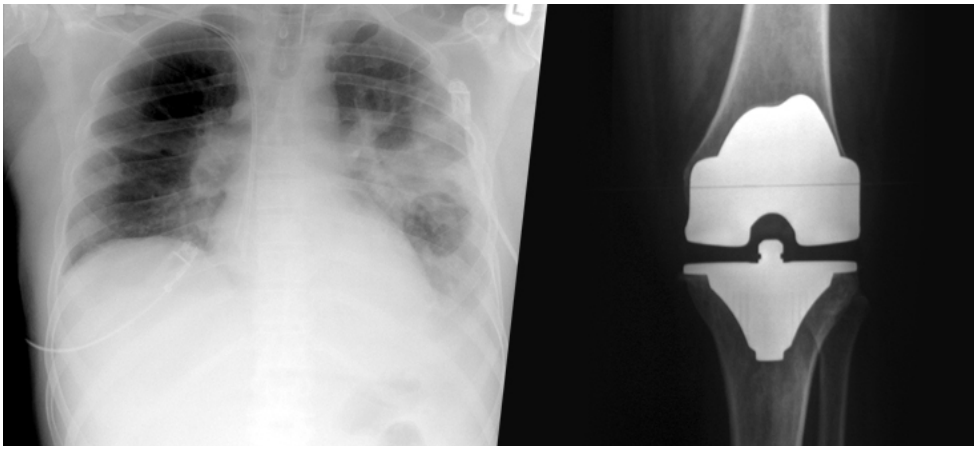


Sources: Wikimedia Commons, Christaras A and fpjacquot

PNEUMONIA AFTER TJA: NYU & BUNDLED PAYMENTS; DIRECT ANTERIOR AND REVISIONS

Elizabeth Hofheinz, M.P.H., M.Ed. • Tue, January 31st, 2017 **Print this article**

Pneumonia After TJA: 1 in 25 Die!

You don't hear much about pneumonia after total joint arthroplasty (TJA). To change that, researchers from Rush University Medical Center set out to get some specifics. Using the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database, the team, which included Craig Della Valle, M.D., conducted a retrospective cohort study of patients undergoing TJA. In total, 66,493 patients underwent THA and 104,707 underwent TKA.

Daniel Bohl, M.D. is an orthopedic resident at Rush University, and participated in the research. He commented to *OTW*, "Hip and knee replacement have become impressively successful procedures, but they can rarely still be complicated by devastating medical events. We know a lot about many of these events (for example, blood clots that can form during or shortly following surgery). However, we know much less about others. Pneumonia is one of these events that certainly occurs but hasn't received much attention."

"We were surprised at how great an impact this complication can have on patients. That is, 4 of 5 patients who developed this complication were readmitted to the hospital, and 1 in 25 die."

"The strongest risk factors for pneumonia are COPD [chronic obstructive pulmonary disease], diabetes mellitus requiring insulin, and age ≥ 80 years. Given the serious implications of this pulmonary complication, evidence-based pneumonia prevention programs should be considered for patients with these risk factors. Such interventions include oral hygiene with chlorhexidine, sitting upright for meals, elevation of the head of the bed to at least 30 degrees, aggressive incentive spirometry, and early ambulation."

BCPI: The NYU Langone Experience

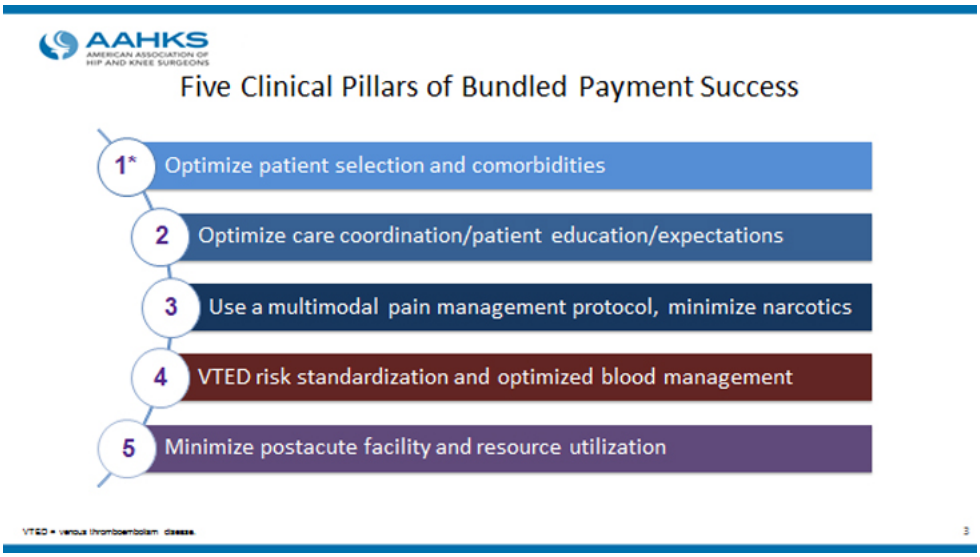
The Bundled Payments for Care Improvement Initiative (BPCI)…the merger of physician/patient/hospitals interests, shared risks…all with the maintenance of quality. Researchers with the Department of Orthopaedic Surgery at New York University Langone Medical Center (NYULMC) in New York City decided to examine the BPCI, looking at issues such as risk stratification, size of institution, and the development of infrastructure. NYULMC is a large, urban, tertiary, academic medical center.

Richard Iorio, M.D. is chief of Adult Reconstructive Surgery at NYU Langone. He told *OTW*, "We entered BPCI Model 2 in January 2013 with the hope of controlling the hospital and episode cost of Medicare patients undergoing total joint arthroplasty (TJA) as we were losing money in those cases. In a 90-day episode of care, 40% of the cost is in the post-acute phase. By controlling the after acute care hospital costs, there is an opportunity to save money and beat the target price. We went from 75% of patients going to post-acute facilities to 25% over four years. Additionally, clean data and transparent data exchange between hospitals and docs leads to better alignment and gainsharing reinforces these alignment arrows."

"Comorbidities are a significant issue when it comes to BPCI as very sick patients could potentially be denied access to care. At our institution, 74% of TJA patients had musculoskeletal comorbidities, 60% had hypertension, and the list goes on. Any comorbidity increases the risk of surgical complications, thus we developed a surgeon-directed risk

factor stratification and modification program to delay surgery and optimize health status in the highest risk patients. This included individuals who were morbidly obese, those with uncontrolled diabetes and poor nutrition, and smokers, to name a few."

"Our conclusion was that there are five pillars of clinical bundled payment success. Then there is the data. It must be real-time, transparent, believable, and accurate. Otherwise, the foundation of the hospital-physician relationship is cracked and will not support continued cooperation. Lastly, gainsharing and physician/hospital alignment are critical. Involved, committed physicians must be an integral part of any bundled payment initiative. As for alignment, we have found that if you can get everyone on the same page in the areas of clinical management, technology, and clinician behavior, then it will likely result in good management of an entire episode of care."



Source: American Association of Hip and Knee Surgeons

"Yes, this is a huge organizational challenge, involving a large infrastructure commitment and many full-time employees. Robert Grossman, M.D., dean of NYU Langone Medical Center, and Joe Zuckerman, M.D., the chair of Orthopedics, were visionary, and saw BPCI as a great opportunity to decrease cost, improve quality and bring more value to our patients."

Direct Anterior Approach and Early Femoral Failure of Cementless THA

Research involving the Indiana University School of Medicine, The Rothman Institute at Thomas Jefferson University, and OrthoCarolina Hip and Knee Center has studied 478 consecutive early revision THAs to examine the inherent risks in the direct anterior approach (DAA) for total hip arthroplasty (THA).

The article, entitled "Direct Anterior Approach: Risk Factor for Early Femoral Failure of Cementless Total Hip Arthroplasty" was published in the January edition of *The Journal of Bone and Joint Surgery*. The authors wrote, "Analysis of the revisions due to early femoral failure showed them to be more common in patients who had undergone the direct anterior approach (57/112; 50.9%) than in those treated with the direct lateral (39/112; 34.8%) or the posterior (16/112; 14.3%) approach ($p = 0.001$). In multivariate regression analysis controlling for age, sex, laterality, Dorr bone type, body mass index (BMI) at revision, bilateral procedure (yes/no), and femoral stem type, the direct anterior approach remained a significant predictor of early femoral failure ($p = 0.007$). Most early revisions due to instability were associated with the posterior (19/40; 47.5%) or direct anterior (15/40; 37.5%) approach ($p = 0.001$ for the comparison with the direct lateral approach [6/40; 15.0%])."

Michael Meneghini, M.D. is an orthopedic surgeon at the Indiana University School of Medicine. He commented to *OTW*, "Many scientific inquiries begin with an observed clinical phenomenon that spurs the interest to validate and learn more. In this case, through our network of high volume revision centers, we noticed an increase in cementless femoral component loosening as the cause of early hip revisions. Previously, before the rapid adoption of the DAA, this etiology of failure was relatively uncommon. Further, having been trained on and performed the DAA personally, the technical challenge inherent with this approach is obtaining adequate femoral exposure to insert the femoral component safely. Therefore, we undertook this study to see if there was a correlation between surgical approach and early femoral component failure and our hypothesis was supported."

"The main point of this article is that no surgical approach is perfect and there are risks inherent with each surgical approach, largely due to the anatomical considerations. Whereas the posterior approach has a greater risk of dislocation, the DAA has a greater risk of early femoral component failure. We are hopeful this will provide objective

data regarding potential risks associated with a surgical approach that has been rapidly adopted by the orthopedic community and directly marketed to patients by the orthopedic device industry and surgeons."

Thomas K. Fehring, M.D. is an orthopedic surgeon with the OrthoCarolina Hip and Knee Center and a co-author on the research. He told *OTW*, "This study clarifies the potential risks and early failures seen in total hips using a variety of surgical approaches, one of which is the innovative anterior approach. These findings raise the question of how new technology should be introduced into orthopedic practice, especially when marketing outpaces the peer review process."

"Orthopedic surgeons should respond thoughtfully to innovative techniques, implants, or approaches. However, we must be vigilant in evaluating innovative solutions, making sure they are responsible innovations with lasting benefit to patients and not merely marketing innovations with no staying power. As arbitrators of orthopedic innovation, we alone can help our patients distinguish hype from hope."

"When new technology is introduced and there is not evidence-based data available, surgeons must decide whether adoption is worth the risk. This becomes more difficult when marketing efforts stimulate patients' demands and expectations in the exam room before evidence-based studies, such as this, are available. Clearly, good results can be obtained regardless of approach however the strengths and weaknesses of each must be understood. Future studies on this subject will help further clarify whether deviation from a successful operation via a time-honored approach is worth the risk."