

# Christiana Care Health System: Risk Management Strategies for Lower-Extremity Joint Replacements

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Christiana Care Health System, a large academic health system serving Delaware and parts of New Jersey, Pennsylvania, and Maryland, has assumed risk for multiple medical and surgical episodes in the Bundled Payments for Care Improvement (BPCI) model since January 2015.

To reduce complications and readmission rates and, ultimately, to improve outcomes and patient satisfaction for Medicare beneficiaries in the Major Joint Replacement of the Lower Extremity (MJRLE) bundle, Christiana Care has developed and implemented innovative programs that identify and mitigate risk in high-risk MJRLE patients. Christiana Care primarily uses two separate risk-stratification processes to target high-risk MJRLE patients through the Christiana Care Carelink CareNow care coordination team and through the hospital-based Joint Replacement Pre-Operative Assessment Center (JPAC).

## Carelink CareNow

The interdisciplinary Carelink CareNow team provides data-driven, proactive care management for about 100,000 patients through on-site and remote teams composed of RN care coordinators, pharmacists, social workers, medical directors, respiratory therapists, and support staff. The Carelink CareNow team assigns one social worker, pharmacist, and nurse to each joint replacement patient for the duration of their episode of care.

Each patient attends an educational session at the joint replacement unit before surgery and receives an individualized risk assessment conducted by the on-site Carelink CareNow team. Carelink CareNow case-management staff use a homegrown tool to assess patient risk relative to clinical, social, and functional factors. They then compile and score the results and assign patients to one of three risk tiers. Notably, Christiana Care's risk-assessment tool includes nontraditional (that is, nonclinical) predictors of risk, such as patients' comprehension of their

## Bundled Payment for Care Improvement: Examples in Practice

To encourage hospitals, physicians, post-acute facilities, and other providers to work together to improve health outcomes while lowering costs, the Center for Medicare and Medicaid Innovation (CMMI) created the Bundled Payments for Care Improvement (BPCI) initiative. As of October 2017, the AAMC was supporting the efforts of 27 hospitals to implement BPCI through the AAMC Facilitator-Convener Group.

The Examples in Practice Series highlights the challenges faced, and strategies followed, by leaders at five health systems while participating in BPCI. These examples offer potential lessons for other academic medical centers pursuing delivery reform under alternative payment models and for the insurance administrators and policy makers designing these payment-reform programs.

*For more information on bundled payments, go to [aamc.org/bundling](http://aamc.org/bundling).*

clinical condition and treatment plan, caregiver availability, financial stressors, and stability of the home setting, to provide a more comprehensive assessment of a patient's risk.

After the risk assessment has been scored, the results are entered into the electronic medical record and disseminated to the remote Carelink CareNow team, which follows up with each patient within a few days of the preoperative visit to finalize the discharge plan. The risk-assessment score determines the frequency and intensity of the Carelink CareNow team's pre- and postop follow-up with each patient.

Before surgery, high-risk patients receive a series of outreach calls or visits by nurses and social workers to address clinical issues, access to transportation, and financial stressors. Additionally, Carelink CareNow team pharmacists talk with patients who have complex medication regimens or high-risk medications to clarify any ambiguity or confusion about the patient's medication regimen.

After surgery, the remote Carelink CareNow team reestablishes contact with each patient by phone to ensure that there are no clinical concerns and that they are recovering well.

Although all MJRLE patients receive outreach calls from the Carelink CareNow team, the highest-risk patients receive additional outreach, including phone calls twice or three times per week and in-home visits, if needed. To ensure that patients are receiving the most appropriate care, Christiana Care allows any member of the Carelink CareNow team to modify a patient's risk score following surgery if unexpected factors arise postop that may increase the patient's risk. The Carelink CareNow team's risk-assessment and mitigation

process enables Christiana Care to target patients for interventions to reduce adverse outcomes, contributing to Christiana Care's financial success in MJRLE.

## Joint Replacement Pre-Operative Assessment Center

Christiana Care also employs a second risk-stratification process through the JPAC.

Preoperative assessment centers reduce postoperative complications and readmission rates and improve patient outcomes and satisfaction. Christiana Care launched the JPAC as a pilot program in June 2015 to maximize patients' clinical outcomes and improve the patient experience through education and preoperative medical optimization, as described below.

About three weeks before surgery, joint replacement patients visit the JPAC for a preoperative assessment. At this appointment, an internal medicine physician evaluates each patient and conducts a preoperative risk assessment that includes a review of the patient's medical and surgical history, medications, preoperative lab work, and electrocardiogram results; a review of systems; and a physical exam. The internal medicine physician also counsels patients on ways to reduce their individual risks before and after surgery.

After the JPAC assessment, any additional necessary testing or treatment is scheduled, and care coordinators and others make referrals to or coordinate with specialists for medically complex conditions. The physician who sees each patient preoperatively is the same physician who will follow them postoperatively in the hospital, thus improving continuity of care. The care coordinator at the JPAC discusses discharge planning and expectations with each patient at their preoperative appointment, which helps them feel better prepared to return home after surgery. Additionally, patients and their family members attend an educational session with a nurse at the JPAC who discusses how to prepare their home for discharge, provides an overview of their hospital stay, and suggests ways to reduce complications.

A key objective of the JPAC is to optimize chronic medical conditions before surgery. In an effort to reduce postoperative complications and readmissions, modifiable risk factors are addressed in the JPAC. Collaboration with primary care physicians and specialists helps patients decrease the modifiable risks. To reduce the likelihood of complications for patients who need to achieve weight loss or improved glycemic control before they undergo total joint arthroplasty, Christiana Care's Diabetes and Metabolic Center partners with the Christiana Care Center for Advanced Joint

Replacement. In addition to reducing BMI and hemoglobin A1C levels, patients are encouraged to reduce alcohol consumption and cease smoking. They are also screened for MRSA and placed on a decolonization protocol, when needed, in order to improve surgical outcomes.

## Program Results and Key Success Factors

Christiana Care's JPAC and Carelink CareNow programs have resulted in significant improvements in patient care, as well as reductions in readmission and postoperative complication rates. Since the inception of the BPCI Carelink CareNow model, Christiana Care's 30-day-readmission rate decreased 25% from the baseline. Christiana Care attributes the program's success to multiple factors, including extensive communication between key individuals, surgeon engagement, and arranging for continuity of care through coordinated pre- and postoperative care with the same provider.

A key success factor for Christiana Care's high-risk MJRLE program is excellent communication and collaboration among surgeons, internal medical physicians, and the Center for Advanced Joint Replacement staff. Before launching the JPAC, Christiana Care met with orthopedic surgeon office staff caring for Christiana Care patients to better understand the office's flow and processes and thus facilitate collaboration. To increase the likelihood that a patient can return home after discharge, Christiana Care distributes weekly worksheets to all Carelink CareNow team members and nurses assigned to each patient throughout their episode, specifying the patient's relevant medical history and potential obstacles to discharge to home.

Each month, Christiana Care organizes well-attended surgeon meetings in which surgeons collaborate to review monthly outcomes, including length of stay, complication rates, and readmission rates. These meetings help identify opportunities for improvement and develop new initiatives to standardize practice.

Christiana Care's third success factor is continuity of care. The same internal medicine physician evaluates patients at their preoperative and postoperative visits to develop a rapport and medically optimize patients before and after surgery.

## Christiana Care's Future Program Development

Due to the success of the program, Christiana Care intends to expand the JPAC program to include all total hip and knee arthroplasty patients at the Christiana Care Center for Advanced Joint Replacement by 2018 and is increasing staffing and space accordingly to meet this goal.