

Suit claims Duke error

Lawsuit says hospital's mismatch of blood type led indirectly to S.C. patient's death.

By JEAN P. FISHER
STAFF WRITER

The Duke University Health System, which transplanted a heart and lungs of the wrong blood type into Jesica Santillan four years ago, has been sued over another blood-type mismatch.

The family of a South Carolina man who came to Duke for cancer treatment in March 2005 claims he received a transfusion of incompatible blood. According to a lawsuit filed last month, Gene Edward Harrell suffered a severe transfusion reaction after the mixup. The reaction was not fatal, but it left Harrell unable to have the stem cell transplant for which he had come to Duke. Without that treatment, the suit alleges, Harrell's non-Hodgkins lymphoma rapidly progressed, causing his death in January 2006.

Harrell's son, Gene Edward Harrell Jr., who filed the lawsuit, could not be reached to discuss the case and his lawyer did not return calls. The Duke system declined to comment



Medical technologist Drew Tierno does an Rh and ABO blood-type check at WakeMed.

STAFF PHOTO BY TRAVIS LONG

on the case.

Blood type errors occur with surprising frequency in American hospitals, which administer about 29 million units of blood and blood products to patients each year, according to the American Red Cross. An international study of hospitals in 10 countries estimated that the wrong blood is prepared in about one out of every 2,000 transfusions. Half of hospitals studied made errors more often than that.

At hospitals that administer blood to thousands of patients each month — such as Duke, UNC Hospitals in Chapel Hill and WakeMed Health and Hospitals in Raleigh — that means errors can occur as often as a couple of times a month. Many arise from clerical mistakes, such as labeling a blood sample from one patient with another person's name or flubbing the spelling of a patient's name.

"Errors happen because people are

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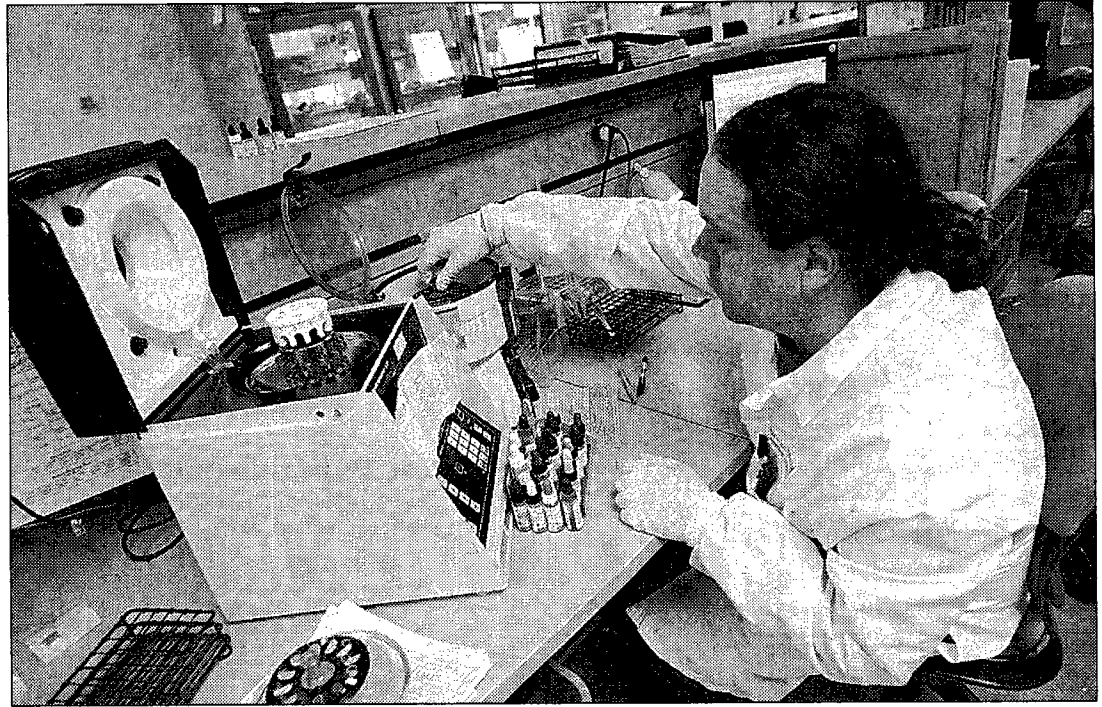
involved, and people are not perfect," said Laura McClannan, assistant administrative director of transfusion medicine at UNC Hospitals, which administers about 3,500 blood products to patients each month.

At least one Triangle hospital system — WakeMed — is in the process of acquiring new bar coding technology to reduce human error.

Under the system, which WakeMed hopes to have running by 2009, all blood samples and other patient specimens will be marked at the bedside with bar coded labels that match the bar coded identification bracelets patients already wear. Blood intended for transfusion is also already marked with the bar codes of the patients who are to receive it. Under the new system, hospital staff will use hand-held devices at the bedside to scan the patient's ID bracelet and the blood before transfusion. The bar codes must match for the transfusion to proceed.

Fortunately, even with the low-tech systems of manual checks that most hospitals use to prevent errors, most mistakes are caught before the blood actually reaches patients. Actual cases of patients receiving the wrong blood occur only in about one of every 14,000 transfusions, according to the international study.

Matching blood types is simple, but critical. All people are born with an inherited blood type determined by the presence or absence of certain markers, known as A or B, on the surfaces of their red blood cells. People with both markers have "AB" blood, those with neither marker have "O" blood type. Some blood types can be mixed without problems. But about a third of wrong blood trans-



At WakeMed, blood to be used in transfusions is checked by medical technologist Drew Tierno. WakeMed gives blood received from blood banks a second test of ABO and Rh type.

STAFF PHOTO BY TRAVIS LONG

fusions result in reactions that can be serious and life-threatening.

"Errors are quite rare, but so many patients are seen in American hospitals it's like playing Russian roulette with a very big gun," said Dr. Michael H. Weinstein, director of pathology laboratories for the WakeMed system. He is overseeing the new technology upgrade.

Santillan, a 17-year-old Mexican girl who died at Duke in February 2003 after receiving organs that did not match her blood type, is one of the most known examples of the disastrous consequences. After she died, hospital officials initiated safeguards designed to keep another blood mismatch from occurring, with a special emphasis on organ transplantation programs.

Gail Shulby, a patient safety officer at Duke University Hospital, said Duke is already bar coding some blood and specimens drawn at the patient's bedside. The hospital is looking to add a system that will include hand-held devices used at the bedside to match blood products and medications with the correct patients.

In December, Pitt County Memorial Hospital in Greenville came close to losing the right to collect payment from Medicare and Medicaid after a blood-type mismatch that occurred in February 2006. In that case, a woman received an incompatible blood transfusion, which caused a serious reaction that may have contributed to her death. Pitt County Memorial satisfied regulators that it had taken steps to avoid future problems in

time to avoid the loss of funding.

Diane Poole, an executive vice president at the Greenville hospital, said that, like most hospitals, Pitt County Memorial had a system of checks in place that should have prevented the patient from getting the wrong blood. However, some parts of that process were not followed, she said.

Poole said hospital leaders have tried to use the incident as a way of highlighting what can happen when safety and quality procedures aren't followed to the letter.

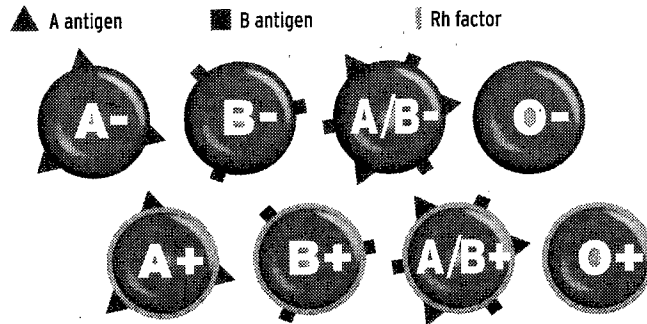
"This is the kind of thing that could have happened to any of us," Poole said. "We never want something like it to happen again."

Staff writer Jean P. Fisher can be reached at 829-4753 or jean.fisher@newsobserver.com.

ABOUT BLOOD TYPES

Every person has an inherited blood type determined by the presence or absence of two markers or antigens, known as A and B, on the surface of their red blood cells. A second important characteristic of blood type is the presence or absence of a protein, called Rh factor, which identifies the person as either Rh-positive or Rh-negative.

Eight blood types



Types O+ and A+ are by far the most common blood types, found in more than 70 percent of all Americans. Rh-positive blood is far more common than Rh-negative, which is found in only about 15 percent of the U.S. population.

Transfusion safety

When a patient receives incompatible blood, the immune system can attack the donor blood as foreign, causing shock, kidney failure and even death. A person must have the same blood antigen – A or B – in common with the donor blood for a transfusion to proceed safely. A person with Type AB blood is the one exception. Since such a person has both the A and B antigens, blood of type A, B, or AB may be safely transfused.

Another way to ensure a safe transfusion is to use Type O donor blood, which contains neither the A or B antigens and may be transfused into patients of any blood type. Patients with Type O blood are out of luck if they need a transfusion, however. They may only receive blood of their own type.

Patient blood type	Donor blood type							
	AB+	AB-	A+	A-	B+	B-	O+	O-
AB+	Safe	Not safe	Safe	Not safe	Safe	Not safe	Safe	Not safe
AB-	Not safe	Safe	Not safe	Safe	Not safe	Safe	Not safe	Safe
A+	Not safe	Not safe	Safe	Not safe	Not safe	Safe	Not safe	Not safe
A-	Not safe	Not safe	Not safe	Safe	Not safe	Not safe	Not safe	Not safe
B+	Not safe	Not safe	Not safe	Not safe	Safe	Not safe	Not safe	Not safe
B-	Not safe	Not safe	Not safe	Not safe	Not safe	Safe	Not safe	Not safe
O+	Not safe	Not safe	Not safe	Not safe	Not safe	Not safe	Safe	Not safe
O-	Not safe	Not safe	Not safe	Not safe	Not safe	Not safe	Not safe	Safe

Sources: America's Blood Centers, the American Red Cross, Wikipedia

JUDSON DRENNAN / The News & Observer