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## Comparison of Administratively Collected (ICD-10) vs. Prospectively Collected Adverse Event Data

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**Background:** Accurate adverse event reporting is vital for analyzing outcomes and implementing the proper systemic efforts to improve them. Complication reporting and tracking has implications in medical practice, billing, and ultimately patient safety.

**Objectives:** To determine accuracy of complications reported in administrative data compared to prospectively obtained data.

**Methods:** A total of 1,213 patients undergoing spine surgery were followed over a two-year period (January 2011 to December 2012) sampled at a single institution. All patients undergoing spine surgery were eligible for inclusion in the study. Prospective data collection of adverse events was accomplished using OrthoSAVES, a standardized assessment tool. All pre- and post-operative medical complications were included in this database. Administratively collected ICD-10 complication codes were then obtained for each patient for comparison. Cohen's Kappa coefficient was utilized to measure agreement between both groups.

**Results:** In the prospective review, 351 (29%) patients were reported to have complications compared to 284 (23%) in the ICD-10 review. A total of 581 adverse events were recorded in the prospective review with 587 in the ICD-10 review. Concordance was poor for massive blood loss (K=0.12), renal insufficiency (K=0.18), urinary retention (K=0.26), and dural tear (K=0.29). Concordance was moderate for pulmonary embolism (K=0.57), delirium (K=0.58), and *C. difficile* infection (K=0.66).

**Conclusions:** Although the total complication rates remained similar between administrative and prospective data collection, significant discordance was identified for specific adverse events. These findings demonstrate a potential shortcoming of ICD-10 codes as a measure of complication rates.