

Models of milk banking in South Africa

Organizations take three approaches to meeting needs for safe, high-quality donor milk

Nearly two dozen human milk banks are currently operating in seven out of nine provinces in South Africa. Although all the milk banks follow standards and guidelines set by the Human Milk Banking Association of South Africa (www.hmbasa.org.za) for processing and pasteurizing breastmilk, they operate independently and use different funding mechanisms to meet community needs. Three human milk bank models found in South Africa are outlined below.

THE HOSPITAL MODEL

In the hospital model, the milk bank is situated within a hospital's neonatal unit and run by the neonatal unit staff. Most hospital milk banks are funded by grants from external groups such as the Carl and Emily Fuchs Foundation.

All breastmilk used in these units is pasteurized to ensure safety. Most hospitals use commercial-grade equipment for pasteurization, located in or near the neonatal unit. One hospital, however (King Edward Hospital), has successfully used a low-technology pasteurization system known as flash-heating, which involves pasteurizing individual bottles of donated breastmilk.¹

Donors are recruited from within the hospital, screened, and given a rapid test for HIV. Women testing positive for HIV are not allowed to donate. Most of the hospitals have a dedicated area for mothers to express milk. Wherever possible, donated breastmilk from mothers who gave birth to premature babies is classified as such and then matched with preterm infants for optimal nutritional benefits. Where infants do not have access to their own mothers' breastmilk, donor milk is provided by prescription from doctors, usually for up to 14 days. This time can be extended, however, in special circumstances and where donor breastmilk is sufficiently available. Infants weighing less than 1500 grams and those whose mothers are HIV positive are usually prioritized, if supplies of breastmilk are insufficient.

THE PUBLIC-PRIVATE PARTNERSHIP MODEL

In the public-private partnership model, donor milk is processed and stored at a central human milk bank reserve that is not necessarily in a hospital. The recipients of pasteurized breastmilk at neonatal intensive care units in private hospitals are asked to donate money to support operations of the milk banks—that is, to cover processing and transportation charges. Public hospitals, in turn, receive donor milk for a minimal administrative and processing fee. This model focuses on medical management of premature infants, rather than nutritional management. Donor milk is for short-term use, and targets premature infants below 1,800 grams and younger than 14 days, who are especially susceptible to necrotizing enterocolitis.

This public-private partnership model is used by the South African Breastmilk Reserve (SABR; www.sabr.org.za), which operates several drop-off centers and



Brazilian National Network of Human Milk Banks

BRAZIL: AN INTERNATIONAL LEADER IN MILK BANKING

The Brazilian National Network of Human Milk Banks is the largest human milk banking system in the world, with 200 banks supplying milk to 170,000 infants. It is supported by the Ministry of Health and is an integral part of the government's strategy of promoting breastfeeding to reduce neonatal deaths. The national breastfeeding campaign, which includes the milk banking program, is credited with helping to lower Brazil's infant mortality rates, which fell by more than half between 1980 and 2009. Provision of donor milk saves the government of Brazil an estimated US\$540 million each year, largely due to reduced medical costs.

Extensive government-led social marketing campaigns and education efforts in schools and health centers have helped to raise the visibility of human milk banking. Convenient drop-

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supplies breastmilk to more than 40 hospitals in eight provinces. SABR is a nonprofit organization funded through donations from private corporations and charitable groups. It uses a humanitarian franchising model to assist hospitals that want to set up milk banks to better access supply and, in turn, meet demand. The group offers assistance with sourcing of equipment (such as pasteurizing units specifically designed for SABR), accounting, staff training, and rapid testing for HIV.

COMMUNITY-BASED MODEL

A community-based model is used by iThemba Lethu (www.ithembalethu.org.za/), a transitional home for orphans and abandoned children. This group cares for children—some of whom are HIV positive—until they can be permanently placed in foster homes, or adopted. Donor breastmilk is provided at iThemba Lethu to all babies less than six months of age. HIV-positive babies are often fed with donor milk until they are 12 to 18 months old to boost their immune system. When donor milk is in excess of demand, the surplus milk is shared with nearby hospitals.

The iThemba Lethu Breastmilk Bank, which now operates in the agency's second home, was initially funded by UNICEF South Africa. It also receives donations from private individuals and corporations.

Donors are recruited from the community through the local media. They are taught how to express and store the milk, which is collected by iThemba Lethu staff for pasteurization and freezing. The milk bank has two freezers and a commercial-grade pasteurizer that uses the Holder method. The group also receives pasteurized donor breastmilk from the United States, which is screened, collected, pasteurized, and shipped free of charge.

Reference

1. Coutsooudis I, Adhikari M, Nair N, Coutsooudis A. Feasibility and safety of setting up a donor breastmilk bank in a neonatal prem unit in a resource limited setting: an observational, longitudinal cohort study. *BMC Public Health* 2011; May 20; 11(1) 356

TO LEARN MORE

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off stations for mothers donating milk have been set up, and firefighters and policemen collect milk from donors on a weekly basis.

Because milk banking takes place on a large scale, with thousands of women donating, the Brazilian network uses commercial-grade machines that automate the Holder pasteurization method. After being heated to 62°C, the milk is stored frozen until it is distributed to infants admitted to neonatal units. Donor mothers and infants are matched according to the age of the donor's baby and the recipient baby. Milk is tested for fat, acidity, protein, and calcium, so that it can be supplied to infants based on individual nutritional needs. These measures have improved neonatal care and lowered infant mortality rates, and have been credited with helping Brazil work towards meeting its Millennium Development Goals.

To ensure that safety and quality standards are met throughout Brazil, all procedures performed at human milk banks are supervised at the municipality and state levels and by the National Health Surveillance Agency. Procedures were established by the National Reference Center for Human Milk Banks, located at the Oswaldo Cruz Foundation. By partnering with this leading biomedical research institute, Brazil has led scientific research and technological developments for ensuring optimal infant and young child feeding.

Brazil has provided technical assistance for establishing or improving donor milk banks around the world. These outreach efforts have reached 27 countries to date. Countries and milk banks interested in receiving technical assistance should contact Franz Novack at franz@fiocruz.br or João Aprígio Guerra de Almeida at joaoaprigio@globo.com.

For more information about milk banking in Brazil, see www.brasil.gov.br/sobre/science-and-technology/innovation/milk-bank/.



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