable Sustainable Oncology Networks (MASON)	IOBS
New York City Department of Health and Mental Hygiene <i>(Public health department)</i>	Multiprovider, bundled episode of care payment model for treatment of chronic hepatitis C virus (HCV) using care coordination by employed physicians in hospital outpatient clinics	NYC DOHMH
Personalized Recovery Care <i>(Regional/local single specialty practice)</i>	Home Hospitalization: An Alternative Payment Model for Delivering Acute Care in the Home	PRC
Renal Physicians Association <i>(Provider association and specialty society)</i>	Incident ESRD Clinical Episode Payment Model	RPA
University of Chicago Medicine <i>(Academic institution)</i>	The Comprehensive Care Physician Payment Model (CCP-PM)	UChicago
University of New Mexico Health Sciences Center <i>(Academic institution)</i>	ACCESS Telemedicine: An Alternative Healthcare Delivery Model for Rural Cerebral Emergencies	UNMHSC

* PTAC found that Mount Sinai “Meets and Deserves Priority Consideration” for Criterion 7. PTAC’s rating for the other proposals in this table was “Meets” for Criterion 7.

Exhibit 8. Summary of the Care Delivery and Payment Model Characteristics of PTAC Proposed Models that were Found to “Meet” Criterion 7, “Integration and Care Coordination” by Care Coordination Context*,**

Submitter	Clinical Focus and Setting	Provider Type	Care Coordination Context	Care Coordination Objectives	Payment Mechanism	Criterion 7 Rating
Care Coordination for Population-Wide Health Management						
AAFP	Primary care Primary care practices	Primary care providers (PCPs)	<ul style="list-style-type: none"> • Population-wide • Multidisciplinary for medical services not tied to an episode • Multiple chronic conditions • Advanced PCPs leading teams of non-physicians based on five key functions of CPC+ and including behavioral and mental health 	<ul style="list-style-type: none"> • Fulfilling five key functions of CPC+ (access and continuity, planned care and population health, care management, patient and caregiver engagement, and coordination) • PCPs thought to be best positioned to coordinate care across settings 	Capitated PBPM	Meets
ACP-NCQA	PCPs and specialists Primary care practices	PCPs	<ul style="list-style-type: none"> • Population-wide • Multidisciplinary • Address multiple chronic conditions 	Better coordination between primary care and specialty care practices	Add-on PBPM	Meets
Care Coordination for Specific Populations						
AAHPM	Serious illness and palliative care Inpatient, outpatient, other	Palliative care teams	<ul style="list-style-type: none"> • Population-specific • Multidisciplinary • Multispecialty during episode of advanced illness 	Support interdisciplinary palliative care teams	Capitated PBPM	Meets

Submitter	Clinical Focus and Setting	Provider Type	Care Coordination Context	Care Coordination Objectives	Payment Mechanism	Criterion 7 Rating
ACS	Cross-clinical Inpatient, outpatient, ambulatory	Single/multispecialty practices	<ul style="list-style-type: none"> • Population-specific • Multispecialty of general and specialty surgeons during an episode of care defined by a selected set of procedural/ condition episodes 	Increase integration across specialties by grouping general and specialty surgeons who participate in a single episode of care, a selected set of procedural or condition episodes, or cumulative patient-level aggregations of all outcomes	Episode-based	Meets
ASCO	Cancer care Inpatient, outpatient	Providers delivering hematology/oncology services	<ul style="list-style-type: none"> • Population-specific • Within condition hematology/ oncology services and multispecialty practices with hematology/oncology providers 	<ul style="list-style-type: none"> • Reduce utilization for conditions that could be averted • Reduce total ED visits and observation stays 	Episode-based	Meets
Avera	Primary care in SNFs SNFs, NFs	Geriatrician care teams (GCTs)	<ul style="list-style-type: none"> • Population-specific • Multidisciplinary care in SNF after acute care event • Implementation is facility-wide • Eligibility criteria include articulating strategy for PCP care coordination and other quality measures 	Reduce avoidable ED visits and hospitalizations	Add-on PBPM	Meets

Submitter	Clinical Focus and Setting	Provider Type	Care Coordination Context	Care Coordination Objectives	Payment Mechanism	Criterion 7 Rating
C-TAC	Serious illness and palliative care Patient home	Care team; other	<ul style="list-style-type: none"> Population-specific Multidisciplinary during episode of advanced illness Specific to patients meeting ACM criteria to identify individuals in last 12 months of life 	<ul style="list-style-type: none"> Evidence-based treatments; align with patient preferences Symptom management 24/7 access to clinical support Comprehensive care plan Transitional and PAC Established reliable handoff processes Advanced care planning Reduce unwanted/duplicate visits and interventions 	Capitated PBPM	Meets
HMH/Cota	Cancer care Inpatient, outpatient	Providers in HMH health system	<ul style="list-style-type: none"> Population-specific Within condition Multidisciplinary 	Patient satisfaction with care and adverse outcomes avoidance	Bundled episode-based	Meets
IOBS	Cancer care Outpatient	Oncology physicians	<ul style="list-style-type: none"> Population-specific Within condition Episode defined to encompass more than just time period for chemotherapy Inclusive of independent practice physicians 	<ul style="list-style-type: none"> Delivery of evidence-based care (including scheduling same day appointments as needed) Avoid unnecessary ED usage and hospitalization Early intervention 	Episode-based	Meets

Submitter	Clinical Focus and Setting	Provider Type	Care Coordination Context	Care Coordination Objectives	Payment Mechanism	Criterion 7 Rating
NYC DOHMH	HCV Primary care and specialty	PCPs (trained by specialists); specialists; nurse practitioners; other	<ul style="list-style-type: none"> Population-specific Within condition Multidisciplinary; hospital-based clinics (with PCPs able to refer to other diagnostic and treatment services within same facility); telementoring with specialists 	<ul style="list-style-type: none"> Reduce patient handoffs with telementoring Assist patient navigation through health care system 	Bundled episode-based	Meets
RPA	ESRD Dialysis Centers	Nephrologists; PCPs	<ul style="list-style-type: none"> Population-specific Within condition Single specialty within episode 	Hospital admission and readmission avoidance	Episode-based	Meets
Care Coordination Related to an Acute Care Event						
ACEP	ED services ED	ED physicians; Part B providers	<ul style="list-style-type: none"> Acute care Multidisciplinary care around an acute care event Follow patient through episode beginning with discharge through 30-day period 	<ul style="list-style-type: none"> Facilitate appropriate discharge Inform patients of treatment options Manage unscheduled care episodes by protocol Arrange post-discharge home visit 	Episode-based	Meets
Mount Sinai	Home health Patient home	Physicians; Hospital at Home providers	<ul style="list-style-type: none"> Acute care Multidisciplinary care around an acute care event; manage episode around acute care event 	Improve quality and reduce costs by reducing complications and readmissions	Capitated PBPM	Meets and Deserves Priority Consideration

Submitter	Clinical Focus and Setting	Provider Type	Care Coordination Context	Care Coordination Objectives	Payment Mechanism	Criterion 7 Rating
PRC	Inpatient services in home setting Patient home	Admitting physicians; recovery care coordinator; others	<ul style="list-style-type: none"> Acute care Multidisciplinary care around an acute care event; management around an acute episode 	Improve health care quality by providing hospital-level care in patient's home, while changing the reimbursement for participating physicians by making them accountable for quality and cost throughout a 30-day episode	Bundled episode-based	Meets
UChicago	Frequently hospitalized patients Patient home	Inpatient and outpatient providers	<ul style="list-style-type: none"> Acute care Multispecialty care around an acute care event, during episode 	Promoting continuity between traditional inpatient and outpatient settings by encouraging physicians to see their patients both in the home and rehabilitation settings when appropriate	Add-on PBPM	Meets
UNMHSC	Cerebral emergent care Inpatient; outpatient; ED	Neurologists/n eurosurgeons; providers in rural systems	<ul style="list-style-type: none"> Acute care Within condition specialty care around an acute care event Support for neurology/ neurosurgery providers in underserved communities 	Connect/coordinate missing link of specialty care in underserved areas	One-time Payment	Meets

* PTAC found that Mount Sinai "Meets and Deserves Priority Consideration" for Criterion 7. PTAC's rating for the other proposals in this table was "Meets" for Criterion 7.

**Categorizations are based on areas emphasized or highlighted within the proposal and may not represent an exhaustive review of all proposed model components. See Appendix F for a full description of the methodology used to categorize these proposed models.

Variation in care coordination objectives and functions. The overall care coordination-related goal for most of the proposed models that were reviewed by PTAC-was to “meet patient needs and preferences in the delivery of high-quality, high-value care.” This is the same central goal that is shown in the center of AHRQ’s care coordination ring in Exhibit 2 (see Section IV.A above).

The following is a summary of how the 34 proposals that were reviewed by PTAC addressed common objectives for care coordination related to patients, providers, and health care systems.^{xxxiv}

- 26 percent of the proposed models that were reviewed by PTAC addressed **patient/family-focused objectives** (seeking to meet patient’s preferences and needs for health care and information- and data-sharing over time) – including a focus on improving patient experience, patient engagement, and care navigation.³
- 21 percent of the proposed models addressed **individual provider-focused objectives** (seeking to ensure health care providers are able to address gaps in patients’ health or social needs.³
 - 15 percent of the proposed models cited supporting and empowering interdisciplinary care teams, and team communication as a care coordination objective.
 - 6 percent of the proposed models highlighted accountability and oversight as a care coordination objective.
 - 6 percent of the proposed models included reducing burden on physicians as a care coordination objective.
- 68 percent of the proposed models addressed **Health care system-related objectives:** Facilitate efficient health care delivery within and across systems.³
 - 38 percent of the proposed models cited reducing costs, readmissions, care escalation, and complications as a care coordination objective.
 - 26 percent of the proposed models sought to deliver evidence-based care as a care coordination objective.
 - 18 percent of the proposed models included coordinating continuity of care across different phases of care, settings, or treatments as a care coordination objective.
 - 3 percent of the proposed models sought to facilitate appropriate discharge as a care coordination objective.
 - 9 percent of the proposed models emphasized specialty care in underserved areas, between primary care and specialty care practices, and/or across specialties as a care coordination objective.

The 16 proposed models that were found to “Meet” Criterion 7 “Integration and Care Coordination” were more likely to address health care system-related care coordination objectives related to continuity of care across different phases of care, settings, or treatments (31 percent vs. 0 percent for the 10 proposed models that were found to “Not Meet” Criterion 7 and 18 percent for the 34 proposed models that were reviewed by PTAC). Exhibit 9 summarizes the distribution of the proposed models that have been reviewed by PTAC by care coordination context, care coordination objective, care coordination function and payment methodology.

^{xxxiv} This analysis is based on AHRQ’s summary of common objectives for care coordination (see Section IV.A above).

Exhibit 9. Distribution of Proposals that were Reviewed by PTAC by Selected Categories Relating to Care Coordination*

Category	Overall Total Number of Proposals Reviewed by PTAC**		Subtotal: Meets and Does Not Meet Criterion 7***		Meets Criterion 7***		Does Not Meet Criterion 7		Not Applicable		Withdrawn	
	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total
TOTAL NUMBER OF PROPOSALS	34*	100%	26	100%	16	100%	10	100%	2	100%	6	100%
<i>Care Coordination Context</i>												
Population-wide	7	21%	4	15%	2	13%	2	20%	2	100%	1	17%
Population-specific	21	62%	16	62%	9	56%	7	70%	0	0%	5	83%
Acute care event	6	18%	6	23%	5	31%	1	10%	0	0%	0	0%
<i>Patient/Family-Focused Objectives</i>												
Improve patient experience or engagement, care navigation	9	26%	8	31%	5	31%	3	30%	1	50%	0	0%
<i>Individual Provider-Focused Objectives</i>												
Total: Individual provider-focused objectives	7	21%	4	15%	2	13%	2	20%	1	50%	2	33%
Support and empower interdisciplinary care teams, team communication	5	15%	3	12%	1	6%	2	20%	0	0%	2	33%
Accountability and oversight	2	6%	2	8%	1	6%	1	10%	0	0%	0	0%
Reducing burden of physicians	2	6%	0	0%	0	0%	0	0%	1	50%	1	17%
<i>Health Care System-Related Objectives</i>												
Total: Health care system objectives	23	68%	18	69%	12	75%	6	60%	1	50%	4	67%
Reducing costs, readmissions, care escalation, complications	13	38%	10	38%	5	31%	5	50%	1	50%	2	33%
Deliver evidence-based care	9	26%	6	23%	2	13%	4	40%	1	50%	2	33%

Category	Overall Total Number of Proposals Reviewed by PTAC**		Subtotal: Meets and Does Not Meet Criterion 7***		Meets Criterion 7***		Does Not Meet Criterion 7		Not Applicable		Withdrawn	
	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total
Continuity of care across different phases of care, settings, treatments	6	18%	5	19%	5	31%	0	0%	0	0%	1	17%
Facilitating appropriate discharge	1	3%	1	4%	1	6%	0	0%	0	0%	0	0%
Specialty care in underserved areas/across specialties	3	9%	3	12%	3	19%	0	0%	0	0%	0	0%
Care Coordination Functions												
Establish accountability/negotiate responsibility	18	53%	14	54%	10	63%	4	40%	1	50%	3	50%
Facilitate transitions and coordinate care across settings	14	41%	10	38%	10	63%	0	0%	0	0%	4	67%
Assess patient needs and goals	7	21%	6	23%	3	19%	3	30%	0	0%	1	17%
Link to community resources	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Align resources with patient and population needs	2	6%	2	8%	2	13%	0	0%	0	0%	0	0%
Communication	7	21%	6	23%	3	19%	3	30%	0	0%	1	17%
Developing care plan	3	9%	3	12%	3	19%	0	0%	0	0%	0	0%
Monitoring and follow-up	7	21%	6	23%	4	25%	2	20%	0	0%	1	17%
Support self-management goals	2	6%	2	8%	1	6%	1	10%	0	0%	0	0%
Payment Methodology												
Bundled episode-based or monthly payments with/without shared risk	14	41%	11	42%	8	50%	3	30%	0	0%	3	50%
Add-on PBPM with shared risk	7	21%	6	23%	4	25%	2	20%	0	0%	1	17%
Episode-based payments with/without replacing FFS	5	15%	4	15%	4	25%	0	0%	0	0%	1	17%

Category	Overall Total Number of Proposals Reviewed by PTAC**		Subtotal: Meets and Does Not Meet Criterion 7***		Meets Criterion 7***		Does Not Meet Criterion 7		Not Applicable		Withdrawn	
	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total
Additional one-time or visit-based payments	9	26%	6	23%	1	6%	5	50%	1	50%	2	33%
Discounted FFS and shared savings payments	1	3%	1	4%	0	0%	1	10%	0	0%	0	0%
FFS	1	3%	0	0%	0	0%	0	0%	0	0%	1	17%
Other	1	3%	0	0%	0	0%	0	0%	1	50%	0	0%

*Categorizations are based on areas emphasized or highlighted within the proposal and may not represent an exhaustive review of all proposed model components. See Appendix F for a full description of the methodology used to categorize these proposed models.

** Excludes information for one proposal that was withdrawn prior to any review by the Committee.

*** Includes one proposal whose rating for Criterion 7 was “Meets and Deserves Priority Consideration.”

The 34 proposed models that were reviewed by PTAC included relatively similar care coordination functions across model characteristics and care coordination objectives.

- 53 percent of the proposed models that were reviewed by PTAC sought to establish accountability or negotiate responsibility through the use of designated interdisciplinary care teams or care coordinators.
- 41 percent of the proposed models sought to facilitate transitions and coordination across settings (for example, through home health care, post-discharge visits, and assistance with referrals).
- 21 percent of the proposed models included care coordination functions related to supporting communication (for example, through EHR integration or through specific mechanisms to notify providers upon admission of their patients to a hospital).
- 21 percent of the proposed models included care coordination functions associated with assessing, and documenting, patient needs and goals (for example, through the use of patient surveys and the use of patient-centered care protocols).
- Overall, the proposed models that were reviewed by PTAC were less likely to focus on the development of care plans (9 percent); align resources with patient and population needs, for example through the use of risk stratification (6 percent); and support for self-management goals, for example, through shared decision-making and patient or caregiver education (6 percent).

The 16 proposed models that were found to “Meet” Criterion 7 “Integration and Care Coordination” were much more likely to focus on facilitating transitions and coordinating care across settings (64 percent vs. 0 percent for the 10 proposed models that were found to “Not Meet” Criterion 7 and 41 percent for the 34 proposed models that have been reviewed by PTAC). These 16 proposed models were also more likely to address aligning resources with patient and population needs (13 percent) and developing a care plan (19 percent).

Exhibit 10 provides an overview of the functions that were addressed by each of the 16 proposed models that were found to “Meet” Criterion 7 “Integration and Care Coordination”, organized by care coordination context.

Vulnerable Populations

A few proposed models addressed vulnerable populations, including those with behavioral health and social needs. AAFP promoted behavioral health coordination by PCPs. UNMHSC and Mercy sought to increase access to health care services in rural areas. Additionally, the proposed CAPABLE model addressed social needs by helping beneficiaries to maintain independence in the community. As awareness of attention to equity and SDOH continues to increase, future PTAC proposals may address these issues more explicitly.

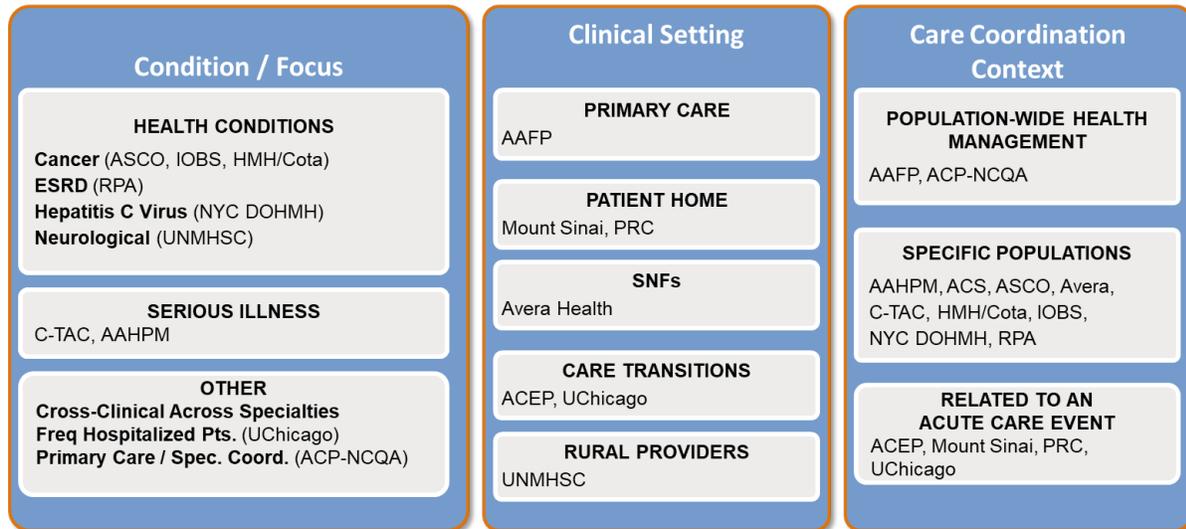
Exhibit 10. Summary of the Care Coordination Functions of Proposed Models that were Found to “Meet” Criterion 7, “Integration and Care Coordination”***

Submitter	Care Coordination Functions							
	Establish Accountability or Negotiate Responsibility	Facilitate Transitions and Coordinate Care Across Settings	Assess Patient Needs and Goals	Align Resources with Patient and Population Needs	Communication	Developing a Care Plan	Monitoring and Follow-Up	Support Self-Management Goals
<i>Care Coordination for Population-Wide Health Management</i>								
AAFP			<input type="checkbox"/>					
ACP-NCQA	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>				
<i>Care Coordination for Specific Populations</i>								
AAHPM	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		
ACS	<input type="checkbox"/>							
ASCO	<input type="checkbox"/>						<input type="checkbox"/>	
Avera	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	
C-TAC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
HMH/Cota		<input type="checkbox"/>			<input type="checkbox"/>			
IOBS		<input type="checkbox"/>						
NYC DOHMH		<input type="checkbox"/>						
RPA		<input type="checkbox"/>						<input type="checkbox"/>
<i>Care Coordination Related to an Acute Care Event</i>								
ACEP	<input type="checkbox"/>						<input type="checkbox"/>	
Mount Sinai*	<input type="checkbox"/>	<input type="checkbox"/>						
PRC	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>	
UChicago					<input type="checkbox"/>			
UNMHSC	<input type="checkbox"/>	<input type="checkbox"/>						

* PTAC found that Mount Sinai “Meets and Deserves Priority Consideration” for Criterion 7. PTAC’s rating for the other proposals in this table was “Meets” for Criterion 7.

**Categorizations are based on areas emphasized or highlighted within the proposal and may not represent an exhaustive review of all proposed model components. See Appendix F for a full description of the methodology used to categorize these proposed models.

Exhibit 11. Clinical Focus, Provider Settings, and Care Coordination Context of PTAC Proposal Submissions that were Found to “Meet” Criterion 7, “Integration and Care Coordination”, December 2016 – September 2020*



* PTAC found that Mount Sinai “Meets and Deserves Priority Consideration” for Criterion 7. PTAC’s rating for the other proposals in this exhibit was “Meets” for Criterion 7.

Payment approaches across models submitted to PTAC. Among the 34 proposed models that were reviewed by PTAC, bundled payment models that reimbursed all physicians involved in care coordination and integration across an episode or condition were the most common payment model methodology. The stakeholders who submitted proposals to PTAC proposed a variety of payment models, including:

- 41 percent of the proposed payment models that were reviewed by PTAC included bundled episode-based or monthly payments with or without shared risk.
- 21 percent of the proposed payment models with add-on PBPM payments with shared risk.
- 15 percent of the proposed payment models included episode-based payments with or without replacing FFS.
- 26 percent of the proposed payment models included additional one-time or visit-based payments.
- One of the proposed payment models (3 percent) included discounted FFS and shared savings payments.

The 34 proposals that have been reviewed by PTAC varied widely in how they structured payments to encourage care coordination. For example, while the previous submitters commonly included bundled payments in their models, some included a one-time bundled payment while others introduced shared risk that could generate additional performance-related payments beyond the bundled amount. Most of the proposed payment models were flexible and allowed for care coordination to be implemented to varying degrees. However, some of the proposed models included performance payments conditional to specific care coordination goals and quality measures.

Most of the proposed models did not include explicit or stand-alone care coordination payment mechanisms or payment incentives. However, two proposals included care management fees; two proposals included add-on or shared savings performance payments that were determined by performance measures related to care coordination; and one proposal included an additional payment to support remote monitoring.

The 16 proposed models that were found to meet Criterion 7 (Integration and Care Coordination) were less likely to have additional one-time or visit-based payments (see Exhibit 9 above).

Section IX.F (Evidence of Effectiveness of Care Coordination) describes promising practices for payment mechanisms in PTAC proposed models and current evidence of effectiveness.

VII.B. PTAC Assessment and Recommendations Related to Care Coordination

This section summarizes PTAC's comments relating to the care coordination components of the 28 proposals PTAC reviewed and addressed in reports to the Secretary (RTSes).^{xxxv} Appendix F summarizes PTAC findings for Criterion 7, "Integration and Care Coordination," and overall recommendations to the Secretary. PTAC's rating for one proposed model was "Meets and Deserves Priority Consideration" for Criterion 7, "Integration and Care Coordination" (Mount Sinai). PTAC noted that this proposed model included clear and standardized care coordination processes to reduce complications and readmissions after an acute care event and included a multidisciplinary care team and a bundled episode-based payment model.

PTAC's ratings for 15 proposed models was "Meets" for Criterion 7, "Integration and Care Coordination." These proposals included care coordination objectives and functions consistent with those included in the PTAC proposals as a whole. Common strengths that PTAC cited for these proposed models included clear processes for care coordination, explicit data-sharing mechanisms, patient engagement, performance quality metrics specific to care coordination, effective payment mechanisms, engagement standards for PCPs and specialists, multidisciplinary teams, and continuity of care.

PTAC's rating for ten of the 28 proposed models that were deliberated and voted on by PTAC was "Does not Meet" for Criterion 7, "Integration and Care Coordination." Common weaknesses that were identified by PTAC for these proposed models included: unclear specifications or requirements for care coordination; lack of clear accountability; lack of interoperability of EHRs; lack of guidance or mechanisms for data- or information-sharing; inaccessibility of proprietary software; lack of specific care coordination quality metrics; or concerns regarding the scalability of models.

VII.C. Other PTAC Insights Related to Care Coordination

In addition to the Committee's comments on care coordination for specific proposals, PTAC has conveyed some general considerations on care coordination in the context of APMs and PFPMs. For example, during PTAC's December 2020 public meeting, Committee members raised the following issues related to care coordination:

^{xxxv} Seven of the 35 proposals submitted to PTAC were withdrawn prior to being deliberated on at a PTAC public meeting.

- **Including payment mechanisms that address care coordination and reduce fragmentation of care.** Committee members noted that few proposals included a financial or payment component that fully addressed care coordination. PTAC commended proposed models that, where appropriate, included: care management fees; add-on or shared savings performance payments determined by care coordination measures; a proposal to test a PBPM payment to incentivize care coordination for more frail patients; compensation for specialists engaging in care coordination with PCPs; and payment to support remote monitoring. Flexible episode-based payments and performance incentives for care coordination have demonstrated success in improving care coordination.^{64,89,90}
- **Engaging PCPs and specialists.** Some Committee members asked whether proposed models appropriately accounted for the need to support active collaboration between PCPs and specialists. In its review of five PTAC proposals, the Committee highlighted the importance of proposed models engaging with PCPs and specialists in the care coordination process. Comments included praise for proposed models that included explicit mechanisms to standardize care coordination processes with PCPs or specialists and care delivery requirements for comprehensive team-based care. Committee members also applauded proposed models that empower PCPs with the knowledge necessary to manage patients with chronic conditions and reduce unnecessary handoffs. Recent literature on the integration of primary care and specialty care within care teams and systems has shown improved care coordination and related outcomes.^{24,91}
- **Addressing fragmentation across settings and clinician types.** Some Committee members voiced concerns over the ability of proposed models to address fragmentation of care across settings and clinician types and the potential for mechanisms like telehealth to address fragmentation by improving access to data. However, some Committee members also noted that when telehealth is not implemented properly, it could exacerbate issues of care fragmentation by creating additional data silos that reduce data accessibility. PTAC highlighted components of seven proposals that sought to reduce care fragmentation, including: use of care coordination to help patients navigate the health care system; provider education/mentoring to reduce handoffs; high-quality clinical pathways; interdisciplinary care teams; use of appropriate HIT and telehealth; including independent practice physicians; and tracking disease progression. Literature highlights the importance of interdisciplinary care teams, communication, education, HIT, and patient navigation for both patient perspectives and health outcomes.^{92,93,94}
- **Coordinating between phases of care.** PTAC members also evaluated whether proposed models were incentivizing care continuity between phases of care (e.g., outpatient, acute, or post-acute settings). PTAC identified care continuity as a strength in five proposals. Components included: reducing transitions between providers, care teams, or care settings across acute and post-acute phases to improve continuity; not linking the payment model to just one phase of care (e.g., chemotherapy); and using interdisciplinary teams. Literature shows that the use of the same team or provider (regardless of specialty) across phases of care can reduce all-cause hospitalizations and ED visits, lower total expenditures, and improve patient perception of care.^{95,96}
- **Addressing equity of care and inclusion of patient preferences.** PTAC members asked whether proposed models addressed equity in care and whether patients' needs and preferences were incorporated in care planning. PTAC recommended one proposal that sought to improve care

coordination between different care settings (including tertiary care) in underserved rural areas. Additionally, PTAC highlighted a focus on patient preferences in three proposals, including the use of evidence-based treatments that align with a patient's evolving personal preferences and patient surveys on shared decision-making. Patient-centered models (e.g., PCMH) often include care coordination approaches such as patient engagement in care planning.⁹⁷

VII.D. Previous Submitters' Insights Regarding Optimizing Care Coordination

This section summarizes potential barriers and enablers to optimizing care coordination within the context of APMs and value-based care from the perspective of past PTAC submitters with proposals that were found to "Meet" Criterion 7, "Integration and Care Coordination." Of the 16 previous submitters that were contacted, 15 organizations participated in discussions. These 15 previous submitters noted the importance of care coordination for reducing costs and improving quality of care. They characterized care coordination as a culture shift that, if supported by tools and payment structures, can improve quality of care for patients, increase engagement with patients' family members and caregivers, and produce value through efficiency. Key points from the discussions are summarized below.

- **Payment policy can be a barrier.** Some previous submitters indicated that despite a growing emphasis on care coordination in health care policy and delivery transformation efforts, reimbursement and payment structures have acted as a major barrier to effective implementation of care coordination activities. They indicated that current FFS reimbursement models do not incentivize care coordination, and emphasized that aligning financial incentives across delivery organizations (e.g., inpatient, outpatient, and long-term care), sectors (e.g., community services), and payers is critical to facilitate effective care coordination activities. They favored APMs as a potential mechanism to optimize use of care coordination by aligning incentives and allowing flexibility and innovation in care coordination programs. Previous submitters consulted for this environmental scan indicated that existing APMs could be better designed to incentivize care coordination across care settings, with one previous submitter noting that Medicare's diagnosis-related groups (DRGs) are currently restricted to acute care and do not incentivize coordination during the post-acute phase.
- **State and federal regulations can create disincentives to effective care coordination.** A few previous submitters noted that concerns about actual or perceived regulatory barriers can discourage providers from engaging in care coordination. For example, emergency physicians may avoid engaging in care coordination for post-discharge activities to avoid a perceived conflict with the Physician Self-Referral (Stark) Law. State and federal regulations also pose challenges for at-home care coordination. Previous submitters also cited Medicare's originating site and geographic restrictions on telehealth as barriers that prevent providers from effectively coordinating with patients and their care teams. Previous submitters described their interest in sharing data to facilitate coordination with community and social service organizations (e.g., home health, housing). However, they noted that due to the Health Insurance Portability and Accountability Act (HIPAA), they are limited in what they can share, which hampers the ability of providers to coordinate care holistically. Finally, submitters also noted that political cycles create barriers to quickly adopting delivery reforms and care coordination initiatives in Medicare and Medicaid programs.

- **Telehealth is an effective and integral tool for care coordination.** A few previous submitters described telehealth as an integral component of care coordination in their proposed models. Submitters described using telehealth not as a replacement for in-person care, but as an additional service that provides opportunity for bolstering optimal care coordination. Telehealth has enabled submitters to reach patients who encounter barriers to receiving in-person care, optimized care coordination activities that did not require an in-person visit (e.g., reduced ED visits through improved communication with short-term and long-term care facility patients and staff), and improved physician-patient relationships.
- **HIT infrastructure is an ongoing barrier to care coordination.** Despite citing telehealth as a critical tool for effective care coordination, most previous submitters described the challenge of sharing data in a timely, efficient, and comprehensive manner with providers where they did not share an EHR system. In spite of advances in interoperability and development of state-based health information exchanges (HIEs), submitters described challenges with limited communication and data exchange, including the need to develop a secondary system to facilitate care coordination. Previous submitters also noted the significant cost of investing in HIT to facilitate care coordination in APMs. Provider organizations require additional tools to support care coordination, which requires sizable upfront investments that are typically unfunded in APMs and PFPMs. Previous submitters indicated that the lack of stable financial mechanisms to support care coordination activities can contribute to provider organizations' hesitancy to make upfront investments in needed infrastructure (e.g., HIT, networking systems) and to hire additional staff. Without adequate incentives, organizations may not be able to dedicate resources to coordinating care across settings. Submitters also noted that independent practices face unique challenges related to HIT, as they rely on hospitals and health systems for aspects of patient care (e.g., inpatient stays, surgery, and imaging). While independent practices can access data through the HIE, it is limited in nature and often delayed. Independent practices can monitor admit discharge records from area hospitals, yet this, too, is restricted.
- **Care coordination can address SDOH and promote equity within APMs and PFPMs.** Most previous submitters that were contacted described aspects of their proposed models that promoted equity in areas such as using geographic location (e.g., specialized virtual consults in rural settings), providing tablets to individuals being cared for at home, and making referrals to appropriate and accessible clinical and social services. These previous submitters also described the importance of building trust with patients—whether care would be delivered by a clinician, care coordinator, or community health worker—and making a detailed effort to address workforce diversity. A previous submitter recommended that future APMs and PFPMs require social risk assessments (e.g., Health Leads Social Needs Screening^{xxxvi}) and include social risk adjustment at the individual beneficiary level. Additionally, a few previous submitters suggested that existing measures do not adequately address equity issues related to care coordination. Some of their recommendations included collecting data on rates of prevention and early detection based on race and socioeconomic status.
- **The COVID-19 PHE resulted in opportunities and challenges for care coordination.** Most of the previous submitters observed that increased telehealth utilization during the PHE proved

^{xxxvi} <https://healthleadsusa.org/resources/the-health-leads-screening-toolkit/>.

valuable for reaching patients and coordinating care. Previous submitters also noted that Medicare changes to billing requirements were beneficial. For example, previous submitters expressed a belief that expanded CMS coverage of telehealth under Medicare FFS telehealth services through the 1135 waiver authority and the Coronavirus Preparedness and Response Supplemental Appropriations Act should continue following the conclusion of the PHE. Submitters also noted that the Acute Hospital Care at Home waiver facilitated home care. Submitters also found that the PHE has made disparities in access to coordinated care more evident. Communities most heavily affected by the pandemic often had the least access to coordinated care, particularly long-term care facilities. Upon reflection, one previous submitter discussed incorporating information on equity, as well as addressing SDOH through patient assessments, in their proposal.

Section VIII. Performance and Outcome Metrics and Evaluation of Care Coordination

Validated performance measures are needed to evaluate the effectiveness of care coordination activities in improving health and quality of care, and reducing unnecessary utilization and costs. Numerous published instruments assess care coordination structures and processes directly or assess provider or patient experiences with care coordination specifically. However, in many cases, stakeholders have measured care coordination indirectly by means of utilization, quality, and cost of care outcomes thought to be influenced by care coordination. For example, CMS's Hospital Readmissions Reduction Program gauges care coordination through the unplanned readmission rate for select conditions.⁹⁸ This section outlines the general literature on measures associated with care coordination, as well as specifics from CMMI models and proposed models that were reviewed by PTAC.

VIII.A. Performance Measures for Care Coordination in the Literature

A 2013 systematic review of care coordination measures, reflected in AHRQ's 2014 Care Coordination Measures Atlas, studied 96 measurements that captured information across the three perspectives delineated by AHRQ: patient/family, health care professional, and the health care system.^{9,99} The authors found a focus on survey items assessing the effectiveness of information transfer and communication across providers, particularly from the patient perspective. Some examples of instruments and measures included the following:

- Patient/family perspective: The Consumer Assessment of Healthcare Providers and Systems (CAHPS) asks patients to use a four-point frequency scale to rate how often their providers perform key care coordination functions such as communicating with other doctors and being knowledgeable about care received from specialists.
- Health care professional perspective(s): The Primary Care Assessment Tool–Provider Expanded Edition asks providers to rate the extent to which their practice meets patients' needs, specifically with respect to coordinating care longitudinally and comprehensively, and using information systems.
- Health care system representative perspective(s): The Assessment of Chronic Illness Care asks health systems representatives to evaluate the extent to which their origination supports

functions relevant to care coordination, including community linkages, self-management support, decision support, and information systems.

Other care coordination domains that were commonly measured included monitoring, following up, and responding to change; establishing accountability or responsibility; and facilitating transitions across settings (see Exhibit 12). However, a number of measurement gaps also existed; the same review found that few studies measured provider perspectives on care coordination. Specific measurement gaps also existed in certain settings and patient populations, including home health and end-of-life care.⁹ Experts point to the need for greater consensus regarding how to measure common care coordination activities, to achieve an evidence base.¹⁰⁰ The Center for Healthcare Strategies convened an Integrated Care Performance Measurement Workgroup that recommended two measures for care coordination: 1) the proportion of people reporting service coordinators help them get what they need, from the Human Service Research Institute's Consumer Survey; and 2) the percent of people who feel it is a problem to receive service/assistance from more than one case manager or care coordinator from the Indiana Medicaid Consumer Survey.¹⁰¹

Exhibit 12. Summary of Care Coordination Domains and Instruments Measuring Domains

Measure Domain	Number and Percent of Instruments Measuring Domain			
	Patient/family perspective	Health care professional perspective	System representative perspective	Total all perspectives
Information transfer	41 (53%)	17 (22%)	21 (27%)	78*
Communicate/share knowledge among care team	35 (58%)	17 (28%)	9 (15%)	60*
Monitor, follow up, and respond to change	28 (54%)	9 (17%)	16 (31%)	52*
Establish accountability or negotiate responsibility	22 (44%)	18 (36%)	11 (22%)	50*
Facilitate transitions across settings	22 (48%)	11 (24%)	14 (30%)	46*
Align resources with patient and population needs	13 (43%)	8 (27%)	10 (33%)	30*
Link to community resources	13 (46%)	8 (29%)	8 (29%)	28*
Assess needs and goals	35 (61%)	15 (26%)	7 (12%)	57
Support self-management goals	32 (60%)	11 (21%)	10 (19%)	53
Interpersonal communication	30 (67%)	10 (22%)	5 (11%)	45
Create a proactive plan of care	15 (36%)	15 (36%)	12 (29%)	42
Facilitate transitions as coordination needs change	4 (36%)	2 (18%)	5 (45%)	11

SOURCE: Schultz et al. 2013.

N = 96 instruments. Parentheses indicate the percent of domain instruments that map to each perspective.

*One measure instrument mapped to two perspectives for this domain, making the total less than the sum of the respective columns.

Evaluators have encountered a number of challenges in isolating and measuring the effects of care coordination. Reported barriers to evaluating care coordination programs and models included variability of documentation of care coordination activities in claims and EHRs. In addition, evaluators have reported challenges related to measuring care coordination using electronic data, including:¹⁰²

- Underutilization of HIT system capabilities and clinical workflow barriers.
- Lack of data standardization and limited HIT system interoperability.
- Unknown clinical data quality in electronic data sources.
- Limitations in linking data.
- Technical hurdles to accessing data.

A number of tools exist to aid researchers and evaluators in navigating these measurement challenges and selecting appropriate care coordination measures. Sources include the National Quality Forum’s Preferred Practices and Performance Measures for Measuring and Reporting Care Coordination, and AHRQ’s Care Coordination Measures Atlas.^{3,103}

SMEs that were consulted for this environmental scan noted that there are insufficient performance metrics to address SDOH in the context of care coordination initiatives. They observed that one tool available is the ICD-10-CM codes included in categories Z55-Z65 (“Z codes”), to capture data on social needs (e.g., transportation, housing, food insecurity). However, these codes are rarely used; for this reason, there is an opportunity for APMs to incentivize billing for these codes.

VIII.B. Performance Measures Used in Selected CMMI Models That Relate to Care Coordination

The 19 selected CMMI models that incorporate care coordination elements use a variety of performance measures to assess the impact of care coordination indirectly, via outcomes that might be avoided with strong care coordination. For example, the evaluation of the NGACO model, aimed at reducing unnecessary utilization in the Medicare population, uses utilization measures such as risk-standardized, all-condition readmissions; all-cause unplanned admissions for patients with chronic conditions; and ambulatory care-sensitive conditions (ACSC) admissions. In addition to utilization measures, some models have used quality measures such as medication reconciliation after hospital discharge and preventive service use as proxies for care coordination.

Some CMMI models also have measured care coordination based on beneficiary and family caregiver satisfaction. Other models used process measures at the practice level to assess care coordination. For example, the Pioneer ACO model included the use of claims and EHR data to identify patients for care management and track use of care managers embedded in the clinic. Pioneer ACOs also used Group Practice Reporting Option (GPRO) data to group 21 individual measures into four composites, one of which focuses on care coordination. Exhibit 13 lists the performance measures used to evaluate selected CMMI models, specifically related to care coordination.

Exhibit 13. Performance Measures Associated with Selected CMMI Models

CMMI Model	Performance Measures Related to Care Coordination
Comprehensive Primary Care Plus (CPC+) Model	30-day all-cause unplanned readmissions; CAHPS beneficiary survey (care management domain)
Next Generation ACO (NGACO) Model	CAHPS: Getting Timely Care, Appointments, and Information, How Well Your Doctors Communicate, Health Promotion and Education, Shared Decision Making, Stewardship of Patient Resources; Risk-standardized, all-condition readmission; SNF 30-day all-cause readmission; all-cause unplanned admissions for patients with diabetes, heart failure, multiple chronic conditions; ACSC admissions: COPD or asthma in older adults, heart failure; documentation of current medications in the medical record
Vermont All-Payer Model	See NGACO
Independence at Home Demonstration	Hospitalization rate for ACSCs; rehospitalization rate; ED visit rate for ACSCs; contact with beneficiaries within 48 hours upon admission to the hospital and discharge from the hospital and/or ED; in-home safety assessments; medication reconciliation in the home

CMMI Model	Performance Measures Related to Care Coordination
Kidney Care Choices Model	Gains in Patient Activation (PAM) Scores at 12 Months; Depression Remission at 12 Months – Progress Toward Remission; Controlling High Blood Pressure; Optimal ESRD Starts
Medicare Coordinated Care Demonstration	Hospitalizations; survival rate
Multi-Payer Advanced Primary Care Practice (MAPCP) Demonstration	Rate of follow-up visits within 14 days after discharge; rate of unplanned readmissions with 30 days of discharge
Pioneer ACO Model	Visiting hospitalized patients as part of care coordination; use of claims and EHR to identify patients for care management; use of care manager embedded in the clinic; GPRO data (21 individual measures grouped into four composites, one of which was care coordination); care coordination-related quality measures included medication reconciliation and falls

VIII.C. Performance Measures Proposed in Selected PTAC Proposals

Exhibit 14 summarizes the performance measures that submitters recommended for use in evaluating the 16 proposed models that were found to “Meet” Criterion 7, “Integration and Care Coordination.” (Appendix F includes additional information regarding the performance measures relating to care coordination that were included in proposed models that were reviewed by PTAC). Some proposed models included direct process measures of care coordination (e.g., completed care plans). However, other proposed models relied primarily on measures of cost, utilization, and quality to assess the impact of their care coordination initiatives.

Exhibit 14. Performance Measures Proposed in PTAC Proposed Models that were Found to “Meet” Criterion 7, “Integration and Care Coordination”

PTAC Proposed Model	Performance Measures and Topics
Population-Wide Care Coordination Context	
American Academy of Family Physicians (AAFP)	Core Quality Measures Collaborative’s PCMH/ACO Primary Care Core Set, including clinical quality, patient safety, and resource use measures using National Quality Strategy
American College of Physicians-National Committee for Quality Assurance (ACP-NCQA)	NCQA’s Patient-centered Specialty Practice quality measures: access to timely, patient-focused care; shared decision-making; continuous improvement; use of Certified Electronic Health Record Technology (CEHRT)
Population-Specific Care Coordination Context	
American Academy of Hospice and Palliative Medicine (AAHPM)	Completion of care processes
American College of Surgeons (ACS)	Surgical plan and goals of care, postoperative care plan, postoperative care coordination and follow-up with primary/referring provider, postoperative plan communication with patient and family, and post-discharge review of patient goals of care

PTAC Proposed Model	Performance Measures and Topics
American Society of Clinical Oncology (ASCO)	Cost of care (unplanned acute care hospital admissions; unplanned emergency and observation care visits; supportive and maintenance drug costs); adherence to clinical pathways; patient satisfaction
Avera Health (Avera)	ED visits; hospital readmissions
Coalition to Transform Advanced Care (C-TAC)	Access and timeliness of care; getting help for pain; medication reconciliation post hospital discharge; utilization of intensive care unit and hospice care; communication; ACM provider attestation that the patient's care plan is consistent with preferences; overall satisfaction with care; standardized proactive telemanagement procedures; communication across all clinical settings; engaging PCPs and specialists as core members of clinical team; education
Hackensack Meridian Health and Cota, Inc. (HMH/Cota)	Surgery, oncology, and/or genetic quality measures for breast, colorectal, and lung cancers; general oncology; infection monitoring; COTA analytics; risk management; finance monitoring; reliability; patient experience; patient satisfaction; and patient-recorded outcomes
Innovative Oncology Business Solutions, Inc. (IOBS)	Patient satisfaction; oncology payment category (OPC) virtual accounts; cost of care; hospitalization rates
New York City Department of Health and Mental Hygiene (NYC DOHMH)	Facility-based sustained virologic response (SVR) rate; matched cohort study analyzing the impact of care coordination on total cost of care for Medicare and Medicaid FFS beneficiaries
Renal Physicians Association (RPA)	Patient-Reported Outcomes Measurement Information System (PROMIS) measures
Acute Care Coordination Context	
American College of Emergency Physicians (ACEP)	Model aligned with BCPI Advanced, ACEP's Clinical Emergency Data Registry, and use of other Qualified Clinical Data Registries to measure quality and allow comparison with Merit-based Incentive Payment System (MIPS)-participating professionals; percent of eligible cases in which a safe discharge assessment was completed and reviewed by physician
Icahn School of Medicine at Mount Sinai (Mount Sinai)*	Measures of care planning; medication reconciliation post-discharge
Personalized Recovery Care (PRC)	Patient-reported measure about support of recovery care coordinator during episode; connecting patient with PCP within five to seven days of episode
University of Chicago Medicine (UChicago)	None specified
University of New Mexico Health Sciences Center (UNMHSC)	Patient experience questionnaire (PEQ) and Telemedicine Satisfaction Questionnaire (TSQ)

* PTAC found that Mount Sinai “Meets and Deserves Priority Consideration” for Criterion 7. PTAC’s rating for the other proposals in this table was “Meets” for Criterion 7.

Section IX. Evidence of Effectiveness of Care Coordination

Care coordination objectives across models and interventions include reducing preventable utilization, improving quality of care, and improving patient experience. Care coordination functions and activities vary based on the needs of individual patients and resource constraints, and an effective care coordination intervention for one population might not be appropriate for another. This section summarizes evidence of the effectiveness of care coordination based on a review of peer-reviewed literature and evaluations of CMMI models.

IX.A. Reducing Avoidable Health Care Utilization

Evaluations of care coordination interventions have yielded mixed results with respect to impact on avoidable health care utilization. For example, one study of home-based care coordination by a nurse practitioner and social worker for low-income older adults demonstrated a reduction in ED visits.¹⁰⁴ However, a review of case management programs for chronic illness management, a common function of care coordination, found minimal impacts on utilization measures.¹⁰⁵

Evidence from CMMI model evaluations related to several of the selected models that were discussed in Section VI.D (Care Coordination in CMMI Models) also indicated minimal impact on ED visits, hospitalizations, and readmissions.^{10,11,12,13,14,15,16,17} Two exceptions to these findings were the CCTP and the Maryland All-Payer models. For CCTP, site-specific cross-sectional analyses found that more than half of participating practices showed significant reductions in unplanned readmissions. However, other participating practices did not significantly reduce readmission rates relative to matched comparisons.¹⁸ The Maryland All-Payer model significantly reduced hospitalizations for Medicare beneficiaries with larger reductions for dual eligible beneficiaries.¹³ Hospitalizations decreased by 5.4 percent for Medicare-only beneficiaries and by 10 percent for dually eligible beneficiaries, relative to the comparison groups.

Despite mixed evidence related to reducing avoidable service use, certain functions of care coordination have been associated with positive utilization outcomes. These functions are described below.

- **Targeting high-risk patients.** Some evaluations have shown that care coordination interventions aimed at reducing unnecessary high-cost care were most effective for frequent users of health care services, including those with chronic conditions.^{19,20} MCCD's HQP and the Maryland All-Payer model reduced utilization for high-risk groups.^{13,21} HQP reduced ED visits and hospitalizations for its high-risk subgroup by 28 percent and 25 percent, respectively, over the program's 10 years.
- **Care transitions.** Recent evidence on care transition programs has indicated that these programs can decrease preventable hospitalization readmissions. A PAC intervention focused on patient education, discharge planning based on patient priorities, and coordination with community-based behavioral health and social service interventions resulted in significant reductions in hospitalizations, ED visits, and 30-day readmissions for the Medicaid population only, though total cost of care decreased for both Medicare and Medicaid participants.²² The authors suggested that community interventions may be more effective for the Medicaid or dually eligible population than for the Medicare population at large.

- Primary care coordination.** A 2020 study of the impact of physician networks on ED admissions for Medicaid patients with chronic ACSCs showed a major reduction in avoidable ED visits when PCPs provided comprehensive care for these patients' ACSCs on their own, compared with PCPs coordinating with care with many different specialists. This finding was robust even though the "solo PCPs" were more likely to be in rural areas or underserved areas with limited access to specialists and emergency care. PCPs coordinating with fewer specialists and who had a high degree of network centrality, providing more opportunities for robust care coordination, also were associated with fewer ED visits than PCPs coordinating with many different specialists.²⁰

IX.B. Improving Quality of Care

Several studies assessed the impact of care coordination on reducing fragmentation in care and improving continuity of care, with mixed results. Referrals between primary care and specialty providers are recognized as a critical step in coordination of care, in terms of reducing fragmentation in care. Research shows that use of referral templates and e-consults can lead to increased clarity and completeness of referrals. The same research has shown no association between use of cross-provider service agreements and improved clarity or completeness.¹⁰⁶ Research further indicated that PCPs perceived direct communication with specialists as preferable to relying on an EHR to coordinate care, and that patients appreciate the help of care coordinators, often separate from the medical team, to assist them with navigating referrals.²⁴

Some evaluations of the selected CMMI models discussed earlier used composite measurements of care coordination. On measures of care continuity, fragmentation, and comprehensiveness, CPC+ practices did not score significantly better than non-CPC+ practices.¹⁶ MAPCP demonstration practices were more likely to show improved performance for continuity of care and scored higher for "comprehensiveness" measurements on beneficiary surveys.¹⁷

IX.C. Improving Patient Health and Experience of Care

Care coordination may improve patient health and experience with care. However, evaluations of the selected CMMI models have shown no improvement in health outcomes related to congestive heart failure, incidence of COPD for asthma patients, and incidence of ESRD or long-term complications from diabetes.^{10,107} MCCD patients reported receiving more education on self-management but did not report increased knowledge of or adherence to diet, exercise, and medication regimens.²⁷ However, the MCCD evaluation did find that consistent in-person care coordination for moderate and high-risk patients can improve patient satisfaction with physician communication, functioning, and quality of life. Beneficiaries served by CPC+, MCCD, and OCM practices did not rate the quality of their care experience differently from comparison groups.^{14,16,71}

Other care coordination interventions have been found to be effective at improving both quality of care and quality of life for older patients.^{25,26} A randomized trial of home health care patients with depression found improvement in depression scores when nurse coordinators managed symptoms of individuals with severe depression. In this case, care management included weekly symptom assessment, medication management, care coordination with specialists, education on their condition, and goal setting.¹⁰⁸

IX.D. Reducing Cost of Care^{xxxvii}

Effective care coordination, especially for high-cost patients, presents an opportunity to improve care while reducing costs.¹⁰⁹ However, few large rigorous studies have evaluated the cost-effectiveness of care coordination. Those that do present conflicting results.^{10,27,28} For example, a randomized trial on the effect of home-based nurse care coordination on Medicare patients found significant net cost savings.¹¹⁰

However, evidence from selected CMMI model evaluations is less promising. Overall, these CMMI models have generated minimal net Medicare savings, after accounting for shared savings and additional payments. Medicare expenditures for the CPC+, NGACO, and OCM models increased slightly compared with comparison groups in the models' most recent evaluation reports, after payouts to participants.^{12,14,16} NGACO and OCM both achieved reductions in gross spending, which was offset by additional payments to participants. Of the 15 MCCD programs, a few achieved cost neutrality. Only one provider partnership set up through MCCD reduced net Medicare expenditures when care coordination fees were included.⁷¹

A large, randomized trial of 15 MCCD programs from 2002 to 2006 found that none of the programs generated net Medicare savings; three programs reduced monthly Medicare expenditures compared with the control group, but only one sustainable program realized savings that offset fees.²⁷ Another analysis of six Medicare demonstrations aimed at improving the care coordination for beneficiaries with chronic conditions or high health care costs found no effect on gross Medicare expenditures.¹⁰

Despite the limited evidence regarding care coordination's impact on overall spending, some types of interventions have demonstrated cost savings with respect to specific beneficiary populations. For example, MCCD reduced gross expenditures among a high-risk subgroup, possibly due to reduced ED use.²¹ Maryland's All-Payer model reduced utilization and gross expenditures for beneficiaries with multiple chronic conditions and dually eligible beneficiaries compared with their comparison groups.¹³

Interventions focused specifically on care transitions have also shown promising results with respect to reducing cost of care. For example, one study showed that when TCM services were provided, total gross Medicare costs were significantly lower in the 30 to 60 days post-discharge relative to a comparison group.²⁹ Beneficiaries in the CCTP showed lower 30-day Medicare expenditures than a comparison group, even accounting for fees paid to providers.¹⁸

A randomized control trial of a PAC coordination intervention (e.g., discharge planning, patient education, medication management, post-discharge follow-up, and transition management) found a significant reduction in total cost of care relative to a control group.²² The greatest cost reduction for the Medicare population receiving the acute care intervention was associated with a reduction in SNF utilization.

Overall, the selected CMMI models involving care coordination showed negligible overall net savings; however, there have been promising reductions in costs for some types of care. NGACOs reduced gross

^{xxxvii} Gross Medicare spending/expenditures refers to Medicare spending, not including model-related payouts (i.e., shared savings). Net Medicare spending refers to Medicare spending after accounting for model-related payouts.

spending on SNF and other PAC facilities.¹² The CJR model also realized net Medicare savings, partially by reductions in the use of institutional PAC.¹¹ The Maryland All-Payer model showed slower growth in total expenditures relative to the comparison group, partially due to reduced inpatient admissions and, therefore, reduced PAC spending.¹³

While CMMI's primary care-focused MAPCP demonstration did not demonstrate, and CPC+ has yet to demonstrate consistent net cost reductions,¹⁷ there are promising findings associated with use of the PCMH principles. These principles emphasize care coordination across specialties and settings. One study found that Medicare payments decreased after practices received NCQA PCMH recognition. Sixty-two percent of this decrease was due to a reduction in payments for inpatient care and ED visits.¹¹¹

IX.E. Return on Investment

The peer-reviewed research on the overall return on investment from care coordination is limited regarding research on provider expenditures. However, one Health Care Innovation Award (HCIA) Round One evaluation looked at return on investment for care innovation programs aimed at populations with specific disease conditions. Of the 13 disease-specific programs serving Medicare populations, three awardees demonstrated potential for return on investments, accounting for a reduction in Medicare FFS or Medicaid payments relative to the providers' costs in implementing the model.¹¹² An oncology medical home model saved \$612 per patient per quarter, with operating costs of \$324 per patient per quarter. A care coordination program for patients with dementia and depression saved \$605 per patient per quarter, with operating costs of \$514 per patient per quarter. Finally, an asthma education and care coordination intervention generated savings of \$536 per patient per quarter with operating cost of \$339 per patient per quarter. The majority of provider investment went to personnel expenses, including care coordinators, triage telephone operators, nurses, and program managers. Other care coordination-related costs included IT infrastructure, management of a case management system, translation services, and payments to community-based organizations.

IX.F. Promising Payment Arrangements for Care Coordination

Despite the lack of consistent research findings, the literature suggests that APMs show promise in improving specific performance metrics when they create incentives for care coordination. At-risk compensation models have demonstrated reductions in length of stay and hospital readmissions, as well as improved patient experience in single-system settings.¹¹³ The Texas Medicaid waiver incentive-based payment model has led to demonstrable reductions in hospitalizations for patients receiving care coordination, generating an average savings of \$1,500 per year per patient.²³

The proposals that PTAC reviewed included both flexible episode-based payments and performance incentives for care coordination initiatives. Research has shown that these approaches lead to greater investment in a care coordination workforce and more effort to coordinate care.⁸⁹ Shared savings and global capitation models were specifically associated with greater use of care coordination among ACO-affiliated hospitals. In addition, bundled payment programs were associated with greater adoption of care coordination activities, lending credibility to the idea that value-based payment can facilitate care coordination.^{64,90}

Section X. Barriers and Challenges to Effective Care Coordination

Despite the recent emphasis on care coordination, many barriers still exist to successful implementation and adoption in practice. This section summarizes barriers identified in studies of care coordination interventions and concerns raised in previous PTAC deliberations.

X.A. Provider-Level Barriers

At the provider level, identified challenges relate to defining staff roles, communicating across providers, and addressing resource constraints that impede the implementation and effectiveness of care coordination efforts.

- **Staff roles.** Several studies have demonstrated that an ill-defined scope of responsibilities and insufficient staff put strain on providers.^{30,31} Without clearly delineated roles, tension between clinicians and non-clinical care coordinators can be a challenge.³⁰ The most common concern cited by PTAC in its review of nearly half of PTAC proposals was a lack of specification, accountability, and standardization for care coordination mechanisms.
- **Communication and technology challenges.** Engaged communication across providers is essential for capturing and sharing patient data. A review of the State Action on Avoidable Rehospitalizations (STAAR) initiative found that breakdowns in handoffs after hospital discharge and “medical specialty silos” increased the odds of readmission.³² CMMI model participants found provider engagement to be challenging and cited it as a barrier to improvements in spending and utilization.^{12,13,17,18,33} In some cases, CMMI model participants found that as providers gained experience under a model of care and built stronger cross-provider relationships, exchanging data became more efficient.^{17,18,33}
- **Lack of interoperability.** Functional EHRs are essential for capturing and sharing patient data across providers and tracking care coordination activities. Ill-equipped EHR systems or lack of interoperability across systems can hamper efforts to coordinate care.^{30,32} PTAC has voiced concerns about interoperability of EHRs, lack of data-sharing across providers, and inaccessibility of proprietary software in its review of several proposals. One SME consulted for this environmental scan noted that lack of interoperability often leads to a silo between primary care and specialist care. This is particularly challenging in the context of APMs that aim to facilitate coordination across settings, because it can be difficult for PCPs to influence total cost of care, as they are unaware of the specialty costs.
- **Resource constraints.** Providers have cited lack of time and compensation as barriers to coordinating care.^{31,32} Shortages in the number of providers available may also add to strain on staff and may ultimately diminish the time and capacity providers have to conduct care coordination activities.^{30,31,32} In addition, access to resources outside the health care system is important for care coordination, particularly as providers recognize the need to address SDOH. The availability of community services varies by region and may be lower in marginalized communities.^{30,31} Patients with complex social needs may present challenges to organizations trying to coordinate their care with limited internal and external resources.³² For example, shortages of behavioral health care providers were cited as a challenge to addressing patients’ behavioral health needs.^{16,33}

- **Administrative requirements.** Relating to the topic of resource constraints, SMEs noted that a barrier to effective care coordination is a lack of provider support and buy-in due to increased administrative requirements (e.g., documentation and reporting) in APMs. SMEs emphasized the need to articulate the potential return on investment from care coordination initiatives, as it may not always be clear to providers or practices. SMEs also emphasized that currently, reimbursement for chronic care management and transitional care management is low and not tied to quality. To address this challenge, it will be important for payments to physicians reflect the time and quality of the work being done.

X.B. Patient-Level Barriers

Patient factors may also contribute to barriers to effective care coordination. First, patients may not be familiar with the role of care coordination staff, and gaining trust can be challenging.^{30,31} Second, patients have reported frustration with navigating their care across providers, particularly when providers are not adequately communicating among themselves and EHR platforms are not integrated across settings.³⁴ Even with strong care coordination, patients may not have the ability or willingness to engage in self-management activities of their conditions.^{30,31}

X.C. System-Level Barriers

Widely documented disparities in health care among racial and ethnic minorities, and rural and low-income communities extend to care coordination. Using data from the 2018 Medicare CAHPS survey, researchers found poorer care coordination among Hispanic, Black, and Asian/Pacific Islander beneficiaries compared with non-Hispanic White beneficiaries.³⁵ These three beneficiary groups were significantly less likely to report that their personal doctor had medical records and other relevant information about their care, that they received help in managing their care, and that their personal doctor discussed their medications and had up-to-date information on care from specialists. In addition, respondents identified as Hispanic, Black, and Asian/Pacific Islander reported significantly greater difficulty getting timely follow-up on test results, compared with non-Hispanic White beneficiaries.³⁵

Patients in federally-qualified health centers reported poor care coordination after being discharged from hospitals, including lack of medication reconciliation and lack of recognition of social risk factors that could affect their ability to comply with discharge instructions.³⁶ Disparities in access to care coordination have also been observed for immigrant populations.³⁷ Care coordination is an important means of reducing inequities in health care; for this reason, it is important that access to care coordination, as well as quality of coordination, be more equitable.³⁸

Section XI. Opportunities for Improving and Optimizing Care Coordination in APMs and PFPs

This environmental scan identifies several care coordination strategies with demonstrated positive impacts on quality, health, utilization, and cost outcomes. This section synthesizes findings and discusses other considerations for care coordination in light of the design and implementation of new models.

XI.A. Promising Strategies for Improving Care Coordination

Models focused on high-risk patients, robust transitional care after hospitalizations, or primary care were more likely to achieve reductions in avoidable utilization and health care expenditures compared with other models. Specific strategies linked with positive outcomes related to quality, health, utilization, and/or cost outcomes in successful models are described below. Health care systems and providers may seek to adopt and implement one or more of these strategies based on the needs of their patient populations, organizational factors, and resource availability:

- Frequent (at least one per month) in-person contacts between care coordinators and patients to develop trust;^{10,27,94}
- Regular in-person meetings between care coordinators and providers;⁹⁴
- Evidence-based education for patients;⁹⁴
- Medication self-management programs to improve patient navigation and continuity of transitional care;^{27,94}
- Registries for identifying patients for preventive services, pre-visit planning, clinician reminders, patient outreach, and population health monitoring;⁹⁷
- Promotion of preventive health services;¹⁷
- Risk stratification to target reductions in readmissions, hospital visits, and ED visits, with a focus on transitional care for patients with chronic conditions;¹¹⁴
- Formal care teams (e.g., PCMH) or informal care teams with a structured process for communication between care providers and patients, and systematic monitoring of patients with chronic conditions;¹¹⁵
- Social workers as members of an interdisciplinary care team, to help provide social support to address needs of patients and ensure successful transition from hospital to home;¹¹⁶
- Effective communication, and information and data-sharing between providers to manage transitions and reduce short-term readmissions;²⁷
- Telehealth and EHR interoperability to improve patient communication, follow-up, provider-to-provider communication, and data-sharing;^{93,106,117}
- Co-location of a physician with a care coordinator to improve communication;²⁷ and
- Clear consult request templates from PCPs to facilitate referrals to specialists or e-consultations.¹¹⁸

Care Coordination with Non-Physician Providers and Community-Based Organizations, in PTAC Models, CMMI Models, and Literature. A few PTAC proposals and CMMI models have been structured to support enhanced services not previously reimbursed in Medicare FFS; these services have included coordinating care with non-physician providers (e.g., social workers, therapists) to provide social services and integrating community-based organizations and resources. Both of the palliative care PTAC proposals (AAHPM and C-TAC) included non-physician providers in their care teams, as determined by community needs and resources for the AAHPM proposal. The LUGPA proposal included a monthly care management fee intended to support collaboration between APM entities and non-physician providers across the continuum of care. Five of the selected CMMI models (Maryland Total Cost of Care, MAPCP, InCK, Pioneer ACO, and AHC) sought to increase patient access to and referral relationships with community and social services and their providers; in addition, the models have incorporated community-based resources and/or assisted patient navigation of these resources. All eight of these

CMMI models and PTAC proposals have shared similar care coordination objectives (e.g., delivering evidence-based care; improving health outcomes) and tools (e.g., care planning; interdisciplinary teams).

Some studies have emphasized the importance of non-physician providers in coordinating care, especially for higher-risk patients (e.g., patients with multiple chronic conditions). A 2014 study examined the impact of a model designed to improve care coordination among Safety Net Medical Home Initiative (SNMHI) practices, including linking patients to community resources to facilitate referrals and to respond to social service needs. The study found that by linking patients to these resources, patients were statistically more likely to obtain necessary referrals, information was more likely to be communicated in advance to both providers and patients, and a timely follow-up after the visit was more likely to occur.¹¹⁹

In addition, CHWs and patient navigators have proven to be important for addressing health disparities. A review of interventions to reduce disparities in the Veterans Affairs health system noted the importance of CHWs in improving care coordination, helping patients manage treatments, and linking patients to resources to address SDOH.¹²⁰ Patient navigation to facilitate care coordination has been linked to higher adherence to preventive guidelines for cancer care among racial and ethnic minority group members, as well as earlier detection of cancer and greater satisfaction with care.^{121,122}

XI.B. Considerations to Guide Future Research on Care Coordination

This section includes a summary of some areas for consideration to guide future research on care coordination in the context of APMs.

Looking at care coordination interventions over a longer time span. Very little research has been done on care coordination and time span of care (e.g., episode-based or lifetime) for patients with chronic conditions. However, a recent study noted that in order to care for a population with chronic conditions, reimbursement should be realigned to manage a broad range of conditions that never resolve and that “are not characterized by episodes of care.”¹²³ Another study on staff effort allocation and patient enrollment found that patients with longer program enrollment and more staff effort developed more sustainable connections to medical and social support.¹²⁴ Longer-term studies would face the challenge of tracking outcomes for participants over a long-time horizon and cataloging the care coordination activities of many different health care providers.

Patients may need continued coordinated care for their lifetime or just for an episode, depending on individual needs and risks. This consideration would affect resources required for continuity of care.¹²³ The amount and duration of effective care coordination would be expected to vary by patient need. For example, some patients may need only early assistance post-discharge to ensure medication self-management, self-care, and overall management of their chronic condition(s); others might need consistent follow-up and monitoring for the rest of their lives.¹²⁵

Focusing on accountability for care coordination activities. Research on PCMHs shows that care coordination is most effective when accountability is designated to “the most knowledgeable provider for a given clinical responsibility.”¹²⁶ For example, a cancer patient with additional preventive or chronic disease needs might have those needs best met if their care were coordinated by their PCP rather than

by the oncologist providing cancer care.¹²⁶ However, the explicit establishment of shared accountability across different providers is especially important for patients with multiple needs and/or chronic conditions.¹²⁷ These findings suggest that an interdisciplinary team, with standardized processes for communication and care assignment, and a care coordinator assigned to assist with patient navigation and follow-up, might be necessary for successful care coordination and management for patients with chronic conditions.

Addressing SDOH. Medicaid payment reform initiatives, often supported through 1115 waivers, may be uniquely positioned to support care coordination activities that address SDOH. For example, in Oregon, coordinated care organizations have created flexibility to use resources for health-related social services.¹²⁸ Similarly, in California, Medicaid-funded Whole Person Care Pilots have been designed to support interventions for high-risk groups.¹²⁹ A review of interventions applied by Oregon and California found that care coordination to address patients' social needs was common. Care coordinators may work with patients to access food and resources for child care and benefit from investments in infrastructure to target services based on needs. For example, sites implementing California's Whole Person Care Pilots invested in the data infrastructure to identify and share information on patients in need of coordination across the health care, criminal justice, social services, and housing sectors.¹³⁰

Addressing equity in care coordination. Attention to health inequity has increased in recent years. A 2020 study found that availability of hospital-based care coordination services varied across communities.¹³¹ Hospitals that served communities with high uninsurance and/or poverty rates were significantly less likely to provide care coordination services. Hospital-initiated care coordination mechanisms and innovative ACO models were more available in well-resourced communities. The study suggested that policy makers should consider models to increase resources for coordinated care in rural, underserved, and high-poverty, high-uninsured areas to improve access to care coordination.

Assessing the costs of care coordination activities. As work to implement care coordination continues, stakeholders may benefit from research on the cost related to implementing distinct care coordination activities. Gaining an understanding of required investments in care coordination that improve quality of care in different settings can help stakeholders design payment approaches that produce appropriate returns. Furthermore, research describing how commercial plans pay for effective care coordination can help identify best practices and promising approaches for a wider audience.

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Appendix A. Research Questions by Environmental Scan Section

Section	Research Questions
Background: Care Coordination, Contexts, and Related Activities	<ol style="list-style-type: none"> 1. What is care coordination? How is it defined? What does it include? <ol style="list-style-type: none"> a. What are the objectives of care coordination (examples: reducing fragmentation of care, emergency department [ED] visits, costs, and duplication of services, etc.)? b. What is the difference between care coordination, care integration, care coordination/integration, care management, case management, coordinated care, and integrated care? To what extent is there agreement in the literature regarding the functional elements that are included in each of the definitions? c. How is care coordination best considered / understood / described?—is it: <ul style="list-style-type: none"> ○ A collection of specific definable functions or actions (reducing gaps, duplications, errors, and waste in care; transition care management; coordinating appointments; med reconciliation; patient education; social determinants of health [SDOH] screening; etc.)? ○ A context or underpinning of practice culture (overtly and covertly valued and/or expected, then reinforced in practice systems, norms, rules, compensation, etc.)? ○ A system of actionable attitudes and beliefs about care (mutual interdependence; person centeredness; global responsibility; etc.)? ○ Or are all of the above required to really do it well? d. To what extent do the definitions vary based on needs in local geographic areas? To what extent are certain terms interchangeable, and to what extent is there overlap between some of the terms? <ul style="list-style-type: none"> ○ Example: Is care management / navigation focused on addressing the patient’s immediate needs, while coordination is focused on linking the patient care that is being received from various providers in various settings? e. What are the most common areas of scope / focus in care coordination interventions (i.e. managing chronic conditions, managing episodes of care, care coordination after acute events, addressing SDOH)? f. What are the most common functions (tools / mechanisms / roles / activities) for improving integration and care coordination in APMs (examples: care management, case management, patient navigators, telemonitoring, health information technology / electronic health records, other)? g. How do the number of components of care coordination vary by type of provider (e.g., small physician practices vs. integrated delivery systems)? h. Which timespans of care are relevant, and which one fits best for the PTAC focus (e.g., chronic conditions vs. acute care episode-based vs. patient-focused / whole person / ongoing / lifetime relating to all aspects of the care the patient receives)? Does the relevant timespan vary depending on the condition, specialty, etc.? i. How does care coordination vary by setting (i.e., rural centers compared to urban and academic centers)?*

Section	Research Questions
Trends in Care Coordination Access, Utilization, and Reimbursement	<ol style="list-style-type: none"> 1. Is there evidence of any differences in the availability of effective care coordination by race/ethnicity, geography (e.g., rural vs. urban), etc.? <ul style="list-style-type: none"> How has care coordination been reimbursed in Medicare fee-for-service [FFS], Medicare managed care, Medicaid, Medicaid managed care, and commercial plans? What specialties and disciplines have been reimbursed for care coordination? Which types of providers have been reimbursed for care coordination? What are the differences in rates of reimbursement by specialty / discipline / provider type and by payer? What does the care coordination reimbursement cover beyond the patient visit fee? <ol style="list-style-type: none"> a. Have higher rates for some disciplines and credentials led to better outcomes? For Medicare FFS, is there any proven correlation between use of transitional care management (TCM) and chronic care management (CCM) codes and outcomes or utilization? b. Is there evidence of confusion in alternative payment models (APMs) regarding care coordination reimbursement or payment mechanisms (e.g., if a specialist is involved in more than one APM, is it clear which payment mechanisms apply)? 2. Are there different payment structures for care coordination by provider type (e.g. primary care vs. specialty care) or setting (e.g. outpatient, acute, or post-acute settings)? How do the payment structures related to care coordination work together?* 3. What payer driven innovation in reimbursement for care coordination has emerged in the field (i.e., look at Partnership Health Plan in California – managed/capitated Medicaid populations – direct investment by the payer in intensive outpatient case management model, investments in homeless services, etc.)?
Care Coordination in CMMI Models	<ol style="list-style-type: none"> 1. How has care coordination been incorporated into Center for Medicare & Medicaid Innovation (CMMI) models? How is it reimbursed under these models? How is it measured and evaluated? 2. What have been the findings based on evaluations of care coordination in CMMI models? Are there any issues that have been identified? 3. What payment models to support care coordination are being considered in new CMMI models (i.e., global budgets, geographic-based accountability)?

Section	Research Questions
Care Coordination in PTAC Proposals	<ol style="list-style-type: none"> 1. What are the characteristics of the proposals that PTAC has received from stakeholders that have a care coordination focus or component? How did these proposals incorporate various aspects of care coordination in their care delivery models? How did these proposals incentivize care coordination in their payment methodologies? 2. Which proposed models that were reviewed by PTAC had good approaches to care coordination? (example: palliative care models) Which proposed models had less robust approaches to care coordination? (example: relying on an electronic health record) 3. What proposed care coordination-related improvements in models that were reviewed by PTAC have supporting evidence in the literature? <ul style="list-style-type: none"> ○ Examples include: team continuity from acute to post-acute setting and explicit mechanisms to connect care teams to patient’s usual providers; clearer measures, requirements, resources, and processes to ensure care coordination; more emphasis on primary care providers and specialists managing comorbidities; focusing on the whole patient rather than a targeted disease; and more attention to patient preferences and self-management. 4. Looking at the objectives of previous PTAC proposals, is there evidence in the literature that demonstrates a link between care coordination and improvements in these areas, particularly in areas where there have previously been challenges? 5. What payment arrangements hold the most promise for promoting care coordination in APMs and physician-focused payment models (PFPMs)? Looking at solutions put forth in previous PTAC proposals is there evidence in the literature of improved care coordination and/or impacts in quality, utilization, or cost? <ul style="list-style-type: none"> ○ Examples include: Episode-based models with performance incentives to encourage integration; monthly payments to support interdisciplinary team-based care; financial incentives for improved coordination and upstream preparation for advanced illness; and flexible episode-based payments to support non-covered services under FFS Medicare. 6. In addition to care coordination themes discussed in previous PTAC proposals, what care coordination strategies exist that can address issues raised by stakeholders related to optimizing value-based care, including the cost of home health care, integration of non-physician providers, and engaging with community-based organizations and caregivers? <ul style="list-style-type: none"> ○ How do the characteristics of the previous PTAC proposals that incorporate care coordination compare with CMMI models that incorporate care coordination in general, and with regard to addressing these issues? 7. What approaches to care coordination can address issues that have been raised by the Committee related to optimizing value-based care? <ul style="list-style-type: none"> ○ Examples include: overlap of specialists across different models, risk adjustment, different payment streams for primary care and specialty providers participating in models, accounting for distinct phases and settings of care, addressing equity in care, differences between rural and urban centers, and attention to patients’ social needs.
Performance and Outcome Metrics and Evaluation of Care Coordination	<ol style="list-style-type: none"> 1. What performance and outcome metrics should be used to measure if care coordination improvements are effective in improving quality and reducing costs in the long run? What measures have been proposed in PTAC submissions? What measures are used in CMMI models? <ul style="list-style-type: none"> ○ Examples include: medication reconciliation and reduced harm/costs associated with inappropriate prescribing, double prescribing; avoidable ED visits; hospitalizations for ambulatory care-sensitive conditions; hospital readmissions; management of chronic diseases that are treated by different specialists but have interacting issues—such as rheumatologist and endocrinologist, hematologist/oncologist, and orthopedist. 2. What are key issues in the evaluation of care coordination models submitted to PTAC and/or related demonstrations? How can evaluations capture both short-term and long-term outcomes of care coordination?

Section	Research Questions
Evidence of Effectiveness of Care Coordination	<ol style="list-style-type: none"> 1. What challenges in health care delivery is care coordination best able to address (examples: reducing fragmentation due to transitions in care, improving access, etc.)? What services, settings, and populations are most appropriate for care coordination? 2. What evidence is available in the literature regarding the effectiveness of care coordination in improving quality, reducing costs, improving patient satisfaction, etc.? 3. What have been the trends in care coordination utilization in Medicare FFS, Medicare managed care, Medicaid, Medicaid managed care, and commercial plans? Has there been a focus on particular services or populations? 4. What is the cost of providing various activities related to care coordination? To what extent do these costs vary by condition, specialty, type of provider, etc.?* 5. Is there evidence regarding the savings associated with care coordination (including short-term and long-term savings)? What are the sources of these savings (e.g., reduction in avoidable hospitalizations and ED visits, reduction in unnecessary diagnostic tests, etc.)? To what extent do the savings associated with care coordination vary by condition, specialty, type of provider, etc.? 6. Is there evidence regarding the net impact of care coordination on total cost of care? Does the net impact of care coordination on costs vary by condition, specialty, or type of provider (e.g., integrated delivery systems and independent providers, etc.)?
Barriers and Challenges to Effective Care Coordination	<ol style="list-style-type: none"> 1. Is there evidence of any differences in the availability of effective care coordination by race/ethnicity, geography (e.g., rural vs. urban), etc.? 2. What barriers have affected the availability of effective care coordination? What challenges have affected care coordination for specific chronic conditions, within specialties and across settings? What challenges have affected integration and communication with primary care providers?

Section	Research Questions
Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs	<ol style="list-style-type: none"> 1. What are best practices and/or the ideal state related to optimizing care coordination across providers on an ongoing basis for patients with one or more chronic conditions to mitigate care fragmentation (with a goal of incentivizing accountable, person-centered and coordinated care) across settings and clinician types? <ol style="list-style-type: none"> a. Which timespan of care fits best: episode (again, point in time—does this exacerbate the issue?), lifetime? b. What population is best served by the ideal care coordination model? Is it the multiple chronic condition population, or is it best for overseeing the health of a certain type of population (diabetes, cancer), or could someone with unassuming comorbidities but seemingly healthy qualify? Are there different care coordination models that might be more appropriate for certain populations? c. How much care coordination is really necessary, and where is the breakeven point?* d. How is coordinated care best managed across primary care and specialty services? e. What does the ideal state require (e.g., team-based care, communications / interoperable data, effort on the part of the providers/their staff, etc.)? f. What is the appropriate scope of responsibility: individual providers seeing / treating one aspect of the person vs. all providers (primary and specialty) being responsible for the integration of services? g. What is the optimal payment methodology for incentivizing care coordination (particularly in the context of APMs and PFPMs)? Which provider(s) should be reimbursed for providing care coordination (e.g., one entity vs. multiple providers) and how should they be paid (example: multiple physicians billing a care coordination fee or receiving add-on payments vs. embedding care coordination in global capitation payments)? What are the appropriate mechanisms for risk adjustment? h. How might current models be modified so that they ensure coordinated care but without increasing costs? i. How are social determinants of health or social drivers of health being incorporated in care coordination models? How are these being paid for or reimbursed? j. What parts do not seem necessary to decrease costs, increase outcomes, or improve satisfaction? k. For components that could be either human or technology driven (appointment reminders; TCM; med reconciliation; gap identification and closure; etc.) is there evidence that one is superior to the other? 2. What approaches have been used to improve care coordination in Medicare, Medicare managed care, Medicaid, Medicaid managed care, and commercial plans? 3. What approaches have been used to assist small physician practices that are not in an integrated delivery systems in improving care coordination? 4. What approaches have been used to improve patient experiences (e.g., including social services and community-based organizations in the payment model)? 5. What approaches to care coordination address equity? Are there concerns regarding whether value-based payments could be exacerbating health equity issues (example: if providers are only providing care coordination for certain conditions). 6. What risks are associated with global / capitated payment models (in which providers are assumed to be providing care coordination to assist in improving quality and reducing costs) that need to be addressed in order to ensure that patients are receiving the care that they need? What mechanisms exist for ensuring provider accountability? 7. What models are emerging to collaboratively address care coordination across a community -- including cross sector stakeholders? How are these models being funded? 8. How can telehealth facilitate or hinder care coordination? 9. What are promising ideas for new and/or improved APMs or PFPMs to support appropriate care coordination that improves quality and reduces cost to the FFS Medicare program? 10. What are promising ideas for new and/or improved APMs or PFPMs to support appropriate care coordination that improves quality and reduces cost to the FFS Medicare program?

*While these questions were considering during the drafting process of the environmental scan, information related to these questions was not found.

Appendix B. Search Strategy

Research Questions	Search Terms
Section IV. Background: Care Coordination, Contexts, and Related Activities	
<p>What is care coordination? How is it defined? What does it include?</p>	<p>care coordination OR coordinated care OR care integration OR care management (AND):</p> <ul style="list-style-type: none"> • definition • objectives • functions
Section V. Trends in Care Coordination Access, Utilization, and Reimbursement	
<p>What are the current trends in care coordination access, utilization, and reimbursement?</p>	<p>care coordination + Medicare (AND):</p> <ul style="list-style-type: none"> • utilization • payment OR reimbursement • coverage <p>care coordination + Medicaid (AND):</p> <ul style="list-style-type: none"> • utilization • payment OR reimbursement • coverage <p>care coordination + commercial (AND):</p> <ul style="list-style-type: none"> • utilization • payment OR reimbursement • coverage • care coordination + Medicaid + race OR ethnicity • care coordination + Medicaid + geography
Section VI. Care Coordination in CMMI Models	
<p>How has care coordination been incorporated into Center for Medicare & Medicaid Innovation (CMMI) Models?</p>	<p>Centers for Medicare & Medicaid Services (CMS) Program Statistics and Innovation Center website</p>
Section VII. Care Coordination in PTAC Proposals	
<p>What are the common characteristics of the 16 proposals that PTAC has received that “Met” or “Met and Deserved Priority Consideration” for the “Integration and Care Coordination” Criterion?</p>	<p>PTAC proposal documents Notes and discussion summaries from discussions with previous submitters</p>
Section VIII. Performance and Outcome Metrics and Evaluation of Care Coordination	
<p>What are recommended performance and outcome metrics to measure improvements in care coordination and long-term or short-term outcomes of care coordination?</p>	<p>care coordination + metrics + quality care coordination + performance</p>

Research Questions	Search Terms
Section IX. Evidence of Effectiveness of Care Coordination	
<p>What is current evidence on the effectiveness of care coordination and the impact of care coordination on total cost?</p>	<p>care coordination + effectiveness (AND):</p> <ul style="list-style-type: none"> • settings • populations • costs • patient engagement • chronic condition <p>care coordination + cost of care + Medicare care coordination + cost effectiveness + Medicare care coordination + spending + Medicare</p>
Section X. Barriers and Challenges to Effective Care Coordination	
<p>What are key issues or barriers found in models submitted to PTAC, CMMI Models, related demonstrations, and recent literature?</p>	<p>care coordination (AND):</p> <ul style="list-style-type: none"> • risks • challenges • accountability
Section XI. Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs	
<p>What is the current evidence of promising practices or approaches of implementation and impact of care coordination on key outcomes for Medicare fee-for-service (FFS) beneficiaries, including access, quality, patient experience, and cost?</p> <p>What are promising ideas for new and improved Alternative Payment Models (APMs) or physician-focused payment models (PFPMs) to support appropriate care coordination that improves quality and reduces cost to Medicare FFS program?</p>	<p>care coordination (AND):</p> <ul style="list-style-type: none"> • chronic conditions • patient experiences OR equity • facilitator • impact • payment AND global OR capitated • community • continuity • funding • telehealth

Appendix C. Previous PTAC Proposal Submitters and Subject Matter Experts Who Participated in Discussions for the Environmental Scan

Previous PTAC Proposal Submitters

1. American Academy of Family Physicians (AAFP)
2. American Academy of Hospice and Palliative Medicine (AAHPM)
3. American College of Emergency Physicians (ACEP)
4. American College of Physicians (ACP) and the National Committee for Quality Assurance (NCQA)
5. American College of Surgeons (ACS)
6. American Society of Clinical Oncology (ASCO)
7. Coalition to Transform Advanced Care (C-TAC)
8. Hackensack Meridian Health (HMH) and Cota, Inc.
9. Icahn School of Medicine at Mount Sinai (Mt. Sinai)
10. Innovative Oncology Business Solutions, Inc. (IOBS)
11. New York City Department of Health and Mental Hygiene (NYC DOHMH)
12. Personalized Recovery Care, LLC (PRC)
13. Renal Physicians Association (RPA)
14. University of Chicago (UChicago) Medicine
15. University of New Mexico Health Sciences Center (UNMHSC)

Subject Matter Experts

Subject matter experts act as discussants representing their own expertise and opinions, not those of their respective organizations or affiliations.

1. Sara Barry, MPH – OneCare Vermont
2. Christine E Bishop, PhD – Brandeis University
3. Catherine Olexa Meadors – Aledade, Inc.
4. Leena Sharma, MPP – Community Catalyst
5. Renée Markus Hodin, JD – Community Catalyst

Appendix D. Definitional Table of Care Coordination and Related Terms

This table provides differing definitions identified during the environmental scan used to describe care coordination and its related search terms.

Source	Definition and Goal
Care Coordination	
Agency for Healthcare Research and Quality (AHRQ) website (last modified 2018) ⁱ <i>Working definition from the 2007 Systematic Review</i>	<p><u>Definition</u>: “Care coordination involves deliberately organizing patient care activities and sharing information among all of the participants concerned with a patient’s care to achieve safer and more effective care. This means that the patient’s needs and preferences are known ahead of time and communicated at the right time to the right people, and that this information is used to provide safe, appropriate, and effective care to the patient.”</p> <p><u>Goal</u>: Achieve safer and more effective care.</p>
AHRQ (2014), The Care Coordination Measures Atlas ⁱⁱ (System Representatives Perspective)	<p><u>Definition</u>: “Deliberately integrate personnel, information, and other resources needed to carry out all required patient care activities between and among care participants (including the patient and informal caregivers).”</p> <p><u>Goal</u>: Coordinated care; meet patient needs and preferences in delivery of high-quality, high-value care; facilitate the appropriate and efficient delivery of health care services both within and across systems:</p> <ul style="list-style-type: none"> • Prevent failures in coordination that affect the financial performance of an integrated delivery system. • Prevent patients from being directed to the wrong place in the health system, or having a poor health outcome as a result of poor handoffs or inadequate information exchange. • Prevent patients from experiencing a clinically significant mishap resulting from fragmentation of care. • Prevent health care professionals from needing unreasonable levels of effort in order to accomplish necessary levels of coordination during transitions among health entities. • Prevent patients or their informal caregivers from needing unreasonable.

ⁱ Agency for Healthcare Research and Quality. (n.d.). Care Coordination. Retrieved February 11, 2021, from <https://www.ahrq.gov/ncepcr/care/coordination.html>

ⁱⁱ Agency for Healthcare Research and Quality. Care Coordination Measures | Chapter 2: What is Care Coordination? Published online June 2014. <https://www.ahrq.gov/ncepcr/care/coordination/atlas/chapter2.html>

Source	Definition and Goal
Care Coordination, cont.	
AHRQ (2014), The Care Coordination Measures Atlas ⁱⁱⁱ (General Perspective)	<p><u>Definition:</u> “A process that occurs most often during and in response to care transitions (e.g., transitions across settings, within care teams, among care participants, between encounters or care episodes, as patient needs change) and that involves activities or approaches that bridge gaps arising from these transitions.”</p> <ul style="list-style-type: none"> • Transitions occur when information and/or accountability/responsibility for some aspect of a patient’s care is transferred between two or more health care entities: <ul style="list-style-type: none"> ○ Addressing transition between sites of care ○ Transitions over time <p><u>Goal:</u> Two concepts: 1) coordinated care; 2) to “meet patient needs and preferences in delivery of high-quality, high-value care.”</p>
Lewis et al. (2019) ^{iv}	<p><u>Definition:</u> Synonymous with boundary spanning, referring to activities integrating care across organizations, providers, and settings.</p> <p>Often used loosely to refer to any care provided outside of the direct physician-patient clinical interaction, generally intended to extend or reinforce office-base treatment, such as providers of different specialties discussing a shared patient.</p>
New England Journal of Medicine (NEJM) Catalyst (2018) ^v	<p><u>Definition:</u> “Care coordination synchronizes the delivery of a patient’s health care from multiple providers and specialists.” [Used as a tool for achieving coordinated care]</p> <p><u>Goal:</u> “The goals of coordinated care are to improve health outcomes by ensuring that care from disparate providers is not delivered in silos, and to help reduce health care costs by eliminating redundant tests and procedures.”</p> <p>Specific goals may vary by setting:</p> <ul style="list-style-type: none"> • Primary care coordination: Decrease total health care costs for patients with chronic diseases and conditions; reduce hospital readmissions. • Acute care coordination: Help reduce hospital readmission rates, prevent avoidable emergency room (ER) visits; contribute to a reduction in mortality rates. • Post-acute/long-term care coordination: Reduce readmission risk factors.

ⁱⁱⁱ Agency for Healthcare Research and Quality. Care Coordination Measures | Chapter 1: Background. Published online June 2014.

<https://www.ahrq.gov/ncepcr/care/coordination/atlas/chapter1.html#scope>

^{iv} Lewis VA, Tierney KI, Frazee T., & Murray GF. Care Transformation Strategies and Approaches of Accountable Care Organizations. *Medical care research and review: MCRR*. 2019;76(3), 291–314.

^v NEJM Catalyst. What Is Care Coordination? *New England Journal of Medicine*. Published online January 2018.

Source	Definition and Goal
Care Management	
Lewis et al. (2018) ^{vi}	<p><u>Definition:</u> A population health strategy that can be used by physicians and other health care providers to assume responsibility for “redesigning care, providing high-value services, and driving quality and cost performance.”</p> <p><u>Goal:</u> Providing high-value services, and driving quality and cost performance.</p>
Lewis et al. (2019) ^{vii} and Lewis et al., April-June (2019) ^{viii}	<p><u>Definition:</u> The set of routines (including programs and systems) aimed to help manage patients’ health and medical conditions.</p> <ul style="list-style-type: none"> • Combines elements of case management and disease management into an overall rubric of “care management.” • Largely involves providers working directly with patients.
Robert Wood Johnson Foundation (RWJF) (2009) ^{ix}	<p><u>Definition:</u> A set of activities designed to assist patients and their support systems in managing medical conditions more effectively.</p> <p><u>Goal:</u> Improve patients’ functional health status; enhance coordination of care; eliminate duplication of services; reduce the need for expensive medical services; increase patient engagement (or caregiver) in self-care; improve quality; and reduce costs.</p>

^{vi} Lewis VA, D'Aunno T, Murray GF, Shortell SM, Colla CH. The Hidden Roles That Management Partners Play In Accountable Care Organizations. *Health affairs (Project Hope)*. 2018;37(2), 292–298.

^{vii} Lewis VA, Tierney KI, Frazee T, Murray GF. Care Transformation Strategies and Approaches of Accountable Care Organizations. *Medical care research and review. MCRR*. 2019;76(3), 291–314.

^{viii} Lewis VA, Schoenherr K, Frazee T, Cunningham A. Clinical coordination in accountable care organizations: A qualitative study. *Health care management review*. 2019;44(2), 127–136.

^{ix} Goodnell S, Bodenheimer TS, Berry-Millet R. Care Management of Patients with Complex Health Care Needs. *Robert Wood Johnson Foundation*. December 2009.

Source	Definition and Goal
Clinical Coordination	
Lewis et al. (April-June 2019) ^x	<p><u>Definition:</u> Three overlapping forms of coordination:</p> <ul style="list-style-type: none"> • Routines: Care delivery services are coordinated and routinized through care management protocols, clinical pathways, and best practice guidelines. • Boundary-spanning: Work that occurs across existing organizational boundaries, across provider specialties, or across settings. • Team Meetings/team-based care: Facilitate interactions among participants engaged in the same processes. <p><u>Goals:</u> Proponents of Accountable Care Organizations (ACOs) hope that ACOs will improve the way health care providers coordinate and deliver care:</p> <ul style="list-style-type: none"> • Reduce duplication. • Increase quality of care. • Reduce unnecessary costs associated with fragmented care. • Improve patients' experiences with health care.
Complex Care	
National Center for Complex Health and Social Needs (NCCHSN) website, last modified 2017. ^{xi}	<p><u>Definition:</u> "Complex care is a person-centered approach to address the needs of people whose combinations of medical, behavioral health, and social challenges result in extreme patterns of healthcare utilization and cost."</p> <p><u>Goal:</u> Reduce unnecessary spending in both health care and social services sectors. Complex care seeks to be:</p> <ul style="list-style-type: none"> • Person-centered • Equitable • Cross-sector (works to break down the silos dividing fields, sectors, and specialties, and to build the integrated ecosystem necessary to provide whole person care) • Team-based (delivered through inter-professional, non-traditional, and inclusive teams of medical, behavioral health, and social service providers led by the individual themselves) • Data-driven

^x Lewis VA, Schoenherr K, Frazee T, Cunningham A. Clinical coordination in accountable care organizations: A qualitative study. *Health care management review*, 44(2), 127–136. 2019.

^{xi} The National Center for Complex Health and Social Needs – An Initiative of the Camden Coalition. What is Complex Care? Last modified 2017.

Source	Definition and Goal
Complex Care, cont.	
NCCHSN, Center for Health Care Strategies (CHCS), Institute for Healthcare Improvement Blueprint (2019) ^{xii}	<p><u>Definition:</u> “To improve the health and wellbeing of a relatively small, heterogeneous group of individuals who repeatedly cycle through multiple healthcare, social service, and other systems but do not derive lasting benefits from these interactions.”</p> <ul style="list-style-type: none"> • It operates at the personal level by coordinating care for individuals. • It works at the systemic level by creating complex care ecosystems, the local networks of organizations that collaborate to serve individuals with complex health and social needs. • Programs may be housed in many settings, ranging from health care clinics and health plans to community-based organizations. <p><u>Goal:</u> To effectively address root causes of poor health; address gaps for a small percentage of the population for whom behavioral health and social needs are major contributors to poor health outcomes, and on whom much of health care spending in the U. S. is concentrated; and provide better care at a lower cost.</p>
Coordinated Care	
Alliance for Health Policy (July 2017 - Asner) ^{xiii}	<p><u>Definition:</u> Coordination between primary care and specialty physicians, working as a team.</p>
NEJM Catalyst (January 2018) ^{xiv}	<p><u>Definition:</u> Care coordination is used as a tool to achieve coordinated care “throughout the entire continuum of care from primary care to long-term care.”</p> <p>Elements of coordinated care/successful care coordination:</p> <ul style="list-style-type: none"> • Easy access to a range of health care services and providers • Good communications and effective care plan transitions between providers • A focus on the total health care needs of the patient • Clear and simple information that patients can understand

^{xii} Humowiecki M, Kuruna T, Sax R, Hawthorne M, Hamblin A, Turner S, Mate K, Sevin C, Cullen K. Blueprint for complex care: advancing the field of care for individuals with complex health and social needs. December 2018. www.nationalcomplex.care/blueprint

^{xiii} Asner B. Coordinated Care and Beyond: The Future of Integrated Care for Complex Chronic Conditions: What’s Working, What’s Not? *Alliance for Health Policy*. Published online July 18, 2017. <https://www.allhealthpolicy.org/coordinated-care-and-beyond-the-future-of-integrated-care-for-complex-chronic-conditions-whats-working-whats-not-2/>

^{xiv} NEJM Catalyst. What Is Care Coordination? *New England Journal of Medicine*. Published online January 2018.

Source	Definition and Goal
Integrated Care	
Nuffield Trust UK (National Health Service perspective) (June 2011) ^{xv}	<p><u>Definition:</u> “Reflects a concern to improve patient experience and achieve greater efficiency and value” from health care services.</p> <ul style="list-style-type: none"> • An organizing principle for care delivery that aims to improve patient care and experience through improved coordination • Includes diverse initiatives that seek to address fragmentation • Integrated care is the ambition to deliver services across providers with minimal duplication and disruption, and with high-quality outcomes and patient experience. • The patient’s perspective is at the heart of any discussion about integrated care. Achieving integrated care requires those involved with planning and providing services to “impose the patient perspective as the organizing principle of service delivery.” <p><u>Goal:</u> Address fragmentation in patient services and enable better coordinated and more continuous care, frequently for an aging population which has increasing incidence of chronic disease.</p>
Goodwin (2016) ^{xvi}	<p><u>Definition:</u> An overarching term for a broad and multi-component set of ideas:</p> <ul style="list-style-type: none"> • An approach to overcome care fragmentations, especially where this is leading to outcomes • May be best suited to people with medically complex or long-term care needs, but the term should not be solely regarded as a means for managing medical problems. <ul style="list-style-type: none"> ○ Can vary by type of integration, level at which integration occurs, process of integration, breadth of integration, degree of intensity of integration. ○ Can include horizontal integration, vertical integration, multi-sectoral integration, people-centered integration, whole system integration. <p><u>Goal:</u> To better coordinate care around people’s needs; to improve the quality and safety of care services through ongoing and co-productive partnerships.</p>
CHCS (2015) ^{xvii}	<p><u>Definition:</u> “Integrating care across service settings and funding streams” has great potential for improving quality, coordination, and cost-effectiveness of care for beneficiaries with chronic conditions who are dually eligible—most of whom have extensive medical, social, and long-term care needs.</p> <p><u>Goal:</u> Improve quality, coordination, and cost-effectiveness of care for a population with extensive medical, social, and long-term care needs.</p>

^{xv} Shaw S, Rosen R, Rumbold B. What is integrated care? *Evidence for Better Health Care*. Nuffield Trust. Published online June 2011.

^{xvi} Goodwin N. Understanding Integrated Care. *International Journal of Integrated Care*. 2016;16(4):6.

^{xvii} Archibald N, Kruse A, Center for Health Care Strategies. Snapshot of Integrated Care Models to Serve Dually Eligible Beneficiaries – Technical Assistance Brief. Published online December 2015.

Source	Definition and Goal
Integrated Care, cont.	
Lewis et al. (2014) ^{xviii}	<p><u>Definition</u>: “Allows patients to receive primary care and treatment for behavioral health problems in the same setting....compared to traditional models under which primary care and behavioral health services are delivered by separate providers and systems.”</p> <p><u>Goal</u>: Improve physical and behavioral health outcomes; facilitate more efficient delivery of behavioral health care or improve physical health outcomes among patients with comorbid conditions.</p>
Alliance for Health Policy (July 2017 - Dentzer) ^{xix}	<p><u>Definition</u>: “Integrated in one context, across the conventional focuses of medicine” (primary care, specialty care, and also behavioral health); integrated in the sense that “people don’t have just health care needs that affect their health and their health status, they have a lot of social needs that have to be addressed” (e.g., housing needs, transportation needs).</p> <p><u>Goal</u>: Developing a state-of-the-art model that would really address the needs of people with complex chronic conditions (e.g., health conditions, dual eligibility).</p>
Alliance for Health Policy (July 2017 - Asner) ^{xx}	<p><u>Definition</u>: “The seamless movement of information across the health care system.” Following a patient wherever he or she may be—from the primary care office, to the specialty office, to the hospital, to the home and back, so that everyone has the information they need about the patient and the patient situation.”</p>

^{xviii} Lewis VA, Colla CH, Tierney K, Van Citters AD, Fisher ES, Meara E. Few ACOs pursue innovative models that integrate care for mental illness and substance abuse with primary care. *Health affairs (Project Hope)*. 2014;33(10), 1808–1816.

^{xix} Dentzer S. Coordinated Care and Beyond: The Future of Integrated Care for Complex Chronic Conditions: What’s Working, What’s Not? *Alliance for Health Policy*. Published online July 18, 2017. <https://www.allhealthpolicy.org/coordinated-care-and-beyond-the-future-of-integrated-care-for-complex-chronic-conditions-whats-working-whats-not-2/>

^{xx} Asner B. Coordinated Care and Beyond: The Future of Integrated Care for Complex Chronic Conditions: What’s Working, What’s Not? *Alliance for Health Policy*. Published online July 18, 2017. <https://www.allhealthpolicy.org/coordinated-care-and-beyond-the-future-of-integrated-care-for-complex-chronic-conditions-whats-working-whats-not-2/>

Source	Definition and Goal
Integrated Care, cont.	
Colla et al. (2020) ^{xxi}	<p><u>Definition:</u> There are two domains of integration – clinical and financial.</p> <ul style="list-style-type: none"> • Clinical Integration: Also known as non-financial integration: <ul style="list-style-type: none"> ○ Coordination of patient services ○ Use of protocols ○ Individual clinician measures ○ Access to information • Financial Integration: Financial management and planning across operational units <p><u>Goal:</u> Adoption of quality-focused care delivery processes; better health-related beneficiary outcomes; reduction in spending in complex patients.</p>
Lewis et al. (April-June 2019) ^{xxii}	<p><u>Definition:</u> Structural or organizational integration/coordination refers to areas such as coordination of human resources and leadership and management structures.</p> <p>Relational integration/coordination includes:</p> <ul style="list-style-type: none"> • The existence of trust, mutual respect, and communication • Mediating the effectiveness of clinical coordination activities
Nuffield Trust UK – National Health Service perspective (June 2011) ^{xxiii}	<p><u>Definition:</u> The process, methods, and tools of integration that facilitate integrated care.</p> <p>Integration involves connecting the health care system (acute, community, and primary medical) with other service systems (such as long-term care, education, or housing services).</p>
Integration and Care Coordination	
Health and Human Services (HHS) Regulations (Centers for Medicare & Medicaid Services [CMS]) 42 CFR §414.1465	<p><u>Definition:</u> “Encourage greater integration and care coordination among practitioners and across settings where multiple practitioners or settings are relevant to delivering care to the population treated under the PFFM.”</p>

^{xxi} Colla C, et al. Organizational integration, practice capabilities, and outcomes in clinically complex Medicare beneficiaries. *Health Services Research*. 2020;55(S3).

^{xxii} Lewis VA, Tierney KI, Frazee T, Murray GF. Care Transformation Strategies and Approaches of Accountable Care Organizations. *Medical care research and review*. *MCR*. 2019;76(3), 291–314.

^{xxiii} Shaw S, Rosen R, Rumbold B. What is integrated care? *Evidence for Better Health Care*. Nuffield Trust; June 2011.

Appendix E. Summary of Model and Care Coordination Characteristics of 19 Selected Center for Medicare & Medicaid Innovation (CMMI) Models, by Care Coordination Context

The following tables provide specific details on model characteristics (i.e., clinical focus, providers, setting, and payment mechanisms); care coordination characteristics (i.e., objectives, functions); and evaluation details and results (i.e., performance measures specific to care coordination, and a summary of evaluation findings where appropriate) for selected CMMI models that included care coordination components. The selected CMMI models are organized into three separate tables by the following care coordination contexts: population-wide health management, specific populations, and/or care coordination related to an acute care event. Each table is organized by model status (i.e., ongoing models are listed first in alphabetical order, followed by completed models in alphabetical order, and then followed by models under development in alphabetical order).

Overview of Methodology Used to Review the Selected CMMI Models

The available information on each of the 19 selected CMMI model’s summary pages on the CMMI website was reviewed. This included an overview of the model, evaluation reports and findings, summaries, fact sheets, and press releases. Information found in these materials was used to summarize the models’ main themes related to care coordination context, objectives, functions, and payment model. AHRQ’s framework was used to categorize objectives and functions. The categorizations were based on the key information highlighted in these documents and are not exhaustive. The selected models may have elements that fall into additional categories of context, objective, functions, and payment models.

Appendix E.1. CMMI Models with Care Coordination for Population-Wide Health Management

CMMI Model Name and Implementation Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of Evaluation Findings Related to Care Coordination
Comprehensive Primary Care Plus (CPC+) Model, 2017 – current <i>Ongoing Model</i>	Clinical focus: Primary care Providers: Primary care providers (PCPs) Setting: Primary care practices	<ul style="list-style-type: none"> Care management fee Performance-based incentive payments Medicare Physician Fee Schedule (MPFS) 	<ul style="list-style-type: none"> Reduce acute care events Form proactive care management relationships with patients Utilize primary care to help patients navigate the health care system Meet patients' individual medical and behavioral health goals 	<ul style="list-style-type: none"> Align Resources with Patient and Population Needs Facilitate Transitions and Coordinate Care Across Settings Assess Patient Needs and Goals 	<ul style="list-style-type: none"> 30-day all-cause unplanned readmissions Consumer Assessment of Healthcare Providers and Systems (CAHPS): Care Management Domain 	<ul style="list-style-type: none"> Average rates of emergency department (ED), hospital follow-up, and risk stratification increased from 2017 to 2019. Little evidence that CPC+ improved continuity, fragmentation, comprehensiveness of care, 30-day unplanned readmissions, or mortality

CMMI Model Name and Implementation Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of Evaluation Findings Related to Care Coordination
<p>Maryland Total Cost of Care Model, 2019 – current</p> <p><i>Ongoing Model</i></p>	<p>Clinical Focus: Primary and specialty care</p> <p>Providers: Multiple</p> <p>Setting: Multiple</p>	<ul style="list-style-type: none"> • Annual global budgets paid by fee-for-service (FFS) • Hospital Payment Program: Population-based payments for hospital services • Care Redesign Program: Hospitals make incentive payments to non-hospital health care provider partners if the incentive payments are less than the attained savings under its fixed global budget. • Maryland Primary Care Program (MDPCP): Incentives for PCPs to offer advanced primary care services, per beneficiary per month (PBPM) payments to cover care management services, and performance-based incentive payments aimed at reducing hospitalization rates and improve the quality of care 	<ul style="list-style-type: none"> • Support tailored initiatives • Encourage providers to drive health care innovation • Support care redesign and offer resources for PCPs to better meet the needs of patients with complex and chronic conditions • Target high-risk, high-need individuals to reduce avoidable utilization 	<ul style="list-style-type: none"> • Establish Accountability or Negotiate Responsibility • Align Resources with Patient and Population Needs • Developing a Care Plan • Facilitate Transitions and Coordinate Care Across Settings • Link to Community Resources 	<ul style="list-style-type: none"> • Performance measures based on: 1) substance use disorder; 2) diabetes; 3) hypertension; 4) obesity; 5) smoking; and 6) asthma • Allows the state to select the specific measures associated with these areas and includes an Outcomes-Based Credits framework • Participants in the MDPCP track will report certain quality measures that are the same or similar to the Electronic Clinical Quality Measures (eCQMs): • Preventive care and screening: body mass index screening and follow-up • Controlling high blood pressure • Hemoglobin A1c poor control • Initiation and engagement of alcohol and other drug dependence treatment 	<ul style="list-style-type: none"> • Not yet available

CMMI Model Name and Implementation Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of Evaluation Findings Related to Care Coordination
<p>Next Generation ACO (NGACO) Model, 2016 – current</p> <p><i>Ongoing Model</i></p>	<p>Clinical focus: Primary and specialty care</p> <p>Providers: PCPs and specialists</p> <p>Setting: Multiple</p>	<ul style="list-style-type: none"> • Normal FFS claims • Normal FFS claims plus an additional PBPM payment • Population-based payment • Capitation 	<ul style="list-style-type: none"> • Facilitate the integrated and coordinated delivery of care across the continuum • Focus more on and invest in primary care and prevention • Deliver care lower-cost settings • Reduce duplication of services 	<ul style="list-style-type: none"> • Support Self-Management Goals • Communication • Establish Accountability or Negotiate Responsibility • Link to Community Resources • Facilitate Transitions and Coordinate Care Across Settings 	<ul style="list-style-type: none"> • CAHPS: Getting Timely Care, Appointments, and Information; How Well Your Doctors Communicate; Health Promotion and Education; Shared Decision Making; Stewardship of Patient Resources • Risk-standardized, all-condition readmission • Skilled nursing facility (SNF) 30-day readmission • All-cause unplanned admissions for patients with diabetes, heart failure, multiple chronic conditions • Ambulatory sensitive conditions admissions: chronic obstructive pulmonary disease (COPD) or asthma in older adults, heart failure • Documentation of current medications in the medical record 	<ul style="list-style-type: none"> • NGACOs built data analytic capacity to improve risk stratification, used annual wellness visits and care management to engage beneficiaries, and coordinated with SNFs to manage care transitions. • Despite NGACOs' efforts to risk-stratify and provide care management for beneficiaries, the model showed minimal impact in reducing acute care hospital spending and stays that account for the largest percentage of Medicare Parts A and B spending.
<p>Vermont All-Payer Model, 2017 – current</p> <p><i>Ongoing Model</i></p>	<p>Clinical focus: Primary and specialty care</p> <p>Providers: PCPs and specialists</p> <p>Setting: Multiple</p>	<ul style="list-style-type: none"> • See NGACO • Centers for Medicare & Medicaid Services (CMS) made available to Vermont start-up funding of \$9.5 million in 2017 to support care coordination and bolster collaboration between practices and community-based providers. 	<p>See NGACO, plus:</p> <ul style="list-style-type: none"> • Increase access to primary care • Reduce deaths from suicide and drug overdose • Lower prevalence of chronic disease 	<ul style="list-style-type: none"> • See NGACO 	<ul style="list-style-type: none"> • See NGACO 	<ul style="list-style-type: none"> • Not yet available

CMMI Model Name and Implementation Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of Evaluation Findings Related to Care Coordination
<p>Maryland All-Payer Model, 2014 – 2018</p> <p><i>Completed Model</i></p>	<p>Clinical Focus: Primary and specialty care</p> <p>Providers: Hospitals</p> <p>Setting: Hospital</p>	<ul style="list-style-type: none"> Hospital annual global budget that sets limits on hospital revenue Pay-for-performance indicatives 	<ul style="list-style-type: none"> Reduce costs and avoidable utilization 	<ul style="list-style-type: none"> Establish Accountability or Negotiate Responsibility Align Resources with Patient and Population Needs Developing a Care Plan Facilitate Transitions and Coordinate Care Across Settings 	<ul style="list-style-type: none"> Rates of unplanned readmission Visits to the ED within 30 days of discharge ED visits for avoidable conditions Admissions for ambulatory care sensitive conditions (ACSCs) Percentage of discharges with a follow-up visit within 14 days 	<ul style="list-style-type: none"> Hospitals adopted approaches to improve care coordination, including training nursing care coordination staff, developing/expanding care coordination and management offices, and integrating care coordination and care management staff and services into care. No change in rates of unplanned readmissions or ED visits within 30 days of discharge, relative to the comparison group Admissions for ACSCs decreased, relative to the comparison group.

CMMI Model Name and Implementation Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of Evaluation Findings Related to Care Coordination
<p>Medicare Coordinated Care Demonstration (MCCD), 2002-2012</p> <p><i>Completed Model</i></p>	<p>Clinical focus: Chronic illnesses</p> <p>Providers: Varied by organization</p> <p>Setting: Varied by organization</p>	<ul style="list-style-type: none"> • Monthly PBPM payment 	<ul style="list-style-type: none"> • Provide medical care that is consistent with recommended standards • Help patients adhere to recommended diet, medication, exercise, and self-care regimes • Effective provider-to-provider and provider-to-patient communication • Identify and address patients' health problems in a timely way • Provide recommended care when transitioning from hospital to home 	<ul style="list-style-type: none"> • Monitoring and Follow Up • Support Self-Management Goals • Facilitate Transitions and Coordinate Care Across Settings • Establish Accountability or Negotiate Responsibility 	<ul style="list-style-type: none"> • Hospitalizations • Survival rate 	<ul style="list-style-type: none"> • Of the 15 MCCD programs, few achieved cost neutrality, and only one, Health Quality Partners (HQP), reduced total Medicare expenditures when care coordination fees were included. • HQP reduced hospitalizations for patients included in the treatment group by 17 percent. The effects were concentrated mostly among patients in the high-risk subgroup. For these patients, the program reduced hospitalizations by 25 percent.

CMMI Model Name and Implementation Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of Evaluation Findings Related to Care Coordination
<p>Multi-payer Advanced Primary Care Practice (MAPCP) Demonstration, 2011-2016</p> <p><i>Completed Model</i></p>	<p>Clinical focus: Primary care</p> <p>Providers: PCPs</p> <p>Setting: Multiple</p>	<ul style="list-style-type: none"> • PBPM payments (varied by state) 	<ul style="list-style-type: none"> • Promote patient-centered medical home (PCMH) principles and standards • Integrate community-based resources to support advanced primary care practices • Increase use of primary care services • Reductions in ED visits, hospital admissions, and readmissions • Improve patient health outcomes and health status; reduce mortality and serious medical events • Increase beneficiary satisfaction with care 	<ul style="list-style-type: none"> • Align Resources with Patient and Population Needs • Establish Accountability or Negotiate Responsibility • Communication • Support Self-management Goals 	<ul style="list-style-type: none"> • Rate of follow-up visits within 14 days after discharge • Rate of unplanned readmissions with 30 days of discharge 	<ul style="list-style-type: none"> • Primary care visit rate for Medicare beneficiaries in Rhode Island increased. • Unplanned readmissions within 30 days after hospital discharge for Medicare beneficiaries in Michigan decreased. • Rate of follow-up visits within 14 days post-discharge for Medicare beneficiaries in Michigan and Pennsylvania increased. • Continuity of care for the Medicare population in Rhode Island, Vermont, Maine, and Pennsylvania increased.

CMMI Model Name and Implementation Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of Evaluation Findings Related to Care Coordination
<p>Pioneer ACO Model, 2012-2016</p> <p><i>Completed Model</i></p>	<p>Clinical focus: Primary and specialty care</p> <p>Providers: PCPs and specialists</p> <p>Setting: Multiple</p>	<ul style="list-style-type: none"> • Shared savings/losses payments • Population-based payments 	<ul style="list-style-type: none"> • Reduce unnecessary inpatient admissions, avoidable readmissions • Reduce inappropriate emergency department use • Improve care transitions • Facilitate improved communication and coordination across providers and between patients and their doctors 	<ul style="list-style-type: none"> • Align Resources with Patient and Population Needs • Facilitate Transitions and Coordinate Care Across Settings • Assess Patient Needs and Goals 	<ul style="list-style-type: none"> • Visiting hospitalized patients as part of care coordination • Use of claims and electronic health records (EHR) to identify patients for care management • Care manager embedded in the clinic • Group Practice Reporting Option (GPRO) data grouped 21 measures into four composites, including care coordination. • Care coordination-related quality measures included medication reconciliation and falls. 	<ul style="list-style-type: none"> • Positive GPRO quality outcomes were consistently linked with the presence of embedded care managers in the clinic setting.

CMMI Model Name and Implementation Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of Evaluation Findings Related to Care Coordination
<p>Professional and Global Direct Contracting (PGDC) Mode , April 2021</p> <p><i>Model Under Development</i></p>	<p>Clinical focus: Primary and specialty care</p> <p>Providers: Multiple</p> <p>Setting: Multiple</p>	<ul style="list-style-type: none"> • Total Care Capitation: Monthly capitation payments for all services furnished by participants and optionally preferred providers • Primary Care Capitation: Monthly capitation payments for enhanced primary care services furnished by participants and optionally preferred providers 	<ul style="list-style-type: none"> • Support provision of primary care and care coordination services, including resources, technology, and processes • By giving Direct Contracting Entities (DCEs) a monthly cash flow through the Capitation Payment Mechanism, DCEs have more leverage to enter downstream payment arrangements to incent providers to collaborate and coordinate care for beneficiaries. • Focus on complex, high-needs, dual eligible beneficiaries and Medicare FFS beneficiaries at risk of becoming dually eligible—i.e., High Needs Population DCEs—to test if provider-led entities can replicate successful clinical approaches of the program of all-inclusive care for the elderly (PACE) and other models for broader Medicare FFS population 	<ul style="list-style-type: none"> • Facilitate Transitions and Coordinate Care Across Settings 	<ul style="list-style-type: none"> • CAHPS: Getting Timely Care, Appointments, and Information; How Well Your Doctors Communicate; Health Promotion and Education; Shared Decision Making; Stewardship of Patient Resources; Care Coordination All Condition Readmission • All-cause unplanned admissions for patients with multiple chronic conditions 	<ul style="list-style-type: none"> • Not yet available

CMMI Model Name and Implementation Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of Evaluation Findings Related to Care Coordination
<p>Primary Care First (PCF) Model, April 2021</p> <p><i>Model Under Development</i></p>	<p>Clinical focus: Primary care</p> <p>Providers: PCPs</p> <p>Setting: Primary care practices</p>	<ul style="list-style-type: none"> Total Primary Care Payment paid to deliver advanced primary care in/outside of office Performance-Based Adjustment to reduce acute hospitalizations to reduce total cost of care, while meeting quality and experience of care performance thresholds PCF will use separate payment structure for practices that care for Seriously Ill Populations (SIP) beneficiaries, including one-time per beneficiary payment for patient outreach and engagement, as well as monthly per beneficiary payments with an upward or downward adjustment based on quality. 	<ul style="list-style-type: none"> Encourage practices to use funds for innovative care delivery approaches, including those that are not dependent on office-based, face-to-face care, such as telehealth, care managers, and 24/7 primary care access The goal of the SIP component of the model^{xxiv} is to proactively intervene with beneficiaries who appear unmanaged and on a downward clinical trajectory, stabilize them through high-touch care coordination and case management, and transition them to a practitioner or other care setting (e.g., hospice) that can best meet their longer-term goals of care. 	<ul style="list-style-type: none"> Align Resources with Patient and Population Needs Facilitate Transitions and Coordinate Care Across Settings Assess Patient Needs and Goals 	<ul style="list-style-type: none"> Because PCF practices are expected to be delivering advanced primary care at the time they apply to participate in the model, they will be given flexibility under the model to use own individualized care delivery approaches if they satisfy a minimum threshold of care delivery requirements. PCF will also have minimal care delivery reporting requirements, reducing administrative burden for participating practices. 	<ul style="list-style-type: none"> Not yet available

^{xxiv} As of April 2021, the PCF model's Seriously Ill Population component is under review and will not begin on the previously scheduled date of April 1, 2021. More information on this component can be found here: <https://innovation.cms.gov/innovation-models/primary-care-first-model-options>

Appendix E.2. CMMI Models with Care Coordination for Specific Populations

CMMI Model Name and Implementation Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of Evaluation Findings Related to Care Coordination
<p>Accountable Health Communities (AHC) Model, 2017 – current</p> <p><i>Ongoing Model</i></p>	<p>Clinical focus: Primary, specialty, and behavioral care</p> <p>Providers: “Community bridge organizations”</p> <p>Setting: Multiple</p>	<ul style="list-style-type: none"> Funds for this model support the infrastructure and staffing needs of bridge organizations, and do not pay directly or indirectly for any community services. 	<ul style="list-style-type: none"> Identify high-cost, high-use beneficiaries and coordinate resources to address beneficiaries' social determinants of health (SDOH) needs and reduce avoidable utilization and cost 	<ul style="list-style-type: none"> Align Resources with Patient and Population Needs Link to Community Resources 	<ul style="list-style-type: none"> Connection to Community Service Providers (CSPs) Resolution of health-related social needs (HRSNs) Community capacity to respond to HRSNs 	<ul style="list-style-type: none"> Early results show a 9 percent reduction in ED visits among Medicare FFS beneficiary enrollees, but no Medicare savings or impacts on other outcomes in the first year.

CMMI Model Name and Implementation Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of Evaluation Findings Related to Care Coordination
<p>Independence at Home (IAH) Demonstration, 2012 – current</p> <p><i>Ongoing Model</i></p>	<p>Clinical focus: Chronically ill</p> <p>Providers: Home-based primary care practices</p> <p>Setting: Patient home</p>	<ul style="list-style-type: none"> Practices can earn incentive payments if their patients' Medicare expenditures are below the practice's target expenditures and the practice meets required standards for a set of quality measures. 	<ul style="list-style-type: none"> Reduce preventable hospitalizations Prevent hospital readmissions Reduce emergency room visits Improve health outcomes Improve the efficiency of care Reduce the cost of health care services Achieve beneficiary and family caregiver satisfaction 	<ul style="list-style-type: none"> Align Resources with Patient and Population Needs Communication Establish Accountability or Negotiate Responsibility Facilitate Transitions and Coordinate Care Across Settings 	<ul style="list-style-type: none"> Hospitalization rate for ambulatory-care sensitive conditions Rehospitalization rate ED visit rate for ACSCs Contact with beneficiaries within 48 hours upon admission to the hospital and discharge from the hospital and/or ED In-home safety assessments Medication reconciliation in the home 	<ul style="list-style-type: none"> Demonstration was associated with a statistically significant reduction in number of potentially avoidable hospital admissions in Years 3 to 5; however, the number of potentially avoidable hospital admissions also changed during the two years before the demonstration in a way that was statistically significantly different for the IAH group versus the comparison group. No evidence that the demonstration changed number of potentially avoidable outpatient ED visits in any year or chance of an unplanned readmission over five-year period
<p>Integrated Care for Kids (InCK) Model, 2022</p> <p><i>Ongoing Model</i></p>	<p>Clinical focus: Physical and behavioral pediatric health care</p> <p>Providers: Multiple</p> <p>Setting: Multiple</p>	<ul style="list-style-type: none"> State-specific pediatric Alternative Payment Models (APMs) that incorporate provider accountability and integrated care coordination, and focus on meaningful improvements in care quality and health outcomes 	<ul style="list-style-type: none"> Reduce out-of-home placement and inpatient utilization Integrate community-based resources to support advanced primary care practices Improve health outcomes for children covered by Medicaid and CHIP 	<ul style="list-style-type: none"> Establish Accountability or Negotiate Responsibility Align Resources with Patient and Population Needs 	<ul style="list-style-type: none"> Family experiences with coordination of care 	<ul style="list-style-type: none"> Not yet available

CMMI Model Name and Implementation Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of Evaluation Findings Related to Care Coordination
<p>Oncology Care Model (OCM), 2016-current</p> <p><i>Ongoing Model</i></p>	<p>Clinical Focus: Cancer</p> <p>Providers: Oncologists</p> <p>Setting: Outpatient</p>	<ul style="list-style-type: none"> • Monthly Enhanced Oncology Services (MEOS) Payment (\$160 PBPM) • Performance-Based Payment (Shared Savings/Losses) 	<ul style="list-style-type: none"> • Ensure each patient's needs and preferences are met and bridge gaps between different systems of care 	<ul style="list-style-type: none"> • Monitoring and Follow Up • Developing a Care Plan • Establish Accountability or Negotiate Responsibility • Align Resources with Patient and Population Needs • Facilitate Transitions and Coordinate Care Across Settings 	<ul style="list-style-type: none"> • Risk-adjusted proportion of patients with all-cause ED visits or observation stays that did not result in a hospital admission within the six-month episode • Proportion of patients who died who were admitted to hospice for three days or more • Patient-Reported Experience of Care (Modified Cancer CAHPS) 	<ul style="list-style-type: none"> • No impact of any of the six patient-reported composite measures of care experience • While there was no meaningful impact of OCM on ED visits overall, there were fewer hospitalizations at the end of life.

CMMI Model Name and Implementation Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of Evaluation Findings Related to Care Coordination
<p>Kidney Care Choices Model, 2027</p> <p><i>Under Development</i></p>	<p>Clinical focus: Chronic kidney disease (CKD) and end-stage renal disease (ESRD)</p> <p>Providers: Nephrologists, transplant providers, other health care providers, including dialysis facilities</p> <p>Setting: Physician offices, dialysis facilities</p>	<ul style="list-style-type: none"> Adjusted Monthly Capitated Payment (AMCP) to equalize payments for managing a beneficiary who dialyzes at home or in-center CKD Quarterly Capitated Payment to manage aligned CKD stages 4/5 beneficiaries equivalent to AMCP amount for aligned ESRD beneficiaries Kidney Transplant Bonus: payment of up to \$15,000 over three years for every successful transplant that stays healthy Performance-Based Adjustment: payments to participating Kidney Care First practices based on performance on quality and utilization measures Shared Savings/Losses (Comprehensive Kidney Care Contracting Option Only) based on total cost of care compared to benchmark/voluntary capitation mechanism 	<ul style="list-style-type: none"> Delay the onset of dialysis Incentivize kidney transplantation Prevent disease progression Prevent unplanned starts to in-center hemodialysis treatment 	<ul style="list-style-type: none"> Facilitate Transitions and Coordinate Care Across Settings 	<ul style="list-style-type: none"> Gains in Patient Activation Measure (PAM) scores at 12 months Depression remission at 12 months – progress toward remission Controlling high blood pressure Optimal ESRD starts 	<ul style="list-style-type: none"> Not yet available

Appendix E.3. CMMI Models with Care Coordination Related to an Acute Care Event

CMMI Model Name and Implementation Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of Evaluation Findings Related to Care Coordination
<p>Bundled Payments for Care Improvement (BPCI) Advanced, 2018 – current</p> <p><i>Ongoing Model</i></p>	<p>Clinical Focus: Acute care</p> <p>Providers: Acute care hospitals; physician group practices; other providers, suppliers, or organizations</p> <p>Setting: Inpatient and outpatient settings</p>	<ul style="list-style-type: none"> • One retrospective payment for clinical episodes and a Performance-Based Payment (Shared Savings/Losses) 	<ul style="list-style-type: none"> • The model rewards providers for delivering services more efficiently, supports enhanced care coordination, and recognizes high-quality care. • BPCI Advanced aims to help hospitals and clinicians work more collaboratively to achieve these goals, which have the potential to improve the beneficiary/patient experience and align to the CMS goals of promoting effective communication and care coordination, highlighting best practices, and making care safer and more affordable. 	<ul style="list-style-type: none"> • Establish Accountability or Negotiate Responsibility • Communication • Align Resources with Patient and Population Needs 	<ul style="list-style-type: none"> • All-cause readmissions • Patient-reported experience of care 	<ul style="list-style-type: none"> • Approximately 22 percent of eligible hospitals participated in BPCI Advanced. • BPCI Advanced was responsible for up to 16 percent of eligible Medicare discharges for the model’s clinical episodes in its first six months. • Evaluation findings were limited to first performance year.
<p>Comprehensive Care for Joint Replacement (CJR) Model, 2016-current</p> <p><i>Ongoing Model</i></p>	<p>Clinical Focus: Lower extremity joint replacement</p> <p>Providers: Physicians, hospitals, post-acute providers</p> <p>Setting: Inpatient and outpatient settings</p>	<ul style="list-style-type: none"> • Performance-Based Payment (Shared Savings/Losses) 	<ul style="list-style-type: none"> • The CJR model holds participant hospitals financially accountable for the quality and cost of a CJR episode of care and incentivizes increased coordination of care among physicians, hospitals, and post-acute care providers. 	<ul style="list-style-type: none"> • Align Resources with Patient and Population Needs • Facilitate Transitions and Coordinate Care Across Settings • Communication 	<ul style="list-style-type: none"> • CAHPS: Patient-Reported Experience of Care 	<ul style="list-style-type: none"> • Hospitals identified common approaches to care coordination, including earlier discharge planning and providing care coordination post-discharge.

CMMI Model Name and Implementation Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of Evaluation Findings Related to Care Coordination
<p>Emergency Triage, Treat, and Transport (ET3) Model, 2021 – current</p> <p><i>Ongoing Model</i></p>	<p>Clinical Focus: Ambulatory care</p> <p>Providers: Ambulance suppliers and providers</p> <p>Setting: Patient home (or location of emergency); alternative care facility</p>	<ul style="list-style-type: none"> • Transport to alternative destinations which will be calculated using the appropriate Medicare Part B ambulance fee schedule rates • Treatment in place will be equivalent to the Basic Life Support or Advanced Life Support, Level 1 base rate. • Performance-Based Adjustment: Participants may be eligible for up to a 5 percent upward adjustment to payments based on performance the previous year. 	<ul style="list-style-type: none"> • Decrease unnecessary ED utilization • Increase efficiency of Emergency Medical Services (EMS) • Provide person-centered care 	<ul style="list-style-type: none"> • Assess Patient Needs and Goals • Facilitate Transitions and Coordinate Care Across Settings 	<p>Proposed metrics include:</p> <ul style="list-style-type: none"> • Overall 911 call volume • Proportion of calls that result in dispatch • Patterns of frequent utilization of services by beneficiaries, participants, non-participant partners, and downstream practitioners, including events for same beneficiary in same day and overutilization of services, including services associated with treatment in place • Diagnostic codes for services from non-participant partners and downstream practitioners through treatment in place or at alternative destination sites 	<ul style="list-style-type: none"> • Not yet available

CMMI Model Name and Implementation Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of Evaluation Findings Related to Care Coordination
<p>Community-based Care Transitions Program (CCTP), 2012 – 2017</p> <p><i>Completed Model</i></p>	<p>Clinical Focus: Care transitions</p> <p>Providers: Community-based organizations (CBOs) or acute care hospitals partnered with CBOs</p> <p>Setting: Inpatient and outpatient settings; patient home</p>	<ul style="list-style-type: none"> All-inclusive rate per eligible discharge based on the cost of care transition services provided at the patient level and of implementing systemic changes at the hospital level 	<ul style="list-style-type: none"> Support patient's transition from hospitals to other settings (e.g., long-term care facilities, patient's home) to reduce readmissions 	<ul style="list-style-type: none"> Establish Accountability of Negotiate Responsibility Align Resources with Patient and Population Needs Facilitate Transitions and Coordinate Care Across Settings 	<ul style="list-style-type: none"> 30-day all-cause readmission rates 90- and 180-day readmission rates Mortality rates Observation services Emergency department visits 	<ul style="list-style-type: none"> 30-day readmission rates and inpatient expenditures were significantly lower for CCTP participants compared to the comparison group.

Appendix F. Summary of Model and Care Coordination Characteristics of Proposals Reviewed by PTAC as of September 2020^{xxv}

The following tables provide specific details on model characteristics (i.e., clinical focus, providers, setting, and payment mechanisms); care coordination characteristics (i.e., context, objectives, functions); evaluation details and results (i.e., performance measures specific to care coordination; and a summary of PTAC comments on Criterion 7, where available) for proposals that were reviewed by PTAC. Proposals are organized into four separate tables: proposals with a PTAC rating of “Meets and Deserves Priority Consideration” for Criterion 7; proposals with a PTAC rating of “Meets” for Criterion 7; proposals with a PTAC rating of “Does Not Meet” for Criterion 7; and proposals that were either withdrawn prior to PTAC review or that PTAC rated as “Not Applicable” for Criterion 7. Each table is listed alphabetically by submitter.

Overview of Methodology Used to Review the Proposals

The following information was reviewed for each submitter’s proposal, where available: proposal and related documents, Preliminary Review Team (PRT) Report, and report to the Secretary (RTS). This information was used to summarize the proposal’s main themes related to care coordination context, objectives, functions, and payment model. AHRQ’s framework was used to categorize objectives and functions. The categorizations were based on the key information highlighted by the submitters in their proposal and related documents and by PTAC in their reports, and are not exhaustive. Proposals may have elements of their proposed models that fall into additional categories of context, objective, functions, and payment models.

^{xxv} Between 2016 and 2020, PTAC received 35 proposals. This analysis excludes information for one proposal that was withdrawn prior to any review by the Committee.

Appendix F.1. Proposals with a PTAC Rating of “Meets and Deserves Priority Consideration” for Criterion 7, “Integration and Care Coordination” (1 Proposal)

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, “Integration and Care Coordination”
<p>Icahn School of Medicine at Mount Sinai (Mount Sinai) <i>(Academic Institution)</i></p> <p>HaH Plus (Hospital at Home Plus) Provider-Focused Payment Model</p> <p>9/17/2017: Recommended for implementation</p>	<p>Clinical Focus: Inpatient services in home setting</p> <p>Providers: Physicians; HaH Plus providers</p> <p>Setting: Patient home</p>	<ul style="list-style-type: none"> Bundled episode-based payment replacing fee-for-service (FFS) with shared risk 	<p>Acute care</p> <ul style="list-style-type: none"> Multidisciplinary care around an acute care event; manage episode around acute care event 	<ul style="list-style-type: none"> Improve quality and reduce costs by reducing complications and readmissions 	<ul style="list-style-type: none"> Establish accountability/ negotiate responsibility Facilitate transitions and coordinate care across settings 	<ul style="list-style-type: none"> Measures of care plan; medication reconciliation post-discharge 	<ul style="list-style-type: none"> Fewer transitions improve continuity. Includes mechanisms for coordination with usual providers

Appendix F.2. Proposals with a PTAC Rating of “Meets” for Criterion 7, “Integration and Care Coordination” (15 Proposals)

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, “Integration and Care Coordination”
<p>American Academy of Family Physicians (AAFP) <i>(Provider association and specialty society)</i></p> <p>Advanced Primary Care: A Foundational Alternative Payment Model (APC-APM) for Delivering Patient-Centered, Longitudinal, and Coordinated Care</p> <p>12/19/2017: Recommended for limited-scale testing</p>	<p>Clinical Focus: Primary Care</p> <p>Providers: Primary care providers (PCPs)</p> <p>Setting: Primary care practices</p>	<ul style="list-style-type: none"> Capitated per beneficiary per month (PBPM) with shared risk options for accountability 	<p>Population-wide</p> <ul style="list-style-type: none"> Multidisciplinary for medical services not tied to an episode Multiple chronic conditions Advanced PCPs leading teams of non-physicians based on five key functions of CPC+ and including behavioral and mental health 	<ul style="list-style-type: none"> Fulfilling five key functions of Comprehensive Primary Care Plus (CPC+) (access and continuity, planned care and population health, care management, patient and caregiver engagement, and coordination) PCPs thought to be best positioned to coordinate care across settings. 	<ul style="list-style-type: none"> Assess Patient Needs and Goals 	<ul style="list-style-type: none"> Core Quality Measures Collaborative's patient-centered medical home (PCMH/Accountable Care Organizations [ACOs]) Primary Care Core Set, including clinical quality, patient safety, and resource use measures using National Quality Strategy 	<ul style="list-style-type: none"> Practices expected to implement five CPC+ functions and Joint Principles of PCMH No requirements or measures of care coordination for individual patients; no details on PCP coordination with specialists
<p>American Academy of Hospice and Palliative Medicine (AAHPM) <i>(Provider association and specialty society)</i></p> <p>Patient and Caregiver Support for Serious Illness (PACSSI)</p> <p>3/26/2018: Recommended for limited-scale testing</p>	<p>Clinical Focus: Serious illness and palliative care</p> <p>Providers: Palliative care teams</p> <p>Setting: Inpatient; outpatient; other palliative care settings</p>	<ul style="list-style-type: none"> Capitated PBPM with shared risk options for accountability 	<p>Population-specific</p> <ul style="list-style-type: none"> Multidisciplinary Multispecialty during episode of advanced illness 	<ul style="list-style-type: none"> Support interdisciplinary palliative care teams 	<ul style="list-style-type: none"> Communication Developing a Care Plan Establish Accountability or Negotiate Responsibility 	<ul style="list-style-type: none"> Completion of care processes 	<ul style="list-style-type: none"> Provision of care management and interdisciplinary Palliative Care Teams are likely to encourage integration and care coordination among practitioners.

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, "Integration and Care Coordination"
<p>American College of Emergency Physicians (ACEP) <i>(Provider association and specialty society)</i></p> <p>Acute Unscheduled Care Model (AUCM): Enhancing Appropriate Admissions</p> <p>9/6/2018: Recommended for implementation</p>	<p>Clinical Focus: Emergency Department (ED) services</p> <p>Providers: ED physician; Part B providers</p> <p>Setting: Emergency department</p>	<ul style="list-style-type: none"> Episode-based model with continued FFS, with shared risk options for accountability 	<p>Acute care</p> <ul style="list-style-type: none"> Multidisciplinary care around an acute care event <p>Follow patient through episode beginning with discharge through 30-day period</p>	<ul style="list-style-type: none"> Facilitate appropriate discharge Inform patients of treatment options Manage unscheduled care episodes by protocol Arrange post-discharge home visit 	<ul style="list-style-type: none"> Establish Accountability or Negotiate Responsibility Monitoring and Follow-Up 	<ul style="list-style-type: none"> Aligned with BPCI Advanced, ACEP Clinical Emergency Data Registry, and other Qualified Clinical Data Registries to measure quality and allow comparison with Merit-based Incentive Payment System (MIPS)-participating professionals 	<ul style="list-style-type: none"> Incentivizes greater communication and coordination between ED and ambulatory physicians who may plan follow-up Devoting resources to integration and coordination during 30-day episode
<p>American College of Physicians-National Committee for Quality Assurance (ACP-NCQA) <i>(Provider association and specialty society/other)</i></p> <p>The "Medical Neighborhood" Advanced Alternative Payment Model (AAPM) (Revised Version)</p> <p>9/15/2020: Recommended for testing to inform payment model development</p>	<p>Clinical Focus: Coordination between specialists and PCPs</p> <p>Providers: PCPs</p> <p>Setting: Primary care practices</p>	<ul style="list-style-type: none"> Add-on PBPM with shared risk 	<p>Population-wide</p> <ul style="list-style-type: none"> Multidisciplinary Address multiple chronic conditions 	<ul style="list-style-type: none"> Better coordination between primary care and specialty care practices 	<ul style="list-style-type: none"> Establish Accountability or Negotiate Responsibility Facilitate Transition and Coordinate Care Across Settings Align Resources with Patient and Population Needs 	<ul style="list-style-type: none"> Uses NCQA's Patient-Centered Specialty Practice (PCSP) quality measures, which include some focused on care coordination 	<ul style="list-style-type: none"> Compensates specialists coordinating care with PCPs Leverages existing medical neighborhoods (CPC+, PCF) to encourage care coordination between specialists and PCPs PCSP recognition program has standards to improve care coordination and pre-screening process for specialist referrals. Does not specify steps for specialty practices to improve care coordination/management

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, "Integration and Care Coordination"
<p>American College of Surgeons (ACS) <i>(Provider association and specialty society)</i></p> <p>ACS–Brandeis Advanced Alternative Payment Model</p> <p>4/11/2017: Recommended for limited-scale testing</p>	<p>Clinical Focus: Cross-clinical focus</p> <p>Providers: Single/multispecialty practices; groups of small provider practices</p> <p>Setting: Inpatient, outpatient, ambulatory</p>	<ul style="list-style-type: none"> • Episode-based model with continued FFS and shared risk 	<p>Population-specific</p> <ul style="list-style-type: none"> • Multispecialty of general and specialty surgeons during an episode of care defined by a selected set of procedural/condition episodes 	<ul style="list-style-type: none"> • Increase integration across specialties by grouping general and specialty surgeons who participate in a single episode of care, a selected set of procedural or condition episodes, or cumulative patient-level aggregations of all outcomes 	<ul style="list-style-type: none"> • Establish Accountability or Negotiate Responsibility 	<ul style="list-style-type: none"> • Surgical plan and goals of care • Postoperative care plan • Postoperative care coordination and follow-up with primary/referring provider • Postoperative plan communication with patient/family • Post-discharge review of patient goals of care 	<ul style="list-style-type: none"> • Innovative way to support multiple clinicians who work together, but there is no minimum threshold of integration required. • This voluntary nature may lead to less integration.
<p>American Society of Clinical Oncology (ASCO) <i>(Provider association and specialty society)</i></p> <p>Patient-Centered Oncology Payment Model (PCOP)</p> <p>9/15/2020: Referred for other attention by HHS</p>	<p>Clinical Focus: Cancer care</p> <p>Providers: Providers delivering hematology/oncology services; partners</p> <p>Setting: Inpatient; outpatient</p>	<ul style="list-style-type: none"> • Episode-based payment with two tracks • Add-on payments worth 2-3 percent of total cost of care, including FFS payments • Add-on performance payments 	<p>Population-specific</p> <ul style="list-style-type: none"> • Within condition hematology/oncology services and multi-specialty practices with hematology/oncology providers 	<ul style="list-style-type: none"> • Reduce utilization for conditions that could be averted • Reduce total emergency department (ED) visits and observation stays 	<ul style="list-style-type: none"> • Establish Accountability or Negotiate Responsibility • Monitoring and Follow-Up 	<ul style="list-style-type: none"> • Cost of care • Adherence to clinical pathways • Patient satisfaction • Optional quality metric to be selected by each Oncology Steering Committee (OSC): Care plan 	<ul style="list-style-type: none"> • Care delivery requirement for comprehensive team-based care • Common, high-quality clinical pathways and quality metrics • Practices may need to use of proprietary pathways/standards. • Does not provide incentives for greater integration and care coordination across all oncology sub-specialties

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, "Integration and Care Coordination"
<p>Avera Health (Avera) <i>(Regional/local multispecialty practice or health system)</i></p> <p>Intensive Care Management in Skilled Nursing Facility Alternative Payment Model (ICM SNF APM)</p> <p>3/27/2018: Recommended for implementation</p>	<p>Clinical Focus: Primary care (geriatricians) in skilled nursing facilities (SNFs)</p> <p>Providers: Geriatrician Care Teams (GCTs)</p> <p>Setting: SNFs and NFs</p>	<ul style="list-style-type: none"> • Add-on PBPM with shared risk options for accountability 	<p>Population-specific</p> <ul style="list-style-type: none"> • Multidisciplinary care in SNF after acute care event • Implementation is facility-wide. • Eligibility criteria include articulating strategy for PCP care coordination and other quality measures. 	<ul style="list-style-type: none"> • Reduce avoidable ED visits and hospitalizations 	<ul style="list-style-type: none"> • Establish Accountability of Negotiate Responsibility • Monitoring and Follow-Up • Align Resources with Patient and Population Needs • Developing A Care Plan • Assess Patient Needs and Goals • Facilitate Transitions and Coordinate Care Across Settings 	<ul style="list-style-type: none"> • ED visits • Hospital readmissions 	<ul style="list-style-type: none"> • Participation criteria include articulating care coordination capabilities. • GCT is expected to coordinate with PCP and other providers, but there is no explicit requirement to do so.

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, "Integration and Care Coordination"
<p>Coalition to Transform Advanced Care (C-TAC) <i>(Coalition)</i></p> <p>Advanced Care Model (ACM) Service Delivery and Advanced Alternative Payment Model</p> <p>3/26/2018: Recommended for limited-scale testing</p>	<p>Clinical Focus: Serious illness and palliative care</p> <p>Providers: ACM care team; other ancillary collaborator organizations</p> <p>Setting: Patient home</p>	<ul style="list-style-type: none"> • Capitated PBPM with shared risk 	<p>Population-specific</p> <ul style="list-style-type: none"> • Multidisciplinary during episode of advanced illness • Specific to patients meeting ACM criteria to identify individuals in last 12 months of life 	<ul style="list-style-type: none"> • Evidence-based treatments; align with patient preferences • Symptom management • 24/7 access to clinical support • Comprehensive care plan • Transitional and post-acute care • Established reliable handoff processes • Advanced care planning • Reduce unwanted/duplicate visits and interventions 	<ul style="list-style-type: none"> • Establish Accountability or Negotiate Responsibility • Facilitate Transitions and Coordinate Care Across Settings • Developing a Care Plan • Assess Patient Needs and Goals 	<p>14 processes, including:</p> <ul style="list-style-type: none"> • Access and timeliness of care • Medication reconciliation post-discharge • Communication • ACM provider attestation that the patient's care plan is consistent with preferences • Care coordination measure • Care satisfaction • Tele-management procedures • PCPs and specialists as core members of clinical team • Education 	<ul style="list-style-type: none"> • Use of interdisciplinary palliative care teams encourages greater integration and care coordination among practitioners. • Degree of clinical expertise in palliative care could vary depending upon which provider type has certification.

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, "Integration and Care Coordination"
<p>Hackensack Meridian Health and Cota, Inc. (HMH/Cota) <i>(Regional/local multispecialty practice or health system; Device/technology company)</i></p> <p>Oncology Bundled Payment Program Using CAN-Guided Care</p> <p>9/8/2017: Recommended for limited-scale testing</p>	<p>Clinical Focus: Oncology</p> <p>Providers: Eligible professionals in HMH health system with attributed Medicare cancer patients</p> <p>Setting: Inpatient and outpatient care</p>	<ul style="list-style-type: none"> Bundled episode-based payment replacing FFS, with shared risk 	<p>Population-specific</p> <ul style="list-style-type: none"> Within condition Multidisciplinary 	<ul style="list-style-type: none"> Patient satisfaction with care and adverse outcomes avoidance 	<ul style="list-style-type: none"> Communication Facilitate Transitions and Coordinate Care Across Settings 	<ul style="list-style-type: none"> Surgery, oncology, genetic quality measures Oncology/infection monitoring COTA analytics Risk management Finance monitoring Patient experience/satisfaction Patient recorded outcomes 	<ul style="list-style-type: none"> As this population has a high rate of comorbidities, care needs to be coordinated across a multidisciplinary group. However, care coordination description is limited and internal to the proposer's system.
<p>Innovative Oncology Business Solutions, Inc. (IOBS) <i>(For-profit corporation)</i></p> <p>Making Accountable Sustainable Oncology Networks (MASON)</p> <p>12/10/2018: Referred for further development and implementation</p>	<p>Clinical Focus: Cancer; oncology physicians; patient home</p> <p>Providers: National Cancer Care Alliance (NCCA) oncology physicians</p> <p>Setting: Outpatient</p>	<ul style="list-style-type: none"> Episode-based model with continued FFS, with shared risk 	<p>Population-specific</p> <ul style="list-style-type: none"> Within condition Episode defined to encompass more than just time period for chemotherapy Inclusive of independent practice physicians 	<ul style="list-style-type: none"> Delivery of evidence-based care, including scheduling same day appointments as needed Avoid unnecessary ED usage and hospitalization Early intervention 	<ul style="list-style-type: none"> Facilitate Transitions and Coordinate Care Settings 	<ul style="list-style-type: none"> Patient satisfaction Virtual accounts Cost of care Hospitalization rates 	<ul style="list-style-type: none"> Encompasses more than just time period patient is undergoing chemotherapy Direct incentives around care coordination not linked with specific treatment Effort to delineate cancer and non-cancer care may disincentivize care coordination Emphasis on spending may inhibit coordination. Inclusive of independent practice physicians

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, "Integration and Care Coordination"
<p>New York City Department of Health and Mental Hygiene (NYC DOHMH) <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>12/18/2018: Not recommended</p>	<p>Clinical Focus: Hepatitis C virus (HCV)</p> <p>Providers: Primary care physicians (trained by hepatologists/gastroenterologists); specialists; nurse practitioners; physician assistants; and non-clinician staff</p> <p>Setting: Primary care and specialty</p>	<ul style="list-style-type: none"> Bundled episode-based payment replacing FFS, with shared risk 	<p>Population-specific</p> <ul style="list-style-type: none"> Within condition Multidisciplinary; hospital-based clinics (with PCPs able to refer to other diagnostic and treatment services within same facility); telementoring with specialists 	<ul style="list-style-type: none"> Reduce patient handoffs with telementoring Assist patient navigation through health care system 	<ul style="list-style-type: none"> Facilitate Transitions and Coordinate Care Across Settings 	<ul style="list-style-type: none"> Facility-based sustained virologic response (SVR) rate Matched cohort study analyzing the impact of care coordination on total cost of care for Medicare and Medicaid FFS beneficiaries 	<ul style="list-style-type: none"> Care coordinators assist patient navigation of health care system. Empowering PCPs means fewer patient handoffs, and PCPs more likely to have comprehensive picture of patient's health. Needs more detail on information sharing with outside providers Doesn't address need for continuity of care coordination; intense coordination during certain periods (HCV treatment) is appropriate.
<p>Personalized Recovery Care (PRC) <i>(Regional/local single specialty practice)</i></p> <p>Home Hospitalization: An Alternative Payment Model for Delivering Acute Care in the Home</p> <p>3/26/2018: Recommended for implementation</p>	<p>Clinical Focus: Inpatient services in home setting</p> <p>Providers: Admitting physician at facility receiving PRC payments; On-Call Physician; Recovery Care Coordinator</p> <p>Setting: Patient home</p>	<ul style="list-style-type: none"> Bundled episode-based payment replacing FFS, with shared risk 	<p>Acute care</p> <p>Multidisciplinary care around an acute care event; management around an acute episode</p>	<ul style="list-style-type: none"> Improve health care quality by providing hospital level care in patient's home, while changing the reimbursement for participating physicians by making them accountable for quality and cost throughout a 30-day episode 	<ul style="list-style-type: none"> Establish Accountability or Negotiate Responsibility Communication Facilitate Transitions and Coordinate Care Across Settings Monitoring and Follow-Up 	<ul style="list-style-type: none"> Patient-reported measure about support of recovery care coordinator during episode; connecting patient with PCP within five to seven days of episode 	<ul style="list-style-type: none"> Same team manages care during acute and post-acute episode; includes explicit mechanisms to coordinate with PCPs.

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, "Integration and Care Coordination"
<p>Renal Physicians Association (RPA) <i>(Provider association and specialty society)</i></p> <p>Incident ESRD Clinical Episode Payment Model</p> <p>12/18/2017: Recommended for implementation</p>	<p>Clinical Focus: end-stage renal disease (ESRD)</p> <p>Providers: Nephrologists, PCPs</p> <p>Setting: Dialysis centers</p>	<ul style="list-style-type: none"> Episode-based model with shared risk and transplant bonus 	<p>Population-specific</p> <ul style="list-style-type: none"> Within condition Single specialty within episode 	<ul style="list-style-type: none"> Hospital admission and readmission avoidance 	<ul style="list-style-type: none"> Support Self-Management Goals Facilitate Transitions and Coordinate Care Across Settings 	<ul style="list-style-type: none"> Patient-Reported Outcomes Measurement Information System (PROMIS) measures 	<ul style="list-style-type: none"> Encourage nephrologists to establish better mechanisms for communication with PCPs and other specialists Submitter explained lack of standards provided flexibility in different practice settings. Providers can opt-in to activities to become principal care providers for ESRD patients.
<p>University of Chicago Medicine (UChicago) <i>(Academic Institution)</i></p> <p>The Comprehensive Care Physician Payment Model (CCP-PM)</p> <p>9/7/2018: Recommended for limited-scale testing</p>	<p>Clinical Focus: Frequently hospitalized patients</p> <p>Providers: Inpatient and outpatient providers</p> <p>Setting: Home care and rehabilitation</p>	<ul style="list-style-type: none"> Add-on PBPM with shared risk 	<p>Acute care</p> <ul style="list-style-type: none"> Multispecialty care around an acute care event, during episode 	<ul style="list-style-type: none"> Promoting continuity between traditional inpatient and outpatient settings by encouraging physicians to see their patients both in the home and rehabilitation settings when appropriate 	<ul style="list-style-type: none"> Communication 	<ul style="list-style-type: none"> Not specified 	<ul style="list-style-type: none"> Coordination during immediate period surrounding a transition between settings Broader preventive care is incomplete and should be extended to additional settings. Care coordination metrics could strengthen the model.

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, "Integration and Care Coordination"
<p>University of New Mexico Health Sciences Center (UNMHSC) <i>(Academic Institution)</i></p> <p>ACCESS Telemedicine: An Alternative Healthcare Delivery Model for Rural Cerebral Emergencies</p> <p>9/16/2019: Recommended for further development and implementation</p>	<p>Clinical Focus: Cerebral emergent care; telemedicine</p> <p>Providers: Neurologists and neurosurgeons; providers in rural and community systems</p> <p>Setting: Inpatient; outpatient; or emergency department</p>	<ul style="list-style-type: none"> Additional one-time payment without shared risk 	<p>Acute care</p> <ul style="list-style-type: none"> Within condition specialty care around an acute care event Support for neurology/neurosurgery providers in underserved communities 	<ul style="list-style-type: none"> Connect/coordinate missing link of specialty care in underserved areas 	<ul style="list-style-type: none"> Establish Accountability or Negotiate Responsibility Facilitate Transitions and Coordinate Care Across Settings 	<p>Quality measures and evaluation approaches in areas, including:</p> <ul style="list-style-type: none"> Patient experience Total cost of care Readmissions Transfer rates Timeliness of care 	<ul style="list-style-type: none"> Attempts to improve coordination between different care settings, primarily rural hospitals and tertiary care facilities Use of cloud technology to share imaging/lab results viewed positively by PTAC. Consulting specialist does not have direct access to EHR, which may impact extent of coordination.

Appendix F.3. Proposals with a PTAC Rating of “Does Not Meet” for Criterion 7, “Integration and Care Coordination” (10 Proposals)

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, “Integration and Care Coordination”
<p>American College of Allergy, Asthma & Immunology (ACAAI) <i>(Provider association and specialty society)</i></p> <p>Patient-Centered Asthma Care Payment (PCACP)</p> <p>6/22/2020: Referred for other attention by HHS</p>	<p>Clinical Focus: Asthma care</p> <p>Providers: Allergists; immunologists; pulmonologists; PCPs; other providers</p> <p>Setting: Emergency department</p>	<p>3 categories for payments:</p> <ul style="list-style-type: none"> • Bundled monthly payment replacing all FFS with shared risk • Bundled monthly payment replacing some FFS with shared risk • Monthly payment for non-face-to-face visits 	<p>Population-specific</p> <ul style="list-style-type: none"> • Within chronic condition <p>Asthma care team</p>	<ul style="list-style-type: none"> • Reduce costs • Reduce hospitalizations and ED visits 	<ul style="list-style-type: none"> • Establish Accountability or Negotiate Responsibility 	<ul style="list-style-type: none"> • Patient access to physicians • Patient surveys 	<ul style="list-style-type: none"> • Lacks information about specific mechanisms and does not specify how care would be coordinated between PCPs and specialists • Focuses on physician co-management and doesn’t elaborate on care management outside of office • No information on how care coordination might evolve with patient’s condition
<p>Dr. Antonucci <i>(Individual)</i></p> <p>An Innovative Model for Primary Care Office Payment</p> <p>9/6/2018: Recommended for limited-scale testing</p>	<p>Clinical Focus: Primary care</p> <p>Providers: Primary care physicians and independent primary care nurse practitioners</p> <p>Setting: Primary care</p>	<ul style="list-style-type: none"> • Capitated PBPM with shared risk 	<p>Population-wide</p> <ul style="list-style-type: none"> • Within specialty (primary care) • Not specific to condition (i.e., opt-in and/or claims-based attribution methodology) 	<ul style="list-style-type: none"> • Reduce costs and ER costs • Improve quality of care delivery 	<ul style="list-style-type: none"> • Assess Patient Needs and Goals 	<ul style="list-style-type: none"> • Medical Home: Composite measure of access, continuity, efficiency, and coordination 	<ul style="list-style-type: none"> • No specific mechanisms or support for coordination with participating practices

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, "Integration and Care Coordination"
<p>Dialyze Direct <i>(Regional/local single specialty practice)</i></p> <p>APM for Improved Quality and Cost in Proving Home Hemodialysis to Geriatric Patients Residing in Skilled Nursing Facilities</p> <p>9/6/2018: Recommended for attention</p>	<p>Clinical Focus: ESRD patients residing in SNFs</p> <p>Providers: Nephrologists</p> <p>Setting: Patient home</p>	<ul style="list-style-type: none"> One-time additional payment with shared savings 	<p>Population-specific</p> <ul style="list-style-type: none"> Within condition <p>Detailed delineation of responsibilities with respect to dialysis staff and SNF staff</p>	<ul style="list-style-type: none"> Detailed handoff care procedure for each treatment, robust coordination of psychosocial care efforts 	<ul style="list-style-type: none"> Establish Accountability or Negotiate Responsibility 	<ul style="list-style-type: none"> Direct survey of physician experience Measures of engagement, including participation in multidisciplinary meetings Standard consumer reporting 	<ul style="list-style-type: none"> Does not propose explicit processes for ensuring that coordination occurs Lack of measures related to integration/coordination
<p>Johns Hopkins School of Nursing and the Stanford Clinical Excellence Research Center (Hopkins/Stanford) <i>(Academic Institution)</i></p> <p>CAPABLE Provider-Focused Payment Model</p> <p>12/12/2018: Recommended for testing</p>	<p>Clinical Focus: Limited-time in-home care activities of daily living (ADL) for beneficiaries with at least two chronic conditions</p> <p>Providers: Occupational therapist and registered nurse</p> <p>Setting: Patient home</p>	<ul style="list-style-type: none"> Additional one-time bundled payment without shared risk 	<p>Population-wide</p> <ul style="list-style-type: none"> Care context not specified Integrated team of providers, nursing staff, and therapists "flow" into community along with patients 	<ul style="list-style-type: none"> Allow patients to age in place safely and independently, uphold patient choice, maintain flat hierarchy with a single team member acting as coordinator 	<ul style="list-style-type: none"> Establish Accountability or Negotiate Responsibility 	<ul style="list-style-type: none"> Not specified 	<ul style="list-style-type: none"> Proposal does not include specific coordination approaches. No formal mechanism for PCP involvement

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, "Integration and Care Coordination"
<p>Illinois Gastroenterology Group and SonarMD, LLC (IGG/SonarMD) <i>(Regional/local single specialty practice; Device/technology company)</i></p> <p>Project Sonar</p> <p>4/10/2017: Recommended for limited-scale testing</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>	<ul style="list-style-type: none"> • Add-on PBPM with two-sided risk, plus a payment to support remote monitoring 	<p>Population-specific</p> <ul style="list-style-type: none"> • Within condition • Specialty-based intensive medical home (little integration with other clinicians) 	<ul style="list-style-type: none"> • Reduce total cost of care • Increase access to patient data through platform 	<ul style="list-style-type: none"> • Communication • Monitoring and Follow-Up 	<ul style="list-style-type: none"> • Total cost of care 	<ul style="list-style-type: none"> • Model encourages greater care coordination within participating practices by holding participants accountable for total cost of care. • Need greater specificity on how care coordination would happen across disciplines and who is responsible
<p>Large Urology Group Practice Association (LUGPA) <i>(Provider association and specialty society)</i></p> <p>LUGPA APM for Initial Therapy of Newly Diagnosed Patients with Organ-Confined Prostate Cancer</p> <p>12/19/2017: Not recommended</p>	<p>Clinical Focus: Ambulatory; cancer (prostate cancer)</p> <p>Providers: Urologists and other coordination physicians</p> <p>Setting: Urology practices</p>	<ul style="list-style-type: none"> • Add-on PBPM with shared risk 	<p>Population-specific</p> <ul style="list-style-type: none"> • Within condition during episode (coordinated urologic care during episode) 	<ul style="list-style-type: none"> • Reduce expenditures/total cost of care • Management of comorbidities • Payment split to reflect allocation of work 	<ul style="list-style-type: none"> • Assess Patient Needs and Goals Ongoing • Support Self-Management Goals • Establish Accountability or Negotiate Responsibility 	<ul style="list-style-type: none"> • Utilization of different active interventions • Total cost of care • Time on active surveillance (AS) • Complications • Utilization of other services • Beneficiary outcomes as measured in claims and surveys • Disease progression 	<ul style="list-style-type: none"> • Mismatch between proposed care model and payment model based on total Medicare spending • Consensus regarding patient's treatment plan not sufficiently addressed in proposal; however, promise in supporting coordinated urologic care once AS episode begins

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, "Integration and Care Coordination"
<p>Pulmonary Medicine Associates (PMA) <i>(Regional/local single specialty practice)</i></p> <p>The COPD and Asthma Monitoring Project</p> <p>4/11/2017: Not recommended</p>	<p>Clinical Focus: Pulmonology, COPD, and asthma</p> <p>Providers: Pulmonary physicians</p> <p>Setting: Patient home; outpatient</p>	<ul style="list-style-type: none"> Bundled episode-based payment replacing FFS, with shared risk 	<p>Population-specific</p> <ul style="list-style-type: none"> Within condition Manage chronic condition 	<ul style="list-style-type: none"> Improved monitoring and management of patients with COPD and asthma 	<ul style="list-style-type: none"> Communication Monitoring and Follow-Up 	<ul style="list-style-type: none"> Patient self-management action plan 	<ul style="list-style-type: none"> Does not provide an integrated care model where PCPs and other providers beyond pulmonary specialists are involved in care delivery and care planning
<p>Seha Medical and Wound Care (Seha) <i>(Individual)</i></p> <p>Bundled Payment for All Inclusive Outpatient Wound Care Services in Non Hospital Based Setting</p> <p>5/11/2019: Not recommended for implementation as a PFPM</p>	<p>Clinical Focus: Acute and/or chronic wound care</p> <p>Providers: Wound care physician or provider and home care providers</p> <p>Setting: Outpatient primary care</p>	<ul style="list-style-type: none"> Additional visit-based payment (no episode) 	<p>Population-specific</p> <ul style="list-style-type: none"> Within condition 	<ul style="list-style-type: none"> To free up time for the wound care provider to communicate with all health care providers in the patient's team 	<ul style="list-style-type: none"> Communication 	<ul style="list-style-type: none"> Not specified 	<ul style="list-style-type: none"> There are no details outlining care coordination. No guarantee of funds to dedicate to care coordination staff Providers are paid on a per-visit basis.

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, "Integration and Care Coordination"
<p>Upstream Rehabilitation (Upstream) <i>(Regional/local single specialty practice)</i></p> <p>CMS Support of Wound Care in Private Outpatient Therapy Clinics: Measuring the Effectiveness of Physical or Occupational Therapy Intervention as the Primary Means of Managing Wounds in Medicare Recipients</p> <p>5/11/2019: Not recommended for implementation as a PFPM</p>	<p>Clinical Focus: Chronic wound care</p> <p>Providers: All providers in the patient's care plan</p> <p>Setting: Physical and occupational therapy centers</p>	<ul style="list-style-type: none"> Additional one-time payment with shared risk, plus expanded billing capacity for providers 	<p>Population-specific</p> <ul style="list-style-type: none"> Within condition Multispecialty during episode 	<ul style="list-style-type: none"> Oversight of physical/occupational therapy care by the referring PCP 	<ul style="list-style-type: none"> Assess Patient Needs and Goals 	<ul style="list-style-type: none"> Not specified 	<ul style="list-style-type: none"> Reliance on current limited methods of coordination No coordination provision No referral process description No promotion of care coordination
<p>University of Massachusetts Medical School (UMass) <i>(Academic Institution)</i></p> <p>Eye Care Emergency Department Avoidance (EyEDA) Model</p> <p>6/22/2020: Not recommended for implementation as a PFPM</p>	<p>Clinical Focus: ED-avoidable eye conditions</p> <p>Providers: Optometrists, ophthalmologists</p> <p>Setting: Emergency department</p>	<ul style="list-style-type: none"> Discounted FFS and shared savings payments based on number of office-based visits and quality performance thresholds 	<p>Acute care</p> <ul style="list-style-type: none"> Coordinating around an acute care event with an interdisciplinary approach non-hospital ED setting 	<ul style="list-style-type: none"> Improve patient experience; reduce unnecessary/inappropriate services 	<ul style="list-style-type: none"> Not specified 	<ul style="list-style-type: none"> Patient experience Patient safety Reducing unnecessary/inappropriate services 	<ul style="list-style-type: none"> Participating providers would be encouraged to see patients for urgent care needs, regardless of specialty. Proposed model does not include formal methods for integration with PCPs or other providers. Integrated interdisciplinary approach may be difficult to scale to other practices with small referral networks.

Appendix F.4. Proposals that Were Withdrawn Prior to PTAC Review or that PTAC Rated as “Not Applicable” to Criterion 7, “Integration and Care Coordination” (8 Proposals)

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, “Integration and Care Coordination”
<p>American Academy of Neurology (AAN) <i>(Provider association and specialty society)</i></p> <p>The Patient-Centered Headache Care Payment (PCHCP)</p> <p>N/A - Withdrawn</p>	<p>Clinical Focus: Neurology</p> <p>Providers: PCPs; neurologists; other physicians with expertise in headache care</p> <p>Setting: Inpatient or outpatient in primary care; patient home</p>	<ul style="list-style-type: none"> One-time payment, PBPM payments, or add-on payments (depending upon payment category) with shared risk 	Population-specific Multidisciplinary and Multispecialty during episode	<ul style="list-style-type: none"> Creation of a Headache Care Team 	<ul style="list-style-type: none"> Establish Accountability or Negotiate Responsibility Facilitate Transitions and Coordinate Care Across Settings 	<ul style="list-style-type: none"> Not specified 	N/A - Withdrawn
<p>Clearwater Cardiovascular and Interventional Consultants, MD, PA (CCC) <i>(Provider association and specialty society)</i></p> <p>Bundled PCI Services</p> <p>N/A - Withdrawn</p>	<p>Clinical Focus: Percutaneous coronary intervention services in lower cost non-catheter labs</p> <p>Providers: Cardiovascular physicians</p> <p>Setting: Outpatient</p>	<ul style="list-style-type: none"> Bundled episode-based model replacing FFS, with shared risk 	Population-specific Care context not specified	<ul style="list-style-type: none"> Reductions in total payments 	<ul style="list-style-type: none"> Not specified 	<ul style="list-style-type: none"> Not specified 	N/A - Withdrawn

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, "Integration and Care Coordination"
<p>Community Oncology Alliance (COA) <i>(Non-profit organization)</i></p> <p>Oncology Care Model 2.0</p> <p>N/A - Withdrawn</p>	<p>Clinical Focus: Oncology/cancer care</p> <p>Providers: Individuals or groups of medical oncologists providing services to patients</p> <p>Setting: Oncology medical home</p>	<ul style="list-style-type: none"> Episode-based payment with shared risk; trigger code (onset of episode) payment, monthly care management fee, "value-based" cost management for drugs and therapies 	<p>Population-specific</p> <ul style="list-style-type: none"> Multidisciplinary during chronic condition (cancer) episode <p>Identify diverse clinical and resource needs via OMH medical oncology team</p>	<ul style="list-style-type: none"> Empower medical oncology team to be hub of delivery paradigm, and provide care while communicating with network of PCPs, surgeons, and other specialists Elevate oncology team as the PCP 	<ul style="list-style-type: none"> Assess Patient Needs and Goals Facilitate Transitions and Coordinate Care Across Settings Establish Accountability or Negotiate Responsibility 	<ul style="list-style-type: none"> 14 OMH Standards with specifications for each Accreditation Commission for Health Care (ACHC) improvement metrics (unspecified) 	<p>N/A - Withdrawn</p>
<p>Digestive Health Network, Inc. (DHN) <i>(Provider association and specialty society)</i></p> <p>Comprehensive Colonoscopy Advanced Alternative Payment Model for Colorectal Cancer Screening, Diagnosis and Surveillance</p> <p>N/A - Withdrawn</p>	<p>Clinical Focus: Gastrointestinal (GI)/digestive health; colorectal cancer (CRC)</p> <p>Providers: All providers within the care team</p> <p>Setting: Outpatient</p>	<ul style="list-style-type: none"> Bundled episode-based payment model with shared risk 	<p>Population-specific</p> <ul style="list-style-type: none"> Within specialty Multidisciplinary within episode 	<ul style="list-style-type: none"> Expand CRC screening at population health level, improve detection of CRC at early stages 	<ul style="list-style-type: none"> Communication Monitoring and Follow-Up 	<ul style="list-style-type: none"> MIPS quality measures 	<p>N/A - Withdrawn</p>

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, "Integration and Care Coordination"
<p>Mercy Accountable Care Organization (Mercy) <i>(Regional/local multispecialty practice or health system)</i></p> <p>Annual Wellness Visit Billing at Rural Health Clinics (RHCs)</p> <p>12/18/2017: Not applicable to Committee's charge</p>	<p>Clinical Focus: Primary/preventive care</p> <p>Providers: Rural clinic providers</p> <p>Setting: Outpatient</p>	<ul style="list-style-type: none"> Separately payable annual visit with RHCs 	<p>Population-wide</p> <ul style="list-style-type: none"> Context not specified <p>Licensed professional staff; annual wellness visit (AWV); coordinating chronic and preventive care with AWV in conjunction to secondary visit</p>	<ul style="list-style-type: none"> Focus holistically on patient care, both chronic and preventive Make AWVs more feasible and reduce burden on physicians 	<ul style="list-style-type: none"> Establish Accountability or Negotiate Responsibility 	<ul style="list-style-type: none"> PCMH standards (NCQA) Group Practice Reporting Option Metrics 	N/A
<p>Minnesota Birth Center <i>(Regional/local single specialty practice)</i></p> <p>A Single Bundled Payment for Comprehensive Low-Risk Maternity and Newborn Care Provided by Independent Midwife Led Birth Center Practices that Are Clinically Integrated with Physician and Hospital Services</p> <p>N/A - Withdrawn</p>	<p>Clinical Focus: Maternity/newborn care</p> <p>Providers: Certified nurse midwives (CNMs), registered nurses (RNs), and licensed practical nurses (LPNs)</p> <p>Setting: Birth centers</p>	<ul style="list-style-type: none"> Additional one-time bundled payment 	<p>Population-specific</p> <ul style="list-style-type: none"> Within specialty and condition <p>Maternity care and coordinated effort across three phases: prenatal care, labor and birth, postpartum care</p>	<ul style="list-style-type: none"> Maximize care continuity for mothers and avoid burnout for CNM providers 	<ul style="list-style-type: none"> Establish Accountability or Negotiate Responsibility Facilitate Transitions and Coordinate Care Across Settings 	<ul style="list-style-type: none"> American Association of Birth Centers Perinatal Data Registry and expanded postpartum survey to capture maternal experience with care 	N/A - Withdrawn

Proposal: Submitter, Submitter Type, Proposal Name, and PTAC Recommendation and Date	Clinical Focus, Providers, and Setting	Payment Mechanism	Care Coordination Context	Care Coordination Objectives	Care Coordination Functions	Performance Measures Related to Care Coordination	Summary of PTAC Comments on Criterion 7, "Integration and Care Coordination"
<p>Dr. Sobel (Sobel) <i>(Individual)</i></p> <p>Remote specialists and experts on demand improving care and saving costs (Revised version)</p> <p>N/A - Withdrawn</p>	<p>Clinical Focus: Broad/not specified</p> <p>Providers: Regional Referral Centers (specialists)</p> <p>Setting: Not specified</p>	<ul style="list-style-type: none"> • FFS 	<p>Population-wide</p> <ul style="list-style-type: none"> • Multiple chronic conditions • Access to remote specialists for acute or chronic conditions 	<ul style="list-style-type: none"> • Mitigate or reduce the escalation of care for conditions where access to physician specialists could forestall or prevent hospital admissions or transfer from community to more care-intensive settings, such as ED, inpatient, and rehabilitation settings 	<ul style="list-style-type: none"> • Facilitate Transitions and Coordinate Care Across Settings 	<ul style="list-style-type: none"> • Not specified 	<p>N/A - Withdrawn</p>
<p>Dr. Yang (Yang) <i>(Individual)</i></p> <p>Medicare 3 Year Value Based Payment Plan (Medicare 3VBPP)</p> <p>6/29/2017: N/A</p>	<p>Clinical Focus: Broad</p> <p>Providers: Not specified</p> <p>Setting: Broad</p>	<ul style="list-style-type: none"> • Fundamental restructuring of Medicare coverage and benefits 	<p>Population-wide</p> <ul style="list-style-type: none"> • Care context not specified 	<ul style="list-style-type: none"> • Not specified 	<ul style="list-style-type: none"> • Not specified 	<ul style="list-style-type: none"> • Not specified 	<p>N/A</p>

Appendix G. Annotated Bibliography

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

Subtopic(s): Care Coordination in Center for Medicare & Medicaid Innovation (CMMI) Models; Evidence of Effectiveness of Care Coordination

Type of Source: Report

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

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

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

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

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

Agarwal SD, Barnett ML, Souza J, Landon BE. Adoption of Medicare's Transitional Care Management and Chronic Care Management Codes in Primary Care. *JAMA*. 2018;320(24):2596-2597. doi:10.1001/jama.2018.16116

Subtopic(s): Trends in Care Coordination Access, Utilization, and Reimbursement

Type of Source: Journal article

Objective: To determine the use of transitional care management (TCM) and chronic care management (CCM) services nationally.

Main Findings: Uptake of TCM and CCM services were low at both the beneficiary and practice levels.

Strengths/Limitations: The use of claims data to measure services could have overestimated the population eligible to receive CCM or TCM services.

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

Methods: Analyzed Medicare claims data from 2012 through 2016 using a random sample of fee for service (FFS) beneficiaries.

Agency for Healthcare Research and Quality. Care Coordination Measures Atlas Update. AHRQ. Published June 2014. <https://www.ahrq.gov/ncepcr/care/coordination/atlas/chapter1.html#scope>

Subtopic(s): Background on Care Coordination; Appendix D. Definitional Table of Care Coordination and Related Terms

Type of Source: White paper

Objective: To establish the Atlas database with current measures in care coordination and to propose a framework for measurement in care coordination.

Main Findings: N/A

Strengths/Limitations: N/A

Generalizability to Medicare Population: The Atlas proposes measures of care coordination for use by evaluators who may be examining models specific or relevant to Medicare.

Methods: To create the Atlas, researchers used a meta-analysis and systematic review.

Agency for Healthcare Research and Quality. Care Management Issue Brief. Care Management: Implications for Medical Practice, Health Policy, and Health Services Research. Published online 2015. <https://www.ahrq.gov/ncepcr/care/coordination/mgmt.html>

Subtopic(s): Background on Care Coordination

Type of Source: Issue brief

Objective: To highlight key strategies in emerging care management models, and develop a framework for care management objectives.

Main Findings: Care coordination is thought to be a service to the needs of the population and may be considered a function or sub-objective of care management.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Care management and care coordination are often critical components of Medicare models, which this issue brief aims to address.

Methods: Authors engage in a narrative synthesis and systematic review.

Agency for Healthcare Research and Quality. Care Coordination. AHRQ. Published 2018. <https://www.ahrq.gov/topics/care-coordination.html>

Subtopic(s): Background on Care Coordination

Type of Source: Website

Objective: Consolidate Agency for Healthcare Research and Quality (AHRQ) resources into single topic page, briefly define care coordination.

Main Findings: Present single sentence definition of care coordination, according to AHRQ.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Care coordination acts as a critical component of many Medicare models; therefore, a simple definition has great relevance.

Methods: N/A

Agency for Healthcare Research and Quality. Challenges of Measuring Care Coordination Using Electronic Data and Recommendations to Address Those Challenges. Published September 2012. Last reviewed July 2018. <https://www.ahrq.gov/research/findings/final-reports/prospectscare/prospects1.html>

Subtopics(s): Performance and Outcome Metrics and Evaluation of Care Coordination

Type of source: Website

Objective: To identify challenges related to measuring care coordination using electronic data.

Main findings: AHRQ described six key challenge areas in using electronic data for care coordination measurement.

Strengths/Limitations: The audiences for the recommendations vary. Some recommendations are meant “specifically for federal agencies, while others are applicable to a wide range of stakeholders within this field, including researchers, measure developers, health IT systems vendors, health care delivery organizations, or systems administrators.”

Generalizability to Medicare Population: Strong, outcome measures will help with improving health care quality for the Medicare population.

Methods: Researchers convened a panel of experts.

American Academy of Family Physicians. Advancing Health Equity by Addressing the Social Determinants of Health in Family Medicine (Position Paper). Published April 2019. Accessed April 30, 2021.

<https://www.aafp.org/about/policies/all/social-determinants-health-family-medicine.html>

Subtopic(s): Background on Care Coordination

Type of source: Website

Objective: To outline prevalent health inequities; describe how social factors impact health; discuss the role family physicians can play in addressing social determinants of health (SDOH) and reducing health inequities; and state the American Academy of Family Physicians (AAFP) stance on relevant policy interventions.

Main findings: SDOH are the conditions under which people are born, grow, live, work, and age, and include factors such as socioeconomic status, education, employment, social support networks, and neighborhood characteristics. These have a greater impact on population health than factors like biology, behavior, and health care. SDOH, especially poverty, structural racism, and discrimination, are the primary drivers of health inequities. Reducing health inequities is important because they are pervasive, unfair, and unjust; individuals affected have little control over the contributing circumstances; the inequities affect everyone; and they can be avoided with existing policy solutions.

Strengths/Limitations: This is a position paper by AAFP.

Generalizability to Medicare Population: Paper does not specifically focus on the Medicare population, but findings on SDOH in health care may be applicable to Medicare beneficiaries.

Methods: Authors reference studies on the impact of SDOH on health inequities; socioeconomic status; race, ethnicity, and discrimination; sexual orientation and gender expression; and geography.

American Academy of Pediatrics. Care Coordination Resources. Accessed April 7, 2021.

<http://www.aap.org/en-us/professional-resources/practice-transformation/managing-patients/Pages/Care-Coordination.aspx>

Subtopic(s): Background on Care Coordination

Type of Source: Website/Resource Center

Objective: N/A

Main Findings: Care coordination defined as “the deliberate organization of patient care activities between two or more participants (including the patient) involved in a patient’s care to facilitate the appropriate delivery of health care services.”

Strengths/Limitations: N/A

Generalizability to Medicare Population: N/A; the definition of care coordination may apply to Medicare models; however, the website is meant to consolidate resources focused on pediatrics.

Methods: N/A

Anderson AC, Chen J. ACO Affiliated Hospitals Increase Implementation of Care Coordination Strategies. *Med Care*. 2019;57(4):300-304. doi:10.1097/MLR.0000000000001080

Subtopic(s): Trends in Care Coordination Access, Utilization, and Reimbursement; Care Coordination in PTAC Proposals

Type of Source: Journal article

Objective: To assess care coordination strategies of Accountable Care Organization (ACO)-affiliated and unaffiliated hospitals and across payment types employed by ACO-affiliated hospitals.

Main Findings: ACO-affiliated hospitals reported greater use of care coordination strategies compared to unaffiliated hospitals. ACO-affiliated hospitals with FFS shared savings and partial or global capitation payments were associated with greater use of care coordination strategies than other ACO-affiliated hospitals.

Strengths/Limitations: The researchers used a binary measure for ACO affiliation so no conclusions can be made about differences between different payers across ACOs.

Generalizability to Medicare Population: Limited; this study did not include a variable for different payer populations.

Methods: Researchers constructed a care coordination index that aggregated scores across 12 indicators to assess care coordination and used state-fixed effects multivariable linear regression models to estimate the relationship between a hospital's ACO affiliation, payment models used, and score of the care coordination index.

Archibald N, Kruse A, Center for Health Care Strategies. Snapshot of Integrated Care Models to Serve Dually Eligible Beneficiaries – Technical Assistance Brief. Published online December 2015.

<https://www.chcs.org/resource/snapshot-integrated-care-models-serve-dually-eligible-beneficiaries/>

Subtopic(s): Appendix D. Definitional Table of Care Coordination and Related Terms

Type of Source: White Paper/Issue Brief

Objective: To provide a snapshot of four specific models of integrated care that target the dually eligible.

Main Findings: Dual Eligible Special Needs Plan-Based, Financial Alignment Initiative-Based, the Program of All-Inclusive Care for the Elderly, and Accountable Care Organizations represent the four models of integrated care, each with unique policy and program goals.

Strengths/Limitations: N/A

Generalizability to Medicare Population: High; focuses on the dually eligible population, which is contained within the Medicare population.

Methods: Model review, assessment of pros and cons.

Asner B. Coordinated Care and Beyond: The Future of Integrated Care for Complex Chronic Conditions: What's Working, What's Not? Alliance for Health Policy. Published online July 18, 2017.

<https://www.allhealthpolicy.org/coordinated-care-and-beyond-the-future-of-integrated-care-for-complex-chronic-conditions-whats-working-whats-not-2/>

Subtopic(s): Background on Care Coordination; Appendix D. Definitional Table of Care Coordination and Related Terms

Type of Source: Interview Transcript

Objective: To conduct panel on effective strategies for integrated care targeting complex chronic conditions

Main Findings: N/A; "Integrated" can be thought to address the conventional focuses of medicine (primary care and specialties), but may also be thought to contain the complex social needs of patients in their individualized care plans, and effective models should address both.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Reasonable; many Medicare beneficiaries live with complex chronic conditions that may be better addressed through effective integrated care strategies.

Methods: N/A; Interview/Panel.

Berkowitz SA, Parashuram S, Rowan K, et al. Association of a Care Coordination Model With Health Care Costs and Utilization: The Johns Hopkins Community Health Partnership (J-CHIP). *JAMA Network Open*. 2018;1(7):e184273. doi:10.1001/jamanetworkopen.2018.4273

Subtopic(s): Evidence of Effectiveness of Care Coordination

Type of Source: Journal article

Objective: To determine whether the Johns Hopkins Community Health Partnership (J-CHIP) was associated with improved outcomes and lower spending.

Main Findings: Medicare beneficiaries who received the acute care intervention had significantly lower total costs of care, but saw increases in 90-day hospitalizations and 30-day readmissions.

Strengths/Limitations: Study results do not account for the cost of the intervention.

Generalizability to Medicare Population: Strong; study included both Medicare and Medicaid populations, and reported results by insurance group.

Methods: Study was a nonrandomized intervention.

Berry CA, Mijanovich T, Albert S, et al. Patient-Centered Medical Home Among Small Urban Practices Serving Low-Income and Disadvantaged Patients. *The Annals of Family Medicine*. 2013;11(Suppl 1):S82-S89. doi:10.1370/afm.1491

Subtopic(s): Opportunities for Improving and Optimizing Care Coordination in Alternative Payment Models (APMs) and Physician-Focused Payment Models (PFPMs); Appendix D. Definitional Table of Care Coordination and Related Terms

Type of Source: Journal article

Objective: To describe the experiences of small urban practices serving racially diverse and predominantly low income communities.

Main Findings: Survey results indicated substantial implementation of key aspects of the patient-centered medical home (PCMH) among small practices serving disadvantaged patient populations, despite considerable potential challenges to achieving PCMH implementation. Practices tended to use few formal mechanisms, but there was considerable evidence of use of informal team-based care and care coordination nonetheless. It appears that many of these practices achieved the spirit of key dimensions of PCMH.

Strengths/Limitations: There was demonstrated capacity to incorporate PCMH ideals and aspects in small practices. However, the practices may differ from other small clinics just by participating in this study, and the data are self-reported, which may contribute to bias.

Generalizability to Medicare Population: Strong; these clinics may be serving Medicare patients.

Methods: Researchers analyzed descriptive data for 94 primary care practices with five or fewer clinicians serving high volumes of Medicaid and minority patient populations in New York City.

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

Subtopic(s): Evidence of Effectiveness of Care Coordination

Type of Source: Journal article

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

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

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

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

Methods: Researchers conducted a retrospective cohort analysis of all Medicare FFS claims.

Bloink J, Adler KG. Transitional Care Management Services: New Codes, New Requirements. *FPM*. 2013;20(3):12-17. <https://www.aafp.org/fpm/2013/0500/p12.html>

Subtopic(s): Trends in Care Coordination Access, Utilization, and Reimbursement

Type of Source: Fact sheet

Objective: To provide information on the codes and requirements for TCM codes.

Main Findings: N/A

Strengths/Limitations: N/A

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

Methods: N/A

Blumenthal D, Chernof B, Fulmer T, Lumpkin J, Selberg J. Caring for High-Need, High-Cost Patients — An Urgent Priority. *New England Journal of Medicine*. 2016;375(10):909-911. doi:10.1056/NEJMp1608511

Subtopic(s): Trends in Care Coordination Access, Utilization, and Reimbursement

Type of Source: Perspective

Objective: How to improve care for the high-need, high-cost population of patients.

Main Findings: The high-need, high-cost patient population has limited ability to care for themselves and has complex needs. The goal is to develop an understanding of the population, identify evidence-based programs that support higher-quality integrated care at a lower cost, and nationally adopt these programs rapidly.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; not all high-need, high-cost patients are elderly or eligible for Medicare.

Methods: N/A

Boult C, Green AF, Boult LB, Pacala JT, Snyder C, Leff B. Successful Models of Comprehensive Care for Older Adults with Chronic Conditions: Evidence for the Institute of Medicine's "Retooling for an Aging America" Report. *Journal of the American Geriatrics Society*. 2009;57(12):2328-2337. doi:<https://doi.org/10.1111/j.1532-5415.2009.02571.x>

Subtopic(s): Evidence of Effectiveness of Care Coordination

Type of Source: Journal article

Objective: To inform efforts to overhaul the health care system, including those related to the "medical home," models of comprehensive health care that have shown the potential to improve the quality, efficiency, or health-related outcomes of care for chronically ill older persons were identified.

Main Findings: Fifteen models reviewed in the literature have shown improvement on at least one outcome: interdisciplinary primary care, models that supplement primary care, transitional care, models of acute care in patients' homes, nurse-physician teams for residents of nursing homes, and models of comprehensive care in hospitals.

Strengths/Limitations: For some models, evidence of success is limited to a single randomized trial.

Generalizability to Medicare Population: Strong; literature review focused on care for older adults.

Methods: Researchers conducted a literature review for articles that reported statistically significant positive outcomes from high-quality research on models of comprehensive health care for older persons with chronic conditions.

Boutwell A, Calderon V, Khan A. STAAR Issue Brief: Reducing Barriers to Care Across the Continuum – Engaging Physicians. An Initiative of the Commonwealth Fund and the Institute for Healthcare Improvement. 2010.

<http://www.ihl.org/Engage/Initiatives/Completed/STAAR/Documents/STAAR%20Issue%20Brief%20-%20Engaging%20Physicians.pdf>

Subtopic(s): Barriers and Challenges to Effective Care Coordination

Type of Source: Issue Brief

Objective: To report on physician experiences in the State Action on Avoidable Rehospitalizations (STAAR) initiative.

Main Findings: Physicians noted that the following three categories were important for reducing rehospitalizations: using financial incentives to elicit delivery reform, improving funding and support for services that help coordinate care (e.g., case managers, commitment by organizational leadership, IT infrastructure), and using professional norms to improve physician engagement around strategies to reduce rehospitalization.

Strengths/Limitations: This brief includes results from focus groups with physicians who chose to participate in the STAAR initiative. Therefore, the results may not be generalizable to the physician population more broadly.

Generalizability to Medicare Population: N/A

Methods: The researchers conducted focus groups.

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

Subtopic(s): Evidence of Effectiveness of Care Coordination

Type of Source: Journal article

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

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

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

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

Methods: The study used a pre-post comparative analysis to compare hospital records for patients who were frequent ED users at four urban safety net hospitals in Texas.

Brown R, Mathematica Policy Research, Inc. The Promise of Care Coordination - Models that Decrease Hospitalizations and Improve Outcomes for Medicare Beneficiaries with Chronic Illnesses. The National Coalition on Care Coordination. Published online March 2009. <https://www.mathematica.org/our-publications-and-findings/publications/the-promise-of-care-coordination-models-that-decrease-hospitalizations-and-improve-outcomes-for-medicare-beneficiaries-with-chronic-illnesses>

Subtopic(s): Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs

Type of Source: Presentation

Objective: To define effective care coordination and review promising interventions (i.e., transitional care interventions; self-care management interventions; coordinated care interventions), summarize findings from previous care interventions, and discuss lessons and recommendations for Medicare on the "optimal" care coordination model.

Main Findings: N/A

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; focuses on models that decrease hospitalization and improve outcomes for Medicare beneficiaries with chronic conditions.

Methods: N/A

Brown RS, Peikes D, Peterson G, Schore J, Razafindrakoto CM. Six Features Of Medicare Coordinated Care Demonstration Programs That Cut Hospital Admissions Of High-Risk Patients. *Health Affairs*. 2012;31(6). <https://www.healthaffairs.org/doi/10.1377/hlthaff.2012.0393>

Subtopic(s): Care Coordination in PTAC Proposals; Evidence of Effectiveness of Care Coordination; Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs

Type of Source: Journal article

Objective: To assess which features of Medicare Coordinated Care Demonstration (MCCD) programs had an impact on hospital admissions among high-risk beneficiaries.

Main Findings: Four of 11 programs in the MCCD reduced hospitalizations by 8 to 33 percent among enrollees who had a high risk of near-term hospitalization. Care coordinators used a variety of approaches. When care management fees were included, the programs were essentially cost neutral, but none of these programs generated net savings to Medicare.

Strengths/Limitations: Researches used a randomized design. However, though the study included a large sample size compared to other studies of care coordination, the study had a low statistical power. Additionally, researchers did not specify which subgroups would be tested before the start of the demonstration in 2002.

Generalizability to Medicare Population: Strong; the demonstration focused on the Medicare population.

Methods: Researchers conducted qualitative interviews and analyzed Medicare claims data.

Bruce ML, Raue PJ, Reilly CF, et al. Clinical Effectiveness of Integrating Depression Care Management Into Medicare Home Health: The Depression CAREPATH Randomized Trial. *JAMA Internal Medicine*. 2015;175(1):55-64. doi:10.1001/jamainternmed.2014.5835

Subtopic(s): Evidence of Effectiveness of Care Coordination

Type of Source: Journal article

Objective: To determine whether Medicare home health depression patients of nurses receiving randomization to an intervention have greater improvement in depressive symptoms.

Main Findings: In the full sample, the intervention had no effect. Adjusted Hamilton Scale for Depression (HAM-D) scores did not differ until 12 months post-intervention. There was no effect for patients with mild depression. Patients with the highest HAM-D scores showed improvement at three, six, and 12 months.

Strengths/Limitations: Selected home health care agencies were diverse in size and location but were not strictly representative of certified home health care agencies. Study participants represent only patients with sufficient cognitive functioning and willingness to participate in research, and there were higher rates of consent among minority and younger patients.

Generalizability to Medicare Population: Strong; the study looked at Medicare home health patients.

Methods: A cluster randomized effectiveness trial measuring patients' depression severity, assessed by the 24-item HAM-D.

Burton RA, Zuckerman S, Haber SG, Keyes V. Patient-Centered Medical Home Activities Associated With Low Medicare Spending and Utilization. *The Annals of Family Medicine*. 2020;18(6):503-510. doi:10.1370/afm.2589

Subtopic(s): Care Coordination in PTAC Proposals; Opportunities for Improving and Optimizing Care Coordination in APMs and PFPs Coordination

Type of Source: Journal Article

Objective: To identify components of the PCMH model of care that are associated with lower spending and utilization among Medicare beneficiaries.

Main Findings: Six activities were associated with lower spending or utilization: 1) registries used to identify and remind patients due for preventive services; 2) registries used for pre-visit planning, patient outreach, and population health monitoring; 3) practice staff, trained in patient education, engaging patients with chronic conditions in goal setting, action planning, and ongoing support; 4) practice monitors for patients' care during hospital and post-acute facility stays; 5) formalized relationships with commonly referred-to practices; and 6) quality improvement activities based on systematic approaches.

Strengths/Limitations: Clinicians self-reported which PCMH activities they engaged in and could have overstated how consistently they performed PCMH activities.

Generalizability to Medicare Population: Strong; some Medicare demonstrations utilize PCMH principles.

Methods: Study included regression analyses of changes in outcomes for Medicare beneficiaries in practices that engaged in particular PCMH activities.

Burwell SM. Fifth Report to Congress on the Evaluation of the Medicare Coordinated Care Demonstration: Findings over 10 Years. Department of Health and Human Services; 2014:70.

<https://innovation.cms.gov/files/reports/medicarecoordinatedcaredemortc.pdf>

Subtopic(s): Care Coordination in CMMI Models; Evidence of Effectiveness of Care Coordination

Type of Source: Report to Congress

Objective: To report on the findings of the Mercy and Health Quality Partners (HQP) programs as part of the MCCD.

Main Findings: Mercy reduced hospitalizations by 10 percent, but did not significantly reduce Medicare expenditures, relative to comparison groups. For high-risk patients, Mercy reduced hospitalizations by 14 percent and reduced Medicare expenditures by \$145 per beneficiary per month (PBPM). HQP reduced hospitalizations by 17 percent relative to comparison groups. HQP reduced Medicare expenditures by \$129 PBPM, which offset the program fees, making the program budget neutral. The effects were concentrated in high-risk groups, which saw reductions in hospitalizations and expenditures by 25 percent and \$291, respectively, relative to comparison groups.

Strengths/Limitations: Researchers were unable to control for unobservable characteristics, such as functional limitations or caregiver status, which may have differed in the pre- and post-extension high-risk groups.

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

Methods: Study included a randomized controlled trial and an intent-to-treat design.

Butler S, Higashi T, Cabello M. Budgeting to Promote Social Objectives—A Primer on Braiding and Blending. *Economics Studies at Brookings*. Published online April 2020:48.

Subtopic(s): Trends in Care Coordination Access, Utilization, and Reimbursement

Type of Source: Report

Objective: To explore the need for cross-sector government budgeting.

Main Findings: Tackling many complex social issues—such as homelessness, aging, the causes and impacts of opioid use, community stabilization, and good family health— also requires a high degree of cross-sector and cross-program collaboration to achieve a coordinated and often customized approach.

Strengths/Limitations: Study is focused on programs from the government perspective and focuses less on the patient perspective.

Generalizability to Medicare Population: Strong; study is focused on Medicare and other government programs.

Methods: Report brings together research on various government sectors.

California Department of Health Care Services. Whole Person Care Pilots.
<https://www.dhcs.ca.gov/services/Pages/WholePersonCarePilots.aspx>

Subtopic(s): Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs

Type of Source: Website

Objective: To describe the Whole Person Care (WPC) Pilots, the goal of which is to coordinate health, behavioral health, and social services in a patient-centered manner with the goals of improved beneficiary health and well-being through more efficient and effective use of resources.

Main Findings: N/A

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; the program is for Medicaid beneficiaries, which could include dually-eligible patients.

Methods: N/A

Center for Health Care Strategies. Care Management Definition and Framework. Published online 2007.
https://www.chcs.org/media/Care_Management_Framework.pdf

Subtopic(s): Background on Care Coordination

Type of Source: Issue Brief

Objective: To develop a consensus definition of care management and to develop a translatable tool for care management program design.

Main Findings: Care management may be defined as a program that applies systems, science, incentives, and information to improve medical practice and assist consumers and their support system to become engaged in a collaborative process designed to manage conditions more effectively. The goal of care management is to achieve an optimal level of wellness and improve coordination of care.

Strengths/Limitations: Consensus definition devised by six-state workgroup; may not be representative of care management theory nationwide.

Generalizability to Medicare Population: Strong; care management is often a critical component of Medicare models, and differentiating from care coordination may allow for more clearly devised programs.

Methods: Report was a result of a workgroup brainstorm.

Chang L, Wanner KJ, Kovalsky D, Smith KL, Rhodes, KV. "It's Really Overwhelming": Patient Perspectives on Care Coordination. *Journal of the American Board of Family Medicine*. September 2018.

Subtopic(s): Barriers and Challenges to Effective Care Coordination

Type of Source: Journal Article

Objective: Characterize factors leading to patient satisfaction or dissatisfaction with care coordination in the emergency department (ED).

Main Findings: Patients with multiple providers identified barriers to communication among providers and inadequate support with care coordination. Many patients attributed the effective sharing of their health information to the use of electronic health records (EHRs). The expansion of team-based primary care models and prioritization of interoperable technology to share patient health information between providers were found to be important to the patient experience and safe transitional care.

Strengths/Limitations: Primarily hypothesis-generating; patients recruited from a single ED at an urban academic medical center, so their experiences may not be generalizable; purposive sampling selected only patients with multiple providers and medical problems that resulted in ED visits.

Generalizability to Medicare Population: Moderate; criteria for inclusion were intended to select patients with high need for care coordination – some of whom were potentially in the Medicare population.

Methods: Semi-structured phone interviews conducted with 25 adult patients following ED visits; all patients interviewed had two or more ED visits and hospitalizations in the last year and/or health providers in more than one health care system. Interview transcripts were coded and analyzed following a modified grounded theory approach.

Chen J, DuGoff EH, Novak P, Wang MQ. Variation of hospital-based adoption of care coordination services by community-level social determinants of health. *Health Care Management Review*. 2020;45(4):332-341.

Subtopic(s): Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs

Type of Source: Journal article

Objective: To explore variation of hospital-initiated care coordination services and participation in ACOs by community characteristics within an organizational theory framework.

Main Findings: Hospitals with large bed size, located in urban areas, and/or with high volume of operations were more likely to adopt care coordination practices and participate in the ACO models. Hospitals serving communities with high uninsurance rates and/or poverty rates were significantly less likely to provide care coordination practices. More stringent Community Benefit Laws (CBLs) were positively associated with the implementation of care coordination practices, suggesting strong normative impacts of CBLs.

Strengths/Limitations: Researchers used hospital reports of care coordination practices that may be impacted by bias. There were also characteristic variations between the hospitals in the sample and all hospitals in the American Health Association (AHA) annual survey. Therefore, results might have underestimated the association between the community poverty–uninsured rate and the adoption of hospital-initiated care coordination practices. Additionally, this study focused on “general medical and surgical” hospitals. Therefore, additional studies are needed to explore care coordination practices and ACO participation in specialized hospitals.

Generalizability to Medicare Population: Strong; the ACO program focuses on the Medicare population, and the survey data used collected information from hospitals in all 50 states and the District of Columbia.

Methods: Researchers used state fixed-effects models to test the association between the adoption of care coordination practices and hospital characteristics, community-level sociodemographic characteristics, and health policies.

Cipriano PF, Bowles K, Dailey M, Dykes P, Lamb G, Naylor M. The importance of health information technology in care coordination and transitional care. *American Academy of Nursing on Policy*. 2013;61(6):475-489.

Subtopic(s): Care Coordination in PTAC Proposals; Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs

Type of Source: Journal article

Objective: To highlight the importance of using health information technology (HIT) to coordinate care and recommendation strategies for the development, standards, content, and measures for using HIT infrastructure to enable care coordination.

Main Findings: N/A

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; two out of the three recommendations reference actions that the Centers for Medicare & Medicaid Services (CMS) and Department of

Health and Human Services (HHS) can take to guide the development of infrastructure, standards, content, and measures to enable care coordination and care transitions.

Methods: N/A

Clarke JL, Bourn S, Skoufalos A, Castillo DJ. An Innovative Approach to Health Care Delivery for Patients with Chronic Conditions. *Population Health Management*. 2017(1).

Subtopic(s): Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs

Type of Source: Journal article

Objective: To review new models for care coordination during transitions, longitudinal high-risk care management, and unplanned acute episodic care and the Mobile Integrated Healthcare (MIH) model.

Main Findings: Of 136.3 million annual ED visits, only 11.9 percent result in a hospital admission; unnecessary ED visits cost the U.S. health care system more than \$4.4 billion per year. Inappropriate ED visits account for 8 to 27 percent of total visits. MIH model enables active patient management in most appropriate settings and provides clinically appropriate reduction in ED and hospital utilization.

Strengths/Limitations: Since MIH is an emerging model, an actual impact analysis or evaluation of the model (vs. key components of the model) is absent.

Generalizability to Medicare Population: Moderate; most of the comparison models included in the article were developed under CMS, and the MIH model is available to Medicare Advantage beneficiaries. Older adults with chronic conditions are a consistent population of interest in the article.

Methods: Researchers synthesized findings related to outcomes of models for coordinating transitional care and the MIH model.

Colla C, et al. Organizational integration, practice capabilities, and outcomes in clinically complex Medicare beneficiaries. *Health Services Research*. 2020;55(S3).

Subtopic(s): Background on Care Coordination; Appendix D. Definitional Table of Care Coordination and Related Terms

Type of Source: Journal Article

Objective: To assess the association between clinical integration and financial integration, quality-focused care delivery processes, and beneficiary utilization and outcomes.

Main Findings: High levels of financial integration are not associated with improved delivery or better health outcomes. Practices that score high in clinical integration are more likely to adopt quality-focused care delivery processes and have greater associated reductions in spending.

Strengths/Limitations: National Survey of Healthcare Organizations and Systems used as primary data source, which had a 47 percent response rate; regression may be unable to fully adjust for practice and beneficiary characteristics.

Generalizability to Medicare Population: High; the study uses Medicare beneficiaries as the population of interest.

Methods: Cross-sectional study of Medicare beneficiaries with regression techniques to associate integration domains and quality-focused care delivery, utilization, and outcomes.

Cope R, Jonkman L, Quach K, Ahlbord J, Connor S. Transitions of Care: Medication-Related Barriers Identified by Low Socioeconomic Patients of a Federally Qualified Health Center Following Hospital Discharge. *Research in Social and Administrative Pharmacy*, 14 (1), 26-30.

Subtopic(s): Barriers and Challenges to Effective Care Coordination

Type of Source: Journal Article

Objective: Describe barriers to transitions of care as they relate to medication access, use, and adherence in an effort to improve the transitions of care processes for practices serving primarily low socioeconomic status populations.

Main Findings: Common themes found in the analysis included: assumptions on patient plans to access/appropriately use discharge medications negatively impacts adherence; there are unmet expectations for care coordination between primary care provider (PCP) and hospital; a disconnect between patients and health care workers leads to disengagement; and lack of personal contact hinders access to services.

Strengths/Limitations: Some underserved populations were likely excluded (e.g., those without access to a telephone or non-English speakers).

Generalizability to Medicare Population: Strong; study population includes Medicare beneficiaries.

Methods: Qualitative study using semi-structured interviews of recently discharged patients between January and June 2015.

Counsell SR, Callahan CM, Clark DO, et al. Geriatric Care Management for Low-Income Seniors: A Randomized Controlled Trial. *JAMA*. 2007;298(22):2623-2633. doi:10.1001/jama.298.22.2623

Subtopic(s): Evidence of Effectiveness of Care Coordination

Type of Source: Journal Article

Objective: To test the effectiveness of a geriatric care management model on improving the quality of care for low-income seniors in primary care.

Main Findings: Intervention patients improved on measures of general health, vitality, social functioning, and mental health, compared to usual care. The cumulative two-year ED visit rate was lower in the intervention group, but hospital admission rates were not significantly different. For a predefined group at risk of hospitalization, ED and hospital admission rates were lower for intervention patients.

Strengths/Limitations: Study participants limited to low-income patients in Indianapolis, and may not be generalizable to a wider Medicare population.

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

Methods: Study involved a controlled trial.

Daumit GL, Stone EM, Kennedy-Hendricks A, Choksy S, Marsteller JA, McGinty EE. Care Coordination and Population Health Management Strategies and Challenges in a Behavioral Health Home Model. *Med Care*. 2019;57(1):79-84. doi:10.1097/MLR.0000000000001023

Subtopic(s): Trends in Care Coordination Access, Utilization, and Reimbursement

Type of Source: Journal article

Objective: To explore the perceived ability of community mental health programs to implement behavioral health home (BHH) models in Maryland.

Main Findings: BHH reported challenges implementing population health management or primary care coordination due to tensions between care teams, lack of experience, state regulations, health IT, staffing, and lack of engagement from primary care providers (PCPs).

Strengths/Limitations: This study focused only on implementation of the Maryland BHH and may not be generalizable to the wider Medicaid population.

Generalizability to Medicare Population: Weak; study focused on the Medicaid population.

Methods: Researchers conducted interviews and surveys.

DuGoff EH, Dy S, Giovannetti ER, Leff B, Boyd CM. Setting Standards at the Forefront of Delivery System Reform: Aligning Care Coordination Quality Measures for Multiple Chronic Conditions. *Journal for Healthcare Quality*. 2013;35(5):58-69.

Subtopic(s): Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs

Type of Source: Journal article

Objective: To assess how three major health reform care coordination initiatives (ACOs, Independence at Home [IAH], and Community-based Care Transitions Program [CCTP]) measure important care coordination concepts for people with multiple chronic conditions.

Main Findings: There are major differences in quality measurements across the three initiatives and other measures of care coordination; care transitions, patient-centered approaches, and care across multiple conditions are infrequently measured in these initiatives.

Strengths/Limitations: This study included only a subset of measures tied to incentive payments for care coordination and did not include Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey measures because they were classified as measures of the patient experience and not care coordination.

Generalizability to Medicare Population: Strong; all programs studied focused on the Medicare population.

Methods: Researchers used the Care Coordination Measurement Framework and Mapping Table to assess what aspects of care coordination the ACOs, IAH, CCTP, and the National Quality Forum (NQF) Care Coordination Measurement Set capture.

Eldercare Workforce Alliance, National Coalition on Care Coordination. Care Coordination Issue Brief.

http://eldercareworkforce.org/wp-content/uploads/2018/03/EWA_and_N3C_Care_Coordination_Issue_Brief_-_FINAL.pdf

Subtopic(s): Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs

Type of Source: Issue brief

Objective: To define, describe, and highlight lessons learned from care coordination.

Main Findings: The best care coordination models are person- and family-centered, provided across service settings, and promote better communication among the members of the interdisciplinary team, individual, and caregiver.

Strengths/Limitations: N/A

Generalizability to Medicare Population: The target audience of the issue brief is the Medicare-age population (it was co-authored by the Eldercare Workforce Alliance), and provides information on care coordination specific to the elderly population.

Methods: N/A

Erikson CE, Pittman P, LaFrance A, Chapman SA. Alternative payment models lead to strategic care coordination workforce investments. *Nursing Outlook*. 2017;65(6):737-745.

doi:10.1016/j.outlook.2017.04.001

Subtopic(s): Care Coordination in PTAC Proposals; Evidence of Effectiveness of Care Coordination

Type of Source: Journal article

Objective: To explore care coordination staffing in four health systems participating in new payment models, including Medicaid payment reform and ACOs.

Main Findings: Each of the four sites engaged in significant task shifting of low-complexity care coordination activities to licensed practical nurses, medical assistants, and other unlicensed personnel in order to free up registered nurses and social workers for more complex patients.

Strengths/Limitations: Sites included were not representative of all health care organizations engaged in Alternative Payment Models, and interviewees may not represent all views at their respective organizations.

Generalizability to Medicare Population: Strong; health systems studied participated in Medicare payment models.

Methods: Study uses comparative case study design and analysis of 43 semi-structured interviews with leadership, clinicians, and care coordination staff.

Fagnan LJ, Dorr DA, Davis M, et al. Turning on the Care Coordination Switch in Rural Primary Care. *Journal of Ambulatory Care Management*. 2011;34(3):304-318. doi:10.1097/JAC.0b013e31821c63ee

Subtopic(s): Barriers and Challenges to Effective Care Coordination

Type of Source: Journal article

Objective: To understand the acceptability and feasibility of office-based nurse care management in medium and large rural primary care practices.

Main Findings: Key implementation attributes included a proven care coordination program, adequate staffing, practice buy-in, time, measurement, practice facilitation, and functional IT.

Strengths/Limitations: The study interviewed a diverse panel of staff across the practices; however, there was a high degree of heterogeneity. Small practices were also not included.

Generalizability to Medicare Population: Strong; study includes Medicare population and reports results by insurance type.

Methods: A qualitative assessment of Care Management Plus (a focused medical home model for complex patients) implementation was conducted using semi-structured interviews with four staff cohorts, including clinician champions, clinician partners, practice administrators, and nurse care managers.

Freij M, Weiss L, Gass J, Trezza C, Weiner A, Melly , Volland P. “Just Like I’m Saving Money in the Bank”: Client Perspectives on Care Coordination Services. *Journal of Gerontological Social Work*. 2011;54(7):731-748.

Subtopic(s): Barriers and Challenges to Effective Care Coordination

Type of Source: Journal article

Objective: Examine the perspectives of a multiethnic sample of older adults living in the New York City area to determine: what services adults in the community receive; what services or assistance they need; how care coordination services are experienced/perceived; what the benefits or limitations are; and how care coordination assists older adults who remain in their homes.

Main Findings: Describes two nonmedical challenges faced by low-income older adults trying to maintain community-based living (housing and access to health care); and the roles of care coordination and care coordinators in addressing each.

Strengths/Limitations: Potential social desirability or recall bias; impossible to determine whether findings are generalizable to a broader population.

Generalizability to Medicare Population: Strong; limited to older adults in the New York City metropolitan area – 86 percent of who had Medicare.

Methods: Conducted 25 qualitative interviews and six focus groups between April 2009 and January 2010. Transcripts were entered into NVivo and coded and synthesized for analysis; data were then analyzed using the grounded theory framework.

Friedman A, Howard J, Shaw EK, Cohen DJ, Shahidi L, Ferrante JM. Facilitators and Barriers to Care Coordination in Patient-centered Medical Homes (PCMHs) from Coordinators' Perspectives. *The Journal of the American Board of Family Medicine*. 2016;29(1):90-101. doi:10.3122/jabfm.2016.01.150175

Subtopic(s): Barriers and Challenges to Effective Care Coordination

Type of Source: Journal article

Objective: To describe experiences and perspectives of care coordinators across the U.S.

Main Findings: Coordinators identified barriers and facilitators in their work at the organization/system level, the interpersonal level, and the individual level. Some factors emerged as both barriers and facilitators: clinical IT, community resources, interactions with patients and clinicians, and self-care practices.

Strengths/Limitations: The online discussion forum may have contributed to sampling bias, and participants were not required to answer every question. Individuals with stronger opinions may have been more likely to volunteer. However, the data are real-time and provide insight to their day-to-day work.

Generalizability to Medicare Population: Moderate; study does not talk specifically about Medicare beneficiaries, but findings are likely applicable to the experiences of care coordinators caring for Medicare patients.

Methods: Researchers conducted a private online discussion forum to gather data from 25 care coordinators from a diverse set of PCMH practices.

Gifford K, Ellis E, Lashbrook A, et al. A View from the States: Key Medicaid Policy Changes; Results from a 50-State Medicaid Budget Survey for State Fiscal Years 2019 and 2020. Kaiser Family Foundation. 2019. <http://files.kff.org/attachment/Report-A-View-from-the-States-Key-Medicaid-Policy-Changes>

Subtopic(s): Trends in Care Coordination Access, Utilization, and Reimbursement

Type of Source: Report

Objective: To examine the changes taking place in Medicaid programs across the country in Fiscal Year (FY) 2019 and 2020.

Main Findings: Medicaid programs made efforts to address social determinants of health, control prescription drug spending, improve birth outcomes and reduce infant mortality, and address the opioid epidemic. Additional states have expanded Medicaid coverage for their residents. However, there may be issues surrounding right-to-work requirements in Arkansas, Kentucky, New Hampshire, and Indiana, and requests from six additional states.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; program focuses on Medicaid policy.

Methods: Analysis of the 19th annual budget survey of Medicaid officials in all 50 states and the District of Columbia.

Gimm G, Goldberg DG, Ghanem N. et al. Provider Experiences with a Payer-Based PCMH Program. *Journal of General Internal Medicine*. 34, 2047–2053 (2019). <https://doi.org/10.1007/s11606-019-05005-7>

Subtopic(s): Trends in Care Coordination Access, Utilization, and Reimbursement

Type of Source: Journal article

Objective: To analyze how providers experienced specific elements of a payer-based PCMH model.

Main Findings: Nurse care coordinators were crucial to program visibility and success. Individual care plans were the main tool of communication between nurse care coordinators and physicians on patient goals. Online data portals were viewed as not useful. There were also

widespread communication issues and a lack of trust between providers and nurse care coordinators.

Strengths/Limitations: The study revealed that provider experience varied. However, the sample size was small and limited to the Maryland/Northern Virginia region, and focus groups may have introduced selection bias.

Generalizability to Medicare Population: Moderate; this study included patients of all ages, which may include Medicare beneficiaries.

Methods: Observational qualitative study of 81 individuals.

Goodnell S, Bodenheimer TS, Berry-Millet R. Care Management of Patients with Complex Health Care Needs. Robert Wood Johnson Foundation. December 2009.

<https://www.rwjf.org/en/library/research/2009/12/care-management-of-patients-with-complex-health-care-needs.html>

Subtopic(s): Background on Care Coordination; Appendix D. Definitional Table of Care Coordination and Related Terms

Type of Source: Journal Article

Objective: To review the evidence on care management and its ability to improve patient care and reduce costs.

Main Findings: Care management that follows patients longer reveals greater improvement, but impact on cost reduction is less consistent. Programs that target transitions of care were most successful in reducing readmission. Evidence of effective care management programs includes patient identification, specially trained care managers, interdisciplinary teams, and in-person patient contact.

Strengths/Limitations: Limited by quality of studies included in systematic review; studies focus on different populations in different settings.

Generalizability to Medicare Population: Reasonable; many Medicare beneficiaries are targeted for care management, and care management is central to the design of many models of care focusing on the Medicare population.

Methods: Systematic review.

Goodwin N. Understanding Integrated Care. *International Journal of Integrated Care*. 2016;16(4):6.

Subtopic(s): Appendix D. Definitional Table of Care Coordination and Related Terms

Type of Source: Journal Article

Objective: To bring clarity to the meaning of integrated care beyond a narrow definition.

Main Findings: Care integration may be defined under specific taxonomies, including type, level, process, breadth, and degree/intensity. Integration may occur horizontally, vertically, or sectorally (within one sector of care), or may be “people-focused” or performed across an entire system, i.e., whole-system integration.

Strengths/Limitations: The taxonomies described are not necessarily widely adopted by the literature, and the international focus of the article may limit applicability for specific U.S. settings.

Generalizability to Medicare Population: Limited; the article focuses on international conceptions of care integration; however, these considerations may hold true for integrated care models targeting the Medicare population.

Methods: Literature Review/Issue Brief.

Granata RL, Hamilton K. Exploring the Effect of At-Risk Case Management Compensation on Hospital Pay-for-Performance Outcomes: Tools for Change. *Professional Case Management*. 2015;20(1):14-27. doi:10.1097/NCM.000000000000067

Subtopic(s): Evidence of Effectiveness of Care Coordination

Type of Source: Journal article

Objective: To inform leaders in the field of case management about tools to facilitate the alignment of case management systems with hospital pay-for-performance measures.

Main Findings: The implementation of an at-risk compensation model using key performance indicators, Lean Six Sigma methodology, and Creative Health Care Management's Relationship-Based Care framework demonstrated reduced length of stay and hospital readmissions, and improved patient experiences.

Strengths/Limitations: Study focused on only one quality improvement project implemented at a hospital in Alabama, so findings may not be applicable outside this specific setting.

Generalizability to Medicare Population: Moderate; study does not focus on the Medicare population, but findings may be applicable to Medicare beneficiaries.

Methods: Researchers conducted a case study and evaluated outcomes at an inpatient acute care hospital in Alabama.

Hasselt M van, McCall N, Keyes V, Wensky SG, Smith KW. Total Cost of Care Lower among Medicare Fee-for-Service Beneficiaries Receiving Care from Patient-Centered Medical Homes. *Health Services Research*. 2015;50(1):253-272. doi:<https://doi.org/10.1111/1475-6773.12217>

Subtopic(s): Evidence of Effectiveness of Care Coordination

Type of Source: Journal Article

Objective: To compare health care utilization and payments between PCMH practices recognized by the National Committee for Quality Assurance (NCQA) and practices without such recognition.

Main Findings: Relative to the comparison group, total Medicare payments, acute care payments, and the number of ED visits declined after practices received NCQA PCMH recognition. The decline was larger for practices with sicker than average patients, primary care practices, and solo practices.

Strengths/Limitations: Only 32 percent of NCQA-recognized PCMH practices agreed to participate in the study, which could lead to selection bias. Researchers noted that the practices evaluated seemed to be more advanced than the average PCMH.

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

Methods: Study involved a longitudinal, non-experimental design.

Hearld LR, Carroll N, Hall A. The adoption and spread of hospital care coordination activities under value-based programs. *The American Journal of Managed Care*. 2019;25(8):397-404.

Subtopic(s): Care Coordination in PTAC Proposals; Evidence of Effectiveness of Care Coordination

Type of Source: Journal article

Objective: To examine the relationship between participation in value-based programs and care coordination activities.

Main Findings: Hospital participation in an ACO was associated with the adoption of 3.07 more care coordination activities, on average, and 0.16 more points on the scale of spread of care coordination activities, compared with hospitals that were not participating in an ACO. Hospital participation in a bundled payment program was associated with the adoption of 1.84 more care coordination activities, but not greater spread.

Strengths/Limitations: A comparison of the hospitals in the study with overall acute care hospital population indicated significant differences.

Generalizability to Medicare Population: Strong; study examined the links between Medicare programs and care coordination.

Methods: Researchers used ordinary least squares regression methodology to assess the associations between participation in an ACO or bundled payment program and the adoption and spread of 12 care coordination activities.

Hickam D, Weiss J, Guise J. Outpatient Case Management for Adults With Medical Illness and Complex Care Needs. Published online January 25, 2013. Accessed April 7, 2021.

<http://europepmc.org/article/nbk/nbk116491>

Subtopic(s): Evidence of Effectiveness of Care Coordination

Type of Source: Journal article

Objective: To evaluate outpatient case management as an intervention strategy for chronic illness management.

Main Findings: The interventions tested in the studies reviewed were associated with small changes in patient-centered outcomes, quality of care, and resource utilization. While case management can improve some types of health care utilization, there are minimal effects on overall costs of care. For selected populations, the characteristics of successful interventions included intense case management with greater contact time, longer duration, face-to-face visits, and integration with patients' usual care providers.

Strengths/Limitations: Differences between the included studies and limitations of the synthesis make it difficult to determine the reliability of the findings and their applicability to clinical practice.

Generalizability to Medicare Population: Moderate; literature included in the review included studies of all adults, but the findings may be relevant to Medicare beneficiaries.

Methods: The researchers conducted a literature review.

Hugh A, Hood-Ronick CM, Gottlieb LM. Medicaid Investments to Address Social Needs in Oregon and California. *Health Affairs*. 2019;38(5):774-781.

Subtopic(s): Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs

Type of Source: Journal article

Objective: To explore how Medicaid funding was used to support social interventions in sites involved in payment reforms in Oregon and California.

Main Findings: Medicaid funding supported investments in direct services (e.g., care coordination, housing services, food insecurity programs, and legal supports) and capacity-building programs for health care and community-based organizations.

Strengths/Limitations: These findings are not representative of all Medicaid reform efforts to address social needs in Oregon and California given the sampling strategy used to identify interview participants.

Generalizability to Medicare Population: N/A

Methods: The researchers conducted qualitative research that included document review and semi-structured interviews with stakeholders.

Humowiecki M, Kuruna T, Sax R, et al. Blueprint for complex care: advancing the field of care for individuals with complex health and social needs. December 2018.

<https://www.nationalcomplex.care/our-work/blueprint-for-complex-care/>

Subtopic(s): Appendix D. Definitional Table of Care Coordination and Related Terms

Type of Source: White Paper/Issue Brief

Objective: To provide a strategic plan to support multidisciplinary innovations and accelerate opportunities to improve care for individuals with complex health and social needs.

Main Findings: Eleven specific recommendations are made based on strengths and weaknesses in complex care frameworks, including better quality measures, value of the individual lived experience, and strengthened local cross-sector partnerships.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Reasonable; Medicare beneficiaries often live with complex chronic conditions which fall under the scope of the proposed recommendations.

Methods: Stakeholder interviews, policy analysis.

Institute for Healthcare Improvement. Care Coordination Model: Better Care at Lower Cost for People with Multiple Health and Social Needs. Accessed February 19, 2021.

<http://www.ihl.org:80/resources/Pages/IHIWhitePapers/IHICareCoordinationModelWhitePaper.aspx>

Subtopic(s): Evidence of Effectiveness of Care Coordination; Barriers and Challenges to Effective Care Coordination

Type of Source: White paper

Objective: To outline methods and opportunities to better coordinate care for people with multiple health and social needs, and review ways that organizations have allocated resources to better meet the range of needs of this population.

Main Findings: Care coordination reframe complexity is one posed by care systems, not by individuals, and offers a solution in the form of individualized, wrap-around planning and supports. When done effectively, care coordination holds the promise of helping individuals take on more of their own health-fostering activities.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; the white paper includes some discussion of Medicare specifically, and the population focus—people with multiple health and social needs—applies to many Medicare beneficiaries.

Methods: N/A

Jean-Pierre P, Cheng Y, Wells K, Freund KM, et al. Satisfaction with Cancer Care Among Underserved Racial-Ethnic Minorities And Lower Income Patients Receiving Patient Navigation. *Cancer*. 2016;122(7):1060-1067.

Subtopic(s): Opportunities for Improving and Optimizing Care Coordination in APMs and PFPs

Type of Source: Journal article

Objective: To analyze patient satisfaction with cancer-related care and interpersonal characteristics of patient navigators among racial and ethnic minority patient populations at 10 sites.

Main Findings: Patients with abnormal cancer screening and definitive cancer diagnoses had statistically significant findings on the relationship between their cancer-related care satisfaction score and interpersonal characteristics of patient navigators.

Strengths/Limitations: Findings are cross-sectional and subject to response bias; generalizability of findings across sex and cancer types needs to be explored further.

Generalizability to Medicare Population: Weak; study focuses on cancer patients within a 10-site study.

Methods: Quantitative analyses including one-way Analysis of Variance (ANOVA) and regression analyses.

Joo JY, Liu MF. Case management effectiveness in reducing hospital use: a systematic review.

International Nursing Review. 2017;64(2):296-308. doi:10.1111/inr.12335

Subtopic(s): Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs

Type of Source: Journal article

Objective: To synthesize recent evidence of the effectiveness of case management in reducing hospital use by individuals with chronic illnesses.

Main Findings: All 10 studies evaluated used case management as an intervention, focused on transitional care services and reported hospital use, including readmissions, ED visits, and hospital visits, as primary outcomes. Case management greatly reduced hospital readmissions and ED visits.

Strengths/Limitations: Studies tended to report positive results.

Generalizability to Medicare Population: Limited; studies reviewed did not focus on the Medicare population and were not limited to the U.S. context.

Methods: Researchers conducted a systematic literature review.

Khullar D, Chokshi DA. Can Better Care Coordination Lower Health Care Costs? *JAMA Network Open*.

2018;1(7):e184295-e184295. doi:10.1001/jamanetworkopen.2018.4295

Subtopic(s): Evidence of Effectiveness of Care Coordination

Type of Source: Perspective piece

Objective: To comment on evidence on the impact of care coordination programs.

Main Findings: Research on the impact of care coordination programs had yielded mixed results on programs' ability to reduce care fragmentation and improve outcomes.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; the study that the article discussed focused on Medicare and Medicaid beneficiaries in the Johns Hopkins Community Health Partnership.

Methods: N/A

L&M Policy Research. Evaluation of CMMI Accountable Care Organization Initiatives: Pioneer ACO Final Report. L&M Policy Research; 2016:113. <https://innovation.cms.gov/files/reports/pioneeraco-finalevalrpt.pdf>

Subtopic(s): Care Coordination in CMMI Models; Barriers and Challenges to Effective Care Coordination

Type of Source: Report

Objective: To report on findings from the Pioneer ACO demonstration.

Main Findings: Pioneer ACOs identified a number of key activities, including provider engagement, care management, health information technology, and beneficiary engagement. The presence of embedded care managers in the clinic setting was associated with improved quality of care. There was a higher level of beneficiary satisfaction related to access to timely care, provider communication, and shared decision-making in larger ACOs.

Strengths/Limitations: Evaluation did not discuss spending and utilization outcomes.

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

Methods: Evaluation methods included analyses of claims data, patient surveys, site visits, interviews, focus groups, and provider surveys.

Lemke M, Kappel R, McCarter R, D'Angelo L, Tuchman LK. Perceptions of Health Care Transition Care Coordination in Patients With Chronic Illness. *Pediatrics*. 141(5).

Subtopic(s): Care Coordination in PTAC Proposals

Type of Source: Journal article

Objective: To assess the effectiveness of care coordination during health care transitions (HCT) on quality of chronic illness care and for adolescents and young adults.

Main Findings: Questionnaire findings show that intervention participants had 2.5 times increased odds of endorsing mostly or always receiving the services they thought they needed and had 2.4 times increased odds of having talked to their provider about future care.

Strengths/Limitations: The study used convenience sampling and may therefore not be generalizable to populations with different demographics.

Generalizability to Medicare Population: Weak; the study focused on care coordination for adolescents and young adults.

Methods: Adolescents and young adults with special health care needs were enrolled in a randomized HCT care coordination intervention, and perceptions of chronic illness care quality were assessed at 0, 6, and 12 months.

Lewis VA, Colla CH, Tierney K, Van Citters AD, Fisher ES, Meara E. Few ACOs Pursue Innovative Models That Integrate Care For Mental Illness And Substance Abuse With Primary Care. *Health Affairs*. 2014;33(10):1808-1816. doi:10.1377/hlthaff.2014.0353

Subtopic(s): Appendix D. Definitional Table of Care Coordination and Related Terms

Type of Source: Journal article

Objective: To examine the extent to which ACOs are clinically, organizationally, and financially integrating behavioral and primary health care.

Main Findings: Integration of behavioral and primary health care remains low, with most ACOs pursuing traditional fragmented approaches to behavioral and primary care. This may be influenced by contract design and contextual factors.

Strengths/Limitations: Results limited to respondents of the National Survey of Accountable Care Organizations, and contextual factors were not captured.

Generalizability to Medicare Population: Strong; ACOs principally manage Medicare populations, and integrations initiatives serve to improve quality and reduce cost for the Medicare population.

Methods: Researchers conducted a qualitative interview analyses.

Lewis VA, D'Aunno T, Murray GF, Shortell SM, Colla CH. The Hidden Roles That Management Partners Play In Accountable Care Organizations. *Health Affairs*. 2018;37(2):292-298.
doi:10.1377/hlthaff.2017.1025

Subtopic(s): Appendix D. Definitional Table of Care Coordination and Related Terms

Type of Source: Journal article

Objective: To examine the extent to which management partners are involved in ACOs or the nature of relationships between ACO physicians and management organizations.

Main Findings: Management partners play a central role in many ACOs, perhaps providing capital and expertise necessary to launch and ACO.

Strengths/Limitations: Survey questions were deliberately broader than most survey questions to collect data on a phenomenon that had not previously been studied, and limited the ability to generalize to partnerships with non-provider partners.

Generalizability to Medicare Population: Moderate; management partners are often utilized under ACOs that are highly concerned with the Medicare population, and these partners carry significant experience working with the Medicare population.

Methods: Researchers conducted qualitative survey analyses.

Lewis VA, Schoenherr K, Frazee T, Cunningham A. Clinical coordination in accountable care organizations: A qualitative study. *Health Care Management Review*. 2019;44(2):127-136.
doi:10.1097/HMR.000000000000141

Subtopic(s): Appendix D. Definitional Table of Care Coordination and Related Terms

Type of Source: Journal article

Objective: To understand ACOs' efforts to change clinical care during the first 18 months of ACO contracts.

Main Findings: ACOs primarily focus on transforming primary care through increased access and team-based care, but do comparatively little around transforming specialty, acute, and post-acute care, and likewise do little to standardize care across practices.

Strengths/Limitations: Findings based on set of 30 ACOs and results do not address strategies as they relate to performance on quality or cost outcomes.

Generalizability to Medicare Population: Strong; ACOs represent long-standing models of care centered on treating the Medicare population.

Methods: Researchers conducted qualitative semi-structured interview analyses.

Lewis VA, Tierney KI, Frazee T, Murray GF. Care Transformation Strategies and Approaches of Accountable Care Organizations. *Medical Care Research and Review*. 2019;76(3):291-314.
doi:10.1177/1077558717737841

Subtopic(s): Background on Care Coordination; Appendix D. Definitional Table of Care Coordination and Related Terms

Type of Source: Journal article

Objective: To understand what clinical strategies ACOs have used to meet quality and cost goals.

Main Findings: ACOs have adopted a practice-based or overlay transformation approach, with four specific methods identified to achieve ACO goals: patient support roles, targeted clinics and

events, clinical process standardization, and tracking and identifying patients on which to focus resources.

Strengths/Limitations: Results based on interviews with leadership at 16 ACOs, which is not statistically generalizable. Results are also focused on strategies pursued by ACOs but not necessarily implemented.

Generalizability to Medicare Population: Strong; ACOs are highly concerned with the Medicare population and present strategies that may be used in novel models or adopted in health systems regardless of contractual obligations.

Methods: Researchers conducted qualitative interview analyses.

Liss DT, Chubak J, Anderson ML, Saunders KW, Tuzzio L, Reid RJ. Patient-Reported Care Coordination: Associations with Primary Care Continuity and Specialty Care Use. *The Annals of Family Medicine*. 2011;9(4).

Subtopic(s): Care Coordination in PTAC Proposals

Type of Source: Journal article

Objective: To investigate the association between care coordination and continuity of primary care and the differences in association by level of specialty care use.

Main Findings: Among low-specialty care users, there was an association between increases in continuity and reported coordination. In high-specialty care users, there was no observed association between continuity and reported coordination.

Strengths/Limitations: Group Health—the integrated delivery system studied—differs from the delivery system of most health care settings. The integration of Group Health clinical databases ensures continuity of information transfer, whereas PCPs in other settings may face additional barriers to care coordination due to decreased access to specialty care visit data.

Generalizability to Medicare Population: Moderate; this study focused on Medicare enrollees in the state of Washington.

Methods: Researchers conducted a cross-sectional study of Medicare enrollees, using survey data to assess patient experiences and health care utilization. Linear regression was used to estimate the association between coordination and continuity, measured by the number of primary care visits. Researchers also used continuity-by-specialty interaction term to determine whether the continuity-coordination association was modified by high-specialty care use.

Marcotte LM, Reddy A, Zhou L, Miller SC, Hudelson C, Liao JM. Trends in Utilization of Transitional Care Management in the United States. *JAMA Network Open*. 2020;3(1):e1919571-e1919571. doi:10.1001/jamanetworkopen.2019.19571

Subtopic(s): Trends in Care Coordination Access, Utilization, and Reimbursement; Care Coordination in CMMI Models

Type of Source: Journal article

Objective: To examine the trends in TCM use.

Main Findings: Almost 300,000 TCM services (62.7 percent) were accepted and over \$56 million in payments were provided in 2015. This increased to almost 1.3 million TCM services (95.1 percent) accepted and over \$243 million payments provided in 2018.

Strengths/Limitations: Study limitations include descriptive design, lack of granular practice- and patient-level data, and inability to evaluate the association of TCM use with patient outcomes.

Generalizability to Medicare Population: Strong; TCM is a Medicare-specific billing program.

Methods: Researchers calculated total service counts and payments for TCM, as well as counts and potential payments for denied services.

Marek KD, Stetzer F, Adams SJ, et al. Cost Analysis of a Home-Based Nurse Care Coordination Program. *Journal of the American Geriatrics Society*. 2014;62(12):2369-2376. doi:<https://doi.org/10.1111/jgs.13162>

Subtopic(s): Evidence of Effectiveness of Care Coordination

Type of Source: Journal article

Objective: To determine whether a home-based care nurse care coordination (NCC) program focused on medication self-management would affect the cost of care to the Medicare program and whether the addition of technology, a medication-dispensing machine, would further reduce cost.

Main Findings: Total Medicare costs were \$447 per month lower in the NCC plus pill organizer group than in a control group. The cost of the NCC plus pill organizer intervention was \$151 per month, yielding a net savings of \$296 per month and \$3,552 per year.

Strengths/Limitations: It is likely that healthier older adults were less likely to participate in the two intervention groups and more likely to consent to be in the control group, potentially leading to bias in the study results.

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

Methods: The study design is a randomized, controlled, longitudinal study of home-based care coordination program in a large Midwestern urban area.

Martinez Z, Koker E, Truchil A, Balasubramanian H. Time and effort in care coordination for patients with complex health and social needs: Lessons from a community-based intervention. *Journal of Interprofessional Education & Practice*. 2019;15:142-148.

Subtopic(s): Opportunities for Improving and Optimizing Care Coordination in APMs and PFPs

Type of Source: Journal article

Objective: To provide a detailed description of time spent by non-physician members of an interprofessional care coordination team for individuals with multiple chronic conditions and complex social needs.

Main Findings: More than 20 percent of staff effort occurs in the first two weeks of enrollment. Seventy percent of care coordination effort occurs face-to-face. Indicators of social vulnerability such as housing instability and behavioral health needs were associated with more time-intensive program enrollments.

Strengths/Limitations: This study provides an analysis of staffing-relevant aspects of care coordination interventions, filling a gap in the research on care coordination which primarily focuses on patient outcomes. One limitation is that data used were self-reported data that may be subject to self-reporting errors.

Generalizability to Medicare Population: Strong; this study focuses on the care coordination team members' experiences and can therefore be generalized to all patients, include Medicare patients served by these teams.

Methods: Encounters conducted with or on behalf of patients were recorded by care team members, and additional patient-level data were obtained through assessments conducted at enrollment and throughout the intervention.

Martino SC, Elliot MN, Hambarsoomian K, Weech-Maldonado R, Gaillot, S, Haffner S, Hays R. Racial/Ethnic Disparities in Medicare Beneficiaries' Care Coordination Experiences. *Medical Care*. 2016;54(8):765-771.

Subtopic(s): Barriers and Challenges to Effective Care Coordination

Type of Source: Journal article

Objective: Investigate extent to which racial and ethnic disparities exist in the receipt of coordinated care by Medicare beneficiaries.

Main Findings: Hispanic, Black, and Asian/Pacific Islander beneficiaries reported that their provider had medical records/other care information significantly less often than non-Hispanic white beneficiaries, and also reported significantly greater difficulty receiving timely follow-up on test results than non-Hispanic white beneficiaries. Hispanic and Black beneficiaries reported that care management assistance was provided significantly less often than non-Hispanic white beneficiaries.

Strengths/Limitations: Issues of differing expectations of and use by different racial and ethnic groups. Nonresponse bias may have influenced findings. Some unmeasured confounding variable might account for the observed associations between race and ethnicity, and care coordination.

Generalizability to Medicare Population: Strong; this study focused on Medicare beneficiaries who responded to the 2013 Medicare CAHPS survey.

Methods: Series of linear, case-mix adjusted models predicting Medicare CAHPS measures of care coordination from race and ethnicity.

Mathematica Policy Research. Evaluation of the Diffusion and Impact of the Chronic Care Management (CCM) Services: Final Report. Published online November 2017:138. <https://www.mathematica.org/our-publications-and-findings/publications/evaluation-of-the-diffusion-and-impact-of-the-chronic-care-management-ccm-services-final-report>

Subtopic(s): Trends in Care Coordination Access, Utilization, and Reimbursement

Type of Source: Report

Objective: To report on findings on the Chronic Care Management service billing.

Main Findings: About 19 percent of Medicare beneficiaries received only one month of CCM services; however, the majority of beneficiaries received between four and 10 months of CCM services, on average. The average rate of growth in estimated Medicare PBPM expenditures for CCM beneficiaries relative to the comparison beneficiaries decreased in the 12- and 18-month follow-up periods. The decreased rate of growth was driven by decreases in facility expenditures for inpatient hospital services, skilled nursing facility (SNF) services, and outpatient services.

Strengths/Limitations: Individual clinicians identified patients for CCM services, leading to the potential for patient selection bias. Beneficiaries had to consent to receive CCM services, and may have been more amenable to engaging in care coordination than the comparison group. Combined, these factors limit the generalizability of the evaluation findings.

Generalizability to Medicare Population: Strong; CCM billing is unique to the Medicare population.

Methods: Evaluation methods included beneficiary and provider interviews, and claims data analyses.

Mathematica Policy Research. The Evaluation of the Medicare Coordinated Care Demonstration: Findings for the First Two Years. Mathematica Policy Research; 2007.

<https://innovation.cms.gov/files/x/evaluation-of-medicare-coordinated-care.pdf>

Subtopic(s): Care Coordination in CMMI Models

Type of Source: Report

Objective: To report on findings from the MCCD.

Main Findings: Most programs tested had limited or no improvements in quality of care, few achieved cost neutrality, and none reduced total Medicare expenditures when care coordination fees were included.

Strengths/Limitations: Small sample sizes and large variations in Medicare expenditures limited the power to detect the size of differences the programs are generating.

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

Methods: Evaluation methods included analyses of claims data, patient surveys, and quality outcomes.

Mathematica Policy Research. Final Evaluation Report: Evaluation of the Community-Based Care Transitions Program. Mathematica Policy Research; 2017:233.

<https://downloads.cms.gov/files/cmimi/cctp-final-eval-rpt.pdf>

Subtopic(s): Care Coordination in CMMI Models; Evidence of Effectiveness of Care Coordination; Barriers and Challenges to Effective Care Coordination

Type of Source: Report

Objective: To report on findings from the CCTP demonstration.

Main Findings: CCTP participants had lower readmission rates and Medicare expenditures relative to matched comparison. CCTP participants exhibited readmission rates that were 1.8 percentage points lower than matched comparisons, and their Medicare expenditures were \$634 lower.

Strengths/Limitations: The cross-sectional regression analyses cannot be used to show impact of the CCTP due to the inability to observe patient-level pre-CCTP outcomes or identify a baseline cohort of potential CCTP participants.

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

Methods: Evaluation methods included analyses of claims data, provider interviews, patient and provider focus groups, and site visits.

Mathematica Policy Research. Evaluation of the Independence at Home Demonstration: An Examination of the First Four Years. 2019. <https://www.mathematica.org/our-publications-and-findings/publications/evaluation-of-the-independence-at-home-demonstration-an-examination-of-the-first-four-years>

Subtopic(s): Care Coordination in CMMI Models

Type of Source: Report

Objective: To report on findings from the first four years of the IAH demonstration.

Main Findings: There was no statistically significant impact on Medicare expenditures, hospital admissions, or unplanned hospital readmissions. Total ED use significantly decreased for demonstration beneficiaries, but there was no effect on potentially avoidable ED use not accompanied by a hospital admission.

Strengths/Limitations: Due to small sample sizes, the evaluation lacked the statistical power to identify small effects of the demonstration across all demonstration sites.

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

Methods: Evaluation methods included analyses of claims data, provider interviews, and patient and caregiver surveys.

Mathematica Policy Research, Inc. Third Report to Congress on the Evaluation of the Medicare Coordinated Care Demonstration. Mathematica Policy Research; 2008:62.

<https://www.mathematica.org/our-publications-and-findings/publications/third-report-to-congress-on-the-evaluation-of-the-medicare-coordinated-care-demonstration>

Subtopic(s): Care Coordination in CMMI Models; Evidence of Effectiveness of Care Coordination
Type of Source: Report

Objective: To report to Congress on the Medicare Coordinated Care Demonstration (MCCD) programs.

Main Findings: Most programs tested had limited or no improvements in quality of care, few achieved cost neutrality, and none reduced total Medicare expenditures when care coordination fees were included.

Strengths/Limitations: Sample sizes were relatively small and variance of expenditures was large, making it difficult to discern the effects of the programs.

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

Methods: Evaluation methods included analyses of claims data, patient surveys, and quality outcomes.

Mathematica Policy Research, Inc. Evaluation of the Independence at Home Demonstration: An Examination of the First Five Years. Mathematica Policy Research; 2020:28.

<https://innovation.cms.gov/files/reports/iah-yr5evalrpt.pdf>

Subtopic(s): Evidence of Effectiveness of Care Coordination

Type of Source: Report

Objective: To report on the findings of the IAH demonstration.

Main Findings: The demonstration did not have a statistically significant effect on total Medicare expenditures. The demonstration was associated with fewer ED visits, but the estimated effect on hospital admissions, avoidable ED visits, or unplanned readmissions was not statistically significant. There was no evidence that the demonstration impacted the mortality rate of the probability of entry into institutional long-term care.

Strengths/Limitations: Due to small sample sizes, the evaluation lacked the statistical power to identify small effects of the demonstration across all demonstration sites.

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

Methods: Evaluation methods included analyses of claims data, provider interviews, and patient and caregiver surveys.

Mathematica Policy Research, Inc. Independent Evaluation of Comprehensive Primary Care Plus (CPC+): Third Annual Report. Mathematica Policy Research; 2021. Accessed January 29, 2021.

<https://innovation.cms.gov/data-and-reports/2021/cpc-plus-third-annual-eval-report>

Subtopic(s): Care Coordination in CMMI Models; Evidence of Effectiveness of Care Coordination; Barriers and Challenges to Effective Care Coordination

Type of Source: Report

Objective: To report on the findings from the first three years of the Comprehensive Primary Care Plus (CPC+) demonstration.

Main Findings: The demonstration did not impact expenditures, excluding CMS' enhanced payments, and expenditures increased when accounting for enhanced payments. CPC+ decreased ED visits by approximately 1.5 percent, but did not have statistically significant effects on hospitalizations, ambulatory specialty primary care visits, or urgent care center visits. The demonstration was associated with small improvements in quality measures, including the percentage of beneficiaries with diabetes who received recommended services, the percentage of female beneficiaries who received breast cancer screening, and measures of patient and caregiver engagement.

Strengths/Limitations: Due to limited set of claims-based quality measures and the small estimated improvements, the report could not draw conclusions on the impact of CPC+ on quality.

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

Methods: Evaluation methods included analyses of claims data, payer and provider surveys, program documentation, beneficiary and provider interviews, and beneficiary surveys.

McDonald KM, Sundaram V, Bravata DM, et al. Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies (Vol. 7: Care Coordination). Agency for Healthcare Research and Quality (US); 2007. Accessed March 2, 2021. <http://www.ncbi.nlm.nih.gov/books/NBK44015/>

Subtopic(s): Background on Care Coordination

Type of Source: Book

Objective: To develop a working definition of care coordination, apply it to a review of systematic reviews, and identify theoretical frameworks that might predict or explain how care coordination mechanisms are influenced by factors in the health care setting and how they relate to patient outcomes and health care costs.

Main Findings: A working definition of care coordination is established from common components identified in the literature: "Care coordination is the deliberate organization of patient care activities between two or more participants (including the patient) involved in a patient's care to facilitate the appropriate delivery of health care services. Organizing care involves the marshalling of personnel and other resources needed to carry out all required patient care activities, and is often managed by the exchange of information among participants responsible for different aspects of care."

Strengths/Limitations: Systematic review limited to "well-established" frameworks; may exclude more nuanced local conceptions of care coordination not "well-established" in the literature.

Generalizability to Medicare Population: Strong; seeking a definition of care coordination holds significant relevance to Medicare models that incorporate care coordination as a critical component.

Methods: Researchers conducted an iterative literature review and systematic review.

Mohr DC, Benzer JK, Vimalananda VG, et al. Organizational Coordination and Patient Experiences of Specialty Care Integration. *Journal of General Internal Medicine*. 2019;34(Suppl 1):30-36. doi:10.1007/s11606-019-04973-0

Subtopic(s): Care Coordination in PTAC Proposals

Type of Source: Journal article

Objective: To examine measures of coordination and patient experiences of care coordination within specialists.

Main Findings: Improving care coordination within and across primary care and specialty care increases patient experiences, efficiency, and effectiveness.

Strengths/Limitations: The study revealed areas of improvement to increase patient satisfaction with care coordination. The study was conducted within the Veterans Administration (VA); therefore, generalizability is limited, and VA care is already integrated to a degree.

Generalizability to Medicare Population: Moderate; the study was conducted within the VA, which may include the Medicare-eligible population.

Methods: Cross-sectional surveys of 3,183 patients and 233 primary care providers (PCPs) from the Veterans Health Administration.

Natale-Pereira A, Enard KR, Nevarez L, Jones LA. The role of patient navigators in eliminating health disparities. *Cancer*. 2011;117(S15):3541-3550.

Subtopic(s): Opportunities for Improving and Optimizing Care Coordination in APMs and PFPs

Type of Source: Journal article

Objective: Examine the role that patient navigation can play in improving health outcomes for racial and ethnic minorities and other underserved populations.

Main Findings: The following navigation activities can reduce health disparities: conduct patient education on screening guidelines; assist patients identifying a PCMH, appointments, ancillary care medication/equipment; provide/coordinate patient education; assist with transportation to appointments; determine eligibility for Medicare, Medicaid, and other public programs; monitor eligibility renewal dates; and others

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; examines some literature/activities specific to Medicare and Medicaid beneficiaries.

Methods: N/A

National Quality Forum. Preferred Practices and Performance Measures for Measuring and Reporting Care Coordination. October 2010.

https://www.qualityforum.org/Publications/2010/10/Preferred_Practices_and_Performance_Measures_for_Measuring_and_Reporting_Care_Coordination.aspx

Subtopic: Performance and Outcome Metrics; Evaluation of Care Coordination Models

Type of Source: Report

Objective: To provide recommended practices and outcome measures to ensure coordinated care and improve health care quality.

Main Findings: NQF-endorsed set of preferred practices and performance measures for care coordination.

Strengths/Limitations: Because measures will evolve over time, future researchers will still need to test recommended practices against providers and settings.

Generalizability to Medicare Population: Strong; endorsed care coordination measures will help assure quality health care for the Medicare population.

Methods: The NQF-endorsed framework for care coordination served as a road map to help identify these performance measures; a 27-person Steering Committee helped evaluate and recommend these measures.

NEJM Catalyst. What Is Care Coordination? *New England Journal of Medicine*. Published online 2018. doi:<https://catalyst.nejm.org/doi/full/10.1056/CAT.18.0291>

Subtopic(s): Background on Care Coordination; Appendix D. Definitional Table of Care Coordination and Related Terms

Type of Source: Journal article

Objective: To establish a definitional framework and common objectives of care coordination initiatives.

Main Findings: Care coordination is comprised of four key elements and is principally concerned with aligning patient care across providers and settings.

Strengths/Limitations: Definitions may be limited to the literature reviewed and systems analyzed, and care coordination may manifest differently in different geographic areas.

Generalizability to Medicare Population: Strong; definitions of care coordination are highly relevant to Medicare models in which care coordination is identified as an objective.

Methods: Researchers conducted a literature review.

Nelson L. Lessons from Medicare's Demonstration Projects on Disease Management, Care Coordination, and Value-Based Payment. Congressional Budget Office. Published online January 2012:30.

<https://www.cbo.gov/publication/42860>

Subtopic(s): Evidence of Effectiveness of Care Coordination; Opportunities for Improving and Optimizing Care Coordination in APMs and PFPs

Type of Source: Working paper

Objective: To summarize the results of six Medicare demonstrations (including 34 programs) of disease management and care coordination programs.

Main Findings: On average, the 34 programs had no effect on hospital admissions or Medicare expenditures before accounting for program fees. After accounting for program fees, Medicare spending was either unchanged or increased in almost all of the programs. There was considerable variation in the estimated effects among programs.

Strengths/Limitations: Review of evidence limited by what was included in evaluation reports.

Generalizability to Medicare Population: Strong; paper focused on Medicare demonstrations.

Methods: Researchers reviewed evaluation reports for six Medicare demonstrations.

Nevola A, Morris ME, Colla C, Tilford JM. Risk-based contracting for high-need Medicaid beneficiaries: The Arkansas PASSE Program. *Health Policy OPEN*. 2021;2. <https://doi.org/10.1016/j.hpopen.2020.100023>

Subtopic(s): Trends in Care Coordination Access, Utilization, and Reimbursement

Type of Source: Journal article

Objective: To highlight the Provider-led Arkansas Shared Savings Entity (PASSE) program for people with behavioral health conditions or intellectual and developmental disabilities.

Main Findings: PASSE improved beneficiary outcomes overall through expanded care coordination, service flexibility, community investment incentives, accountability for cost, quality, and targets across physical and behavioral health and long-term care. The PASSE program also fostered competition and increased provider ownership. However, there may not be sufficient incentives to change provider behavior.

Strengths/Limitations: Blending elements of payment reform has shown to improve care overall for populations with behavioral health conditions or intellectual and developmental disabilities, and may extend to other high-risk populations. The program is new and needs additional experience before determining true outcomes of the systems change. There is also selection bias through choosing informants and evidence scanning.

Generalizability to Medicare Population: Moderate; the program is focused on the Medicaid population.

Methods: Key informant interviews and an environmental scan of the literature.

NORC at the University of Chicago. Third Annual Report: HCIA Disease-Specific Evaluation. NORC at the University of Chicago; 2016. Accessed February 25, 2021. <https://downloads.cms.gov/files/cmimi/hcia-diseasespecific-thirdannualrpt.pdf>

Subtopic(s): Evidence of Effectiveness of Care Coordination; Barriers and Challenges to Effective Care Coordination

Type of Source: Report

Objective: To report on findings from the Health Care Innovation Awards (HCIA) Disease-Specific evaluation.

Main Findings: The majority of programs focused on enhancing care coordination through direct patient engagement and indirect systems interventions to improve access to care. Six of the 18 awardees demonstrated significant improvements in cost of care or utilization measures relative to comparison groups.

Strengths/Limitations: Analyses of some awardees were limited by sample sizes.

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

Methods: Evaluation methods included document review, site visits, interviews, and claims data analyses.

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): Care Coordination in CMMI Models; Evidence of Effectiveness; Barriers and Challenges to Effective Care Coordination

Type of Source: Report

Objective: To report on the findings from the third year of the Next Generation Accountable Care Organization (NGACO) demonstration.

Main Findings: The NGACO model decreased Medicare expenditures, but there was no net spending reduction. There were statistically significant reductions in spending for professional services, SNFs, and other post-acute facilities. There were no significant differences in quality of care measures.

Strengths/Limitations: The evaluation was not able to attribute any outcomes to care coordination activities.

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

Methods: Evaluation methods included analyses of claims data, document review, interviews with NGACO leadership and staff, and surveys of NGACO leadership and staff.

O'Malley AS, Sarwar R, Keith R, Balke P, Ma S, McCall N. Provider Experiences with Chronic Care Management (CCM) Services and Fees: A Qualitative Research Study. *J Gen Intern Med.* 2017;32(12):1294-1300. doi:10.1007/s11606-017-4134-7

Subtopic(s): Trends in Care Coordination Access, Utilization, and Reimbursement

Type of Source: Journal article

Objective: To explore the experiences, facilitators, and challenges of practices providing CCM services, and their implications going forward.

Main Findings: Facilitators to implementation included practice care managers, PCMH models, and prior care coordination experience. Providers noted that CCM payments did not adequately reimburse practices for upfront investments needed to provide CCM services or the time needed to provide CCM services to patients with complex needs.

Strengths/Limitations: This study included a disproportionate number of non-billing providers (four of 60 providers) so results may not be generalizable to a wider population of non-billing providers.

Generalizability to Medicare Population: Strong; this study focused on CCM payments for Medicare beneficiaries.

Methods: Researchers conducted semi-structured interviews.

Palmer L, Llanos K, Tobias C, Bella M. Integrated Care Program: Performance Measures Recommendations. Center for Health Care Strategies, June 2006.

Subtopic(s): Performance and Outcome Metrics and Evaluation of Care Coordination

Type of Source: Report

Objective: To recommend a manageable number of performance measures that states could use in their contracts with special needs plans (SNPs) for dually eligible beneficiaries to assure the quality of integrated care.

Main Findings: The Performance Measurement Workgroup recommended two measures for care coordination: 1) the proportion of people reporting service coordinators help them get what they need, from the Human Service Research Institute's Consumer Survey; and 2) the percent of people who feel it is a problem to receive service/assistance from more than one case manager or care coordinator from the Indiana Medicaid Consumer Survey.

Strengths/Limitations: The workgroup did not conduct a systematic review of existing measures.

Generalizability to Medicare Population: Strong; this study focused on beneficiaries dually eligible for Medicare and Medicaid.

Methods: CHCS convened a Performance Measurement Workgroup that collected knowledge of measures from their expert experience and solicited state feedback to develop recommendations.

Peikes D, Chen A, Schore J, Brown R. Effects of Care Coordination on Hospitalization, Quality of Care, and Health Care Expenditures Among Medicare Beneficiaries: 15 Randomized Trials. *JAMA*. 2009;301(6):603-618. doi:10.1001/jama.2009.126

Subtopic(s): Evidence of Effectiveness of Care Coordination; Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs

Type of Source: Journal article

Objective: To determine whether care coordination programs reduced hospitalizations and Medicare expenditures and improved quality of care for chronically ill Medicare beneficiaries.

Main Findings: Thirteen of the 15 programs showed no significant differences in hospitalizations, and none of the 15 programs generated net savings; however, treatment groups in three programs had Medicare expenditures less than the control group.

Strengths/Limitations: Large variance in Medicare expenditures resulted in only four programs having adequate power to detect reductions in standard Medicare expenditures large enough to offset the program fees.

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

Methods: Study used randomized trials.

Peters SG, Bunkers KS. Chronic Care Coordination. *Chest*. 2015;148(4):1115-1119. doi:10.1378/chest.15-0704

Subtopic(s): Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs

Type of Source: Journal Article

Objective: Overview new CCM codes for 2015.

Main Findings: New codes indicate that work is required beyond a traditional office visit to ensure ongoing care management of patients with multiple long-term and complex medical conditions. There are extensive requirements for documentation, consent, communication, care planning, and electronic information exchange.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; discusses specific expectations for reimbursement by CMS for the new Current Procedural Terminology (CPT) codes.

Methods: N/A

Quinones AR, Talavera GA, Castaneda SF, Saha S. Interventions that Reach into Communities – Promising Directions for Reducing Racial and Ethnic Disparities in Healthcare. *Journal of Racial and Ethnic Health Disparities*. 2015;2(3):336-340.

Subtopic(s): Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs

Type of Source: Journal article

Objective: To develop a conceptual framework for the Veterans Administration (VA) to guide its efforts addressing racial and ethnic disparities in its integrated health care system.

Main Findings: There was a statistically significant relationship between patient satisfaction with cancer-related care and patient satisfaction with interpersonal characteristics of navigators for patients with abnormal cancer screening and definitive cancer diagnosis.

Strengths/Limitations: The literature review included interventions conducted both within and outside of VA settings, including synthesizing 34 systematic review of interventions to improve minority health and reduce disparities in health.

Generalizability to Medicare Population: Moderate; literature used to develop conceptual framework includes Medicare interventions but not limited to them.

Methods: Researchers conducted a qualitative synthesis of 34 published systematic reviews.

Romair MA, Haber SG, Wensky SG, McCall N. Primary Care and Specialty Providers: An Assessment of Continuity of Care, Utilization, and Expenditures. *Medical Care*. 2014;52(12):1042-1049.

Subtopic(s): Care Coordination in PTAC Proposals

Type of Source: Journal article

Objective: Test associations between health service use and expenditures, beneficiaries' main provider type (primary or specialist), and continuity of care for beneficiaries who typically see a primary care provider vs. a specialist.

Main Findings: Having a predominantly specialist provider was associated with 9 percent fewer ED visits, 14 percent fewer ambulatory care sensitive condition (ACSC) visits, and 8 percent fewer ACSC hospitalizations. Higher continuity was associated with fewer all-cause hospitalizations and ED visits and lower expenditures for both groups of patients.

Strengths/Limitations: Casual inference cannot be made, and unmeasured confounding may bias the results. There may be temporal trends in clinical practice among primary care providers and specialists that account for changes in utilization and expenditures.

Generalizability to Medicare Population: Strong; study focused on the Medicare population.

Methods: Cross-sectional analysis of Medicare fee-for-service claims data from July 2007 to June 2009; negative binomial and generalized linear models were both used in multivariate regression modeling.

RTI International. Evaluation of the Multi-Payer Advanced Primary Care Practice (MAPCP) Demonstration: Final Report. RTI International; 2017:1214.

<https://downloads.cms.gov/files/cmimi/mapcp-finalevalrpt.pdf>

Subtopic(s): Care Coordination in CMMI Models; Evidence of Effectiveness; Barriers and Challenges to Effective Care Coordination; Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs

Type of Source: Report

Objective: To report on findings from the MAPCP demonstration.

Main Findings: Medicare expenditures for the MAPCP demonstration beneficiaries were less than the PCMH comparison beneficiaries (after accounting for demonstration payments to practices), but expenditures were higher than for non-PCMH comparison beneficiaries. The four states that achieved net savings included several common features: required practices to be PCMH-certified at demonstration entry and allowed practices to join only at the start of the demonstration; incentivized consistent activities; provided demonstration payments that were consistent with practice expectations; and included opportunities for practices to earn performance bonuses.

Strengths/Limitations: Comparison group practices may have been involved in other care delivery initiatives throughout the demonstration, which could impact the evaluation's ability to capture the impact of the demonstration.

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

Methods: Evaluation methods included analyses of claims data, document review, site visits, interviews, and focus groups.

RTI International. Maryland All-Payer Model: Final Evaluation Report. RTI International; 2019:278. <https://innovation.cms.gov/files/reports/md-allpayer-finalevalrpt-fg.pdf>

Subtopic(s): Care Coordination in CMMI Models; Evidence of Effectiveness; Barriers and Challenges to Effective Care Coordination

Type of Source: Report

Objective: To report on the findings of the Maryland All-Payer demonstration.

Main Findings: The demonstration reduced both total expenditures and total hospital expenditures without shifting costs to other parts of the health care system. Reductions in hospital expenditures were driven by reduced spending on outpatient hospital services. The rate of ED visits for Medicare beneficiaries did not change relative to the comparison group. Admissions for ambulatory case-sensitive conditions declined relative to comparison groups, but changes in unplanned readmission rates were not statistically significant.

Strengths/Limitations: The evaluation could not account for the extent to which market factors outside the demonstration could have impacted demonstration findings.

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

Methods: Evaluation methods included analyses of claims data, key informant interviews, site visits, patient and provider focus groups, and hospital survey data.

Schultz EM, Pineda N, Lonhart J, Davies SM, McDonald KM. A systematic review of the care coordination measurement landscape. *BMC Health Services Research*. 2013;13(1):119. doi:10.1186/1472-6963-13-119

Subtopic(s): Performance and Outcome Metrics and Evaluation of Care Coordination

Type of Source: Journal article

Objective: To review and characterize existing measures of care coordination processes and identify areas of high and low density to guide future measure development.

Main Findings: Of the 96 included measure instruments, most relied on survey methods (88 percent) and measured aspects of communication (93 percent). Few measured changing care coordination needs (11 percent). Nearly half of instruments mapped to the patient/family perspective; 29 percent to the system representative; and 27 percent to health care professional perspective.

Strengths/Limitations: Literature review may have missed measures not included in peer-reviewed research.

Generalizability to Medicare Population: Moderate; study includes Medicare-related measures, but is not limited to the Medicare context.

Methods: Research conducted a systematic review of measures published in MEDLINE and characterized measures with respect to aspects of coordination measured, measurement perspective, applicable settings and patient populations, and data used.

Shaw S, Rosen R, Rumbold B. What is integrated care? Evidence for Better Health Care. Nuffield Trust. Published online June 2011. <https://www.nuffieldtrust.org.uk/files/2017-01/what-is-integrated-care-report-web-final.pdf>

Subtopic(s): Appendix D. Definitional Table of Care Coordination and Related Terms

Type of Source: Report

Objective: To report on Nuffield Trust's program work on integrated care in the United Kingdom.

Main Findings: Integrated care is an organizing principle for care delivery that aims to improve patient care and experience through improved coordination. Achieving integrated care requires

that those involved with planning, financing and providing services have a shared vision; employ a combination of processes and mechanisms; and ensure that the patient's perspective remains a central organizing principle.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Moderate; report is focused on health care in the United Kingdom, but findings on the principles of care coordination may be applicable to the Medicare population.

Methods: N/A

She Z, Gaglioti AH, Baltrus P, et al. Primary Care Comprehensiveness and Care Coordination in Robust Specialist Networks Results in Lower Emergency Department Utilization: A Network Analysis of Medicaid Physician Networks. *Journal of Primary Care & Community Health*. 2020;11:2150132720924432.

doi:10.1177/2150132720924432

Subtopic(s): Evidence of Effectiveness of Care Coordination

Type of Source: Journal article

Objective: To assess the impact of network characteristics in primary/specialty physician networks on ED visits for patients with chronic ACSCs.

Main Findings: PCPs providing comprehensive care for their patients with chronic conditions and PCPs with robust specialty networks and a high degree of centrality in the network had lower utilization rates than those coordinating care with specialists.

Strengths/Limitations: The study is limited to generalizing the Texas Medicaid population and relied on claims data which may be incomplete. However, the study provides a balance of PCP centrality with the availability of specialist networks.

Generalizability to Medicare Population: Limited; study used Medicaid data for adult beneficiaries.

Methods: A cross-sectional social network analysis of primary care and specialty physicians caring for adult Medicaid beneficiaries with ACSCs.

Singer SJ, Kerrissey M, Friedberg M, Phillips R. A Comprehensive Theory of Integration. *Medical Care Research and Review*. 2020;77(2):196-207. doi:10.1177/1077558718767000

Subtopic(s): Background on Care Coordination

Type of Source: Journal article

Objective: To distinguish empirical relationships among types of care integration.

Main Findings: Care integration may be defined under five subtypes: 1) structural, 2) functional, 3) normative, 4) interpersonal, and 5) process. Within each there exists a framework of organizational and social features, all of which associate with intermediate and final outcomes.

Strengths/Limitations: The novel theory of integration presented is not necessarily accepted by the scientific community at large. The article presents a theory of integration without substantive examples of each type in practice.

Generalizability to Medicare Population: Strong; Medicare models may seek to differentiate care coordination from care integration, in which case integration should be more clearly theorized.

Methods: Researchers conducted a literature review.

Sussman J, Baldwin LM. The interface of primary and oncology specialty care: from diagnosis through primary treatment. *Journal of the National Cancer Institute*. 2010;2010(40):18-24.

Subtopic(s): Opportunities for Improving and Optimizing Care Coordination in APMs and PFPMs

Type of Source: Journal article

Objective: To review the barriers and opportunities for relationships between primary care and oncology providers through the initial cancer treatment period.

Main Findings: Challenges identified include: discontinuity of care between providers, information exchange problems, and lack of clarity on provider roles, particularly in the management of patients with comorbid health conditions.

Strengths/Limitations: N/A

Generalizability to Medicare Population: N/A

Methods: The researchers performed a literature review.

The Lewin Group. CMS Comprehensive Care for Joint Replacement Model: Performance Year 3 Evaluation Report. 2020:141. <https://innovation.cms.gov/data-and-reports/2020/cjr-thirdannrpt>

Subtopic(s): Care Coordination in CMMI Models; Evidence of Effectiveness of Care Coordination

Type of Source: Report

Objective: To report on findings from the third year of the Comprehensive Care for Joint Replacement (CJR) demonstration.

Main Findings: There were statistically significant reductions in average episode payments, driven by reductions in the use of institutional post-acute care. Quality of care measures improved or were maintained under the demonstration.

Strengths/Limitations: An analysis of patient data indicates a greater increase in patient complexity after the start of the model among some CJR patients in certain post-acute care (PAC) settings. To the extent that CJR patients were more complex in ways the evaluation could not observe, the estimates by post-acute care (PAC) setting will be biased downward.

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

Methods: Evaluation methods include analyses of claims data, patient assessments, patient surveys, site visits, and interviews.

The National Center for Complex Health and Social Needs – An Initiative of the Camden Coalition. About Complex Care. Last modified 2017. <https://camdenhealth.org/about/about-complex-care/>

Subtopic(s): Appendix D. Definitional Table of Care Coordination and Related Terms

Type of Source: Website

Objective: To provide a definition of complex care that holds wide applicability.

Main Findings: Complex care is proposed as “a person-centered approach to address the needs of people whose combinations of medical, behavioral health, and social challenges result in extreme patterns of health care utilization and cost.” Complex care should seek to be person-centered, equitable, cross-sector, team-based, and data-driven.

Strengths/Limitations: N/A

Generalizability to Medicare Population: Reasonable; Medicare beneficiaries are often treated for complex conditions that may warrant complex care.

Methods: N/A

Thorpe JH, Hayes K. Selected Provisions from Integrated Care RFPs and Contracts: Care Coordination. Integrated Care Resource Center. 2013.

http://www.chcs.org/media/ICRC_Care_Coordination_FINAL_7_29_13.pdf

Subtopic(s): Trends in Care Coordination Access, Utilization, and Reimbursement

Type of Source: Technical Assistance Tool

Objective: To identify variations in the development of Request for Proposals (RFPs) and contract provisions related to care coordination.

Main Findings: N/A

Strengths/Limitations: Study focused on patients with diabetes at a VA hospital, so findings may not be generalizable to other conditions or settings.

Generalizability to Medicare Population: N/A; this tool focused on RFPs and contracts specifically for Medicare-Medicaid dual eligibles. .

Methods: N/A

Tricco AC, Antony J, Ivers NM, et al. Effectiveness of quality improvement strategies for coordination of care to reduce use of health care services: a systematic review and meta-analysis. *Canadian Medical Association Journal*. 2014;11.

Subtopic(s): Evidence of Effectiveness of Care Coordination

Type of Source: Journal article

Objective: To analyze the effectiveness of interventions to improve the coordination of care to reduce health care utilization for patients who frequently use the health care system.

Main Findings: Significantly fewer patients in the intervention group than in the control group were admitted to the hospital. In subgroup analyses, a similar effect was observed among patients with chronic medical conditions other than mental illness, but not among patients with mental illness. Significantly fewer patients 65 and older in the intervention group than in the control group visited the ED.

Strengths/Limitations: Studies included in the meta-analyses reported few details about the intensity of quality improvement strategies and other details regarding care delivery. Additionally, in some studies, the duration of the intervention may have been too short to show any significant impact.

Generalizability to Medicare Population: Moderate; literature review is not focused on the Medicare population, but findings may be applicable.

Methods: Researchers conducted a literature review for randomized clinical trials assessing quality improvement strategies for the coordination of care of frequent users of the health care system.

Turchi RM, Antonelli RC, Norwood KW, et al. Patient- and family-centered care coordination: A framework for integrating care for children and youth across multiple systems. *Pathologica*. 2014;133(5):e1451-e1460. doi:10.1542/peds.2014-0318

Subtopic(s): Background on Care Coordination

Type of Source: Policy statement

Objective: To provide and better understand a framework for care coordination, its functions, and its effects on children and families.

Main Findings: Strong coordinated care requires elements for provision of services supporting coordination across settings and professionals. The patient-centered medical home demonstrates care coordination as a core element. Optimal outcomes require interfacing across medical, social, and behavioral professionals; the educational system (relevant to children);

payers; medical equipment providers; home care agencies; advocacy groups; supportive therapies; and families.

Strengths/Limitations: Article is a policy statement from the American Academy of Pediatrics.

Generalizability to Medicare Population: Weak; framework focuses on children and families, not the Medicare-age population.

Methods: N/A

Vimalananda VG, Dvorin K, Fincke BG, Tardiff N, Bokhour BG. Patient, Primary Care Provider, and Specialist Perspectives on Specialty Care Coordination in an Integrated Health Care System. *Journal of Ambulatory Care Management*. 2018;41(1):15-24. doi:10.1097/JAC.0000000000000219

Subtopic(s): Care Coordination in PTAC Proposals; Evidence of Effectiveness of Care Coordination

Type of Source: Journal article

Objective: To identify opportunities to improve coordination across patients, PCPs, and specialists.

Main Findings: Clinicians' work suffered from a lack of procedures and protocols to clarify roles and responsibilities related to the organization of specialty care. There was a lack of opportunities for PCPs and endocrinologists to communicate directly.

Strengths/Limitations: Study focused on patients with diabetes at a VA hospital, so findings may not be generalizable to other conditions or settings.

Generalizability to Medicare Population: Moderate; study focused on the VA setting, but findings could be relevant to the Medicare population.

Methods: Researchers conducted interviews and focus groups with veteran patients with diabetes, VA PCPs, and VA endocrinologists.

Vimalananda, V. G., Meterko, M., Waring, M. E., Qian, S., Solch, A., Wormwood, J. B., & Fincke, B. G. (. Tools to improve referrals from primary care to specialty care. *The American Journal of Managed Care*. 2019;25(8):e237-e242.

Subtopic(s): Evidence of Effectiveness; Opportunities for Improving and Optimizing Care Coordination in APMs and PFPs

Type of Source: Journal article

Objective: To examine whether three tools to coordinate specialty care are associated with better referral characteristics and whether greater perceived helpfulness of these tools is associated with better referral characteristics among specialists who use all three of them.

Main Findings: Among specialists, use of referral templates was associated with perceptions that referrals were more frequently appropriate and complete. Use of e-consults was associated with more frequent referral clarity. Among specialists using all three tools, those reporting that templates were very helpful also perceived more frequent referral clarity.

Strengths/Limitations: Study was cross-sectional and observational; therefore causal inferences cannot be made.

Generalizability to Medicare Population: Moderate; study was not focused on physicians serving the Medicare population; however, findings may be applicable.

Methods: Study included a national online survey about care coordination among medical specialists receiving referrals in the VA. Researchers calculated adjusted odds ratios for associations between the use and helpfulness of three care coordination tools.

Weiner JM, Khatutsky G. Early Findings on Care Coordination in Capitated Medicare-Medicaid Plans under the Financial Alignment Initiative. RTI International. 2017.

<https://innovation.cms.gov/files/reports/fai-carecoordination-issuebrief.pdf>

Subtopic(s): Trends in Care Coordination Access, Utilization, and Reimbursement

Type of Source: Issue brief

Objective: To provide an overview of the findings of the Financial Alignment Initiative (FAI) from 2013 to 2015.

Main Findings: Although the demonstrations vary, Medicare-Medicaid Plans (MMPs) are implementing new care coordination approaches designed to integrate care across medical, long-term services and supports (LTSS), and behavioral health systems. MMPs faced challenges in hiring and retaining large numbers of care coordinators; completing health risk assessments and individualized care plans within required time frames; involving all members of the interdisciplinary care team; sharing information and coordinating care with behavioral health providers; and establishing new care coordination data systems.

Strengths/Limitations: Findings are limited from the first two years of implementation. Care coordination interventions take time to implement and show results.

Generalizability to Medicare Population: Strong; FAI is focused on Medicare-Medicaid dual eligible beneficiaries.

Methods: Evaluation findings were based on site visit interviews with state officials, consumer advocates, CMS staff, and other demonstration stakeholders; quarterly data submitted by the states and MMPs; and demonstration documentation.

Williams J. Improvement In Chronic Disease Outcomes For Medicare Beneficiaries Has Stalled—Where Do We Go From Here? *Health Affairs*. Published January 28, 2020.

<https://www.healthaffairs.org/doi/10.1377/hblog20200127.583888/full/>

Subtopic(s): Evidence of Effectiveness of Care Coordination

Type of Source: Blog post

Objective: Discuss common health care premises that warrant further examination in order to scale up care coordination and improve chronic disease outcomes for Medicare beneficiaries; primary care provider as the main provider/care coordinator; demand for cost savings; and chronic care with the fee-for-service system.

Main Findings: N/A

Strengths/Limitations: N/A

Generalizability to Medicare Population: Strong; focus is on how to improve chronic disease outcomes for Medicare beneficiaries.

Methods: N/A

Yue D, Pourat N, Chen X, Lu C et al. Enabling Services Improve Access to Care, Preventative Services, and Satisfaction Among Health Center Patients. *Health Affairs*. 2019;38(9).

Subtopic(s): Barriers and Challenges to Effective Care Coordination

Type of Source: Journal Article

Objective: Examine how the receipt of enabling services influenced patient health care outcomes.

Main Findings: Enabling services were associated with 1.92 more health center visits, an 11.78 percentage point higher probability of receiving a routine checkup, a 16.34 percentage point higher likelihood of having had a flu shot, and a 7.63 percentage point higher probability of patient satisfaction.

Strengths/Limitations: Analysis used propensity score matching and sampling weights to address selection bias, but that might not have completely overcome the problem due to unobserved confounding factors. Did not examine how the receipt of each specific service might have facilitated access to care or increased satisfaction.

Generalizability to Medicare Population: Strong; focus is on how to improve chronic disease outcomes for Medicare beneficiaries.

Methods: Used data from 2014 Health Center Patient Survey (HCPS) (a cross-sectional survey of patients served by health centers funded by Health Resources and Services Administration [HRSA] grants) and data on organizational characteristics for 2014 reported by HRSA-funded health centers to the Uniform Data System. Used a doubly robust propensity score method and combined with sampling weights.