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### **Umbilical cord blood banking: Smart move or not?**

Blood taken from the umbilical cord of a newborn infant can, if obtained and stored properly, be used for future lifesaving transplantation procedures for a number of diseases, including genetic disorders, those related to defects in the immune system and cancer.

On the surface, it appears that informed parents should take the opportunity to establish "biologic insurance" by saving blood that, once discarded, is gone forever. Parental choice, however, is a complicated issue. In most families, the probability of needing such a transplant is very low. Only estimates are available regarding need, and they suggest that somewhere between 1 in 1,000 and 1 in 200,000 children would ever need such treatment. In addition, costs can be exorbitant if private blood banking is used. Initial fees range from \$1,500 to \$2,000, and yearly fees run between \$90 and \$200.

Despite these facts, most parents looking to protect their precious newborns would clearly choose to pay for the reassurance that comes with umbilical cord blood banking. However, there are other factors to consider.

In a study published in *Pediatrics* in March 2009, pediatric transplant specialists note that they would not use a patient's own cord blood in treating acute lymphoblastic leukemia, the most common type of childhood leukemia, because leukemic markers have been found in the cord blood of children who later develop this disorder. That suggests there is a significant possibility of recurring disease with this transplanted material. Using cord blood from siblings or other matched donors may actually be safer than one's own blood in this circumstance.

Transplanting cord blood from unrelated donors is presently highly effective, and it has also been noted that transplanted cells may confer increased immunity by fighting any remaining abnormal cancerous cells. In most cases, privately obtained and stored newborn cord blood has limited value and may provide false assurance. However, pediatric transplant specialists do believe that cord blood transplants could prove beneficial in rare conditions such as neuroblastoma, which occurs in fewer than three

Massachusetts children each year. Private cord blood banking should also be considered for children born into families where a close relative has or has had a disease treatable with transplantation.

Cord blood donation and storage for public use, however, is an invaluable and underutilized resource. Unfortunately, private banking competes with public cord banking, thus limiting the public system's ability to reach its full potential. Transplants using matched, unrelated cord blood in the treatment of cancer have success rates reaching 90 percent. Expanding the cord blood supply protects the community at large by providing potentially lifesaving material for children and adults without potential familial donors, and for those of mixed heritage where acceptable transplant matches may be difficult to find.

To protect future recipients and ensure the safety of the stored blood supply, it must be tested for infection and potential genetic diseases. Monitoring the donor is critical, as well. If a donor is later diagnosed with certain diseases such as cancer, or develops a serious genetic disorder, the stored donor blood should not be used and, if already transplanted, the recipient must be notified. In a public system, the donor faced with this rare situation could well become the recipient of the caring and commitment of another donor. In addition, public cord banking reduces the parental stress that comes with having to make an expensive decision that involves a lifetime commitment that could amount to over \$100,000 over the next 50 years.

Newborn cord blood banking is an expensive and complex decision for parents willing to make almost any sacrifice for the new addition to their family. What appears to be a simple and straightforward choice is in reality quite difficult.

The Academy of Pediatrics, American College of Obstetrics and Gynecology, and AMA are now joined by the pediatric transplantation specialists in their recommendations regarding cord blood banking. Public blood banking is preferable to private banking, unless there is a family history suggesting a high probability of the need for a transplant. Parents are vulnerable to the marketing efforts of for-profit companies and should discuss with their physician or a professional society for information and education.

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