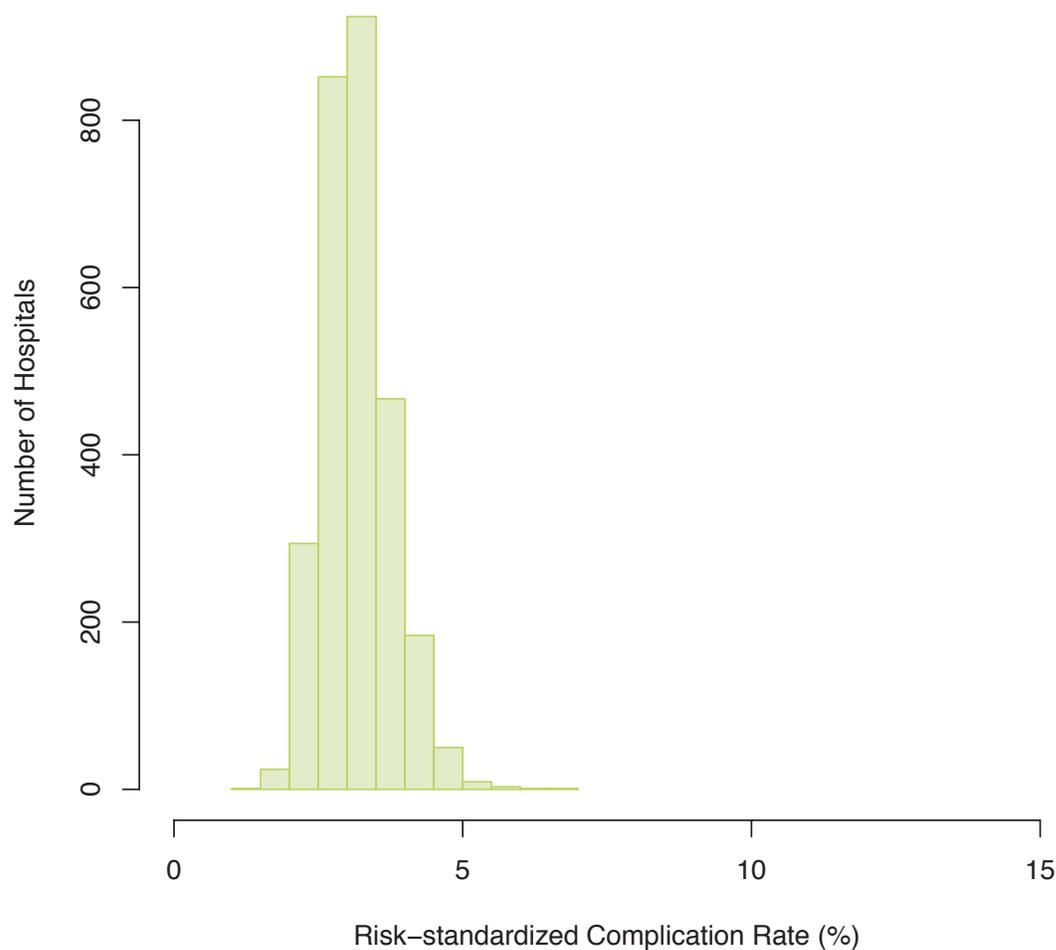


► Variation in complication rates across hospitals following elective primary total hip arthroplasty and/or total knee arthroplasty.

The Centers for Medicare & Medicaid Services (CMS) periodically provides a comprehensive overview of national performance on the following complication measure: hospital-level risk-standardized complication rate (RSCR) following elective primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA) [1]. The THA/TKA complication measure includes Medicare fee-for-service (FFS) beneficiaries aged 65 or older [2]. The THA/TKA complication measure assesses the occurrence of significant medical and/or surgical complications within 7 to 90 days, depending on the complication, following hospitalization for elective primary THA/TKA. Medical and surgical complications include: acute myocardial infarction (AMI), pneumonia, or sepsis/septicemia during hospitalization or within 7 days of admission; surgical site bleeding, pulmonary embolism or death during hospitalization or within 30 days of admission; or mechanical complications, periprosthetic joint infection, or wound infection during hospitalization or within 90 days of admission [2]. The THA/TKA complication measure has been publicly reported on [Hospital Compare](#) since 2013, and in Fiscal Year 2019, it will be included in the Hospital Value-Based Purchasing (HVBP) Program [3].

**FIGURE I** Distribution of hospital RSCRs (%) for THA/TKA, April 2011-March 2014.



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Variation in THA/TKA RSCRs reflects differences in performance among hospitals; lower RSCRs suggest better quality, and higher RSCRs suggest worse quality. To determine the extent of variation present in the THA/TKA complication measure, we examined hospital RSCRs for the April 2011 – March 2014 reporting period. To ensure accurate assessment of each hospital, the THA/TKA complication measure uses a statistical model to adjust for key differences in patient risk factors that are clinically relevant and that have a strong relationship with the specified complications [2].

**TABLE I** *Distribution of hospital RSCRs (%) for THA/TKA, April 2011-March 2014.*

Distribution of THA/ TKA RSCRs (%)	
Maximum	6.9
90%	3.9
75%	3.5
Median (50%)	3.1
25%	2.8
10%	2.5
Minimum	1.4

Hospital RSCRs for THA/TKA were normally distributed and centered at 3.1%. The hospitals that were at the 25th and 75th percentiles had a 0.7 percentage point difference in performance. The absolute difference between the 10th and 90th percentiles was 1.4 percentage points. Figure 1 and Table 1 display the distribution for hospitals with 25 or more qualifying admissions.

While half of hospitals had RSCRs within a 0.7 percentage point range around the median hospital's RSCR, the absolute difference in RSCRs across all hospitals was 5.5 percentage points. This supports continued opportunities for improvement.

1. Medicare Hospital Quality Chartbook 2014: Performance Report on Outcome Measures. Prepared by Yale New Haven Health Services Corporation Center for Outcomes Research and Evaluation for the Centers for Medicare and Medicaid Services 2014; <http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/Downloads/Medicare-Hospital-Quality-Chartbook-2014.pdf>. Accessed 16 June 2015.

2. Suter L, Zhang W, Parzynski C, et al. 2015 Procedure-Specific Complication Measure Updates and Specifications Report: Elective Primary Total Hip Arthroplasty (THA) and/or Total Knee Arthroplasty (TKA) Measure – Version 4.0; <https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnet-Tier4&cid=1228772782693>. Accessed 16 June 2015.

3. "Hospital Inpatient Prospective Payment Systems for Acute Care Hospitals, Final Rule." Federal Register / 22 August 2014; <http://federalregister.gov/a/2014-18545>. Accessed 16 June 2015.

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