

Reliability of ICD-10 Codes in Identifying Post-Cesarean Delivery Surgical Site Infections

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Introduction

- Cesarean delivery (CD) is the most common surgical procedure within the United States, with ~1.3 million women undergoing CD annually.
- Surgical site infections (SSI) after CD vary from 3% to 15% based on SSI definition and follow-up period.
- SSIs are associated with increased maternal morbidity and healthcare costs. The Centers for Medicare and Medicaid Services (CMS) also implemented financial penalties on healthcare organizations for hospital-acquired infections, including SSI.
- International Classification of Diseases 10 (ICD-10) codes, which are administrative codes adopted by all healthcare institutions starting in Oct 2015, assigned during the hospital course, discharge, or follow-up are used by CMS, other payors, and healthcare organizations like the University of Iowa Hospitals and Clinics to identify SSI, compare performance to other healthcare organizations, and improve quality of care.
- Previous studies have questioned the reliability of administrative codes as a predictor of SSI.
- Additionally, since the introduction of ICD-10 codes, no study has examined how well they perform in identifying SSI in the post-CD population.

Aim

- The main goal of this study was to ascertain the reliability of ICD-10 codes in identifying SSI for post-CD patients.

Methods

- This study was an IRB-approved retrospective chart review analysis of all cesarean section deliveries performed at the University of Iowa Hospitals and Clinics from October 2015 to March 2022 with their respective assigned ICD-10 codes for SSI after the date of surgery.
- Surgical site infection surveillance was performed for each patient through chart review and the assigned ICD-10 code using the Center for Disease Control (CDC)/National Healthcare Safety Network (NHSN) definitions.
- Patient data were analyzed for age, height, weight, BMI, date of surgery, gestational age, the reason for CD, any pre-operative infections, blood loss, length of surgery, complications during surgery, length of hospital stay, date of SSI onset, wound discharge, type of SSI, wound cultures, treatments, and ICD-10 codes.

Results

Basic Characteristics	Values
Median Age (years)	30 (mean 30.1, SD 5.4)
Race/Ethnicity	113/149 patients were white 134/149 were non-Hispanic
Median Gestational Age (Days)	266 (mean 253.5, SD 30.7)
Emergent Cases	69/149 = emergent cases

- There were 5,006 CDs performed during the study period from October 2015 to March 2022.
- One hundred and forty-nine patients had one or more ICD-10 codes for SSI assigned post-operatively.
- Using ICD-10 codes, SSI was detected for 2.9% of all CD (145/5006).
- The false positive rate was 2.8 % (95% CI [0.8, 6.9]).

Conclusion

- The findings of this study suggest that ICD-10 codes may be a reliable tool with a high sensitivity for SSI surveillance in CD patients.

References

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