



ACCELERATING AND ALIGNING
CLINICAL EPISODE PAYMENT MODELS:

ELECTIVE JOINT REPLACEMENT

Draft White Paper

Written by:

The Clinical Episode Payment (CEP) Work Group

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Executive Summary

[Placeholder: Formal abstract to be developed after incorporating feedback from the community.]

Overview

The Health Care Payment Learning & Action Network (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. The Centers for Medicare & Medicaid Services (CMS) Alliance to Modernize Health Care (CAMH), the federally funded research and development center operated by the MITRE Corporation, was asked to convene this large national initiative.

In keeping with the goals of the U.S. Department of Health and Human Services (HHS), the LAN aims to have 30% of U.S. health care payments in alternative payment models (APMs) or population-based payments 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 focused on:

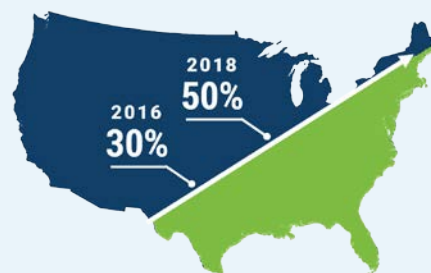
- A setting (such as a hospital or a hospital stay);
- A procedure (such as elective surgery); or
- A condition (such as diabetes).

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.

Health Care Payment Learning & Action Network (LAN)

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, 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 APMs.

U.S. Health Care Payments in APMs



Purpose of the White Paper

In November 2015, the GC convened the Clinical Episode Payment (CEP) Work Group. The GC charged the Work Group members with creating a set of recommendations that can facilitate the adoption of clinical episode-based payment models. The GC noted a specific interest in models that fall within Categories 3 and 4 of its [Alternative Payment Model Framework](#).

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 draft White Paper addresses clinical episode payment for elective joint replacement, which is the first of the three priority areas identified by the CEP Work Group. Future CEP Work Group papers will address the other two priority areas, namely: cardiac care and maternity care. Background on the CEP Work Group's charge, priority areas, selection criteria, and guiding principles are outlined in [Appendix A](#). The roster of the Work Group members who prepared this White Paper is in [Appendix B](#). Note that Work Group members participated in this effort as individuals and not on behalf of their organizations.

The White Paper's recommendations are intended for use in clinical episode payment models for elective joint replacement, also known as joint replacements to the lower extremities. However, it is the Work Group's intention that the information in this document can apply to any major procedure, in particular, procedures that are elective or non-emergent. Further, the Work Group recognizes that the process of designing and implementing episode payment requires a continuous cycle in which stakeholders learn, adapt, and improve.

The Work Group is aware that CMS is in the process of soliciting recommendations on the implementation of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA). Formal recommendations for implementing MACRA and/or other CMS programs and policies should continue to be made directly to CMS as they are explicitly and intentionally not part of the Work Group's charge.

At this stage in the process, the Work Group is requesting feedback on the draft White Paper and the recommendations in order to strengthen the recommendations and obtain broad agreement on the proposed definitions and approaches.

Background: 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, quality and costs of care for joint replacement surgeries vary greatly among providers and across geographic areas (Figure 1). 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 (see [Appendix A: CEP Work Group Background, Figure A1: Criteria for Prioritization](#)).

Figure 1: Prevalence and Cost of Joint Replacement in the U.S.¹

	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	<p>Knee replacement costs range from \$11,317 to \$69,654.</p> <p>Hip replacement costs range from \$11,327 to \$73,987 (Blue Cross Blue Shield Association & Blue Health Intelligence, 2015).</p>	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).
Variation in Cost	<p>The cost of a joint replacement procedure can vary by tens of thousands of dollars, depending on the geographic location.</p> <p>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.</p> <p>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).</p>	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	<ul style="list-style-type: none"> • Duplication of exams, imaging, and other diagnostics due to lack of communication between the surgical practice and the hospital. • In the commercial market, 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 PAC. 	

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 improve quality, and reduce overall costs and cost variation. As described in more detail in [Appendix D: Summary of Joint Replacement Initiatives Reviewed](#), joint replacement episode payment efforts tend to correlate with reduced use of certain types of post-acute care, reduced lengths of inpatient hospital stay, reduced

¹ The data in this table refers to both elective and non-elective joint replacement.

Source: The MITRE Corporation analysis.

patient complications, and fewer avoidable 30-day readmissions, all of which together contribute to lower total episode costs.

Clinical Episode Payment

Unlike traditional FFS payment models, in which providers are paid separately for each service they deliver, clinical episode payment models are an alternative approach that takes into consideration the quality, costs, and outcomes for a patient-centered course of care over a set period and across multiple settings. This course of care is defined 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. This leads to better health for patients and lower costs for payers and providers. [Appendix C](#) provides examples of clinical episode payment for joint replacement and highlights the design elements contained within each along with considerations for implementation and results.

Clinical episode or episode of care is “a series of temporally continuous health care services related to the treatment of a given spell of illness or provided in response to a specific request by the patient or other entity” (Hornbrook, Hurtado, & Johnson, 1985).

Clinical episode payment is a bundled payment model that considers the quality, costs, and outcomes for a patient-centered course of care over a longer time period and across care settings.

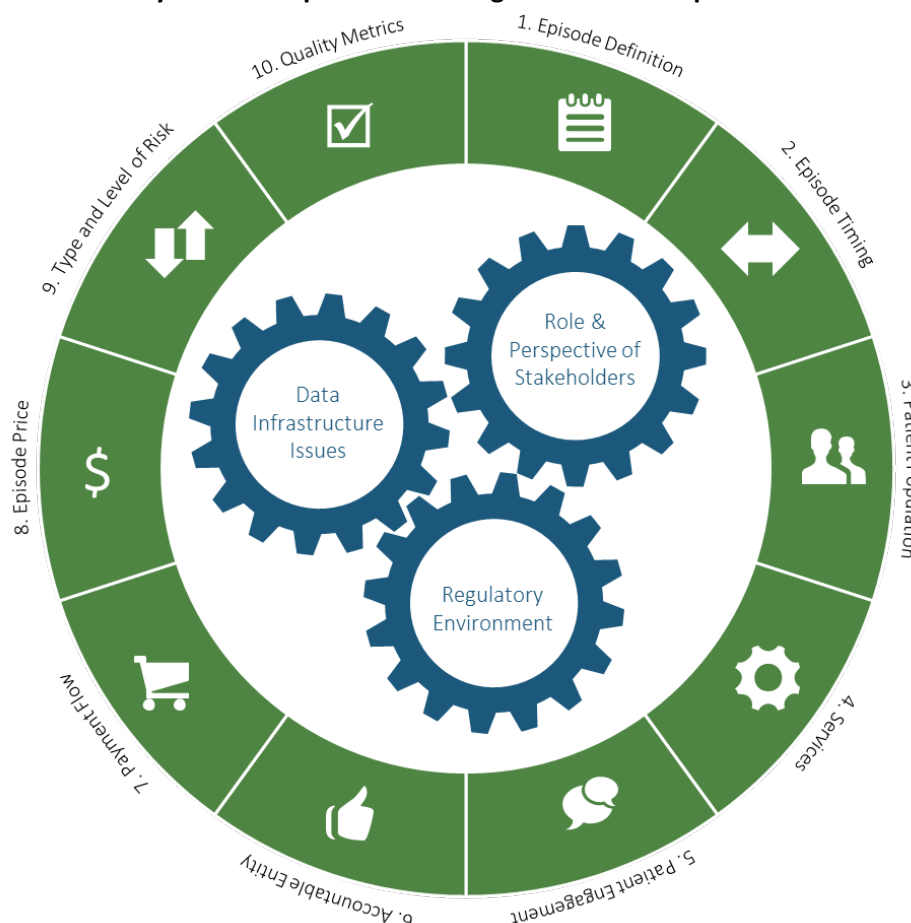
Episode payment can create incentives to break down existing silos of care, promote communication and coordination among care providers, improve care transitions, and respond to data and feedback on the entire course of illness or treatment. Episode payments make logical sense because they also reflect how patients experience their care: a person develops symptoms or has health concerns; he or she seeks medical care; and providers treat the condition. Ideally, the treatments the patients receive along the way reflect their wishes and cultural values. Therefore, by aligning payment with this vision of patient-centered care, episode-based care can be a driver of improvement, and subsequently lead to better patient outcomes.

Recommendations: Elective Joint Replacement

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, what services are to be included, and others (Figures 2–4).
- **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 inter-related to design element decisions.

Figure 2: Graphical Summary of Joint Replacement Design Elements & Operational Considerations



Source: Ripple Effect Communications, Inc.

These recommendations and options reflect how circumstances may vary among different markets, payers, or providers with respect to their capacity to support clinical episode payment. Though the recommendations and options reflect the current environment in which most stakeholders operate,

they also point to a future state in which infrastructure challenges are addressed and can support further innovation in episode payment. The high-level goal of these recommendations and options is to support clinical episode payment adoption across a broad set of payers and providers, with support from consumers, patients, and purchasers, by helping them to align their efforts and define the circumstances and rationale for when and how it may be reasonable to use a different strategy.

Design Elements

The CEP Work Group conducted research and analysis on a range of existing episode payment initiatives (see [Appendix D](#)). Based on their experience and the analysis of current initiatives, the Work Group identified a set of episode payment model design elements (Figures 2 and 3). These elements reflect the decisions that payers and providers need to make prior to implementation. Figure 4 summarizes the ten recommendations that are discussed in this draft White Paper.

Figure 3: Design Elements



Source: Ripple Effect Communications, Inc.

Figure 4: Summary of Joint Replacement Episode Recommendations

1. Episode Definition	Elective and appropriate total hip or total knee replacement due to osteoarthritis.
2. Episode Timing	<ul style="list-style-type: none"> • Requirements: 1) Patient completes a standardized, validated functional status assessment tool, and 2) patient and family caregiver work through a high-quality decision aid, with the support of a decision coach or a nurse educator as desired. • Starting Point: 30 days pre-procedure. • Stopping Point: 90 days post-discharge. • Accountability: Quality measurement may include data up to 12 months post-discharge.
3. Patient Population	Broadest-possible pool of patients, using risk and severity adjustment to account for age and complexity.
4. Services	All services needed by the patient that are related to the joint replacement procedure, including not just professional services but hospitalization and PAC. Detailed exclusion and/or inclusion lists must be developed to determine what is considered “related.”
5. Patient Engagement	<ul style="list-style-type: none"> • Standardized, validated functional status assessment tool; • High quality decision aid; • Comparative quality information; • Transparent information on whether a provider is participating in an episode-based reimbursement model; and • Coordination across provider settings.
6. Accountable Entity	A physician or clinical group is the preferred accountable entity; however, it is understood that that individual physician may be unable to accept all the risks associated with serving as the accountable entity for the total cost of care. In those cases, a model in which risk is shared across the physician, the hospital, and other members of the care team may be required.
7. Payment Flow	Use retrospective reconciliation with upfront payments flowing through a fee-for-service mechanism (APM Framework Category 3).
8. Episode Price	Data used to establish the episode price should reflect two years of historical costs and strike a balance between regional- and provider-specific data. The price should acknowledge efficiencies already gained by some payers and providers and also incentivize more efficient levels of practice.
9. Type and Level of Risk	The goal should be to utilize both upside and downside risk. Transition periods and risk mitigation strategies should be used to encourage broader provider participation.
10. Quality Metrics	<ul style="list-style-type: none"> • Prioritize use of 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 to communicate with and engage patients.

Source: The MITRE Corporation.

1. Episode Definition

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

Elective: Elective joint replacement is higher volume, compared to replacement due to fracture; thus, focusing on elective joint replacement provides a higher value “target” than focusing on an episode that includes fractures and emergency joint replacement. Elective joint replacement also presents 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 procedures for elective joint replacement have an evidence base and are well-standardized, which can ease the way for wide adoption.

Appropriate: An ideal episode payment model for elective joint replacement should support appropriateness of the episode (the procedure is evidence-based and consistent with patient preferences and values) and optimal quality, and should have a set episode price that supports high-quality care delivery. It may be the case that alternative, less invasive treatments can achieve similar or better outcomes at lower costs.

By this definition, the joint replacement procedure is included in this episode *only* if the following two data points are available:

1. 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 candidate for a surgical procedure, as opposed to being a candidate for less invasive care such as physical therapy; and

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. 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)² with the support of a decision coach or nurse educator, if needed. There is also evidence showing that there was subsequent engagement in the shared decision-making process and discussion of care options and decisions with their provider before determining that a joint replacement

² Findings from the IPDA assessment can be found at: <http://decisionaid.ohri.ca/azinvent.php>

procedure was appropriate. This evidence of support can be provided by a primary care practice, as doing so would provide greater care continuity.

One example of a decision aid provider is Healthwise,³ 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. They include the pros and cons of the care options and how to consider a patient's values and preferences as they relate to the care options. Ideally, both processes should be integrated such that patients are part of the discussion on appropriateness and provided the opportunity to weigh in with their own values on the risk and potential benefits of having the procedure.

2. Episode Timing

For purposes of payment, the starting point for this episode is 30 days pre-procedure, and the stopping point is 90 days post-discharge (Figure 5). Accountability for functional improvement may go beyond the 90 days.

Figure 5: Episode Timing



Source: Derived from Premier, Inc., and Institute for Healthcare Improvement. *Integrated Care Pathway for Total Joint Arthroplasty*. Charlotte, NC: Premier, Inc. and Cambridge, MA: Institute for Healthcare Improvement; 2013. (Available at www.premierinc.com and www.ihl.org)

Start and End Points

Optimally, the start and end points should be established based on the time period when unexplained variation in spending begins and ends and when the opportunity to impact quality and outcomes is greatest (Figure 5). 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 to ensure that patient care is not inappropriately impacted should be built into the data analytics and monitored frequently.

Episode Start Point: Based on experience in current initiatives, the episode should start 30 days pre-procedure. This recommendation is linked to the facts that the episode is built around elective surgery and that an elective procedure makes it feasible to know when the 30-day “look-back” period begins.

³ Healthwise's knee replacement decision aid, rated by the Ottawa Hospital Research Institute, can be found at: <https://decisionaid.ohri.ca/Azsumm.php?ID=1191>. A corresponding decision aid for hip replacement can be found at: <https://decisionaid.ohri.ca/Azsumm.php?ID=1112>

Also salient, including this pre-operative period should incentivize a reduction in unnecessary, duplicative imaging or other diagnostics during the pre-operative period. The look-back period aims to improve care coordination and communication while reducing overall cost to the patient and the system without adversely affecting quality.

Episode End Point: The length of the episode after surgery is a critical decision point, given that the lack of coordination post-discharge (of post-acute care services, rehabilitative services, and pharmaceutical needs) is a significant contributor to costs and poor patient outcomes. Based on the principle that the episode design should be patient-centered, and acknowledging the challenges patients experience in the recovery period post operatively, 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, significant complications can occur throughout the 90 days, and, in fact, the recuperation period often exceeds that time period.

Current models' end points vary from 30 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 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 be attractive to providers. It may also be useful to enlist the support of the primary care provider, so the proposed surgery episode is integrated within the context of the patient's other health concerns, and engage the family in shared decision making. If concerns arise, an appeals process can be established for those patients whose circumstances or risk cannot be identified through claims 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 will meet the LAN's goals and will discourage providers from "cherry-picking" the lowest-risk patients. A flip

side to “cherry-picking” is the inappropriate selection of cases where conservative management should be implemented instead of 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 what 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 may prefer more narrowly defined episodes so that clinical pathways can be developed and because there are fewer clinical variables in the population that may not easily be addressed. Too narrow an episode definition, however, might make the costs of implementation vs. the value created not worth the effort.

Included Services: The episode payment should include delivery of all services billed in the defined time period *that are related to the 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, skilled nursing facilities, physical therapy, and sometimes pharmaceuticals. Including pharmaceuticals and devices in the episode price and definition is important as they can be an expensive portion of the bundle.

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

- **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 (Medicare Program; Comprehensive Care for Joint Replacement Payment Model for Acute Care Hospitals Furnishing Lower Extremity Joint Replacement Services, 2015) include hemophilia clotting factors furnished during the inpatient hospitalization and acute surgery for unrelated conditions, such as appendectomy. 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, the list has 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.
- **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 Chronic Conditions: One challenge of establishing service boundaries is how to deal with complex patients with multiple chronic conditions. For example, a patient with diabetes and coronary artery disease who received a joint replacement may require additional services 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-morbidities 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, deep vein thrombosis, etc. 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 and transparency of the payment model in patient-facing materials to maximize opportunities to engage patients and families in advancing high-value care.

As detailed in “1. Episode Definition” and “2. Episode Timing,” the episode payment must be designed in a way that adds value for patients and their families and the procedure is appropriate. 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 surgical procedure; 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 Quality Information:** Patients and family caregivers must be provided with information about the procedure complication rates of possible surgeons and possible acute-care facilities, as well as information on the quality of possible post-acute care facilities and home health agencies. Patients should receive help 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.
- **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 Provider Settings:** In the private sector, this may mean a conversation 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 at the time of discharge as it relates to choice of post-acute providers, 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 facilities, knowing 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 patient and providers. Patients with chronic disease 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.

Deploying Shared Decision-Making Tools in a Way that is Meaningful for Patients and Family Caregivers

High-quality decision aids are needed in order to make the process one that truly supports patient engagement and drives the appropriate use of procedures. These aids support providers and patients in discussing the following:

- 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 a decision coach or a nurse educator to get answers to any questions and decide about the

Financial Incentives for Patients: There are episode payment initiatives in which payers are experimenting with providing financial incentives for patients. For example, an incentive might be provided if savings are achieved during the episode. Although benefit design is outside the scope of this White Paper, it should be noted as an area to investigate further.

6. Accountable Entity

*The accountable entity (Figure 6) should be chosen based on its **ability to engineer change** in the way care is delivered to the patient and its **ability to accept risk** for an episode of care.*

Figure 6: Examples of Joint Replacement Accountable Entities



Source: Ripple Effect Communications, Inc.

Ability to Engineer Change: The clinician(s) may be most able to effect change in a joint replacement episode, but this 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, or "quarterback."

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 quarterback 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 can the hospital. Further, the discussions with patients regarding appropriateness and expectations on functional improvements are most effective if the physicians are fully engaged.

Ability to Accept Risk: However, 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. 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 hospitals, because of their resources and greater ability to tolerate risk, should be the episode quarterback. 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. The hospitals in that initiative utilized gain-sharing to engage the physicians.

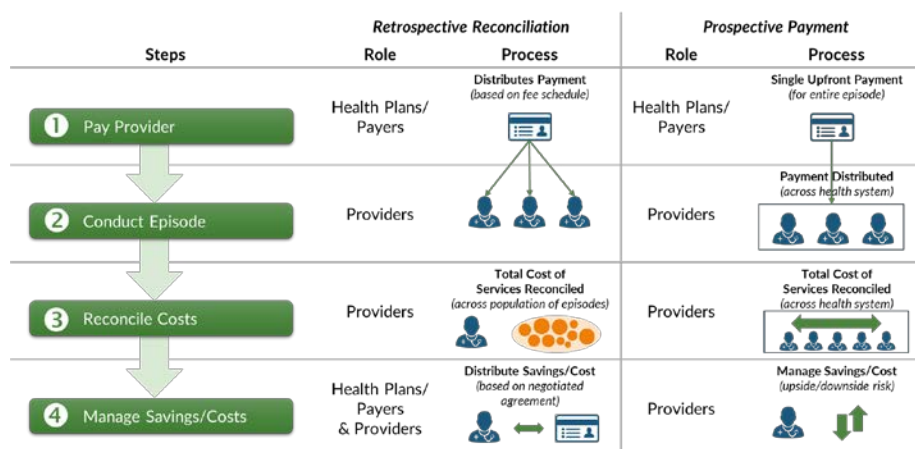
Shared Risk and Care Coordination: Regardless of which entity is the focus for accountability, there are a number of key requirements needed for success. Payers should work with the accountable entity to assess their readiness and promote collaboration to allow for multiple providers within a joint replacement 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. In the private sector, as the payer often has contracts directly with providers, it can require active participation across the continuum by aligning incentives across those contracts. In the public sector, with a payer such as Medicare that allows for full freedom of choice of provider in FFS, the risk spreading may take the form of a gain-sharing relationship among providers. 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.

7. Payment Flow

Use retrospective reconciliation with upfront payments flowing through an FFS mechanism (APM Framework Category 3).

As illustrated in Figure 7, there are two ways to design and administer a bundled payment.

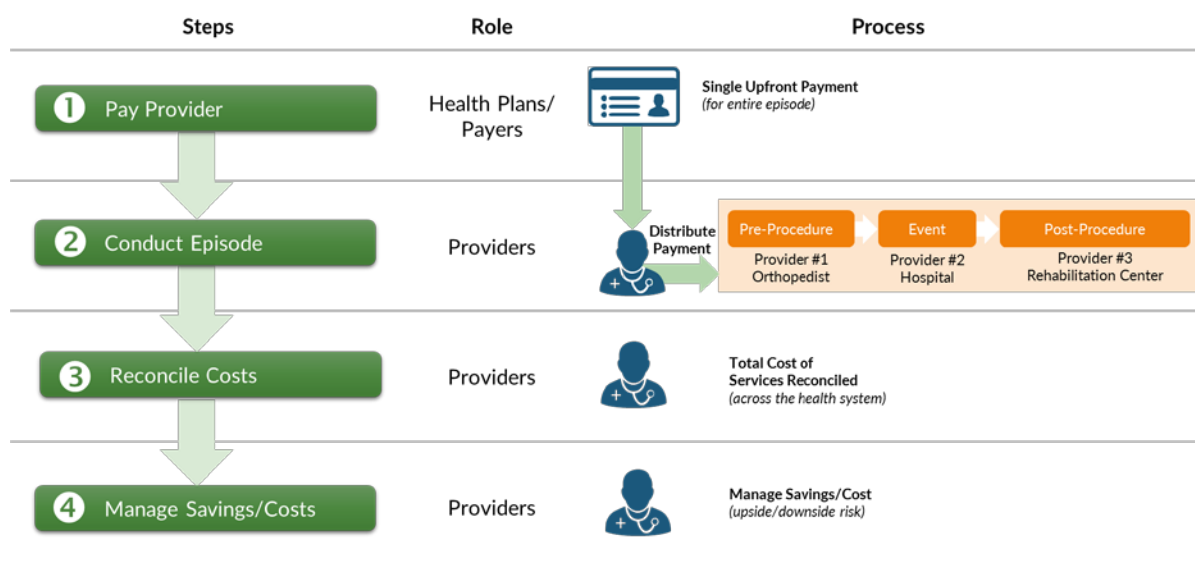
Figure 7: Retrospective Reconciliation and Prospective Payment



Source: Ripple Effect Communications, Inc.

Prospective: In a prospective payment system (Figure 8), providers receive an up-front payment for the entire episode when the episode begins. This method works most effectively when the care is delivered via an integrated health system that provides hospital, physician, and post-acute care. Within this system, the payment dollars can be efficiently allocated or distributed within an existing infrastructure. Outside of an integrated system, prospective payment will require providers to establish a mechanism for paying other providers that deliver services within the episode. A prospective payment model typically also includes a post-episode reconciliation process to account for resource costs that were incurred by the providers above the episode price.

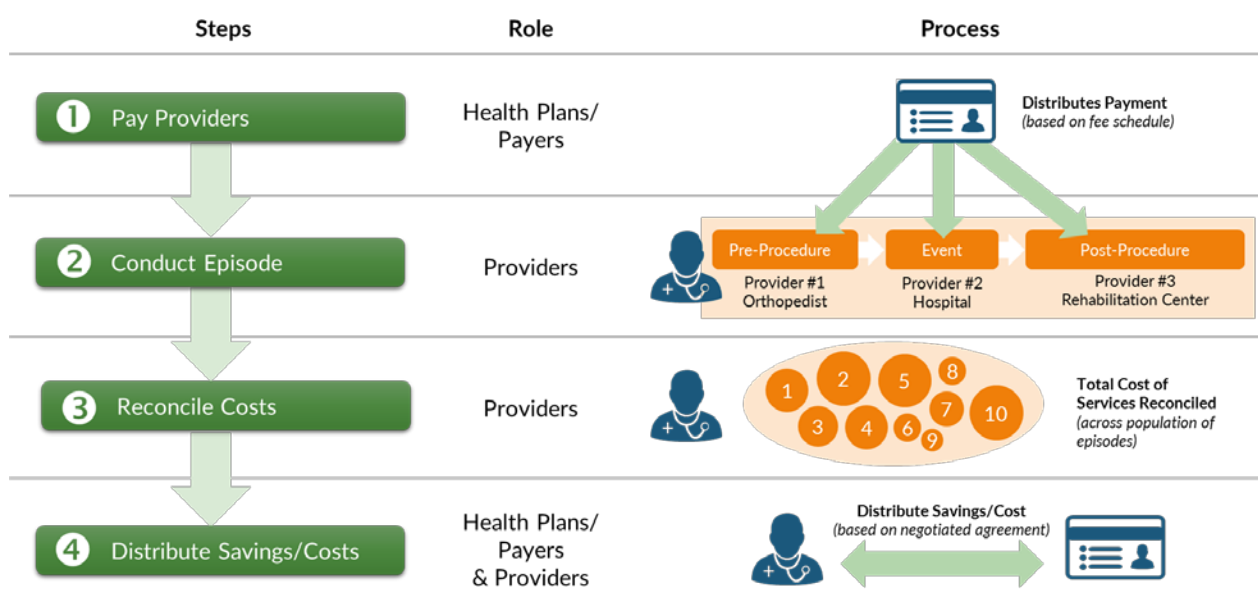
Figure 8: Prospective Payment



Source: Ripple Effect Communications, Inc.

Retrospective: In a retrospective payment system (Figure 9), the payer reimburses providers via a traditional FFS model based on claims, with a reconciliation process that determines whether the average actual episode costs were over or under the episode price. Payment for any savings is often shared between the provider and the payer within certain parameters. Retrospective reconciliation can either be based on a prospectively set episode price or allow for adjustments to occur, such as adjusting for patient risk. If adjustments are allowed to the episode price retrospectively, the target price may change, thus making it harder for providers to manage patient care with certainty regarding the budget.

Figure 9: Retrospective Reconciliation



Source: Ripple Effect Communications, Inc.

Retrospective Reconciliation Recommended: While prospective payment is an option in some circumstances and potentially more viable for the future, at this point in time, payment should flow through a retrospective reconciliation system. The primary rationale is recognition of the challenges inherent in operationalizing prospective payment in the prevailing open, non-integrated system. 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, and can be built on a legacy payment system.

Future Considerations for Prospective Payments: There are advantages to prospective payment. 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. Further, 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. The choice between retrospective and prospective payment is still unresolved in regard to an ideal future state, but retrospective payment is the most practical approach at present.

8. Episode Price

Data used to establish the episode price should reflect two years of historical costs and strike a balance between regional- and provider-specific data.

The price should acknowledge efficiencies already gained by previous programs and incentivize more efficient levels of practice.

Setting Episode Price

The monetary rewards or penalties that a provider may experience are determined in large part by the manner in which the episode price is set. In addition, there are several key aspects that interact in the establishment of the episode price. All payers will expect some return on their investment in this payment design and can choose a variety of mechanisms to ensure some level of savings.

- **Time Frame for Look-Back Period:** The recommendation to use two years of look-back data is based on the average number of cases that occur within a two-year period. Severity adjustment can be employed to explain much of the variation in costs of care that are within a reasonable distance from the average. 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.
- **Balance Regional- and Provider-Specific Data:** The data used should be a mix of provider and regional claims experience. This mix will ensure that the established episode price takes into consideration the unique historic experience of the specific provider, and that the goals are set based on what is feasible in the region. Risk adjustment will also 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 equity 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:** 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.
 - **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 to achieve savings or build in inefficiencies that limit the savings for the payer.

- **Incentivize More Efficient Levels of Practice:** The method for establishing 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.

Other Factors Impacting Episode Price

There are many other factors that can impact the episode price, including:

- **Public vs. Private Payers:** The degree to which pricing is an element of negotiation (private payer) or set by the purchaser (public payer) 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.

Multiple Ways to Build in Savings: 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 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 and downside risk.
Transition periods and risk mitigation strategies should be used
to encourage broader provider participation.*

Upside and Downside Risk: The goal when setting an episode price should be to incorporate both upside and downside risk. Absent downside risk, the accountable entity and other providers involved have less incentive and flexibility to make the necessary care re-design changes to create efficiencies and improve patient care. Further, increases in the cost of care delivery 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 down-side 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 risk only. Decisions about type, level, and timing of upside and downside risk illustrate 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 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-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 (HCII) 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.

⁴ <http://www.medpac.gov/search-results?indexCatalogue=PublicationSearchIndex&Topics=Risk+Adjustment&wordsMode=0>

- **Risk Corridors, Stop-Loss Caps, 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% over or under the target price to 20% over the target price by year 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, one 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

- 1) Prioritize use of patient-reported outcome and functional status measures;*
- 2) Use quality scorecards to track performance on quality and inform decisions related to payment; and*
- 3) Use quality information to communicate with and engage patients.*

Given that one of the goals of clinical episode payment is to improve the quality of care for a given procedure or condition, it is critical to measure the outcomes and patient experience of care to determine whether that is achieved. Currently, incentives are limited for providers to coordinate patient care across settings to ensure delivery of high-quality care, the best patient outcomes, and patients' ability to continue their lives at a high level of functionality. Episode payment encourages better coordination across providers, such that the patient is at the center of the care across settings. However, incentives to reduce costs may create incentives to reduce the use of beneficial services, so quality metrics must also be used, both to assess whether this is occurring and to protect patients.

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 **patient-reported outcome 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 Patient-Reported Outcome (PRO) 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.

Regardless, a few metrics have been identified for measuring the quality of the surgery, and some metrics exist that measure aspects of the patient experience. Work has also been done to identify and standardize assessment instruments to measure the important patient-reported outcomes, notably pain and functioning, as described above in the discussion on episode definition. As these are the core concerns of patients, it is critical that more work be done to develop this capacity. With that in mind, the following core measure set from the Core Quality Measures Collaborative (CQMC) are intended to help align private and public payers and should be used to select quality measures for a joint replacement episode (Figure 10):

Figure 10: CQMC Consensus Core Set: Orthopedic Measures, Version 1.0

Consensus Core Set: Orthopedic Measures, Version 1.0
<ul style="list-style-type: none"> • 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): <ul style="list-style-type: none"> ○ 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 ○ Rating of surgeon

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

Note that CQMC is overseeing a work group on Patient Reported Outcome and Patient Experience measures, which may include the following measures related to hip and knee replacement:

- **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) 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).
- **Patient-Reported Outcome Measures (PROMs):** PROMs, in particular with regard to functioning and pain, are critical, as these are the two key problems joint replacement is designed to solve and thus, important to patients. Functioning and pain should be measured both pre- and post-procedure. Given that a patient assessment (Figure 4) 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. The Work Group recommends – at this time – 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.
- **Standardized and Consensus-Based Measures:** Measures should use standardized and consensus-based measures of complication rates and hospital readmissions to understand 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. The CQMC core measure set (AHIP Coverage, 2016) includes measures of hospital level complication rates and 30-day all-cause readmission rates following elective hip replacement and should be used in these initiatives.

Care across Settings: Measures should reflect care across settings and within individual provider settings. Patients need provider-specific performance scores to assist them with selecting individual providers. However, providers also need to know that patients are experiencing positive outcomes across all settings within the episode.

Additionally, 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.

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 to 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.

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.

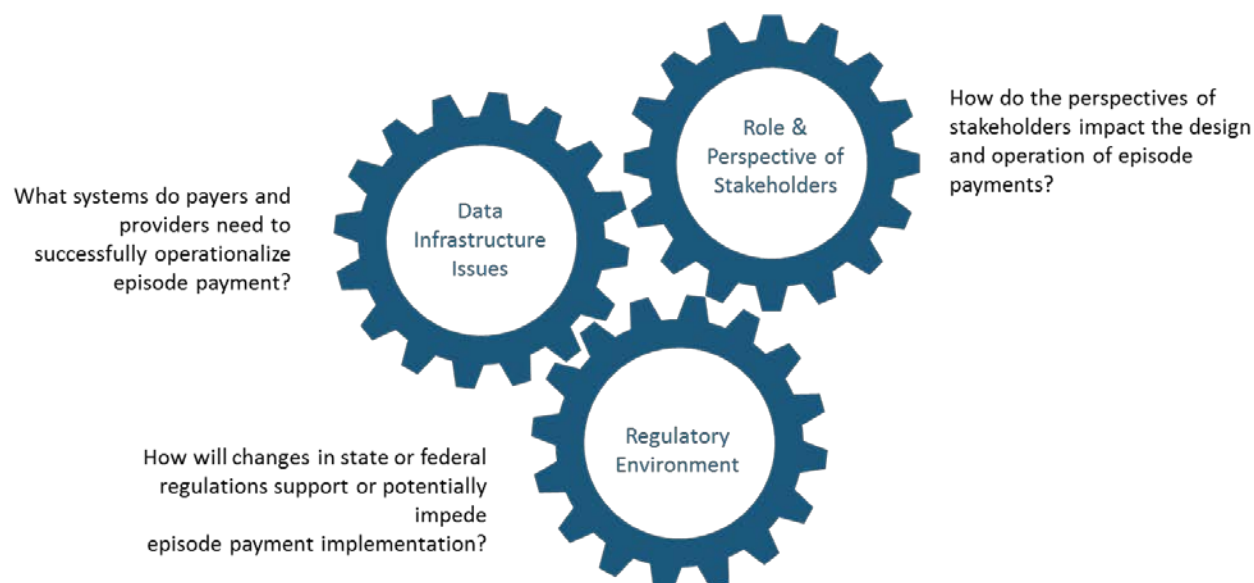
Finally, episode payment design must build in the capacity to collect, analyze, and provide data and support patients in identifying and interpreting this information. It is important, therefore, to establish cross-cutting efforts to define metrics and systems for data collection and analysis. But it 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 operational challenges discussed in the following section.

Operational Considerations

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 so-called operational considerations include: remaining mindful of the perspectives of stakeholders; building and maintaining an appropriate infrastructure for data collection, analysis, and payment; and finally, staying abreast of regulatory changes that could impact the design and operation of episode payments (Figure 11).

In this section, we do not include specific recommendations. Instead the CEP Work Group has developed three key questions that all adopters of clinical episode payment should consider and discuss when they begin planning and designing episode payment models.

Figure 11: Operational Considerations



Source: Ripple Effect Communications, Inc.

1. Role and Perspectives of Stakeholders

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

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, such as the states and the federal government, may be primarily focused on creating incentives for providers to achieve economies of scale and thus be willing to invest in data infrastructure to support that goal. Meanwhile, providers may be equally interested in the potential of episode payments but have reservations about leadership and accountability when it comes to care coordination across multiple medical settings. Patients bring a wide range of resources and abilities to the conversation; some have access to shared decision-making tools that can positively impact the delivery of value-based care; others may need additional supports to benefit from the potential for quality that episode payments offer.

Finally, because of their purchasing power, employers and other entities

Stakeholder Perspectives

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 look for indicators of sufficient leadership and accountability for episode payment to be established to ensure that the goals of care re-design 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.

Patients and Consumers: Patients, their family caregivers, and consumers contribute to, and benefit from, episode payment models, including participating in design and use of high-quality decision tools to help determine appropriate interventions. When patients and their family 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. Finally, consumers and patients can provide important feedback on care experiences and outcomes, which helps measure success and drive improvement.

Employers and Purchasers: Large purchasers hold significant leverage with payers and can push for episode payment within their contracting negotiations. 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.

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.

2. Data Infrastructure Issues

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

One of the biggest challenges to implementing joint replacement episode payments involves managing and sharing the vast amounts of data necessary to assess and mitigate risk. 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.

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 in-between of bundled payment requires pulling claims from multiple data files, applying exclusionary rules, calculating and updating benchmarks, 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 setting up these systems.

However, in order for episode payment to work, there needs to be a data infrastructure that supports and facilitates analysis for purposes of: establishing the episode price; bundling claims to determine 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 providers to understand patient preferences and expectations, and for patients and family caregivers to communicate preferences and goals.

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.

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, providing information to patients that allows for them to be engaged with each provider and understand their role in their recovery is also key and must be tied to the provider data analytics as well.

The Work Group recommends the following two models 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 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. 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.
- **Defining a Core Set of Logic:** This will assist the industry in developing the capacity for grouping claims into bundles by standardizing some of the logic and allowing each payer to customize some of the more specific rules. This could be applied individually by payers or within the context of a third party described above.

3. Regulatory Environment

How will changes in state or federal regulations support or potentially impede episode payment implementation?

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

The manner in which clinical episode payment is designed and implemented will be affected by both the federal and state regulatory environment. Federal regulations designed to prevent inappropriate

incentives for providers and to protect beneficiaries may affect providers' incentive structure with other providers and consumers and patients. Further, 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).

The three federal laws of most interest to health care systems are known as the self-referral, anti-kickback, and 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 in the Bundled Payment for Care Improvement (BPCI) initiative and for the CJR. More discussion can be found on the CMS Fraud and Abuse Waivers Web page.⁵

Moving Forward: Priorities for Supporting Episode Payment

The Work Group's recommendations reflect 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 areas in which evolution is necessary in order to fully optimize the impact that APMs such as episode payment may have on patients and the health care system. While this list is not exhaustive, following are certain high priority issues that are particularly relevant to episode payment:

- **Transparency of Cost Data:** All stakeholders need transparent, detailed data on the negotiated prices for joint replacement that payers establish 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.
- **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 joint replacement outcomes 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. Continuing the conversation on the development of key measures will be critical in determining the effectiveness of episode payment models.

⁵ <https://www.cms.gov/Medicare/Fraud-and-Abuse/PhysicianSelfReferral/Fraud-and-Abuse-Waivers.html>

Conclusion

Overall, the recommendations developed by the CEP Work Group include design elements and operational considerations that together are designed to support alignment. The Work Group allowed 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 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 GC and the designated focus of the LAN.

Finally, the recommendations and implementation options described in the body of the draft White Paper are directed toward all stakeholders. Certain recommendations will resonate more with those who are directly involved in implementation, such as large payers and providers. However, it is the intention of the CEP Work Group that consumers, patients and their family caregivers, purchasers, and states will also view these recommendations and options as starting points for critical conversations about how to promote aligned adoption of episode payment models.

Appendix A: About the CEP Work Group

History and Rationale

In November 2015, the Guiding Committee (GC) launched the Clinical Episode Payment (CEP) Work Group ([Appendix B: Roster](#)) in order to create “practical, actionable, operationally meaningful” recommendations that can facilitate the adoption of clinical episode-based payment models. The GC noted a specific interest in models that fall within Categories 3 and 4 of its [Alternative Payment Model Framework](#). In addition, the GC encouraged the CEP Work Group to create recommendations that build on existing successes, to identify and address critical barriers to adoption to accelerate progress, and to address key technical components of selected payment models. These technical components include risk adjustment, attribution, performance measures, and how to efficiently share data without compromising patient privacy. The GC also emphasized the importance of staying mindful of the perspectives of patients and consumers while seeking out these best practices.

Work Group Charge

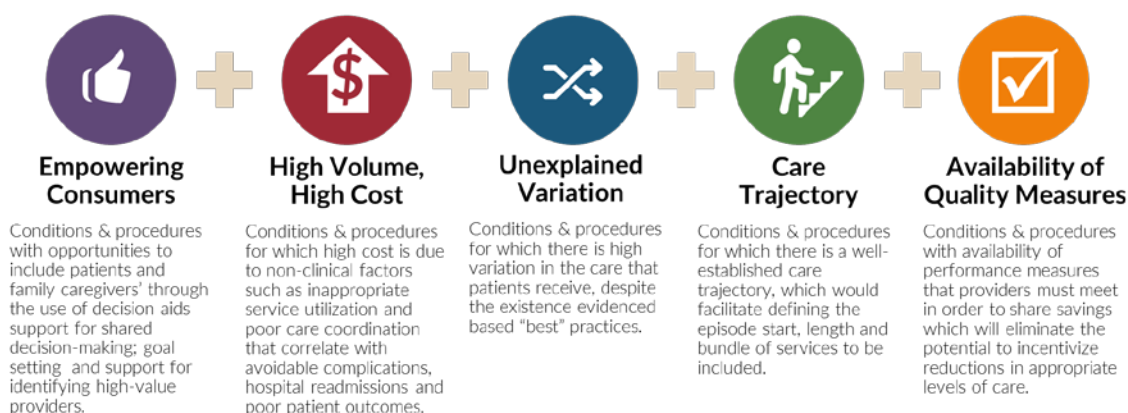
Since the first episode payments were introduced over 30 years ago, public and private purchasers (and a range of delivery systems) have explored a variety of episode payment models with varying degrees of success. This is because, while episode payments offer great potential as an alternative to FFS care, designing and implementing such models come with financial, technological, 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 CEP Work Group’s charge was as follows:

- 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 aspiration.

Priority Areas

In convening the CEP Work Group, the GC stipulated that the 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 CEP Work Group used the criteria in Figure A1 to prioritize the diseases and conditions on which their work would focus.

Figure A1: Criteria for Prioritization



Source: Ripple Effect Communications, Inc.

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

- Elective joint replacement;
- Cardiac care; and
- Maternity care.

The CEP Work Group believes that these priority areas have the greatest potential to create greater consensus and alignment of payment methods across payers and, thus, 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 focused, however, specifically on the design of episode payments. In addition, in their research and discussion, the CEP Work Group chose to emphasize clinical episode payments that also achieved one or more of the following:

- Incentivize **person-centered care**. One goal of alternative payment models (and a principle of the LAN APM Framework⁶) is to define⁷ person-centered care as high-quality care that is both evidence based and delivered in an efficient manner, and where patients' and caregivers' individual preferences, needs, and values are paramount.
- Improve patient outcomes through **effective care coordination**. Episode payment encourages providers to better coordinate care across and within care settings and focus more strongly on care

⁶ Principle 1 of the APM Framework.

⁷ Definition of Patient-Centered Care (APM Framework, page 4).

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.

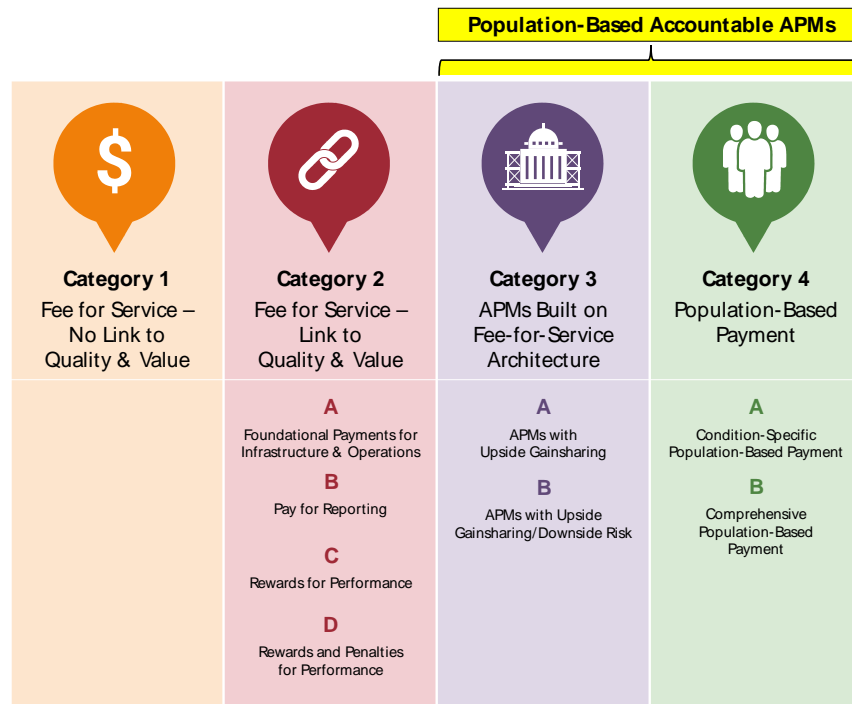
- **Reward high value care** by incentivizing providers and patients, together with their family caregivers, to discuss the appropriateness of procedures. Therefore, episodes and procedures that do not align with patient preferences can be avoided.
- **Reduce unnecessary costs** to the patient and to the health care system. Episode payment offers incentives to examine all the cost drivers across the episode – whether they relate to the provider, the payer, the patient or the purchaser -- including fragmentation, duplication, site of service, volume of services, and input costs/prices. Episode payment can create (for payers and consumers) an “apples-to-apples” comparison for assessing quality and cost. This well-defined “product” allows buyers to compare price and quality.

APM Framework Alignment

In January 2016, the Alternative Payment Model Framework Progress and Tracking Work Group released the [APM Framework White Paper](#), which defines payment model categories and establishes a common framework and a set of conventions for measuring progress in the adoption of APMs.

Figure A2 illustrates the four categories within the APM Framework. Categories 3 and 4 represent population-based accountable APMs. Clinical episode-based payments fall into either Categories 3 or 4, depending on whether they are designed around procedures, such as a hip replacement, or health conditions, such as pregnancy. This draft White Paper discusses joint replacement episode payment, which is a procedure-based episode, and thus is in line with Category 3. Future Work Group white papers will address maternity care and cardiac care, which are episode payments for specific health conditions and are related to developing APMs within Category 4.

Figure A2: APM Framework (At-a-Glance)



Source: Ripple Effect Communications, Inc.

Appendix B: Roster

Clinical Episode Payment (CEP) Work Group Members and Staff

Work Group Chair

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Executive Vice President, Clinical Advancement, UnitedHealth Group

CEP Work Group Members

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Appendix C: Summary Review of Selected Joint Replacement Initiatives⁸

Draft: February 26, 2016

Initiative	Episode Definition	Population/ Services	Accountability	Payment Flow & Risk	Quality	Results*
<i>CMS—ACE demonstration</i>	<ul style="list-style-type: none"> Hip and knee replacement Admits for MS DRGs 469 and 470 IP and OP in an admission, including some pre-op Part A and B in an admission, including some pre-op services 	Limited list of population and service exclusions	Health system <i>Voluntary gain sharing with providers</i>	<i>Prospective</i> <ul style="list-style-type: none"> Built-in discount Risk <ul style="list-style-type: none"> Upside and downside risk 	No explicit quality tie to payment methodology	<ul style="list-style-type: none"> Medicare payments decreased; savings shared with beneficiaries not accounted for. Increase in Part B costs. Discharges to PAC less likely. Decrease in readmissions. Mixed results on complications.
<i>CMS—Bundled Payment for Care Improvement (BPCI): Model 2⁹</i>	<ul style="list-style-type: none"> Hip and knee replacement Admits for MS DRGs 469 and 470. Part A and B services in an admission, including some pre-op services. All related A and B services for 30, 60, 90 days post-discharge except hospice; subject to limited exclusions. 	Limited list of population and service exclusions for unrelated Part B services and Part A inpatient readmissions	Provider practice, hospital or convener <i>Voluntary gain-sharing with providers</i>	<i>Retrospective</i> <ul style="list-style-type: none"> FFS upfront Built-in discount Risk <ul style="list-style-type: none"> 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	Early evaluation (based on one quarter only) found: <ul style="list-style-type: none"> 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%

⁸ Note: *Results reported are based on studies of varying statistical rigor and extrapolated from publications.

⁹ Note: Model 1 not included as it is a discount off of IPPS, not accountability across providers or settings.

						for the comparison hospitals. <ul style="list-style-type: none"> Lower number of HHA days among patients with at least one HHA day.
<i>CMS—Bundled Payment for Care Improvement (BPCI): Model 3⁹</i>	<ul style="list-style-type: none"> Hip and knee replacement Admits for MS DRGs 469 and 470 Beginning on admission to PAC within 30 days of discharge from MS-DRG 469 or 470; all related A and B services 30, 60, or 90 days from PAC admission, except hospice; subject to limited exclusions. 	Limited list of population and service exclusions for unrelated Part B services and Part A inpatient readmissions	Post-acute care provider, convener, provider group practice <i>Voluntary gain-sharing with providers</i>	<i>Retrospective</i> <ul style="list-style-type: none"> FFS upfront Risk Built-in discount 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	Early evaluation (based on one quarter only) found: <ul style="list-style-type: none"> 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.
<i>CMS—Bundled Payment for Care Improvement (BPCI): Model 4⁹</i>	<ul style="list-style-type: none"> Hip and knee replacement Admits for MS DRGs 469 and 470 Inpatient stay (including pre-op services under FFS in the IPPS payment); all Part B during hospital stay; related readmissions (A and B) within 30 days of discharge; subject to limited exclusions 	Limited list of population and service exclusions for unrelated Part B services and Part A inpatient readmissions	Convener or acute care hospital <i>Voluntary gain-sharing with providers</i>	<i>Prospective</i> <ul style="list-style-type: none"> FFS upfront Risk Built-in discount 	No explicit quality tie to payment methodology	<ul style="list-style-type: none"> Too small a sample.
<i>CMS—Comprehensive care for Joint Replacement (CJR)</i>	<ul style="list-style-type: none"> Hip and knee replacement Admits for MS DRG 469 and 470 	Limited list of population and service exclusions	Hospital	<i>Retrospective</i> <ul style="list-style-type: none"> FFS upfront Risk 	Payment methodology includes complications,	<ul style="list-style-type: none"> Not yet available.

*PBGH—Employers
Centers of Excellence
Network (ECEN) with
Walmart, Lowe's,
McKesson, and JetBlue*

*Integrated Healthcare
Association*

<ul style="list-style-type: none"> All A and B for admission; 90 days post-discharge; subject to limited exclusions 		Voluntary gain sharing with providers	<ul style="list-style-type: none"> Built-in discount Increasing upside and downside risk over time to stop loss and stop gain limits 	HCAHPS, and voluntary reporting of patient outcome	
<ul style="list-style-type: none"> Hip and knee replacement Episode based on MS-DRG 469 and 470 Bundle includes hospital charges, physician fees, affiliated services (PT, home health) for 7-10 day bundle 	<ul style="list-style-type: none"> 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 CoE Other appropriateness criteria applied to definition of bundle and COE certification 	Hospital/health system	Prospective Risk <ul style="list-style-type: none"> Upside and downside risk 	<ul style="list-style-type: none"> 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" 	<ul style="list-style-type: none"> Employer savings on procedure episodes; employee travel and lodging included.
<ul style="list-style-type: none"> Relied primarily on PROMETHEUS Evidence-based Case Rates (ECRs) 	<ul style="list-style-type: none"> Specific list of services 	Hospitals	Prospective Risk	Not yet implemented	<ul style="list-style-type: none"> Results from the study were developed into several papers on implementation

a regional health care improvement collaborative with several health plans and hospitals	<ul style="list-style-type: none"> Did not include post-acute care as it would have required multiple new contracts 	<ul style="list-style-type: none"> Limited list of eligible patients to avoid complexities of risk-adjustment Avoid high BMI, those with high severity scores 		<ul style="list-style-type: none"> Upside and downside risk 		issues (links provided in the Appendix E below).
<p><i>Geisinger ProvenCare</i></p> <p>case study still under review by Geisinger</p>	<ul style="list-style-type: none"> Hip and knee replacement IP, OP, PAC with some pre-operative care included 	<ul style="list-style-type: none"> Appropriateness criteria 	Health system	<p><i>Prospective/Warranty Risk</i></p> <ul style="list-style-type: none"> Upside and downside risk 	<ul style="list-style-type: none"> Complications Readmissions 	<ul style="list-style-type: none"> 50% decrease in readmissions. 10% decrease in length of stay. Two of their programs certified for exceeding national benchmarks for hip fracture care.
<p><i>Arkansas Health Care Improvement Initiative</i></p> <p>Medicaid and commercial payers</p>	<ul style="list-style-type: none"> Hip and knee replacement IP, OP in admission and PAC for 90 days out 	<ul style="list-style-type: none"> Differential definitions of who and 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	<p><i>Retrospective Risk</i></p> <ul style="list-style-type: none"> Shared savings Also includes a built-in discount on the target price Upside and downside risk Downside risk limited to relatively high spending levels 	<ul style="list-style-type: none"> Readmissions 30-day wound infection Frequency of prophylaxis for DVT and PE Treatment for DVT and PE 	<ul style="list-style-type: none"> 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 2014. 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%
<p><i>PROMETHEUS/Health Care</i></p>	<ul style="list-style-type: none"> Hip and knee replacement 	Detailed list of exclusions and inclusions	Varies based on the initiative	<i>Varies</i>	Builds in savings for potentially	<ul style="list-style-type: none"> Varies by payer and/or provider.

*Improvement Initiative
Institute (HCI3)*

- Includes hospital, provider, and other provider costs

- Retrospective reconciliation recommended

avoidable complications

Risk

- Contracts can be based on upside only, upside/downside, with or without stop loss, and with upside tied to quality scorecards

*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
- Includes PT, certain medications, and treatment for complications due to infections, blood clots or readmissions
- Up to 90 days post-discharge

Orthopedic surgeon

Retrospective

- Shared savings potential

Risk

- 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

- Not yet available.

Appendix D: Implementation Resources

General Resources:

Centers for Medicare & Medicaid Services (CMS) <u>Bundled Payment for Care Improvement (BPCI) Home Page</u>	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) <u>Bundled Payments Web Page</u>	The IHA website offers multiple reports and specification documents on bundled payments.
Arkansas Health Care Improvement Initiative <u>Payment Reforms Report</u>	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 <u>Episodes 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.
Horizon Blue Cross Blue Shield in New Jersey <u>Payer and Provider Relationship Case Study</u>	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) <u>Employee Center of Excellence Network (ECEN) Summary</u>	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 DecisionMaking for Total Joint Replacement: The Physician's Role	"Shared DecisionMaking 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.

Patient Assessment Tools:

<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.
<u>Patient Reported Outcome Measurement Information System (PROMIS)</u>	PROMIS® instruments use modern measurement theory to assess patient-reported health status for physical, mental, and social wellbeing 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.
<u>Veterans RAND 12-Item Health Survey (VR-12)</u>	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.

Quality Measurement:

<u>National Quality Forum</u>	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.
<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: <ul style="list-style-type: none"> • 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.

Appendix E: References

- AHIP Coverage. (2016). AHIP, collaborative partners announce core set of quality measures [Press release]. Retrieved from <http://www.ahipcoverage.com/2016/02/16/ahip-collaborative-partners-announce-core-set-of-quality-measures/>
- Blue Cross Blue Shield Association & Blue Health Intelligence. (2015). *A study of cost variations for knee and hip replacement surgeries in the U.S.* Retrieved from http://www.bcbs.com/healthofamerica/BCBS_BHI_Report-Jan-_21_Final.pdf
- Department of Research & Scientific Affairs, American Academy of Orthopaedic Surgeons. (2014). *Annual incidence of common musculoskeletal procedures and treatment.* Retrieved from <http://www.aaos.org/research/stats/CommonProceduresTreatments-March2014.pdf>
- ECRs and definitions: HCI3 evidence-informed case rate® (ECR®) definitions. Retrieved from http://www.hci3.org/programs-efforts/prometheus-payment/evidence_informed_case_rates/ecrs-and-definitions
- Hornbrook, M.C., Hurtado, A.V., & Johnson, R.E. (1985). Health care episodes: Definition, measurement and use. *Medical Care Research and Review*, 42(2), 163–218.
- Medicare Program; Comprehensive Care for Joint Replacement Payment Model for Acute Care Hospitals Furnishing Lower Extremity Joint Replacement Services, 80 Fed. Reg. 73274 (proposed Nov. 24, 2015) (to be codified at 42 C.F.R. pt. 510)
- U.S. Department of Health and Human Services. (2015). CMS finalizes bundled payment initiative for hip and knee replacements [Press release]. Retrieved from <http://www.hhs.gov/about/news/2015/11/16/cms-finalizes-bundled-payment-initiative-hip-and-knee-replacements.html>
- U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. (2016). Core measures. Retrieved from <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityMeasures/Core-Measures.html>
- U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. (2014). HCAHPS: patients' perspectives of care survey. Retrieved from <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/HospitalHCAHPS.html>