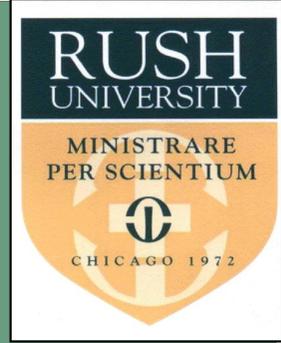




Attempt at Reduction of Hemolyzed Samples from the Emergency Department at Rush University Medical Center



Yolanda Garcia, Ryan Henricks, Mark Jaros, Alyssa Erich
Core Laboratory, Rush University Medical Center, Chicago, Illinois

Background

In 2016 a Medical Laboratory Student performed the following analysis: *A Comparison of Hemolysis in Clinical Specimens*. Objectives of that study were:

- To quantitatively compare the number of specimens rejected for hemolysis based on nurse draw vs. phlebotomy draw
 - To perform a cost analysis to determine cost of redraws for the hospital
 - Student reviewed 2 months of data:
 - 06/01/2016-06/30/2016
 - 07/01/2016-07/31/2016
- Findings showed that 411 out of 968 (43%) hemolyzed samples were from the Emergency Department (ED) over the course of 2 months.

Design

Pre Test Post Test intervention. Core Lab Management decided to reach out to the ED to identify the cause of hemolysis and implement changes to reduce hemolysis rates. Becton Dickinson education rep was brought in to observe collection practices in the ED, identify possible causes of hemolysis, and provide reeducation and improvement in collections.

Project Timeline



Issues Identified

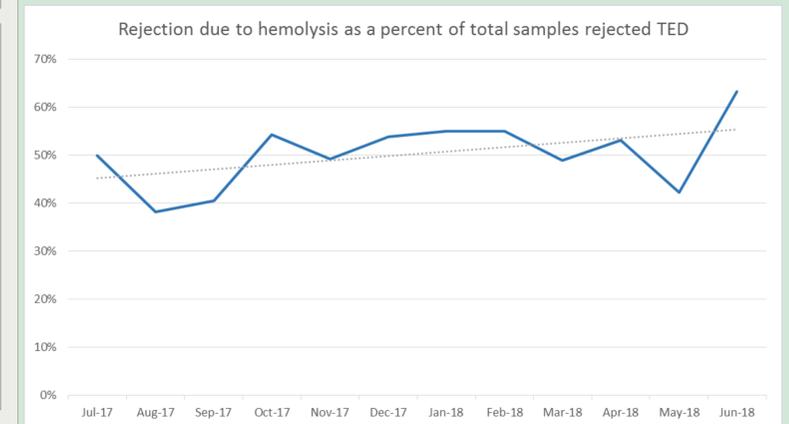
- Blood collection practices were inconsistent in most cases
- Samples were not inverted sufficiently to allow for a well mixed sample (essential to prevent clotting)
- Tourniquet left on patient too long (less than 1 minute) – can lead to hemolysis
- Correct order of draw not known/not followed
- Vacutainer caps were sometimes removed to fill from a syringe draw
- Forcing blood through syringe into tube can shear the cells and lead to hemolysis
 - Leads to a break in sterility
 - Improper blood to additive ratio due to underfilled/overfilled tubes
 - Potential cross contamination between tubes
 - Caps not securely placed back leading to possible uncapping in transport

Intervention

- Reeducation provided to staff in November of 2017
- Proper equipment was added to Supply System in November 2017
- All ED staff were expected to use the knowledge learned and equipment purchased at the end of training
- Expectation was that all staff performing blood sample collection would be trained by January 2018

Results

Pre Intervention – July – September 2017	Post Intervention – January – March 2018
687/1590 = 43%	899/1684 = 53%



Unfortunately a reduction in hemolysis rates has not been realized. The lab has continued to monitor the rejection rate due to hemolysis and the trend is increasing. The lab will continue to assist the ED in ongoing education efforts. Core lab has reached out to the ED to schedule additional observations/education on collection techniques to continue attempt at hemolysis rate rejection.