alive&thrive
nourish. nurture. grow.

Making space for human milk banks:
Lessons learned from Viet Nam

Briefing Note

Human milk bank (HMB) services are an essential component of a breastfeeding-friendly health system. HMB services give at-risk infants, such as those born pre-term or low birthweight, access to the multiple benefits of breastmilk when they need it the most. Alive & Thrive (A&T) and other partners have been supporting the Da Nang Department of Health and Tu Du Hospital to set up the first two HMBs in Viet Nam. The HMB at Da Nang Hospital for Women and Children (DNHWC) was established in 2016, while the HMB at Tu Du Hospital was established in 2019. A&T has developed this brief in order to share information, resources, and lessons learned from the experience of setting up the first HMBs in Viet Nam.

The set-up of an HMB depends on the local environment and needs of the community, underscoring the importance of conducting a facility readiness assessment before establishing a new HMB. The two HMBs in Viet Nam have two very different designs. While the HMB at DNHWC has most of the components in one location within the hospital, the HMB at Tu Du Hospital integrates various components and services within existing hospital services and structures, a decision that was based on a facility assessment conducted by A&T. For example, the donor recruitment unit at Tu Du is based at the main entrance of the hospital, the counselling and lactation room is closer to the human milk processing facility, and the processing facility is closer to donor human milk recipients (near the neonatal intensive care unit, NICU). Below are lessons that can be shared from the experience in Viet Nam:

- The best location in a hospital for an HMB is near the NICU or in the department of pediatrics or neonatology.
- The space designated for the HMB must be clean and dry, far from infectious places such as kitchens, public toilets, and infectious disease departments. This increases security and prevents heat, flies, and contamination penetrating the milk bank area.
- It is beneficial to have designated areas for milk expression, where milk collection and donation take place.
- The arrangement of rooms, doors, and windows must ensure that raw milk, pasteurized donor human milk, clean equipment, milk disposal and dirty equipment are in one-way circulation to ensure infection control. This arrangement should be discussed and agreed with the infection control department.
- There should be areas for milk storage, milk pooling, and milk pasteurizing that meet local criteria for infection control.
- The design of the space should prioritize functionality and minimize the costs of necessary upgrades and repairs.

What should a human milk bank look like?

To invest in an HMB, a hospital must explore how to best upgrade a space that can be made suitable for the freezer storage, sampling of donor human milk, and handling of raw breast milk, as well as for processing the milk using human milk pasteurization equipment. The space allocated must meet the national regulatory standards for a clean space for food handling, and for the provision of electricity and water supplies, in accordance with recommendations for clinical services (e.g., being linked to a back-up generator for the freezers and routine testing of water supplies to ensure an uncontaminated supply). The maintenance of records (computerized and paper) requires a fully equipped office space, as well as a means of storing records according to the guidelines. The pasteurization room must meet the standard of a sterile room and comply with the infection control department at the hospital.

Work surfaces should be stainless steel, and all joints sealed with materials that can be effectively cleaned and disinfected. The surfaces should comply with food hygiene regulations.

Splash-back areas should be made of stainless steel for any areas behind work surfaces where breast milk may be open to the atmosphere (i.e., when it is pooled, mixed, or aliquoted). The use of a laminar flow cabinet, which has glass or acrylic sides, is an exception. This facilitates effective decontamination and disinfection.

Flooring, walls, and ceilings should be made of a material that can be easily maintained and cleaned and are compliant with food hygiene regulations.

Storage area. All stored items (e.g. consumables, small pieces of equipment, etc.) should be stored separately from the milk preparation, testing, and processing room. This is to avoid a build up of dust and to prevent boxes, which may have been stored in warehouses, from being taken into the clean room. The storage area should be set up with easy-to-clean shelves that are accessible without requiring steps or ladders, where possible. If steps are needed, store infrequently used items on high shelves. All stored items should be placed in labeled areas on the shelves. There should be no storage of boxes or containers on the floor. Stock use-by dates should be checked regularly and rotated when storing to avoid the use of out-of-date products. The use-by dates of all products (e.g., sterile jugs) should be checked before use.

Milk preparation area. The area where containers of breast milk are placed on surfaces to sort and label, as wells as any preparation areas, should contain a stainless-steel work surface, a hand washing sink with hand-free taps, and antibacterial hand washing and drying facilities in accordance with food hygiene regulations.

Power and water supplies. There should be water provision for the pasteurizer to meet national and institutional standards. Adequate electrical outlets with appropriate power should be provided for the equipment within the room and be compliant with local and national standards. Electrical outlets for the refrigerators and freezers should be backed by an emergency generator in case of power failure. Lights within the unit should be enclosed and allow adequate illumination.

Ventilation and room temperature. Clean air should be supplied through the ventilation system. The temperature of the milk bank rooms should be ambient, without large variations. Air conditioning will help to avoid breast milk becoming too warm during testing and prior to processing and will facilitate the efficient operation of the refrigerators and freezers, as well as provide a comfortable working area for milk bank staff. The use of electric fans – other than extractor fans – should be avoided in the processing room.

Clean-up area. This should be a designated area within the preparation and processing room. The processes of preparation and clean up must be separated. Small equipment can be sterilized in an autoclave (external to the milk bank) or a dishwasher. When a dishwasher with an 82°C final rinse cycle is used, a single sink for pre-rinsing is sufficient. If bottles are reused, a two- or three-compartment sink with a rinse nozzle is suggested, along with bottle-washing brushes. A two- or three-compartment sink will allow the washing and rinsing of equipment to be separated.

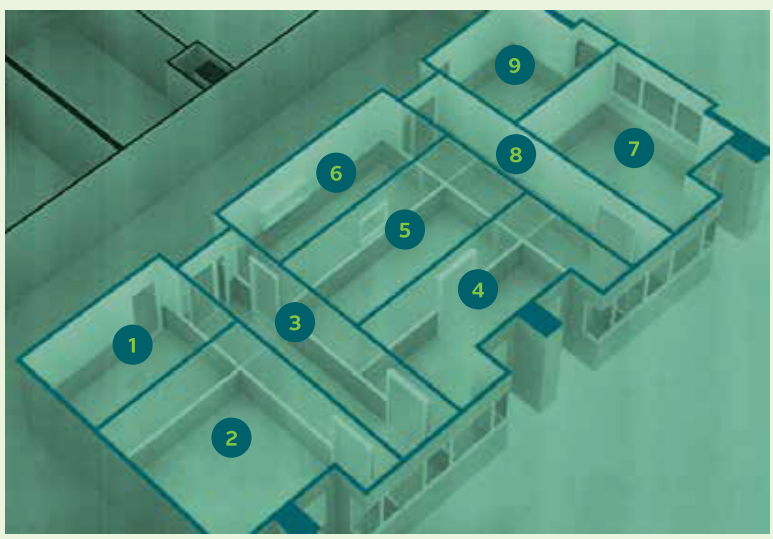
All equipment and utensils used within the processing room should be made of stainless steel or other non-absorbent material. All equipment and utensils should be easy to clean and decontaminate and able to withstand temperatures of a commercial dishwasher. Strong and persistent biofilms can form on surfaces such as steel, plastic, silicone and latex. Proper cleaning and decontamination of feed equipment are essential to avoid Enterobacter sakazakii biofilms, which can contaminate subsequent feeds.

Cleaning. The unit must be cleaned daily and deep cleaned on a weekly basis. All waste bins must be covered, foot operated, and emptied daily.

Throughout the world, there are HMBs of many different sizes and shapes, depending on the local context and the HMB scale. For a busy urban hospital, Tu Du's design included 11 rooms.

1. Room for Human Milk Bank Office (12.5m^2)
2. Room for clean-equipment/consumable storage (21.2m^2)
3. Corridor 1 (for clean equipment and raw milk transportation) (15.8m^2)
4. Room for raw milk storage (13.7m^2)
5. Room for milk pooling and pasteurizing (19m^2)
6. Room for milk splitting (13.5m^2)
7. Room to process the dirty equipment (16.2m^2)
8. Corridor 2 (for dirty equipment transportation) (12.5m^2)
9. Room for HMB staff (11.4m^2)
10. Room to provide counseling and receive milk from community (13 m^2)
11. Room for milk expression and provide counseling (29 m^2)

In Tu Du hospital, rooms 1-9 are in one block, as shown in the picture below, but the rooms 10 and 11 are in other blocks of the hospital, based on their situation.



References

1. Dr. Jayashree Mondkar, Dr. Ruchi Nanavati, Dr. Armida Fernadez. Guidelines for Human Milk Banking, Second Edition. Department of Neonatology, Sion, Mumbai. 2014.
2. Gillian Weaver and Kimberly Amundson. Human Milk Bank Project Landscape in Da Nang, Viet Nam. 2016.
3. Bộ Y tế. Hướng dẫn QG về các dịch vụ CSSKSS. 2009.
4. Bệnh viện Từ Dũ. Đề án Ngân hàng sữa mẹ. 2018

LEARN MORE ABOUT THE VIET NAM PROGRAM

Visit the website for tools and resources:
www.aliveandthrive.org.

STAY CONNECTED WITH ALIVE & THRIVE

E-MAIL: **aliveandthrive@fhi360.org**
TWITTER: **@aliveandthrive**
INSTAGRAM: **@aliveandthrive**
FACEBOOK: **www.facebook.com/fhi360.aliveandthrive**
YOUTUBE: **www.youtube.com/aliveandthrive**