Thousands of Physicians in a Twenty-Two Hospital Integrated Healthcare System Changed Their Blood Transfusion Practices When they were Regularly Given Their Own Transfusion Practice Data and They Were Educated to Best Practice Guidelines

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INTRODUCTION: Packed Red Blood Cells (PRBC) transfusions are one of the most expensive, over-utilized, and harmful intervention in healthcare. Studies confirm that a restrictive-transfusion threshold and the use of 1 unit as opposed to 2 unit transfusions carry improved, if not equivalent clinical outcomes and cost savings.

METHODS: We developed and implemented an automated electronic blood ordering and tracking system to monitor PRBC ordering and administration in order to alter physician behavior. We initiated a system-wide educational effort of thousands of physicians and staff. Referential performance was provided monthly via email to each transfusing physician.

RESULTS: Percentage of patients receiving PRBC decreased by 30% from 1/1/2012 to 1/31/2015. The number of PRBC units transfused decreased from 49.64 units per 1000 patient days pre-intervention to 34.55 units per 1000 patient days post-intervention. Two unit transfusions decreased from 68% of all transfusions ordered to 23%. The percentage of patients transfused with a hematocrit $\geq$ 23% decreased from 60% to 34% over the same time period. The amount of cost avoidance was $2.5 million over a two year period assuming each unit of PRBC cost $300. Hospital acquired infections and mortality decreased significantly in the same time period.

CONCLUSIONS: Providing thousands of physicians and staff with their personal PRBC transfusion practices and educating them to best evidence based guidelines across a 22 hospital integrated healthcare system resulted in statistically significant reductions in patient transfusions, decreased healthcare costs, and improved outcomes.