Improving Surveillance for Deep and Organ/Space Surgical Site Infections Following Coronary Artery Bypass Graft Surgery and Hip Arthroplasty

Michael S. Calderwood, MD, MPH; Ken Kleiman, ScD; Claire Canning, MA; Julie D. Lankiewicz, MPH; Richard Platt, MD, MSc; Susan S. Huang, MD, MPH

1. Brigham and Women's Hospital, Boston, MA. 2. Harvard Medical School and Harvard Pilgrim Health Care Institute, Boston, MA. 3. University of California Irvine School of Medicine, Irvine, CA.

METHODS (Analysis)

• Using code performance characteristics (sensitivity and positive predictive value [PPV]), we identified the subset of ICD-9 codes that best identified deep and organ/space SSIs in these prior datasets.

• Codes were selected to maximize sensitivity for different levels of PPV.

• Marked variability in case finding, especially after discharge, lessens the validity of hospitals' reported SSIs.

• While other orthopedic procedures, including shoulder/hip/ankle, have used HAC codes 996.57 (infection of an internal/external orthopedic device) and 996.59 (other post-operative infection), ICD-9 996.65 (infection of an internal prosthesis) was the most sensitive code for identifying deep and organ/space SSIs following hip arthroplasty.

• Code sets were found to outperform any single code.

RESULTS

• The CMS hospital-acquired condition (HAC) code for SSI following CABG (ICD-9 019.2, mediastinitis) only captured 13% of the confirmed deep and organ/space SSIs following CABG.

• Using these codes, we expect to find 93% of Deep and Organ/Space SSIs, with one infection identified for every two patients reviewed.

• Hip Arthroplasty: Any of 3 ICD-9 codes identified nearly 100% of the deep and organ/space SSIs, with one infection identified for every two patients reviewed.

• Code sets work better than individual codes and account for variability in coding practices between hospitals.

• Comprehensive approaches for detecting deep and organ/space SSIs are critical for valid inter-hospital comparisons and targeted quality improvement interventions.

REFERENCES

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