"Where's The Blood?": A Quality Improvement Project in Perioperative Blood Bank Ordering

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Introduction/Problem

Errors involving the ordering of blood products are not uncommon during the perioperative setting and can lead to procedure delay, case cancellation, or even result in patient harm if blood products are not available due to an ordering error. Our quality improvement project focuses on an operating room case involving a near-miss situation. A patient scheduled for a total knee replacement (TKR) had a voided blood bank specimen due to inappropriate labeling. In this case, the anesthesia provider was notified and a repeat sample was drawn prior to the procedure. However, there have been cases in which these errors are not recognized in time, causing a delay in the release of blood products even after a procedure has started.

This project will have a direct impact on the blood bank as well as all perioperative staff. It will have the greatest impact on anesthesia faculty, residents, and nurse practitioners who are often the providers to draw the type and screen prior to a procedure. By reducing ordering errors and voided blood bank specimens, we hope to deliver safer and more timely care to our patients.

Aim/Goal

The goal of this project was to perform a Root Cause Analysis identifying contributing factors to a close call event, namely a delay in perioperative blood availability. Subsequently, the goal was to propose action items for addressing the contributing factors.

The Team

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- Julia Parzych, MD PGY-4 Department of Anesthesia, Critical Care and Pain Medicine
- Simon Zhang, MD PGY-3 Department of Anesthesia, Critical Care and Pain Medicine
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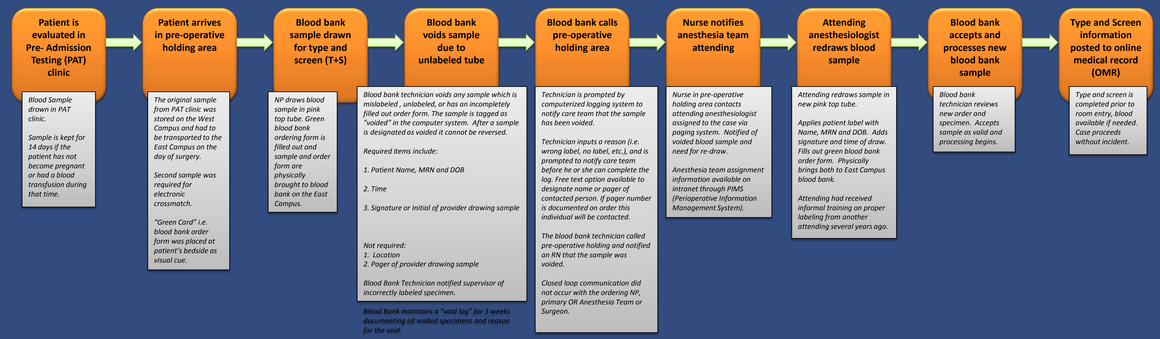
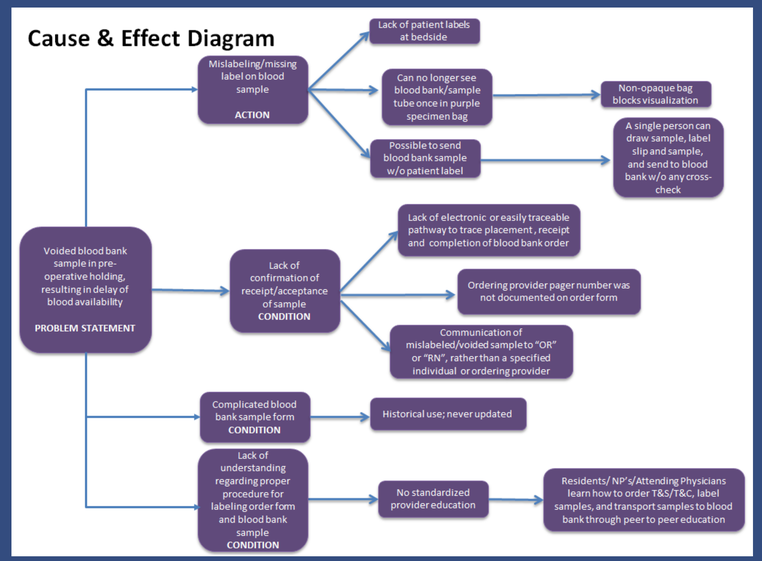
Methods: Root Cause Analysis

Event Flow Diagram





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Root Cause Analysis Contributing Factors and Proposed Action Items

RCCF Statement 1	**Current paper-based perioperative blood bank form (green slip) is more error-prone compared to an electronic ordering system, which leads to more ordering mistakes**
Action 1	Implementation of Electronic Provider Order Entry (POE) blood bank order form for non-emergent OR cases
• Completion Date	July 01, 2017
• Responsible Person	Blood bank representative, peri-operative staff representative
• Action Hierarchy	Standardization of blood bank ordering process by using POE – Strong Action
Outcome Measure 1	Number of voided blood bank specimens due to mislabeling in the peri-operative setting
• Measure Date	August 01, 2017
• Responsible Person	Blood bank QA representative
• Expected Compliance	100% provided the old “green slip” is phased out

RCCF Statement 2	**Non-standardized Physician/NP education results in deficits in knowledge regarding blood bank sample labeling procedure resulting in a voided blood bank sample in pre-operative holding**
Action 2	Implementation of standardized education for providers on proper blood bank labeling techniques to be made available online (via MyPath module).
• Completion Date	April 01, 2017
• Responsible Person	MyPath module coordinator
• Action Hierarchy	Personal training on proper blood bank labeling protocol – Weak Action
Outcome Measure 2	Number of anesthesia MDs/NPs/CRNAs completing MyPath module on standard blood bank labeling protocol within a 30-day period
• Measure Date	May 01, 2017
• Responsible Person	MyPath module coordinator
• Expected Compliance	95-100% - all peri-operative staff to receive MyPath module on proper labeling of blood bank specimens

RCCF Statement 3	**Lack of timely feedback on the acceptance or voiding of a blood bank specimen causing potential delay in available blood product**
Action 3	Updating Provider Order Entry (POE) software to give timely high priority alerts such as a voided or accepted blood bank sample
• Completion Date	July 01, 2017
• Responsible Person	Electronic Medical Record (EMR) information technologist
• Action Hierarchy	Software enhancement – Intermediate action
Outcome Measure 3	Survey to providers assessing the utility of the new software and suggestions for improvement
• Measure Date	September 2017
• Responsible Person	Web OMR IT representative
• Expected Compliance	50-95%

In Summary: the Interventions

- Phase I: Develop a MyPath online education module about proper labeling and handling of blood bank specimens. This will ensure that all blood bank sample tubes will have a correctly labeled patient sticker attached.
- Phase II: Streamline the ordering process by using the Provider Order Entry (POE) and phasing out the “green slips” that we currently use for blood bank requisitions. This will provide the blood bank a reliable method of contacting the ordering provider if a sample has been voided.

Lessons Learned

- Start RCA process early after an event in order to gather information that is “fresh in the mind”
- Record detailed information gathered from interviews in order to refer back to this information in creating an accurate event flow diagram

Next Steps

- Implement our action statements in the perioperative setting for East and West campuses
- Work with Blood Bank QA personnel on measuring the incidence of mislabeled, voided specimens
- Obtain feedback from blood bank and perioperative staff members on the efficacy of these interventions

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