

Helping every baby receive human milk

In India, PATH and local leaders are collaborating to scale up integrated human milk banking systems—giving more babies access to lifesaving health and nutrition.

PRIORITIZING HUMAN MILK TO SAVE LIVES

Despite progress, India loses more children under five each year than any other country in the world.¹ Country-wide, more than half of these deaths occur in the neonatal period, most often because babies are born prematurely, suffer from birth asphyxia, or have neonatal infections.^{1,2} Of the 27 million babies born in India annually, approximately 13 percent (3.5 million) are born preterm and 28 percent (7.6 million) with low-birthweight, increasing their risk of dying in the neonatal period.^{3,4}

Worldwide, feasible and cost-effective interventions exist that can save a staggering 71 percent of premature babies. Of these, human milk has the greatest potential impact on child survival.² It provides the unique nutrition and immune support babies need to survive and thrive. Early exclusive breastfeeding has the potential to prevent 13 percent of under-five deaths globally each year.^{5,6} Yet not every newborn is able to benefit from his or her mother's milk, often because of maternal illness, death or abandonment, leaving them more vulnerable, especially when they are born preterm, with low-birthweight, sick or are severely malnourished.

HUMAN MILK BANKING

For vulnerable babies without access to their mother's own milk, the World Health Organization and other health leaders recommend donor human milk (DHM) as the next-best feeding option.⁷ Human milk banks (HMBs) play a lifesaving role by helping babies receive the benefits of early initiation and exclusive feeding of human milk. Banks collect, pasteurize, test, and store safe donor milk from lactating mothers and provide it to infants in need. They make sure that even if babies cannot breastfeed, they still receive human milk as soon as possible. Importantly, HMBs are also key to protecting, promoting, and supporting breastfeeding.

“Evidence shows that the nutrition and immunity in donor human milk is superior to formula; it reduces the risk of deadly



PATH/Tom Furtwangler

infections. Human milk improves survival rates and reduces hospital stays—making human milk banks a lifesaving and cost-effective intervention.”

—Dr. Ashok Deorari, WHO Collaborating Centre for Education and Research in New-born Care, All India Institute of Medical Sciences, New Delhi

HUMAN MILK BANKING: A CENTURY-OLD PRACTICE

Saving babies with the use of DHM through HMBs is a century-old practice. Countries in North America and Europe established HMBs in the early 20th century. The United Kingdom established its first HMB in the 1930s, and Brazil established a bank in the 1940s. Today, there are more than 550 milk banks in more than 37 countries.

The Brazilian Network of Human Milk Banks—the largest network in the world—has successfully demonstrated the effectiveness of a government-supported, nationalized, and integrated HMB program. The network is established on the foundation of protecting, supporting, and promoting breastfeeding, which includes provision of donor milk. It has contributed to achieving Brazil's single-digit neonatal and infant mortality rates.

Studies demonstrating the impact of DHM on vulnerable infants.⁷⁻¹¹

SEPSIS

DHM reduced risk of late-onset sepsis in vulnerable, low-birthweight infants by 19% in the first 28 days.

NECROTIZING ENTEROCOLITIS (NEC)

Human milk feedings, whether mother's own or donor milk, reduce NEC by as much as 79% when formula is avoided.

RETINOPATHY OF PREMATURITY (ROP)

Human milk feeding in the NICU is associated with lower rates of severe ROP.

FEEDING TOLERANCE

Preterm infants fed unfortified DHM had greater feeding tolerance, fewer vomits, less gastric stasis, and reduced diarrhea compared with formula-fed infants.

REDUCE LENGTH OF STAY IN NEONATAL INTENSIVE CARE UNIT (NICU)

Cost of providing DHM to preterm infants is mitigated by a reduced risk of complications and shorter length of stay in NICU.

COST SAVING

The percentage of infants who are exclusively breastfeeding at discharge is about 13% higher in NICUs with an HMB.

A study reported saving ~US\$8,167 per infant using DHM through shortened length of stay and reduced cases of NEC and sepsis.

Estimated savings to NICU or health care plan for every dollar spent on DHM: ~US\$11.

NEURODEVELOPMENTAL OUTCOMES AND LONG TERM BENEFITS

Later in childhood and adulthood, preterm infants fed human milk have shown to have lower rates of metabolic syndrome, greater white matter, brain volumes and significantly greater score for mental, motor and behavior ratings.

HUMAN MILK BANKING IN INDIA

Historically, strategies for effective, country-specific implementation, regulation, and quality of HMBs have been slow to develop in India, limiting the expansion of networks and services. Poor coordination between obstetricians and pediatricians, a lack of availability of lactation consultants, and limited awareness among service providers have also been serious challenges.

Human milk banking has a long history in India—and further to go.

The first human milk bank in Asia was established in 1989 in Lokmanya Tilak General Hospital, Mumbai, India, by Dr. Armida Fernandez. Today, the country has 21 milk banks, mostly in the western region. This number, however, is inadequate to meet the massive need for donor human milk. Leaders now have an opportunity to do more.

Fortunately, national momentum to scale up HMBs is growing. Technical, policy, and government leaders have acknowledged the role that HMBs play in reducing neonatal mortality, particularly when they are integrated into newborn care. As a result, stakeholders are actively prioritizing and supporting HMBs.

“Back in 1989, we used to have 6,000 to 8,000 deliveries a year at Sion Hospital, Mumbai. We were also losing a lot of babies to diarrhea and sepsis. When we dug deeper, we realized it was due to formula milk. There was an immediate need to change this if we wanted to save our babies. The only alternative was mother's milk. However, [not] all mothers were able to feed their babies or there were infants who were weak or orphaned and didn't have access to mother's milk. ...Hence, in a short period of time, we stopped formula milk and got mothers to express and save milk. That was really the beginning.”

—Dr. Armida Fernandez, Former Professor and Head of Neonatology, Sion Hospital, and Founder of SNEHA

HUMAN MILK BANKS AS HUBS FOR NEWBORN CARE

Ensuring that all babies are fed human milk requires a combination of activities. Properly coordinated and supported through policies and resources, the following activities work together to increase access and intake of human milk:

- **Mobilizing health care staff and communities to support and encourage breastfeeding, providing lactation counseling to mothers, and more.** National data demonstrates that the rate of early initiation of breastfeeding is 24.3 percent in India and that exclusive breastfeeding is 46 percent. Immense effort is required to support and encourage more women to breastfeed.⁹
- **Providing safe, pasteurized DHM from HMBs when mother's milk is not available.** In India, it is estimated that 30 to 50 percent of babies in neonatal intensive care units and 10 to 15 percent of term healthy babies are in need of DHM. Increasing access to human milk through HMBs has the potential to reach 5 million babies in India annually. When combined with strengthened breastfeeding practices, this impact could increase tenfold.
- **Encouraging Kangaroo Mother Care (KMC).** KMC is a simple method of care for low-birthweight

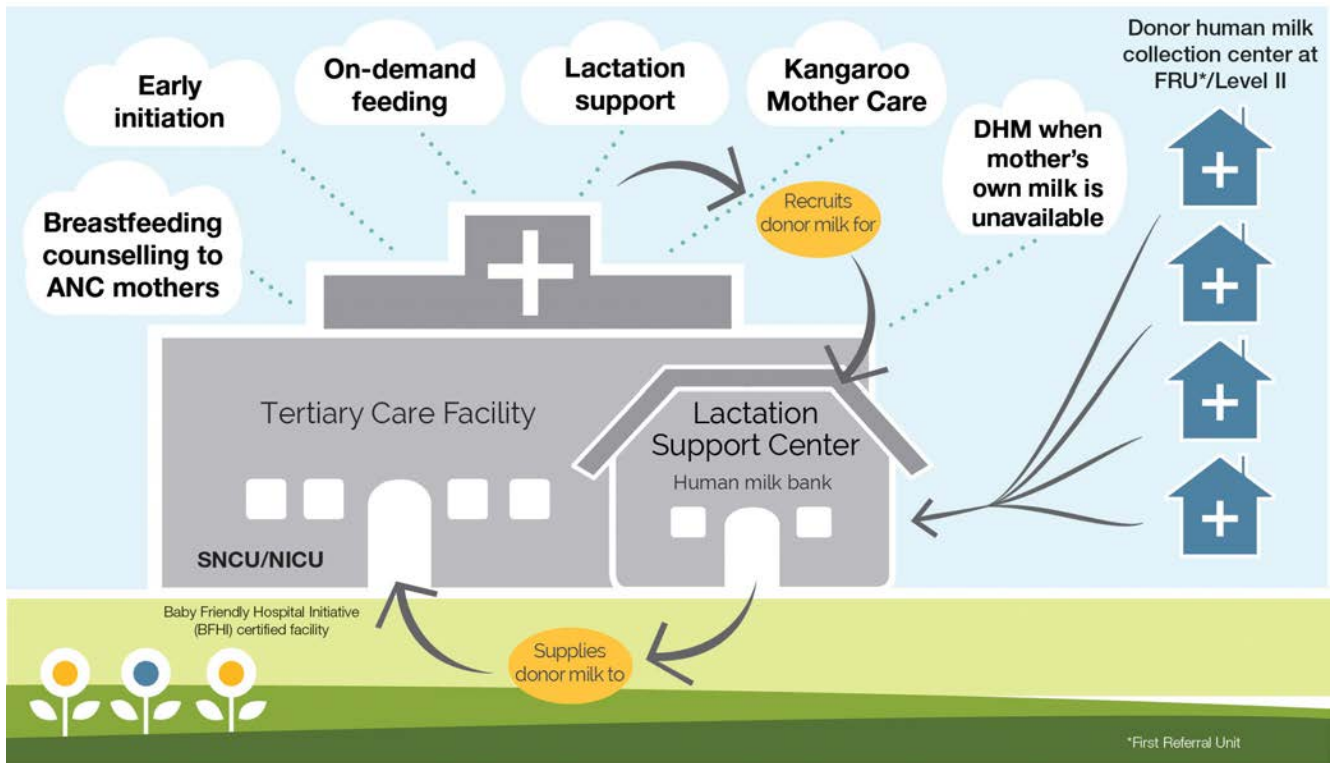


Figure 1. Mother-Baby Friendly Initiative *Plus* model adapted for India.

infants that include early and prolonged skin-to-skin contact with the mother or a family member and exclusive and frequent breastfeeding. This natural form of human care stabilizes body temperature, promotes breastfeeding, and prevents infection and other morbidities.¹⁰ It is estimated that early KMC has the potential to help 1.6 million preterm babies in India annually.¹¹

PATH: CLOSING THE GAP TO SAVE INFANT LIVES

PATH, a global leader in newborn care and nutrition, works with leaders across the world to recognize and prioritize provision of human milk as part of the newborn care.

Our unique, integrated, and comprehensive approach, the Mother-Baby Friendly Initiative *Plus* integrated system (MBFI+) positions HMBs to not only collect, process, and store human milk, but also serve as welcoming hubs for mothers—providing lactation and KMC support.

Because successful breastfeeding often hinges on support from a mother’s family and community, the model also puts HMBs to work to engage local communities. They promote the importance of breastfeeding and milk donation, build awareness of the value of human milk, and work with

employers and other leaders to create an encouraging environment for breastfeeding and milk donation.

Significantly, the MBFI+ model is designed to be adapted and modified by national and local leaders in each country to fit their unique needs and context.

In addition, PATH brings together health leaders from around the world to share the best HMB practices, establish common guidance, support research on developing low-cost technologies to aid effective HMB systems in resource-limited settings, and confirm a global commitment to give every baby access to human milk.

PATH’S WORK IN INDIA TO INCREASE ACCESS TO HUMAN MILK

In India, PATH collaborates with government, technical, and policy leaders to successfully implement and expand an India-specific MBFI+ integrated system.

PATH’s activities include:

- **Providing technical guidance.** PATH is supporting the government of India to formulate evidence-backed guidelines and standards to ensure the safety and quality of human milk banking systems.
- **Supporting capacity building and advocacy.** As a trusted convener, PATH leads efforts to build capacity among stakeholders. For example, PATH has:
 - » Facilitated learning exchanges within and outside India, including a learning exchange between India and Brazil.

- » Supported the establishment of the Network Chapter of the Human Milk Banking Association of India, whose aim is to improve coordination, share expertise, and strengthen systems.
- » Is creating local ownership of MBFI+ by supporting stakeholders to develop robust HMB processes.
- **Research and innovation.** PATH continues to facilitate research to build evidence for human milk banking systems in India. PATH is:
 - » Supporting a study to evaluate the impact of the MBFI+ model on newborn health outcomes and breastfeeding practices in a network of hospitals in Mumbai.
 - » Engaged in efforts to encourage produce of affordable, easy-to-use equipment to help HMBs operate safely and effectively in India, for use in India and in other low-resource settings around the globe.
 - » Working with government organizations and other partners to support further research and innovations in human milk banking.

“We would like to make access to human milk an integral component in India’s health care system, especially in all major newborn units providing care to sick babies. PATH is playing a very important role by linking human milk banking systems with breastfeeding promotion and newborn care. PATH has been working with the government of India to establish quality-controlled systems by supporting development of human milk banking operational guidelines... learning exchanges, sharing global best practices and capacity building. This intervention will not only assist in addressing feeding of preterm and low-birthweight babies but...encourage and increase breastfeeding rates in the country.”

—Dr. Ajay Khara, Deputy Commissioner, Child Health, Government of India

A UNIQUE OPPORTUNITY TO SAVE LIVES

Today, India’s leaders, health workers, and communities have the opportunity to expand and strengthen integrated human milk banking and breastfeeding to save more lives. By including the HMBs in newborn care efforts, India can reach more vulnerable infants with the benefits of human milk. In addition, leaders are well-positioned to promote and expand burgeoning HMB networks in South Asia and Africa.

To succeed, stakeholders must join together to align policies to support access to human milk, and enhance efforts to advocate for the critical role that DHM plays in newborn survival in India.

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