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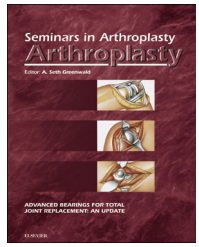

Dealing with the outliers—Physicians, inpatient post-acute care providers, physical therapists, and visiting nursing facilities

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ABSTRACT

The face of health care is rapidly transforming due to the fiscal necessity to contain unsustainable costs and from the need to increase the value and quality of the health care. The purpose of this evolution is to improve outcomes, lower costs, and provide a better patient experience. Bundle Payment for Care Improvement Initiative (BPCI) was introduced to align incentives for providers—hospitals, post-acute care providers, physicians, and other practitioners—allowing them to work closely together across all specialties and settings.

In this article, we hope to describe some of our experiences with primary elective hip and knee replacement as a BPCI participant since 2013. We hope to identify the common pitfalls related to patient management and explain how to anticipate, avoid, and manage the outliers. Although we manage our revision hip and knee replacement patients nearly identically to our primary joint replacement patients, for the sake of this discussion the focus is on primary elective hip and knee replacement.

1. Who is an outlier?

An outlier is any patient whose care pathway varies *significantly* from the other patients in the BPCI episode. The definition of an outlier differs widely; it may be discharging a patient at 3 pm rather than noon, discharging a patient to an extended care facility, or readmitting a patient within the 90-day global period. All of these events would qualify as a *significant* variation to our standard goals for the post-operative phase of care. It is imperative to understand our goals prior to discussing how to avoid or minimize the outlier events.

Our acute post-operative goals for primary elective hip and knee arthroplasty patients:

(1) *Discharge post-operative day (POD) #1 by noon*: Our hospital system routinely runs at 95% filled bed capacity. For a high-volume joint practice (~1500 joints per year) to be successful in this system, real-time bed management is essential for throughput. We recently reported *no difference* in length of stay (LOS) and readmission rates regardless of operative day of the week; therefore, we maximize throughput by operating every day of the week Monday–Friday [1]. Every elective primary joint replacement is assigned an orthopedic bed with an expectation for <24 h of use. Our target is 100% discharge of primary elective joint replacement by noon POD #1. As the first patients discharge by 10 a.m., these beds/rooms are cleaned and ready to receive the first elective joint

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replacements patients from the PACU by 11 a.m. Our hospital-employed joint replacement advanced practice nurse (APN) plays a key role in coordinating the discharge process to flow seamlessly. It is critical to ensure each patient successfully meets PT goals, completes all remaining antibiotic doses, has follow-up appointment scheduled, gets a pain medication prescription, has a PT appointment scheduled, and has transportation arranged prior to discharge by noon.

(2) *Discharge to home*: Rarely do we discharge patients to inpatient rehabilitation hospitals (RH), skilled nursing facilities (SNF), or nursing homes (NH) in an elective joint replacement BPCI episode [2]. Occasionally situations arise in which a patient is not medically stable or has an unforeseeable change in their social status preventing them from discharging to home. This is the exception not the rule; however, it is slightly more common in our revision/infection patients [2]. Family availability does *not* qualify as a reason for discharge to extended care facilities; this barrier would be identified and addressed *prior* to surgery. In the rare occasion a patient must be discharged to an extended care facility, we will send them to one of the facilities on our preferred list of providers. These are facilities in which our social work team has met with the medical directors of the facilities, shared our expectations and goals for our BPCI and revision joint replacement patients, and who have agreed to align with us in achieving these goals. They have provided cost data per day for the average patient and are willing to negotiate a lower cost per day. These facilities were also willing to admit patients and discharge after only 1- and 2-week intervals as long as the patient is progressing as expected. This is in contrast to many of the facilities that refuse to discharge a patient in <30 days regardless of progress. The facilities not willing to align with us to achieve our goals are not on our preferred list of providers.

(3) *Avoid all readmissions*: Many readmissions such as, pulmonary embolus, surgical site infection, acute myocardial infection, and exacerbation of congestive heart failure are unavoidable. Other than improving patient selection and optimization *prior* to surgery there is little that can be done to minimize the unavoidable readmission. However, our focus has been eliminating 100% of the *avoidable* readmissions such as DVT, shortness of breath, confusion, superficial cellulitis, anemia, leg swelling, and pain. One key to eliminating the avoidable readmission is providing a reliable, easy to use system for patients to contact their surgeons in a timely fashion. Once a team member is aware of a concern, pre-established protocols can be instituted to address the issue, while also arranging appropriate follow-up to ensure resolution. We have successfully used a 24 h/7 days per week "hotline" phone number designed to connect with one of our team members.

(4) *No outpatient physical therapy for total hip replacements*: The surgeons in our group perform elective THA via all approaches: posterior, anterolateral, and direct anterior, however we do *not* use any PT for our THA patients. Rarely a patient will receive PT if they have not progressed as quickly as expected by the 2- or 6-week office visit.

(5) *No home health care consultation for PT or wound care management*: We do not order Home Health Care (HHC) PT for our total knee replacement patients. We require outpatient PT because it requires the patient to more quickly mobilize and adapt to their routine. We acknowledge many other institutions have great success with HHC services but our experience has not been similar. We have also had challenges with HHC nursing staff performing unauthorized dressing changes to check incisions, as well as ordering laboratory studies when not needed.

2. "An ounce of prevention is worth a pound of cure"—Ben Franklin

Avoidance of an outlier event is best, but having a strategy in place to minimize and manage the event is critical. Several key elements to avoid outlier events deserve specific discussion.

2.1. *Patient selection*

Appropriate patient selection combined with proper pre-operative optimization is paramount in avoiding an outlier incident. In our practice, the hip and knee replacement partners have agreed upon a few strict exclusion criteria. Our strict exclusion criteria is to *not* perform elective primary hip and knee replacement on patients with: (1) body mass index (BMI) > 40, (2) HgbA1c > 8.0%, and (3) pre-operative Hgb < 10.0 g/dl. We choose not to perform elective surgery on these patients because of the documented increased risk for complications [3–16]. Although we recognize flaws in this system, it allows for continuity of patient selection among those shareholders/partners assuming the risk of the BPCI episode.

All patients have height and weight with calculated BMI available for review in the chart. Regardless of the severity of arthritis symptoms, those patients with a BMI > 40 are treated non-operative and referred for weight loss/nutritional counseling or bariatric surgery. Patients are informed that they are not candidates for elective hip or knee replacement because they are at a higher risk for wound complication, deep infection, implant failure, implant mal-alignment, and/or dislocation [3–6].

HgbA1c is reviewed on all patients with diabetes or elevated glucose, if elevated >8.0% elective surgery is delayed until glucose is well controlled. Patients are informed that they are not a candidate for elective joint replacement due to the increased risk of complications [7–9,17]. All patients with Hgb < 10 g/dl are referred to hematology for optimization. Patients are informed they are not a candidate for elective joint replacement due to increased risk for bleeding, transfusion, and infection [10–16]. After successfully passing this initial screening, the patient is allowed to proceed with scheduling surgery and the pre-operative medicine consultation.

2.2. *Patient expectations*

After qualifying for scheduling of the total joint replacement operation, the surgeon/mid-level provider should clearly state our expectations/goals for the patient after joint