

Digitizing Lactation Management System to Improve Newborns' Access to Human Milk



PATH supports governments and health leaders globally by promoting an integrated newborn care platform that encourages breastfeeding and provides safe donor human milk to those who can't access mothers' own milk. Photo: PATH/Tom Furtwangler.

Mother's milk is the best source of nutrition for newborns and promotes growth and development. However, a substantial number of infants, especially premature infants (babies born before ~37 weeks gestation period), are unable to receive adequate amount of their mother's milk for reasons that include delay in milk production, baby's illness, mother's death, or abandonment. Donated human milk provides optimal nutrition and immunological protection to infants who do not have access to mother's milk.

A human milk bank (HMB) is a service established to motivate and counsel mothers to donate excess human milk; collect the milk; and process, screen, store, and distribute the milk to meet infants' needs.

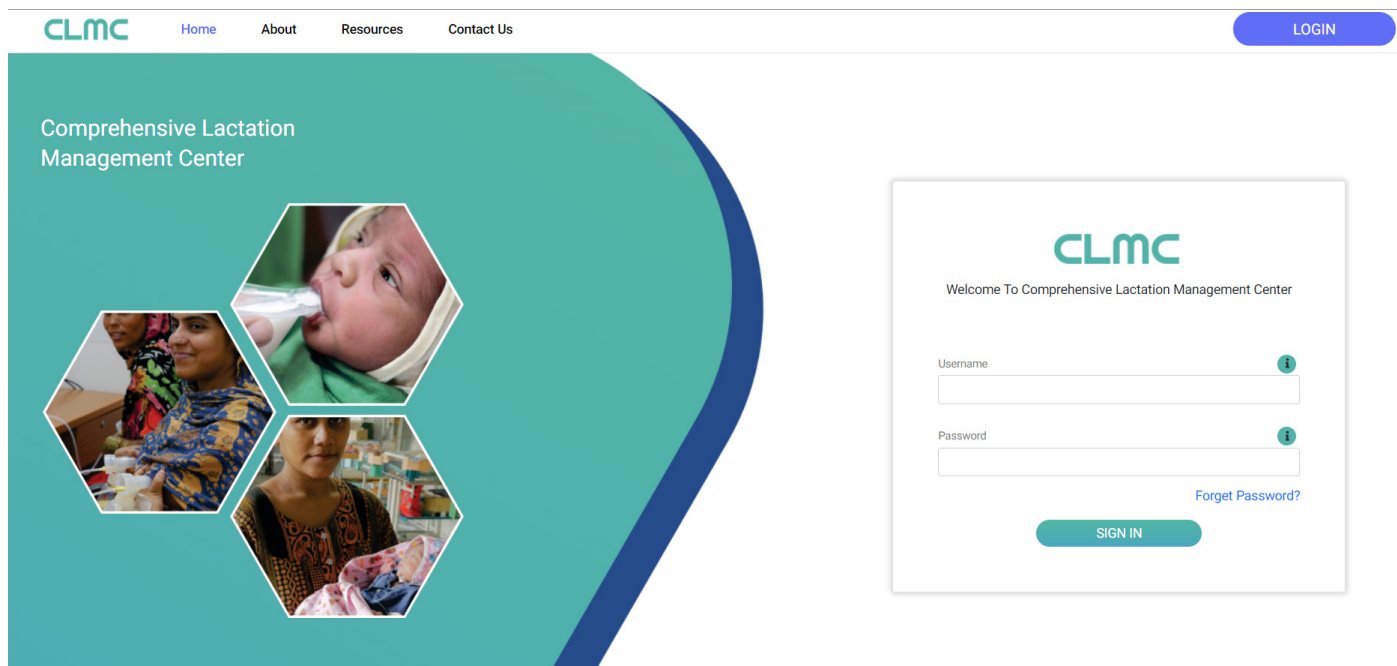
HMBs are becoming an important component of newborn care in health facilities across India. Globally, PATH supports the establishment of human milk banks as part of an integrated newborn care approach, which promotes, protects, and strengthens breastfeeding. Most of the HMBs in India are a part of this comprehensive care approach and are called Comprehensive Lactation Management Centre (CLMC). Apart from donor human milk, the CLMCs also support cost-effective interventions—like breastfeeding counselling and support, kangaroo care with skin to skin contact, family participatory care and

infection detection and treatment. So far, 108 CLMCs and Lactation Management Units (LMUs) have been established in India. With the introduction of the National Guidelines for Lactation Management by the Government of India under the National Health Mission, the momentum towards setting up of CLMCs is growing. PATH's innovative Mother Baby Friendly Initiative Plus (MBFI+) model places CLMCs at the center of promoting access to human milk for all babies admitted in health care facilities as part of comprehensive newborn care package.

Safety and quality are at the core of the human milk banking process. Hence, it is imperative to track the process from collection of milk till its disbursement to the infant in need. Quality assurance can be ensured through appropriate record keeping and tracking systems for safe handling and sharing of donated human milk.

Digitizing the CLMC ecosystem

PATH, in collaboration with Government Medical College and Hospital, Chandigarh (GMCH) and Beehyv, a software development organization, has developed the eCLMC web application system to optimize data management at CLMCs across India. The first version of the application was launched in August 2021 at GMCH. Using a human-



Screenshot of eCLMC application portal

centered design approach, the application has been developed following a consultative process with the end users. The eCLMC application is an effective digital system to record, process, and analyze the end-to-end process and includes data on donating/expressing milk, storage, pooling, pasteurization, and disbursal of milk to eligible recipients.

The web application is a standardized tool with defined formats to collect data. The current version is continuously improved based on user feedback. The latest user-led updates include the availability of downloadable, customized, and standardized reports for effective reporting and decision-making.

Incorporating user feedback during a pandemic

The process of developing and implementing the application had its set of challenges. At the outset, it was important to understand the workflows around the human milk donation process at the CLMCs. This emerged to be a challenge due to the COVID-19 pandemic. Onsite visits and in-person interactions were not possible and developing a complex web application virtually was a daunting task. However, the team conducted multiple virtual meetings to understand each workflow in detail and developed the solutions capturing the feedback at each step of the implementation. Once the software was developed, PATH conducted a training for the health facility staff regarding the use of the application. eCLMC is available as a mobile application to make data entry and usage convenient as well as encourage adoption among users.

Success, sustainability, and way forward

Over 700 donor mothers have been registered on the platform and data related to 65,000 milliliters of donated milk has been recorded on the application.

The pilot has proven to be successful in allowing effective data management at GMCH; reducing the possibility of human error; and bringing transparency, accountability, and efficiency to the entire ecosystem.

PATH continues to support the development of user-centric digital health tools for CLMCs across India. After successfully sensitizing several state governments, the team is supporting the scale up of the eCLMC application in Rajasthan and Maharashtra. The support provided to the state governments includes planning the rollout of the application, data analysis, and building the capacity of existing CLMC human resources and state nodal officers. The team is also developing an e-learning module to conduct trainings on using the application.

“The eCLMC system, developed as a collaboration between PATH, India and GMCH, Chandigarh, has enabled prompt and efficient real-time capturing of data generated during various activities in a comprehensive lactation management centre.” – Dr. Deepak Chawla, DM of Neonatology, GMCH, Chandigarh

By the end of 2022, there will be close to 100 active CLMCs across seven states in India. All these CLMCs would require efficient and effective data management and analysis systems, hence, enhancing the scope for the application in terms of adoption and use.

PATH will integrate learnings from the GMCH pilot to enable wider acceptance and adoption of the application across Indian states with the vision to ensure equitable access to human milk for all babies.