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Title: Trauma Anesthesiology Guideline Quality Improvement Project

Abstract:

Problem: The University of Colorado Hospital is a growing Level II trauma hospital. The goal of our QI project is to improve the care delivered to our trauma patients, and educate faculty, residents, and other anesthesia providers with the most up to date trauma anesthesiology management recommendations.

QI Approach: Initially, a review of updated anesthesiology and surgical trauma literature was completed to develop the Trauma Anesthesiology Guidelines. The guidelines are published on the Department of Anesthesia Intranet and the Department of Surgery Acute Care and Trauma website for use by faculty, residents and students. A reference card was created from these guidelines and placed in operating rooms designated for trauma surgical cases. The Trauma Anesthesiology card is readily available as a quick reference during emergency trauma surgical cases to guide management.

Outcomes: The OR teams were notified of the new guidelines and reference cards. A trauma simulation was completed using SimMan 3G technology with available teams that included OR nursing, anesthesia providers and support from the Blood Bank, pharmacy and laboratory. Data was collected including time between activation and delivery of massive transfusion blood products, and time to receive requested vasoactive infusions from pharmacy. It required four minutes to receive blood products and greater than ten minutes to receive requested vasopressors and tranexamic acid (TXA).

Next Steps: The goal of testing the team work during a trauma surgery and utilization of support services was met. All faculty, trainees, and staff are aware of the Trauma Anesthesiology guidelines and reference card in the OR. The simulation exercise showed areas where response times and team work may be improved. OR setup requires the type of bed to be specified for various services, especially for patients with multi-system trauma. The response time of pharmacy during weekends and off hours is slower and it is recommended that a ‘Trauma Box’ be created containing various vasoactive infusions and TXA. The stability of vasoactive infusions for storage is currently being investigated by the pharmacy. Anesthesia providers would benefit from thrombelastograph (TEG) lab reference values for interpretation during trauma emergencies, which will be added to the reference card.