



ACCELERATING AND ALIGNING
**CLINICAL EPISODE
PAYMENT MODELS**

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About the CMS Alliance to Modernize Healthcare

The Centers for Medicare & Medicaid Services (CMS) sponsors the CMS Alliance to Modernize Healthcare (CAMH), the first federally funded research and development center (FFRDC) dedicated to strengthening our nation's healthcare system. The CAMH FFRDC enables CMS, the Department of Health and Human Services (HHS), and other government entities to access unbiased research, advice, guidance, and analysis to solve complex business, policy, technology, and operational challenges in health mission areas. The FFRDC objectively analyzes long-term health system problems, addresses complex technical questions, and generates creative and cost-effective solutions in strategic areas such as quality of care, new payment models, and business transformation.

Formally established under Federal Acquisition Regulation (FAR) Part 35.017, FFRDCs meet special, long-term research and development needs integral to the mission of the sponsoring agency—work that existing in-house or commercial contractor resources cannot fulfill as effectively. FFRDCs operate in the public interest, free from conflicts of interest, and are managed and/or administered by not-for-profit organizations, universities, or industrial firms as separate operating units. The CAMH FFRDC applies a combination of large-scale enterprise systems engineering and specialized health subject matter expertise to achieve the strategic objectives of CMS, HHS, and other government organizations charged with health-related missions. As a trusted, not-for-profit adviser, the CAMH FFRDC has access, beyond what is allowed in normal contractual relationships, to government and supplier data, including sensitive and proprietary data, and to employees and government facilities and equipment that support health missions.

CMS conducted a competitive acquisition in 2012 and awarded the CAMH FFRDC contract to The MITRE Corporation (MITRE). MITRE operates the CAMH FFRDC in partnership with CMS and HHS and maintains a collaborative alliance of partners from nonprofits, academia, and industry. This alliance provides specialized expertise, health capabilities, and innovative solutions to transform delivery of the nation's healthcare services. Government organizations and other entities have ready access to this network of partners, including RAND Health, the Brookings Institution, and other leading healthcare organizations. This includes select qualified small and disadvantaged business. The FFRDC is open to all CMS and HHS Operating Divisions and Staff Divisions. In addition, government entities outside of CMS and HHS can use the FFRDC with permission of CMS, CAMH's primary sponsor.

Executive Summary

The Health Care Payment Learning & Action Network (LAN) was created to drive alignment in payment approaches across and within the public and private sectors of the U.S. health care system. To advance this goal, the Clinical Episode Payment (CEP) Work Group (the “Work Group”) was convened by the LAN Guiding Committee and charged with developing recommendations for the purpose of accelerating adoption of aligned clinical episode payment models in the areas of elective joint replacement, maternity care, and coronary artery disease. Composed of diverse health care stakeholders, the Work Group deliberated, incorporated input from LAN participants, and reached consensus on many critical issues related to designing person-centered clinical episode payment, which is the subject of this White Paper.

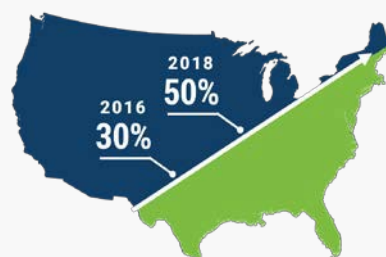
Clinical episode payment models are different from traditional fee-for-service (FFS) health care payment models, in which providers are paid separately for each service they deliver. Instead, clinical episode payment models take into consideration the quality, costs, and outcomes for a patient-centered course of care over a set period of time and across multiple settings. This course of care is known as the clinical episode. Research suggests that when payments for health care are based on the care delivered in a clinical episode, the result is increased coordination of care, enhanced quality of care, and less fragmentation in the medical system. This leads to better experiences and health for patients and lower costs for payers and providers.

Since the first episode payments were introduced more than 30 years ago, public and private purchasers (and a range of delivery systems) have explored a variety of episode payment models with varying degrees of success. This is because, as research has shown, while episode payments offer great potential as an alternative to FFS care, designing and implementing such models comes with financial, technological, cultural, logistical, and informational obstacles. These challenges, along with the sheer diversity of designs and approaches currently in use, have made it difficult to promote alignment and acceleration of payment models across the U.S. health care system.

Health Care Payment Learning & Action Network

To achieve the goal of better care, smarter spending, and healthier people, the U.S. health care system must substantially reform its payment structure to incentivize quality, positive health outcomes, and value over volume. Such alignment requires a fundamental change in how health care is organized and delivered and requires the participation of the entire health care ecosystem. The Health Care Payment Learning & Action Network (LAN) was established as a collaborative network of public and private stakeholders, including health plans, providers, patients, employers, consumers, states, federal agencies, and other partners within the health care ecosystem. By making a commitment to changing payment models, establishing a common framework, aligning approaches to payment innovation, sharing information about successful models, and encouraging use of best practices, the LAN can help reduce barriers and accelerate the adoption of alternative payment models (APMs).

U.S. Health Care Payments in APMs



Thus, the CEP Work Group's charge was to:

- Provide a directional roadmap for providers, health plans, patients and consumers, purchasers, and states, based on existing efforts and innovative thinking in the realm of clinical episode payment;
- Promote alignment in both CEP design and operational approach;
- Strike a balance between alignment/consistency and flexibility/innovation;
- Find the balance between short-term feasibility and long-term aspiration; and
- Recognize the effects of an evolving health care system on the design and implementation of CEP.

The Work Group selected three clinical focus areas on which to build episode payment models: elective joint replacement (EJR), maternity care, and coronary artery disease (CAD). For each episode model, the LAN released a draft White Paper that laid out a set of 10 design element recommendations, as well as operational considerations. Each draft White Paper was made available to the public for a 30-day comment period, and those comments resulted in significant revisions across several design element recommendations.

A number of cross-cutting themes emerge across all three episodes:

Consumer, patient, and family engagement is critical to driving value-based care: At the patient level, this means engaging individual patients and families and supporting them in being partners in their care. At the system level, this involves engaging consumers, patients, families, and their advocates in meaningful participation in the design, implementation, governance, evaluation, and quality improvement of episode payment models. Engagement can be reflected by providers acknowledging and incorporating the types of care that patients value; or by payers, purchasers and providers ensuring that information about payment and reimbursement is available in a way that is linguistically and culturally appropriate and tailored to the health literacy level of patients and families. Other specific examples of how to facilitate this engagement are found throughout the paper.

In clinical episodes with numerous care team members, there are a number of variables to consider in assigning accountability: A common feature across the three clinical episodes described in this paper, as well as clinical episodes in general, is that they are composed of care delivered in multiple settings by a care team that includes numerous clinicians and other providers. While the Work Group initially intended to recommend specific types of providers (e.g., the patient's cardiologist or primary care provider in the coronary artery disease episode), the final recommendation describes the many variables that play into a clinician's ability to take responsibility for the patient, both from a fiscal and from a quality outcomes standpoint. These variables may apply regardless of the clinical focus for any given episode payment model.

Certain design decisions hinge on whether implementation is mandatory or voluntary: As the Work Group studied and analyzed many episode payment initiatives, a key element that seemed to drive various design decisions was whether the initiative was voluntary for providers or whether it was a program mandated by the state or other entity. For example, if a state mandates episode payment in its Medicaid program, it may have more leeway to require that providers take on both upside reward as well as downside risk. In a voluntary initiative, the payer (or other implementer) *may* design the program around upside reward only while encouraging providers to achieve a state of readiness necessary to take on downside risk.

Using historical data to determine the episode price creates challenges for payment and care

transformation: Setting the episode price is a critical aspect of episode payment design, yet it creates a significant challenge. Historical data is crucial to giving payers and providers an understanding of the resources needed to deliver high-quality care and optimal outcomes. However, that same historical data may likely reflect care that was unnecessary or inappropriate and may not reflect the potential for low-cost, high-value services that have traditionally not been used because the providers do not get paid for them. These include care coordination services, lifestyle change support (in the case of coronary artery disease), or prenatal parenting education support (in the case of maternity care).

A robust data infrastructure is critical to an episode payment model's success: The Work Group heard from many commenters about the importance of providers, payers, patients, and purchasers having access to data in a way that supports the kind of care coordination and care delivery that is central to optimizing outcomes for patients via an episode payment model.

The White Paper provides recommendations for designing clinical episode payment in the above-mentioned clinical areas of elective joint replacement, maternity care, and coronary artery disease, with the goal of creating aligned models that lead to improved outcomes for patients.

A summary description of the design recommendations for each episode can be found in Chapter 2, [Episode Payment Design Elements](#). Chapters 3, 4, and 5, respectively, provide a set of recommendations and detailed discussions about clinical episodes for elective joint replacement, maternity, and coronary artery disease. Chapter 6, [Operational Considerations](#), discusses issues to consider in moving from episode payment design to operationalization and implementation. The White Paper concludes with some immediate next steps that stakeholders can take to advance the Work Group's recommended approach to designing clinical episode payment models.

Chapter 1: Overview

The LAN established its Guiding Committee (GC) in May 2015 as the collaborative body charged with advancing alignment of payment approaches across and within the private and public sectors. This alignment aims to accelerate the adoption and dissemination of meaningful financial incentives to reward providers and systems of care that implement person-centered care and patient-responsive delivery systems. [CAMH](#), the federally funded research and development center operated by the MITRE Corporation, was asked to convene this national initiative.

In keeping with the goals of HHS, the LAN aims to have 30% of U.S. health care payments in alternative payment models by 2016 and 50% by 2018. One promising area for payment innovation and alignment is in payment for “episodes of care” to improve patient outcomes, enhance health system performance, and control costs. A clinical episode payment is a bundled payment for a set of services that occur over time and across settings. This payment model can be applied in various ways:

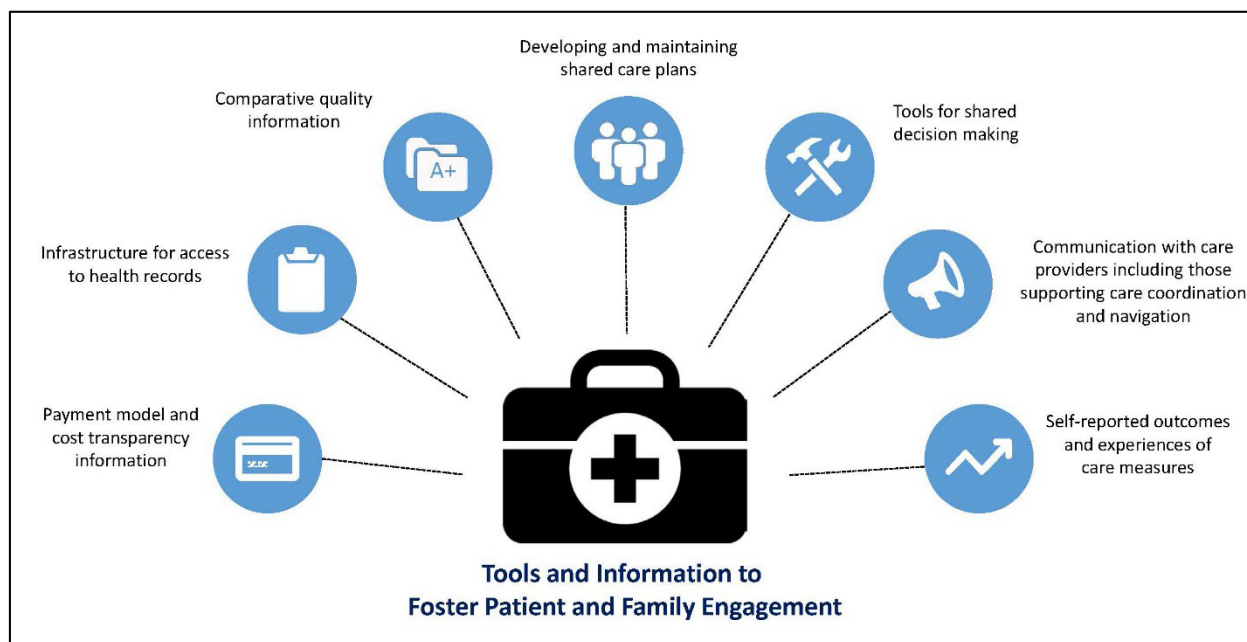
- At the setting level, whereby the episode is focused on a hospital stay;
- At the procedure level, in which the episode encompasses a defined surgical procedure; or
- At the condition level, whereby the episode is defined around a condition. Conditions for which episode payment can be used range from asthma to diabetes to cancer.

Bundling payments for episodes of care shows promise for reducing costs and improving the quality of care. Currently, there is much interest in episode-based payment models. Both public and private purchasers are exploring how best to promote acceleration and alignment of these models because episode payments offer a particularly promising approach to efficiently create and sustain delivery systems that advance value, quality, cost effectiveness, and patient engagement.

The recommendations in this paper are presented with recognition of the evolving health care system, and the many forces that are seeking to accelerate the movement from FFS to paying for value. These include the federal initiatives established by the Affordable Care Act, including the CMS Innovation Center and its models like the Bundled Payment for Care Initiative (BPCI) and Comprehensive Primary Care Plus (CPC+). This also includes more recent legislation aimed at accelerating the adoption of APMs like the Medicare Access and CHIP Reauthorization Act (MACRA).

Where accelerated adoption of aligned models does occur, it must do so in a way that supports person-centered care. This paper provides substantive information on how episode payment models can be designed to do just that. Meaningfully engaging consumers, patients, families, and their advocates requires a set of tools and information that are crucial to not just episode payment, but to alternative payment models overall (Figure 1). Consumers, patients, families, and their advocates should be collaboratively engaged in all aspects of design, implementation and evaluation of payment and care models, and they should be engaged as partners in their care. Person-centered episode payment models have a strong investment in engaging patients in multiple ways, including shared care planning, shared decision-making, comparative quality information, care coordination, chronic disease management tools, transparency of payment information, and care transition support. To be effective, communications and resources must be tailored to the health literacy level of patients and families and be linguistically and culturally appropriate.

Figure 1: Tools for Fostering Patient and Family Engagement



Purpose of the White Paper

In November 2015, the GC convened the CEP Work Group and charged the group members with creating a set of recommendations that can facilitate the adoption of clinical episode-based payment models (CEP Work Group members participated in this effort as individuals and not on behalf of their respective organizations). The GC noted a specific interest in models that fall within Category 3—APMs built on an FFS architecture—and Category 4—population-based payment—of the LAN's Alternative Payment Model Framework, which can be found [here](#).

Clinical episode payment models are different from traditional FFS health care payment models, in which providers are paid separately for each service they deliver. Instead, clinical episode payment models take into consideration the quality, costs, and outcomes of a patient-centered course of care over a set period of time and across multiple settings. This course of care is known as the clinical episode. Research suggests that when payments for health care are based on the care delivered in a clinical episode, the result is increased coordination of care, enhanced quality of care, and less fragmentation in the medical system. This leads to both better experiences and health for patients and lower costs for payers and providers.

Since the first episode payments were introduced more than 30 years ago, public and private purchasers (and a range of delivery systems) have explored a variety of episode payment models with varying degrees of success. This is because, as research has shown, while episode payments offer great potential as an alternative to FFS care, designing and implementing such models comes with financial, technological, cultural, logistical, and informational obstacles. These challenges, along with the sheer diversity of designs and approaches currently in use, have made it difficult to promote alignment and acceleration of payment models across the U.S. health care system.

Thus, the purpose of this paper is to provide an episode payment design framework, as well as recommendations pertaining to each of the ten elements in said framework, that will support adoption of aligned episode payment models in the areas of elective joint replacement, maternity care, and coronary artery disease. The Work Group developed these recommendations with recognition of the evolving health care system, and the many forces currently seeking to accelerate the movement from FFS to value-based payment.

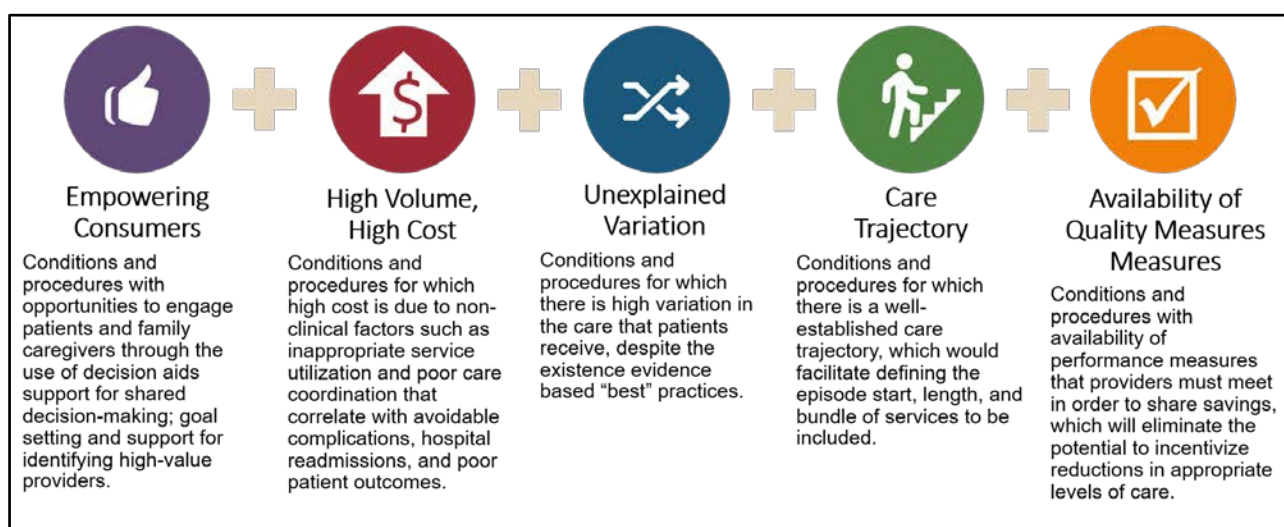
Priority Areas

With this context in mind, the CEP Work Groups viewed its charge as the following:

- Provide a directional roadmap for providers, health plans, patients and consumers, purchasers, and states, based on existing efforts and innovative thinking;
- Promote alignment (within the commercial sector, as well as across the public and commercial sectors) in both design and operational approach;
- Find a balance between alignment/consistency and flexibility/innovation;
- Strike a balance between short-term realism and long-term aspirations; and
- Recognize that the recommendations will be viewed within the context of an evolving health care system environment, acknowledging the effects of MACRA and other CMS initiatives.

In convening the CEP Work Group, the GC stipulated that the Work Group should take certain considerations into account as they explored opportunities to advance the alignment and adoption of episode-based APMs. In developing its recommendations, the GC noted that the CEP Work Group should develop a list of priority areas that together reflect a broad spectrum of potential episode types, represent a diverse range of patients, and have the potential to be widely adoptable and useful across the entire U.S. health system. The Work Group used the criteria in Figure 2 to prioritize the diseases and conditions on which their work would focus.

Figure 2: Criteria for Prioritization



Based on these considerations, the CEP Work Group agreed to focus on the following three priority areas:

- Elective joint replacement;
- Maternity care; and
- Coronary artery disease.

The CEP Work Group chose these three priority areas because they have the greatest potential to create a greater consensus and alignment of payment methods across payers and, over time, to accelerate the adoption of clinical episode-based payments.

Key Principles

Before the CEP Work Group set out to develop its recommendations, the members developed a set of key principles to guide their assessment of models currently in use. These principles align with the broader set of principles described in the [LAN APM Framework White Paper](#). They are, however, focused specifically on the design of episode payments. In addition, in their research and discussion, the CEP Work Group chose clinical areas in which clinical episode payment in particular could also achieve one or more of the following:

Incentivize person-centered care: One intended effect of APMs (and a principle of the LAN APM Framework¹) is to deliver² person-centered care, defined as high-quality care that is evidence based, delivered in an efficient manner, and where patients' and caregivers' individual preferences, needs, and values are paramount. Recognizing that payment reform must ultimately serve the interests of consumers and patients, the LAN Guiding Committee endorsed a set of Principles for Patient- and Family-Centered Payment. These principles, prepared by the LAN Consumer and Patient Affinity Group, are intended as guideposts so that new payment models and implementation activities can address the needs and priorities of patients and families. The principles are reflected in this White Paper, and their text is included in [Appendix J](#).

Improve patient outcomes through effective care coordination: Episode payment encourages providers to better coordinate care across and within care settings and to focus more strongly on care quality to achieve better care, smarter spending, and healthier people. Effective care coordination is particularly important for those with chronic conditions and for other high-risk/high-need patients.

Reward high-value care: Another intended effect of APMs is to reward high-value care by incentivizing providers and patients, together with their family caregivers, to discuss the appropriateness of services, including certain procedures. In this way, services that do not align with patient preferences can be avoided.

Reduce unnecessary costs: Reducing unnecessary costs to the patient and to the health care system is another intended effect of APMs. Episode payment offers incentives to examine all the cost drivers across the episode, including fragmentation, duplication, site of service, volume of services, and input costs/prices. Episode payment can create an "apples-to-apples" comparison for assessing quality and

¹ Principle 1 of the APM Framework

² Definition of Patient-Centered Care (APM Framework White Paper, page 4)

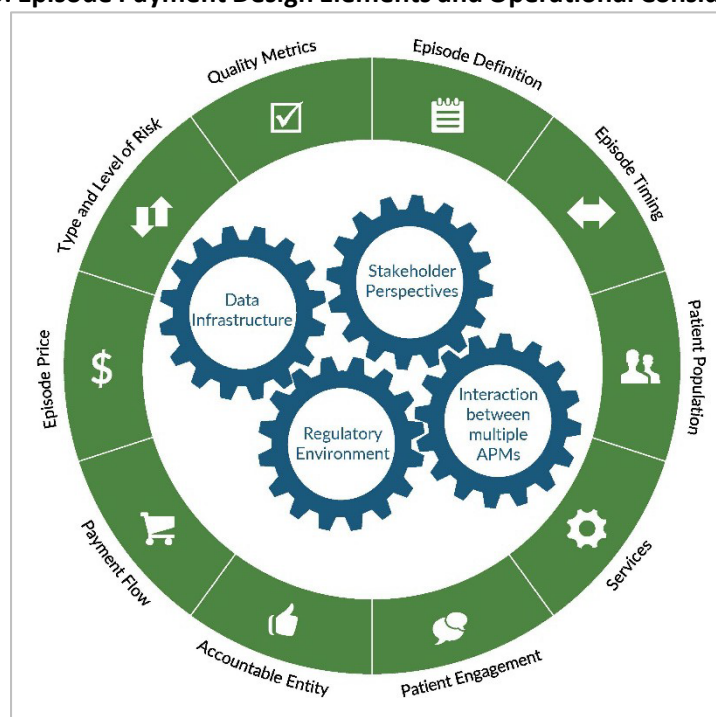
cost (for payers and consumers). This well-defined “product” allows buyers to compare price and quality.

Recommendations Framework: Design and Operations

The Work Group’s recommendations fall into two categories:

- **Design Elements:** The design elements address questions stakeholders must consider when designing an episode payment model, including the definition, the duration of the episode, and what services are to be included (Figure 3); and
- **Operational Considerations:** Operational considerations relate to implementing an episode payment model, including the roles and perspectives of stakeholders, data infrastructure issues, and the regulatory environment in which APMs must operate. Operational considerations should not be assessed in a vacuum since they are interrelated with the design element decisions.

Figure 3: Episode Payment Design Elements and Operational Considerations



This paper is organized according to the following structure:

- Summary of Episode Design Element Recommendations for elective joint replacement, maternity care, and coronary artery disease;
- A chapter on each of the three episodes that provides more in-depth discussion on 1) why the clinical focus area is appropriate for applying episode payment to achieve improvements in quality and outcomes and 2) the thinking behind each of the ten design element recommendations; and
- A chapter on operational considerations (stakeholder perspectives, data infrastructure, and regulatory environment) that cut across the three clinical episode payment models. Also included in this chapter is a discussion of questions and issues that may arise in the course of implementing clinical episode payment together with another APM, namely population-based payment.

CLINICAL EPISODE PAYMENT MODELS

SUMMARY OF EPISODE RECOMMENDATIONS

Chapter 2: Summary of Episode Recommendations

The CEP Work Group conducted research and analysis on a range of existing episode payment initiatives. Based on their experience and the analysis of current initiatives, the Work Group identified a set of 10 episode payment model design elements (Figure 3). These elements reflect the decisions that payers and providers need to make prior to implementation. The tables below summarize the 10 recommendations, based on the design elements that are discussed in this White Paper.

Table 1: Summary of Joint Replacement Episode Recommendations

Episode Definition	The episode is defined as an elective and appropriate total hip or total knee replacement due to osteoarthritis.
Episode Timing	The episode should start pre-procedure (e.g., 30 days), and end 90 days post-discharge in order to include the most resource-intensive aspects of care for elective joint replacement patients. Accountability for functional improvement and performance measurement goes beyond 90 days.
Patient Population	The episode should apply to the broadest-possible pool of patients, using risk and severity adjustment to account for age and complexity.
Services	All services needed by the patient that are related to the joint replacement procedure should be covered by the episode price.
Patient Engagement	Require use of shared decision-making and patient engagement tools, transparency of performance and the payment model, shared care planning, access to full health records, care coordination, and patient-reported quality measures in patient-facing materials to maximize opportunities to engage patients and families in advancing high-value care, both for themselves and overall.
Accountable Entity	The accountable entity should be chosen based on readiness to re-engineer change in the way care is delivered to the patient and to accept risk. In this model, the accountable entity will likely require a degree of shared accountability, given the number of clinicians working to care for a patient.
Payment Flow	The unique circumstances of the episode initiative will determine the payment flow. The two primary options are 1) a prospectively established price that is paid as one payment to the accountable entity and 2) upfront FFS payment to individual providers within the episode with retrospective reconciliation and a potential for shared savings/losses.
Episode Price	The episode price should strike a balance between provider-specific and multi-provider/regional utilization history. The price should 1) acknowledge achievable efficiencies already gained by previous initiatives, 2) reflect a level that potential provider participants see as feasible to attain, and 3) include the cost of services that help achieve the goals of episode payment.
Type and Level of Risk	The goal should be to utilize both upside reward and downside risk. Transition periods and risk mitigation strategies should be used to encourage broad provider participation and support inclusion of as broad a patient population as possible.
Quality Metrics	Prioritize use of metrics that capture the goals of the episode, including outcome metrics, particularly patient-reported outcome and functional status measures; use quality scorecards to track performance on quality and inform decisions related to payment; and use quality information and other supports to communicate with and engage patients and other stakeholders.

Table 2: Summary of Maternity Care Episode Recommendations

Episode Definition	The episode is defined to include the large majority of births, including the newborn care, that are lower risk. While not necessarily lower risk, episode payment may also be considered appropriate for women who may be at elevated risk due to conditions that have defined and predictable care trajectories, such as gestational diabetes. As the CEP model matures, some groups with significant high-risk pregnancy experience and capacity may seek to manage the entire continuum of risk.
Episode Timing	The episode should begin 40 weeks before the birth and end 60 days postpartum for the woman and 30 days post-birth for the baby.
Patient Population	The episode should primarily include the large majority of births, including newborn care, that are lower risk. The Work Group also supports CEP for women who may be at elevated risk because of predictable risk factors that have defined care trajectories, such as gestational diabetes.
Services	Covered services include all services provided during pregnancy, labor and birth, and the postpartum period (for the women) and newborn care for the baby. Exclusions should be limited. Initiatives should also consider including high-value support services, such as doula care and prenatal and parenting education.
Patient Engagement	Engaging women and their families is critical in all three phases of the episode—prenatal, labor and birth, and postpartum/newborn—to contribute to the foundation for healthy women and babies.
Accountable Entity	The accountable entity should be chosen based on readiness to re-engineer change in the way care is delivered to the patient and to accept risk. In this model, the accountable entity will likely require a degree of shared accountability, given the number of clinicians working to care for a patient.
Payment Flow	The unique circumstances of the episode initiative will determine the payment flow. The two primary options are 1) a prospectively established price that is paid as one payment to the accountable entity and 2) upfront FFS payment to individual providers within the episode with retrospective reconciliation and a potential for shared savings/losses.
Episode Price	The episode price should strike a balance between provider-specific and multi-provider/regional utilization history. The price should 1) acknowledge achievable efficiencies already gained by previous initiatives, 2) reflect a level that potential provider participants see as feasible to attain, and 3) include the cost of services that help achieve the goals of episode payment.
Type and Level of Risk	The goal should be to utilize both upside reward and downside risk. Transition periods and risk mitigation strategies should be used to encourage broad provider participation and support inclusion of as broad a patient population as possible.
Quality Metrics	Prioritize use of metrics that capture the goals of the episode, including outcome metrics, particularly patient-reported outcome and functional status measures; use quality scorecards to track performance on quality and inform decisions related to payment; and use quality information and other supports to communicate with and engage patients and other stakeholders.

Table 3: Summary of Coronary Artery Disease Episode Recommendations

Episode Definition	The episode is defined as care for a cohort of patients with diagnosed CAD, for a 12-month period that will ultimately align with the benefit year (see Episode Timing). Once aligned with the benefit year, the episode will continue for consecutive periods of 12 months of active care management for as long as a patient is under active management for CAD. PCI and/or CABG procedures deemed necessary during any given 12-month episode period will also be delivered within an episode payment model.
Episode Timing	The 12-month condition episode may commence at various points post-CAD diagnosis. For any nested procedure within the condition-level episode, the procedure episode begins 30 days pre-procedure and lasts 30-90 days post-discharge.
Patient Population	Condition: Patients diagnosed with CAD and in same health plan for full 12 months. Procedure: Patients deemed to need PCI or CABG based on determination of appropriateness.
Services	For both the condition and procedure episodes, the services should include core services for CAD management (e.g., lifestyle changes, medication management, secondary prevention) and core services for the quality delivery of a procedure (e.g., pre-operative diagnostics, drugs and devices, care transition support, post-acute care including cardiac rehab).
Patient Engagement	Models should support patient and family involvement in episode payment design, implementation, and evaluation and patient and family engagement in all phases of cardiac care. This should be facilitated by health information technology.
Accountable Entity	The accountable entity should be chosen based on readiness to re-engineer change in the way care is delivered to the patient, and to accept risk. In this model, the accountable entity will likely require a degree of shared accountability, given the number of clinicians working to care for a patient.
Payment Flow	The unique circumstances of the condition-level/nested procedure episode model make upfront FFS payment to individual providers within the episode, with retrospective reconciliation and a potential for shared savings/risk, the more feasible option.
Episode Price	The episode price should strike a balance between provider-specific and multi-provider/regional utilization history. The price should 1) acknowledge achievable efficiencies already gained by previous initiatives, 2) reflect a level that potential provider participants see as feasible to attain, and 3) include the cost of services that help achieve the goals of episode payment.
Type and Level of Risk	The goal should be to utilize both upside reward and downside risk. Transition periods and risk mitigation strategies should be used to encourage broad provider participation and support as broad a patient population as possible.
Quality Metrics	Prioritize use of metrics that capture the goals of the episode at both the condition and procedure levels. These include outcome metrics, patient-reported outcome and functional status measures, and some process measures related to procedures. Use quality scorecards to track performance on quality and inform decisions related to payment. Use quality information and other supports to communicate with and engage patients and other stakeholders.



CLINICAL EPISODE PAYMENT MODELS

ELECTIVE JOINT REPLACEMENT

Chapter 3: Elective Joint Replacement

Background: Why Use Episode Payment for Elective Joint Replacement?

Total hip and total knee replacements are among the most commonly performed surgical procedures today. According to the U.S. Centers for Disease Control and Prevention, over one million such procedures are performed each year across all payers. Despite the high volume of these surgeries, outcomes and costs of care for joint replacement surgeries vary greatly among providers and across geographic areas (Table 4). This variation, combined with a clear care trajectory, the availability of quality measures, and the ability to empower consumers, made it an ideal focus for the CEP Work Group to develop recommendations.

Table 1: Joint Replacement in the U.S.: Prevalence, Cost, and Opportunities for Improvement¹

	Commercial Market	Medicare
Number of Procedures	In 2011, there were more than 645,000 knee replacements and more than 306,000 hip replacements (American Academy of Orthopaedic Surgeons, 2014).	In 2014, FFS Medicare covered more than 400,000 procedures (U.S. Department of Health and Human Services, 2015).
Reason for Procedure	Joint replacements are most often due to osteoarthritis. Hip replacements may also be due to fracture.	
Spending by Payers	Knee replacement costs range from \$11,317 to \$69,654. Hip replacement costs range from \$11,327 to \$73,987 (Blue Cross Blue Shield Association & Blue Health Intelligence, 2015).	In 2014, on hip and knee replacement, FFS Medicare spent more than \$7 billion (including cost sharing) for the hospitalizations alone (U.S. Department of Health and Human Services, 2015).

¹ The data in this table includes both elective and non-elective joint replacement, as well as joint replacements conducted for reasons other than osteoarthritis.

	Commercial Market	Medicare
Variation in Cost	The cost of a joint replacement procedure can vary by tens of thousands of dollars, depending on the geographic location. Variation can occur within the same metropolitan market. For example, in Dallas, a knee replacement can cost anywhere from \$16,000 to \$61,000, depending on the hospital. In Boston, a hip replacement can cost anywhere between \$17,000 and \$73,987. A study of 64 markets in the U.S. found that costs can vary up to 313% (Blue Cross Blue Shield Association & Blue Health Intelligence, 2015).	Medicare expenditures for surgery, hospitalization, and post-acute recovery range from \$16,500 to \$33,000, across geographic areas (U.S. Department of Health and Human Services, 2015).
Factors Affecting Variation	• Duplication of exams, imaging, and other diagnostics due to lack of communication between the surgical practice and the hospital. • Site of service (i.e., performing the procedure in an inpatient hospital setting when a less costly outpatient setting would be deemed safe and appropriate for a given patient). • Variation in the price paid for inpatient length of stay. • Delays and/or lack of coordination in transferring patients from hospital to post-acute care (home health, outpatient or inpatient rehabilitation, or skilled nursing). • Variation in value and cost of services, technology, equipment, and implants. • Variation in the use of standardized care protocols. • Variation in, and unnecessary use of, high intensity, post-acute care (PAC).	

Source: The MITRE Corporation.

Medicare, Medicaid, large purchasers, commercial payers, and providers have all developed clinical episode payment strategies for hip and knee joint replacement in an effort to reduce variation and thus positively affect overall costs and variation. As described in [Appendix C: Summary of Joint Replacement Initiatives Reviewed](#), joint replacement episode payment efforts tend to correlate with reduced use of non-value-added care, such as unnecessary post-acute care, lengthy inpatient hospital stays, avoidable complications and readmissions, all of which together contribute to better outcomes and experiences and lower total episode costs.

Recommendations: Elective Joint Replacement

The design element recommendations reflect the CEP Work Group's research and analysis on a range of existing episode payment initiatives for joint replacement (see [Appendix C](#)). See Chapter 2, [Episode Payment Design Elements](#), for a summary of the recommendations described in more detail below.

1. Episode Definition

The episode is defined as an elective and appropriate total hip or total knee replacement due to osteoarthritis.

The recommendations in this chapter are based on defining the episode as a total hip or total knee replacement procedure² that is both **elective** and **appropriate**.

Elective: There are a number of reasons why this episode is defined around elective total hip and elective total knee replacement. Compared to lower extremity joint replacement due to fracture, elective joint replacement is higher volume and more predictable. Focusing on elective joint replacement then provides a higher-value “target” than focusing on an episode that includes fractures and emergency joint replacement. It is also a more controlled clinical event, in which there are greater opportunities for patient engagement and shared decision-making. In addition, the pre-operative and post-discharge care trajectories for elective joint replacement have an evidence base and are well-standardized, which can ease the way for wide adoption of this episode model. Finally, an elective procedure creates the opportunity for patients and providers to have a meaningful discussion about whether the procedure is truly appropriate and/or whether there are alternative treatments that would better suit the patient’s goals and values.

Appropriate: As noted previously, joint replacement is among the most common inpatient surgeries in the United States, and some estimate that the demand for this procedure will quadruple by 2030 (Ghomrawi, Schackman, & Mushlin, 2012). Finding data on how many of those joint replacement procedures were elective and appropriate, however, is not as straightforward. Stakeholders see joint replacement as a prime opportunity for applying appropriateness criteria in the course of determining whether it should be performed or whether the person with arthritis prefers less invasive treatments that can achieve similar or better functional outcomes at lower costs.

When appropriateness criteria were applied in other countries, studies found that 20% to 40% of elective joint replacement procedures were considered inappropriate when using evidence-based criteria (Quintana et al., 2008; Van Walraven et al., 1996). The model described here is designed to include only those patients for whom the decision to have an elective joint replacement is evidence-based and consistent with patient preferences and values.

Appropriateness will be determined via **both** the use of a functional status assessment tool **and** a meaningful, validated, shared decision-making process:

1. Evidence-based functional status assessment: For a patient to be included in the episode, there should be evidence that in addition to a clinical assessment, a provider used a **standardized, validated functional status assessment tool** to determine that the patient is an appropriate

² The episode definition does not include partial knee replacements or partial hip replacement due to their low volume in the Medicare population. Organizations that want to pursue adding these procedures to the episode should be aware that the cost is often higher than the cost for total replacement, which will factor into the episode price.

candidate for a surgical procedure, as opposed to being a candidate for less invasive care such as weight loss, activity modifications, non-steroidal anti-inflammatory medications, and exercise. The assessment should look at not only the functional capability of a patient's hip or knee but also the pain that the patient is experiencing and optimization of modifiable risk factors (such as obesity, smoking, opioid tolerance, untreated depression or anxiety, and/or poorly controlled diabetes). It should also include an assessment of whether the procedure will meaningfully affect both function and pain levels.

Examples of Functional Status Assessment Tools

Some examples of provider-administered functional status tools are:

- Western Ontario and McMaster Universities Arthritis Index (WOMAC) score;
- Hip Disability and Osteoarthritis Outcome Score (HOOS JR);
- Knee Injury and Osteoarthritis Outcome Score (KOOS JR);
- Patient Reporting Outcome Measurement Information System (PROMIS); and
- Veterans RAND 12-item Health Survey (VR-12).

2. Meaningful shared decision-making: In addition to formal assessment of pain and functional status, there must be evidence that the **patient, possibly with a family caregiver, has worked through a decision aid** that is highly rated according to International Patient Decision Aids Standards (IPDAS) with the support of a decision coach or a health educator if needed (Ottawa Hospital Research Institute, 2014a). One example of a decision aid provider is Healthwise, a not-for-profit corporation that provides consumer health information to patients and caregivers, which has highly rated decision aids for both hip and knee replacement, as assessed by the IPDAS (Ottawa Hospital Research Institute, 2014b; Ottawa Hospital Research Institute, 2014c). Healthwise includes information about care options—including the pros and cons of each—and how to consider a patient's values and preferences as they relate to the care options.

In addition to an initial shared decision-making, there should be evidence of ongoing engagement of patients in the discussion of care options and subsequent decisions related to the joint replacement procedure, if one is deemed appropriate. Primary care providers can perform this role and, in doing so, provide greater continuity of care to their patients. These providers could also support patients in reviewing comparative quality information about choice of surgeon, surgical facility, rehab services, and home health services when the patient still has time to make proactive decisions about his or her treatment.

Ideally, both processes should be integrated into discussions with patients about appropriateness of care, and patients should be able to weigh in with their own values about the potential risks and benefits of the treatment options.

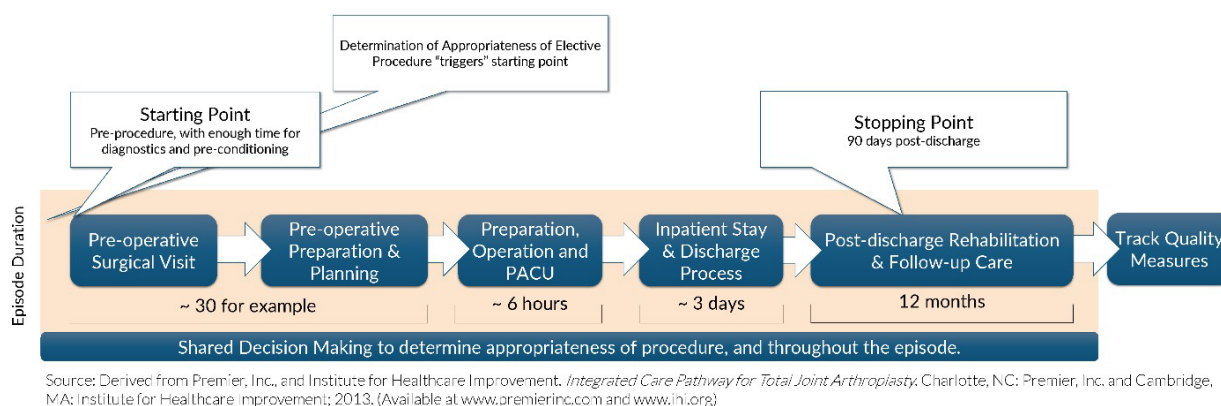
The Implementation Resources ([Appendix F](#)) includes information on Appropriate Use Criteria developed by organizations such as the American Association of Orthopedic surgeons. Providers and payers will need to determine how best to apply appropriateness criteria while avoiding the potential for limiting necessary care.

Finally, while functional status assessments and coaching/education are critical to making the initial determination that a procedure is necessary and appropriate, these are activities that should occur across the continuum of care to ensure that care is having the intended effect and that patients' preferences are reflected in the course of care.

2. Episode Timing

The episode should start pre-procedure (e.g., 30 days), and end 90 days post-discharge (Figure 4) in order to include the most resource-intensive aspects of care for elective joint replacement patients. Accountability for functional improvement and performance measurement goes beyond 90 days.

Figure 1: Episode Timing



Start and End Points

Optimally, the start and end points should be established based on the time when unwarranted (i.e., not evidence-based) variation in care begins and ends **and** when the opportunity to impact quality and outcomes is greatest (Figure 4). While defining start and end points is necessary, incentives can be created for services to be scheduled either before or after the dates in order to improve patient outcomes and decrease the costs of the episode. Therefore, an analysis of utilization patterns and outcomes should be built into the data analytics and monitored frequently in order to ensure that patient care is not inappropriately affected.

Episode Start Point: The episode should begin pre-procedure (as opposed to starting at the point of procedure) in order to create an incentive for reducing unnecessary or duplicative imaging and other diagnostics. The critical issue when determining the episode start point is ensuring that it provides an appropriate amount of time to achieve this goal, without creating perverse incentives to over- or under-deliver appropriate pre-operative care. Alternatively, the episode design could include care that is not directly related to the procedure. Based on the design of current initiatives, a reasonable starting point

may be 30 days pre-procedure. Operationally, this requires creating a look-back period, which an elective procedure by definition makes feasible.

An important factor to consider when setting the start point is the patient population. Older adults and Medicare beneficiaries may need a different time window than their younger counterparts who are covered by commercial insurance.

Episode End Point: The length of the episode after surgery is a critical decision point. This is because poor post-discharge care coordination around auxiliary services such as post-acute care, rehabilitative treatment, home- and community-based services and supports, and even delivery of medicines can be a significant contributor to costs and reduced patient outcomes. Based on the principle that the episode design should be patient centered and acknowledging the challenges patients experience during the rehabilitation period, the recommendation is for the episode to end 90 days post-discharge. Even though costs may not vary as much in the latter days of the episode, the risk of significant complications continues throughout the 90 days; in fact, for many people, the recuperation period exceeds that period.

Current models feature end points that vary from 30 days to 90 days. This recommendation balances the ability of the accountable party to have some control over the patient's care (which would support a shorter episode) with the recognition that patients can benefit enormously from professional support in coordinating clinical and other post-operative services during recovery, which extends well beyond 30 days post-discharge. One factor to consider in determining episode length is the specificity of the definition of the episode, including the inclusions or exclusions, as the more narrowly it is defined, the more comfortable providers will be with a longer episode.

Accountability: Quality measurement may include data for up to 12 months post-discharge, even though the episode payment period ends 90 days post-discharge.

3. Patient Population

The episode should apply to the broadest possible pool of patients, using risk and severity adjustment to account for age and complexity.

Stakeholder views on which patients should be eligible for these episodes may vary significantly. Within the context of *elective* joint replacement, the patient population to which the episode payment applies should be broad.

Ideally, focusing on a broad population within the context of elective joint replacement will also motivate innovations in care and care coordination that will benefit the highest-risk patients, who are also highest in resource use. **Appropriately specified risk and severity adjustment algorithms applied to the episode price** are critical to this recommendation if the episode is to gain buy-in from providers.

It may also be useful to enlist the support of the primary care provider to ensure the proposed surgery episode is integrated within the context of the patient's other health concerns. It is also valuable to engage the family in shared decision-making.

If concerns arise regarding the appropriateness decision, an appeals process should be established for those patients whose circumstances or risk cannot be identified through available data and might not otherwise be eligible. It is important to acknowledge that ineligibility for the episode does not necessarily mean the person would not receive care; their care would simply not be included in the episode payment initiative. This design will support the LAN's goals while, at the same time, discouraging providers from "cherry-picking" the lowest-risk patients. A flip side to cherry-picking is the inappropriate selection of cases where conservative management is a more appropriate alternative to surgery.

4. Services

All services needed by the patient that are related to the joint replacement procedure should be covered by the episode price.

Stakeholder views on which services should be included may vary significantly. Payers may want to define the episode more broadly to capture as much variation and, thus, potential efficiencies as possible. Providers, on the other hand, may prefer more narrowly defined episodes so that care needs—and the associated costs—that are completely unrelated to total hip or total knee replacement do not weigh into the target price or quality metric goals for the episode. For example, a patient who receives a total knee replacement and requires a coronary artery bypass graft (CABG) procedure within the 90 days post-joint replacement discharge window should not have the costs of the CABG associated with the joint replacement episode. Too narrow an episode definition, however, might make the costs of implementation as compared to the value created not worth the effort.

This paper does not include specific MS-DRG codes to guide the selection of included service because the two relevant DRG codes (469 and 470) apply to all lower extremity joint arthroplasty procedures **and** specify only those procedures performed in an inpatient hospital setting. Thus, using these codes to define the services included in the episode may 1) result in including patients that do not meet the patient population or episode definition in this model and 2) exclude outpatient procedures, which is not the intent.

Included Services: The episode payment should include delivery of all services billed in the defined time period *that are related to the elective joint replacement procedure*. Most initiatives ([Appendix C](#)) include all related services that occur within the defined time frame, including but not limited to costs involving physicians, hospital/ambulatory surgical centers, devices, labs, home health services, skilled nursing facilities, physical therapy, and sometimes pharmaceuticals. Including pharmaceuticals and devices in the episode price and definition is important because they can be an expensive portion of the bundle.

There are two approaches to determining which services are considered part of the episode:

Define the Excluded Services: One approach focuses on defining a list of excluded services. For example, exclusions from the Comprehensive Care for Joint Replacement (CJR) Model final rule include hemophilia clotting factors furnished during the inpatient hospitalization, and acute surgery for unrelated conditions, such as appendectomy (Medicare Program; Comprehensive Care for Joint Replacement Payment Model for Acute Care Hospitals Furnishing Lower Extremity Joint Replacement

Services, 2015). These excluded services are identified based on Medicare Severity Diagnosis-Related Groups (MS-DRGs) and International Classification of Diseases-Clinical Modification (ICD-CM) diagnosis codes. If an initiative focuses solely on exclusions, recognize that the list is likely to be extremely long to avoid situations whereby patients or providers delay important services until after the episode ends. For example, if preventive services cannot be delayed simply because they are due to be performed during the episode of joint replacement and they are not specifically excluded, those costs would be considered part of the episode costs.

Define the Included Services: Other models rely on very specific lists of included services and exclude anything not on that list. Defining what is included, rather than excluded, might be more effective and easier to manage. Payers and providers should look to existing resources that provide evidence-based information about service inclusions and exclusions.

Patients with Multiple Concurrent Conditions: One challenge in establishing service boundaries is how to deal with complex patients with multiple concurrent conditions. For example, a patient with diabetes and coronary artery disease who receives a joint replacement may also require additional services related to their chronic illness within the 90-day episode period. While some of those services may clearly be outside the scope of the knee or hip replacement, others (e.g., treatment for a post-op heart attack) may be less clear.

The significant rise in joint replacements among patients who are obese and have co-morbid conditions such as diabetes and heart disease makes this a significant concern for payers and providers. While risk adjustment may address this in part, it is necessary to include sufficient accountability within the episode so as to appropriately care for common complications such as myocardial infarction, infection, and deep vein thrombosis. These are within the purview of the accountable entity if the appropriate involvement of the providers responsible for the ongoing care of these conditions is obtained throughout the time frame of the episode. For example, the tight control of diabetes has been shown to decrease the risk of these same complications.

5. Patient Engagement

Require use of shared decision-making and patient engagement tools, transparency of performance and the payment model, shared care planning, access to full health records, care coordination, and patient-reported quality measures in patient-facing materials to maximize opportunities to engage patients and families in advancing high-value care, both for themselves and overall.

As detailed in Recommendation 1 (Episode Definition) and Recommendation 2 (Episode Timing), the episode payment must be designed in a way that adds value for patients and their families and determines the best course of care. To summarize, accountable entities must provide:

- Evidence that a provider used a standardized, validated functional status assessment tool to determine that the patient was an appropriate candidate for a total hip or knee replacement; and

- Evidence that the patient, possibly along with a family caregiver, worked through a high-quality decision aid, with a decision coach or nurse educator, as needed and desired.

In addition, patients and family caregivers should be provided the following in a non-biased and transparent manner:

Comparative Provider Quality Information:

Patients and family caregivers should have access to information about the procedure-related complication rates of possible surgeons and possible acute-care facilities; outcomes such as reduction in pain, gains in functional status, and quality of life; and information on the quality of possible post-acute care facilities and home health agencies. Patients should receive help shortly after deciding to have a procedure in identifying participating surgeons, facilities, and agencies, and in finding and interpreting relevant information about them. Such help should be available through clearly designated personnel without conflicts of interest. It is optimal for the patient to learn about, visit, and assess the quality and suitability of post-acute care options, including home health, skilled nursing facilities, and inpatient rehabilitation facilities, prior to admission for surgery. In addition, the accountable entity should identify providers included in the model and provide that list to patients.

Reimbursement Transparency: Patients and family caregivers need transparent information on how providers are being reimbursed in an episode payment model, the impact that episode payment may have on the patient's co-pay and co-insurance responsibilities and other cost sharing, and the manner in which care will be delivered.

Coordination Across Care Settings: In the private sector, this may mean engaging with patients and family caregivers about in- or out-of-network post-acute or follow-up care. In the Medicare FFS program, this may involve discussions related to choice of post-acute providers, after confirming that the patients still have freedom of choice. Regardless of payer, this involves providers and patients working together to identify participating and accessible post-acute care options, understanding their quality ratings, and making a wise choice. This is a critical patient conversation as it may be the case that a patient will not wish to see a provider that is within a specified payment arrangement.

Supported Care Planning: Providers should incorporate shared care planning into the delivery of care, which includes collaborative provider-patient goal setting prior to the procedure and ongoing decision-making and monitoring using documented individualized care plans that are accessible to both patients

Deploying Shared Decision-Making Tools in a Way That Is Meaningful for Patients and Family Caregivers

Meaningful shared decision-making requires both high-quality decision aids and a process that supports their use. This process can be described via the following steps:

- 1) Acknowledging that there is a decision to be made;
- 2) Explaining that there are care options, and each option has a different set of issues to consider;
- 3) Presenting the best evidence about the pros and cons of the care options; and
- 4) Acknowledging how personal values and preferences might align with the care options.

This conversation should be followed by a subsequent opportunity for the patient and family caregiver to meet with the care provider to get answers to any questions, decide about the optimal path forward, and initiate shared care planning.

and providers. Patients with comorbid conditions that may affect their outcome should be encouraged to engage their primary care provider in their decision-making process.

Access to Health Care Information: For patient engagement to occur, patients (and, as desired, family caregivers) should have full access to health records to help understand and manage their condition and care. The goal is to provide infrastructure and support for gathering, storing, and using health data. One example of a tool that is providing access to these data is the successful Open Notes project, which is providing a growing proportion of patients to full access to their electronic health records (Bell et al., 2015; Esch et al., 2016; Walker, Meltsner, & Delbanco, 2015).

6. Accountable Entity

The accountable entity should be chosen based on readiness to re-engineer change in the way care is delivered to the patient and to accept risk. In this model, the accountable entity will likely require a degree of shared accountability, given the number of clinicians working to care for a patient.

Overall Readiness: The question of readiness to both re-engineer the care delivery model for the patient and, in the process, accept the financial risk they might incur is central to the determination of what entity or entities should be accountable. There are a number of key requirements needed for success regardless of which entity (or entities) is held accountable (Table 5). Payers should work with the accountable entity to assess their readiness and promote collaboration to allow for multiple providers within an elective total joint replacement care team to share the risk and reward in such a manner that all are engaged in creating a seamless, efficient, patient-centered care process. This process can require active participation across the continuum by aligning incentives across contracts in the private sector, because the payer often has contracts directly with providers. Medicare allows for full freedom of choice of provider in FFS, and the spreading of risk may take the form of a gain-sharing relationship. This is particularly important in a relationship whereby the providers are still paid an FFS with a retrospective reconciliation, because the accountable entity has limited ability to obtain buy-in from other providers in the episode without direct incentives for them to collaborate.

Factors to Weigh in Determining Readiness for Episode Accountability:

- Minimum volume standards;
- Ability to deliver, or contract for, the entire bundle of services to be rendered;
- Demonstrated ability to care for total joint replacement patients;
- Effective discharge planning capacities, including systems to include rehabilitation physicians and extenders early in the discharge planning process to help in identifying the proper trajectory of patients and their care;
- Ability to manage transitions or handoffs from one setting to another when necessary (e.g., entry, transitions, discharge);
- Ability to track quality indicators and patient outcomes across an array of services and settings;

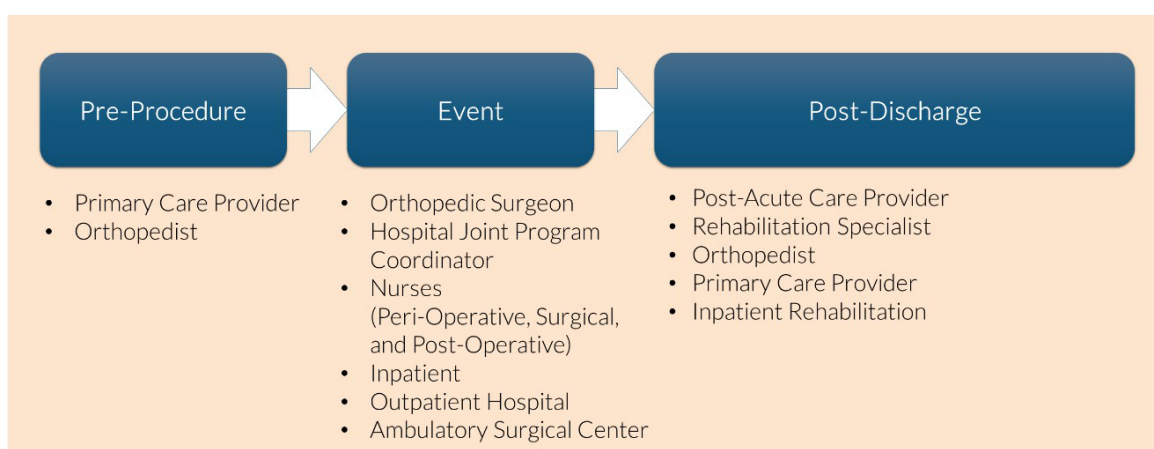
- Demonstrated dedication of the hospital, physicians, nurses, therapists, and other clinical professionals' time to the programs;
- Capacity to monitor patient clinical status and coordinate medical management and reconciliation as patients progress across acute and post-acute care settings;
- Ability to coordinate with other community services to foster the patient's independence;
- Necessary financial systems to administer payment across multiple entities; and
- Ability to tolerate financial risk, including post-discharge outcomes, such as readmissions, and understand its own risk exposure.

Shared Accountability Across a Care Team: An ideal design would allow for shared accountability across multiple providers representing pre-operative, surgical, and post-acute care (Figure 5). These providers include not just orthopedic surgeons working in an inpatient setting, but also care settings such as emergency departments, ambulatory surgical centers (ASCs), outpatient hospitals, skilled nursing facilities (SNFs), inpatient rehabilitation facilities (IRFs), and other Post-Acute Care providers. They may also include other clinicians such as hospitalists and telehealth clinicians. Regardless of which entity is determined to be ultimately accountable, there must be recognition there are a number of key requirements needed for success. Payers should work with the accountable entity to assess its readiness to 1) promote and support coordinated, collaborative care and 2) allow for multiple providers within a joint replacement care team to share the risk and reward in such a manner that all are engaged in creating a seamless, efficient, patient-centered care process. It is useful to recognize that post-acute care entities may be set up to meet these criteria.³

In the private sector, the payer often has contracts directly with providers. Thus, this design, in which there is one accountable entity but multiple provider entities share risk and/or reward, will require active coordination across providers serving all parts of the care continuum. It will also require an alignment of incentives—by the payer or the accountable entity—across provider contracts, to all work toward a shared savings and high-quality performance goal. In the public sector, with a payer such as Medicare that allows for traditional Medicare beneficiaries full freedom of choice of provider in FFS, the risk spreading may take the form of a gain-sharing relationship among providers who have received a Medicare waiver that allows them to do so. This is particularly important in a relationship whereby the providers are still paid FFS with a retrospective reconciliation, because the accountable entity has limited ability to obtain buy-in from other providers in the episode without direct incentives for them to collaborate.

³ The CMS Bundled Payments for Care Improvement (BPCI) Initiative includes two models (Model 2 and Model 3) that include post-acute care, with Model 3 defined as having the PAC provider serve as the accountable entity.

Figure 2: Examples of Joint Replacement Accountable Entities, Based on Care Team



Ability to Engineer Change: The pre-procedure orthopedic surgeon may be most able to effect change in an elective joint replacement episode, given his or her role in determining appropriateness and engaging the patient in care planning and post-discharge PAC decision-making. However, assigning accountability to the orthopedic surgeon may not be feasible in some markets. Risk levels may vary depending on the attributes of the accountable entity. While it is important that one entity be the primary accountable party, it is also important that care is provided using a team-based approach. Payers can use their negotiations with providers and use gain-sharing and loss-sharing to enable a system in which all providers who touch the patient share some level of accountability. Payers will need to assess which provider in a given market can act most effectively in achieving a joint replacement episode payment initiative's goals and establish that provider as the accountable entity.

Public and private models are mixed. Sometimes the hospital is the accountable entity, but sometimes it is the physician practice (often the orthopedic surgeon or practice). In many cases, the clinician can have the greatest impact on care re-design, because establishing a physician-level champion can ease the episode's management process. The clinician can lead the design and implementation of new patient care protocols, determine the best prosthetic devices, and communicate with the patient's post-discharge provider more easily than the hospital. Furthermore, the discussions with patients regarding appropriateness and expectations on functional improvements are most effective if the physicians are fully engaged.

Ability to Accept Risk: Some physician practices may have less ability to assume downside risk than larger practices or better capitalized providers, such as hospitals or health systems that integrate hospital and physician care. This limited ability for physician practices to take on risk can be mitigated by limiting the level of risk associated with the episode. Strategies for doing so are discussed in the next recommendation.

In the CJR program (Medicare Program; Comprehensive Care for Joint Replacement Payment Model for Acute Care Hospitals Furnishing Lower Extremity Joint Replacement Services, 2015), CMS determined that the hospital—in comparison to other health care facilities—is best positioned to manage the care in an effective manner. This is based on the idea that hospitals have resources to coordinate and manage care, **and** hospital staff are involved in discharge planning and PAC recommendations for recovery. The regulations allow the hospital to opt to share a portion of gains or losses with other providers that are

part of the delivery of care for patients, including physicians or other post-acute providers. In the Acute Care Episode demonstration implemented by CMS, while the hospital was the accountable entity, it was considered critical to get the physicians involved. In that initiative, hospitals were able to utilize gain-sharing to engage physicians.

See Chapter 6, [Operational Considerations](#), for a discussion on two related issues. First, in the data infrastructure section is a discussion of the structures necessary to facilitate coordination and communication across members of the care team and between clinicians and patients. Second, in the regulatory environment section is the discussion of how state laws may affect how much risk providers are allowed to incur. For example, some states' laws and regulations are supportive of hospitals to serve as the accountable entity, rather than a physician or physician practice.

7. Payment Flow

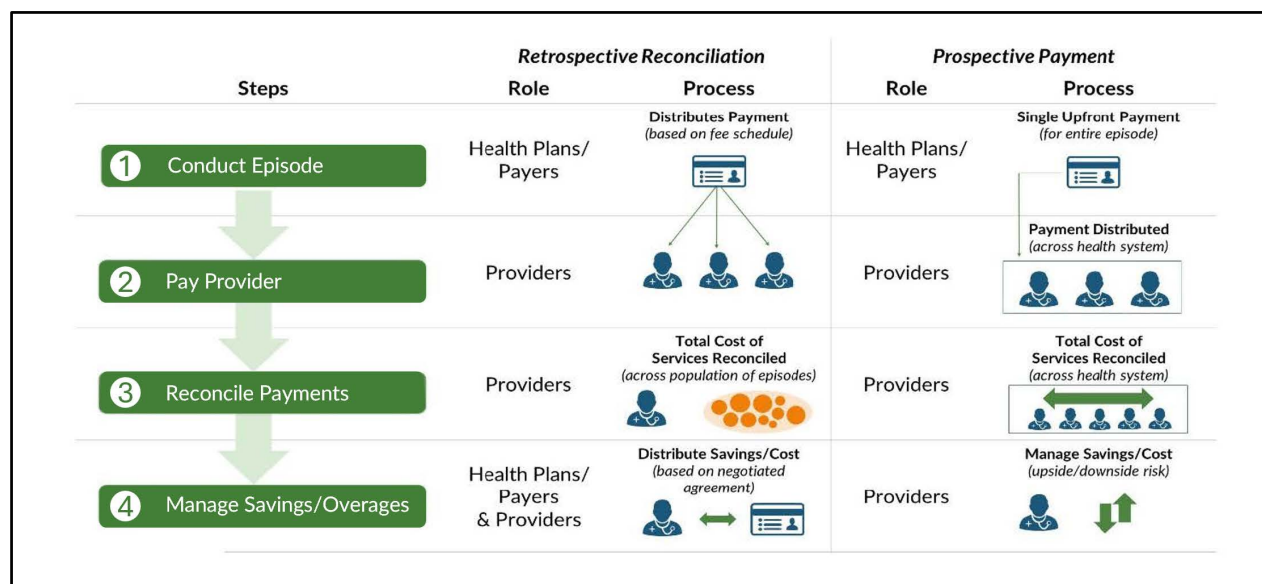
The unique circumstances of the episode initiative will determine the payment flow. The two primary options are 1) a prospectively established price that is paid as one payment to the accountable entity and 2) upfront FFS payment to individual providers within the episode with retrospective reconciliation and a potential for shared savings/losses.

Episode payments are typically dispersed via either prospective payment or retrospective reconciliation (Figure 6).

In **Prospective Payment**, payment is provided for the entire episode of care, including all services and providers, and paid to the accountable entity to subsequently pay each provider in turn. This payment typically occurs after the episode has occurred but is termed “prospective,” as the price of the episode is established prospectively based on what is deemed to be appropriate care for the episode, and the savings or losses are not shared with the payer—they are simply a function of how well the accountable entity (and the providers with whom it coordinates) manage to the pre-determined price.

In **Retrospective Reconciliation**, individual providers are each paid on a typical FFS basis, and then there is a reconciliation between the target episode price and the actual average episode price after a period of time across all the episodes attributed to a provider. An initial reconciliation is typically conducted by the end of the first quarter following an episode's end; a final reconciliation is typically conducted within six months of the episode's completion. For this episode, this translates to April and June. Based on a specific formula, either negotiated or established by the payer, the accountable entity can share in gains and/or losses with the payer and/or the patient. In some instances, gains or losses are also shared among providers in the episode to encourage collaboration and coordination across settings. These types of gain-sharing arrangements need to be considered within the parameters of federal laws that may impact their design. See Chapter 6, [Operational Considerations](#).

Figure 3: Retrospective Reconciliation vs. Prospective Payment



Prospective payment is generally felt to provide a stronger stimulus for care redesign through greater coordination of care across providers and care delivery settings, but it is an option in only some circumstances. These may include when the accountable entity is a health system that already integrates the clinician and facility payment. However, retrospective reconciliation is simpler to administer, as it requires fewer changes from current practice where the prevailing model is an open, non-integrated system. In addition, retrospective reconciliation is more prevalent in current episode initiatives, as it does not require providers to develop the capacity to pay claims, allows for better tracking of the resources used in the episode, and can be built on an existing payment system.

As a practical matter, it may be more difficult to implement a single prospective payment when multiple providers involved in delivering the care do not already have mechanisms for administering payment among themselves, such as is the case in integrated systems. Increased use of prospective payment can accelerate development of various supporting mechanisms to aid in this process.

Nevertheless, prospective payment has advantages in that it is a clear break from legacy FFS payment and may encourage greater coordination and innovation in episode payment. For example, in a prospective payment initiative, it may be more feasible to be flexible in delivering otherwise uncovered, value-added services, or to deliver services that—while covered under traditional FFS—are underutilized, such as coordination services that link patients recovering from an elective joint replacement with community supports, transportation, and other wrap-around services that are instrumental to ensuring patients receive the post-acute care and rehabilitation therapy that they need to achieve a positive outcome.

Currently, most episode-of-care payment models flow through a retrospective reconciliation system due to the challenges inherent in operationalizing prospective payment in the prevailing open, non-integrated health care environment. As noted above, retrospective reconciliation is more prevalent in current episode initiatives, as it does not require providers to develop the capacity to pay claims, keeps better track of the resources used in the episode (using administrative claims), and can be built on a legacy payment system. However, the recommendation is to consider prospective payment where possible. Prospective payment is a clear break from legacy FFS payment and may serve as a foundation

for greater innovation in the quality and coordinated care delivery needed to make episode payment successful. Furthermore, if a prospective payment is shared among providers, it negates the incentives of the FFS payment and creates important buy-in for care redesign.

Prospective payment may work best in the context of a health system that already integrates hospital and physician care, as the monetary relationship among the key providers is already established. However, even under prospective payment, it is critical to maintain a record of specific services delivered that may still involve some degree of FFS payment. This will allow for analyses of best practices that lead to greater efficiencies, including lower levels of complications and functional improvement. One caution on prospective payment in an FFS Medicaid program is that there may be regulatory barriers for one provider assigning payment to another. Legal counsel should be sought in this scenario.

8. Episode Price

The episode price should strike a balance between provider-specific and multi-provider/regional utilization history. The price should 1) acknowledge achievable efficiencies already gained by previous initiatives, 2) reflect a level that potential provider participants see as feasible to attain, and 3) include the cost of services that help achieve the goals of episode payment.

The episode price is critical. It ultimately determines the monetary rewards or penalties that a provider may experience. It can also play a role in creating the incentives that determine how care is delivered and whether the goals of the episode are prioritized. There are several key aspects that interact in the establishment of the episode price, described below.

Look-Back Period for Historical Data: The appropriate look-back period for historical data should be set according to two variables: the number of cases that occurred and the number of years. For elective joint replacement, a two-year period should yield a sufficient number of cases on which to determine a reasonable episode price. Severity adjustment (described more fully below) can be employed to explain much of the variation in costs of care that are within a reasonable distance from the average cost within that time period. It should be noted that there is no way to completely eliminate measurement error in this process, but it can be reduced by using a large enough sample size; thus, the reliance on number of cases may be prioritized over the number of look-back years.

One challenge with defining a look-back period by years and/or number of cases is that the number of years and cases will vary depending on whether the episode is broadly defined (i.e., includes a wider range of services) or more narrowly defined (i.e., includes a smaller range of services). To address this challenge, implementers may think about the look-back for historical data within the context of setting a target margin of error. This margin can be defined as a factor of the number of cases and the underlying distribution and variability of episode costs. A more broadly defined episode will require more cases in order to achieve a reasonable margin of error, while a more narrowly defined episode will be able to fall within that margin by using fewer cases.

Balancing Regional and Provider-Specific Data: Once the look-back period is determined, the cost data should reflect a mix of provider and regional claims experience. The goal of including regional rather

than market-level data is to ensure that there is enough variation in episode cost. This mix will also ensure that the established episode price takes into consideration the unique experience of the specific provider and that the goals are set based on what is feasible in the region. Risk adjustment will be needed during this process to adjust for the unique characteristics of the population the provider serves. If the payer is a national payer, it may be more difficult to address specific provider issues and will require consideration of the use of national claims experience to ensure parity across regions. Over time, as performance becomes less variable, it may be useful to lessen the proportion of the episode look-back period that is based on the organization's specific experience.

Regional Costs: As noted above, using regional-level claims data allows the payer to take into account the costs of multiple providers within a region, reflecting the fact that one provider's costs may not be fully representative of what is possible in that region. It also addresses the variability that may exist for a provider with a low volume of cases. However, the concern with using regional claims is that if, as a whole, providers in that region have already achieved a certain level of efficiency, they may be less able to achieve further savings or will achieve lower savings. In essence, these regions (or the providers in them) will argue that an efficient region will be "punished" for their previous work to achieve these efficiencies. On the other hand, if the region, on average, has a higher per bundle cost than other regions (or specific providers within the region), the payer may not achieve as great a level of savings than if the episode price was to be set at a national or provider-specific level. In situations where a region is not large enough to reflect sufficient variation across providers, a larger region may need to be defined.

Provider Costs: Provider-specific costs are the actual costs for the previous patients of the provider now responsible for the patient episode. For example, if a hospital is accountable, the analysis would be conducted using the current episode definition and applying it to patients who received joint replacements over the last two years. The challenge is that while these costs may be accurate for a given institution, they may build in already gained efficiencies that make it more difficult for an already efficient group of providers to achieve savings or build in inefficiencies that limit the savings for the payer. Another challenge is in using provider costs in a way that does not inhibit traditionally high performers from continuing to strive for excellence and improvement. One way to address this is to use multi-provider cost averages, which can create a "pay for performance" model, versus a "pay for improvement" model, which can benefit poor performers disproportionately.

Incentivize More Efficient Levels of Practice: In addition to historical provider- and region-level data, the episode price should be based on the performance of the better performers in a particular market, such that all providers can see that the episode price and the quality metric performance thresholds are feasible to achieve. If a provider's performance is already at a relatively efficient level, it will need to see some reward for that achievement at the same time that low performers will have an incentive to improve.

The episode price can be revised over time to ensure continual improvement by both the more and less efficient providers. In this way, the episode price automatically integrates savings and simultaneously incentivizes a compression of variation in cost and quality across all providers. Finally, the episode price should take into account services that are historically under-reimbursed and thus underused but are of high value to the patient. Care coordination, patient engagement, shared decision-making, and assessment of patient-reported pain and function are examples of services that could fall under this category.

Other Factors Impacting Episode Price

There are many other factors that should be used in developing the episode price, though the ability to do so will depend on the availability of data and analytic tools. For further discussion on this topic, please read the paper on Financial Benchmarking, [click here](#).

Factors impacting price include:

Socio-Economic Status of the Patient Population: There are a number of socio-economic factors that have a significant impact on a patient's health status prior to the joint replacement procedure, access to care, and post-procedure rehabilitation and follow-up care. These include income, health literacy, living status (living alone, living in a community without family or other supports nearby), availability of transportation (both in general, and to care settings), and others. Certain socio-economic factors may align with a specific payer category, whether it be Medicare or commercial payers.

Public vs. Private Payers: There are differences between public and private payers that should be acknowledged and reflected in the episode pricing. In addition to the socio-economic status of the patient population, as described above, there is also a difference in how overall pricing is set. For private commercial payers, pricing is an element of negotiation; in the public payer realm, prices are set by the public payer. Either way, this will impact the level at which the episode price is set, as will the market in which the payer operates. Most private sector payers will need to negotiate with providers on the episode price, particularly if participation is voluntary. If the initiative requires participation, it may be easier to establish an episode price, as is the case for the CJR.

Trusted Empirical Data: One challenge is the ability for payers and providers to understand the variation in the costs of the episode across their region. Determining the appropriate price requires empirical data from a trusted source. The availability of these data to identify the opportunities for efficiencies is critical to the success of these initiatives.

Episode Payment Flow: The episode price can be set retrospectively in an episode model for which retrospective reconciliation is the selected payment flow. Similarly, the price can be set prospectively in a model designed around prospective payment. Thus, setting the episode price and the payment flow should be part of an integrated process.

Patient and Family Definitions of Value: Information on the types of services that are most valued by patients and their families should be considered in determining the episode price. This information would not typically be captured via historical data, but rather via engagement between providers and their patients, as well as between purchasers and their employees.

Multiple Ways to Build in Savings for EJR Episodes: One commercial bundled payment model, the PROMETHEUS payment model, builds in an assumption of a lower level of costs for complications and readmissions and adjusts the episode price accordingly. On the other hand, the original Geisinger model's ProvenCare™ warranty strategy built in an assumed 50% decrease in complications into its warranty price. Meanwhile, other payers build in savings, regardless of whether the calculation is based on provider or region-specific estimates or decreases in readmissions or complications. CMS built in a set discount factor of three percent and allowed for the episode price for the CJR to be set using a mix of hospital specific and regional data, shifting to a more regional approach over a five-year period. The provider's performance on key quality metrics can be utilized to lower the discount factor if its performance is high enough.

9. Type and Level of Risk

The goal should be to utilize both upside reward and downside risk. Transition periods and risk mitigation strategies should be used to encourage broad provider participation and support inclusion of as broad a patient population as possible.

The goal when setting an episode price should be to incorporate both upside reward and downside risk. Absent downside risk (where the actual costs of care exceed the target episode price), the accountable entity and other providers involved have less incentive to make the necessary changes in how care is delivered to create efficiencies and improve patient outcomes. Furthermore, increases in the cost of care from year to year often negate the benefits of upside sharing of savings, particularly when the episode price is based on historic data. However, taking on downside risk may be difficult for smaller providers, including many physician practices, that are also the most able to make the necessary changes in a joint replacement episode of care.

To address these concerns, payers can utilize strategies to limit that risk or to transition (phase in) the downside risk over time. This is particularly important if the initiative is voluntary and participation would be limited absent the option for upside reward only. Decisions about type, level, and timing of upside reward and downside risk illustrate tensions between payers and providers: Certain risk arrangements may be more acceptable to payers than to providers, and vice versa. Consequently, in the private market, these factors become part of the ongoing negotiations among network participants and payers. Regardless of the mechanism used to limit risk, it is critical that the methodology for developing that mechanism be transparent, as well as modifiable, depending on the timing of the procedure.

Mechanisms for Limiting Risk: The level at which those risk limits are set is a critical design element. There are a number of issues to consider, such as whether the accountable entity will be required to pay the full difference back to the payer between the established episode price and the actual episode costs or whether limits will be established. Limits are especially important considering that a provider is often also accountable for care provided by several other providers across the episode. What the accountable entity is paid through FFS payment is typically not sufficient for them to pay back a payer if the costs over the episode price are due to higher-than-

Safety Net Providers and Risk

A primary goal in designing any alternative payment model arrangement is guarding against unintended consequences. In episode payment for elective joint replacement, the unintended consequence that concerns all providers—but perhaps safety net providers most of all—is the potential for decreased access to care for patients with poor health status, which puts them at increased risk for poor outcomes. This may be correlated with lower socio-economic status if the provider feels that it will not be possible to provide the full continuum of care and achieve positive outcomes within the episode price. Safety net providers in particular may need time to develop adequate reporting and staffing infrastructure; and build relationships across historically siloed organizations in order to feel prepared to take on the risk in an episode payment model.

expected utilization of other providers' services across the episode. Therefore, following are strategies used by various initiatives to limit risk in an episode payment:

Risk Adjustment: Risk adjusting the episode price, based on the severity within the population in the elective joint replacement bundle, is one risk-mitigation strategy. There are a variety of approaches to capturing patient characteristics, disease status, and other parameters that predict episode expenditures. For example, the Health Care Incentives Improvement Institute's (HCl3) evidence-based case rates (Health Care Incentives Improvement Institute, n.d.) create a variety of patient-specific episodes that re-calibrate based on various patient-specific severity factors. Another example, the Medicare Payment Advisory Commission, in its analysis of bundling, utilized various risk adjustment tools,⁴ including markers of functional status and co-morbidities, to adjust the underlying episode for their analysis. For further discussion on this topic, please read the paper on Financial Benchmarking, [click here](#).

Stop-Loss Caps, Risk Corridors, and Capital Requirements: Other options for limiting the level of risk include limits at both the individual and aggregate levels that could be included as stop-loss insurance, risk corridors that limit exposure and gains (CJR includes a ramp up of the exposure from an upper limit of 5% of the target price to 20% of the target price by year five (5) of the model), and some level of capital requirements to cover the losses. Another consideration may be to limit the risk for any entity to some portion of the overall costs of the episode based on the accountable entity's role in the episode.

Interaction Between Risk Mitigation Strategies: Illustrating the interaction between risk adjusting the episode price and other risk mitigation strategies, for one existing joint replacement episode payment initiative, a payer decided not to risk adjust the price but instead established a risk corridor that capped exposure at 115% of the episode price. This method limits provider exposure, avoids the complexity of risk adjusting, and provides a set target.

10. Quality Metrics

Prioritize use of metrics that capture the goals of the episode, including outcome metrics, particularly patient-reported outcome and functional status measures; use quality scorecards to track performance on quality and inform decisions related to payment; and use quality information and other supports to communicate with, and engage patients and other stakeholders.

Episode payment encourages better communication and coordination of care across providers. This puts the patient at the center of the care across settings and helps achieve the goal of improving quality, providing positive patient experiences and patient outcomes, and doing it all within a defined price to reduce unnecessary care.

⁴ http://www.medpac.gov/documents/contractor-reports/sept13_episodebundle_contractor.pdf?sfvrsn=0

Quality measurement is critical to achieving all of these goals. Quality measures may be used to hold providers accountable for the quality of care being given, the level of resource use, and a patient's experience with the care. Accountability requires the use of process measures as well as outcome measures (clinical and patient-reported). It also requires measures that reflect care across settings as well as within individual provider settings. Patients need provider-specific performance scores to assist them with selecting individual providers, and providers need to know that patients are experiencing positive outcomes across all settings within the episode.

The CEP Work Group recommends using Patient-Reported Outcome Measures (PROMs) and measures of functional status pre- and post-procedure for accountability purposes, and additional clinical outcome measures should be considered for both accountability and payment.

In selecting the metrics for an episode payment model, it is important to recognize the preference for alignment of measures across programs, use of nationally endorsed measures, and a limited, tight set of measures with a low burden of collection. The CEP Work Group supports these principles whenever they can be met with measures that incentivize priority opportunities for improving elective joint replacement care. A measure that meets these criteria without the potential for clear benefits for patients would not be fit for this purpose and is not recommended. The Work Group is not including recommendations for specific quality metrics at this time.

Measuring and tracking performance on quality are critical for the success of clinical episode payment. Measures of quality must be identified, and the manner in which information on the performance on quality will be used must be defined. To do so requires:

- Selecting **clinical and patient-reported outcome measures, and functional status measures** to track provider performance for services delivered within the episode to ensure that the fiscal savings incentives do not incentivize lower quality care but improve quality;
- Creating a **quality scorecard** with performance thresholds or benchmarks against which performance is assessed and used to inform payment; and
- Using quality metrics for **communicating information to consumers and patients** in a way that is meaningful and supports patient engagement.

Prioritize Use of Outcome Measures (Clinical and Patient-Reported), and Functional Status Measures

Defining quality metrics for episodes can be challenging. Many quality measurement metrics are designed for measuring the quality of care in a single setting of care and not for observing quality over multiple settings. For example, with hip and knee replacement, complications in a hospital do not measure what may have happened in a post-acute setting where the improvement in functioning is a primary goal. Another issue is that some metrics were designed for broader topics, such as patient experience surveys of a hospital experience, and may not be designed to capture key attributes of the patient experience specific to joint replacement episodes that occur over time and over multiple settings and providers.

There are metrics available today for measuring the quality of the surgery, aspects of the patient experience, and to assess pain and functioning pre- and post-procedure (as described in Recommendation 1, Episode Definition). Patient experience survey measures should include questions about patients' experience with pain and pain management; functional status assessments should include measures of ambulatory function and should be conducted immediately post-procedure and at six-month intervals through the duration of the 12-month quality measurement cycle.

There is not a standard number of measures that should or must be used to support elective joint replacement episode payment. The prevailing wisdom is to seek to use less measures, but make those measures more powerful in terms of how much information they impart about the care delivered. Examples include standardized and consensus-based measures of complication rates and hospital readmissions, which can provide information about the relationship between reducing costs of care and the effects on quality. Standardized measures of complications and readmissions are aligned with the goals for lower costs as the lower the rates of complications and readmissions, the lower the costs of the episode.

Finally, all outcome measures used to determine payment or reported to patients must be accurately risk adjusted to account for a range of complexity in the patient mix. In considering which measures to implement, one resource is the Orthopedic Measures Core Set, Version 1.0 (Table 5), developed by the Core Quality Measures Collaborative (CQMC) is not meant to be an exhaustive list of what is available. Rather, it is a core set of measures developed by a multi-stakeholder effort aligned at implementation by private and public payers.

Table 2: CQMC Consensus Core Set: Orthopedic Measures, Version 1.0

Consensus Core Set: Orthopedic Measures, Version 1.0 ⁵
- Hospital-level risk-standardized complication rate (RSCR) following elective primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA) - Hospital-level 30-day, all-cause risk-standardized readmission rate (RSRR) following elective primary THA - Surgical Care Consumer Assessment of Healthcare Providers and Systems (CAHPS): - Information to help you prepare for surgery; - How well surgeon communicates with patients before surgery; - Surgeon's attentiveness on day of surgery; - Information to help you recover from surgery; - How well surgeon communicates with patients after surgery; - Helpful, courteous, and respectful staff at surgeon's office; and - Rating of surgeon

Source: Core Quality Measures Collaborative; <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityMeasures/Core-Measures.html>.

Patient Experience of Care: Given the central role of care coordination to episode payment, payers use patient experience surveys to assess whether patient-provider interactions are supporting the goals of the payment initiative. For example, the CJR initiative plans to utilize the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) (Centers for Medicare & Medicaid Services, 2014)

⁵ The CQMC is currently overseeing a work group on Patient-Reported Outcome and Patient Experience measures, which is reviewing the following measures related to hip and knee replacement.

patient experience survey for this purpose. Surgical-CAHPS (S-CAHPS), which is designed for surgical episodes, is more specific to the present context and is included in the CQMC's orthopedic core set (Centers for Medicare & Medicaid Services, 2016).

PROMs: Patient-reported outcomes, particularly those related to functioning and pain, are critical in elective joint replacement episodes because these are the two key problems the procedures are designed to solve. Functioning and pain should be measured both pre- and post-procedure. Given that a patient assessment should be done as a requirement for a patient to be included in an episode payment initiative, the same tool should be used prior to the procedure and at defined intervals after the procedure to ensure standardization and measure improvement. Several assessment instruments are utilized in post-acute settings that include these types of items and can be evaluated to determine their utility in joint replacement episode payment. At this time, the CEP Work Group recommends that a patient's change in functional status should not affect payment; rather, payment should be based on the use of these pre- and post-procedure assessment tools.

As part of this work, the CQMC is reviewing NQF measures 0422 (Functional status: knee impairments, using Focus on Therapeutic Outcomes knee PROM) and 0423 (Functional status: hip impairments, using Focus on Therapeutic Outcomes hip PROM). The CQMC work group is also reviewing NQF 2653: Average change in functional status following total knee replacement surgery, using the Oxford Knee Score.

Quality Scorecards

Most episode payment initiatives use a quality scorecard with defined thresholds that a provider must meet or exceed in order to receive either the full reimbursement for an episode or the full shared savings possible. However, decisions on where those thresholds are set or how they are used should be up to the payer and provider to negotiate (this applies to the commercial market; see below for comparison with the public sector). Some initiatives vary the level of shared savings based on performance on the metrics, while others also use minimum performance levels as a threshold for receiving any portion of the savings. Issues that must be considered when developing quality scorecard thresholds include:

Collecting Sufficient Data: It is important to collect sufficient data to inform the threshold levels. This is of particular concern when it comes to using measures such as a functional status tool. Since use of these tools is relatively recent, there may not be enough information on where the threshold should be set.

Driving Quality and Patient Safety Improvement: While in the initial years of episode payment the thresholds may be set to allow for the greatest opportunity for sharing savings, the goal should be to set thresholds at a point that incentivizes innovation in care improvement over time, which ultimately will drive quality and patient safety improvement.

Lack of Alignment: There may not be alignment between public-sector and commercial-sector episode payment models when it comes to a quality scorecard design. Commercial payers have a different ability to negotiate payment related to performance with their providers than CMS or the states. In addition, the threshold levels may vary given the difference in their populations, which may make alignment across sectors challenging. However, efforts such as the CQMC, which represents collaboration among CMS, AHIP, and the National Quality Forum, are seeking to address this issue.

Note that quality measures are needed for use in payment and for consumer information; however, one concern is that providers may not be as willing to take on patients at risk for poor outcomes if these

types of outcome measures are used in tandem with payment. Another concern is whether stakeholders have confidence in the quality of the metric itself.

Quality Information to Communicate and Engage with Patients

In addition to using information on quality to determine payment, it is important for other stakeholders to have access to data on quality. To be informed on the outcomes across settings, patients need quality data (ideally prior to making the joint replacement procedure decision) about the physicians, surgeons, hospital, and post-acute care providers, particularly if they have a choice of provider teams and/or settings in which to receive care. Currently, there are gaps in the availability of such data, as well as a lack of research on the extent to which consumers (or payers) find such information useful.

To make optimal use of available comparative quality information, consumers should have access to personnel who can help them identify and interpret information relevant to their circumstances, and who are not unduly conflicted, allowing them to provide helpful, disinterested advice and recommendations to the patient.

Employers and purchasers need to make data on quality available to employees to support their use of providers that offer bundled payment for joint replacement. Specifically, employees need to understand the bundle and what their role is in receiving high-quality care.

Primary care providers hoping to enter into bundled payment contracts will want data about specialty physician quality performance in order to determine which bundled arrangements would be most beneficial to their patient population.

Finally, episode payment design must build in the capacity to collect, analyze, and provide data and support patients in identifying and interpreting this information. It is important, therefore, to establish cross-cutting efforts to define metrics and systems for data collection and analysis. But it is a significant burden for each initiative to define its own metrics, collection system, and scorecard. Consequently, one place to look would be the CQMC process for defining metrics and the use of existing reporting mechanisms, such as Hospital Compare, Physician Compare, Nursing Home Compare, and Home Health Compare, which provide relevant information on the quality of their care on hip and knee replacements and rehabilitative services. Clinical registries also have experience with collecting and analyzing rich data on complications and other outcomes for joint replacement. Broader efforts are needed to build the necessary infrastructure for meaningful development and use of quality performance information, and building these systems is one of the key challenges discussed in the [Operational Considerations](#) section of this White Paper.



CLINICAL EPISODE PAYMENT MODELS

MATERNITY CARE

Chapter 4: Maternity Care

Background

Pregnancy and childbirth are pivotal events in a woman's life, framed by both the overall care experience and the actual birth event. During pregnancy, women are concerned with many things, including the healthy development of the baby, the labor and birth experience, and how they will take care of themselves and their newborns postpartum. Interactions with the health care system during this time create opportunities to address and allay these concerns by laying a strong foundation for the ongoing health of the woman, her baby, and her family as a whole. Often prenatal care, labor and birth, and postpartum care are viewed and delivered as three distinct periods. However, by viewing them as three phases within one episode, there is a potential for incentivizing the types of interactions and care delivery that support positive outcomes.

Positive outcomes for maternity care can be defined and achieved in a variety of ways, such as:

- A greater percentage of appropriate vaginal births;
- A greater percentage of full-term babies born at healthy weights;
- Strong recoveries for women; and
- Healthy starts for the babies.

Thoughtful episode payment seeks to achieve these outcomes at a lower overall cost to the system and at a lower cost to women and families. The Work Group's recommendations provide guidance on how to achieve this goal without becoming overly prescriptive about the exact mechanisms for doing so.

In maternity care today, there are a variety of payment mechanisms. Payment often includes a global fee for professional services for prenatal care, and the management of the labor and birth. It will sometimes also include postpartum care. Facility fees for the actual birth are typically paid separately, with higher fees in the event of a birth by cesarean section. There are also separate facility and professional fees for the newborn. These different payment mechanisms are often associated with overuse of high-cost interventions and underuse of low-cost interventions, which leads to less-than-desirable outcomes for women and their babies, despite the fact that the maternity population is generally healthy. It is also important to note that maternal mortality in the United States has risen over the past 30 years (Centers for Disease Control and Prevention, 2016). By providing incentives for the provision of higher-value practices, and for care coordination across the continuum of services and providers, episode payment can potentially have a significant impact on both the short and long-term health of a woman and her baby and on the health of American society.

Childbirth is the most common reason for hospitalization in the United States. In 2009, combined maternal and newborn stays represented 23% of all hospital stays (Agency for Healthcare Research and Quality, 2011). According to Healthcare Cost and Utilization Project (HCUP) data, while charges billed by hospitals represent a significant over-estimate of actual payment, such charges totaled \$127 billion in 2013 (actual payments are roughly half of billed charges). These charges do not include professional fees or other settings of care across the episode. In addition, hospital-billed charges increased more than 90% between 2003 and 2013 (Agency for Healthcare Research and Quality, 2003; Agency for Healthcare Research and Quality, 2013).

A study by Truven Analytics shows the cost of birth varies significantly by payer, type of birth (vaginal or cesarean section), and setting where the birth occurs (see Table 6). In 2013, the average total maternal-newborn payments for cesarean births, including all facility and provider fees for prenatal, labor and delivery, and postpartum/newborn care, was \$27,866 for a commercial payer and \$13,590 for Medicaid. For both payer types, total payments for cesarean births were roughly 50% higher than for vaginal births. One of the reasons that cesarean birth costs more is that there are 50% higher neonatal intensive care unit (NICU) payments associated with these surgeries, compared to the percentage of vaginal births requiring NICU stays. Furthermore, the fact that women who experience a cesarean once often have repeat additional cesareans adding to system costs.

Table 1: Costs and Disparities in Maternity Care

	Commercial Market	Medicaid
Volume (HCUP 2013)* Medicare, Other, or Uninsured Accounted for the Remainder	2,012,584 births (48.99%)	1,811,759 births (44.10%)
Payment Variation by Payer and Type of Birth (Truven, 2010)	Vaginal: \$18,329 Cesarean: \$27,866	Vaginal: \$9,131 Cesarean: \$13,590
Significant Opportunities for Improved Outcomes	• Reduce cesarean rates: Current average of cesarean is 32.2%, up 60% from the most recent low of 20.7% in 1996 (Osterman & Martin, 2013). WHO data find that cesarean rates higher than 10% are not associated with further reductions in infant or maternal mortality (World Health Organization, 2015). • Reduce preterm rates: 9.57% of births are preterm. The American College of Obstetricians and Gynecologists (ACOG) recommends no early births unless medically indicated (Hamilton et al., 2015). • Increase in births occurring in the highest value setting: Vaginal births are 50% less costly in birth centers than in hospitals (Hamilton et al., 2015). • Reduce infant mortality rates: Infant mortality is higher in the United States than in 38 other countries (World Health Organization, 2014). • Reduce maternal mortality rate in the United States, which has doubled since 1987 (World Health Organization, 2014). • Reduce racial/ethnic disparities: The prevalence of preterm births for non-Hispanic white is 8.91%, non-Hispanic black is 13.23%, and Hispanics is 9.03%, with additional significant disparities in infant mortality and low-birth weight babies (Matthews & MacDorman, 2013).	

The setting in which a woman gives birth also affects the cost, as well as the type of delivery. The average national cesarean rate in the United States is currently 32.2% (Matthews & MacDorman, 2013; World Health Organization, 2015). Just as with other surgical procedures, there is significant, non-

clinically supported variation in cesarean rates across hospitals. Even hospitals in the same city show wide variation. For example, Jersey City Medical Center, near Newark, N.J., reported a 35% cesarean section rate for low-risk women, compared to a 19% rate at Trinitas Regional Medical Center in nearby Elizabeth, N.J. (Haelle, 2016). In California, rates varied from 18% in one hospital to more than 50% in another, according to a recent study (Main et al., 2011). Healthy People 2020 calls for a reduction in nationwide cesarean rates for low-risk women to 23.9% by 2020.

For women who choose a midwife and/or a birth center for their primary care provider and birth setting, respectively, the costs are significantly less than in a hospital. Of course, part of this is due to the fact that birth centers do not provide cesarean section procedures. There are occasions when a woman chooses a midwife to manage prenatal care and a birth center for labor and birth but ultimately delivers in a hospital due to complications. The costs in this scenario are still lower for vaginal birth if a midwife managed the prenatal care and subsequently manages the hospital birth (Howell et al., 2014). The use of community-based settings, such as birth centers and home births is growing. In 2014, 18,219 babies were born in birth centers while another 38,094 babies were born at home (MacDorman, Matthews, & Declercq, 2014). However, the vast majority of births in the U.S.—98.6%—still take place in a hospital setting (Hamilton et al., 2015).

These data demonstrate that too often the resources spent on maternity care services are not leading to the highest value birth care. The fact that the United States has a higher rate of infant mortality than 38 other countries and a lower successful breastfeeding rate than 98 other countries reflects this (World Health organization, 2014). It is also reflected in the 9.57% preterm birth rate in 2014. Finally, there are significant racial and ethnic disparities in birth outcomes. Non-Hispanic black babies are at more than twice the risk of dying at birth compared to non-Hispanic white babies (Centers for Disease Control and Prevention & Health Resources and Services Administration, 2012).

The good news is that evidence-based care practices can deliver higher-quality care at a lower cost. For the majority of low-risk births, lower resource-intensive births correlate with positive outcomes. There is no single definition of low-risk birth. However, Healthy People 2020 used this definition to define low-risk for cesarean sections: full-term, singleton, and head-first presentation. Data from the National Center for Health Statistics show that as many as 80% of births meet this definition. If the percentage of safely achievable vaginal births for these lower risk pregnancies were to increase, resulting in a decrease in cesareans, overall birth costs would decrease. Outcomes should improve as well because vaginal births have fewer complications. Furthermore, with a decrease in the rate of early elective and preterm births, fewer babies would need high-cost NICU care, and babies would have higher survival rates and a healthier start to life. At the same time, those at elevated risk from such conditions as gestational diabetes, obesity, or twin pregnancy can benefit from personalized care fostering healthy outcomes.

Although the relationship between quality of care and better health outcomes is recognized by the field, this relationship is not always reflected in the current U.S. payment system, which is characterized by a tendency to incentivize higher cost and lower quality care. In the maternity care context, vaginal births cost less, have fewer complications, and involve shorter stays, thus providing less reimbursement to hospitals; but they also require patience and often several hours of hard work by the women, as well as support from the care team. In contrast, cesareans are sometimes considered more convenient by women, practitioners, and facilities because of the shorter duration of labor and the ability to schedule in advance (Truven Health Analytics, 2013). In part, the rate of cesareans has increased 60% from the most recent low of 20.7% in 1996 because of this (Agency for Healthcare Research and Quality, 2011). This is despite the fact that they are considered riskier for both the mother and baby. ACOG and the

Society for Maternal-Fetal Medicine have both stated that this increase has not been accompanied by discernable gains in maternal or newborn health (American College of Obstetricians and Gynecologists, 2014).

Role of Episode Payment in Maternity Care

The goal of using clinical episode payments is to improve the value of maternity care by improving the outcomes and experience of care for the woman and her baby while reducing costs. Although the payment incentives in episode payment provide significant support for this goal, the design and implementation of the episode's care pathway(s) and delivery model(s) are also critical—for example, rates of cesarean births or early elective inductions could be impacted by changing protocols within a hospital. The CEP Work Group believes that the goal of episode payment should go beyond lowering costs, and that it should be designed such that it supports a more patient-centered approach to care. Specific goals of maternity episode payment include:

- Increasing the percentage of vaginal births and decreasing unnecessary cesarean births;
- Increasing the percentage of births that are full-term and decreasing preterm and early elective births;
- Decreasing complications and mortality, including readmissions and neonatal intensive-care unit (NICU) use;
- Providing support for childbearing women and their families in making critical decisions regarding the prenatal, labor and birth, and postpartum phases of maternity care and respecting those choices;
- Increasing the level of coordination across providers and settings of maternity care; and
- Consistently providing a woman- and family-centered experience.

Care improvements must occur across the continuum of prenatal, labor and birth, and postpartum care in order to support a more patient-centered approach to care. Episode payment can address the need for appropriate, high-quality, prenatal and postpartum care. Testing for potential problems (such as gestational diabetes or birth defects); monitoring the growth and health of the growing fetus and the woman; providing education to the woman on what to expect during and after birth; and supporting her in making decisions about her preferences for interventions, settings, and provider types can all lead to a more engaged and healthier mother. Postpartum care that supports the new mother in breastfeeding, baby care, contraceptive care, mental health, and self-recovery can have a lifelong impact on the health of both the woman and her baby. Yet these and other high-value services are not always effectively provided because the bulk of payment is focused on hospital-based labor/delivery services. Therefore, the goal of episode payment design in this realm is both to incentivize the delivery of the full continuum of services by holding providers accountable for their quality and coordination, and to decrease costs while improving the value of maternity care overall.

Fortunately, Medicaid (which pays for approximately 45% of births annually), commercial payers, and large purchasers have begun to develop episode payment initiatives for maternity care in recognition of the ways in which episode payment can drive higher-quality, lower-cost care (Kaiser Family Foundation, n.d.).

There are three general types of models in the market today that bundle all or some of the services for maternity care into an episode payment. See [Appendix D](#) for a table summarizing various initiatives. Examples of each model are below.

Comprehensive Bundle: Several initiatives, led by both Medicaid and commercial payers, define the episode as the prenatal, labor and birth, and postpartum time frame and include care for the woman and sometimes the newborn. This strategy acknowledges the importance of support throughout the entire maternity care experience to ensure the best outcomes for the woman and her baby. It is agnostic as to both the birth site and who manages the birth, and as to whether the birth is vaginal or a cesarean, but it is typically priced assuming a hospital birth.

Comprehensive Birth Center/Midwife Bundle: This provider-driven episode model includes the full continuum of services, much like the comprehensive bundles, but is priced based on midwife management and thus reflects the cost of a birth center birth. In this model, if a woman is referred to a hospital, then the hospital is paid a separate fee; the bundle is only for the midwife services and the fee for a birth center. In some cases, the midwife still manages the birth even if it is in the hospital, but the facility fee for the hospital is paid separately.

Blended Rate for Hospital Labor and Birth (Regardless of Delivery Type): Several purchasers and providers are implementing episodes framed specifically around hospital-based labor and birth and which do not include costs for prenatal or postpartum care or care for the baby. This model blends cesarean and vaginal birth reimbursement rates into a blended case rate for hospitals. The primary goal is to decrease cesarean rates. Hospital payments and the clinical professional fees are the same in this model, regardless of the delivery method. The episode price also includes the costs of postpartum complications, but no other postpartum costs are included.

As described in more detail in [Appendix D](#), maternity episode payment has been associated with increased use of preventive services, lower cesarean rates, lower readmission and complication rates, and lower early elective birth rates.

Recommendations: Maternity Care

Design Elements

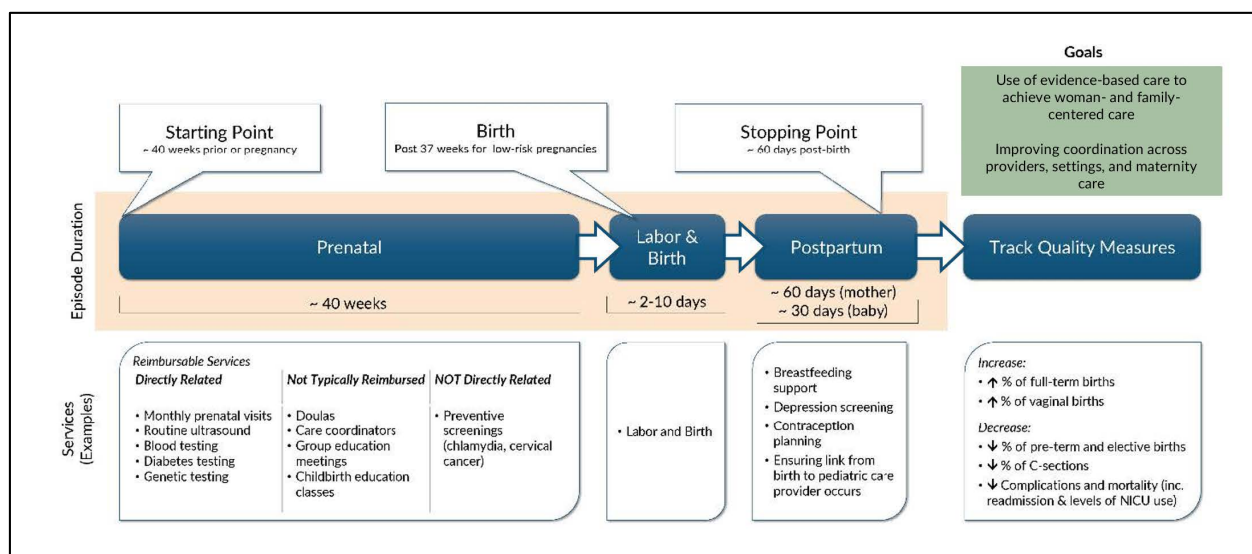
The design element recommendations reflect the CEP Work Group's research and analysis on a range of existing episode payment initiatives for joint replacement (see [Appendix C](#)). See Chapter 2, [Episode Payment Design Elements](#), for a summary of the recommendations described in more detail below.

1. Episode Definition

The episode is defined to include the large majority of births, including the newborn care, that are lower risk. While not necessarily lower risk, episode payment may also be considered appropriate for women who may be at elevated risk due to conditions that have defined and predictable care trajectories, such as gestational diabetes. As the CEP model matures, some groups with significant high-risk pregnancy experience and capacity may seek to manage the entire continuum of risk.

The CEP Work Group recommends defining the episode to include all services and care delivered during three phases of maternity: prenatal, labor and birth, and postpartum (Figure 7). Including these three phases within the episode, as opposed to narrowly defining the episode around labor and birth, which are arguably the costliest aspects of maternity care, is key to achieving the goals of episode payment. A focus on lower risk births will have significant impact as the large majority of births are considered low risk. However, women with conditions that develop over the course of the pregnancy or which have defined trajectories can also benefit. Over time, some providers who are experienced with higher-risk pregnancies may also seek to manage the continuum of risk underneath a CEP.

Figure 1: Maternity Episode Definition and Timeline



2. Episode Timing

The episode should begin 40 weeks before the birth and end 60 days postpartum for the woman and 30 days post-birth for the baby.

Including the entire pregnancy, the labor and birth, and the postpartum/newborn period within one payment recognizes the importance of prenatal and postpartum/newborn support for the health of the woman and her baby. However, some episode payment initiatives limit the time period for the episode to hospital care only and use a blended hospital case rate (blending payment for vaginal births with cesareans) for labor and birth. While this approach has been shown to decrease the rate of cesareans, the potential for improving on a broader set of outcomes encourages a more woman/patient-centered, coordinated approach across settings and could be increased by including prenatal and postpartum care in the episode.

The 60 days postpartum recommendation will allow for post-natal follow-up to occur and will ensure the woman receives needed physical and mental health care in a sufficient time period to be able to take care of her baby. A lesser amount of time is recommended for the baby to ensure that accountability was limited to newborn care.

Consistent prenatal care, in addition to providing continuous care for the woman, can identify high-risk markers, such as gestational diabetes. Prenatal care can also include childbirth education to support a woman through the mental and physical challenges of vaginal delivery and provide other supports during pregnancy, giving birth, and the transition to new parenthood. High-quality postpartum support can lower readmission rates, increase rates of breastfeeding, reduce postpartum depression, and provide a strong foundation for the woman as a caregiver to her baby and her family.

There may be concerns among stakeholders that including prenatal and postpartum care in the episode can lead to decreased access to or limited delivery of those services by a provider trying to utilize fewer resources to maximize potential savings. Another concern regarding postpartum care is whether the clinician who manages the birth should also be accountable for the postpartum period, particularly when the postpartum period may include some pediatric care. The Work Group believes these concerns, although valid, are manageable. For example, some initiatives require the collection and monitoring of certain performance metrics, such as number of visits and delivery of certain prenatal tests and screening before the birth and the provision of breastfeeding support or contraceptive advice afterwards to ensure their delivery. Concerns have also been raised about whether to include women who do not opt to access prenatal care or who access prenatal care later in their pregnancy. To address these concerns, one bundling initiative adjusts the episode definition and price based on differing numbers of prenatal visits. Another option is to exclude women who do not have a minimum number of visits from the episode design.

Recognizing these concerns, it is nevertheless optimal for maternity care episode payment to include prenatal and postpartum care in addition to labor and birth, in order to fully leverage the opportunity to improve value and outcomes across all three phases of maternity care.

3. Patient Population

The episode should primarily include the large majority of births, including newborn care, that are lower risk. While not necessarily lower risk, episode payment may also be considered appropriate for women who may be at elevated risk due to conditions that have defined and predictable care trajectories, such as gestational diabetes. As the CEP model matures, some groups with significant high-risk pregnancy experience and capacity may seek to manage the entire continuum of risk.

There are two issues of particular importance in defining the population in the episode: whether to include newborn care and whether to include all pregnant women or a subset of less risky women.

Including the Baby: Some current maternity episode payment initiatives include the baby, while others include only care for the woman. The Work Group recommends including the baby in the episode population, given that the primary focus of the episode is the birth and the primary goal is both a healthy woman **and** a healthy baby. Stakeholder readiness to implement maternity care episode payment can be a factor in determining whether to include the baby in the population. In the beginning of these initiatives, even limiting the episode to the childbearing woman can yield improvements in value and may be less complex for the provider to implement. However, the Work Group recommends transitioning to a design that includes both the woman and baby as soon as possible.

The inclusion of the baby in the episode population raises issues related to assigning an accountable entity (e.g., when managing the pregnancy requires a neonatology specialist in addition to or instead of the OB/GYN or the midwife). Although these cases are relatively rare, such instances highlight the need for cooperation among all providers across the episode, as well as the need for clear policies on the level of risk when the provider identified as the accountable entity has limited ability to manage care across providers.

Defining the Pregnancy Level of Risk: The Work Group recommends that, at least in the beginning of the implementation of CEP models, the episode should primarily include the large majority of births, including newborn care, that are lower risk. The Work Group also supports CEP for women who may be at elevated risk because of predictable risk factors that have defined care trajectories, such as gestational diabetes. For both lower and elevated risk pregnancies, CEP may offer opportunities for better, safer care at lower cost. As the CEP model matures, some groups with significant high-risk pregnancy experience and capacity may seek to manage the entire continuum of risk.

There is ample opportunity in this group of women for CEP to provide incentives to discourage the use of unnecessary services and increase the use of services that are shown to be effective but underused. Beginning with lower risk pregnancies also ensures less variation in the complexity and the risk that providers will absorb. However, the Work Group also believes that women at higher levels of risk could benefit.

Some high-risk pregnancies introduce a level of variability and potential risk for the accountable entity that could be difficult to manage, particularly for small practices. In the event that a pregnancy results in

a baby who requires intensive care, stop-loss policies should be established to mitigate potential unanticipated risks of true outliers. Critical to the episode population design element is defining the exclusions. Definitions vary, depending on when during the maternity period the determination is made and by whom.

Defining risk levels can be difficult because they can change over the course of the episode and can be influenced by the care delivered. Initial determination of whether a woman is “low risk” can be made at the first prenatal visit, but it may change over time. Healthy People 2020 uses a definition for calculating low risk for cesarean rates that is based on factors present immediately prior to birth—full-term, single, head-first presentation (Office of Disease Prevention and Health Promotion, 2016; Stapleton, Osborne, & Illuzzi, 2013). A higher-risk pregnancy is one which puts the mother, the developing fetus, or both at an increased risk for complications during or after pregnancy and birth. Clinical parameters for identifying a high-risk pregnancy can include:

- Pre-existing health conditions, such as diabetes, hypertension, epilepsy, cancer, renal disease, obesity, advanced maternal age, and mental health conditions;
- Lifestyle choices: Cigarette smoking, alcohol use and illegal drug use;
- Previous pregnancy complications, such as genetic or congenital disorder, stillbirth, and preterm delivery; and
- Pregnancy complications, which can also arise during the pregnancy and birth, such as: Multiple gestation, fetal growth restriction, prolonged premature rupture of membranes, or placenta abnormalities.

As evidenced by the list above, some of the excluded cases may not be clear until after the birth. CEP may be helpful in effectively managing complications as they arise. The Work Group advises those designing initiatives to consider the different levels of risk and develop exclusionary criteria exclusions of importance to their populations. If there is concern over the ability for providers to accept the risk of a higher-risk population, there are ways to limit risk through risk adjustment, including factors that might arise during pregnancy. Stop/loss limits will be discussed in the discussion on the Level and Type of Risk below. See [Appendix K](#) for links to resources that provide lists of exclusions.

4. Services

Covered services include all services provided during pregnancy, labor and birth, and the postpartum period (for women) and newborn care for the baby. Exclusions should be limited. Initiatives should also consider including high-value support services, such as doula care and prenatal and parenting education.

All services currently covered during prenatal care visits, labor and birth, postpartum care, and newborn care should be included as part of the episode services. This includes services such as genetic testing, imaging, and anesthesia that are typically provided to pregnant women. We note the time frame for newborn care is shorter than for woman’s care; this is intentional to limit the services included in the

price to those needed to address neonatal care needs. The Work Group considered excluding specific newborn services but determined that limiting the time frame to 30 days post-discharge would ensure that the bulk of ongoing healthy baby pediatric care, such as immunizations, would be delivered outside that time frame.

Central to the recommendation of included services is the issue of currently underused services. Some underused services are typically covered in today's delivery systems, but others are not. Each set of services creates opportunities for effective implementation of a maternity care episode payment strategy.

Currently Covered but Underused Services Not Directly Related to Pregnancy and Birth: Some initiatives see the OB/GYN, midwife, or family physician as the primary care provider during the pregnancy, birth, and postpartum periods and view the prenatal care period as an opportunity to perform preventive screenings, such as for screenings for chlamydia or cervical cancer. These screenings are not typically related to pregnancy, but it may be important to include them in the episode price, as they are commonly provided to women as part of their prenatal care and, if present, could impact care during the pregnancy (American Academy of Pediatrics, 2013). Another option might be to pay separately for them through FFS, but include them in episode quality metrics, perhaps with a pay for performance incentive in addition to the bundled payment incentives.

Commonly Uncovered (and Underused) High-Value Services Directly Related to Pregnancy and Birth: A variety of services that have been shown to improve a woman's birth experience and potentially improve outcomes are not commonly part of typical benefit packages. One important service that clinical episode payment is designed to encourage is greater care coordination across providers by the providers themselves. Typically, providers are expected to provide some level of this coordination without additional reimbursement. Other services not typically covered are those provided by doulas, care coordinators (e.g., for shared decision-making, shared care planning, community referrals, and follow-up on such matters as smoking cessation, mental health referrals, and completion of postpartum visits), group prenatal visits, and breastfeeding support. The use of doulas alone—or continuous support for women during childbirth—has been associated with a 28% reduction in cesarean birth (Hodnett et al., 2013).

Although bundling currently covered services could result in efficiencies and improved outcomes, providing incentives to increase the use of the enhanced services described above may lead to even higher-value care. Prospective payment (as described in the Payment Flow Recommendation below) may allow for greater provider flexibility to deliver these services, as it does not rely on a direct payment from the payer for individual covered services. Evaluation of the enhanced prenatal care models—through maternity care homes, group prenatal care, and birth centers—being tested within the CMS Center for Medicare and Medicaid Innovation's Strong Start initiative provides lessons for the types of services that support maternity care episode payment models (see Patient Engagement recommendation). Regardless, it is important to monitor the shift in service patterns to ensure that the initiative results in the highest value care feasible and does not lead to unintended consequences, such as restricting the use of important services because of the risk involved in the episode payment.

5. Patient Engagement

Engaging women and their families is critical in all three phases of the episode—prenatal, labor and birth, and postpartum/newborn—to contribute to the foundation for healthy women and babies.

Engaging the patient across the full episode of maternity care provides important opportunities to contribute to maternity care episode payment success. It is not uncommon for pregnant women to want to understand the changes they are experiencing and to learn about care options. Many prioritize being involved in making decisions about their care. They are motivated to contribute to healthy outcomes for themselves and their babies. Moreover, given that most are embarking on a long period of having disproportionate responsibility for managing health care across generations, the entire maternity care episode is an optimal time to help women become effective users of health care.

It should be stressed as early as possible in the maternity experience that the woman's choice of a care provider and birth setting are interrelated. Given the extent of practice variation, understanding these choices could greatly impact their care options, experiences, and outcomes. With the growth of meaningful public reporting of performance results, and evidence of women's considerable interest in finding and using such information, many women would benefit from being directed to relevant resources and having access to guidance from someone who could help them identify and interpret available and relevant comparative quality information (Declercq et al., 2013). Health plans are well positioned to support women in this way and, as a pregnancy proceeds, to encourage them to assess whether their chosen care arrangements prove to be a good match with their values and preferences. However, it is also important that providers understand the choices a woman faces in her area and are willing to help her make them, because not all health plans will be set up to support these discussions, and the woman may go first to the provider. It may also be helpful for a primary care provider to assist a woman in these decisions. This level of involvement can help a woman obtain the type of high-quality care she prefers and foster quality-based competition in the marketplace.

After a maternity care provider is selected, shared-care planning should be integrated throughout the episode, including goal setting, shared decision-making, and documenting preferences and decisions, with the understanding that circumstances can change over time. Optimally, information technology makes the care plan available across the episode at all sites of care and to all members of the care team, including women and families.

Some patient engagement efforts involve enhanced services, such as the maternity home and group prenatal visits being studied in the CMS-sponsored Strong Start demonstration (Centering Healthcare Institute, n.d.; Hill et al., 2016). In the maternity care home model, clinical or community health worker care coordinators are assigned to work with pregnant women to support their goals, provide referrals to community resources (such as smoking cessation programs, childbirth education, mental health services, breastfeeding support), foster successful care transitions, and ensure that women attend postpartum visits. The Year 2 Strong Start evaluation suggests that these enhanced services are associated with a decrease in interventions that are not medically indicated and that women are pleased with this type of care. Strong Start participants experiencing enhanced prenatal care in birth

centers had a reduction in cesareans and other interventions, had strong breastfeeding results, and were especially happy with their experiences (Hill et al., 2016). In the context of this clinical episode payment model, a care coordinator is also well positioned to ensure that childbearing women complete self-reported surveys of experience and outcome. In addition, women who have access to doula services, including prenatal and postpartum support, experience lower frequency of cesarean sections and increased breastfeeding (National Partnership for Women & Families, 2016).

High-quality childbirth education classes are another important way to engage women in learning about options and making informed decisions about their care. Benefit policies vary, but many Medicaid programs include childbirth education as a covered benefit. Healthy People 2020 includes a goal to increase the number of women who attend childbirth classes (Office of Disease Prevention and Health Promotion, 2016). These classes can decrease a woman's fears about labor and birth and are shown to be a critical factor in reducing early elective births.

Other examples of tools for patient engagement include shared decision-making aids, such as the decision aids developed by the Informed Medical Decisions Foundation and [Childbirth Connection](#) (now available through Healthwise) and the use of mobile devices, including Text4baby, to access health information and services that provide individualized information based on the pregnancy stage and individual needs. An online inventory identifies decision aids by topic rated according to international standards (Ottawa Hospital Research Institute, 2016).

Furthermore, based on the success of the Open Notes project, a growing proportion of patients are gaining full access to their electronic health records (Bell et al., 2015; Esch et al., 2016; Walker, Meltsner, & Delbanco, 2015). Another initiative—Maternity Neighborhood—helps clinicians and women communicate and query each other, track women's progress, schedule appointments, and share educational resources (Maternity Neighborhood, n.d.). Meanwhile, the initiative enables women to review, discuss, and contribute to their health record. Existing experience suggests that full and interactive access to health records may contribute to the success of episode payment models. Patient portals can deliver a broad range of user-friendly, evidence-based tools and educational resources. While not yet standard practice, a wide variety of patient engagement support is now available (see [Appendix G](#) for a list of resources, including patient engagement tools).

The maternity care episode should support the standardized use of patient engagement strategies and models, particularly given that these strategies are typically underutilized. In fact, it may be feasible to encourage some reinvestment of a portion of overall episode savings into services that support such engagement. One provider-driven initiative specifically included additional services such as doulas and patient navigators and found them to be of significant value in engaging patients and improving outcomes.¹

Furthermore, to consistently improve upon patient-engagement activities, it will be important to use patient-activation metrics to track overall patient engagement. A change score for the Patient Activation Measure (a healthy person version recently endorsed by the National Quality Forum [NQF]) administered near the beginning and end of pregnancy would incentivize those participating in the episode payment to build women's skills, knowledge, and confidence as they approach giving birth and new parenthood.

¹ Providence Health and Services initiative, article and e-mail conversation. April 2016. See [Appendix D](#) for more detail.

A final approach to engaging women is to communicate, in plain language, that they are receiving their maternity care within an episode payment model and to explain the implications in terms of their participation and how the model affects cost sharing, health care quality, and health care outcome.

6. Accountable Entity

The accountable entity should be chosen based on readiness to re-engineer change in the way care is delivered to the patient and to accept risk. In this model, the accountable entity will likely require a degree of shared accountability, given the number of clinicians working to care for a patient.

Overall Readiness: The question of readiness to both re-engineer the care delivery model for the patient and, in the process, accept the financial risk they might incur, is central to the determination of what entity or entities should be accountable. Payers should work with the accountable entity to assess their readiness and promote collaboration to allow for multiple providers within a maternity care team to share the risk and reward in such a manner that all are engaged in creating a seamless, efficient, patient-centered care process. This process can require active participation across the continuum by aligning incentives across contracts in the private sector, because the payer often has contracts directly with providers.

While local situations will vary, the CEP Work Group favors clinicians as the preferred accountable entity. The accountable clinicians are more likely to be involved throughout the entire pregnancy. In addition, if FFS represents the payment methodology with retrospective reconciliation, hospitals may have less of an incentive to decrease practices that provide higher reimbursement because the bulk of the costs for this episode lie in the labor and birth facility fees.

Optimally, accountability would be shared among all involved providers, if incentives are aligned. However, it can be difficult from a legal and financial perspective to create the necessary structures to share accountability. In circumstances where the provider is a health system encompassing both the facility and the clinicians, accountability could more easily be shared between the clinicians and the facility. Some hospitals own birth centers, and this may be an ideal situation. One initiative brought together the facility and the providers through a birth center as the accountable entity. In this example, if the woman needs to go to the hospital for the actual birth, the hospital facility fee is paid outside the bundle. Others use a blended (vaginal and cesarean) case rate with a discount built in to encourage lower cesarean rates and, in these cases, hold the hospital and clinicians accountable separately for the part of the episode price that is allocated for each. In Medicaid, the process of sharing accountability may be affected in states that have regulatory barriers against one provider assigning payment to another. This is discussed below as well, in Recommendation 7, Payment Flow.

Another challenge related to assigning the accountable entity relates to situations in which the newborn needs intensive care. In such an instance, the newborn specialist will take over as the care manager. While we anticipate that limiting the population to lower-risk pregnancies, stop/loss limits and risk adjustment may limit the risk of the assigned accountable entity. It will be important for the team that managed the birth to incorporate the newborn specialist into the process.

In some cases, the practice responsible for the woman's care before the birth may not be available to manage the actual labor and birth or the hospital may use a "laborist" to manage the birth. Regardless, the determination of the accountable entity and alignment and coordination across the entire episode of care must take into consideration the specific context in which the care is delivered.

One question that arises in considering alternatives to hospital births is how widespread the availability is of birth centers or home births. According to the American Association of Birth Centers, there are 325 birth centers in the nation in 38 states. There are 11,114 certified nurse midwives, who practice primarily in hospitals, but also in birth centers and home births, with 1,904 certified professional midwives, who manage both birth center and home births. In contrast, there were 33,624 OB/GYNs in 2010. While not present in all regions, many women have access to these lower cost birth options, which also result in good birth outcomes (Cheyney et al., 2014; Health Management Associates, 2007).

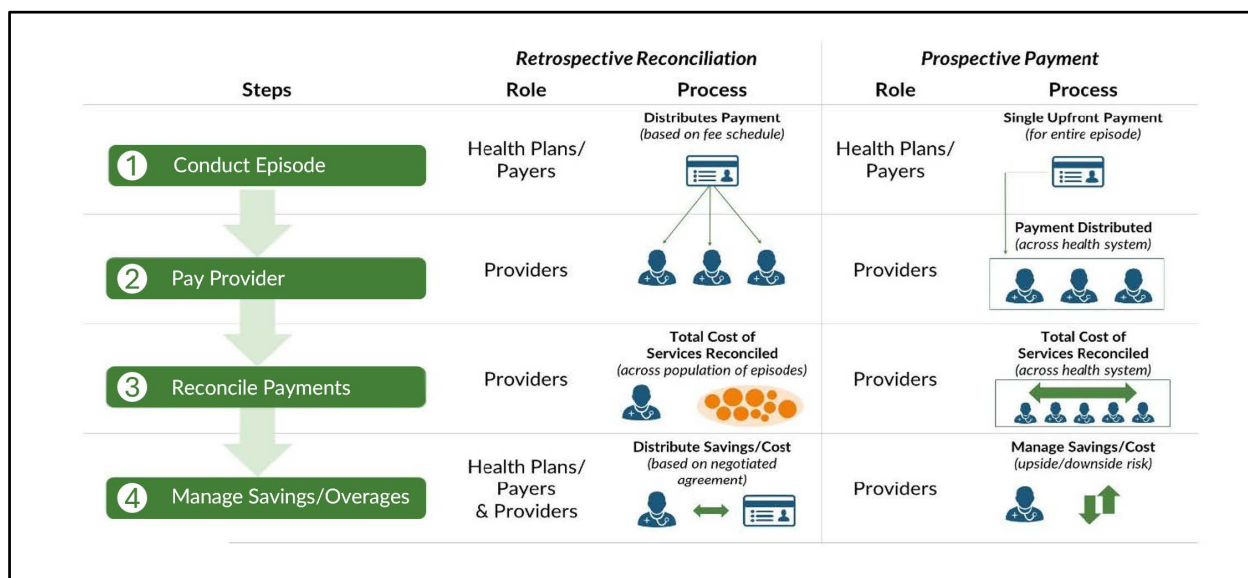
7. Payment Flow

The unique circumstances of the episode initiative will determine the payment flow. The two primary options are 1) a prospectively established price that is paid as one payment to the accountable entity and 2) upfront FFS payment to individual providers within the episode with retrospective reconciliation and a potential for shared savings/losses.

Episode payments are typically dispersed via either prospective payment or retrospective reconciliation (Figure 8).

In **Prospective Payment**, payment is provided for the whole episode, including all services and providers, and paid to the accountable entity, who subsequently pays each provider in turn. This payment typically occurs after the episode has occurred but is termed "prospective," as the price of the episode is set in a prospective budget ahead of time, and the savings or losses are not shared with the payer; they are simply a function of how well the accountable entity (and the providers with whom it coordinates) manages the predetermined price. In **Retrospective Reconciliation**, individual providers are each paid on a typical FFS basis and then there is a reconciliation between the target episode price and the actual average episode price after a period of time across all the episodes attributed to a provider. Based on a specific formula, which is either negotiated or established by the payer, the accountable entity can share in gains and/or losses with the payer. In some instances, gains or losses are also shared among providers in the episode, in order to encourage collaboration and coordination across settings. These types of gain-sharing arrangements need to be considered within the parameters of federal laws that may impact their design, which is discussed in further detail in the regulatory infrastructure section of the [Operational Considerations](#) section of this White Paper.

Figure 2: Retrospective Reconciliation vs. Prospective Payment



Prospective payment is an option in some circumstances—particularly when the accountable entity is a health system that already integrates the clinician and facility payment. As a practical matter, it may be more difficult to implement a single prospective payment when multiple providers involved in delivering the care do not already have mechanisms for administering payment among themselves, such as is the case in integrated systems. Increased use of prospective payment can accelerate development of various supporting mechanisms to aid in this process. One caution on prospective payment in an FFS Medicaid program is that there may be regulatory barriers for one provider assigning payment to another. Legal counsel should be sought in this scenario. However, retrospective reconciliation is easier to administer within our current FFS environment, because it requires fewer changes from current practice where the prevailing model is an open, non-integrated system. In addition, retrospective reconciliation is more prevalent in current episode initiatives. It does not require providers to develop the capacity to pay claims and allows for better tracking of the resources used in the episode. It also can be built on an existing payment system.

Nevertheless, prospective payment has advantages in that it is a clear break from the legacy of FFS payment and may encourage greater coordination and innovation in episode payment. For example, in a prospective payment initiative, it may be easier to be flexible in delivering otherwise uncovered services, such as childbirth education or care coordination, which assist providers in achieving the goals of fewer preterm deliveries and a higher level of vaginal births. Overall, it will be important for payers in specific regions to coordinate their strategies on payment flow, as it is easier to administer for providers if they are paid the same way.

8. Episode Price

The episode price should strike a balance between provider-specific and multi-provider/regional utilization history. The price should 1) acknowledge achievable efficiencies already gained by previous initiatives; 2) reflect a level that potential provider participants see as feasible to attain; and 3) include the cost of services that help achieve the goals of episode payment.

Pricing episodes involves significant complexity, both to assure the accuracy of estimates and to develop a pricing structure that is fair to providers while encouraging innovation. The goal should be to establish a price that encourages competition among providers to achieve the best outcomes for the lowest cost. However, certain issues need to be taken into consideration, including accounting for variation in the risk of the population, the impact of differing fee schedules and negotiating power, shifts in insurers mid-stream, regional variation in availability of types of providers, and ensuring that payments are sufficient to adequately reimburse for high-value services.

The monetary rewards or penalties that an accountable entity may experience are determined in large part by the manner in which the episode price is determined. In addition, there are several key aspects that interact in the establishment of the episode price. All payers will expect some return on their investments in this payment design and can choose a variety of mechanisms to generate some level of savings. It is also important to consider including in the target episode price costs for historically underused services, as discussed in Recommendation 4, and additional services, such as a patient navigator/care coordinator, group visits, a doula, or breastfeeding support. Furthermore, whether to build in savings for improvements, such as lower cesarean rates, is also a consideration.

Typically, the target episode price is set using some combination of regional and provider-specific claims data for a period of time that includes a sufficient number of cases used in estimates for the coming year. In some cases, the payer can also include an estimate of a decrease in costs based on quality improvements, such as lower cesarean rates or less need for NICU care. The Work Group recommends balancing regional-/multi-provider² and provider-specific cost data:

Balancing Regional- and Provider-Specific Data: Cost data should reflect a mix of provider and regional claims experience. The goal of including regional, rather than market-level data, is to ensure that there is enough variation in episode cost. This mix will also ensure that the established episode price takes into consideration the unique experience of the specific provider, and that the goals are set based on what is feasible in the region. Risk adjustment will be needed during this process to adjust for the unique characteristics of the population the provider serves. If the payer is a national payer, it may be more difficult to address specific provider issues and will require consideration of the use of national claims experience to ensure parity across regions. Over time, as performance becomes less variable, it may be

² For purposes of this paper, region is not defined. The region will be defined as a combination of the experience of multiple providers. We use the term “regional” to reflect this assumption.

useful to lessen the proportion of the episode look-back period that is based on the organization's specific experience.

Regional Costs: Using region-level claims data allows the payer to take into account the costs of multiple providers within a region, reflecting the fact that one provider's costs may not be representative of the entire region. It also addresses the variability that may exist for a provider with a low volume of cases. However, the concern with using regional claims is that if, as a whole, providers in that region have already achieved a certain level of efficiency, they may be less able to achieve further savings. In essence, these regions—or the providers in them—will argue that an efficient region will be “punished” for its previous work to achieve these efficiencies. On the other hand, if the region, on average, has a higher per bundle cost than other regions (or specific providers within the region), the payer may not achieve as great a level of savings than if the episode price was to be set at a national or provider-specific level. While basing some part of the price on region, it is also important to note variation across regions and to consider whether variation across the regions is warranted or not. It is important to look at this closely, and not just “bake in” regional variation if there is not objective reason for doing so.

Provider Costs: Provider-specific costs are the actual costs for the provider's previous patients. For example, if the OB/GYN practice is the accountable entity, the payer would conduct the analysis using the current episode definition and apply it to its pregnant patients over the past two years. The challenge is that although these costs may be accurate for a given clinical practice with a given payer, they may build in existing efficiencies that make it more difficult to achieve savings or leave in place built-in inefficiencies that limit the savings for the payer.

One challenge in maternity care is that different providers may have different episode costs. Consequently, payers may take various approaches to episode pricing as a function of other factors, including network configuration, benefit incentives, and preferred mechanisms for coming to agreement on pricing. For example, because there is significant variation in cesarean section rates across providers, as well as varying prices, payers will need to determine with which providers they want to base the episode. Determining what level of cesarean rate to build into the price will vary based on the payer's network and negotiating power, or it may impact the decisions the payer makes regarding with which hospitals to contract. It is also the case that services delivered at one hospital may be more or less expensive based on the fees they have negotiated with payers. Another example of a challenge specific to maternity is the absence of uniform billing codes for birth centers across payers. This may require a benchmarking process that utilizes different, or proxy, billing codes.

Significant variation in costs between hospitals and birth centers can also greatly impact episode cost. Research increasingly reveals that births managed by midwives and births in birth centers are not only less expensive than hospital births but also often lead to the same, if not better, outcomes (Howell, et al., 2014; Johantgen et al., 2012). If a woman chooses to go to a birth center, the cost structure is significantly lower than if she chooses to give birth in a hospital. A strategy might be one where the payer builds a network either with hospitals that have lower cesarean rates or with incentives for women to more fully utilize and expand access to birth centers in their region. The bundled price could be based on that lower intensity birth model but may only apply in that setting.

Incentivize More Efficient Levels of Practice: In addition to historical provider and region-level data, the episode price should be based on the performance of the better performers in a particular market, such that all providers can see that the episode price and the quality metric performance thresholds are feasible to achieve. If a provider's performance is already at a relatively efficient level, it will need to see

some reward for that achievement at the same time that low performers will have an incentive to improve.

The episode price can be revised over time to ensure continual improvement by both the more and less efficient providers. In this way, the episode price automatically integrates savings and simultaneously incentivizes a compression of variation in cost and quality across all providers. Finally, the episode price should take into account services that are historically under reimbursed, and thus, underused, but are of high value to the patient. Care coordination, patient engagement, shared decision-making, and assessment of patient-reported pain and function are examples of services that could fall under this category.

Other Factors Impacting Episode Price

There are many other factors that should be used in developing the episode price, though the ability to do so will depend on the availability of data and analytic tools. These include:

Socio-Economic Status of the Patient Population: There are a number of socio-economic factors that have a significant impact on a patient's health status prior to pregnancy, access to care, and post-partum outcomes for the woman and the baby. These include income, literacy status, living status (living alone, living in a community without family or other supports nearby), and availability of transportation (both in general, and to care settings), among others. Certain socio-economic factors may align with a specific payer category, whether it be Medicaid or commercial payers.

Public vs. Private Payers: There are differences between public and private payers that should be acknowledged and reflected in the episode pricing. In addition to the socio-economic status of the patient population, as described above, there is also a difference in how overall pricing is set. For private commercial payers, pricing is an element of negotiation; in the public payer realm, prices are set by the public payer, if paid on a FFS basis. Managed care plans in Medicaid and Medicare will negotiate with providers, as they do in the commercial market. Either way, this will impact the level at which the episode price is set, as will the market in which the payer operates. If participation is voluntary, some form of negotiation will be necessary—whether through direct discussion or through the public process of rulemaking. If the initiative requires participation, it may be easier to determine an episode price. However, the price will need to be one which is realistic for providers.

Trusted Empirical Data: One challenge is the ability for payers and providers to understand the variation in the costs of the episode across their region. Determining the appropriate price requires empirical data from a trusted source. The availability of these data to identify the opportunities for efficiency is critical to the success of these initiatives.

Episode Payment Flow: The episode price can be set retrospectively in an episode model for which retrospective reconciliation is the selected payment flow. Similarly, the price can be set prospectively in a model designed around prospective payment. Thus, setting the episode price and the payment flow should be part of an integrated process.

Patient and Family Definitions of Value: Information on the types of services that are most valued by patients and their families should be considered in determining the episode price. This information would not typically be captured via historical data, but rather via engagement between providers and their patients, as well as between purchasers and their employees. For further discussion on this topic, please read the paper on Financial Benchmarking, [click here](#).

9. Type and Level of Risk

The goal should be to utilize both upside reward and downside risk. Transition periods and risk mitigation strategies should be used to encourage broad provider participation and support inclusion of as broad a patient population as possible.

The goal when setting an episode price should be to incorporate both upside reward and downside risk. Without downside risk (where the actual costs exceed the target episode price), the accountable entity and other involved providers have less incentive to make the necessary care redesign changes to create efficiencies and improve patient care. Furthermore, increases in the cost of care delivery from year to year can negate the benefits of upside sharing of savings because of the reliance on historical data. Prospective payment by definition includes both. Retrospective reconciliation with upfront FFS payment can be designed to only share in savings (upside reward) or to share in losses (downside risk). In some cases, payers will begin with upside reward sharing to allow for the provider to establish the infrastructure and reengineer care practices to become capable of managing downside risk in the future.

However, taking on downside risk may be difficult for smaller providers, including many OB/GYN, family physician, and midwife practices that are the providers best able to support a new model of maternity care. Furthermore, inclusion of downside risk may be a barrier to provider participation when the initiative is voluntary.

It is important to acknowledge that several of the primary goals of the maternity care episode (for example, decreasing cesarean and NICU use) will result in lower per patient reimbursement for the hospital. This means that if the clinician practice is the accountable entity, and there is no upside reward or downside risk to the hospital where the majority of births will occur, then the providers—the clinicians and the facilities—will have very different incentive structures. This source of tension will need to be explicitly addressed, possibly through some type of shared accountability, which includes the ability to share in the savings or risk for any potential losses.

To address concerns related to the level of risk, payers can utilize strategies to limit that risk or to transition (phase in) to downside risk arrangements over time. This is particularly important if the initiative is voluntary and participation would be limited without the option for upside shared savings only. Decisions about type, level, and timing of upside and downside risk illustrate the tensions between

Safety Net Providers and Risk

A primary goal in designing any alternative payment model arrangement is guarding against unintended consequences. In episode payment for maternity care, the unintended consequence that concerns all providers—but perhaps safety net providers most of all—is the potential for decreased access to care for patients with poor health status, which puts them at increased risk for poor outcomes. This may be correlated with lower socio-economic status if the provider feels that it will not be possible to provide the full continuum of care and achieve positive outcomes within the episode price. Safety net providers in particular may need time to develop adequate reporting and staffing infrastructure; and build relationships across historically siloed organizations in order to feel prepared to take on the risk in an episode payment model.

payers and providers: More attractive risk arrangements for payers may be less attractive for providers and vice versa. Consequently, in the private market, these factors will become part of the ongoing negotiations among network participants and payers. In public programs, these negotiations will happen through the political and policy process of rulemaking.

Mechanisms for Limiting Risk

The level at which those risk limits are set is a critical design element. There are several issues to consider, such as whether the accountable entity will be required to pay the full difference between the total dollars over the established episode price and the actual episode costs back to the payer, or whether limits will be established. Limits are especially important considering that an accountable entity is accountable for care provided by other providers. In the case of maternity care, the facility accounts for the largest percentage of overall costs. What the accountable entity (the clinician practice) is paid through FFS payment is limited compared to the liability associated with the entire cost of the episode over the estimates for the entire population of included births.

One risk-mitigation strategy already addressed is limiting high-risk cases through exclusions. Following are additional strategies used by various initiatives to limit risk in an episode payment while still maintaining as broad an episode population as is feasible. These are often, but not always, used in tandem.

Risk Adjustment: Risk adjusting the episode price, based on the severity within the population in the maternity bundle, is one risk-mitigation strategy. Most initiatives will include a list of included and excluded women and then also have a list of factors that would be used to adjust the episode price. There are a variety of approaches to capturing patient characteristics, risk factors, and other parameters that predict maternity care episode expenditures. For example, the Health Care Incentives Improvement Institute's (HCII) evidence-based case rates create a variety of patient-specific episodes that re-calibrate based on various patient-specific severity factors. The maternity bundles in Tennessee are also adjusted based on a variety of factors, including risk and/or severity factors captured in recent claims data, such as early labor, preeclampsia/eclampsia, and behavioral health conditions. Although risk-adjustment methods are limited in their predictive accuracy based on claims alone, over time, these factors and their weights can be updated to become more accurate based on empirical experience. At the same time, we recognize that risk adjustment can potentially lead to gaming. For example, a provider may adopt more intensive coding to either increase the reimbursement or to ensure the patient is not included in episode population. Or a provider may refer more difficult patients to other practices to limit their own panel to only the lowest-risk women. This will need to be monitored to ensure that codes are not being overused to obtain higher payments rather than to accurately reflect the condition or risk of the pregnancy. For further discussion on this topic, please read the paper on Financial Benchmarking, [click here](#).

Stop-Loss Caps, Risk Corridors, and Capital Requirements: Stop-loss caps are already discussed in the context of the included population as one way to limit the risk of very high-cost newborns at an individual patient level. Stop-loss caps also can be used on an aggregate level across the population. Risk corridors limit the exposure of the accountable entity by establishing an upper limit over which the accountable entity will not have to pay back any amount of dollars the overall costs of the episodes may go over the established episode price. These corridors can also be placed on the upside reward, such that the incentives to limit care are not as great as they would be otherwise. Another risk-mitigation strategy is to require the accountable entity to maintain a certain level of capital, so that it can cover

losses and invest in necessary infrastructure. While these types of arrangements are often used to limit insurance risk, the same concepts can also be used in this context to limit service risk.

10. Quality Metrics

Prioritize use of metrics that capture the goals of the episode, including outcome metrics, particularly patient-reported outcome and functional status measures; use quality scorecards to track performance on quality and inform decisions related to payment; and use quality information and other supports to communicate with and engage patients and other stakeholders.

A wide variety of measures are in use for maternity care that could be used to support the goals and operation of clinical episode payment. At this time, the Work Group does not have specific recommendations for the most effective measures but rather provides examples of the types of measures of maternity and newborn care quality. The Work Group also notes the importance of the development of patient-reported outcomes and functional status (particularly postpartum) measures.

Those already implementing maternity bundles use a variety of metrics, but there seems to be two primary categories or strategies. First, there are measures of whether certain processes or services were provided due to concerns that they might be underutilized absent some mechanism for accountability and because they are practices known to improve outcomes. These include measures such as the number of prenatal visits, screening tests, breastfeeding support, and depression screening. Second are measures of outcomes, which can correlate to changes in care delivery. These include rates of vaginal births/cesareans, preterm and early elective births, rates of episiotomy, exclusive breastfeeding in the hospital, and patient complications. These two categories together can capture the quality of care delivered in the prenatal, labor and birth, and postpartum time frame.

In selecting the metrics for an episode payment model, it is important to recognize the preference for alignment of measures across programs, use of nationally endorsed measures, and a limited, tight set of measures with a low burden of collection. The Work Group supports these principles whenever they can be met with measures that incent priority opportunities for improving maternity care. A measure that meets these criteria without the potential for high impact among childbearing women and newborns would not be useful for this purpose.

Potential Measures: In the spirit of building on existing measurement consensus processes, the Work Group recommends consideration of the applicable measures recently released from the Core Quality Measures Collaborative (CQMC) that could be used in the maternity bundle (Centers for Medicare and Medicaid, 2015a). Measures in the CQMC OB/GYN Core Set that are only applicable to gynecological care and not obstetric care are not included here. However, measures in the core set that may not be considered directly related to maternity care but are often delivered either during the prenatal or postpartum period are included. The CQMC divided the set into accountability for the OB/GYN and for the hospital/acute care setting, but they could also be used for quality measurement of an episode of care.

CQMC measures related to the ambulatory OB/GYN setting include:

- Frequency of ongoing prenatal care;³
- Cervical cancer screening; and
- Chlamydia screening and follow up.

CQMC measures identified for the hospital/acute care settings include:

- Incidence of episiotomy;
- Elective delivery for vaginal or cesarean at ≥ 37 and < 39 weeks of gestation completed (PC-01);
- Cesarean (nulliparous women with a term, singleton baby in a vertex position delivery by cesarean section, PC-02);
- Antenatal steroids under certain conditions (PC-03); and
- Exclusive breast milk (PC-05).

CMS Medicaid and CHIP Child and Adult Core Measures for Maternity Care: As illustrated in Table 7, CMS worked with state Medicaid agencies to develop a core set of child and adult measures that include some maternity metrics of importance to that community.

Table 2: Medicaid and CHIP Child and Adult Core Measures for Maternity Care⁴

	Source	Adult Core	Child Core	CQMC
PC-01: Elective delivery	NQF 0469	X		X
PC-03: Antenatal steroids	NQF 0476	X		X
Timeliness of Prenatal Care	NQF 1517	X	X	
PC-02: Cesarean Section	NQF 0471		X	X
Live births less than 2500 grams	NQF 1382		X	
Frequency of ongoing prenatal care	NQF 1391		X	X
Behavioral health risk assessment for pregnant women	AMA-PCPI		X	
Pediatric Central Linked Associated Bloodstream infections: neonatal ICU and pediatric ICU (CLABSI)	NQF 0139		X	

³ Status: This measure was recently recommended for removal of NQF endorsed measures and the Medicaid core set by The NQF Perinatal and Reproductive Health Standing Committee and the NQF MAP Medicaid Child and Adult Task Forces.

⁴ The NQF MAP Medicaid Child Task Force voted to recommend inclusion of PC-05 Exclusive Breast Milk Feeding (NQF 0480) and the equivalent PC-05 eMeasure (NQF2830) in the Child Core Set.

	Source	Adult Core	Child Core	CQMC
Postpartum contraceptive use among women ages 15–44	Developmental measure (OPA/CDC)-NQF-2902 ⁵	Likely to be included in future sets		

Other Potential Measures:

The generic Consumer Assessment of Healthcare Providers and Systems (CAHPS) patient experiences of care facility, clinician, and health plan measures do not map well to antenatal through postpartum and newborn care and this population. However, there may be specific CAHPS supplemental items that could be of use to measure patient experience (Agency for Healthcare Research and Quality, 2016).

To measure experience of care within its episode payment model, Community Health Choice, a maternity clinical episode payment initiative in Texas Medicaid, developed a survey by selecting items primarily used in previous national *Listening to Mothers* surveys. Topics included the timing and communication experience in prenatal care, planning for the birth, and the mother's experience after the birth, which includes caregiver follow-up and her overall satisfaction with the experience.

Functional status, particularly after birth, when used to capture such self-reported outcomes as pain, ability to perform activities, and depression also needs more focus. It is a time period that sets the stage for the health of the recovering woman and her newborn. Functional status instruments are not routinely used in the initiatives we have reviewed but have been used for postpartum research and could be developed into survey instruments for this context. Research on these functional status surveys demonstrate their ability to measure postpartum health.

A measure of patient skills, knowledge and confidence in managing one's health—the Patient Activation Measure (NQF #2483: *Gains in Patient Activation (PAM) Scores from 6-12 months*)—would demonstrate whether the health system has provided opportunities to increase activation from early to late pregnancy.

Several other measures are also of interest, including rates of unexpected newborn complications and rates of vaginal birth after cesarean. Rates of newborn complications, particularly unexpected complications (e.g., NQF 0716), measure the ultimate outcome of the birth—the baby's health. A measure of the vaginal birth after cesarean (VBAC) rate (e.g., AHRQ IQI 134) could address an important opportunity for improvement that would be complementary to the above-mentioned cesarean rate. Further, provision of influenza vaccines prenatally also has been shown to decrease complications. These measures are not the only ones that various initiatives have used, and each initiative may want to customize its quality metrics to some extent, depending on the needs of its population.

Quality Scorecard: A core feature of any episode payment initiative is using performance metrics to create scorecards to ensure high-quality care delivery; inform the decisions of the woman, her family, and her providers; and determine payment levels.

Most episode payment initiatives use a quality scorecard with defined thresholds that a provider must meet or exceed in order to receive the full reimbursement for an episode or the full shared savings.

⁵ Status: NQF Reproductive Health Standing Committee recommended endorsement of this measure in May 2016 and is currently going through consensus development process.

However, the decision on where those thresholds are set—or how they are used—should be left for the payer and provider to negotiate. Some initiatives vary the level of shared savings based on performance metrics, while others also use minimum performance levels as a threshold for receiving any portion of the savings. In a prospectively paid initiative, it may be useful to withhold some portion of the prospective payment and base its payment or level of payment on performance on the quality scorecard.

Quality Information to Communicate and Engage with Patients: In addition to using information on quality to determine payment, it is important to other stakeholders to have access to data on quality. As discussed under Patient Engagement, women need quality data on the performance of different facilities and on maternity care providers to inform their choices. Currently, data on maternity care provider performance are not routinely available and development is needed to support more widespread and routine data collection.

Comparative quality information is also important for providers to use to improve their performance. A provider portal, separate from electronic health records (EHRs), where providers can access individual average quality, costs, and utilization across episodes, is one way to provide this information. The Arkansas initiative found this type of portal to be important for providers.

Employers, purchasers, and payers also need these data to develop provider networks and to help employees make these important choices, both before and during pregnancy. Specifically, employees need to understand the bundle and what their role is in receiving high-quality care. Primary care providers hoping to enter into bundled payment contracts will want data about specialty physician quality performance in order to determine which bundled arrangements would be most beneficial to their patient population.

Finally, episode payment design must build in the capacity to collect, analyze, and provide data and support patients in identifying and interpreting this information. The use of patient navigators—for whom some existing initiatives have substituted community health workers—can be helpful in providing this support. First, however, the information itself must be available. It is important, therefore, to establish cross-cutting efforts to define metrics and systems for data collection and analysis. It is a significant burden, however, for each initiative to define its own metrics, collection system, and scorecard. Broader efforts are needed to build the necessary infrastructure for meaningful development and use of quality performance information, and building these systems is one of the key challenges discussed in the [Operational Considerations](#) section of this White Paper. To read more about Performance Measurement, [click here](#).



CLINICAL EPISODE PAYMENT MODELS

CORONARY ARTERY DISEASE

Chapter 5: Coronary Artery Disease

Background

According to the National Center for Chronic Disease Prevention and Health Promotion's Division for Heart Disease and Stroke Prevention, coronary artery disease (CAD) is the most common type of heart disease in America. In the United States in 2010, about 20% of the 65-year-old and over population were living with CAD. This condition is also present in about 7% of the population who are between the ages of 45 and 64. Patients with CAD often experience comorbidities such as diabetes and obesity. The two procedures most commonly used to treat CAD patients—PCI and CABG—account for more than one million procedures done annually in the United States. This amounted to a cost of more than \$15 billion of health care spending in 2012. These figures do not take into account the additional costs of hospitalization before and after surgery; according to the U.S. Centers for Disease Control and Prevention, the average cost of hospitalization for a coronary bypass in 2013 was \$38,707 per person. The national expenditures for CAD-related hospitalization in 2013 came to a total of \$6.4 billion (Centers for Disease Control and Prevention, 2014).

Patients with CAD experience their illness in many different ways. Some patients are diagnosed due to a “triggering” event, such as an acute myocardial infarction (AMI)—or heart attack. Others are diagnosed following either acute or routine diagnostic testing that results in either the need for medical management or a procedure like PCI or CABG surgery. While CAD has a variety of manifestations and acuities, a common thread that ties almost all CAD patients together is the fact that CAD is a chronic condition; those who are diagnosed with it will likely have to live with it for the remainder of their lives.

The way in which a patient is first diagnosed, as well as the setting in which care is delivered, can have an impact on the cost and intensity of treatment. In cases where a patient needs a CAD-related procedure, multiple providers participate in each patient's treatment course. This can lead to fragmented and uncoordinated care. For example, the typical settings for CAD care include primary and specialty care settings; hospital inpatient and outpatient settings; post-acute care facilities, such as cardiac rehabilitation centers; and patients' homes (via home health). Patients may receive CAD care in more than one setting as their treatment evolves over time. Currently, each of these settings receives payment separately for the services they provide. There are few incentives to support the provision of care management, preventive services, efficient and sparing use of tests and procedures, and coordination of care across these diverse settings. This lack of coordination and incentives for delivering high-value care across the continuum too often results in relatively high rates of adverse drug events, hospital index admissions and re-admissions, diagnostic errors, and lack of appropriate preventive services and follow-up testing for patients with CAD (Riegel, n.d.).

It is for precisely this reason that the CEP Work Group chose to develop a condition-level episode model for the management of CAD. While PCI and CABG procedures, and incidences of acute AMI, are significant drivers of CAD-related costs, patients with CAD need a more comprehensive approach to managing their conditions and seeking positive outcomes that help prevent the need for procedures. A number of goals associated with improving outcomes for CAD patients are beyond the realm of a PCI or CABG procedure; for each goal, there are levers that can be moved using the types of financial incentives inherent in episode payment (Table 8).

Table 1: Available Levers for Achieving Outcome Goals

Goals		Levers
System-Level	- Increasing the rate of provision of the right care at the right time in the right setting - Reducing avoidable complications - Reducing unwarranted and unjustifiable variation in care	- Delivery of imaging diagnostics and low-acuity procedures in the most appropriate and efficient setting - Providing optimal medication management - Coordinated and innovative care transition processes
Patient-Level	- Improving quality of life for patients - Increasing symptom-free days - Reducing acute myocardial infarctions - Rapid return to normal activities - Increasing preventive care and preventing acute events that result in hospitalization - Increasing positive outcomes for acute-care patients	- Innovative delivery of coordinated preventive care - Disease management - Lifestyle changes - Patient-centered discharge processes - Coordination of post-acute care - Coordinated and innovative care transition processes

The Value of Episode Payment for CAD

Traditional FFS creates incentives for providing a high quantity of services and treatments, potentially rewarding both the use of expensive treatments and tests regardless of value to the patient, and avoidable invasive procedures and hospitalizations. Episode payment for CAD establishes a budget that incentivizes the providers managing the patient to more appropriately balance the needs of the patient and the number and type of services provided. Placing accountability for the entire condition with a designated provider also encourages the active management of the patient in order to prevent acute events that lead to worsening health, further procedures, and an increased risk of overall poor outcomes. The goal of person-centered episode payment is to make the patient the focus of care management, ensuring that any efficiencies achieved through improved care coordination and management first and foremost benefit the patient.

Placing accountability for necessary cardiac procedures with a designated provider encourages that provider to ensure the care the patient receives before, during, and after the procedure is as efficient and effective as possible. For example, optimal provision of preventive and care management services has the potential to reduce the need for acute events like AMI and has the potential to reduce the need for procedures such as PCI and CABG. And a bundled payment program creates incentives for more appropriate use of procedures when they are necessary, versus the current volume-based incentives

that can lead to overuse. There are a number of initiatives underway to address the growing cost of care for patients with CAD. While a few are exploring how to efficiently pay for CAD from the condition perspective—for example, Blue Cross Blue Shield of Texas [Blue Cross Blue Shield of Texas, 2016] and the New York State Delivery System Reform Incentive Payment [NYS DSRIP] Program [New York State, 2016]—most are designed to efficiently deliver high-quality PCI and CABG procedures. The procedure-based models in Table 9 are described in more detail in [Appendix E](#).

Table 2: Examples of Current CAD Procedure Episode Models

PCI	CABG
- Arkansas Payment Improvement Incentives Program - Geisinger ProvenCare - Medicare Bundled Payments for Care Improvement (BPCI) - Ohio Health Transformation - PROMETHEUS Payment - Tennessee Health Care Improvement Innovations Initiative	- Arkansas Payment Improvement Incentives Program - Geisinger ProvenCare - Medicare BPCI - PROMETHEUS Payment - Washington State Bree Collaborative

The CAD episode described in this paper combines condition-level management with a “nested” bundle for the payment of a procedure, if one is deemed necessary and appropriate (Figure 9). These two components will be referred to as “condition” and “procedure” in the subsequent recommendations. The goal of this design is to provide incentives for:

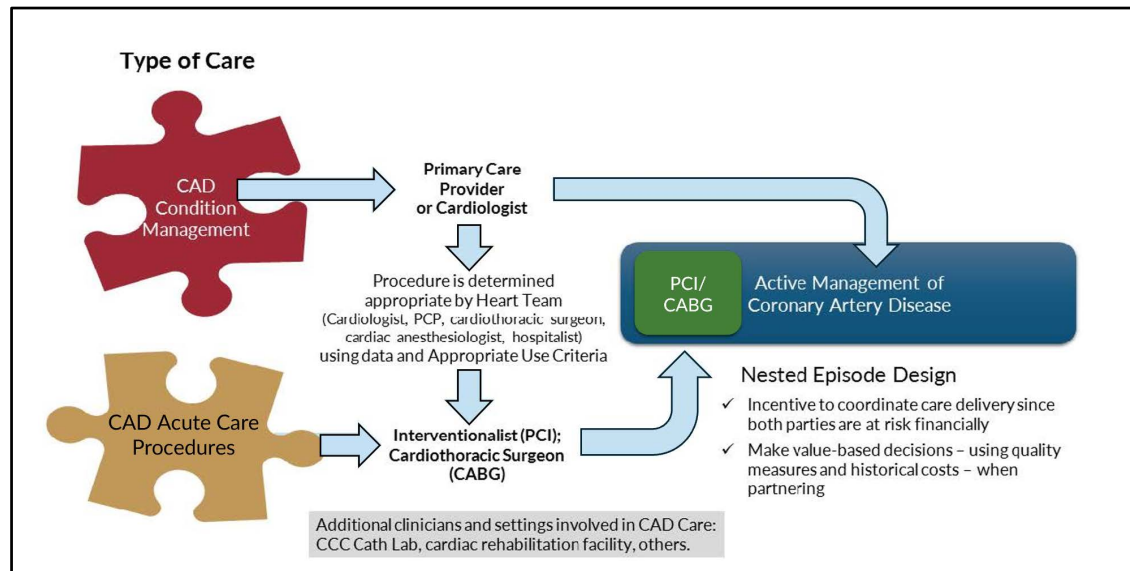
- High-quality CAD condition care and management;
- Appropriate use of CAD procedures; and
- Coordination among all providers, including those who oversee condition management and those who perform the procedure.

Given the number of procedure-level episode examples available for reference ([Appendix E](#)), the discussion presented below focuses primarily on the condition level design recommendations and the issues that arise in the intersection between condition management and procedure provision. The Work Group advises looking to existing procedure-level episodes for specific examples of how to structure a procedure bundle.

The CEP Work Group recognizes that a condition level bundled payment approach for CAD will not exist in a vacuum. Tightly integrated health systems, for example, may already be operating multiple bundles for other conditions and implementing primary care models that require management across chronic conditions. These scenarios will certainly affect how a CAD episode is designed and implemented.

Implementation in markets that are less integrated will similarly be affected by environmental factors. The CEP Work Group believes this approach, while challenging, balances what is feasible and, in some cases, already in practice today, with an aspirational vision that can be adapted to meet future innovations. Figure 9 depicts the settings, providers, and goals that comprise CAD care, all of which informed the Work Group’s decision to develop a nested episode model.

Figure 1: Nested CAD Episode



The CAD episode model is designed to:

- Achieve improvements in patient outcomes and each patient’s experience of care;
- Incentivize the cardiologist/primary care provider (PCP) to employ low-resource tools such as medication and lifestyle changes to manage the patient’s condition in order to avoid the need for procedures;
- Incentivize appropriate use of high-resource procedures such as PCI and CABG to ensure that other non-invasive options are considered where feasible;
- Provide appropriate care to all patients and limit the potential for withholding appropriate CAD management services in order to reduce the risk of complications that could count against the episode price for the accountable provider;
- Incentivize coordination among the PCP and/or cardiologist to coordinate surgeons and other care team members to drive improved patient outcomes when procedures are required;
- Optimize the delivery of procedures within the context of condition management to align incentives across PCPs/cardiologists and intensivists/surgeons; and
- Motivate expanded transparency of clinical quality information—for both providers and patients—to facilitate management of the condition.

Recommendations: Coronary Artery Disease

The CEP Work Group reviewed a range of existing episode payment initiatives (see [Appendix E](#)). Based on their experience and the analysis of current initiatives, the Work Group developed recommendations on the elements that reflect the decisions that payers and providers need to make prior to implementation.

For coronary artery disease, it is important for CEP initiatives to include incentives for ongoing condition management to prevent expensive and complex treatments—such as PCI and CABG—whenever possible. Episode payment also ensures a more comprehensive analysis of the appropriateness of these procedures. Further, many efficiencies and improvements in care can also be achieved through episode payment incentives for the provision of follow-up care associated with those procedures, if they are needed. The recommendations below reflect these goals.

1. Episode Definition

The episode is defined as care for a cohort of patients with diagnosed CAD, for a 12-month period that will ultimately align with the benefit year (see Episode Timing). Once aligned with the benefit year, the episode will continue for consecutive periods of 12 months of active care management for as long as a patient is under active management for CAD. PCI and/or CABG procedures deemed necessary during any given 12-month episode period will also be delivered within an episode payment model.

The CAD episode proposed by the CEP Work Group combines condition-level management with a nested procedure bundle. This is an important distinction from the majority of existing CAD-related episode payment models, which focus solely on PCI or CABG. There are two components within the nested episode: the condition episode, which is defined as a 12-month period of active management of and care for a patient who is diagnosed with chronic CAD, and the procedure episode.

The CAD condition episode includes payment for 12 months of preventive care, disease management, and any necessary procedures and follow-up care for those procedures. Recognizing that CAD is often a chronic, life-long condition, a new 12-month episode period will begin as the previous period ends, for as long as the patient is in need of active management for Coronary Artery Disease. As will be discussed in the next recommendation on Episode Timing, a patient's initial entry into the episode may last for fewer than 12 months, depending on whether model is designed to roll patients into the episode at the beginning of the month or quarter following diagnosis. However, by their second year of receiving care through this episode, every patient would be in a 12-month condition management time frame, beginning at the start of the plan benefit year.

The nested procedure episode is a sub-bundled payment for the delivery of a CAD-related procedure (PCI or CABG) within the course of the condition episode. For CAD, the procedure episode is defined as an elective or emergent procedure—PCI and/or CABG—for the acute treatment of CAD. The CEP Work Group recommends reviewing existing procedure episode models, such as those summarized above in Table 2, and determining which ones work best within their market.

While the goal of this episode is to be as inclusive as possible, it will only apply to patients who receive a CAD diagnosis. This diagnosis may emerge from either a non-emergent presentation (e.g., shortness of breath that leads to diagnostic testing and a diagnosis of CAD) or an emergent presentation (e.g., an AMI or acute PCI). Identification of patients for this episode is discussed in detail below.

2. Episode Timing

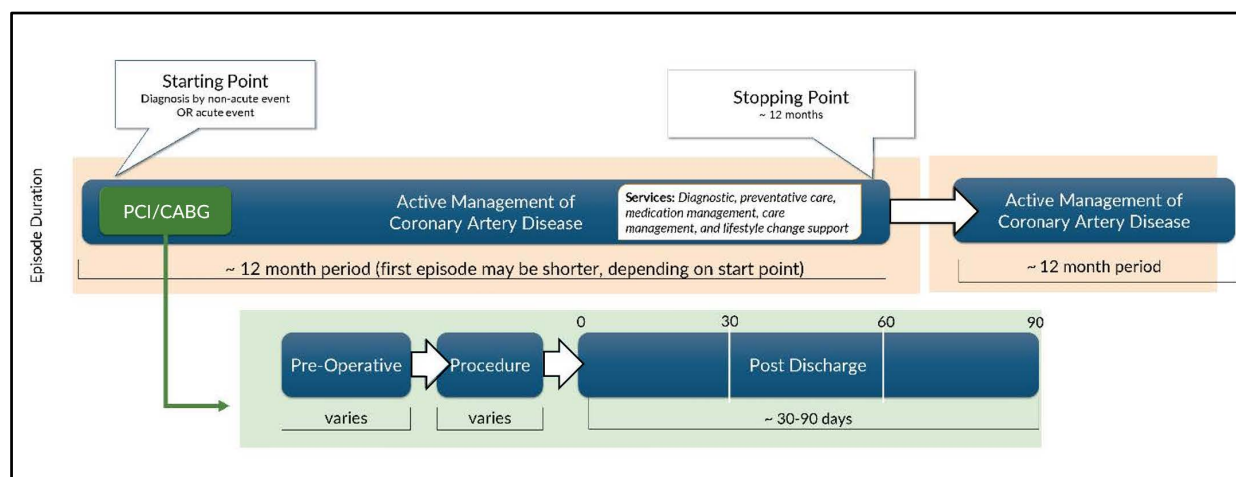
The 12-month condition episode may commence at various points post diagnosis; the procedure episode begins 30 days pre-procedure and lasts 30-90 days post discharge.

The episode period includes 12 months of care, which—by the patient’s second year in the episode at the latest—will run concurrent to an individual’s coverage benefit year (Figure 10). It is expected that most patients will continue to be included in a CAD episode for multiple years, given the chronic nature of the condition. There are options regarding at what point the condition episode should begin after CAD diagnosis.

1. **Begin at the Next Benefit Year:** Given that patients are diagnosed with CAD throughout a benefit year, one option is to flag these patients and include them in the episode at the beginning of the next benefit year. This simplifies operationalization of the episode, including the collection of quality measurement data and reconciliation of payments, and provides purchasers with important information that can be used when negotiating benefit contracts with payers. Within the 12-month period, any procedure that is deemed necessary, using established appropriate use guidelines, should be paid for using an episode payment model. The concern that costly procedures that may not be necessary or appropriate for the patient will be “front-loaded” in the time between diagnosis and the start of the episode is the downside to this design. One strategy to mitigate unintended consequences of this design may be to create a resource use monitoring window of several months prior to the start of the benefit.
2. **Begin on the First Day of the Next Month (or First Day of Next Quarter):** While operationally more complex, establishing the episode starting point as the beginning of either the month or the quarter following a diagnosis will address but not completely eliminate concerns about potential under- or overuse of services. In this option, the patient’s first year in the episode would be only as long as the remaining number of months in the benefit year. In the following year, the episode start would align with the benefit year, and the patient would experience a full 12-month episode period. This option combines the benefit of reducing potential under- or overuse of certain services or procedures with the benefit of administrative ease in the patient’s second year and beyond.

For payers, one important factor to consider when designing the episode start is the method by which patient settlement and reconciliation is processed. A process in which episodes are settled on a case-by-case basis will accommodate greater flexibility and allow patients to be moved into an episodic incentive initiative on a rolling basis. If a payer settles episodes based on averages over a performance period, there may be less room for flexibility in the starting point.

Figure 2: CAD Episode Timeline



In the event of PCI or CABG, the start of the episode depends on whether it is acute or non-acute. If it is an elective PCI, the episode begins with a 30-day pre-operative period. The inclusion of a pre-operative period will support coordination across the multiple providers in a patient's care team and serve to reduce unnecessary resource utilization leading up to the procedure. Of course, CAD procedures are not always elective; in the case of an emergency procedure of either PCI or CABG, the episode begins when it is determined that a procedure is necessary and appropriate. That may occur as soon as 24 hours prior to the procedure.

The Work Group did not develop recommendations for the length of the procedure episode. There are a number of existing PCI and CABG models (Figure 10) to which readers can refer to weigh the benefits of extending the procedure episode to 30, 60, or 90 days post-discharge. It may also be useful to build in a 30-day look-back period from diagnoses to capture the costs of the work up to obtain the diagnosis. The longer the procedure episode, the more post-acute services will be included. The condition episode will run concurrently with the procedure episode. In other words, the 12-month condition time period will not pause while a patient is experiencing a procedure. This is deliberate, to incentivize seamless transitions between each step in the care cycle: condition management, surgical procedure, hospitalization, discharge, post-acute care, and again condition management. However, if a procedure is necessary and the patient has not yet been diagnosed with CAD (so it is not part of the condition-based CAD episode), the procedure-based definitions will apply, and the condition-level episode will commence in either the next month, quarter or benefit year depending on the design of the model.

3. Patient Population

Condition: Patients diagnosed with CAD and in same health plan for full 12 months.

Procedure: Patients deemed to need a PCI or CABG based on determination of appropriateness.

The population of patients who could participate in the condition episode is broad and includes all patients flagged by a provider as diagnosed and under active management for CAD. Individuals who disenroll from their health plan prior to the end of the 12-month episode period will be removed from the episode population.

Health plans should analyze claims from at least the previous 12 months to as far back as 24 months in order to identify all patients who fit this population definition. The goal of this episode model is to improve the value of care delivered to high-need patients. The Work Group recognizes that for individuals who have been living with CAD for many years, active management tends to evolve into an annual visit to the provider for ongoing medication management. While these patients can be included in the episode, doing so may not add additional value. Establishing a minimum number of visits or claims to be eligible for inclusion in an episode payment could be one way to address patients with limited ongoing needed CAD management. This could also strengthen the delivery of care received through primary care models. An important issue for payers and providers to examine when designing a CAD condition episode model is how to address the variation in CAD severity across a patient population. One way to address this is to establish patient cohorts defined by whether a patient's CAD is stable or unstable, or by whether they require medical, surgical, or percutaneous treatment.

The population for the procedure episode comprises patients who are deemed in need of a PCI or CABG procedure in order to manage their CAD. Providers should use such tools as the Appropriate Use Criteria for Coronary Revascularization Guidelines¹ and/or the appropriateness guidelines developed by the Society of Thoracic Surgeons (STS) to determine whether a patient should undergo a non-acute procedure (Patel, 2012; American Association for Thoracic Surgery, 2016).

In addition to appropriate use criteria and guidelines, other models exist for determining—together with a patient—whether a procedure is appropriate. One example is the “Heart Team”² approach, created for use in the TransCatheter Aortic Valve Replacement Program. For patients in this program, a Heart Team consists of a variety of clinicians, including but not limited to a cardiologist and/or primary care provider, cardiothoracic surgeon, cardiac anesthesiologist, and hospitalist. The Heart Team serves to review cases in which a patient is referred for invasive CAD treatment by assessing patient data, consulting with the patient and family, and discussing best options for care. This model would require consideration of appropriate reimbursement within the episode price if included in an episode design.

¹ The Appropriate Use Criteria Guidelines were developed by a consortium that includes the American College of Cardiology Foundation, the Society for Cardiovascular Angiography and Interventions, the Society of Thoracic Surgeons, the American Association for Thoracic Surgery, the American Heart Association, the American Society of Nuclear Cardiology, and the Society of Cardiovascular Computed Tomography.

² Society for Cardiovascular Angiography and Interventions, “The Revascularization Heart Team: Take Patient-Centered Care to Heart, August 26, 2014, <http://www.scai.org/QITip.aspx?cid=e7ec55bc-8e92-4fcd-8b4d-4cb73bd8af5b>

4. Services

For both the condition and procedure episodes, the services should include core services for CAD management (e.g., lifestyle changes, medication management, secondary prevention) and core services for the quality delivery of a procedure (e.g., pre-operative diagnostics, drugs and devices, care transition support, post-acute care including cardiac rehab).

The goal of the episode payment for CAD is to ensure that patients receive all appropriate services needed to improve their quality of life, manage their CAD, and prevent the need for procedures and/or prevent poor health outcomes such as AMI or heart failure, while avoiding inappropriate services. To achieve this, the episode services should strive for inclusivity and comprise the following core services, many of which fall into the category of “secondary prevention” for patients who are diagnosed with CAD following an acute or emergency event:

Overall Management: Services should include appropriate diagnostics, shared-care planning, and coordination of services across various settings and providers.

Medication Management: CAD patients are often put on a long-term medication regimen to control CAD symptoms. These medications may include aspirin, beta blockers, angina control medication, ACE inhibitors post-AMI, and lipid management medications. Ensuring that medication is taken appropriately, managing medication side effects and poor outcomes due to contraindications from other medications, is a key part of CAD condition management care.

Lifestyle Support Related to Modifiable Risk Factors: There are a number of risk factors correlated with CAD, including high blood pressure, smoking and tobacco use, diabetes, stress, and weight. Clinical CAD management should include services designed to support lifestyle changes that address these risk factors. Services to support weight loss, stress reduction, smoking and tobacco cessation, and diabetes control are critical to CAD management.

Services Specific to PCI and CABG: The condition episode and the procedure episode should include all pre-operative diagnostics and care planning, drugs and devices related to the procedure, discharge planning, care-transition support, and post-acute care, including cardiac rehab. It is extremely important to include cardiac rehab in the procedure bundle, given that fewer than 20 percent of patients eligible for this care go on to participate in a cardiac rehabilitation program. Refer to resources in [Appendix H](#) for more information on specific services included in PCI and CABG episode payment models. One issue to consider is whether a patient who receives a concomitant procedure—such as a valve replacement—during the course of a CABG should be included in the nested procedure episode. Examples of how CABG episode payment has been designed and implemented will provide guidance on questions related to what services and potential concomitant procedures should be considered within the scope of the CAD procedure episode model.

For both condition and procedure episodes, the payment model will rely on strategically selected quality measures to hold providers accountable for delivering appropriate care. The types of services described

above are also services that are provided by primary care providers. It will be critical for those that manage these episodes to coordinate with, and build upon, the care that is already being provided in a primary care context. This will be particularly important if other payment reforms, such as Patient-Centered Medical Homes (PCMH), are in place because those practices will also have accountability for the costs and quality of care for that patient living with CAD. The box at right describes Comprehensive Primary Care Plus (CPC+), one prominent upcoming primary care-related initiative.

A challenge in defining the core services for CAD is the fact that patients with CAD often have comorbidities such as diabetes, hypertension, kidney disease, obesity, and peripheral vascular disease. While a cardiologist is not going to manage a patient's chronic kidney disease care, he or she may have an interest in working with the patient to manage their diabetes or weight, since both will have an impact on the efficacy of their CAD care. The questions of what services to include and whether they are coded for CAD care, diabetes care, or other comorbidities associated with CAD will need to be addressed for multiple reasons. Determining the list of services to include will have a direct bearing on the level at which the episode price is set, and determining how to code services that are relevant to care for CAD and its comorbidities will have a direct bearing on whether a provider is determined to have come under or over or hit the episode price target at the completion of the episode. For example, there is the potential for coding lifestyle change support services to the diabetes condition—instead of attributing that spending to the CAD episode—if a provider is participating in the CAD episode but not a similar episode for diabetes.

One strategy for determining core services is to include those with a CAD-related diagnosis code. Services that will address needs relevant to CAD and other comorbidities should be included. It is also possible that this will not be an issue for primary care providers who are working within a system that operates multiple episode payment models. Ultimately, whether the implementing organization seeks to develop a discrete CAD episode model (i.e., more narrowly defined service inclusions) or has already established other episode payment models that it wants to build upon (i.e., broader set of service inclusions) will determine how broad the service inclusions will be in this episode.

The Comprehensive Primary Care Plus (CPC+) Initiative and CAD Episode Payment

The Center for Medicare and Medicaid Innovation (CMMI) recently announced the Comprehensive Primary Care Plus (CPC+) initiative to support the delivery of care via advanced primary care medical homes. The CPC+ initiative builds on the foundation of the Comprehensive Primary Care (CPC) initiative, which concludes in December 2016.

The hallmark of the CPC+ initiative is its multi-payer payment redesign focus, which will involve coordination across CMS, commercial insurance plans, and state Medicaid agencies to support primary care practices in making significant and fundamental changes in how care delivery occurs, to achieve the goals of 1) access and continuity, 2) care management, 3) comprehensiveness and coordination, 4) patient and caregiver engagement, and 5) planned care and population health.

Given the role that primary care providers play in the care management of patients with CAD, it is possible that CPC+ initiative participants may also consider implementation of this CAD episode model. It will be important to consider the implications of the CPC+ initiative on the episode design and implementation as part of the design process.

5. Patient Engagement

Models should support patient and family involvement in episode payment design, implementation and evaluation; as well as patient and family engagement in all phases of cardiac care, facilitated by health information technology.

Person-centered episode payment models have a strong investment in engaging patients in multiple ways, including through shared care planning, shared decision-making, comparative quality information, care coordination, chronic disease management tools, transparency of payment information, and care transition support. Examples of the types of processes and tools described in this section are in [Appendix H](#). To be effective, communications and resources must be tailored to the health literacy level of patients and families and linguistically and culturally appropriate.

Supported, Shared-Care Planning: Providers should incorporate shared care planning early in the delivery of care. This process should include collaborative provider-patient goal setting related to both the care for CAD as a condition and any goal setting related to a PCI or CABG procedure. Shared-care planning also involves ongoing decision-making and monitoring, using documented individualized care plans that are accessible to the patient, families, and providers.

Shared Decision Making: Over the course of condition management, a patient—together with a family caregiver ideally—must have the opportunity to engage in shared decision-making during 1) the process of developing a care plan that supports the patients’ goals, values, and preferences, including how best to manage their condition through medication and lifestyle approaches; and 2) determining whether to undergo a PCI or CABG procedure. However, the shared decision-making process cannot be a check-the-box activity. There needs to be evidence that the patient and family caregiver were supported by a decision coach or a nurse educator as they worked with a decision aid that meets a threshold score using the International Patient Decision Aids Standards (IPDAS).

Comparative Quality Information: Patients and family caregivers must be provided with information about the procedure complication rates and quality of possible surgeons and possible acute-care facilities. Clearly designated personnel without conflicts of interest should assist patients with identifying eligible providers and in finding and interpreting relevant information about those providers. Transparency of quality information may also allow the patient—together with the provider and family—to make informed decisions on the inclusion of certain providers on the care team.

Coordination Across Provider Settings: Care coordination takes various forms, including the following:

- **Patient-Centered Transitional Care Services:** The CAD model described herein is designed to set up tight-care transition linkages between the providers overseeing a patient’s procedure and those overseeing a patient’s overall CAD care management, and the patient’s primary care providers. Within this care coordination, however, is the often challenging aspect of care known as care transition. Following discharge from a hospital, 49% of patient experience at least one error in medication continuity, diagnostic workup, and/or test follow-up, 19% to 23% of patients suffer an adverse drug event and, in 75% of cases, discharge summaries for a patient do not arrive at the physician’s office in time for the follow-up appointment (Tsilimingras & Bates, 2008). A CAD episode

model needs to engage patients in transitional care services to be successful. During the transitional time, providers must communicate with each other, family caregivers must be engaged and involved in post-acute care planning, and patients must be given clear information on how to manage their condition. The following programs reflect a number of different tools and models for transitional care:

- **The Acute Care for Elders (ACE)** program starts discharge planning at the time of admission to the hospital.
- The **Care Transitions Coaching** program at the University of Colorado uses a transition coach to teach patients and caregivers skills that promote and support continuity of care, both in the hospital and for 30 days post-discharge.
- The American College of Cardiology and the Institute for Healthcare Improvement's **H2H Hospital to Home Quality Initiative** focuses on post-discharge medication management. This ensures the patient has symptom management and a rapid follow-up appointment with their cardiologist or primary care provider to ensure that the patient fully understands the signs and symptoms that require medical attention.

It is also important to discuss the options of in- or out-of-network post-acute or follow-up care with patients and family caregivers. In the Medicare FFS program, this may involve discussions related to choice of post-acute providers, confirming that the patients still have freedom of choice. This is a critical patient conversation because a patient may not wish to see a provider that is within a specified payment arrangement.

Chronic Disease Management Tools: The goal of condition-management care is twofold.

First, it is to help patients make the kind of lifestyle changes that will prevent aggravation of their disease or the need for a procedure.

Second, it is to manage a patient's medication

protocol. Patient engagement is critical in both areas and requires well-designed educational materials and tools such as in-person coaching, smart phone apps for tracking adherence to lifestyle change activities, and patient support groups to provide both emotional support and tips and tricks from others who have experienced similar concerns to patients diagnosed with CAD. When available, high-quality decision aids should be used to make care management decisions. A study to track the effects of smartphone app usage was conducted by the Mayo Clinic and followed 44 patients participating in

Deploying Meaningful Shared Decision-Making for Patients and Caregivers

Requiring providers to use shared decision-making tools does not necessarily translate into meaningful shared decision-making process between a patient with his or her family caregivers and providers. In order to make the shared decision-making process one that truly supports patient engagement and drives the appropriate use of procedures and other care, provider and patient processes will include the following:

- Acknowledge that there is a decision to be made;
- Explain that there are care options, and each option has a different set of issues to consider;
- Present the best evidence about the pros and cons of the care options; and
- Acknowledge how personal values and preferences might align with the care options.

Following an opportunity for the patient and family caregiver to meet with a decision coach or a nurse educator to review decision tools and get answers to any questions, they should determine together with a care provider the optimal path forward.

cardiac rehab following a heart attack and PCI. Patients were divided into two groups: one that used an app to record their weight and blood pressure daily in a smartphone, and one that did not use the app. The app group experienced greater improvements in those cardiovascular risk factors and was less likely to be readmitted to the hospital within 90 days of discharge, compared to the non-app group. The app group also received educational activities that supported lifestyle behavior changes. The goal of the app and the study was to both demonstrate the efficacy of cardiac rehab on post-AMI and PCI recovery, and the importance of engaging patients in “owning” their lifestyle behavior changes (Klein, 2014).

Transparency of Reimbursement and Payment Flow: Patients and family caregivers need transparent information on how providers are being reimbursed in an episode payment model, the impact that episode payment may have on the patient’s cost sharing or co-pay responsibilities, and the manner in which care will be delivered.

SMARTCare Pilot: The Florida and Wisconsin chapters of the American College of Cardiology developed this pilot project to improve quality of care, enhance access to care, and reduce health care costs by providing tools to help physicians and cardiovascular team members apply guidelines and appropriate use criteria at the point of care. The pilot involves embedding SMARTCare tools—including patient education and shared decision—within every step along the CAD care pathway. SMARTCare is also designed to provide patients and physicians with access to data on clinical quality measures, outcomes, and resource utilization. Among the tools included in the SMARTCare program are the PROMs (TONIC, SAQ7, Heart Quality of Life and Decision Quality Assessment Instrument).

Patients should be involved with all aspects of identifying and achieving care goals and should actively participate in their care planning. They should also be encouraged to engage their primary care provider in their decision-making process, especially those patients with chronic disease. Integration of health information technology that facilitates access to health data, shared-care plans, educational and support tools, and communications with members of the care team can improve the topics discussed in all of the above sections. One example of a tool that is providing access to these data is the successful Open Notes project, which is providing a growing proportion of patients to full access to their electronic health records (Bell et al., 2015; Esch et al., 2016; Walker, Meltsner, & Delbanco, 2015). HIT is also crucial for timely filling of prescriptions, making necessary appointments, communicating with members of the care team between visits, and completing patient-reported measure surveys.

6. Accountable Entity

The accountable entity should be chosen based on readiness to re-engineer change in the way care is delivered to the patient and to accept risk. In this model, the accountable entity will likely require a degree of shared accountability, given the number of clinicians working to care for a patient.

Overall Readiness: The question of readiness to both re-engineer the care delivery model for the patient, and in the process, accept the financial risk they might incur, is central to the determination of what entity or entities should be accountable. There are a number of key requirements needed for success regardless of which entity (or entities) are held accountable. Payers should work with the

accountable entity to assess their readiness and promote collaboration to allow for multiple providers within a CAD care team to share the risk and reward in such a manner that all are engaged in creating a seamless, efficient, patient-centered care process. This process can require active participation across the continuum by aligning incentives across contracts in the private sector, because the payer often has contracts directly with providers. Medicare allows for full freedom of choice of provider in FFS, and the risk spreading may take the form of a gain-sharing relationship once a Medicare waiver is in place. This is particularly important in a relationship whereby the providers are still paid FFS with a retrospective reconciliation, because the accountable entity has limited ability to obtain buy-in from other providers in the episode without direct incentives for them to collaborate.

Factors to Weigh in Determining Readiness for Episode Accountability:

- Minimum-volume standards, in acute and post-acute care, for the CAD patient population;
- Ability to deliver or contract for the entire bundle of services to be rendered;
- Demonstrated ability to care for CAD patients;
- Effective discharge planning capacities, including systems to include rehabilitation physicians and extenders early in the discharge planning process to help in identifying the proper trajectory of patients and their care;
- Ability to manage transitions or handoffs from one setting to another when necessary (e.g., entry, transitions, discharge);
- Ability to track quality indicators and patient outcomes across an array of services and settings;
- Demonstrated dedication of the hospital, physicians, nurses, therapists, and other clinical professionals' time to the programs;
- Capacity to monitor patient clinical status and coordinate medication management/reconciliation as patients progress across acute and post-acute care settings;
- Ability to coordinate with other community services to foster the patient's independence;
- Necessary financial systems to administer payment across multiple entities; and
- Ability to tolerate financial risk, including post-discharge outcomes, such as readmissions, and understand its own risk exposure.

There will need to be accountability placed on the clinician(s) who oversee both the condition management and the PCI or CABG procedures in situations where either procedure is needed. Shared accountability is an important design idea to consider, especially given the importance of a team-based approach to this model. Under this shared accountability umbrella, payers can negotiate with providers and use gain-and-loss sharing to enable a system in which all providers who touch the patient share some level of accountability. Payers will need to assess which provider(s) in a given market can act most effectively in achieving a CAD episode payment initiative's goals and establish that provider or providers as the accountable entity.

In some instances, the care team may be narrower, particularly if one clinician or clinician organization is able to provide both the condition management care and conduct the procedure. This may be the case if the cardiology practice also includes cardiac surgeons or if the patient is seen within a health system that integrates both hospital and outpatient services. A more common scenario is when a primary care

provider or cardiologist is managing the CAD before the need for a procedure is deemed necessary and a separate practice is identified to manage the patient's procedure.

The accountable entities in current examples of CAD episode payment vary. Because current models are typically procedure based, it is often the hospital that serves as the accountable entity. Sometimes, it is the physician practice (often the cardiology practice). In many cases, the clinician, when acting as the accountable entity, can have the greatest impact on care redesign because establishing a physician-level quarterback can ease the episode's management process. The clinician can lead the design and implementation of new patient care protocols and communicate with the patient's post-discharge provider more easily than the hospital. Further, discussions with patients regarding appropriateness and expectations on functional improvements are most effective if the physicians are fully engaged.

In the Acute Care Episode (ACE) demonstration the hospital served as the accountable entity, which is consistent with the episode definition as it is limited to hospital and physician care delivered in the hospital for certain cardiothoracic procedures (Centers for Medicare & Medicaid Services, 2016). The rules allowed the hospital to opt to share a portion of gains or losses with other providers that are part of the delivery of care for patients, including physicians or other post-acute providers. While the hospital was the accountable entity, it was considered critical to get the physicians involved. The hospitals in that initiative utilized gain-sharing to engage the physicians. The accountable entity in the more recent Bundled Payment for Care Improvement demonstration, which included cardiac care such as CABG, PCI, or AMI, could be a physician practice, hospital, health system, or a so-called convener that would organize the effort across multiple sites. Premier, which is an organization that works with hospitals, and Cogent, which manages hospitalist practices, are two examples of such. It is not surprising that the accountable entities were often hospitals inasmuch as this bundled payment program was also centered upon procedures delivered in the hospital—albeit somewhat broader in several models (Centers for Medicare & Medicaid Services, 2016a).

Ability to Accept Risk: Ability and readiness to accept risk are high priorities among the factors that should be used to determine the accountable entity or entities. Some physician practices may have less ability to assume downside risk than larger practices or other better capitalized providers, such as hospitals or health systems that integrate hospital and physician care. Limiting the level of risk associated with the episode can mitigate this limited ability for physician practices to take on risk. Recommendation 7, Payment Flow discusses some strategies for doing this.

In situations where shared accountability is not feasible, other scenarios might include one multi-specialty group holding accountability for both the condition and the procedure, using internal mechanisms for operationalizing joint accountability, or a cardiology practice holding accountability for the entire condition episode, and as part of this accountability, coordinating with a surgical practice if a procedure is deemed necessary. Again, transparent, accessible quality information will help the accountable entity seek out the highest-performing proceduralists. The commonalities of these notional scenarios are that the accountable entity is incentivized to ensure the care in the procedure (if needed) is as efficient as possible, that the hand-offs pre- and post-procedure are as smooth as possible for the patient, and that the clinician accountable for the full episode seeks to contract with the highest-performing proceduralists.

See the chapter on [Operational Considerations](#) for a discussion on two related issues: First, in the data infrastructure section is a discussion of the structures necessary to facilitate coordination and communication across members of the care team and between clinicians and patients. Second, in the regulatory environment section, is the discussion of how state laws may affect how much risk providers

are allowed to incur. For example, some states' laws and regulations are supportive of hospitals to serve as the accountable entity, rather than a physician or physician practice.

7. Payment Flow

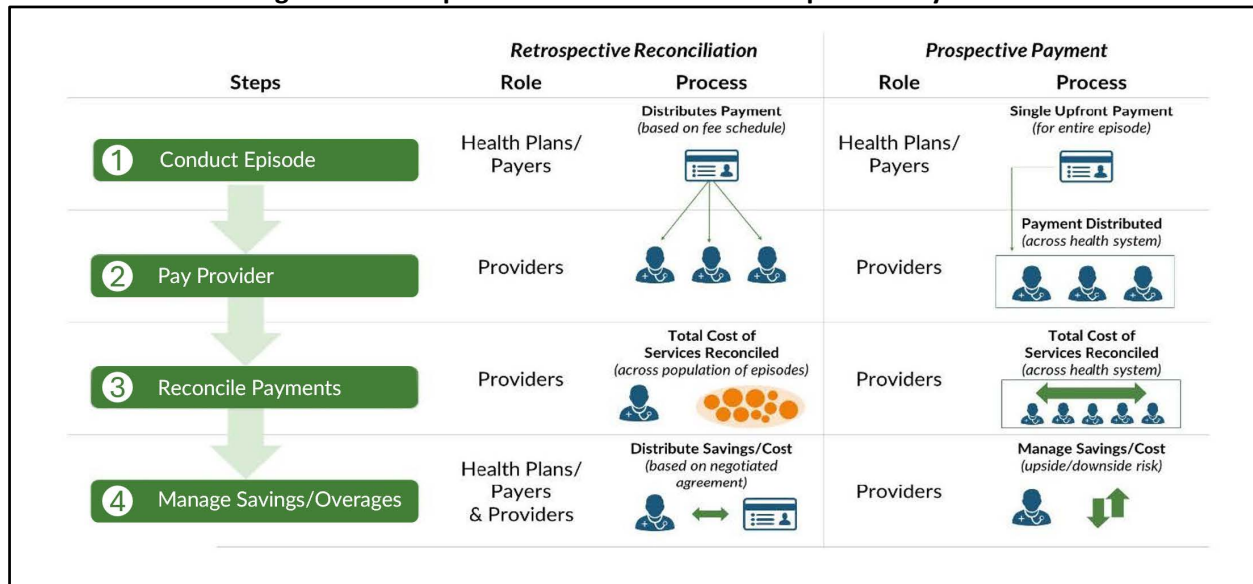
The unique circumstances of the condition-level/nested procedure episode model makes upfront FFS payment to individual providers within the episode, with retrospective reconciliation and potential for shared savings/risk, the more feasible option.

Episode payments are typically dispersed via either prospective payment or retrospective reconciliation (Figure 11).

In **Prospective Payment**, payment is provided for the whole episode, including all services and providers, and paid to the accountable entity, which subsequently pays each provider in turn. This payment typically occurs after the episode has occurred but is termed "prospective" because the price of the episode is set in a prospective budget ahead of time. The savings or losses are not shared with the payer; they are simply a function of how well the accountable entity and the providers with whom it coordinates are managing the predetermined price.

In **Retrospective Reconciliation**, individual providers are each paid on a typical FFS basis and then the target episode price and the actual average episode price are reconciled after a period of time across all the episodes attributed to a provider. An initial reconciliation is typically conducted by the end of the first quarter after an episode's end, and a final reconciliation is typically conducted within six months of the episode's completion. For this CAD episode, these reconciliations take place in roughly April and June. Based on a specific formula, either negotiated or determined by the payer, the accountable entity can share with the payer in gains and/or losses. Gains or losses are also shared among providers in the episode to encourage collaboration and coordination across settings in some instances. These types of gain-sharing arrangements need to be considered within the constraints of federal laws that may impact their design, which is discussed in further detail in the regulatory infrastructure section of Chapter 6, [Operational Considerations](#).

Figure 3: Retrospective Reconciliation vs. Prospective Payment



While prospective payment is an option in some circumstances, such as when the accountable entity is a health system that already integrates the clinician and facility payment, the Work Group recommends using retrospective reconciliation for this episode model. Retrospective reconciliation is simpler to administer and requires fewer changes from current practice where the prevailing model is an open, non-integrated system. In addition, retrospective reconciliation is more prevalent in current episode initiatives, because it does not require providers to develop the capacity to pay claims, it allows for better tracking of the resources used in the episode, and it can be built on an existing payment system. Retrospective reconciliation may also continue to engage the payer as a partner as they maintain a more direct interest in the financial success of the program.

It may be more difficult to implement a single prospective payment when multiple providers involved in delivering the care do not already have mechanisms for administering payment among themselves, which is the case in integrated systems. However, prospective payment may also be better at encouraging innovation as providers in a prospective payment program are often not limited by the payer's coverage policy. Increased use of prospective payment can accelerate development of various supporting mechanisms to aid in this process. One caution on prospective payment in an FFS Medicaid program is that there may be regulatory barriers for one provider assigning payment to another. Legal counsel should be sought in this scenario.

An additional consideration in this CAD episode payment approach is whether the accountable entity is the same for both the condition and the procedure. If the payment flow is retrospective reconciliation of FFS payments and the accountable entities are both expecting to share in gains or losses, the manner in which those gains or losses are split within the time period of the procedure episodes will be a critical issue.

8. Episode Price

The episode price should strike a balance between provider-specific and multi-provider/regional utilization history. The price should 1) acknowledge achievable efficiencies already gained by previous initiatives, 2) reflect a level that potential provider participants see as feasible to attain, and 3) include the cost of services that help achieve the goals of episode payment.

Pricing episodes is significantly complex as a result of the need to both assure the accuracy of estimates and develop a pricing structure that is fair to providers but encourages innovation. The goal should be to establish a price that encourages competition among providers to achieve the best outcomes at the lowest cost. Issues such as accounting for variation in the risk of the population, having a large enough patient population to allow for sufficient variation, the impact of differing fee schedules and negotiating power, shifts in insurers mid-stream, regional variation in availability of types of providers, and ensuring that payments are sufficient to adequately reimburse for high-value services will all need to be taken into consideration. For example, Recommendation 3, Patient Population, describes the importance of using a model such as the “Heart Team” to help make appropriate determinations. Incorporating this model, which is not currently used under traditional FFS reimbursement, will require calculating the reimbursement costs to do this work.

It will also be necessary to identify a price that both reflects current utilization practices and creates an achievable “stretch” goal. Factors such as decreased rates of use of certain testing, procedures, or lower complication and readmission rates may affect the episode price as a result of this. In essence this bakes in a certain level of downside risk, but the provider knows upfront the target they must reach. However, the episode price should not be set so low that providers are discouraged from delivering all necessary care.

The manner in which the episode price is established largely determines the monetary rewards or penalties that an accountable entity may experience. Several key aspects interact in the determination of the episode price. All payers will expect some return on their investments in this payment design and can choose a variety of mechanisms to generate some level of savings. It is also important to consider including costs for the services described in Recommendation 5, Patient Engagement, in the target episode price in order to provide sufficient resources for care coordination, care transitions, shared decision-making, and other strategies.

Balancing Regional and Provider-Specific Data: Cost data should reflect a mix of provider and regional claims experience. The goal of including regional, rather than market-level data, is to ensure that there is enough variation in episode cost. This mix will also ensure that the established episode price takes into consideration the unique experience of the specific provider, and that the goals are set based on what is feasible in the region. Risk adjustment will be needed during this process to adjust for the unique characteristics of the population the provider serves. If the payer is a national payer, it may be more difficult to address specific provider issues and will require consideration of the use of national claims experience to ensure parity across regions. Over time, as performance becomes less variable, it may be useful to lessen the proportion of the episode look-back period that is based on the organization’s

specific experience. The payer can also include an estimate of a decrease in costs based on improvements in some cases, such as lower rate of PCI or CABG, or reduced rate of hospital readmissions post-AMI. The Work Group recommends balancing regional/multi-provider³ and provider-specific cost data:

Regional Costs: Using region-level claims data allows the payer to take into account the costs of multiple providers within a region. This emphasizes the fact that one provider's costs may not be representative of the entire region. It also addresses the variability that may exist for a provider with a low volume of cases, as long as the region is large enough to reflect sufficient variability. One issue with using regional claims is that if providers in that region as a whole have already achieved a certain level of efficiency, they may be less able to achieve further savings. These regions—or the providers in them—could argue that an efficient region will be “punished” for its previous work to achieve these efficiencies. On the other hand, if the region has a higher per bundle cost on average than other regions or specific providers within the region, the payer may achieve fewer savings than if the episode price was set at a national or provider-specific level. While basing some part of the price on region, it is also important to note variation across regions and to consider whether variation across the regions is warranted. It is important to look at this closely and not just “bake in” regional variation if there is not an objective reason for doing so.

Provider Costs: Provider-specific costs are the actual costs for the provider's previous patients. For example, if the cardiology practice is the accountable entity, the payer will conduct the analysis using the current episode definition and apply it to its CAD patients from the past two years. However, this can come with challenges—although these costs may be accurate for a given clinical practice with a given payer, they may build in already gained efficiencies that make it more difficult to achieve savings or have built-in inefficiencies that limit the savings for the payer.

A combination of provider and regional claims experience should be used as data. This mix will ensure both that the determined episode price takes into consideration the unique historical experience of the specific provider, and that goals are set based on what is feasible in the region. This process will also require risk adjustment to adjust for the unique characteristics of the population the provider serves. Recommendation 9, Type and Level of Risk, discusses this further.

Establishing an appropriate episode price for a condition episode with a nested procedure is far more complex than establishing a price for an episode that includes only a condition or a procedure. For example, a condition bundle is intrinsically complex because it is difficult to estimate the number of beneficiaries in the bundle who will need procedures. Moreover, the costs of any single procedure can be significant. Adding a procedure into a bundle requires creating a budget and accountability for the procedure, as well as an overarching budget for the condition, including an estimate of the number and type of procedures that may be needed. As difficult as this sounds, this episode price structure can set up meaningful incentives that prevent the overuse of expensive procedures, particularly when there are more appropriate alternatives.

In order to develop the CAD episode price, the Work Group recommends that health plans default to an average base price for applying the episode to patients who are new to the plan and for which no historical data exists. Doing this would likely lead to an upfront FFS payment and retrospective

³ For purposes of this paper, “region” is not defined. The region will be defined as a combination of the experience of multiple providers. We use the term “regional” to reflect this assumption.

reconciliation payment flow, since a plan may want to conduct retrospective adjustments after a certain number of quarters based on patient resource use. The Work Group also recommends that payers track the frequency of diagnostic testing over the first quarter of the episode in a newly diagnosed patient in order to understand and assess pricing in subsequent years.

The price for the procedure episode can be calculated as a percentage allocation carved out from the underlying condition episode price. It is reasonable to assume that an accountable entity will automatically be over budget in any one case where a patient requires a procedure or experiences a complication. However, the episode price will account for a certain number of procedures that may occur across the population as a whole. Only those accountable providers with higher-than-average rates of procedures, adjusted for patient severity, will have total average actuals that exceed the budgets. Recommendation 9, Type and Level of Risk, describes strategies such as stop-loss, which will address situations in which a provider conducts a greater-than-expected number of procedures. While this overage may be due to lack of historical data in the initial years of the episode model, it will be important to assess whether a provider is conducting procedures that may not be appropriate or necessary.

The procedure episode could be priced with historical data applied to the episode definition for the procedure—the same basic foundation as the condition. It would be necessary to calculate the PCI and the CABG procedures separately. Determining whether to do one or the other would be in the hands of the entity accountable for the overall condition.

Historical data, where available, is essential to determining the episode price. Health plans should ideally use 12 to 24 months of patient historical data. The depth of historical data will differ depending on whether the model is being designed for Medicare, Medicaid, or for a commercial payer. One concern is that there is a wider range in cost and utilization within and across markets for cardiac care than there is in a common procedure episode. One option for starting to develop a full condition episode price with the nested procedures is to begin by pricing the procedure episodes and building the condition episode around the procedure. This is particularly relevant here, since historical data on procedure price may be most feasible to collect and use. The role of negotiating power is also an issue. Prices will vary based on market share. While negotiating power based on market share is not helpful, CEP can encourage transparency across providers and expose these types of variances to drive market to those who are providing a higher value product.

Incentivize More Efficient Levels of Practice: In addition to historical provider and region-level data, the episode price should be based on the performance of the better performers in a particular market, such that all providers can see that the episode price and the quality metric performance thresholds are feasible to achieve. If a provider's performance is already at a relatively efficient level, it will need to see some reward for that achievement at the same time that low performers will have an incentive to improve.

The episode price can be revised over time to ensure continual improvement by both the more and less efficient providers. In this way, the episode price automatically integrates savings and simultaneously incentivizes a compression of variation in cost and quality across all providers. Finally, the episode price should take into account services that are historically under-reimbursed, and thus, underused, but are of high value to the patient. Care coordination, patient engagement, shared decision making, and assessment of patient-reported pain and function are examples of services that could fall under this category.

Other Factors Impacting Episode Price

There are many other factors that should be used in developing the episode price, though the ability to do so will depend on the availability of data and analytic tools. These include:

Socio-Economic Status of the Patient Population: There are a number of socio-economic factors that have a significant impact on a patient's health status prior to the joint replacement procedure, access to care, and post-procedure rehabilitation and follow-up care. These include income, literacy status, living status (living alone, living in a community without family or other supports nearby), availability of transportation (both in general, and to care settings), and others. Certain socio-economic factors may align with a specific payer category, whether it be Medicare or commercial payers.

Public vs. Private Payers: There are differences between public and private payers that should be acknowledged and reflected in the episode pricing. In addition to the socio-economic status of the patient population, as described above, there is also a difference in how overall pricing is set. For private commercial payers, pricing is an element of negotiation; in the public payer realm, prices are set by the public payer. Either way, this will impact the level at which the episode price is set, as will the market in which the payer operates. Most private sector payers will need to negotiate with providers on the episode price, particularly if participation is voluntary. If the initiative requires participation, it may be easier to establish an episode price, as is the case for the CJR.

Trusted Empirical Data: One challenge is the ability for payers and providers to understand the variation in the costs of the episode across their region. Determining the appropriate price requires empirical data from a trusted source. The availability of these data to identify the opportunities for efficiencies is critical to the success of these initiatives.

Episode Payment Flow: The episode price can be set retrospectively in an episode model for which retrospective reconciliation is the selected payment flow. Similarly, the price can be set prospectively in a model designed around prospective payment. Thus, setting the episode price and the payment flow should be part of an integrated process.

Patient and Family Definitions of Value: Information on the types of services that are most valued by patients and their families should be considered in determining the episode price. This information would not typically be captured via historical data, but rather via engagement between providers and their patients, as well as between purchasers and their employees.

For further discussion on this topic, please read the paper on Financial Benchmarking, [click here](#).

9. Type and Level of Risk

The goal should be to utilize both upside reward and downside risk. Transition periods and risk mitigation strategies should be used to encourage broad provider participation and support as broad a patient population as possible.

The goal should be to incorporate both upside reward and downside risk when setting an episode price. Without downside risk—where the actual costs exceed the target episode price—the accountable entity and other involved providers have less incentive to redesign care to create efficiencies and improve

patient care. Furthermore, increases in the cost of care delivery from year to year often negate the benefits of upside sharing of savings due to the reliance on historical data. Prospective payment includes both by definition. Retrospective reconciliation with upfront FFS payment can be designed either to only share in savings (upside reward) or to share in losses (downside risk). In some cases, payers will begin with upside reward to allow for the provider to establish the infrastructure and reengineer care practices in order to become capable of managing downside risk in the future.

Payers can utilize strategies to limit that risk or to transition (phase in) to downside risk arrangements over time in order to address concerns related to the level of risk. This is particularly important if the initiative is voluntary and participation would be limited without the option for only upside reward. Decisions about type, level, and timing of upside and downside risk illustrate the tensions between payers and providers: more attractive risk arrangements for payers may be less attractive for providers, and vice versa. Consequently, in the private market, these factors become part of the ongoing negotiations among network participants and payers.

Mechanisms for Limiting Risk: The level at which those risk limits are set is a critical design element. There are a number of questions to consider including: 1) will the accountable entity be required to pay the full difference between the total dollars over the established episode price and the actual episode costs back to the payer, or will limits be established? and 2) what is the optimal patient panel size for enabling the adequate spread of risk in the event that the number of procedures provided over the course of the episode is greater than expected? Limits are especially important when the fact that an accountable entity is accountable for care provided by other providers is taken into account. In the case of cardiac care, who accounts for the largest percentage of overall costs? The FFS payment received by the accountable entity—the physician practice—is limited compared to the liability associated with the entire cost of the episode over the estimates for the entire population.

One risk-mitigation strategy already addressed is limiting high-risk cases through exclusions. Following are additional strategies used by various initiatives to limit risk in an episode payment while still maintaining as broad an episode population as is feasible. These are often, but not always, used in tandem.

Risk Adjustment: Risk adjusting the episode price based on the patient severity within the CAD population is one risk-mitigation strategy. Most initiatives will both include a list of included and excluded patients and have a list of factors that would be used to adjust the episode price. There are a variety of approaches to capturing patient characteristics, risk factors, and other parameters that

Safety Net Providers and Risk

A primary goal in designing any alternative payment model arrangement is guarding against unintended consequences. In episode payment for coronary artery disease, the unintended consequence that concerns all providers—but perhaps safety net providers most of all—is the potential for decreased access to care for patients with poor health status, which puts them at increased risk for poor outcomes. This may be correlated with lower socio-economic status if the provider feels that it will not be possible to provide the full continuum of care and achieve positive outcomes within the episode price. Safety net providers in particular may need time to develop adequate reporting and staffing infrastructure; and build relationships across historically siloed organizations in order to feel prepared to take on the risk in an episode payment model.

predict CAD resource use and expenditures. For example, the Health Care Incentives Improvement Institute’s evidence-based case rates create a variety of patient-specific episodes that re-calibrate based on various patient-specific severity factors (Health Care Incentives Improvement Institute, 2016). Another example is the Society for Thoracic Surgeons (STS) National Database, which includes more than 5.4 million patient records. The database contributes to the STS Risk Calculator, which allows users to calculate outcomes such as a patient’s risk of mortality and length of stay. While risk adjustment methods are limited in their predictive accuracy based on claims alone, over time, these factors and their weights can be updated to become more accurate based on empirical experience. However, risk adjustment can potentially lead to gaming. This will need to be monitored to ensure that codes are not being overused to obtain higher payments rather than to accurately reflect the condition or risk of the patient. For further discussion on this topic, please read the paper on Financial Benchmarking, [click here](#).

Stop-Loss Caps, Risk Corridors, and Capital Requirements: Stop-loss caps are already discussed in the context of the included population as one way to limit the risk of very high-cost patients at an individual patient level. Stop-loss caps can also be used on an aggregate level across the population. Risk corridors limit the exposure of the accountable entity by establishing an upper limit over which the accountable entity will not have to pay back any amount of dollars that the overall costs of the episodes may exceed the established episode price. These corridors can also be placed on the upside reward, so that the incentives to limit care are less than they would otherwise be. Another risk-mitigation strategy is to require the accountable entity to maintain a certain level of capital in order to cover losses. While these types of arrangements are often used to limit insurance risk, the same concepts can also be used in this context to limit service risk.

10. Quality Metrics

Prioritize use of metrics that capture the goals of the episode at both the condition and the procedure levels. These include outcome metrics, patient-reported outcome and functional status measures, and some process measures related to the procedures; use quality scorecards to track performance on quality and inform decisions related payment; and use quality information and other supports to communicate with and engage patients and other stakeholders.

There are two tiers of measurement necessary in this model—measures that provide information on the quality of condition management, and measures that hold providers accountable for the quality and outcomes specific to a CAD procedure. Both CMS and commercial health plans use existing cardiac care measures of clinical outcomes and clinical processes that address both conditional management care as well as procedure-related care. There should be less focus, however, on process of care measures and, instead, a greater focus on the use of episode-level measures that allow for assessment of patient outcomes across care settings and providers. That said, it is most effective if all stakeholders in the initiative, including providers, agree on the value of the measures.

Given the lack of system-level outcome measures for CAD care, the Work Group recommends using Patient-Reported Outcome Measures (PROMs) to collect information on patients' experience of care from their cardiologist/PCP, from their surgeon in the case of procedures, and from measures of functional status pre- and post-procedure, and over time with a condition.

It is important to recognize the preference for alignment of measures across programs, use of nationally endorsed measures, and a limited, tight set of measures with a low burden of collection when selecting the metrics for an episode payment model. The Work Group supports these principles whenever they can be met with measures that incent priority opportunities for improving CAD care. A measure that meets these criteria without the potential for clear benefits among CAD patients is not recommended because it would not be fit for this purpose. The Work Group is not including recommendations for specific metrics at this time.

Potential Measures: Table 10 describes examples of potential measures, most of which are included in the Core Quality Measures Collaborative (CQMC) Consensus Core Set of Cardiovascular Measures Version 1.0 (Centers for Medicare & Medicaid Services, 2016b). The CQMC divides the set into chronic care and acute care accountability and specifies whether the measures themselves are at the hospital or the physician level. The Work Group recommends considering the measures in Table 10 as a menu of potential options for developing a core measure set for CAD episode payment.

Table 3: Potential CAD-Related Quality Measures for Use for Accountability and/or Payment

Measure	Examples
Clinical Outcomes	- Hospital 30-day risk-standardized readmission rate following CABG (NQF# 2558) - Hospital 30-day unplanned risk-standardized readmission rate following CABG (NQF# 2515) - Hospital 30-day risk-standardized readmission rate following AMI (NQF #0505) - Hospital 30-day risk-standardized readmission rate following PCI (NQF # X) 30-day risk standardized mortality rate following PCI for patients with STEMI (NAF#0536) or without STEMI (NQF# 0535) - Risk adjusted operative mortality for CABG (NQF #0119) - Primary PCI received within 90 of hospital arrival (NQF #0163) - In-hospital Risk Adjusted Rate of Bleeding Events for Patients Undergoing PCI (NQF# 2459) - Potentially Avoidable Complications Measures
Clinical Processes	- Chronic Stable CAD: ACE inhibitor or ARB therapy (NQF# 0066) - Chronic Stable CAD: Antiplatelet therapy (NQF# 0067) or beta blocker therapy (NQF# 0070) - Tobacco Use: Screening and Cessation Intervention (NQF# 0028)

Measure	Examples
	Therapy with aspirin, P2Y12 inhibitor and statin at discharge following PCI (NQF# 0964)
Care Transition Coordination	Post-discharge appointment for heart failure patients (NQF #2439)
Patient-Reported Outcomes	- CAHPS Clinician and Group Survey - CAHPS Surgical Care Survey - Gains in patient activation scores from 6 to 12 months (Patient Activation Measure) (NQF# 2483)
Appropriate Use	Cardiac Stress Imaging Not Meeting Appropriate Use Criteria: Routine testing after PCI (NQF# 0671)
Functional Status	- Seattle Angina Questionnaire - The Continuity Assessment Record and Evaluation (CARE) tool (measures health and functional status upon hospital discharge, changes in severity, and other outcomes)
Measure Concepts for Development	- Mental health status following cardiovascular events - Symptom management measures - Measures of use of cardiac rehabilitation - Follow-up visit after hospitalization by PCP

The goal of episode payment is to achieve improved outcomes for patient. As a result, it is imperative for the CAD episode model to include clinical outcome measures for the purpose of accountability and in order to track whether the care delivered is or is not achieving the goal. However, unlike the LAN recommendations on episode payment for maternity care and elective joint replacement, the Work Group does recommend the inclusion of some clinical process measures for CAD, due to the link that certain process measures have to patient outcomes and/or their correlation to meaningful care transition efforts.

Quality Scorecard: Incorporating performance on metrics into scorecards for ensuring high-quality care delivery; informing the decisions of the patient, family caregivers, and providers; and using the scorecard to determine payment levels are core features of any episode payment initiative. This information will be critical for engaging patients in decisions related to choice of provider and setting and types of care delivery. Below, we describe in more detail the potential measures that could be used and the manner they would be used, both in a scorecard and for information purposes for patients and other stakeholders.

Most episode payment initiatives use a quality scorecard with defined thresholds that a provider must meet or exceed in order to receive either the full reimbursement for an episode or the full shared

savings. However, the decision on where those thresholds are set or how they are used should be left to the payer and provider to negotiate. Some initiatives vary the level of shared savings based on performance metrics, while others also use minimum performance levels as a threshold for receiving any portion of the savings. In a prospectively paid initiative, it may be useful to withhold some portion of the prospective payment and base its payment or level of payment on the reporting of and performance on the quality scorecard.

A rich source of measure data for developing a quality scorecard exists within cardiac care-related registries, such as the Society of Thoracic Surgeons (STS) National Database. The STS registry was established in 1989 as an initiative of cardiothoracic surgeons seeking to improve the safety and outcomes of care. The registry affords cardiothoracic surgeons across the nation a standardized format for collecting a set of data elements required to systematically measure and compare surgical outcomes. The system employs robust risk adjustment and benchmarks that both enable comparison across providers and over time and that form the basis for sharing best practices and motivating continuous quality improvement. Moreover, since 2010, the STS has facilitated the public reporting of results of surgical quality and outcomes for procedures such as CABG and aortic valve replacement (AVR), among others. The work of the STS and others within the National Quality Registry Network (NQRN) could be a major contribution to the potential for incorporating clinically rich outcome measures for priority conditions and procedures into CEP models.

Quality Information to Communicate and Engage with Patients: In addition to using information on quality to determine payment, it is important to many stakeholders to have access to data on quality. As discussed under Recommendation 5, Patient Engagement, patients need quality data on the performance of different providers—primary care, cardiology, surgeons, and intensivists—to inform their choices. Patients also need information about the different facilities in which their procedures may take place.

One example of public reporting of cardiac surgery performance at both the hospital and the surgeon level is the STS Public Reporting Initiative. Though the STS' initial efforts focused on CABG performance, it has also added quality data on Aortic Valve Replacement (AVR) surgery. The STS uses a composite CABG score that includes 11 different components of clinical care, which include both mortality and morbidity rates and adherence to NQF-endorsed quality measures. Its star-rating system is designed to allow patients to view a provider's performance against the average performance of all STS database participants.

Employers, purchasers, and payers also need these data both to develop provider networks and to help employees make these choices. Employees need to understand the bundle and what their role is in providing high-quality care.

Finally, episode payment design must build in the capacity to collect, analyze, and provide data; and to support CAD patients and consumers in identifying and interpreting this information. The use of patient navigators—for whom some existing initiatives have substituted community health workers—can be helpful in providing this support. First, however, the information itself must be available. It is important, therefore, to establish cross-cutting efforts to define metrics and systems for data collection and analysis. It is a significant burden, however, for each initiative to define its own metrics, collection system, and scorecard. Broader efforts are needed to build the necessary infrastructure for meaningful development and use of quality performance information, and building these systems is one of the key challenges discussed in Chapter 6, [Operational Considerations](#). To read the LAN White Paper on Performance Measurement, [click here](#).

CLINICAL EPISODE PAYMENT MODELS

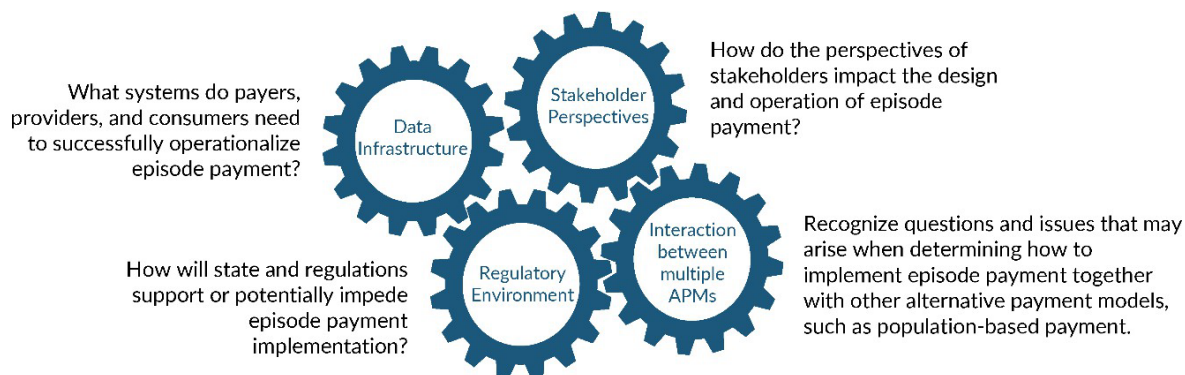
OPERATIONAL CONSIDERATIONS

Chapter 6: Operational Considerations

In this section, the CEP Work Group does not offer specific recommendations. Instead, the Work Group has developed a set of questions that all adopters of clinical episode payment should consider and discuss when they begin planning and designing episode payment models.

While the design of an episode of care is critical to its success, some aspects of the way episode payments are conducted affect the likelihood that payers and providers will be able to adopt a given model. These operational considerations include remaining mindful of the perspectives of stakeholders; building and maintaining an appropriate infrastructure for data collection, analysis, and payment; staying abreast of regulatory statutes and regulations that could affect the design and operation of episode payments; and, finally, considering how episode payments interact with population-based payments (Figure 12).

Figure 1: Operational Considerations



1. Role and Perspectives of Stakeholders

How do the perspectives of stakeholders impact the design and operation of clinical episode payment?

It is important to understand the varied perspectives of those who will be impacted by the clinical episode payment. Each stakeholder, whether payer, provider, consumer, or purchaser, has unique expectations, goals, and limitations during the design of an episode payment. Because of the multiplicity of these diverse perspectives, it is important to consider all stakeholder voices in the design and operation of episode payments.

Many stakeholders have multiple and sometimes conflicting viewpoints. For example, commercial health plans and large payers (including states and the federal government), may be interested in creating incentives for providers to develop the capacity to invest in data infrastructure to support that goal. Meanwhile, providers may be equally interested in the potential of episode payments and can be valuable innovators. But they may have reservations about leadership and accountability when it comes to care coordination across multiple medical settings. Involving patients and families in myriad ways throughout the episode as partners in their own care and in the design, implementation and evaluation of episode payment models is an essential strategy for advancing value-based care and improving outcomes. They can also provide valuable feedback on how the methodology impacts the patient.

Finally, because of their purchasing power, employers and other entities that purchase health care can align incentives between themselves and providers through episode payment. Purchasers' interests coincide with those of consumers and patients, because both groups share a vested interest in ensuring that episode payment models tie reimbursement to performance.

Well-designed payment models consider all of the perspectives above, as well as support reliable delivery of care that is provided at the right time in the right setting. Another consideration that impacts the roles and relationships among the various stakeholders is whether the initiative is voluntary or mandatory. For example, if a given market is characterized by having significant alignment of multiple payers or has one dominant payer, there is greater opportunity for a payer to make participation mandatory. Whether it is voluntary or mandatory, the negotiations among providers, purchasers, and payers will need to ensure that participation is feasible for those to whom it applies.

Stakeholder Perspectives

Patients and Consumers: Patients and their families, caregivers, and consumers contribute to, and benefit from, episode payment models, including by participating in design, governance, evaluation, and improvement of episode payment models. They can use high-quality decision tools to decide about appropriate care. When patients and caregivers have access to meaningful quality and cost information, they are able to make thoughtful care arrangements that favor the highest value care and providers. Patients and families can participate in shared care planning and benefit from care coordination to implement care plans and monitor quality. Finally, consumers and patients can provide important feedback on care experiences and outcomes, which helps measure success and drive improvement. Health information technology facilitates their involvement throughout the episode.

Payers: Payers (commercial health plans, Medicare, and Medicaid) seek to create incentives for providers to coordinate care across provider types and thus, create efficiencies that decrease costs for a bundle of services. They are often willing to invest in strong data infrastructure for episode payment implementation, as well as develop new contracting procedures with participating providers.

Providers: Providers (clinicians and facilities) look for indicators of sufficient leadership and accountability for episode payment to be established to ensure that the goals of care redesign and care coordination across settings and providers are prioritized over cost savings. They are interested in aligning financial incentives, data requirements, and quality-measurement requirements across all payers with which they contract.

Employers and Purchasers: Purchasers can advance the goal of aligning incentives between themselves and providers through episode payment. Purchasers may also be interested in integrating tiered networks within a bundled payment model to provide incentives to employees to seek care from high-performing providers and in improving value through enhanced benefits. Large purchasers hold significant leverage with payers and providers and can push for episode payment within their contracting negotiations. In the case of maternity care, this leverage is held by employers and state Medicaid agencies that can encourage their managed care organizations (MCOs) to use bundled payment for maternity care. In the CAD episode model, purchasers may need to develop different tools for negotiating multi-year contracts with payers, given the fluctuation in care needs for patients with CAD from the point of diagnosis to active management and beyond.

2. Data Infrastructure Issues

What data systems do payers, providers, and consumers need to successfully operationalize episode payment?

One of the biggest challenges to implementing a clinical episode payment model is the process of managing and sharing the vast amounts of data necessary to assess, manage, and mitigate risk and to use it to improve quality and outcomes for patients. Effective data infrastructure systems must be able to achieve two things:

- Group claims into episodes for analysis and payment; and
- Meet providers' need for critical patient information to be accessible across providers and to patients to coordinate care and engage patients in their care.

At present, the field lacks scalable infrastructure for widespread, effective, efficient adoption of episode-based payment. Payer systems are set up for FFS payment, or, in some cases, full capitation. The intermediate steps of bundled payment require pulling claims from multiple data files, applying exclusionary rules, calculating and updating benchmarks and target episode prices, and doing so within the context of multiple provider contracts and enrollee benefit designs. Simply put, some payers are struggling to develop the business case and justify the return on investment for building these systems.

For episode payment to achieve its potential requires a data infrastructure that supports and facilitates analysis for the following purposes:

- Determining which clinical episodes/conditions to target and what services and costs are considered part of the episode;
- Establishing the episode price;
- Bundling claims to determine historical/actual expenditures; and
- Communicating clinical, patient-generated, and care coordination data across providers, including primary and specialty physicians, hospitals, post-acute care settings, and others who are part of the patients' care teams.

This data infrastructure must also support the ability of clinicians to understand patient preferences and expectations, and for patients and family caregivers to communicate preferences and goals. For these purposes, an episode payment data system by itself may not be sufficient. Other clinical data and patient decision aid information will also be important. However, the payment systems that analyze FFS claims data can also provide important information on the types of clinical decisions and the impact of those decisions on patients experiencing similar conditions.

In addition, whether clinical episode payment is prospective or utilizes retrospective reconciliation with upfront FFS payment, it is critical to build and implement software and systems to group these claims to estimate and establish the episode price, to calculate actual costs, and to make the correct payment adjustments. Currently, the data analysis and systems being used are too manual, and the expense of either replacing or building this type of process on top of legacy systems will limit broader

implementation of episode payment. Depending on the volume of payment that is done in this manner and the monetary impact, revising legacy systems to be able to handle this level of complexity may not be a high priority for a payer. Payers are faced with a “buy or build scenario” whereby they can either buy the complex infrastructure, albeit with little knowledge about the quality of the product, or try to build it themselves, with the understanding that it will be a long-term investment in this type of payment reform. Although the needs are complex, some companies have developed the capacity to assist payers and providers in these functions. Further movement toward the use of clinical episode payments will create an even greater market for such services whether they are developed by a third party or whether the payer creates their own solution.

Moreover, these systems must be able to support data sharing with providers and payers in a transparent manner to ensure that all involved understand where the opportunities for efficiencies and improvements in care occur across the episode, including potentially individual patient management. However, it is often very difficult to obtain useful data in a sufficiently timely manner to allow for the most effective care management of the patient. Another issue is the capacity for provider entities, and in some cases, payers, to analyze the data. Even if the underlying claims are available and the logic for running the data was shared, provider entities often find it challenging to run the necessary reports.

Finally, for the care to be as effective as possible, digital systems that provide information to patients and enable them to communicate with their providers and take an active role in their care are also key and must be tied to the provider data analytics. The grouping of claims is primarily a payer function; however, the clinical infrastructure is something that a provider may want/need to develop on its own, or it is possible that a payer can assist. This is a critical decision point when implementing CEP.

The Work Group recommends the following two concepts for operationalizing the data infrastructure needed to implement episode payment.

A Service or “Utility” Model: In this model, a group of payers pay a third party to develop a core set of logic that could be used to group claims; provide feedback and benchmarking to providers; and support data sharing for patient management, instead of each payer having to develop the capacity individually. Several examples were provided by Work Group members including vendors that are performing in this capacity; large payers, such as Medicaid in one state; and regional initiatives whereby purchasers or payers support a third party to perform these tasks in a uniform manner. State-sponsored All-Payer Claims Databases (APCDs) are an example of a data warehouse that could pull together data across payers for these purposes. In any implementation scenario, neutral sources of such data and analysis will help to facilitate multi-payer analysis. This ensures that providers involved in this form of payment are not subject to multiple definitions of episodes and benchmarking formulas. Another concept that was important to the Work Group to ensure high-quality products was to potentially create a “certification” process for this type of function.

A Core Set of Logic: A core set of logic will assist the health care industry in developing the capacity for grouping claims into bundles by standardizing the core logic but allowing each payer to customize a portion of the more granular rules. This could be applied individually by payers or within the context of a third party described above.

3. Regulatory Environment

How can the current and evolving federal and state legal landscape in the health care industry affect episode payment implementation?

Any organization pursuing an episode payment initiative needs to remain cognizant of the statutory and regulatory framework that may impact the manner in which it creates relationships with providers and the way incentive and risk structures are established.

The manner in which clinical episode payment is designed and implemented will be affected by existing and emerging laws and regulations at both the federal and state levels. Certain arrangements and relationships between providers and suppliers, as well as between patients and providers and suppliers, may implicate federal laws and regulations designed to prevent inappropriate incentives and to protect beneficiaries. Furthermore, many states have created, or are considering creating, regulations designed to ensure that providers do not take on a level of risk that they might not be able to support without harming the patient or other consumers (regardless of whether it is characterized as insurance or service risk).

Three federal laws of significant importance to health care systems are the physician self-referral law, the anti-kickback statute, and the civil monetary penalty (CMP) laws. It will be important for provider organizations to discuss with legal counsel the potential implications of these and other laws on proposed arrangements for clinical episode payment. HHS issued limited waivers of these laws for specific types of models, including the Bundled Payment for Care Improvement (BPCI) initiative and the CJR. More discussion can be found on the [CMS Fraud and Abuse Waivers web page](#) (Centers for Medicare & Medicaid Services, 2016c).

Several other legal issues also impact the implementation of clinical episode payment. For example, EMTALA is an important consideration when pricing the three episodes of care discussed in this paper. Patients being seen for the first time in the emergency room will be given whatever care the hospital and clinician on call determine feasible without regard or awareness of the clinical episode payment context. This may be particularly important for maternity episodes if the bundled payment is developed using the cost of a birth-center birth.

Regarding medical liability, it may be the case that clinicians and facilities need to consider concerns related to liability with their preferred treatment. There may also be concerns with liability when multiple providers are sharing accountability in a team-based approach. Payers need to be aware of and acknowledge these concerns. With maternity care, liability laws for the clinicians (including OB/GYN, midwives, and birth centers) vary across states regarding birth; those establishing a maternity care initiative should have an understanding of their state laws.

Many states have created, or are considering creating, regulations designed to ensure that providers do not take on a level of risk that they might not be able to support without harming the patient or other consumers (regardless of whether it is characterized as insurance or service risk).

In addition, we note that, given limits on reassignment of claims, if a state pays FFS for EJR, Maternity or Cardiac care under Medicaid it may not be feasible to prospectively pay for a clinical episode of care to

one accountable entity that would then remunerate other providers.¹ We highlight this issue for maternity because of the importance of Medicaid as a payer, but it is relevant to the episode types as well.

In the maternity context, we found evidence that it may be helpful for the various participants to know that a series of evaluations of rigorous quality improvement programs has documented rapidly plummeting liability claims, payments, and premiums (Sakala, Yang, & Corry, 2013). It will be important to include these dimensions of care in evaluations of episode payment models because of this relationship.

Regulatory Areas That May Additionally Impact Maternity Payment Strategy

States define the types of providers, including practitioners, and settings of care that support birth. They define licensure and certification of providers and the scope of practice under which the providers operate. At a minimum, these regulations will impact decisions related to participating providers, services covered, and episode price determination. For example, laws that require written agreements for transfers between birth centers and hospitals or that require OB/GYN supervision of births in a birth center can limit the availability of that birthing option if no hospital or OB/GYN is willing to engage in such an agreement. Other state laws create a different minimum length of stay for a birth than the federal minimum and may also need to be considered.

The **Medicaid context** is important to consider, given a large number of births are paid for by Medicaid. A high percentage of those births are paid through MCOs; therefore, it will be important to consider the manner in which a state contracts with MCOs. These contracts must determine whether states could encourage such payment arrangements or whether the Medicaid MCOs may be interested in paying for maternity care in that manner without state encouragement. There are examples whereby a state encourages these types of payment arrangements through their contracted MCOs, whereas other states have MCOs build bundled payments for maternity care into their contracts with providers without state encouragement. We note that, given limits on reassignment of claims, if a state pays FFS for births under Medicaid it may not be feasible to prospectively pay for a clinical episode of care to one accountable entity that would then remunerate other providers.

Many states have created, or are considering creating, regulations designed to ensure that providers do not take on a level of risk that they might not be able to support without harming the patient or other consumers (regardless of whether it is characterized as insurance or service risk).

¹ See Section 1903(a) (32) of the Social Security Act and the regulations at 42 CFR 447.10.)

4. Interaction between CEP and Population Based Payment

How do clinical episode payment and population-based payment interact to move payment reform forward?

As the LAN develops recommendations specific to implementing either clinical episode payment or population-based payment, questions arise from those in the field who see opportunities or, at some point in the future, mandates related to implementing both of these alternative payment models within one organization. There are many questions that payers, purchasers, and providers will need to think about and address when determining whether and how to implement multiple payment models. The discussion here centers on integrating both CEP and PBP but may apply to other APMs as well.

It is critical that the decision to implement both of these payment reforms (either separate or together) will be taken within the context of a broader strategic goal. As the health system moves towards APMs of all types, a clear vision is needed to avoid confusion and unnecessary complexity. In some instances, it may be the case that using CEP will incentivize the necessary delivery system changes to ensure person-centered care. In other initiatives, payers may implement PBP and find that clinical episodes within the continuum of care become person-centered without CEP. Establishing a goal for adopting one or multiple APMs and measuring movement towards it is critical.

Implementing one APM, either CEP or PBP, has its own challenges; these challenges are compounded when an organization considers implementing both types of APMs. Questions that arise when implementing both CEP and PBP may include:

- Can initially implementing the model that focuses on the risk limited to an episode of care (clinical episode payment) serve as a transition to implementing the broader model of population-based payment? If so, how?
- What are some potential operational practices for implementing CEP and PBP in an integrated way?

Can Clinical Episode Payment Serve as a Transition to Implementing Population-Based Payment?

As policymakers and payers consider various APMs, the movement towards PBP is often described as a progression from “less disruptive” forms of APMs to “more disruptive” forms. For example, accountability for value in the HCPLAN Framework Category 2 (FFS link to payment/quality) is only related to the services provided by individual providers. In Category 3, accountability for value is across several settings and providers, but not all. Category 4 holds one entity accountable across all care for the enrollee. Thus, one question is whether CEP can (or should) serve as an appropriate “stepping stone” toward a potential goal of broad population-based payment.

While it may be the case, as noted below, that implementing CEP before a PBP reform may help build a foundation for PBP, it is also the case that CEP is a goal on its own. CEP can be quite complex to implement as it requires defining hard-to-define beginnings and endings of episodes within the continuum of patient care and also separating out the costs of the episode from other costs of care. These distinctions are not always clear. Thus, implementation of CEP should not be considered only as a stepping stone to PBP. It may also be the case that a payer or provider finds CEP on its own to be

effective at focusing on the types of care of most interest to its population and thus, see no need to implement PBP.

While CEP can be implemented on its own, below are some ways in which CEP could encourage the development of infrastructure and relationships among providers that would be useful for moving towards PBP:

- Encouraging providers to create mechanisms for coordinating across settings within a clinical episode **and**, potentially, with primary care before and after the episode. The mechanisms and infrastructure needed to facilitate this kind of coordination would create a foundation for coordinating care in a PBP environment.
- Creating expectations for accountability beyond a provider's own setting and for the patient over time. Accountability across settings, clinicians, and phases of the care continuum is critical for PBP and CEP. A culture of shared accountability and team-based care is particularly important given the need to measure patient-reported outcomes and key quality metrics across settings in both models.
- Incentivizing new structures, including care management protocols, information sharing systems, and ongoing quality improvement programs that make it more feasible to take on additional risk.
- Providing experience for providers to learn how to take on financial risk and distribute payment across providers.

Clinicians participating in a CEP model will likely need to share accountability across members of a patient's care team and will require the infrastructure to support that. Building this infrastructure for CEP may make it easier for them to become an entity capable of the risk involved in a PBP arrangement. From the payer or purchaser perspective, it may be easier to begin with CEP, as it requires less change in organization billing systems and will be applied to a smaller subset of claims. As billing systems become more facile at grouping claims to define the episodes, that capacity could be used to assist the provider organization in targeting their interventions on episodes and conditions with the greatest opportunity for improvement and cost savings under a PBP model.

Operationalizing Integrated CEP and PBP Models

In an integrated model, it is possible that the clinical episode payment will “nest” within the population-based payment. This is because a PBP model holds the accountable entity responsible for the costs and quality of care for all services an aligned enrollee uses across a continuum of care, while the CEP model will focus on the episodic portion of that care. From a clinical perspective, having an accountable entity under a CEP program within a PBP model could complement the primary care focus of the PBP model. The PBP accountable entity will have a need to prevent some high-cost episodes, but also to effectively manage those that do occur. In this way, CEP could assist the PBP accountable entity reach its financial and quality benchmark goals by managing specific high-cost, high-volume episodes within the continuum of care. However, this complementary relationship is only feasible if the providers themselves coordinate the primary, specialty, and post-acute care for the patient both before and after the episode.

Before tackling these clinical questions, however, there are a number of operational issues that must be addressed when two entities have responsibility for costs that may arise for one patient but could be attributed to both a clinical episode and a population-based care service. The primary issue when integrating CEP and PBP is that a patient may be attributed to two entities at the same time: the PBP entity for total cost of care and the CEP entity if the patient needs care that aligns with a clinical

episode. Using a carve out mechanism—or some variety of carve out—can address this situation. In the three carve out examples provided below, we assume that each situation involves a single payer (Medicare, state Medicaid agency or Medicaid or Medicare MCO, or a commercial payer) implementing both CEP and PBP in the same region:

1. **Basic Carve-Out:** The most straightforward way to address this is to carve out the dollars represented by those episodes from the total cost of care baseline calculation for which the PBP entity is accountable. The payer would keep track of the members and their costs assigned to these episodes and subtract them out when payment is reconciled. The benchmarks would be based on these amounts.
2. **Carve Out with Metric-Based Provider Accountability:** A criticism of the basic carve out is that it provides no incentive for the PBP entity to coordinate with the CEP entity for things such as upfront shared decision making, or high quality, coordinated, follow-up care for the patient post-discharge. One way to address this might be (when using the basic carve out methodology) to use quality metrics to hold providers accountable and encourage PBP entity providers to work with the CEP entity to make sure the member or patient received seamless care around the episode.
3. **Carve Out with Savings Assigned to the PBP Entity:** Another criticism of a pure carve out is that carving out the costs of an episode removes part of the incentive for entities to enter into PBP arrangements as they are not able to obtain all of the savings from their efforts. One way to address this is to establish the price less than the historic average episode price (essentially building in a guaranteed discount level). The PBP could absorb these upfront savings while the CEP entity would accept the risk beyond that amount.

For some providers, this discussion may still be in the realm of the theoretical. For providers participating in various ACO models **and** wishing to participate in a new episode-based demonstration initiative, these questions and challenges are important. As APM implementation evolves, the hope is that promising practices will emerge to support providers and payers in successful design, implementation, and sustainability of such integrated models.

Chapter 7: Conclusion

Overall, the recommendations developed by the CEP Work Group include design elements and operational considerations that together are designed to support APM alignment. The Work Group recognized that implementation must be tailored to market conduciveness, organizational readiness, and the characteristics of particular initiatives. For that reason, compromises will sometimes be necessary to achieve the goal of alignment. When compromises are made, there should be justifiable reasons for divergence from the Work Group's recommendations.

The CEP Work Group also recognizes that there are many additional elements that can be helpful in deploying episode-based payment programs. These include technical assistance, detailed specification of care delivery models, and aligned benefit designs. While important, these elements are out-of-scope for the Work Group due to the charge from the LAN Guiding Committee and the designated focus of the LAN.

Finally, the recommendations and implementation options described in the body of the White Paper are directed toward all stakeholders. It is the intention of the CEP Work Group that payers, providers, consumers, patients and their family caregivers, purchasers, and states will all consider these recommendations and options as starting points for critical conversations about how to work together to promote aligned adoption of episode payment models. Specific priorities for moving this work forward are described below.

Moving Forward: Priorities for Supporting Episode Payment

The Work Group's recommendations include actions that are feasible for stakeholders to implement in the current environment; in fact, many are based on existing initiatives. At the same time, there are a number of other areas in which evolution is still necessary in order to fully optimize the impact that APMs, in general, and episode payment, in particular, may have on patients and the health care system. While the following list is not exhaustive, the following issues stand out as being necessary in the short term for moving the field of episode payment forward:

Creating an Infrastructure that Supports Person-Centered Care: The design and implementation of person-centered episode payment models require the ability of providers and patients to engage in shared decision-making, shared care planning, sharing of critical information on cost and quality, and systematic care coordination that puts the patient first. Addressing the need for an overarching infrastructure that allows all of these interactions to occur is central to supporting episode payment.

Transparency of Cost Data: All stakeholders need transparent, detailed data on episode-based care prices that payers negotiate with providers. Having this data available via a trusted source will allow purchasers, payers, patients, and consumers to make informed decisions in the episode payment process. In addition, information on regional-cost variation and on how variation relates to different circumstances is particularly valuable. Ideally, participants will be able to compare episode to FFS costs and understand cost implications for their situation.

Provider and System Readiness: Individual providers may have interest in participating in an episode payment initiative; however, in order for episode payment to be effective, it requires coordination among a collaborative care team that includes both clinical providers and payers. Most markets lack the systems and infrastructure to support this type of collaboration and are still hallmarked by siloed-care environments that do not share common data or payment systems. Addressing the readiness of both

providers and the systems in which they deliver care will be critical to easing the path toward greater episode payment implementation.

Quality Measurement: While there are measures of process standards, patient outcomes, patient engagement tools, and functional status assessment tools available today, there are concerns about how well these tools support providers' and payers' abilities to assess whether a procedure truly improved the outcome for an individual patient. Continued development of key measures capable of measuring quality across settings of care will be critical for the effectiveness of episode payment models.

High-Value, Underused Services: As noted in the body of this White Paper, a wide variety of high-value services (both those currently covered and others non-covered) are underused today. Especially within maternity care, research suggests their use can increase vaginal birth rates, lower pre-term birth rates, and provide necessary support for childbearing women and newborns throughout the episode. There are a number of episode payment design elements that point to ensuring payment models incentivize the use of these high-value, underused services across all episode payment models.

Low-Value, Overused Services: Also noted in this paper is the fact that the current health care system is overusing services that do not provide value to the patient. These services may come in the form of unnecessary diagnostics or procedures. The goal of the episodes described herein is to reduce the incentives to providers for including these types of services in their care process and replace them with services that are high value and are appropriate for a given patient, based on clinical assessment and the patient's preferences and values.

Appendix A: Roster

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Appendix C: Elective Joint Replacement Bundled Payment Models

This appendix presents a summary review of selected elective joint replacement initiatives. Results reported are based on studies of varying statistical rigor and extrapolated from publications.

	Episode Definition	Episode Timing	Patient Population	Service Inclusion/Exclusion	Accountable Entity	Payment Flow	Episode Price	Level and Type of Risk	Quality Metrics	Patient Engagement	Results
CMS—ACE demonstration	Hip and knee replacement	Medicare Part A and Part B services provided during an inpatient stay	Admits for MS DRGs 469 and 470	Limited list of service exclusions	Health system	Prospective Payment	Competitive bidding by sites on a voluntary basis to provide orthopedic services to Medicare patients in inpatient settings	Upside and downside risk	No explicit quality tie to payment methodology	NA	Medicare payments decreased; savings shared with beneficiaries not accounted for
			Limited list of population exclusions	IP and OP in an admission, including some pre-op	Voluntary gain sharing with providers			Built in discount			Increase in Part B costs
				Part A and B in an admission, including some pre-op services							Discharges to PAC less likely
											Decrease in readmissions
											Mixed results on complications

	Episode Definition	Episode Timing	Patient Population	Service Inclusion/Exclusion	Accountable Entity	Payment Flow	Episode Price	Level and Type of Risk	Quality Metrics	Patient Engagement	Results
CMS—Bundled Payment for Care Improvement (BPCI): Model 2 ¹	Hip and knee replacement	Inpatient stay through 30, 60, or 90 days post discharge except hospice Awardees select episode length	Admits for MS DRGs 469 and 470 Limited list of population exclusions for unrelated Part B services and Part A inpatient readmissions	All related inpatient stay costs in acute care and post-acute care and all related services for 90-days post-discharge All non-hospice Part A and Part B services	Acute care hospital, physician group practice, or awardee convener Voluntary gain-sharing with providers	FFS with retrospective reconciliation	Reconcile actual cost against a bundled payment amount for the episode of care, which is based on historical FFS payments	Upside and downside risk Increasing upside and downside risk over time to stop loss and stop gain limits	No explicit quality tie to payment methodology	NA	Early evaluation (based on one quarter only) found: Lower lengths of hospital stays. Percentage of BPCI patients discharged to an institutional PAC provider (SNF, IRF, LTCH) decreased from 66% in the pre-BPCI baseline to 47% during intervention quarter. This proportion remained relatively steady at 62-60% for the comparison hospitals. Lower number of HHA days among patients with at least one HHA day.

¹ Note: Model 1 not included as it is a discount off of IPPS, not accountability across providers or settings.

	Episode Definition	Episode Timing	Patient Population	Service Inclusion/Exclusion	Accountable Entity	Payment Flow	Episode Price	Level and Type of Risk	Quality Metrics	Patient Engagement	Results
CMS—Bundled Payment for Care Improvement (BPCI): Model 3¹	Hip and knee replacement	Admission to post-acute care within 30-days of discharge through 30, 60, or 90 days after the initiation of the episode Awardees select episode length	Admits for MS DRGs 469 and 470 Limited list of population exclusions for unrelated Part B services and Part A inpatient readmissions	Provider fees (physician and post-acute care services), related readmissions, and related Part B services (e.g., lab, DME) All non-hospice Part A and Part B services during the post-acute period and readmission	Post-acute care provider, provider group practice, or awardee convener Voluntary gain-sharing with providers	FFS with retrospective reconciliation	Reconcile actual cost against a bundled payment amount for the episode of care, which is based on historical FFS payments	Upside and downside risk Increasing upside and downside risk over time to stop loss and stop gain limits	No explicit quality tie to payment methodology	NA	Early evaluation (based on one quarter only) found: Average PAC days lower than comparison Most of difference was present prior to demonstration HHA payments increased more in BPCI sites vs. comparison sites Sample was very small
CMS—Bundled Payment for Care Improvement (BPCI): Model 4¹	Hip and knee replacement	Entire acute care hospital stay and related readmissions for 30 days	Admits for MS DRGs 469 and 470 Limited list of population exclusions for unrelated Part B services and Part A inpatient readmissions	All related services provided by the hospital, physician, and other practitioners	Acute care hospital or Awardee Convener Voluntary gain-sharing with providers	Prospective payment	Single bundled payment for all related services	Upside and downside risk	No explicit quality tie to payment methodology	NA	Results not yet available

	Episode Definition	Episode Timing	Patient Population	Service Inclusion/Exclusion	Accountable Entity	Payment Flow	Episode Price	Level and Type of Risk	Quality Metrics	Patient Engagement	Results
CMS— Comprehensive Care for Joint Replacement (CJR)	Hip and knee replacement	Admission through 90 days post-discharge for all Part A and Part B Subject to limited exclusions	Admits for MS DRG 469 and 470 Limited list of population exclusions	Limited list of service exclusions	Hospital Voluntary gain sharing with providers	FFS with retrospective reconciliation	Reconcile actual spending against target prices set by risk stratification methodology each year	Upside and downside risk Increasing upside and downside risk over time to stop loss and stop gain limits	Payment methodology includes complications, HCAHPS, and voluntary reporting of patient outcome	NA	Not yet available
PBGH— Employers Centers of Excellence Network (ECEN) with Walmart, Lowe’s, McKesson, and JetBlue	Hip and knee replacement	Consultation, care and travel through post-op clinical care	Employee population willing to travel to a center of excellence pays no co-pays or cost-sharing; travel and lodging for patient and caregiver provided by employer Some BMI and other appropriateness criteria applied to definition of bundle and to the certification of the Centers of Excellence	Episode based on MS-DRG 469 and 470 Bundle includes hospital charges, physician fees, affiliated services (PT, home health) for 7- to 10-day bundle Other appropriateness criteria applied to definition of bundle and Centers of Excellence certification	Hospital/health system	Prospective payment	Competitively set price that is a negotiated bundled payment for surgical procedures performed by Centers of Excellence	Upside and downside risk	Replicates CMS and BREE Collaborative orthopedic complication definitions and measures Additionally, completion rates and average change in HOOS/KOOS and all incidents of unanticipated medical care”	Patient navigator provides patients and caregivers with 24/7 support at the Centers of Excellence	Employer savings on procedure episodes; employee travel and lodging included

	Episode Definition	Episode Timing	Patient Population	Service Inclusion/Exclusion	Accountable Entity	Payment Flow	Episode Price	Level and Type of Risk	Quality Metrics	Patient Engagement	Results
Integrated Healthcare Association <i>a regional health care improvement collaborative with several health plans and hospitals</i>	Relied primarily on PROMETHEUS Evidence-based Case Rates (ECRs)	Admission through related readmissions within 90 days of hospital discharge. Does not include post-acute care as it would have required multiple new contracts	Limited list of eligible patients to avoid complexities of risk-adjustment Avoid high BMI, those with high severity scores	Specific list of services	Hospitals	Prospective payment	Fixed, single price, covering all medical care for the episode including physician fees, inpatient stay, tests, and devices	Upside and downside risk	Not yet implemented	NA	Results from the study were developed into several papers on implementation issues (see Appendix F)
Geisinger Health System (GHS) ProvenCare Total Hip and Total Knee Replacement Initiatives	Hip and knee replacement	Admission through 90 days post-discharge	Appropriateness criteria Limited exclusions based on prospective provider consensus	Inpatient, outpatient, and post-acute care with some pre-operative care included	GHS facility or GHS provider	Prospective payment with retrospective reconciliation	Set price for episode of care	Upside and downside risk	Complications Readmissions Adherence to Best Practice Elements	"Patient Compact" was developed so that patients could become partners in their own care	50% decrease in readmissions 10% decrease in length of stay Two of their programs certified for exceeding national benchmarks for hip fracture care

	Episode Definition	Episode Timing	Patient Population	Service Inclusion/Exclusion	Accountable Entity	Payment Flow	Episode Price	Level and Type of Risk	Quality Metrics	Patient Engagement	Results
Arkansas Health Care Improvement Initiative <i>Medicaid and commercial payers</i>	Hip and knee replacement	Inpatient or outpatient admission and post-acute care through 90 days	Differential definitions of population included based on the point of time in the trajectory of the episode Fewer cases included in the last 31 to 90 days, for example	Differential definitions of what services are included based on the point of time in the trajectory of the episode Fewer cases included in the last 31 to 90 days, for example	Orthopedic surgeons	FFS with retrospective reconciliation	Shared savings and includes a built-in discount on the target price	Upside and downside risk Downside risk limited to relatively high spending levels	Readmissions 30-day wound infection Frequency of prophylaxis for DVT and PE Treatment for DVT and PE	NA	Over two-year period (See January 2016 report for more specifics) AR BCBS—trend for LOS from 2.7 to 2.3 from 2013 to 1014 Medicaid—2013 to 2014 30-day wound infection decreased from 2.0% to 1.7% Post-op complications increased from 8% to 14% Prophylaxis for DVT/PE increased from 13% to 17.4%

	Episode Definition	Episode Timing	Patient Population	Service Inclusion/Exclusion	Accountable Entity	Payment Flow	Episode Price	Level and Type of Risk	Quality Metrics	Patient Engagement	Results
PROMETHEUS/ Health Care Improvement Initiative (HCII)	Hip and knee replacement	30 days prior to inpatient or outpatient admission through 180 days post-discharge	Detailed list of relevant, qualifying diagnosis codes for patient inclusion	Detailed lists of procedure codes for inclusion of services	Varies based on the initiative; can be either the facility, the practice, or both	Can use either prospective payment or FFS with retrospective reconciliation	Prospective: Patient-specific predicted budgets, which are negotiated upfront during contracting Retrospective: FFS payment allows for severity-adjustment based on risk factors to budget for per-patient costs	Contracts can be based on upside only, upside/ downside, with or without stop loss, and with upside tied to quality scorecards	Builds in savings for potentially avoidable complications Set of measures evaluating potentially avoidable complications	NA	Varies by payer and/or provider
Tennessee Division of Health Care Finance & Administration Episodes of Care	Hip and knee replacement Treatment of chronic arthritis	Claims related to total joint replacement beginning 45 days prior to admission Procedure Post-acute care related to procedure Up to 90 days post-discharge	Patients with an inpatient or outpatient hip or knee replacement procedure code Limited business, clinical, patient, and high-cost outlier exclusions	Includes PT, certain medications, and treatment for complications due to infections, blood clots or readmissions	Orthopedic surgeon	FFS with retrospective reconciliation Shared savings potential	Reimbursement for episode is risk adjusted using historical claims data Payers adjust over time based on new data Acceptable, commendable, and gain-sharing limit thresholds are set	Upside and downside risk	30-day readmission rate 30-day post-operative DVT or PE 90-day post-operative infection rate 90-day post-operative dislocation or fracture rate Average LOS	NA	Not yet available

Appendix D: Maternity Care Bundled Payment Models

This appendix presents the Summary Review of Selected Maternity Care Initiatives. Results reported are based on studies of varying statistical rigor and extrapolated from publications.

	Episode Definition	Episode Timing	Patient Population	Service Inclusion/Exclusion	Accountable Entity	Payment Flow	Episode Price	Level and Type of Risk	Quality Metrics	Patient Engagement	Results
Tennessee Health Care Improvement Innovation Initiative	Low-risk pregnancy with live birth	40 weeks prior to delivery through 60 days after delivery or discharge	Mother only Exclusions: Various comorbidities, maternal death, any indication of leaving AMA, triggering events occurring at FQHC/RHC, and use of TPL	Prenatal: Related medical claims, related medication, or emergency department claims Delivery: All claims Postpartum – Days 1-30: Non-Inpatient Admissions (readmissions), ED claims not resulting in readmission, other pharmacy/professional/facility claims with an inclusion code Postpartum—Days 31–60: All related medical claims and medications	Physician or midwife who delivers the baby Global Billing Code: Tax ID of the billing provider or group No Global Billing Code: Tax ID of the billing provider or group responsible for delivery	FFS with retrospective reconciliation	End of an episode: Costs are totaled and adjusted using a risk weight based on woman’s age, health conditions, and complications during pregnancy PAP’s end of year average adjusted cost is compared to “Commendable” and “Acceptable” levels established by each payer Pregnancies with a cost greater than the 99.73 rd percentile after adjustment and certain comorbidity pregnancies will be excluded from PAP’s annual average adjusted cost	Upside and downside risk	Gain sharing: Screening rates for HIV, group B streptococcus (GBS), cesarean section Informational only (not for gain sharing): Screening rates for gestational diabetes, asymptomatic bacteriuria, hepatitis B specific antigen, Tdap vaccination	NA	Available late 2016

	Episode Definition	Episode Timing	Patient Population	Service Inclusion/Exclusion	Accountable Entity	Payment Flow	Episode Price	Level and Type of Risk	Quality Metrics	Patient Engagement	Results
Arkansas Health Care Payment Improvement Initiative	Low-risk pregnancy with live birth	Roughly 40 weeks before delivery through 60 days postpartum	Mother only Exclusions: Various comorbidities and high-risk pregnancy	Inclusions: All prenatal care, care related to labor and delivery, and postpartum maternal care, including labs, imaging, specialist consultations, and inpatient care Exclusions: Patient costs that are incurred during the episode time period that are not related to the maternity episode	Physician or nurse midwife (provider or provider group) who delivers the baby and performs the majority of prenatal care (identified by claims with the appropriate global OB bundle procedure, prenatal care bundle procedure, or office visit procedure)	FFS with retrospective reconciliation	FFS payments during episode, retrospective adjustment based upon patient comorbidities Provider average episode cost is compared to Commendable, Acceptable, Unacceptable thresholds that are established by each payer annually. When providers have 5+ episodes, an average episode cost in the Commendable range, and have met the quality metrics, they are eligible to share in savings. For providers that have 5+ episodes and an average cost in the Unacceptable range, they share in the risk.	Upside and downside risk	Performance metrics are linked to payment, but reporting metrics are not. Cost savings require a provider to meet quality thresholds on all performance metrics and report data for reporting metrics. Quality Metrics (80% threshold): prenatal screenings and appropriate utilization of diagnostic tests Performance quality metrics linked to shared savings: HIV, GBS, and chlamydia screenings. Reporting only metrics: gestational diabetes screening, UTI or asymptomatic bacteriuria screening, hepatitis B-specific antigen screening, and cesarean section utilization rate.	NA	Medicaid cesarean section rate reduced from 38.6% (baseline) to 33.5% (2014), with an estimated 2-4% direct savings to date. Preliminary results show an increase in reported screenings. From 2012 to 2014, chlamydia screening increased from 65% to 90% and group B strep screening increased from 90% to 93%.

	Episode Definition	Episode Timing	Patient Population	Service Inclusion/Exclusion	Accountable Entity	Payment Flow	Episode Price	Level and Type of Risk	Quality Metrics	Patient Engagement	Results
Community Health Choice	Low-risk and high-risk deliveries with severity markers	Mother: 270 days prior to delivery through 60 days post-discharge Newborn: Initial delivery stay and all services/costs up to 30 days post-discharge	Mother and newborn Exclusions: First phase: Currently Level 4 NICU stay Second phase: Planning on using individual stop/loss limits	All prenatal care and services related to delivery Blended cesarean section and vaginal delivery rate Blended nursery levels 1, 2, and 3 Exclusions: Level 4 NICU stays	OB/GYNs from two multispecialty group providers who are participating in the pilot	FFS with retrospective reconciliation	Use historical average costs and adjust based on risk factors (e.g., age, comorbidities, clinical severity markers) Year 1: Use quality scorecard for monitoring and setting benchmarks Year 2: Set quality thresholds for shared savings Year 3 and beyond: Move away from current contractual payments to flat dollar or other budget payments with reconciliation	Upside reward only in Year 1 with move to upside and Downside risk in Year 2 Reconciliation occurs at the end of each year of the pilot	Normal birth weight: Prenatal care and screenings; Delivery care (cesarean section rate, elective deliveries); Postpartum care with depression screening; Baby care (breastfeeding, hepatitis B vaccine) Low birth weight: Similar to above plus NICU infection rates Patient-reported outcome measures: Hardcopy survey is mailed, and results are accepted in hardcopy or online Additional measures for monitoring purposes	Active with community groups that promote prenatal care	Results not yet available

	Episode Definition	Episode Timing	Patient Population	Service Inclusion/Exclusion	Accountable Entity	Payment Flow	Episode Price	Level and Type of Risk	Quality Metrics	Patient Engagement	Results
Providence Health & Services The Pregnancy Care Package	Low-risk pregnancy	Positive pregnancy confirmation until 6 weeks after delivery	Mother and newborn	All prenatal and postpartum care, including check-ups, prenatal tests, education, psychosocial support, labor, delivery, hospital stay, and postpartum care Doulas and patient navigators are also included services	Nurse midwife	Prospective	Fixed, negotiated fee	Upside and downside risk	NA	NA	First implementation at nurse midwife-based clinic: 10% reduction in overall pregnancy costs and a cesarean section rate of 19%
Geisinger Health System (GHS) Perinatal ProvenCare Initiative	Low-risk pregnancy Exclusions: Late referrals, high-risk patients, members without continuous enrollment during the entire episode or other primary coverage	Prenatal: Identification of pregnancy in the first or second trimester Postpartum: Concludes with postpartum visit 21-56 days post-delivery	Mother only Exclusions: Neonatal care	All prenatal, labor and delivery, and postpartum care; at least 12 continuous weeks of prenatal care and delivery must be performed by a GHS provider Global payment includes technical and professional, physician, consultations, and supporting clinicians Prenatal: Professional and outpatient services only Postpartum: Inpatient readmissions, outpatient, and professional Exclusions: Care provided by non-GHS providers	GHS provider	Prospective	Fixed rate for episode	Upside and downside risk	103 evidence-based elements of care are incorporated, measured, and tracked for compliance	"Patient Compact" was developed so that patients could become partners in their own care	Preliminary results: Improved in nearly all 103 measures identified; reduced NICU admissions by 25%; 23% reduction in NICU use; 26% reduction in cesarean sections; 68% reduction in birth trauma Since 2011, Geisinger has not performed an early induction or elective cesarean before 41 weeks unless medically indicated No cost savings have been made publicly available to date

	Episode Definition	Episode Timing	Patient Population	Service Inclusion/Exclusion	Accountable Entity	Payment Flow	Episode Price	Level and Type of Risk	Quality Metrics	Patient Engagement	Results
Pacific Business Group on Health (PBGH) <i>PBGH Blended Case Rate</i>	High- and low-risk pregnancy	Hospital labor and delivery only	Mother only	Blended case rate for all facility and professional fees rendered during labor and delivery for both vaginal and cesarean section births	Hospital accountable for the facility blended rate Medical group practice accountable for the professional blended rate	Prospective	Rate for cesarean section and vaginal birth the same and negotiated between payer and hospital, and payer and physician group, respectively	Upside and downside risk with no prospective risk adjustment	Rate of cesarean sections performed among primary, low-risk (NTSV) births Incidence of unexpected newborn complications is also used as a balancing measure	NA	Three hospitals in pilot demonstrated a 20% decrease in cesarean section rates, which was sustained Also, no changes in incidence of unexpected newborn complications
American Association of Birth Centers (AABC) <i>Bundled Payment Proposal</i>	Low-risk pregnancy	Enrollment in freestanding birth center through and including 6-week postpartum care visit	Mother and newborn care through first 28 days of life	Prenatal care, nutrition, patient navigation, care coordination, discussion of options for birth, breastfeeding and childbirth preparation instruction, health education and support to avoid preventable complications, labor and birth in the birth center, newborn care and home visits Large birth center includes lab services, ultrasound, obstetrician, and perinatal visits Includes facility fee and professional fee at time of birth in the birth center	Freestanding birth center (FSBC)	FFS with retrospective reconciliation	Small birth centers would receive incentive payments for each participant provided with enhanced services Large birth centers would receive a bundled rate for professional and facility services with shared savings for overall cost savings	Small birth centers: upside reward only Large birth centers: upside and downside risk	Number of prenatal visits, cesarean birth rate, elective delivery before 39 weeks, preterm birth and low birth weight rates, breastfeeding initiation and continuation, NICU admissions, perineal integrity, and completion of the 6-week postpartum visit	Prenatal education, enhanced prenatal care, doulas, peer counselors, and continuous support during labor and birth Client experience surveys	Birth centers typically achieve average cesarean rates of 6% for women admitted to birth center in labor, 1.59% episiotomy rate, and 0.11% elective delivery rate before 39 weeks of pregnancy

	Episode Definition	Episode Timing	Patient Population	Service Inclusion/Exclusion	Accountable Entity	Payment Flow	Episode Price	Level and Type of Risk	Quality Metrics	Patient Engagement	Results
Baby+ Company	Low-risk pregnancy	Initial OB visit at birth center through 6 weeks postpartum	Mother and newborn	Prenatal care, birthing plan, classes, postpartum care, newborn exam, metabolic screen, and medications	FSBC if low-risk pregnancy, uncomplicated delivery	FFS with retrospective reconciliation	Working with payers to set pricing based on the outcomes (healthy mother and baby)	Incremental percentage at end of year if hit certain quality markers	NTSV cesarean, early elective delivery, exclusive breastfeeding during birth center stay, cesarean rate among women who entered labor in the birth center	Measured by logging in to a patient’s EHR’s mirrored interface that allows for patients to record their experiences	More than 90% engagement
											NTSV rate: 11.8%
				Includes facility and professional fees							Early elective rate: 0%
				Exclusions: labs, ultrasounds							Exclusive breastfeeding rate: 100%
											Electronic experience surveys at 32 weeks and postpartum

	Episode Definition	Episode Timing	Patient Population	Service Inclusion/Exclusion	Accountable Entity	Payment Flow	Episode Price	Level and Type of Risk	Quality Metrics	Patient Engagement	Results
The Minnesota Birth Center's BirthBundle™	Low-risk pregnancy	270 days prior to delivery and 56 days postpartum	Mother and newborn	Prenatal care, labs within normal OB panel, ultrasound, and perinatal consults within reasonable scope, and birth Facility fee (birth center only, hospital facility fee outside of bundle) and professional fee at time of birth Baby assessment and facility fees at delivery 24-hour postpartum assessment 1- to 2-week and 6-week postpartum visit	Birth center	Model is prospectively determined budget but payment is currently retrospective	Use birth center historical data Professional fees only are included if delivered in a hospital Facility fees are FFS outside of bundle If all care is within the birth center, facility and professional fees are included in the bundle	Upside and downside risk within the bundle	Patient-reported outcome measures	Prenatal/postpartum care surveys	Results not yet available, but significantly lower level of cesarean sections than the national average

Ohio Episode-Based Payment Model	Low-risk pregnancy with live birth	280 days prior to delivery until 60 days post-delivery	Mother only Exclusions: specific clinical and business exclusions	Relevant prenatal care and complications, delivery care, and relevant care and complications through the postpartum period, including readmissions relevant to the episode Exclusions: prenatal medications	Physician/group delivering the baby	FFS payment with retrospective reconciliation	Risk adjusted reimbursement per episode for each accountable provider Adjust average episode cost down based on presence of 70+ clinical risk factors Removal of any individual episodes that are more than three standard deviations above the risk-adjusted mean	Positive incentive payment if average costs below Commendable levels and quality targets are met Pay negative incentive if average costs are above Acceptable level No impact if average risk-adjusted costs are between Commendable and Acceptable levels Incentive payment based on average across all episodes within a 12-month performance period	Linked to Incentive Payments: HIV Screening, GBS Screening, cesarean Rate, Postpartum Visit Rate For Reporting Only: % of episodes with gestational diabetes screening, % of episodes with prenatal hepatitis B screening, % of episodes with chlamydia screening, ultrasound rate Year 1: quality metric threshold will be at a level where 75% of providers pass all metrics tied to incentive payments After Year 1: quality metric threshold will increase to top quartile performance over the next 5 years	NA	NA
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Appendix E: Coronary Artery Disease Bundled Payment Models

This appendix presents the Summary Review of Selected CABG and PCI Initiatives. Results reported are based on studies of varying statistical rigor and extrapolated from publications.

CABG Bundled Payment Models	Episode Definition/ Population	Episode Timing	Service Inclusion/Exclusion	Accountable Entity	Payment Flow	Episode Price	Level and Type of Risk	Quality Metrics	Patient Engagement	Results
CMS – Bundled Payments for Care Improvement (BPCI): Model 2²	Elective and Emergent CABG	Inpatient stay through 30, 60, or 90 days post-discharge Awardees select episode length	All related inpatient stay costs in acute care and post-acute care and all related services for 90 days post-discharge All non-hospice Part A and Part B services	Acute care hospital, physician group practice, or awardee convener Voluntary gain-sharing with providers	FFS with retrospective reconciliation	Reconcile actual cost against a bundled payment amount for the episode of care, which is based on historical FFS payments	Upside and downside risk Increasing upside and downside risk over time to stop loss and stop gain limits	No explicit quality tie to payment methodology	NA	Results not yet available
CMS – Bundled Payments for Care Improvement (BPCI): Model 32	Elective and Emergent CABG	Admission to post-acute care within 30-days of discharge through 30, 60, or 90 days after the initiation of the episode Awardees select episode length	Provider fees (physician and post-acute care services), related readmissions, and related Part B services (e.g., lab, DME) All non-hospice Part A and Part B services during the post-acute period and readmission	Post-acute care provider, provider group practice, or Awardee Convener Voluntary gain-sharing with providers	FFS with retrospective reconciliation	Reconcile actual cost against a bundled payment amount for the episode of care, which is based on historical FFS payments	Upside and downside risk Increasing upside and downside risk over time to stop loss and stop gain limits	No explicit quality tie to payment methodology	NA	Results not yet available

² Model 1 not included as it is a discount off of IPPS, not accountability across providers or settings

CABG Bundled Payment Models	Episode Definition/ Population	Episode Timing	Service Inclusion/Exclusion	Accountable Entity	Payment Flow	Episode Price	Level and Type of Risk	Quality Metrics	Patient Engagement	Results
CMS – Bundled Payments for Care Improvement (BPCI): Model 42	Elective and Emergent CABG	Entire acute care hospital stay and related readmissions for 30 days	All related services provided by the hospital, physician, and other practitioners	Acute care hospital or awardee convener Voluntary gain-sharing with providers	Prospective payment	Single bundled payment for all related services	Upside and downside risk	No explicit quality tie to payment methodology	NA	Results not yet available
Geisinger Health System (GHS) CABG ProvenCare Initiative	Elective CABG	Procedure through 90 days post-discharge	Pre-operative evaluation, all hospital and professional fees, routine post-discharge care, and management of related complications occurring within 90 days of procedure	GHS facility or GHS provider	Prospective Payment	Set price for episode of care. Single payment to the hospital system and single payment to the provider system (payment to the provider/ surgeon is allocated to multiple service lines/providers encounters) i.e., CABG—surgery, anesthesiology, cardiology	Upside reward	40+ best practice process measures	Engage patients with post-discharge services such as home health services and cardiac rehab Developed a patient compact	Clinical outcome improvements show a decrease in in-hospital mortality, patients with any complications (STS), atrial fibrillation, permanent stroke, prolonged ventilation, re-intubation, intra-op blood products used, re-operation for bleeding, deep sternal wound infection, and post-op mean LOS Hospital: Contribution margin increased 17.6% and total inpatient profit per case improved \$1,946 Health Plan: Paid 4.8% less per case for CABG with ProvenCare than it would have without; paid out 28 to 36% less for CABG with GHS than with other providers

CABG Bundled Payment Models	Episode Definition/ Population	Episode Timing	Service Inclusion/Exclusion	Accountable Entity	Payment Flow	Episode Price	Level and Type of Risk	Quality Metrics	Patient Engagement	Results
PROMETHEUS/ Health Care Improvement Initiative (HC13)	Elective and Emergent CABG	30-days pre-admission through 180 days post-discharge	Detailed lists of procedure codes for inclusion of services	Varies based on the initiative; can be either the facility, the practice, or both	Can use either prospective or FFS with retrospective reconciliation	Prospective: Patient-specific predicted budgets, which are negotiated upfront during contracting Retrospective: FFS payment allows for severity-adjustment based on risk factors to budget for per-patient costs	Contracts can be based on upside reward only, upside and downside risk, with or without stop loss, and with upside reward tied to quality scorecards	Set of measures evaluating potentially avoidable complications	NA	NA
Arkansas Health Care Payment Improvement Initiative	Acute and Non-acute CABG Procedure Emergency CABG excluded	Date of surgery through 30 days post-discharge from facility where surgery occurred	All related inpatient, outpatient, professional, and pharmacy services happening within the episode timeframe Exclusion: PCI converting to CABG within 1 day	Physician performing the CABG	FFS with retrospective reconciliation	Average cost per episode for each accountable provider is compared to commendable and acceptable levels	Upside and downside risk	Average length of pre-operative inpatient stay Percentage of patients admitted on day of surgery Percentage of patients for whom an internal mammary artery is used	NA	Results not yet available

Appendix F: Elective Joint Replacement Implementation Resources

<i>General Resources:</i>	
Centers for Medicare & Medicaid Services (CMS) Bundled Payment for Care Improvement (BPCI) Home Page	The webpage for the Bundled Payment for Care Improvement (BPCI) models includes details on episode definitions, eligible MS-DRGs, and lists of participants in the model.
Integrated Healthcare Association (IHA) Bundled Payments Web Page	The IHA website offers multiple reports and specification documents on bundled payments.
Arkansas Health Care Improvement Initiative Payment Reforms Report	The Arkansas Health Care Improvement Initiative report describes that state's payment reforms, including their episodes of care work. Description of the design and findings from their initiative are included. Medicaid and several insurers, including Blue Cross Blue Shield of Arkansas, are described in detail.
State of Tennessee Health Care Initiative Episodes of Care Description and Examples	The State of Tennessee Health Care Initiative website offers descriptions of episodes of care and examples of quality and cost provider reports.
Horizon Blue Cross Blue Shield in New Jersey Payer and Provider Relationship Case Study	The Horizon Blue Cross Blue Shield in New Jersey case study includes results and a description of the incentive relationship between the payer and provider.
Pacific Business Group on Health (PBGH) Employee Center of Excellence Network (ECEN) Summary	The Pacific Business Group on Health offers an Employers Center of Excellence Network in which certain hospitals and health systems are designated Centers of Excellence. These centers agree to take a bundled payment for the episode, and several large employers provide incentives to employees who need those services to seek care from the centers' providers.

Episode Definition:

Health Care Incentives Improvement Institute's Evidence-Based Case Rates and Definitions	The Health Care Incentives Improvement Institute website provides open source definitions of various evidence-based case rates. Includes specific codes that can be used for defining the trigger event and what services are included.
Integrated Healthcare Association's Description of Episode Definitions	The Integrated Healthcare Association's description of definitions of the episode offers a prototype used by several payers and providers, particularly in California.
Centers for Medicare & Medicaid Services (CMS) Bundled Payment for Care Improvement (BPCI) Program Presentation	This CMS presentation on the Bundled Payment for Care Improvement models includes information on how to define episodes including data on episode costs and post-acute care use variation.
Catalyst for Payment Reform (CPR) Report on Implementing Total Joint Replacement Episode Payment How to Guide	The Catalyst for Payment Reform report on implementing total joint replacement episode payment is a downloadable document that includes a spreadsheet with several examples of inclusion and exclusion lists as well as guidance on the steps necessary, including initial data analysis, model contract language, and stakeholder expectations.

Shared Decision-Making Tools:

Shared Decision-Making for Total Joint Replacement: The Physician's Role	"Shared Decision-Making for Total Joint Replacement: The Physician's Role," published by the Rheumatology Network, contains description of considerations in shared decision-making and determinations of when total joint replacement is most effective.
Introducing Decision Aids at Group Health was Linked to Sharply Lower Hip and Knee Surgery Rates and Costs	This Health Affairs article cites evidence of the impact of decision aids on the costs and use of total joint replacement.
Decision Aid Library Inventory (DALI)	The DALI website contains an inventory of decision aid tools that meet the criteria of the International Patient Decision Aid Standards (IPDAS) Collaboration. The inventory is an Excel spreadsheet that provides the treatment area and links to the sponsoring organization.

<i>Patient Assessment Tools:</i>	
<u>Knee Injury and Osteoarthritis Outcome Score (KOOS)</u>	The KOOS questionnaire was developed as an instrument to assess the patient's opinion about their knee and associated problems. The psychometric properties of the KOOS have been assessed in more than 20 individual studies from all over the world. KOOS is widely used for research purposes in clinical trials, large-scale databases, and registries. KOOS is also extensively used for clinical purposes. It consists of 5 subscales: pain, other symptoms, function in daily living, function in sport and recreation, and knee-related quality of life.
<u>Hip Disability and Osteoarthritis Outcome Score (HOOS)</u>	HOOS was developed as an instrument to assess the patient's opinion about their hip and associated problems. HOOS is intended to be used for hip disability with or without osteoarthritis (OA). HOOS is meant to be used over both short and long-time intervals; to assess changes from week to week induced by treatment (medication, operation, physical therapy) or over years due to the primary injury or post-traumatic OA. HOOS consists of 5 subscales: pain, other symptoms, function in daily living, function in sport and recreation, and hip-related quality of life.
Patient-Reported Outcome Measurement Information System (PROMIS)	PROMIS® instruments use modern measurement theory to assess patient-reported health status for physical, mental, and social well-being to reliably and validly measure patient-reported outcomes (PROs) for clinical research and practice. PROMIS instruments measure concepts such as pain, fatigue, physical function, depression, anxiety, and social function. While not specifically designed for outcomes related to hip and knee replacement, it does include a broader set of outcomes than the KOOS and HOOS, including mental functioning and quality of life.
Veterans RAND 12-Item Health Survey (VR-12)	The 12-Item Short Form Health Survey (SF-12) was developed for the Medical Outcomes Study, a multi-year study of patients with chronic conditions. These questionnaires help an investigator or clinician gather reliable information about patient health, save time and money in obtaining this information, obtain information that could not otherwise be obtained, determine the effectiveness of alternative treatments, and assess the course of health over time. A 20-Item and 36-Item survey is also available.

<i>Quality Measurement:</i>	
<u>National Quality Forum</u>	The National Quality Forum (NQF) leads national collaboration to improve health and health care quality through measurement, primarily through measure endorsement. NQF oversees the <i>Quality Positioning System</i> , a searchable database of quality measures.

<i>Quality Measurement:</i>	
<u>CMS Measures Inventory</u>	The CMS Measures Inventory is a compilation of measures used by CMS in various quality, reporting and payment programs. The Inventory lists each measure by program, reporting measure specifications including, but not limited to, numerator, denominator, exclusion criteria, National Quality Strategy (NQS) domain, measure type, and National Quality Forum (NQF) endorsement status.
<u>Hospital Compare</u>	Hospital Compare offers information about the quality of care at over 4,000 Medicare-certified hospitals across the country, including: • Hospital-level risk-standardized complication rate (RSCR) following elective primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA) (NQF #1550) • Hospital-level 30-day all-cause risk-standardized readmission rate (RSRR) following elective primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA) (NQF #1551)
<u>Core Quality Measures Collaborative (CQMC)</u>	America's Health Insurance Plans (AHIP), together with CMS and the NQF, convenes the Core Quality Measures Collaborative (CQMC), which is comprised of leaders from health plans, physician specialty societies, employers and consumers. The CQMC works to develop consensus-driven core measure sets across a variety of clinical areas, including orthopedics, with the goal of harmonizing implementation across both commercial and government payers, which will, in turn, support quality improvement efforts, reduce the reporting burden of quality measures, and offer consumers actionable information for decision-making.
CMMI Comprehensive Care for Joint Replacement Mode: Quality Measures, Voluntary Data, Public Reporting Processes for Preview Reports	This document includes information on a risk-adjusted set of total joint replacement outcome measures that are being used by CMS and providers as part of the CJR program.

Appendix G: Maternity Care Implementation Resources

<i>Existing Initiatives:</i>	
State of Tennessee Health Care Initiative	The State of Tennessee Health Care Initiative website offers descriptions of different episodes of care and examples of quality and cost reporting from providers.
Episodes of Care Description and Examples	
Arkansas Health Care Improvement Initiative Payment Reform Report	The Arkansas Health Care Improvement Initiative report describes the state's payment reforms, including its episode payment work. Description of the episode design and findings from its initiative are included. The roles of Medicaid and several insurers, including Blue Cross Blue Shield of Arkansas, are described in detail.
Community Health Choice Maternity and Newborn Care Bundled Payment Pilot	Community Health Choice's pilot includes both the mother and newborn in the episode of care and uses a blended cesarean and vaginal delivery payment rate.
Providence Health's Pregnancy Care Package	Providence Health's Pregnancy Care Package uses a bundled payment model that includes the use of certified nurse midwives, patient navigators, and doulas on the care team.
Geisinger's Perinatal ProvenCare Initiative	Geisinger uses the ProvenCare model to provide a global payment for the perinatal episode and allows providers to share in savings.
Pacific Business Group on Health (PBGH) Maternity Payment and Care Redesign Pilot Case Study	The Pacific Business Group on Health designed a pilot program to reduce low risk, first time cesarean deliveries and implemented this program across three Southern California Hospitals.
Baby+Company	Baby+Company is a birth center model that provides enhanced prenatal care and education to reduce the rate of cesarean deliveries, and shows significant savings in cost for both vaginal and cesarean deliveries. The Baby+Company website offers additional details about the birth center.
The Minnesota Birth Center's BirthBundle™	The Minnesota Birth Center's BirthBundle™ provides cost savings by offering a single, global fee for maternity care. It uses certified nurse midwives who collaborate with OB physicians to provide coordinated clinical care throughout the pregnancy, delivery, and postpartum period.
Ohio Health Transformation Episode-Based Payment Model	The Ohio Governor's Office of Health Transformation website offers information on its implementation of episode-based payment models.

General Resources:

Integrated Healthcare Association's Description of Maternity and Women's Health Episode Definitions	The Integrated Healthcare Association's description of the Maternity and Women's Health Episodes definitions offers a prototype used by several payers and providers, particularly in California.
Health Care Incentives Improvement Institute's (HCI³) Evidence-Based Case Rates and Definitions	The Health Care Incentives Improvement Institute (HCI ³) website provides open source definitions of various evidence-based case rates. Includes specific codes that can be used for defining the episode starting point and what services are included.
Catalyst for Payment Reform (CPR) Maternity Care Payment Action Brief	The Catalyst for Payment Reform issue brief on maternity care payment discusses challenges with maternity payment reform, offers advice to purchasers, and defines blended payment for delivery.
Center for Healthcare Quality & Payment Reform (CHQPR)	The CHQPR website offers various publications and reports detailing suggestions for payment reform.
Overdue: Medicaid and Private Insurance Coverage of Doula Care to Strengthen Maternal and Infant Health	The National Partnership for Women & Families, Childbirth Connection, and Choices in Childbirth worked together on this issue brief, which provides additional details on how doula services can be incorporated into a perinatal episode of care to help reduce the cost of an episode.
<u>American Association of Birth Centers (AABC)</u>	The AABC website provides comprehensive information on the role of birth centers in maternity care, including a proposal related to using alternative payment models for maternity care.
National Association of Certified Professional Midwives (NACPM) <u>Bundled Payment Proposal</u>	The NACPM offers a proposal to address the definition of the eligible population, three payment models, quality metrics, and data collection for maternity bundles.

Patient Engagement:

Childbirth Connection <u>Listening to Mothers III: Pregnancy and Birth</u>	Results from a national survey of women's childbearing experiences.
Childbirth Connection <u>Listening to Mothers III: New Mothers Speak Out</u>	Results from a national survey of women's childbearing experiences.
<u>Support for Healthy Breastfeeding Mothers and Healthy Term Babies</u>	The Cochrane Library provides a discussion on the effectiveness of encouraging early and ongoing support for breastfeeding.
<u>US OpenNotes Initiative</u>	This initiative allows patients to access their providers' clinical notes online.
<u>Maternity Neighborhood</u>	Tools available online to help connect women with their providers during their perinatal episodes.
Strong Start Initiative <u>Year 1 Annual Report</u> <u>Year 2 Annual Report</u>	Results from both year 1 and year 2 of the Strong Start for Mothers and Newborns Initiative.
<u>CenteringPregnancy</u>	This website offers additional information on CenteringPregnancy's group care and education.
<u>Informed Medical Decisions Foundation</u>	HealthWise Research and Advocacy provides information for patients to participate in a shared decision-making process of their health care.
<u>Patient Decision Aids</u>	An online inventory of decision aids by topic that have been rated according to international standards.

Quality Measurement:

<u>Core Quality Measure Collaborative (CQMC)</u>	America's Health Insurance Plans (AHIP), together with CMS and the NQF, convenes the Core Quality Measures Collaborative (CQMC), which is comprised of leaders from health plans, physician specialty societies, employers, and consumers. The CQMC works to develop consensus-driven core measure sets across a variety of clinical areas, including orthopedics, with the goal of harmonizing implementation across both commercial and government payers. This, in turn, will support quality improvement efforts, reduce the reporting burden of quality measures, and offer consumers actionable information for decision-making.
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<i>Quality Measurement:</i>	
<u>National Quality Forum</u>	The National Quality Forum (NQF) leads a national collaboration to improve health and health care quality through measurement, primarily through measure endorsement. NQF oversees the Quality Positioning System, a searchable database of quality measures.
<u>CMS Measures Inventory</u>	The CMS Measures Inventory is a compilation of measures used by CMS in various quality, reporting, and payment programs. The Inventory lists each measure by program, reporting measure specifications including, but not limited to, numerator, denominator, exclusion criteria, National Quality Strategy (NQS) domain, measure type, and National Quality Forum (NQF) endorsement status.
Healthy People 2020	This website provides information on various Health People quality initiatives for maternal, infant, and child health.
American Congress of Obstetricians and Gynecologists (ACOG) Quality Improvement in Maternity Care	ACOG provides guidelines that address areas where quality improvement initiatives may provide positive outcomes for the mother and infant during a perinatal episode.
Centers for Medicare & Medicaid Services (CMS) Maternal and Infant Health Care Quality	This CMS website provides links to various data and measurement material related to maternal and infant care.
<u>Better Measurement of Maternity Care Quality</u>	This blog by <i>Health Affairs</i> discusses variations in rates of obstetrical complications across the nation and offers steps that may help clinicians become more aware of quality measures.

Appendix H: Coronary Artery Disease Implementation Resources

<i>Existing Initiatives:</i>	
Centers for Medicare & Medicaid Services (CMS) Bundled Payment for Care Improvement (BPCI) Home Page	The webpage for the Bundled Payment for Care Improvement (BPCI) models includes details on episode definitions, eligible MS-DRGs, and lists of participants in the model.
Blue Cross Blue Shield of Texas	Blue Cross Blue Shield of Texas created a Blue Care Connection program for its members to better control chronic conditions.
<u>New York State Delivery System Reform Incentive Payment (NYE DSRIP Program)</u>	The New York State Delivery System Reform Incentive Payment Program is one example of a framework that pays from the condition perspective instead of by procedure.
Geisinger's ProvenCare Initiative	Geisinger uses the ProvenCare model to provide a global payment for PCI and CABG procedures and allows providers to share in savings.
Health Care Incentives Improvement Institute's Evidence-Based Case Rates and Definitions	The Health Care Incentives Improvement Institute website provides open-source definitions of various evidence-based case rates. This includes specific codes that can be used for defining the trigger event and what services are included.
State of Tennessee Health Care Initiative <u>Episode of Care Description and Examples</u>	The State of Tennessee Health Care Initiative website offers descriptions of episodes of care and examples of quality and cost provider reports.
Ohio Health Transformation Episode-Based Payment Model	The Ohio Governor's Office of Health Transformation website offers information on their implementation of episode-based payment models.
Arkansas Health Care Improvement Initiative Payment Reform Report	The Arkansas Health Care Improvement Initiative report describes the state's payment reforms, including their episode payment work. Description of the design and findings from their initiative are included. The roles of Medicaid and several insurers, including Blue Cross Blue Shield of Arkansas, are described in detail.

General Resources:

Convener Organizations	Examples of convener organizations include Premier, Inc. , which primarily works with hospitals, and Cogent Healthcare , which manages hospitalist practices.
Health Care System Federal Laws	This resource guide provides further information on the Anti-Kickback Statute and the Civil Monetary Penalties Law. Further information on the Self-Referral Law can be found here .
CMS Acute Care Episode (ACE) Demonstration	This bundled payment approach includes 28 cardiac and 9 orthopedic inpatient surgical services and procedures.

Physician Engagement:

The Informed Medical Decisions Foundation's Patient Visit Guide	The Informed Medical Decisions Foundation provides a Patient Visit Guide to help patients ask questions and work with their doctors to make fully informed decisions regarding their health care.
Agency for Healthcare Research and Quality (AHRQ) Effective Health Care Program	AHRQ's Effective Health Care Program provides additional resources for patients to understand their condition and start the conversation with their provider regarding treatment options.
Decision Aid Library Inventory (DALI)	The DALI website contains an inventory of decision aid tools that meet the criteria of the International Patient Decision Aid Standards (IPDAS) Collaboration. The inventory is an Excel spreadsheet that provides the treatment area and links to the sponsoring organization.
Cardiovascular Disease Risk Calculator	This risk assessment tool predicts a patient's risk of having a heart attack in the next ten years.
Newcastle Hospital Patient and Visitor Guides	Newcastle Hospital's section on shared decision-making provides a short video, from the MAGIC Programme, on the three most important questions to ask your health care provider when making a decision. This section also provides more information on the need for patients to be involved in decisions about their health care.
Health Consumer Alliance	The Health Consumer Alliance has developed a website that links to various consumer brochures which answer frequent health care questions, including the "Know Your Rights Fact Sheet."

Physician Engagement:

Joint Commission's Speak Up™ Program	Brochures and videos are available on The Joint Commission's website as a part of their national patient safety campaign called Speak Up™.
Mayo Clinic Study Cardiac Rehabilitation mobile app	The Mayo Clinic studied the effect of using a mobile app to help encourage cardiac rehabilitation for patients who recently suffered an episode of acute coronary syndrome.
SMARTCare Pilot	This pilot project, developed by the Florida and Wisconsin chapters of the American College of Cardiology aims to improve quality of care, enhance access to care, and reduce health care costs by providing tools to help physicians and cardiovascular team members apply guidelines and appropriate use criteria (AUC) at the point of care.
Patient-Reported Outcome Measurement Information System (PROMIS)	PROMIS® instruments use modern measurement theory to assess patient-reported health status for physical, mental, and social well-being to reliably and validly measure patient-reported outcomes (PROs) for clinical research and practice. PROMIS instruments measure concepts such as pain, fatigue, physical function, depression, anxiety, and social function.

Care Transitions:

Acute Care for Elders (ACE) Program	The University Hospitals Case Medical Center developed the Acute Care for Elders model of care to assist with the transition from an inpatient admission to home for elderly patients.
Care Transitions Coaching Program	A program at the University of Colorado which uses "Transition Coaches" to teach skills to patients and caregivers to promote and support continuity of care.
H2H Hospital to Home Quality Initiative	The American College of Cardiology (ACC) and the Institute for Healthcare Improvement (IHI) created this initiative to provide resources for the transition of the patient from the hospital to the patient's home

<i>Quality Measurement:</i>	
American College of Cardiology (ACC) Appropriate Use Criteria and Treatment Guidelines	This website provides additional information about The American College of Cardiology's Appropriate Use Criteria and Treatment Guidelines.
Society of Thoracic Surgeons Quality Performance Measures	This website lists the cardiac-related quality measures that are developed and maintained by the Society of Thoracic Surgeons.
Core Quality Measures Collaborative (CQMC)	The Core Quality Measures Collaborative created a Consensus Core Set for Cardiovascular Measures.
National Quality Forum	The National Quality Forum (NQF) leads national collaboration to improve health and healthcare quality through measurement, primarily through measure endorsement. NQF oversees the <i>Quality Positioning System</i> , a searchable database of quality measures.
CMS Measures Inventory	The CMS Measures Inventory is a compilation of measures used by CMS in various quality, reporting, and payment programs. The inventory lists each measure by program, reporting measure specifications including, but not limited to, numerator, denominator, exclusion criteria, National Quality Strategy (NQS) domain, measure type, and National Quality Forum (NQF) endorsement status.
Hospital Compare	Hospital Compare offers information about the quality of care at over 4,000 Medicare-certified hospitals across the country.

Appendix I: LAN-Related Content

In addition to the CEP Work Group, the LAN Guiding Committee convened two additional Work Groups that produced content relevant to many readers of this White Paper.

The Alternative Payment Model (APM) Framework and Progress Tracking Work Group produced the Alternative Payment Model Framework, which describes four categories of alternative payment models.

The Population-Based Payment Work Group developed recommendations for the implementation of population-based payment, with a focus on four priority areas: financial benchmarking, patient attribution, performance measurement, and data sharing.

These priority areas should be considered as a whole for effective PBP implementation as they interact considerably. For example, to determine the financial benchmark, it is critical to know precisely which patients are being attributed to the PBP model. Further, most PBP initiatives will require performance on certain measures in considering whether the accountable entity has met the benchmark. Data sharing is critical for the providers to effectively target their efforts, for payers and purchasers to monitor performance and for patients to be empowered to be active in their care.

The following provides links and a brief overview of each of the papers written by the APM and PBP Work Groups. These products offer readers of this paper additional resources to support decision making on APM design and implementation. Visit our website (<https://www.hcp-lan.org>) for an up-to-date list of LAN work products and for a glossary of terms.

The Alternative Payment Model Framework White Paper

The APM Framework White Paper defines payment model categories and establishes a common framework and a set of conventions for measuring progress in the adoption of APMs, which are methods of rewarding health care providers based on the quality and coordination of the care they provide. Providers are encouraged to move to categories that offer greater quality and value. As they do, they will experience increased accountability for both quality of care and total cost of care, with a greater focus on population health management (as opposed to payment for specific services).

Accelerating and Aligning Population-Based Payment: Financial Benchmarking

The Financial Benchmarking White Paper describes approaches for setting an initial benchmark and updates over time and also addresses risk adjustment considerations. The White Paper discusses the need to balance voluntary participation with the movement toward convergence in a market with providers at different starting points.

Accelerating and Aligning Population-Based Payment: Patient Attribution

The Patient Attribution White Paper describes the method by which patient populations are assigned to providers who are accountable for total cost of care and quality outcomes for their designated populations in a PBP model. The paper recommends that active, intentional identification or self-reporting by patients should be considered first. The paper also outlines nine additional recommendations that payers and providers can use when making decisions on attribution in their PBP models.

Accelerating and Aligning Population-Based Payment: Performance Measurement

The Performance Measurement White Paper offers both short-term action recommendations and a longer-term vision for accelerating alignment around APMs. The paper offers a way forward that could lead to radical change in how performance is measured across the board in order to enable effective population-based payments. The White Paper describes how to evolve from granular measurement systems of the full continuum of care, which focus on narrow and specific care processes, to more macro-level measurement systems oriented on outcomes. The paper also makes strong recommendations for immediate action steps by describing four key performance measurement principles and seven recommendations for building and sustaining a performance measurement system that supports and encourages collaboration among stakeholders.

Accelerating and Aligning Population-Based Payment: Data Sharing

The Data Sharing White Paper offers several guiding principles and recommendations that highlight the future development of data sharing arrangements in PBP models. The paper also outlines Use Cases for data sharing which describe particular types of data sharing arrangements, in both their current and aspirational states. The goal is to create an environment where data follows the patient and is available to stakeholders (patients, providers, purchasers, and payers) in a timely manner.

Appendix J: Principles for Patient- and Family-Centered Payment

The following principles, produced by the LAN's Consumer and Patient Affinity Group, are intended to help guide the development of new payment strategies. They provide guidance and aspirational direction to ensure that we address the needs and priorities of patients and families as we transition to value-based payment. The principles rest on the conviction that consumers, patients, and families are essential partners in every aspect of transforming health care and improving health.

Consumers, patients, families and their advocates should be collaboratively engaged in all aspects of design, implementation, and evaluation of payment and care models, and they should be engaged as partners in their own care.

The collaboration in design of payment and care models should include oversight, governance, and interface with the communities where care is delivered. At the point of care, patients and families should be engaged in ways that match their needs, capacities and preferences. Collaborative care should be aligned with patient goals, values and preferences (including language), and should reflect shared care planning and decision making throughout the care continuum.

Positive impact on patient care and health should be paramount.

The central consideration in all payment design should be improving patient health outcomes, experience of care, and access to quality care, while also ensuring the most effective use of health care resources.

Measures of performance and impact should be meaningful, actionable, and transparent to consumers, patients and family caregivers.

New payment models should be assessed using measures that are meaningful to patients and families. They should prioritize the use of measures derived from patient-generated data that address both care experience and outcomes. Measures should also address the full spectrum of care, care continuity and overall performance of specific models. Measures should be granular enough to enable patients to make informed decisions about providers and treatments.

Primary care services are foundational and must be effectively coordinated with all other aspects of care.

Payment models should foster this coordination, particularly between primary and specialty care, in order to promote optimal coordination, communication and continuity of care; trusted relationships between clinicians and patients/families; concordance with patient goals, values, and preferences; integration of non-clinical factors and community supports; and coordination of services delivered through non-traditional settings and modalities that meet patient needs. Effective delivery and coordination of primary care services should promote better care experience, optimal patient engagement, better health outcomes, and increased access to quality care.

Access to quality care and care for high-need populations must be improved.

New payment models should foster access to quality care, including access to innovative approaches to care and preventing any discrimination in care. They should collect data that allows for assessment of differential impacts and the identification and redress of disparities in health, health outcomes, care experience, access, and affordability.

Patient and family engagement and activation should be supported by technology.

New payment models should promote use of information technology that enables patients and their designated caregivers to easily access their health information in a meaningful format that enables them to use the information to better manage and coordinate their care. The technology should also enable patients to contribute information and communicate with their providers, and it should foster patient-clinician partnership in ongoing monitoring and management of health and care.

Financial incentives used in all models should be transparent and promote better quality as well as lower costs.

Financial incentives for providers and patients should be fully disclosed so that patients and consumers understand how new payment approaches differ from traditional fee-for-service models, and how certain incentives may impact the care providers recommend or provide. Financial incentives should be developed in partnership with patients and consumers in order to reflect how patients define value, and to reduce financial barriers to needed care and ensure that patients are not steered to lower cost care without regard for quality.

Appendix K: Resources

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