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Editor's Spotlight/Take 5

Editor's Spotlight/Take 5: What Drives Variation in Episode-of-care Payments for Primary TKA? An Analysis of Medicare Administrative Data

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High hospital and medical charges are good fodder for outraged commentary [6]. In fact, a Google search for "ridiculous hospital charges" yields more than 6 million hits. It is hard to argue that extreme charges are justified, but what about actual costs? Presumably, a standard high-volume procedure with no complications should cost about the same, whether it is performed in Seattle, WA, USA or Santa Fe, NM, USA. This is particularly true if the payer is the federal government, which has the power to dictate terms to providers.

As it happens, there is an astonishing level of variability in costs. In their study, Cram and colleagues evaluated hospital reimbursement data for 145,514 patients who received TKAs performed at 1430 hospitals in 2009. Their data covered the 30 days prior to surgery and the 90-day postoperative "global period." The lowest quartile of hospitals received a mean payment of USD 18,166 for the care of uncomplicated cases, while the highest quartile received USD 29,342. The difference between the highest and lowest payments was astonishing—nearly USD 40,000. Most of this variation could not be explained by patient characteristics, type of hospital, or geographic location.

So what accounts for this? It turns out that what happens to the patient after hospital discharge is the biggest source of variation in cost. Sending a patient to an inpatient rehabilitation facility resulted in median costs of more than USD 15,000; sending the patient home cost less than USD 2000. A skilled nursing facility was a slightly better bargain at just less than USD 11,000. The lowest-cost hospitals sent 70% of their patients home, while the highest-cost hospitals managed just above 30%. Although the cost before and during hospitalization was slightly higher for those patients who eventually went to rehab or nursing facilities, which might reflect a higher level of medical complexity, it is clear that those differences were minor in the overall picture.

Until recently, postdischarge planning and care was not something I thought about a great deal. I tried to

Note from the Editor-In-Chief: In "Editor's Spotlight," *one of our editors provides brief commentary on a paper we believe is especially important and worthy of general interest. Following the explanation of our choice, we present* "Take Five," *in which the editor goes behind the discovery with a one-on-one interview with an author of the article featured in* "Editor's Spotlight."

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send patients home, but not from any desire to reduce costs. Others have been paying attention, however. Bozic et al. [3] investigated the costs within their academic arthroplasty practice, and noted that postdischarge payments represented 36% of the total for an episode of care, while Harold Luft [7] looked at data from a commercial payer database and found much the same results. When Miller et al. [9] examined cost variation for four highly performed surgical procedures among Medicare patients, they found that postdischarge care for hip replacement accounted for 85% of the difference in total payments to hospitals in the first and fifth payment quintiles; more than for any of the other procedures. Similarly, in June 2013, the Medicare Payment Advisory Commission, an independent congressional agency, submitted their report to the US Congress and noted that, "Under traditional fee-for-service Medicare, the program pays widely varying rates for the care beneficiaries can receive following a hospital stay at [various] post-acute care (PAC) settings … Nationwide, use rates for PAC services also vary widely for reasons not explained by differences in beneficiaries' health status, indicating that, in aggregate, fewer services could be furnished to Medicare beneficiaries without necessarily compromising patient outcomes" [8]. In short, I was not watching them, but they were watching me!

This sets the stage for bundled care. Described as a compromise between fee-for-service and capitation, the bundled care approach seeks to avoid both over and undertreatment by aligning incentives for all parties. As with previous attempts at cost control, such as the hospital prospective payment system and disease-related groups, the details will matter greatly. Recently, the US Department of Health and Human Services proposed a 5-year payment model, in which healthcare providers in 75 geographic areas would continue to be paid under existing Medicare payment systems. However, the hospital where the hip or knee replacement takes place would be held accountable for the quality and costs of care for the entire episode of care—from the time of the surgery through 90 days after discharge [4]. For the first time, we will be hit hard in the wallet if we choose poorly.

Clinicians will have to make some hard decisions with bundled care. First and foremost, we need to decide whether postdischarge care is needed at all. What do patients really need in the first few weeks after joint surgery? Second, if patients do require extra care, what form should that care take? What (if anything) needs to be done in a dedicated facility? Third, should acute-care hospitals take control of postdischarge care, rather than contracting with external agencies? And who will wield the cutter when the time comes to slice the payment pie?

These are unsettling questions. To further explore the issues around variation, join me and Peter Cram MD, MBA in the following Take 5 interview.

Take Five Interview with Peter Cram MD, MBA lead author of "What Drives Variation in Episode-of-care Payments for Primary TKA? An Analysis of Medicare Administrative Data"

Paul A. Manner MD: *How does this variation in cost compare to other areas of care? Is this wide variation typical in healthcare?*

Peter Cram MD, MBA: There is well-recognized variation in healthcare [2, 5]. The variation seems to be wider for "preference sensitive" (ie, elective) treatments when compared to those deemed "necessary" or "emergent." In the case of orthopaedics, primary TKA and primary THA would be considered "preference sensitive" while hip fracture surgery would not. Research has demonstrated widespread variation in the utilization (per-capita procedure rates) of preference sensitive procedures across different healthcare regions of the United States. International studies have shown that the United States has higher utilization of

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Peter Cram MD, MBA

many preference sensitive procedures when compared to other countries. Other preference sensitive care examples include prostate cancer surgery and certain back surgery procedures.

Our study expands on prior studies by focusing on variations in episode-of-care spending around primary TKA. Not surprisingly, we found significant differences in the cost to Medicare (ie, spending) for TKA procedures depending upon the hospital where the procedure was performed.

Dr. Manner: *What are patients getting for this extra money? Where is the money going? Were there consistent findings (a particular hospital chain or system, for example)?*

Dr. Cram: We did not look at this in as much detail as our data would allow, but if you view our work in light of prior research, my guess is likely not that much. Patients appear to receive more preoperative testing, more doctor-to-doctor consultation, more rehabilitation, and more home-health services. Typically as patients and doctors we would like to think that more services equals better care. But the data often suggest that more care is simply more expensive care, without clear benefits in patient outcomes.

What we can say is that teaching hospitals get paid more, likely because of supplemental payments for medical education. For-profit hospitals do not appear to be more expensive, in contrast to conventional wisdom. Remember, more payment is good for some (the people getting paid), but bad for the US tax payer—the benefits to patients are uncertain.

Dr. Manner: *What I see here is that the discharge destination seemed to have an enormous effect on cost. The difference between home care and in-patient rehab for preoperative and perioperative costs was less than USD 1000. When postdischarge costs were included, that seemed to be the biggest driver of cost. How much of the differences that you are seeing are related to variation in postdischarge destination?*

Dr. Cram: Hospitals—specifically inpatient acute care—used to house all of the action, but that is certainly changing. Many of the cases previously done in hospitals are now performed in ambulatory surgery centers. Patients are discharged to long-term care, or to rehabilitation hospitals. Our study suggests that it makes a big difference in terms of costs whether a patient goes to in-patient rehab or not. If I were paying the bills, I would be asking whether the additional cost is providing adequate value. Phrased differently, why can't the patient be discharged to out-patient rehabilitation?

Dr. Manner: *In statistics, there is an entity known as a long tail, where there are several data points way off at one end. For example, the median household income is Seattle is about USD 50,000—but Bill Gates and Paul Allen are making a lot more than that! One of the features of a long tail is that there is an obvious lower limit, but no upper limit. For example, there's an obvious lower limit here: You cannot do a knee replacement for less than zero, but there is theoretically no constraint on the other end. This is the*

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concept of the "black swan," as popularized by Nassim Taleb, where a single unforeseen outlier causes extreme impact [10]. If this is the case, what is the effect of using the heavy hand of payer pressure to control costs? What happens in those cases where care becomes unpredictably expensive?

Dr. Cram: Right now payers face virtually all of the risk for costly cases. This is probably not a good thing for Medicare because it frees the healthcare providers from most of the pain of excessive spending. A high-cost health system for TKA gets paid more, while a lean and thrifty system gets paid less. But the doctors, nurses, and leadership at the lean system do not see any benefit. Conversely, the high-cost system (or community) benefits from greater inflow of money from Medicare.

It is probably not a good thing if all of the risk is shifted from the payer to the providers, either. Complications happen even for reliable and safe procedures like TKA. The big challenge is getting the risk sharing just right.

Dr. Manner: *Bundled payments are here to stay, whether or not surgeons think they are beneficial. You mention several concerns with bundled payments, such as a lack of reproducible risk adjustment for case mix, and the possibility of certain hospital systems "cherry-picking" healthy patients. In a recent article [1], Stuart Altman compared bundling to previous attempts at cost control, such as disease-related groups and prospective payment. He notes: "Because the prospective payment system was for inpatient care only, it allowed the hospital to focus on those services it controlled. Medicare's current bundled payment experiments require several different components of the total care … Either hospitals and postacute care providers must learn to work together and develop acceptable methods for dividing combined payments, or one group needs to develop a controlling interest in the other" [1]. Is this a realistic assessment? Other than cutting out postacute facilities entirely, what can providers do here?*

Dr. Cram: I am a general internist, but I pretty much study orthopaedics. As an American working in the Canadian system, I see many differences in payment models. Orthopaedics in Canada is reimbursed differently than in the United States. It is impossible to say which system is better. Still, I like the idea of bundled payments. Healthcare systems are evolving in the United States and accountable care organizations are becoming more refined. These systems will likely face some sort of global budgeting—either bundled payments or global capitation. The big challenge for leadership will be figuring out how to divide up the money. Who needs a preoperative electrocardiogram and who does not? Who needs expensive medications while in hospital and who does not? Who needs to go to inpatient rehab and who does not? These are great questions and ones that I am convinced that we can answer. We have to do better, and I think we can.]

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