Cost Savings and Efficiency Realized by Decreasing Orders for Type and Crossmatching

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Clinical Problem

High Blood Bank Costs Secondary to a High Crossmatch (C/T) Ratio to Transfusion (C/T) Ratio*

- C/T ratio as high as 7 for spine, other individual service lines as high as 20 with an overall ratio as high as 5
- Red blood cell (RBC) units crossmatched and not transfused are aged an extra day (by sitting in the refrigerator specified for one patient)
- RBC units are out of circulation, either stored in the operating room (OR) or sequestered in the blood bank (BB) when they may be needed for acutely ill or bleeding patients
- Risk expiration by mishandling in the OR
- Greater acquisition necessary to cover "just in case" needs straining the community and American Red Cross (source of blood products)
- No ownership for ordering blood day of surgery

- Delaware Valley with 900+ beds
- Trauma Center and the Regional Spinal Cord Injury Center of the Thomas Jefferson University Hospital (TJUH) is a Tertiary, Level 1

Background

- Thomas Jefferson University Hospital (TJUH) is a Tertiary, Level 1 Trauma Center and the Regional Spinal Cord Injury Center of the Delaware Valley with 900+ beds
- C/T Ratio is the ratio of RBC units crossmatched for potential transfusion to the number of units actually transfused
- The American Association of Blood Banks (AABB) recommendation for C/T ratio is < 2
- TJUH blood bank, on periodic review by AABB and the College of American Pathologists (CAP) was cited as deficient in C/T ratio quality indicators
- Cost to crossmatch RBC units is on average $210
- BB staff educated regarding case specifics and units needed

Data gathered:

- BB tracked day of surgery add on units and utilization rate
- Heemomectonic database was utilized to get historical data of RBC usage by DRG and Current Procedure Terminology (CPT) codes
- Analysis of pre-operative blood ordering flow
- Questioned Physicians to elicit MSBOS ordering practice
- Called best practice hospitals to identify new processes

Hired a patient blood management (PBM) director

Practice Change

Formal protocol developed:

- Emphasis on high blood loss surgeries
- To optimize management of resources
- To maximize patient safety

MSBOS was revised:

- Implemented with high C/T ratio services initially
- Collaborated with surgeons, PBM and anesthesiology to reflect actual usage
- BB staff educated regarding case specifics, and units needed

Eliminated Type and Screen (T/S) on low use cases

Crossmatch Reduction Cost Savings at Jefferson Hospital for Neurosurgery

Results

- National Commission for Health Care Quality Accreditation, 3151 e Park Rd., Silver Spring, MD 20904
- American Association of Blood Banks, 3175 Leesburg Pike, Suite 400, Falls Church, VA 22041
- American Society for Healthcare Risk Management, 222 South Euclid Ave, Suite 610, St. Louis, MO 63108
- Joint Commission International, 400 North Wacker Drive, Chicago, IL 60606

Strategies:


Recommendations / Lessons Learned:

- No adverse patient outcomes over 1.5 years
- Increased compliance with in-house policies for transfusion services
- No adverse patient outcomes over 1.5 years
- Yearly Cost of Unused Crossmatched RBCs in Spine Surgery
- Commission: https://www.jointcommission.org/the_view_from_the_joint_commission/blood_management/

- Send blood products to the OR via the pneumatic tube system,
- Need to be careful with transition to EPIC, so gains are not lost
- In-house pre-admission testing for future surgeries
- For better use of resources and improved processes

- Future Needs Identified
- Future Needs Identified
- Future Needs Identified
- Future Needs Identified

- No need to add on units intra-operatively

- Federal Register: http://www.federalregister.gov
- Future Needs Identified
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- Nurse’s MD ownership of RBC ordering and responsibility, improved with open dialogue at time out
- Increased awareness for potential harm or near miss by being prepared with RBC plan of care
- Employment of continuous improvement model
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