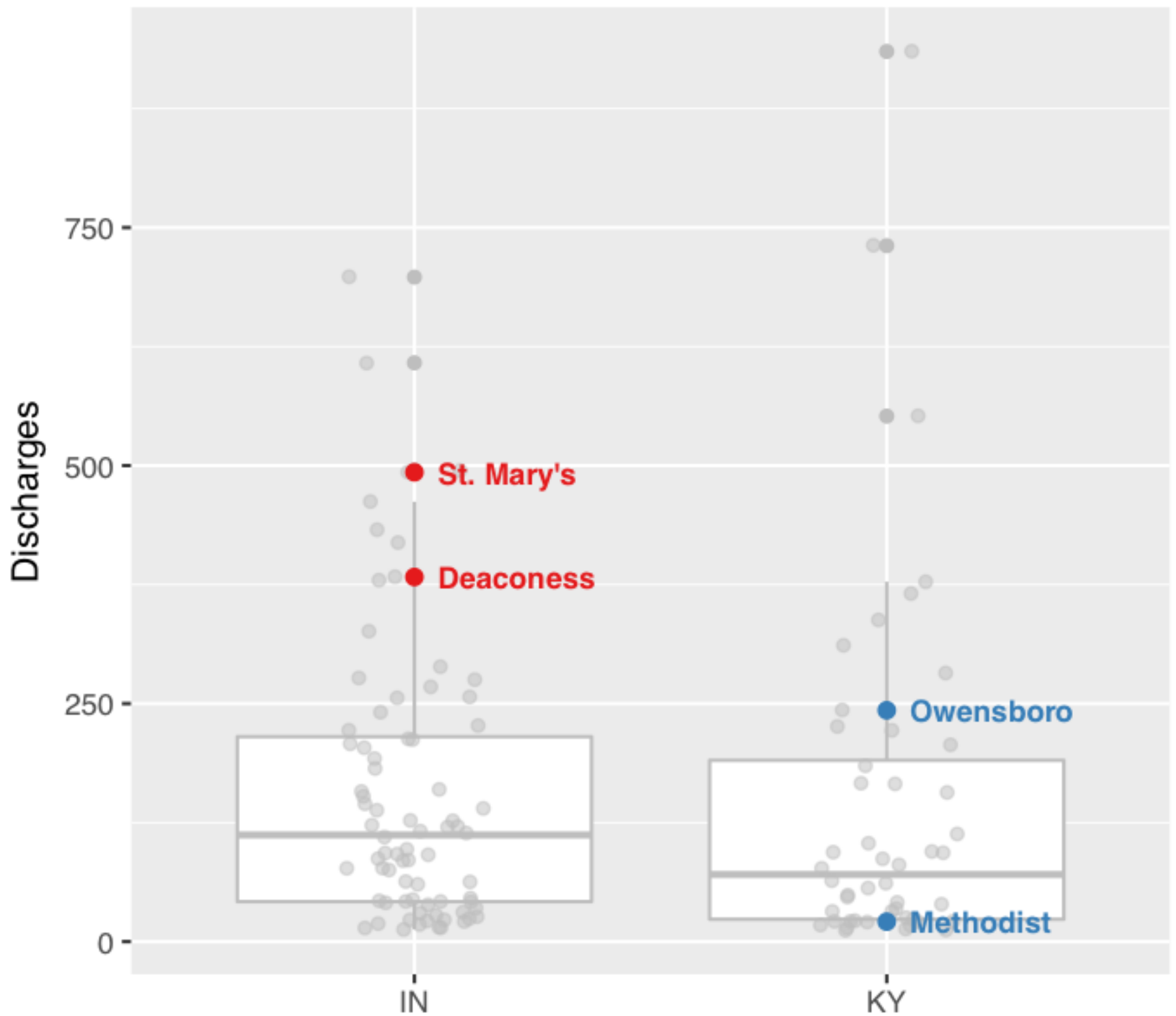


# Could Methodist be a "Low-Volume" Hospital?

Jan 3, 2017 • Rob Wiederstein



# Medicare Joint Replacement Lower Extremity FY2014 (DRG 470)



Source: Medicare.

## Introduction

According to a U.S. News [analysis](#), patients face a greater risk of death and complications when performed by surgical teams who do them infrequently, especially with regard to joint replacements.

The analysis used hip and knee replacements as an example and compared urban hospitals to a rural hospital. The urban hospitals performed hundreds of procedures

whereas the rural one—Sterling Regional Medical Center— averaged 27 per year. The study found the “relative risk of death for the hospital’s elective knee replacement patients was 24 times the national average and three times the national average for hip replacement patients.” This post attempts to find out how many joint replacements are being done in local hospitals.

## Volume Equates to Safety

- In a 1979, the volume-outcome link was discussed in a special report in the New England Journal of Medicine (NEJM). The [report](#) found a correlation between volume and mortality and that, depending on the procedure, mortality increased in procedures that were infrequently performed. The article according to google has been cited 1500 times in other research publications.
- In a 2001 [article](#) in the Journal of Bone and Joint Surgery found that “patients treated at hospitals and by surgeons with higher annual caseloads of primary and revision **total hip replacement** had lower rates of mortality and of selected complications.” However, the analysis was limited by the quality of the Medicare claims data.
- In 2002, a NEJM [article](#), entitled “Hospital Volume and Surgical Mortality in the United States” found that the volume-outcome correlation remains significant across 14 types of procedures even in an era of declining surgical mortality rates.
- In a 2004 [article](#) in the Journal of Bone and Joint Surgery, the authors found that “[p]atients managed at hospitals and by surgeons with greater volumes of total knee replacement have lower risks of perioperative adverse events following primary **total knee replacement**.
- In a 2015 U.S. News and World Report article, Dr. Mark Chassin, president and CEO of the Joint Commission—a not-for-profit agency that inspects and accredits US hospitals— agreed “that many studies, including his own, have shown a relationship between low volumes and worse outcomes.”

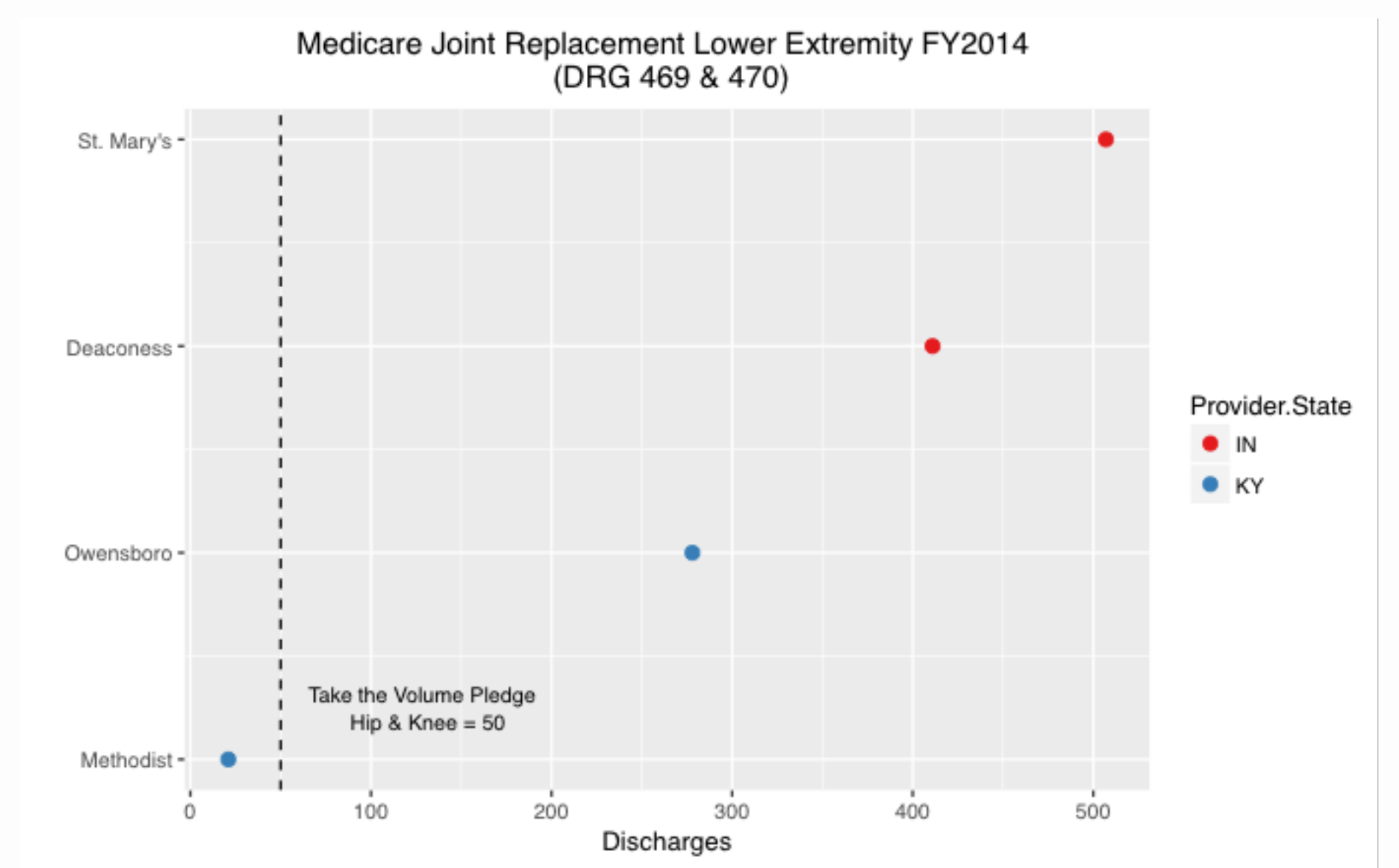
## The Data

The data were downloaded from the Centers for Medicare and Medicaid Services (CMS) [website](#). The data included charges for the more than 3,000 U.S. hospitals “that receive

Medicare Inpatient Prospective Payment System (IPPS) payments for discharges paid under Medicare based on a rate per discharge using the Medicare Severity Diagnosis Related Group (MS-DRG) for” FY2014.

The specific DRGs that were of interest were 469 and 470 since they were the focus of the U.S. News and World Report article on low-volume hospitals.

Using data from Medicare, DRG Code 469 and 470 were grouped together. The description for DRG Code 469 was ““469 - MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY W MCC.” The DRG Code for 470 was “470 - MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY W/O MCC.”



Source: Medicare.

# “Take the Volume Pledge” Campaign

In May of 2015, three hospital systems pledged to eliminate low-volume procedures from being performed by their surgeons: Dartmouth-Hitchcock Medical Center, the Johns Hopkins Hospital and Health System and the University of Michigan Health System. The initiative was advocated by John Birkmeyer and Peter Pronovost, long-time proponents

and researchers of patient safety. (One of Birkmeyer’s many articles is cited above.) The annual volume thresholds were **50 per hospital and 25 per surgeon for hip and knee replacement**. Notice that in 2014 when using only Medicare data that Methodist Hospital’s volume was 21, falling far short of the minimum threshold of 50.

## Conclusion

To the degree that the DRG code 470 “Major Joint Replacements or Reattachment of Lower Extremity” represents the same classification of surgeries reported in the U.S. News as “hip and knee replacements,” then Methodist Hospital’s lower volumes are an indication of increased risk of mortality and complications. Unfortunately, there are a handful of Kentucky and Indiana hospitals that are performing these procedures with even less volume than Methodist.

It should be noted that this analysis *is not* an indication of the surgeon’s ability as many of them perform surgeries at multiple hospitals. (Surgeons’ score cards are available at Pro Publica’s excellent [site](#).) Additionally, it doesn’t include procedures covered by other payors so it’s quite possible that Methodist does over 50 procedures. Nonetheless, the greatest safety can be found with the surgeons and hospitals who are doing the most of them. Patients should take note.

