# BUNDLED PAYMENTS


For decades physicians have provided care under the fee for service payment paradigm. Unfortunately, the American healthcare system is incredibly expensive, consuming 17% of GDP. This rate of growth in health care spending is unsustainable. Traditional fee for service medicine leads to high cost and uncoordinated care. Physicians are reimbursed regardless of long-term outcomes and there is no incentive for high quality care. In 2013 US national health expenditures reached 2.9 trillion dollars and is predicted to reach 4.8 trillion dollars in 2021.1,5 As the largest provider of health insurance in the United States, Medicare accounted for 20% of the national healthcare expenditure in 2013, $585.7 billion dollars.3 CMS has begun pilot programs to control the cost of defined episodes of care. To control cost and increase the value (outcomes or quality/cost) of healthcare for its patients, Medicare is modifying current payment paradigms, moving away from outdated fee for service programs and towards alternative payment models. By 2016 30% of U.S. health care payments will be in alternative payment models and by 2018 it is estimated to be close to 50%.

**Alternative Payment Models**

There are four different categories of alternative payment models, they include: Fee for Service-No Link to Quality, Fee for Service-Link to Quality, Alternative Payment Models Built on Fee for Service Structure, and Comprehensive Population Based Payments.

**Fee for Service-No Link to Quality**

Payments are made for units of service and are not adjusted to account for provider quality data reporting or cost metrics. The provider's incentive may be to bill for additional services because payments are made on the basis of volume.

**Fee for Service- Linked to Quality and Value**

Payments are made for units of service but are adjusted based on whether providers report quality data and how well they perform on cost and quality metrics. These payments fall into four different categories: payments for infrastructure and operations, payments for reporting and rewards for performance, rewards for performance and rewards and penalties for performance.

**Alternative Payment Models Built on Fee for Service Structure**

Providers meeting targets are eligible for shared savings and those that do not may be held financially accountable. Episode based and bundled payments encourage care coordination because they cover a complete set of services for a procedure which may be delivered by multiple providers.

**Population Based Payments**

Providers are encouraged to deliver patient centered and coordinated care within a global budget and are held accountable for meeting quality and patient centered goals for a population of patients.

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Payments are intended to cover a wide range of preventative health services as well as to maintain provider teams and improve patient access to care.

**Value in Health Care and Bundled Payments**

Increasing the value for Medicare patients is imperative. By the year 2029, when all baby boomers are 65 or older and eligible for Medicare, baby boomers will account for 20% of the US population.[2] With such a large percentage of the US population being insured by Medicare, health care value must be increased. Healthcare value is defined as the ratio of positive outcomes to the cost required to achieve those high quality outcomes.[4] By increasing the value of patient care, the efficiency and quality provided to patients, stakeholders, and the health care system can be increased.

In 2011, CMS initiated a new bundled payment project. The goal for this program was "to improve patient care through payment innovation that fosters improved coordination and quality through a patient-centered approach." CMS structured four models of bundled payments, 3 retrospective and 1 with a prospective payment. Under models 1 to 3, Medicare and the participating hospital agree on a target payment amount for a defined episode of care, as determined from the participants' historical fee-for-service payments for the episode, and if savings are realized, gain sharing with surgeons and other practitioners will be permitted. The episode of care is defined as the inpatient and post-acute care and all costs through 90 days following discharge. Teamwork across disciplines will be necessary going forward. All healthcare members involved in patient care from the moment the patient walks into your institution to when the patient recovers must be prepared to work together as a team. But again, value is not limited to just increasing positive health outcomes but also by achieving the lowest cost necessary to secure those outcomes. In a bundled payment environment, hospitals must be aware of payment paradigm changes and be adaptable to make appropriate modifications to improve cost effectiveness and improve the quality of care to their patients.

The Bundled Payment for Care Initiative (BPCI) was begun in 2013 by CMS. Under BPCI organizations enter into payment arrangements which include financial and performance accountability for episodes of care. BPCI requires that quality is maintained and care is delivered at a lower cost in order for it to be successful. This requires physicians and hospitals to align their interests, orthopaedic surgeons must assume a leadership role in cost-containment, surgical safety, and quality assurance in order to deliver cost-effective care. Because most orthopaedic surgeons practice independently and are not hospital-employed, models of physician-hospital alignment such as physician-hospital organizations or contract arrangements between practices and hospitals may be necessary for bundled pricing to succeed. Under this initiative hospitals, surgeons, or third parties are able to share the rewards, but assume the risk for the bundle.

Recently, CMS announced the Comprehensive Care for Joint Replacement Payment Model for Acute Care Hospitals Furnishing Lower Extremity Joint Replacement Services (CCJR), a mandatory bundled payment initiative for hip and knee replacements (DRG 469 & 470) performed at hospitals in 75 key Metropolitan Statistical areas (MSA). The performance period was to begin on Jan 1, 2016 and continue

for 5 years. It is likely that this implementation date will be delayed until later in 2016. CCJR is similar to BCPI Model 2 or the 90 day episode of care. This program is expected to save Medicare 153 million dollars during its trial period. The theme of this program is bundle payments. Instead of simply paying physicians and hospitals for each separate procedure and service, the bundling of payments will allow Medicare to pay hospitals a flat fee for all services involved in the process of care. To be successful during this financial transition, an institution must become familiar with many new terms, one of the most important being the target price.

**What is the Target Price?**

The Target Price is a dollar amount, developed by CMS, based on previous fee-for-service data in years 1-3 of the program and a mixture of historical and regional data for the last 2 years of the program, for a particular procedure performed by a hospital within the bundle. CMS then discounts this target price by 2%. If hospitals provide quality metrics and PRO measures, the discount can be reduced to 1.7%. The bundle target price will include any service provided 72 hours before the admission of the patient, all services provided to the patient during his/her inpatient stay and any services provided up to 90 days after the procedure. This includes physicians' services; inpatient hospital services; inpatient psychiatric facility (IPF) services; LTCH services; IRF services; SNF services; HHA services; hospital outpatient services; Independent outpatient therapy services; clinical laboratory services; durable medical equipment (DME); Part B drugs; Hospice; and readmission to all facilities including those outside of the network. The target price will then be used for comparison against any future payments received by an institution from Medicare. If the payment received by the institution is lower than the target price for that procedure, Medicare will pay the institution the difference. Additionally, to receive the reconciliation payment the institution must meet certain quality metrics. Medicare has set 4 quality metrics:

- Hospital-level 30-day, all-cause RSRR following elective primary THA and/or TKA (NQF #1551)
- Hospital-level RSCR following elective primary THA and/or TKA ( NQF #1550)
- HCAHPS survey (NQF #1661)
- Voluntary THA/TKA data submission on patient-reported outcome measure

For the first 3 years of the program the institution must be above the 30$^{th}$ percentile for the first 3 metrics to receive a reconciliation payment, for the 4$^{th}$ and 5$^{th}$ year the threshold is increased to the 40$^{th}$ percentile to ensure improvement. If on the other hand the sum of payments received by the institution is higher than the target price total, the institution will be forced to pay Medicare the difference. This penalty will not be enforced until the 2$^{nd}$ year of the program giving institutions time to appropriately adjust to the changes. There is a great deal of incentive to decrease cost and improve efficiency and care under this new system.

To assure that an institution’s costs fall below Medicare’s target prices, it is essential that the 3 main aspects of surgical care are examined: What happens to patients during the pre-operative period, what

happens to patients during surgery, and what happens to patients during the post-operative period. The CCJR will focus on procedures in MS DRG 469 and 470 (primary total hip and knee replacement) and their corresponding codes in ICD-10 when implemented.

**The Pre-operative Period:**

Pre admission testing and medical clearance is a component of surgical care that can be easily improved. We recommend that all pre-operative activity becomes aligned. For example, by aligning Anesthesia and medical clearance processes you can minimize cancellations and increase efficiency. We also recommend that evidence-based protocols are followed and preoperative testing is ordered, only if medically indicated. For example, ASA 1 and some ASA 2 patients may only require routine pre admission testing and evaluation made by your anesthesiology department, rather than a full blown medical clearance. Preoperative urinalysis should only be performed with symptomatic patients, additionally PT/PTT and INR testing should only be performed if the patient is on anticoagulants or has a preexisting liver or bleeding disorder.

Pre admission testing should also include post-acute inpatient care and readmission risk assessment prediction tools to forecast a patient's risk for complications and increased cost during and after the index hospital stay. Why is this important? The orthopaedic literature tells us that certain characteristics are associated with higher risk of negative outcomes following surgeries including increased length of stay, increased discharge to inpatient facilities, and increased risk of readmission, all of which can increase episode of care costs considerably.[9] These characteristics include long operating times, elevated BMIs, tobacco use, and S aureus colonization which can predispose to infection. Fall risk, alcohol or narcotic dependency, neurocognitive and psychiatric issues, catastrophizing and poor pain tolerance can all lead to increased cost associated with the episode of care. By identifying and optimizing these modifiable risk factors before surgery, not only will patient outcomes be improved but the incidence of complications, infections and readmissions will be reduced.

By working with the patient and employing shared decision making principles, these risk factors can be optimized to help avoid the cost of extended LOS, post-acute inpatient stays, and readmissions which are the biggest threat to exceeding the target price for the episode of care.[7] Also by determining the patient's pre-operative risk, one can discuss with the patient their expectations regarding post-operative care and guide their perception of the entire episode of care. Patients are more satisfied when their expectations are met.[10] By using pre-operative risk assessment prediction tools you will not only help your institution avoid poor outcomes but also improve patient satisfaction (see RAPT and RRAT).

Risk Assessment and Prediction Tool (RAPT)

| | Value | Score |
|---|---|---|
| 1. What is your age group? | 50-65 years<br>66-75 years<br>> 75 years | =2<br>=1<br>=0 |
| 2. Gender? | Male<br>Female | =2<br>=1 |
| 3. How far, on average, can you walk? (a block is 200 meters) | Two blocks or more (+/- rests)<br>1-2 blocks (the shopping centre)<br>Housebound ( most of the time) | =2<br>=1<br>=0 |
| 4. Which gait aid do you use? (more often than not) | None<br>Single point stick<br>Crutches/frame | =2<br>=1<br>=0 |
| 5. Do you use community supports? (home help, meals-on wheels, district nurse) | None or one per week<br>Two or more per week | =1<br>=0 |
| 6. Will you live with someone who can care for you after your operation? | Yes<br>No | =3<br>=0 |
| | Your score (out of 12) | |

KEY:Scores < 6 high risk..... prediction: discharge extended inpatient rehabilitation
Scores > 9 low risk..... prediction: discharge directly home
Scores 6-9 medium risk ....prediction: additional intervention to discharge directly home

Patient's expectation of discharge destination is also a determinant. The prediction indicated by the score is discussed with the patient and a destination plan agreed to.

| Patient's preference | Prediction (Score) | Agreed destination |
|---|---|---|
| ..... | ..... | ..... |

Modifiable risk factors do play a major role in outcomes post TJA. By addressing these issues and enrolling patients in a risk modification program prior to surgical intervention, we have been able to lower rates of complications associated with these procedures. Identifying and modifying these risk factors prior to surgery presents an opportunity to decrease avoidable complications, improve clinical outcomes, and decrease costs associated with unnecessary health services utilization following these procedures. Although some of these modifiable risk factors may be longstanding and recalcitrant to change, patients may express a renewed interest in addressing them if they stand in the way of obtaining THA, a procedure they hope will result in dramatic changes in pain, physical function and quality of life. Improving the health of the musculoskeletal population prior to orthopaedic intervention will result in decreased costs for the episode of care.

Primary care physicians, internists, anesthesiologists and specialty physicians involved in the pre-admission clearance process can all participate in decreasing these risk factors preoperatively. At NYULMC HJD, we have incorporated a trans-departmental (anesthesia, internal medicine, pulmonary, cardiology, endocrine, nutrition, bariatrics, physical therapy and psychiatry) approach to decrease perioperative morbidity and mortality and decrease readmissions. Employing a risk coordinator (NP, PA,

or internist dedicated to Orthopaedic Perioperative Services) can help achieve the same goals and can serve as the gate keeper to decide when the patient has achieved an optimized state for surgical intervention.

We also recommend using a Peri-operative Orthopaedic Surgical Home (POSH) model. This allows for risk stratification of TJA candidates and clinical treatment to mitigate modifiable risk factors in high-risk patients (morbid obesity, poorly controlled diabetes, malnutrition and hyperglycemia, smoking, S. aureus colonization, cardiovascular disease, venous thromboembolic disease, neurocognitive, psychological and behavioral problems (which include drug and alcohol dependency), and physical deconditioning affecting mobility and fall risk. This program has allowed us at NYULMC HJD to see the average length of stay of our patients decrease from 3.7 to 2.9 days and readmissions at 90 days decrease from 14% to 8%. See our POSH RRAT readmission risk predictor below.

**Readmission Risk Assessment Tool with Proposed Interventions (RRAT)**

| | ***Risk Factor** | **Points on Risk Stratification Scale** |
|---|---|---|
| **1** | **<u>Infection risk factors:*Staphylococcus Aureus* colonization</u>**<br><br>***Every patient is screened***<br><br>***If positive for Staphyloccocus Aureus colonization:***<br><br>• ***Nasal mupirocin or povidone-iodine, chlorhexidine gluconate (CHG) wipes, and appropriate antibiotic coverage***<br><br>• ***If these requirements are not met then hard stop until protocol implemented*** | **3** |
| **2** | **<u>Smoking (Tobacco use)</u>**<br><br>***All tobacco users will be enrolled in smoking cessation program 4 to 8 weeks prior to surgery*** | **1** |

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| | | |
|---|---|---|
| **3** | **<u>Obesity</u>**<br><br>***Body Mass Index (BMI) greater than 40:***<br><br>• ***Enroll in nutritional counseling program***<br><br>• ***Long-term weight loss program, and***<br><br>• ***Undergo bariatric consult***<br><br>***BMI 35-39.9***<br><br>• ***Patients will be enrolled in nutritional counseling with consideration of acute weight loss program***<br><br>***BMI 30-34.9***<br><br>• ***Enroll in nutritional counseling program*** | **3**<br><br>**2**<br><br>**1** |
| **4** | **<u>Cardiovascular Disease</u>**<br><br>***Patient has history of coronary artery disease, stroke, peripheral vascular disease or venous thromboembolic disease, age ≥60 years and at least 2 cardiac risk factors; renal insufficiency (CrCl <60ml/min); diabetes; chronic obstructive pulmonary disease; hypertension; recent smoker (<30 days); cancer; heart failure***<br><br>• ***All qualifying patients will be enrolled in Optimization of Presurgical Testing with an Intensive Multifactorial Intervention to Minimize Cardiovascular Events in Orthopedic Surgery (OPTIMIZE-OS) program peri-operatively*** | **1** |
| **5** | **<u>Venous Thromboembolic Disease (VTED)</u>**<br><br>***History of pulmonary embolus or deep venous*** | **2** |

| | | |
|---|---|---|
| | ***thrombosis:***<br>• ***Consider inferior vena cava (IVC) filter or aggressive VTED management*** | |
| | ***Has VTED risk factors: cerebrovascular accident, chronic obstructive pulmonary disease, BMI >30, coronary artery disease, peripheral vascular disease, activated protein C resistance*** | **1** |
| **6** | **<u>Neurocognitive, psychological and behavioral problems (including drug and alcohol dependency)</u>** | |
| | ***Alcohol abuse or chronic active narcotic dependency*** | **2** |
| | ***Neurocognitive deficits such as traumatic brain injury (TBI), active psychiatric illness, dementia etc.*** | **1** |
| | ***Score of 7 or more for depression using PHQ-9 (Patient Health Questionnaire)*** | **1** |
| **7** | **<u>Physical Deconditioning</u>** | |
| | ***Nonambulatory or needs assistance with transfers status*** | **2** |
| | ***Comorbidities affecting physical function and ambulation*** | **1** |
| **8** | **<u>Diabetes</u>** | |
| | ***Fasting blood glucose > 180mg/dl,***<br>• ***Must be corrected prior to surgery, consider referral to diabetic management clinic (endocrinologist)*** | **3** |

| | | |
|---|---|---|
| | ***Hgb A1c > 8***<br>• ***Referred to diabetic management clinic (endocrinologist)*** | **2** |
| | ***Well controlled Diabetes Mellitus*** | **1** |

*The proposed interventions (italicized) were not applied to or analyzed in current study.

RRAT Odds of readmission by accumulated score

| **RRAT Scores** | **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
|---|---|---|---|---|---|---|---|---|---|
| Readmitted (A) | 30 | 29 | 36 | 41 | 34 | 13 | 13 | 8 | 1 |
| Controls (B) | 79 | 77 | 41 | 18 | 16 | 1 | 2 | 0 | 0 |
| Ratio = A/B | 0.38 | 0.38 | 0.88 | 2.28 | 2.13 | 13.00 | 6.50 | - | - |
| Odds | 0.29 | 0.52 | 0.92 | 1.62 | 2.86 | 5.06 | 8.93 | 15.78 | 27.88 |
| OR | - | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 | 1.77 |

* Odds, a ratio of readmission to none is estimated by Exp($\beta_0 + \beta_{RRAT} RRAT$)

* OR is calculated by $Odds_{current\ score}$ divided by $Odds_{previous\ score}$

* In a linear model, the OR is assumed to be constant across score level, therefore Odds for score 7 and 8 were available in model estimation. However, due to the small sample size, "Ratio", data odds between 4 and 6 are unstable.

**During Surgery:**

A large proportion of acute care hospital cost comes from within the Operating Room, including orthopaedic implant costs. In 2011 our institution, an academic, high volume, urban, orthopaedic specialty hospital, began a program to standardize and decrease the price of total joint implants as part of an overall cost saving effort. Using market analysis and implant cost data from previous years, we established price points for the total cost of all implants for four groupings: 1) routine total hip replacements 2) high demand total hip replacements 3) routine total knee replacements and 4) high demand total knee replacements. In the first year of the program 1,090 unilateral total knee and 1,022

total hip arthroplasties were done. We saw a cost savings of 25.94% for knee arthroplasties and 22.28% for hip arthroplasties. Based on our volume and pricing data, our institution saved slightly over $2 million during the first year of this intervention.[6]

In 2012, our institution started a program to reduce the price of implants used in spine surgeries. Using market analysis and implant cost data from the prior year, reference costs were created for all spinal implants. In order to continue to be approved for use at our institution, vendors were required to meet our uniform prices set for each type of implant. Partnerships were only continued with vendors who met our reference cost. For each implant used, the cost was recorded according to the new prices as well as the historical cost of the implant from the preceding year, before the initiation of our program. In the first year of the program, 26 spinal surgeons performed 1493 spinal procedures and our institution saved a mean of $1982 per patient and $2,958,492 overall. Your institution can follow similar methodologies to help reduce cost of surgical implants, which can be a large proportion of the bundle and target price.[8]

We currently have several more implant selection guideline programs and information technology applications to make implant selection less complicated for the surgeon and hospital. These programs can decrease the number of trays which require sterilization, decrease the on hand inventory necessary to perform orthopaedic interventions, and can decrease cancellations and equipment communication issues which can plague a busy OR. (See Medtel).

**Standardized Clinical Pathways:**

An important component of implementing BPCI is the development and utilization of a standardized inpatient pathway that coordinates the tasks of attending physicians, clinical care coordinators, residents, nurses, nurse practitioners, and social workers to achieve a 2 day length of stay. These measures benefit all total joint arthroplasty patients through reduced length of stay, reduced operating room time, reduced implant, supply, and drug costs, evidence based care initiatives and more coordinated discharge planning. Standardization of care combined with optimization of quality and value are the foundations of a bundled payment initiative. These same programs will also benefit the non-bundled TJA patients and add value to the TJA product line.

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| Elements of Evidence-based Clinical Pathway, Interventions and Intended Results | | |
|---|---|---|
| Anesthesia | • Regional anesthesia and peripheral blocks<br>• Multimodal analgesia protocols and periarticular intraoperative anesthesia injections | • Early ambulation<br>• Pain control<br>• Decrease VTED |
| Blood Management | • Discontinuation of routine autologous blood donation or preoperative pharmacologic optimization (Erythropoietin etc.) without medical necessity<br>• Transfusion was only provided to patients in true need, as determined by symptoms<br>• Tranexamic acid administration protocol (one gram pre-incision and one gram during closure) was utilized<br>• Discontinue radiofrequency bipolar sealer (aquamantys)<br>• Discontinue reinfusion drains | • Patient safety<br>• Cost-effectiveness<br>• Minimize blood loss<br>• Decrease infections |
| Radiology | • Discontinuation of routine postoperative primary TKA radiographs | • Patient safety<br>• Cost-effectiveness<br>• Decrease OR time |
| Pathology | • Pathology specimen evaluation was only performed on primary TJA if a diagnosis was needed | • Cost-effectiveness |
| Catheterization | • No routine urinary catheterization<br>• Bladder scanning used to evaluate urinary retention<br>• If catheterization was required, intermittent catheterization was performed in lieu of an indwelling catheter, to reduce delays in mobilization and complications associated with indwelling catheters and to reduce unnecessary expenditures [7, 10] | • Decrease infections<br>• Improve efficiency<br>• Patient mobilization |
| Laboratory | • Preoperative urinalysis was avoided unless patients were symptomatic<br>• Routine Prothrombin Time (PT)/Partial Thromboplastin Time (PTT) and International Normalized Ratio (INR) were not required unless a patient was currently being treated with anticoagulants or had a preexisting blood and/or liver disorder | • Patient safety<br>• Cost-effectiveness |

**The Post-operative Period:**

After surgery the use of a clinical care coordinator is highly advised. The clinical care coordinator's role is to assist, not only with the coordination of care inside the hospital but also with the coordinated transfer of patients from the hospital to home or post-acute settings. After patient transfer, clinical care coordinators facilitate communication regarding the patient's recovery to the healthcare team during the 90 days following patient discharge. Clinical care coordinators will also be able to help coordinate follow up appointments with attendings and help avoid routine follow-up care with consultants and

PCP's, avoiding confusion and unnecessary cost. This will not only control readmissions to a more appropriate level but also help reduce cost.

Clinical care coordinators are critical to minimizing patients' length of stay at post-acute settings. Recall that post-acute settings are included in the bundle payment and target price, making it imperative that your institution monitor patients' status in post-acute settings to limit length of stay and avoidable readmissions. If a readmission is unavoidable, the clinical care coordinator can evaluate patients and contact the attending before transfer to improve efficiency and avoid delays in care. Additionally by involving the clinical care coordinator, transfers to acute care hospitals and emergency rooms may be avoided by sending the patient to an attending's office thus circumventing the need to send patients to local emergency rooms for non-emergent needs, reducing overall cost and unnecessary readmissions.

We recommend 1 RN FTE Clinical Care Coordinator to manage every 240 patients per year. For preoperative duties we recommend 1 CCC for every 20 patients per month. For inpatient duties we recommend 1 CCC for 4-6 patients per day.

In regards to specific post-acute setting location we recommend that you limit the amount of patients sent to inpatient rehab facilities and skilled nursing facilities. During our Bundle payment initiative we saw that inpatient rehab facilities cost $41,234 while home health aides cost $22,358. In addition to altering discharge setting after surgery we also recommend negotiating contracts with your partnered visiting nurse service and skilled nursing facility to reduce cost. Although you can control the patients' length of stay at your institution you cannot control patients' length of stay at post-acute settings unless they are somehow involved in the gain sharing arrangement.

**Can you do it?**

Following these recommendations, the goals of decreased cost, increased quality of patient care, increased efficiency and increased healthcare value are attainable. Currently in our bundled payment initiative we have achieved:

- average length of stay decrease from 4.27 days to 2.9 days
- discharges to inpatient facilities decrease from 63% to 29%
- 90 day CMS readmission rates decrease from 17% to 8%
- positive margins vs. CMS target price in the first 3 reconciliations
- per case hospital cost decrease of $7,000 overall and $6300/case for the bundle
- 8.1% and 17% savings v target reconciliation for DRG 469 and 470 respectively
- net savings of $4.7 million for DRG 470 in the first 3 quarters of our BPCI implementation in 2013-14.

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To effectively utilize and implement our recommendations a proper hospital accounting and data system is necessary. Without data, not only will you be unaware of where most of your cost comes from and you will also be unable to confirm the data that Medicare sends during the reconciliation process. Your data should include the cost of all aspects of care. This includes pre admission testing, cost of hospital stay, payments to all stakeholders involved in the preoperative, hospital and post-acute care settings, cost of any implants or materials used during the procedure, and cost of any service provided 90 days after the hospital stay.

**Improving Outcomes and Reducing Costs**

For patients, cost savings must be associated with maintenance or improvement in quality metrics. However, the manner in which quality is defined and measured and what processes and outcomes are rewarded can vary. Performance measures are essential in providing information and feedback to the key stakeholders. Metrics to monitor are direct costs per case, physician specific data of discharge disposition, quality metrics (Surgical Site Infections, Venous Thromboembolism, Readmission, Length of Stay and Patient Satisfaction). Risk-stratified allowances for non-preventable complications must be incorporated into bundled pricing agreements in order to prevent the exclusion of patients with significant comorbidities and higher cost care (ie. hip fractures treated with prosthesis). Bundled pricing depends on economies of scale for success and may not be appropriate for smaller orthopaedic groups or hospitals where one costly patient could impact the profitability of the entire program. A minimum threshold of 100 to 200 cases per year within a bundle for successful risk management is recommended by CMS. Significant investment in infrastructure is required to develop programs to improve the quality and coordination of care, to manage quality data, and to distribute payments. The ultimate goal is to ensure that the quality of care is enhanced while a lower cost of care is achieved.

**Alignment of Physicians**

Although the days of fee for service may be coming to end many of your physicians may be against this paradigm shift in payment structure. Physicians generally mistrust hospitals. For the CCJR initiative to work efficiently, the hospitals and the surgeons must work together. We recommend multiple strategies to prepare for this including gain sharing formulas and alignment strategies. By utilizing gain-sharing and monitoring quality, you will give your physicians a stake in the profits realized through care improvement. At NYULMC we were able to make substantial profitability gains despite a hybrid compensation model with many physician compensation strategies. Real time quality dashboards and strategies for physician engagement are critical to insure physician cooperation. Accurate data and timely feedback are also necessary to insure confidence in the system. The value generated by the efforts of the care episode team can be shared by all stakeholders using a mutually agreed upon formula. Physicians can be rewarded with a bonus up to 50% of the surgeon fee allowed by the DRG.

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