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Creating a Cord-Blood Lifeline

By Kathleen Kingsbury

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The decision to donate a newborn's umbilical-cord blood is, for many expectant mothers, a simple checkmark on a long list of prenatal choices. But for Noel Beninati, one donor's checkmark offered a lifeline. Last May, Beninati received a transplant of stem cells harvested from the blood of an infant's discarded umbilical cord at Boston's Dana Farber Institute, to help him fight a rare blood condition called Myelodysplastic syndrome. After doctors couldn't find a matching bone-marrow donor, the 58-year-old New Yorker says his last hope was cord blood, a solution that would not exist without parental donors. New parents, Beninati urges, "must understand the importance this decision can mean for the public good."

State legislators agree. More and more have introduced or passed laws to mandate that doctors and hospitals educate expectant parents about the possibility of cord-blood donation. Doctors can now treat some 70 diseases using stem cells harvested from cord blood, and states including Oklahoma, Michigan and Arkansas are considering bills to fund the establishment of additional local public cord-blood banks and collection centers. "Ideally, we want people to see this as a public service akin to blood or organ donation," says Oklahoma state senator Jay Paul Gumm, who has sponsored such legislation. "Something that they automatically think to sign up for."

Despite the claim by the National Marrow Donor Program (NMDP) that more than 10,000 new patients each year could benefit from cord-blood stem-cell transplants, most umbilical cords currently end up as medical waste. Today, a matching donor from the national registry is found only about 25% of the time, and many patients die waiting. So far, doctors have found the most promise in cord blood for conditions such as blood cancers, leukemia, and sickle-cell anemia. But last year, an on-going study at the University of Florida showed cord-blood cells could also be effective at treating type-1 diabetes. Many doctors also believe that these transplants will eventually prove useful in regenerative medicine, helping patients suffering from heart disease, spinal bifida or even traumatic brain injuries.

"The potential is so significant," says Dr. Jennifer Willert, a stem-cell transplant specialist at the Rady Children's Hospital in San Diego. "Not to have families know about the possibility of banking, that's tragic."


Cord blood has several advantages over bone marrow transplants, the procedure to which it is most often compared. The first is that cord blood is collected without risk to the mother or the newborn, whereas a bone marrow donor faces surgery and general anesthesia. Cord-blood transplants also require a less perfect match in unrelated people, opening up a broader spectrum of potential donors, and recipients' bodies are less likely to reject a transplant.

The U.S. currently only has about 70,000 units of cord blood stored at its 20 public cord-blood banks. That's largely because few parents are aware that public donation is even a possibility. Instead, if a mother-to-be has heard of cord-blood banking at all, she's considered private banking, or the storage of her infant's own cord blood, an option costing up to \$3,000 plus annual fees. Parents generally see private banking as an insurance policy should their child or a sibling fall ill later in life. Public donation does not guarantee availability to the donor's family should the need later arise. "If you don't save the cells [privately], they can never be fully yours," says Dave Zitlow, a spokesman for San Francisco-based Cord Blood Registry, the world's largest cord-blood private bank.

But both the American Academy of Pediatrics and the American Medical Association encourage, in most cases, public donation over private banking. That's because a child has only between one in 1,000 and one in 200,000 chance of needing an infusion of his own cord blood later in life. More public contributions would expand the ethnic diversity in the donor pool, which now predominantly favors Caucasian recipients. What's more, many conditions treated today with cord-blood stem cells are most successful when the donor is not related to the recipient, says Dr. Kent Christopherson, a hematologist at Chicago's Rush University Medical Center. "Odds are you'll never need your own cord blood, but actually your neighbor's," Christopherson says. "So advocating for public donation is in fact a way to help yourself."

A recent NMDP survey showed that 95% of new mothers say had they known about public cord-blood donation, they would have donated. Says Kristi Kirkpatrick, a manager from Pittsburgh who is expecting her second child in March. "To be able to save a life with something that'd normally go in the trash?" she says. "That's not a difficult decision for anyone to make."

The original version of this article misidentified Dave Zitlow as a spokesman for the company CryoCell. He actually works for Cord Blood Registry.

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