

KALAMAZOO GAZETTE

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Storage of cord blood catching on

Stem cells from umbilical cord can save lives later

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Sandra Hart, of Kalamazoo Township, gave her granddaughter Emma Grace Lewis an invaluable gift when she was born 18 months ago.

Hart arranged for the baby's umbilical-cord blood to be extracted and stored in a Florida-based blood bank for 18 years, at a total cost of about \$1,200.

"It's just a little insurance policy," said Hart, who noted that Emma Grace's parents had never heard of such a thing.

"Hopefully we'll never have to use it, but it will be nice to have in the background as a potential treatment."

Why is such blood so valuable?

It's rich in stem cells, which can only be harvested from umbilical cords, placentas, bone marrow and circulating blood. The stem cells can be more easily coaxed than bone-marrow cells to grow in a lab, and they can then be transplanted into patients whose immune systems have been compromised by blood disorders, immunodeficiencies, genetic diseases or cancers.

This kind of stem-cell extraction from umbilical cords has nothing to do with the highly controversial idea of extracting cells from human embryos.

Yet at least 90 percent of parents giving birth in Michigan now simply dispose of their babies' umbilical cords after birth, according to Mary Banfill, a supervisor at Michigan Community Blood Centers.

Only about a dozen patients per year at Kalamazoo's Bronson Methodist Hospital donate or store cord blood, said Hart, who is director of women's and children's services for the Children's Hospital at Bronson.

"I think it's probably a knowledge deficit," she said of the lack of donors. "There's so much info out there about stem cells that people equate them primarily with abortion."

The cord-blood option became available three years ago at Bronson, and now the hospital plans to work harder to promote it, Hart said. Bronson harvests the blood, and parents arrange for a blood bank to store it.

Borgess Medical Center does not offer this service but will allow blood banks to come in and harvest cord blood.

Bank it -- for free or not?

Parents across the United States are increasingly being encouraged to donate cord blood to specialized nonprofit blood banks that can either offer it for research or parcel it out for life-saving treatments that can help cancer patients and others. And for-profit firms are recognizing the commercial value of such banking services, petitioning parents to bank their children's cord blood until adulthood -- at costs of up to \$4,425 per specimen -- should the children ever need it to fight disease in the future.

In recent years, only about 1 percent of parents nationwide have been donating cord blood to nonprofit banks, Banfill said, and about 5 percent have opted to privately bank their children's cord blood for their exclusive use.

In Michigan there are only two nonprofit facilities that accept and register free donations of cord blood, according to Banfill, and neither accepts donations from the Kalamazoo area. One is Michigan Community Blood Centers, where Banfill is a stem-cell-lab supervisor, and another is the J.P. McCarthy Cord Stem Cell Bank, at the Detroit-based Karmanos Cancer Institute.

Michigan Community Blood Centers enrolls about 2,500 potential donors each year, all from the west side of the state, Banfill said. All are screened for family history of cancer and other illnesses, and only about 80 percent end up donating,

because of timing issues with the births. Ultimately, the agency has been able to store only 350 samples, she said, because it operates on donations alone and each sample costs \$1,000 to store.

The agency so far has been able to provide stem-cell transplants to 30 patients, mainly people with leukemia, Banfill said. In January, Gov. Jennifer Granholm signed into law several bills supporting the creation and promotional support of a statewide network of such stem-cell banks -- including state financial support -- "if funding is made available." She vetoed a related bill that would have provided tax incentives to donors.

The bills were initiated by Rep. Glenn Steil, R-Cascade Township (near Grand Rapids), who donated cord blood from his son in 2001 and privately stored the cord blood of his daughter in 2005.

"There are life-threatening diseases that (such treatments) can literally cure overnight," Steil said. "About \$5 million through the 21st Century Jobs Fund ... would promote the idea and expand the bank (network) itself."

Odds you'll need it?

The American Academy of Pediatrics advises on its Web site (www.aap.org) that private storage of cord blood is probably unnecessary for most people since the chances of a child needing his or her own cord-blood stem cells are, at most, one in a thousand. But the private collection firm Lifeblood USA, based in Cedar Knolls, N.J., places those odds at one in 400 and says the odds are even higher when there is a family history of certain blood disorders or cancers.

The pediatrics academy does advise donating cord blood to public banks. In such cases parents don't have access to their child's sample. Instead, the donated blood and tissue are used for research and/or typed and placed in an international registry for applicants who may need the stem cells for life-saving reasons.

Despite national registries, about 50 percent of all patients now needing a bone-marrow transplant cannot find a matching donor. Expanding the search to cord blood could improve the odds significantly, although Banfill said no one knows for sure how long it can be stored safely.

It's kept cold in liquid nitrogen, she said. "That's one of the reasons it's so expensive. We think that (storage method) arrests all metabolic processes so it may be good forever, but the technology is new enough that we don't know."

Potential uses

Scientists believe that if there are new medical advances that can repair the body with stem cells from cord blood and placentas, families who saved their children's stem cells will have access to those treatments.

Future uses may include treatment of diabetes, heart disease, muscular dystrophy, Alzheimer's, Parkinson's disease, spinal-cord injury or stroke, according to the Web site of LifebankUSA. Scientists there are preparing to launch experiments testing treatments for cancer as well as for autoimmune and neuro-degenerative disorders.

"There's no doubt in my mind that we're looking at an exciting future," said the firm's founder, Dr. Robert Hariri.

Newhouse News Service reporter Kitta MacPherson contributed to this story.

To learn more

For more information on private storage of your child's cord blood or placenta, log on to Web sites for ViaCord (www.ViaCord.com), Lifebank USA (www.LifebankUSA.com) or Cord Blood Registry (www.cordblood.com.)