Abstract Title:
Penetrating Mortalities with Low ISS: Really?

Authors:
Joan Pirrung, RN, ACNS-BC
Beth Campbell, CCS, CSTR
Mark Cipolle, MD, FACS
Paula Veneri, RN

Background & Purpose:
In reviewing the American College of Surgeons (ACS) Trauma Quality Improvement Program (TQIP) Risk-Adjusted Benchmark Report 2010, our mortalities in the penetrating category had an Observed to Expected (O/E) ratio indicating that deaths were higher than expected. Further review of this population in our trauma registry revealed fatal injuries, yet Injury Severity Scores (ISS) were less than 16, which indicated only moderate injury. The challenge was to determine the accuracy of the ISS assignment in trauma registry penetrating injury mortalities and assure diagnosis codes accurately reflect patient injuries.

Study/Project Design:
Reviewed trauma registry data and chart documentation on all penetrating mortalities from 2008 - 2011.

Setting:
A large suburban Level 1 Trauma Center.

Sample:
All penetrating mortalities were reviewed. Baseline data from 2008-2010 included 79 patients. Post implementation of an audit process included 30 patients in 2011.

Procedures:
All penetrating mortalities with an ISS < 26 were reviewed. The process included a review of documentation, autopsy reports, and coding accuracy (AIS specifically). Opportunities for improvement included: 1) More detailed documentation from providers on injuries, 2) Medical examiner reports were not always available or lack detailed documentation on the specific injuries and 3) Lack of specific medical terminology knowledge by the trauma registry staff. Conclusion: severity of the patients’ injuries were not accurately reflected by the ISS. The process for improvement included quarterly audit reviews, education to trauma registrars on medical terminology that identifies a more specific diagnosis code to accurately reflect the higher ISS, encouraged providers to document more specific injury descriptions and requested the Medical Examiner’s office to provide more detailed autopsy reports even on legal cases.

Findings/Results:
The average ISS between 2008 to 2011 for penetrating deaths increased from 22.06 to 30.5 respectively. The 2012 TQIP Risk Adjusted Benchmark Report indicated deaths were in the expected range for patients with penetrating injuries. Quarterly data reviews have been successful in improving injury diagnosis coding. Trauma Registry staff will continue to be provided with feedback on injury coding during chart reviews. Education will be provided when we transition to a newer version of AIS codes. Lessons learned include: a collaborative approach among clinical care providers, trauma registrars and the medical examiner helps to maintain accurate coding practices; coding and documentation have a significant impact on outcome measures and benchmarking; incomplete documentation can lead to false outcomes and continuous learning is a great way to develop strong skills among staff.

Discussion/Conclusions/Implications:
Since the quarterly data reviews have been successful in improving injury diagnosis coding for penetrating mortalities, all expired patients, including blunt injuries are subject to the quarterly reviews. TQIP provided us a benchmark which prompted our trauma program to critically review our registry data. Accuracy of trauma registry data is paramount since this is utilized to make clinical changes. Understanding your data is key to success.