

# Strengthening Human Milk Banking Systems through an Integrated Approach: A Global Perspective

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## Introduction

The provision of donor human milk has been shown to significantly reduce morbidity and mortality of vulnerable infants both in the US and globally and is recommended as the next best option when a mother's own milk is unavailable[1-2]. Scale-up of human milk banks has been hindered, however, by the absence of an appropriate model for resource-limited settings and a lack of policy support for human milk banks and operational procedures[3].

- Governments and advocates worldwide could benefit from adopting an effective and integrated approach to establishing human milk bank systems.
- Aligning human milk banking with newborn care and breastfeeding support will permit current and future human milk banks to achieve the greatest impact possible, reaching more infants with a safe and high-quality supply of human milk[3].

## Objective

Using current guidelines from human milk banks around the world, and highlighting best practices, this project offers a set of universal requirements as a model for increasing the effectiveness of human milk banks, particularly in low-resource settings. Integration with newborn care guidelines can be improved and efforts strengthened using:

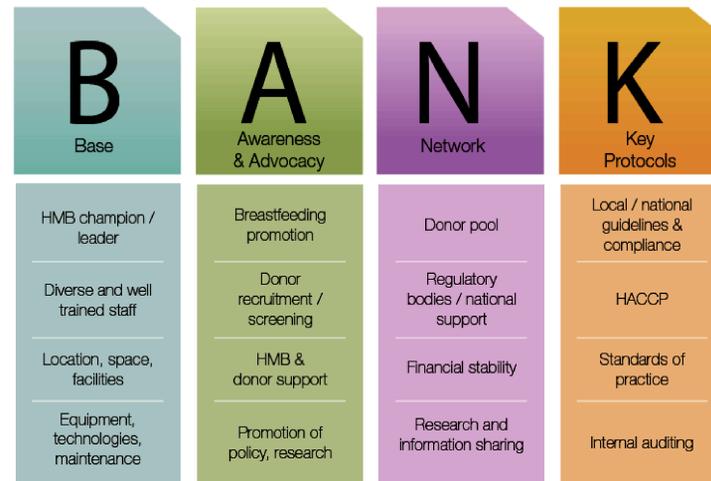
- Standardized practices
- Guidelines outlining critical components
- Policy support

## Methods

PATH's Strengthening Human Milk Banking: A Global Implementation Framework document was used as the primary references for creating this condensed model. The material was collected from literature reviews and key informant interviews with ministries of health, regulatory officials, neonatologists, food scientists, microbiologist, and human literature reviews, and human milk banking technical.

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**Figure 1:** Four key steps required to establish a human milk bank: Base, Awareness and Advocacy, Network, and Key Protocols. Notes: HACCP: hazard analysis and critical control points; HMB: human milk bank

## Recommendations

A successful and integrated HMB system relies on a foundation of four key steps. Leaders must (1) establish the fundamental base necessary for quality assurance (i.e., staff, space, tools); (2) pursue awareness and Advocacy for breastfeeding; (3) establish a network of HMBs, which facilitates auditing, tracking, information sharing (i.e., effective strategies), and partnerships; and (4) develop key protocols to provide guidance for the clinical provision of DHM (Figure 1).

### 1. A Base for quality assurance

A strong foundation of personnel, facilities, and equipment allows an HMB system to employ the highest quality, safety, and ethical practices for DHM collection, treatment, and provision.

### 2. Awareness and Advocacy

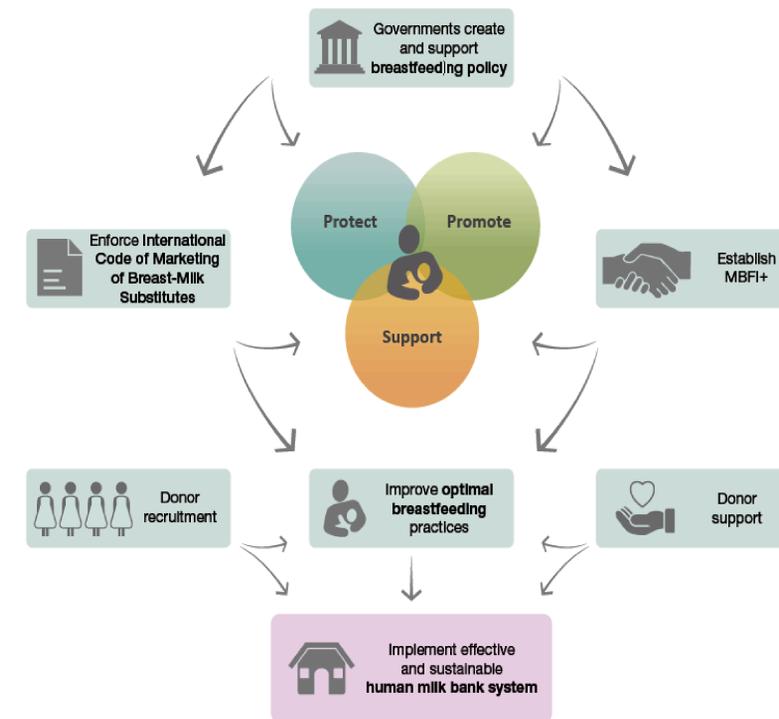
As part of the goal to protect, promote, and support breastfeeding for all mothers and their infants, HMBs must raise awareness of the importance of breastfeeding and DHM (Figure 2).

### 3. Networking

An HMB system requires multiple support networks and partnerships to function effectively.

### 4. Key Protocols

Key protocols provide guidance and standardize the clinical provision of DHM, ensuring adherence to rigorous quality control methods (Figure 3).



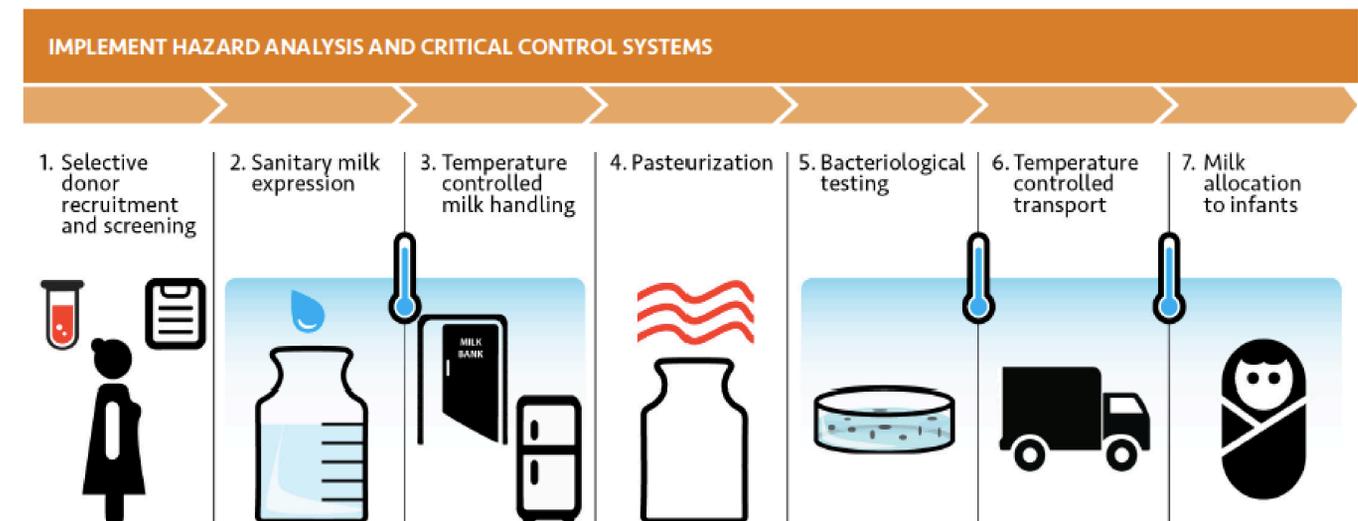
**Figure 2:** Advocacy and awareness of HMBs through breastfeeding promotion, donor recruitment, human milk bank and donor support, policy, and research can strengthen the HMB system. Effective HMB implementation requires investment by the government to protect, promote, and support breastfeeding.

## Discussion

- An integrated for the establishment of HMB systems has the potential to dramatically increase the impact of milk banks and help banking systems meet the increasing demand for DHM worldwide[3].
- Regardless of geographic location or resource availability, core requirements and quality principles should be universal for all HMBs.
- Strong, integrated HMB systems require local, national, and global support to align with a community's needs and resources.
- With support, can provide an successful, cost-effective, and sustainable approach to improving infant survival and health.[3] model

## References:

- 1)Boyd CA, Quigley MA, Brocklehurst P: Donor breast milk versus infant formula for preterm infants: systematic review and meta-analysis. *Archives of disease in childhood Fetal and neonatal edition* 2007, 92(3):F169-175.
- 2) Meinen-Derr J, Poindexter B, Wrage L, Morrow AL, Stoll B, Donovan EF: Role of human milk in extremely low birth weight infants' risk of necrotizing enterocolitis or death. *Journal of perinatology : official journal of the California Perinatal Association* 2009, 29(1):57-62
- 3)PATH: Strengthening Human Milk Banking: A Global Implementation Framework. Version 1. In. Seattle, Washington, USA: Bill & Melinda Gates Foundation Grand Challenges initiative, PATH; 2013.



**Figure 3:** Local and national guidelines for standard procedures in human milk banks best practices for newborn care and utilize Hazard Analysis and Critical Control Points, and internal auditing at each step for quality control. Notes: HACCP: hazard analysis and critical control points should align with