

Patient Safety Tip of the Week

January 9, 2024

Hopkins Blood Management Program 10 Years Later

Ten years ago we highlighted a blood management program at Johns Hopkins Hospital (see our June 2013 What's New in the Patient Safety World column [“Hopkins Blood Ordering Initiative”](#)). A recent study presented at the 2023 annual meeting of the American Society of Anesthesiologists ([ASA 2023](#), [Vlessides 2023](#)) reported on the financial savings that program produced, and they are phenomenal, all without harming patient outcomes!

They actually have 2 programs at Hopkins:

- a blood management program that seeks to reduce unnecessary transfusions
- a bloodless program designed to avoid transfusions for patients who decline them, primarily Jehovah’s Witness patients

Together, these programs had a greater than **sevenfold return on investment (ROI)**.

Steven M. Frank, MD, Professor of Anesthesiology and Critical Care Medicine at Johns Hopkins Medicine was lead author of the study. He noted 22 things they do to avoid unnecessary transfusions, including things like treating preoperative anemia before elective surgery, using evidence-based transfusion triggers, a “Why Give 2 When 1 Will Do?” single unit of blood transfusion campaign, and other anesthesiology-led before, during or after surgery measures of “keeping blood in the patient” such as using tranexamic acid during surgery or intentionally lowering blood pressure to reduce bleeding, and even using smaller tubes to collect blood for lab tests. Over a 10-year period, the annual blood acquisition cost reduction was \$2.9 million, a 10.9% decrease and a 9.6-fold return on investment.

Frank said “We like to say that blood saves lives when you need it, but only increases risks and costs when you don’t. Our results showed that a comprehensive blood management program can substantially help the bottom line — for every dollar spent, we received \$7.50 in return.” Clinical outcomes such as infection, blood clots, kidney injury, heart attack or stroke were the same before and after the Patient Blood Management

Clinical Community program was instituted.

The bloodless surgery program brings in revenue by attracting patients who are often turned down by other hospitals. Over 10 years, that program brought in approximately \$5 million a year (after subtracting the direct cost of care), representing a 6.6-fold return on investment.

Clinical outcomes such as infection, blood clots, kidney injury, heart attack or stroke were the same before and after the Patient Blood Management Clinical Community program was instituted. Clinical outcomes were the same or better for the Center for Bloodless Medicine and Surgery program, as the incidence of hospital-acquired infection was significantly lower when transfusions were avoided.

Frank notes that “we are actually **doing more with less and providing higher value care**”. Most of our prior columns have pointed out some of the downsides of transfusions from a patient safety standpoint. But a few did discuss potential cost savings as well. The Hopkins experience clearly demonstrates that evidence-based blood management programs make sense from both a patient safety standpoint and an economic standpoint.

The Hopkins experience appears to have focused especially on transfusion strategies in surgery. But most of our prior columns regarding transfusion strategies, listed below, have pointed out the benefits of more restrictive transfusion strategies in multiple clinical situations. Results of the MINT (Myocardial Ischemia and Transfusion) trial were also just recently reported ([Carson 2023](#)). That study found that, in patients with acute myocardial infarction and anemia, a liberal transfusion strategy did not significantly reduce the risk of recurrent myocardial infarction or death at 30 days. However, trial end points did suggest some potential benefit of a liberal strategy over a restrictive strategy, but additional studies would be needed to confirm that conclusion.

Given the substantial financial benefit demonstrated by the Hopkins group, it is imperative that all organizations implement evidence-based blood management programs.

Prior columns on potential detrimental effects related to red blood cell transfusions:

- March 2011 [“Downside of Transfusions in Surgery”](#)
- August 2011 [“CPOE Alerts Reduce Blood Transfusions in Children”](#)
- January 2012 [“Need for New Transfusion Criteria?”](#)
- April 2012 [“New Transfusion Guidelines from the AABB”](#)
- February 2013 [“More Evidence Favoring Restriction of Transfusions”](#)
- June 2013 [“Hopkins Blood Ordering Initiative”](#)
- May 2014 [“Blood Transfusion and Infection Risk”](#)
- June 2015 [“Economics and Blood Transfusion”](#)
- November 2016 [“AABB Updates Transfusion Guidelines Again”](#)
- December 2017 [“Study Confirms Safety of Restrictive Transfusion Policy”](#)

- January 2018 [“Transfusion in Cardiac Revision Surgery”](#)
- August 2018 [“Thromboembolism: Another Downside of Transfusions”](#)
- August 2021 [“New Blood Management Guidelines for Cardiac Surgery”](#)

References:

ASA (American Society of Anesthesiologists). Anesthesiologist-led blood management programs save hospitals significant amounts of blood and reduce costs with same or better patient outcomes. ASA Press Release October 13, 2023

<https://www.asahq.org/about-asa/newsroom/news-releases/2023/10/anesthesiologist-led-blood-management-programs>

Vlessides M. Blood Management Program Yields Significant Cost Savings, Comparable Patient Outcomes. Anesthesiology News 2023; December 5, 2023

<https://www.anesthesiologynews.com/Practice-Management/Article/12-23/Blood-Management-Program-Yields-Significant-Cost-Savings-Comparable-Patient-Outcomes/72184>

Carson JL, Brooks MM, Hébert PC, et al. Restrictive or Liberal Transfusion Strategy in Myocardial Infarction and Anemia. N Engl J Med 2023; 389: 2446-2456

<https://www.nejm.org/doi/full/10.1056/NEJMoa2307983>



<http://www.patientsafetyolutions.com/>

[Home](#)

[Tip of the Week Archive](#)

[What's New in the Patient Safety World Archive](#)