

Blood transfusion study: Less is more

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A new study suggests that blood transfusions for hospitalized cardiac patients should be a last resort because they double the risk of infection and increase by four times the risk of death.

The analysis of nearly 25,000 Medicare patients in Michigan also showed that transfusion practices after heart surgery varied substantially among hospitals, a red flag that plays into the health care reform debate.

A wide variation in care is a hot-button issue, as lawmakers and health reform experts discuss the best ways to address the variations. Some experts believe the country needs a system of medical guidelines, supported by scientific evidence, to aid doctors in decision-making. In fact, the Institute of Medicine has called for a national initiative of comparing the benefits and harms of certain methods to improve the delivery of care -- an effort referred to by health-care insiders as "comparative effectiveness" research.

Blood transfusion is an area that could be well served with stronger, research-based guidelines, since the current clinical practice is all over the map, said study co-author Neil Blumberg, M.D., professor of Pathology and Laboratory Medicine and director of Transfusion Medicine at the University of Rochester Medical Center.

"Doctors are simply doing what they were trained to do, but it turns out that their actions are more harmful than helpful in many cases," Blumberg said. "This is an instance in which clinical practice got way ahead of research. And changing the liberal use of transfusions is going

to be difficult despite the evidence showing it is usually not essential."

The study was published July 31, 2009 in the journal, *BMC Medicine*. It was designed to assess patient outcomes as well as hospital variation in blood use.

Blumberg and lead author Mary Rogers, Ph.D., of the University of Michigan Health System, analyzed patient records in 40 hospitals, from admission to 30 days after discharge. All had received coronary artery bypass graft surgery from 2003 to 2006. They found that 30 percent of variation in transfusion practices seemed to be due to widely varied practices among hospital sites.

Also, blood use among women patients ranged from 72.5 percent to 100 percent, and blood use among men varied from about 50 percent to 100 percent. Transfusions with donor blood were associated with infections of the genitourinary system, respiratory tract, bloodstream, digestive tract and skin, the study said.

The risk of death in the hospital was nearly 5 times greater among patients who received a blood transfusion, and the risk of death in the next 30 days was nearly three times greater. Some of the risk may've been due to the underlying condition that led to transfusion but an increasingly convincing body of evidence demonstrates that some of the effect is almost certainly due to the transfusion itself, Blumberg said.

Blood transfusions are extremely common in the United States. Some of the typical reasons for transfusions include prevention of anemia and improving oxygen delivery in heart failure.

Blumberg has been a long-time advocate for fewer transfusions and, when they are necessary, for using blood from which the donor's white cells have been removed. This process, called leukoreduction, is believed

to diminish the chances of infection and inflammation, research has shown.

"Blood transfusions are certainly necessary in life-threatening situations," Blumberg said. "But this study and other studies confirm they should be a last resort, not a first resort, as they often are."

For decades the URMCMC has been a leader in the study of blood transfusions, and Strong Memorial Hospital at URMCMC was among the first in the country to begin using leukoreduced blood for all its patients.

More recently, a team at Strong began to further refine the guidelines for [blood transfusion](#). As a result the hospital has already seen a 10 to 15 percent drop in transfusions during the past six months. The improvement program is still in its early stages, and Blumberg said they will closely monitor the use of transfusions at Strong in the coming months.

Source: University of Rochester Medical Center ([news](#) : [web](#))

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