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How Anemia Pilot Is Lowering The Need For Transfusions

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Before her hip surgery, Mary Folstad was surprised to find out she had low amounts of iron in her blood.

Fortunately for her, she chose to have her surgery at Fairview Southdale Hospital, where an innovative program is identifying anemia in patients earlier and decreasing the need for transfusions during surgery.

A first-of-its-kind effort, supported by grants from Fairview Physician Associates (FPA) and Fairview Southdale Hospital, has dropped the number of transfusions by more than 75 percent in two pilot patient populations—elective cardiovascular surgery and joint replacement patients. And, it's on track to save the hospital $300,000 annually.

Her blood needed a boost

Last summer, Mary, 71, of Hopkins, was having a difficult time getting around her cabin. It got progressively worse until she could hardly walk.

She and her orthopedic surgeon, John Anderson, MD, decided it was time to move forward with hip-replacement surgery.

Her care providers recommended she be screened for anemia through a preoperative anemia program. It turned out her blood needed a boost before surgery so she received intravenous iron and erythropoietin injections at Fairview Southdale Hospital's outpatient infusion center.

"Dr. Anderson is fabulous. He filled me in on what was going to happen. Then, the staff at Southdale were so compassionate," says Mary.

"Not once did anyone go to eat lunch without first offering me lunch or something to drink. I thought they were wonderful and very knowledgeable about what they are doing."

Mary says when it comes to receiving intravenous medications, her veins are challenging to work with, but the nurses were gentle and willing to ask a colleague for help when need be.

"The infusions were pain-free after the needle. I just sat there and read or visited," she says.

Her hip surgery went well and she did not require a transfusion. She's walking better now, and she and her husband look forward to visiting their cabin this spring.

"My patients love it and correctly perceive pre-operative anemia treatment as an improvement of care," says John.

The problem

Recent studies have revealed a previously unrecognized risk.

"Even mild preoperative anemia is associated with an increased risk of 30-day death or medical complication in patients," says **Kathrine Frey**, MD, Transfusion Services medical director at Fairview Southdale Hospital.

"It's the biggest predictor of the need for a transfusion."

Typically, patients consult with their surgeons about non-emergency surgery weeks in advance.

However, the preoperative visit with the primary care physician may happen just a few days before the procedure. If severe anemia is identified, the physician may advise postponing the surgery. If anemia is mild, the patient will most likely proceed to surgery as is.

Kathrine and physician champions John Anderson, MD, Twin Cities Orthopedics, an FPA member independent clinic, and Gregg Anderson, MD, University of Minnesota Physicians–Cardiothoracic Surgery Clinic, initiated the preoperative anemia project, in partnership with the Patient Readiness Institute (PRI), an outsourced anemia management service.

They identified the need to correct anemia before non-emergency surgeries associated with high blood loss, which include cardiac and joint-replacement surgery. Low blood loss surgeries aren't included in the project, nor are pediatric patients.

The intervention

PRI provides a "virtual" anemia clinic, the first in the nation. There is no office visit; instead, patients provide medical information and staff run lab tests.

Then "blood health"-focused care teams use algorithms to identify anemia, cause and treatment recommendations, and they provide in-hospital strategies to avoid or minimize transfusion for all patients..

Treatment includes intravenous iron and, rarely, erythropoietin.

"Newer iron medications, such as iron sucrose, are much safer than transfusion," says Kathrine. "We use safe medications to improve red cell mass prior to surgery and make sure red cells can be produced afterward."

"Our program is about patient safety, ease of physician use and communication with all involved (surgeon, patient, primary care physician and hospital care team) so treating anemia with transfusion becomes the last, rather than first, option," explains Kathrine.

The outcome

So far, we've had 150 orthopedic patients undergo hip and knee replacement surgery using what we are now calling our "patient-specific blood management program," which includes more than the "anemia clinic" evaluation—with a transfusion rate of just 5 percent in managed patients. That's down from Fairview Southdale's average of 19 percent and significantly lower than the 40 percent national transfusion average for joint replacement surgeries.

When blood is used, we're using less of it: on average, one-and-a-half units rather than the customary two.

When we can avoid transfusing blood, patient safety improves, and the cost savings to the medical system is significant.

Studies show that every unit of red cells we use costs about $1,000, which represents the costs associated with the component, compatibility testing, infusion procedure and extra length of stay in the hospital.

"It's not that we would refrain from giving blood to anyone who needs it," says John. "But the core issue is that if we can help patients be healthier when they go into surgery, which often means a healthier outcome after surgery, why wouldn't we do this?"

Another success story

"I couldn't have asked for a better team of people to take care of me and stay on top of what was going on," says JoAnn Monahan.

When JoAnn Monahan was feeling short of breath, she wasn't sure if it was something she should about but went to see her primary care doctor anyway. It turned out the 59-year-old Rosemount woman was experiencing a

host of heart problems, and she'd need to have bypass surgery.

She met with Gregg in January. After analyzing her health status through the pre-operative program, they determined she would have iron infusions.

JoAnn understood this made it more likely that she would recover faster and would decrease the likelihood of her needing blood transfusions during the surgery.

JoAnn had three infusions at Fairview Ridges Hospital lasting between two and three hours.

"It was a relatively easy process. They had to find a vein in my hand. They attached the bag of [iron sucrose] and then I had to wait to make sure I didn't have any reaction to it," she says.

She handled the infusions well, and when she underwent open-heart surgery on Feb. 18, she didn't require any blood transfusions during or after surgery. She's recuperating slowly but surely.

'I'm pretty much of the mind if they tell me it's good for me and if it benefits me or someone else in the future, I'll try it," JoAnn says.

"This program has truly been a game-changer in peri-operative blood management for our cardiovascular patients," says Gregg.

Future best practice

This best process practice improvement program is ongoing, and our leaders are looking at the benefits and implications of implementing this screening tool to a wider audience.

Kathrine and the team would ideally like to evaluate and plan anemia-related care for all joint replacement and cardiovascular surgery patients with at least three weeks to surgery.

For more information, contact Kathrine Frey, MD, 952-412-2700.