



Holden Comprehensive Cancer Center

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**Going Solo:  
Transfusing 1 vs 2 units of PRBCs**

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**Objectives**

- Present the Rationale for Blood Management
- Describe the Implementation Plan
- Review the ABMT Study and projected results

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**Rationale for Blood Management**

1. Blood is a life-saving resource, but supply is limited
2. Historically transfusion practices are learned during residency, based on local culture, and not evidence-based
3. Transfusion of blood products is associated with costs and complications not generally appreciated
4. US uses much more blood than other countries for comparable procedures without improved outcomes
5. There is now good clinical trial and observational evidence to guide transfusion practice
6. Changing practice means changing the institutional transfusion culture

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**Complication of Transfusions**

- Well Known
  - Transmission of infection (hepatitis, HIV, CJD, etc): rare
  - Transfusion reactions: minor (fever, hives): common
  - Transfusion reactions: major (hemolytic, anaphylaxis): rare
- Under-Appreciated
  - Immunosuppression: 100%
  - Increased risk for HAI (CLABSI, CAUTI, SSI, UTI)
  - Increased length of stay (ICU, ventilator, hospitalization)
  - Transfusion Associated Acute Lung Injury (TRALI): 1/5000
  - Transfusion Associated Circulatory Overload (TACO): 1/300

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**Goals of Blood Management Initiative**

- Improve patient safety and outcomes
- Conserve scarce blood resources
- Manage costs associated with blood management and administration
- Utilize the latest scientific evidence to support blood management efforts
- Encourage performance improvement and research projects to enhance our knowledge of evidence-based transfusion practices

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**Initiative Development**

- Hired consultant in late fall 2010
- March 2011- Educational sessions provided to UIHC staff
- Staff Nurse questioned why we ordered 2 units PRBCs
- Proposed an EBP project to Medical Directors

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## Blood Management Project

- National standard practice: 2 units of RBCs per transfusion episode in BMT patients
- Safety concerns after a review of existing blood management practices and literature
- 1 unit of RBCs may be an equivalent or even safer and less costly practice, assuming factors such as amount of bleeding and hemoglobin level are equal
- We changed practice to routinely transfuse 1 unit of RBCs (7-8 g/dL)

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## Blood Management Project

- Pre-practice change
  - Audited allogeneic/autologous patients from July 1, 2009- June 30<sup>th</sup>, 2011
  - Implemented Practice change in July 2011
- Post practice change
  - Audited allogeneic/autologous patients from September 1, 2011- August 31, 2013

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## Blood Management Project

- Following IRB approval, we began a retrospective medical record review to evaluate the practice change among allogeneic and autologous BMT patient populations
- We will be evaluating 1 vs. 2 units of RBCs/transfusion and average units of blood products transfused per patient, impact on LOS, and estimate of nursing time and costs
- Project is expected to generate new knowledge regarding safe blood management practices in hematology oncology patients

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## Blood Management Project

- 400 cases enrolled
  - 200 from pre-practice change (7-1-2009 to 6-30-2011)
  - 200 from post-practice change (9-1-2011 to 8-31-2013)
- Data suggests a reduction in RBC utilization at an average of 1.3 units per hospital discharge
- Based on these utilization trends, we are estimating a cost savings of (\$200 per RBC unit x 1.3 units per discharge x an average of 5 patients per month) **\$1300** each month just in purchase cost
- Additionally, a savings in nursing hours (2 hours per RBC transfusion x 1.3 units per discharge x an average of 5 patients per month) with a total of **13 hours** per month.

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## Findings

- Preliminary findings are promising for a new standard practice of transfusion one unit of RBCs per low hemoglobin episode for allogeneic and autologous BMT patients
- Formal statistics will be completed using Wilcoxon rank-sum test to compare the mean number of RBC units between pre and post data, LOS, and costs
- Early conclusions suggest the goal of improving the safety of blood transfusions and preserving a precious resource might be achieved with this important practice change

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Office of Clinical Quality, Safety, and Performance Improvement

### Blood Transfusion Rate

Rate of Administration Per 1000 Patient Days

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## Thank You

- Team Members
  - Aldijana Avdic, BSN, PBMS, Blood Management Coordinator
  - Melissa Bodecker, BSN, RN
  - Anne Smith, MSN, RN-BC, APN
  - Sharon Tucker, PhD, RN, PMHCNS-BC



## Questions

Thank you for your time



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