

# For safety and savings, lab takes on transfusions

**Ann Griswold, PhD**

**July 2014—Hospitals are under fire to cut costs**, and more often than not that means layoffs, forgoing new equipment, and watching from the sidelines as the medical literature touts advances that could help patients now—if only institutions could afford to implement them.



**Dr. Gettings**

“If institutions can’t reduce costs dramatically while improving quality, they just won’t survive. It’s pure and simple,” says Scott Gettings, MD, senior vice president and chief medical officer of Health First, a not-for-profit organization in Central Florida that encompasses four hospitals, a physicians group, a separate-entity laboratory, and a health insurance plan. “There’s a concept now called Medicare Breakeven, which means that if your institution can’t survive as if everybody were on Medicare, then you might not be in business in the future.”

The way forward—one part of it at least—is clear, Dr. Gettings says: practice evidence-based medicine. Nothing more, nothing less. “We believe it’s better to deliver more value and reduce unnecessary costs than to lay off people. And blood overutilization is one example of an unnecessary cost that does not add value. In fact, transfusions have significant risks.”

In April 2013, Health First began implementing a new blood use initiative, spearheaded by the laboratory blood bank, to educate physicians about the national blood transfusion guidelines and to change practice patterns. The team led efforts to devise new systemwide criteria, which included recommending transfusions in stable patients with hemoglobin levels less than 7 g/dL. The team also began to question every transfusion order that did not meet the new guidelines. Electronic orders for blood products were updated to require an acceptable indication.

“Compared with the same period a year before, there are almost 9,000 units of blood that we did not use because they were going to be unnecessary transfusions. We’re talking \$150,000 of savings every month, give or take,” says Fernando Nascimento, MSLA, MT(ASCP), system director of laboratory services for Health First and director of respiratory, EEG, and PFT for Holmes Regional Medical Center in Melbourne, Fla.

If it sounds like a get-money-quick scheme, that’s because it is. Health First has saved \$1.44 million over one year by changing transfusion practices to conform to national guidelines. The blood bank never denies a transfusion, even those that are out of sync with the guidelines. Medical staff are educated but never chastised. And data collected so far indicate that the initiative hasn’t delayed urgent transfusions. It merely establishes checks and balances to remind physicians the guidelines exist. A tears-free approach to cutting costs.

“The amount of cost with blood transfusion is unbelievable. It’s unnecessary—not just here, but across the country,” Nascimento says. “And this is just one department: the laboratory. Imagine if every department did their part in the hospital. In the nation. We could definitely achieve a major reduction in today’s health care costs.”

**The initiative was brought to the administration’s attention in 2012**, but for years before that it simmered in the mind of Darlene Beasley, BS, MT(ASCP), SBB, systemwide blood bank supervisor for Health First. Beasley had long lamented the lack of a mechanism to stop or question transfusions performed outside of the system’s

approved criteria, which previously set the bar at Hb levels less than 8 g/dL. Despite those criteria, patients with Hb levels as high as 12 or 13 g/dL were sometimes transfused without question, and there wasn't anything anyone could do about it.

"But, you know, until you get the buy-in from above, one person can't pull it off," Beasley says. "So I was fortunate that with our new administration in 2012, all of a sudden the moon and the stars lined up. That particular year, the system picked blood management as a systemwide goal, which helped bring these issues to the forefront."

One member of the new administration, Nascimento, listened with interest as Beasley described her idea during a meeting in November 2012. "When I met with Darlene, it became clear we were popping blood like it's aspirin," he recalls. "Meanwhile, the new guidelines say transfusions should be restricted."

The eventual impact of overuse can be detrimental. "When these patients come for a future transfusion, it becomes a lot more complicated if they've developed antibodies to a previous unit of blood," Nascimento notes. "People were not as aware of the antibody problem 30 or 40 years ago as they are today. Back then there were no hard guidelines, and that's one reason we have so many antibodies out there now."



**Nascimento**

That initial meeting sparked the administration's interest in pursuing Beasley's idea. But it meant hard work—and a lot of it. "Not only did we need to come up with new blood-management parameters, but we realized we needed to do a larger-scale project to lower the hemoglobin to the national standards, and include some tools to identify physician outliers," Nascimento says.

Over the next couple of months, Beasley crafted a new set of criteria based on the AABB evidence-based literature. She sought input from the AABB, the Health First administration, and Richard Gammon, MD, a medical director for One Blood, the system's blood supplier. Finally, the team decided on 7 g/dL Hb as the new parameter for transfusion, with a few exceptions: Surgical patients would have a higher limit of 8 g/dL, cancer patients would likely have frequent exceptions to the guidelines, and trauma patients would be excluded.

"Aside from these exceptions, pretty much every other patient population here, every other unit at Health First, benefits from the transfusion initiative," Nascimento says.

Then came the hard part: seeking approval from the chiefs of medical staff and the medical directors overseeing the system's four hospitals. "That was the major slow-down for us," Nascimento recalls. "But for hospitals that already have a systemwide medical board, or standalone hospitals, it would be much easier to put the new criteria together, to follow national guidelines, and to communicate that this can improve patient care and save money, so it's a win-win."

Beasley laughs, recalling how she and Nascimento attended a round of medical executive meetings at each hospital in January 2013, only to return the following month and repeat their appeal. The process seemed like an uphill battle at the time, but the pair had strong support: Dr. Gammon provided a steady stream of research showing the importance of restrictive transfusion practices, and presentations were given by one of the initiative's biggest proponents, Joseph Gurri, MD, a longtime blood donor, surgeon, and vice president of medical affairs for Holmes Regional Medical Center, the largest Health First hospital.

"The project was extremely attractive to begin with because it's a marvelous evidence-based project," Dr. Gurri notes.



**Dr. Gurri**

"Looking at our existing data, we clearly had a great deal of improvement that could be made simply by following the evidence-based guidelines. Of course, we fully understood what this meant—changing some very ingrained physician practices and all the communication that that would take."

That might be an understatement, Beasley jokes. "Trying to get it through four groups took an act of God," she recalls. "The challenge wasn't the administration—they were already on board. The hard part was trying to get past the medical staff's mindset. But the way I look at it is that I'm a blood banker—this is what I do; this is what I'm good at. If you ask me about the latest surgery techniques, I can't keep up with that. So I can't imagine being a surgeon or physician, trying to keep up with the latest guidelines on medication, procedures, and everything else. We tried to approach it that way."

Just when it seemed as if the approval process might never end, all four hospitals signed on. By April, the new guidelines took effect.

"Within the first month, give or take, we really didn't see a big improvement because we had the new criteria, but we had nothing to stop or alert the physicians and nurses who were ordering transfusions outside of criteria," Nascimento recalls.

That's where the story gets interesting, he says. In April, the blood bank took the reins and started accessing patient medical records to confirm every transfusion met the new criteria. "Clearly, we needed somebody in the blood bank who owned this topic and was profoundly interested in it," Dr. Gurri says. "The techs gave up their lab shyness to pick up the phone and tell people that they're transfusing out of parameter. Taking the lab techs out of the lab and into the mainstream, that was important."

Once the phone calls started, the savings began to roll in. "I think that's what changed the culture. That's when we really started to see the decline in blood utilization," says Nascimento.

By all accounts, the blood bank staff took the initiative and ran with it. "They wanted to be educated on this; they wanted to know to look for hypoxemia and that kind of thing," Beasley says. "And they drew the line themselves: When you have an emergency and you have to hand out many units of blood, you don't bother them. But when somebody's asking for one or two units and the patient is going to be discharged, we start questioning, and a lot of times physicians will change their minds on that."

Physicians always have the option of overriding the criteria and, in the beginning, a fair number did. Whenever the technologists encountered resistance—the lab's phone lines were recorded to discourage "nastiness," Beasley says—a follow-up call from Dr. Gurri would usually cool tempers and bring reason to light.

"We never stopped anyone at the door and said absolutely not," Beasley recalls. "We tried to reason with them. Our famous line was, 'You know, this isn't in the criteria anymore and we're considering this a transplant, and we don't want you to get in trouble with any committees.'"

To track adherence to the guidelines, the laboratory staff generates a daily report using information from the order-entry system. The report lists all transfusion orders from the day before, along with the criteria for the transfusions, the physician, and pre-lab values such as platelet counts or hemoglobin levels.

"My technologists go down the list and remove people who had 6 g hemoglobin or a trauma patient who got 20 units; we're not going to argue over that," Beasley says. "Then our techs go into our clinical system and read doctors' notes for each patient left on the list to see if there's an obvious explanation for the transfusion. We look to see if they had palpitations, low blood pressure, that kind of thing. Then I glance through and see if I can remove

anyone else.”

None of the technologists complained about the extra work. “At first it was very difficult to handle the extra workload with limited staff, but my staff is driven,” Beasley says. “They did this in their spare time, they integrated it into their workflow—that’s how it evolved. Now that our transfusions have dropped so drastically, we have more time to work on these sorts of things. We’re spending less time doing patient work and transfusion review, so it evened out in the end.”

At month’s end, the daily reports are compiled and sent to Dr. Gettings, who reviews the list and enters “letter” or “OK” next to each patient’s name. The physician of each patient with a letter notation receives a note, signed by the laboratory medical director and transfusion committee chair, Carl Smedberg, MD, explaining that he or she appears to have transfused out of guidelines.

“We have two letters,” Beasley explains. “One says, ‘You gave two units, do you think you could have given one?’ And another one says, ‘We don’t see a good reason for the transfusion, so please consider the guidelines the next time because it’s akin to liquid transplant.’”

Nowadays, the outliers are few and far between. But that wasn’t always the case.

“At first, we had a lot of letters, I mean a few dozen every month were going out,” Dr. Gettings says.

But within about six months, he says, that number dropped off dramatically. Now the group just sends a handful of letters, and most of those are not significant. Perhaps the hemoglobin is just a bit high, perhaps the physician gave two units where he or she might have given one.

“The letter isn’t saying, ‘You’re doing this wrong,’” Dr. Gurri is quick to note. “The letter is saying, ‘In this case, you transfused to exception of the recommended parameters. That might be OK if you have a reason, but you didn’t document that reason, and perhaps you need to document it.’”

At first, some physicians weren’t pleased. Nascimento recalls, “I remember going to a meeting and someone said, ‘You’re going to tell us when we can and can’t transfuse blood?’ And we said, ‘Absolutely not. It’s just a tool to aid the physician in deciding if this transfusion is the best approach for this patient.’ Some of them would answer with letters back because they were so upset. They’d say, ‘I can’t believe you are sending me this letter!’ They didn’t understand at first that this is ultimately good for the patients and we are doing this for the greater good. That was a challenge in the beginning.”



Handling the extra work was difficult at first, Beasley says. “But my staff is driven. They did this in their spare time, they integrated it into their workflow—that’s how it evolved.”

Beasley remembers one surgeon in particular whose patients invariably received two units of blood on the second day after surgery—always for the same reason. “Tired and weak, that was the only criterion we could find. For every single surgery. This probably comes from years of doing things the same way; it’s probably how he first learned it in medical school,” Beasley says.

But then something changed. Physicians started to pride themselves on reducing unnecessary blood use. “It seemed like we were hitting a brick wall for a while, but slowly and surely, as word got out there, things began to come together,” Beasley says. Reducing unnecessary transfusions became a goal. A victory. A status symbol, even.

Says Nascimento: “I remember one of the physicians passed me in the hallway and said, ‘Hey, I transfused one patient with a 7.1 hemoglobin but it’s only because he was bleeding quite a bit.’ And I said, ‘OK! It’s OK. You don’t have to explain that.’ It was interesting to see that they are really aware. Now, when we go to a quarterly transfusion committee meeting, the acceptance and the pride of the physicians really makes it a success.”

The group still struggles when patients from skilled nursing facilities—where the hemoglobin parameters are not always consistent with national guidelines, and lab tests are done off site—are sent back to Health First for transfusions. The transfusion committee continues to work on educating this group about evidence-based practices.

“Overall, this initiative was a lot easier than others we’ve had,” says Dr. Gettings. “If you ask physicians to change a practice dramatically—if you say, ‘We want you to do more work, change your process, and save the hospital some money’—that’s not nearly as good an argument as saying, ‘We’re giving too much blood and that’s dangerous to our patients; by giving less, we could save money.’ That’s a lot easier to sell.”

Moreover, the measures of success are more clear-cut than those of other hospital initiatives. “If you give a unit of blood, you can track it, you know what it costs, you know the numbers around that. When you transfuse a unit of red cells, you have a starting measure of hemoglobin, an ending measure, you’ve got clinical proof. But if somebody stays a bit longer in the hospital, you have to figure out why,” Dr. Gettings explains. “So I would rate it

as one of our easier change initiatives.”

**“We just celebrated one year now, in April,”** says Nascimento. “Physicians now are very appreciative. We hear no noise. There are no complaints. It’s almost like it’s their project as well. At the transfusion committee meetings, they’re extremely excited because they know that blood transfusion is not in the best interest of the patient if there’s not an actual need.”

Importantly, the initiative demonstrates that money can be saved in a way that improves care. “Projects that benefit the patient are available, are identifiable, and are readily doable if we all set our minds to do it,” Dr. Gurri says. “It’s important as a cost saver, it’s important as a clinical improvement, and it’s important as a safety issue. But I think its greatest importance is as a model.”

Spurred on by the success of the transfusion project, the administration at Health First is exploring whether the same strategy might help save money in other departments. So far, new evidence-based guidelines are being considered in the imaging workup of patients with stroke and transient ischemic attack, patient flow through operating rooms, and the intubation workflow, just to name a few.

In the end, it’s thanks to the laboratory for having stepped up.

“It’s all about the lab. The beauty of this is that the lab came up with this and all the rest of us listened to them,” Dr. Gurri says. “This is a blood bank/lab leadership project. They were stellar.”

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