

PBM ROI: The 7:1 Business Case for Better Care

From Clinical Initiative to Health System Strategy

Interview: Steven M Frank, MD, The Johns Hopkins Hospital

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The Moment the ROI Became Undeniable

During the period analyzed in your >7-fold ROI study, was there a moment when the financial impact of PBM became unmistakable to leadership—when it shifted from a clinical initiative to a system-level business case?

Dr. Frank: I would say in the first three years of our program back between 2014 and 2017 is when we could see a tangible return on investment. In fact, in 2017 we published a fourfold return on investment and that was for the PBM program by reducing avoidable transfusions. And then after 10 years, in 2024, that's when we added in the financial impact of the bloodless program as well. The two programs combined at a 10-year interval showed a 7.5-fold return on investment.

Where the Real Money Was Made (or Saved)

Your analysis shows that the financial return far exceeded blood acquisition savings alone. Can you share a real life or real world example where PBM changed the trajectory of a case or service line or operational cost in a way that surprised even your team?

Dr. Frank: In the first three years we focused mainly on red blood cells. After that we branched out into what I call the yellow products (plasma, platelets, and cryo). The cases where we don't see much of a return are the big trauma cases or the massive transfusions. But the cases where we saw a big difference in blood use and cost savings were in orthopedic and spine patients where they were getting one, two, or three units of red cells and no yellow products. With **proper preop anemia management, cell salvage, tranexamic acid, normothermia, controlled hypotension, and smaller phlebotomy tubes**, that's where we saw we could just **reduce transfusions to zero on most of those cases**.

From Skepticism to Buy-In

Early on, what financial or operational concerns did executives or clinicians raise about PBM and how did the data, or your lived experience, ultimately change those perceptions?

Dr. Frank: Back in 2014 when we began, we started with a business plan with a range of returns on investment ranging from 5% to 20% reduction in overall blood use and and we could see in the business plan that funding the blood management program was going to pay for itself and save blood and money at the same time. And so I recommend to other programs, when they get started to have even **a simple business plan because most of the funding goes to salary support**. For example, my salary was supported. We had a hematology consultant who was salary-supported. That way you're not doing this work on nights and weekends because that gives you non-clinical time to develop the program and enhance the program and educate the providers in the institution on why this is important.

Changing the Default: Single-Unit Transfusion

What was the single simplest intervention that delivered the greatest impact?

Dr. Frank: Great question because I like to say the simplest thing and the most effective thing that we've done in the last 10 years is probably our **"Why Give Two When One Will Do"** campaign to advocate for single unit red cell transfusions. Because often, you know, if the providers want to give blood to a patient – they're going to give blood if they're determined to give it – but whether they give one unit or two units could make a big difference. When I went to med school in the 1980s, we were taught the dose of red cells was always two units, no questions asked.

Then along came **"Choosing Wisely"** in 2014 and then the experts in the field came up with a single unit transfusion strategy and said to reassess the patient before giving more blood. So we put the "Why Give Two When One Will Do" campaign message on screen savers all across the institution and that had a huge impact on red cell utilization because everybody would see these screen savers even if you don't go to Grand Rounds or read the New England Journal papers you were going to see those screen saver messages day and night, holidays and weekends. So it had a huge impact.

Simple Interventions, Exponential Returns

Which low-cost or no-cost interventions meaningfully reduced bleeding and transfusion?

Dr. Frank: The simplest interventions might include **tranexamic acid** because when you think about it one dose is about \$20 and in orthopedic cardiac surgery, a postpartum hemorrhage, and in trauma; if you look at the overall impact of tranexamic acid with all the studies out there, you're going to see about a 30% decrease in bleeding and a 30% decrease in transfusion. That's a pretty simple intervention. And then other simple effective interventions like I said are just maintaining **normothermia during surgery, controlled hypotension, smaller phlebotomy tubes,** and even just **tolerating lower hemoglobin levels.** For example, we've learned lessons from our Jehovah's Witness patients for what Jeff Carson would call 'how low can you go?' We've seen plenty of Jehovah's Witness patients walk out of the hospital with hemoglobins of five or six. Especially if they're chronically anemic because they tolerate anemia much better than patients who are acutely anemic.

Keeping the Blood in the Patient

What shift in mindset reframes blood as something to protect, not replace?

Dr. Frank: When you look at all the methods of patient blood management and blood conservation, we've outlined them in a table and roughly 23 of the methods that we advocate involve keeping the blood in the patient or reducing blood loss because it's a heck of a lot easier to prevent severe anemia than it is to treat severe anemia. So, **keeping the blood in the patient** is one of our mantras in our program.

The Executive Takeaway

Based on the experience behind the greater than sevenfold return on investment findings, what is the most important lesson that you would want a health system CEO or CFO to understand about PBM as a strategic tool, not just a clinical program?

Dr. Frank: When it comes to educating the leadership of the hospital, the most important lesson is that number one there's a **significant return on investment** for supporting a patient blood management program. And number two, you're going to save blood and you're going to save money and you're going to improve outcomes all at the same time. And that means there's more blood available for those patients who really need it, for example, trauma victims. So, I call it a **win-win-win for saving blood, saving money, and improving outcomes.**