

Equitable access to quality care for the small and sick newborn

A model for optimizing feeding and skilled lactation support in low-resource settings

Bimonthly NeoNuNet Meeting 13 March 2024

Kiersten Israel-Ballard, Team lead, Integrated Maternal and Child Health and Development.
Emily Njuguna, Africa Advisor, Integrated Maternal and Child Health and Development.



One PATH, one mission, many experts

PATH'S MISSION

Advance health
equity through
innovation and
partnerships.

With the help of local and global partners, PATH generates evidence, advances innovation, and strengthens local capacity to improve health in countries and communities experiencing disproportionate burdens of disease and barriers to well-being.

COUNTRIES WHERE PATH WORKS

-  Africa Region
-  Asia, Middle East, Europe (AMEE) Region
-  Americas Region

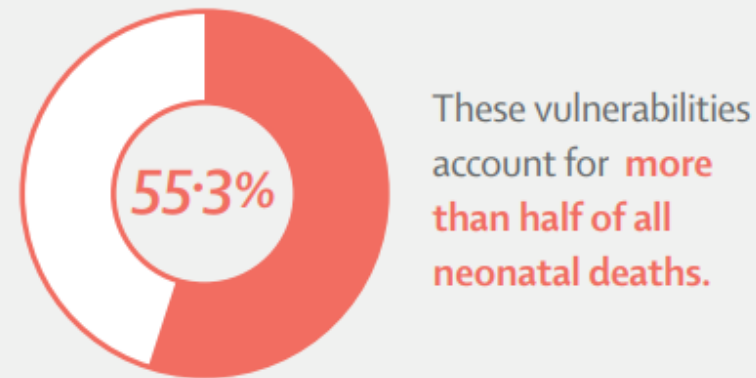
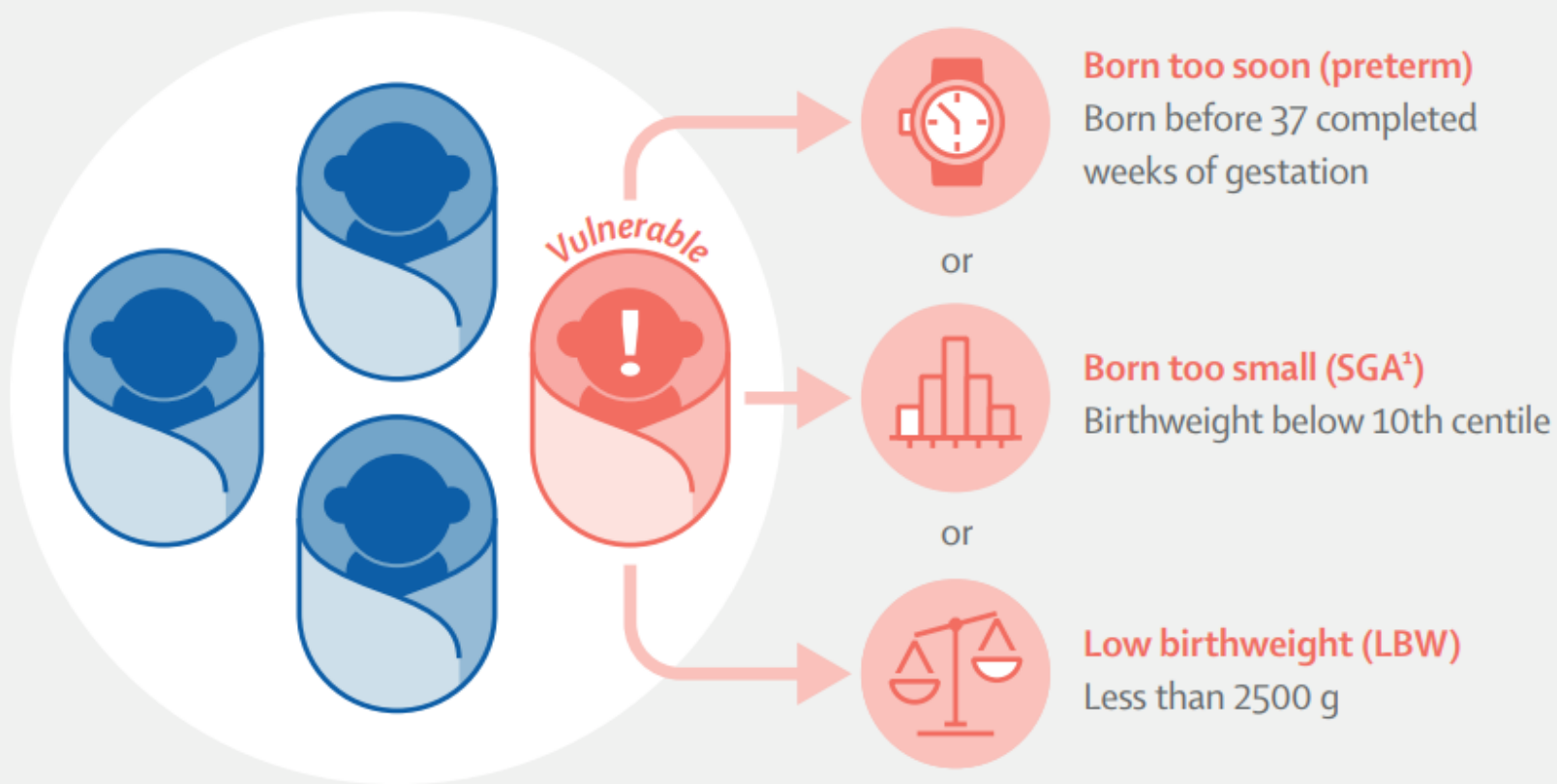
70+
countries
where we
work

384
projects, on
average,
each year

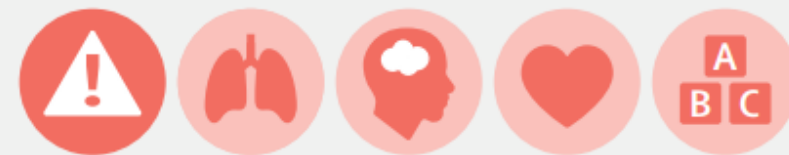
1,500+
professionals
moving humanity
forward

Targeting the drivers of neonatal mortality: small and sick newborns

In 2020, a quarter (an estimated 35.3 million) of babies born alive were born with one or more of three vulnerabilities:



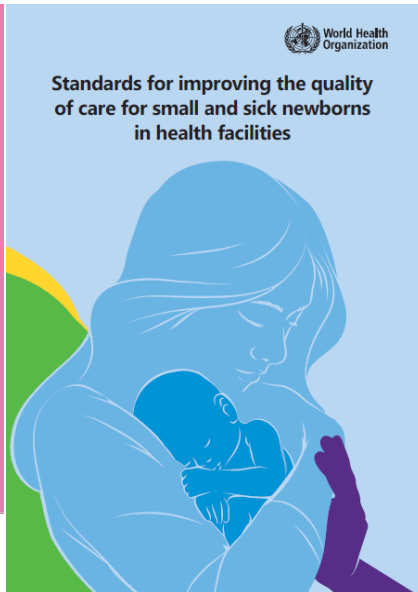
Babies born with these vulnerabilities are at **increased risk for a multitude of adverse health conditions throughout their lifespan.**



¹ Small for gestational age: birthweight below 10th centile of the recommended international, sex-specific birthweight for gestational age standard.

Optimizing lactation and provision of human milk – an evidence based global recommendation to save lives of small and vulnerable newborns

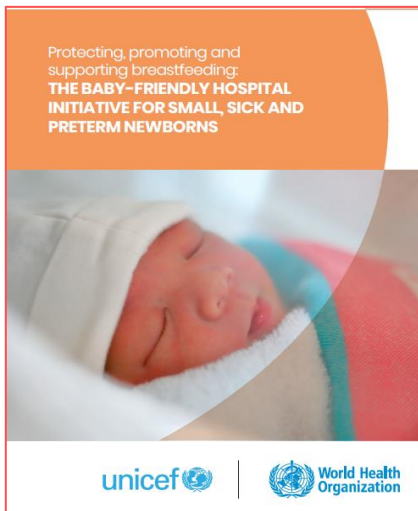
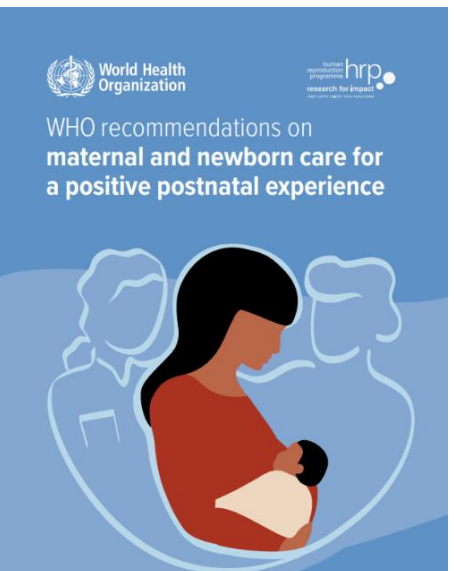
Guidance tells **WHAT** to do, but not **HOW** to do it...



- Support for **lactation** and provision of **human milk** plays a critical role in the survival of small and vulnerable newborns.
- Challenges exist in **ensuring access** to human milk for this vulnerable population.
- Innovative strategies are needed to establish **systems** for protecting, promoting, and supporting breastfeeding

Global recommendations lack operational guidance for HOW to implement optimal nutrition and lactation support

Small and vulnerable newborns and their mothers face unique challenges, requiring specialized care



What are the **newborn feeding challenges** of accessing mother's own milk, when available, for SSNs?



Before 34 weeks, preterm newborns experience difficulty in sucking, swallowing, & respiration⁶



Separation of mother & newborn in hospital settings leads to reliance on donor human milk or formula



Staffing shortages & stressful NICU environment prevent adequate lactation support for mothers



Reliance on cup/spoon/tube feedings of expressed mother's milk



Criteria at hospital discharges newborns before they are feeding at the breast

6. Cartwright et al. (2017): Integrative review of interventions to promote breastfeeding in the late preterm infant

What are the **maternal challenges** to breastfeeding & lactation support for mothers of SSNs?



**Separation of
mother &
newborn due
to maternal
disease**



**Separation
mother &
newborn due
to hospital
visitation
policy**



**Maternal
lactation
delayed**



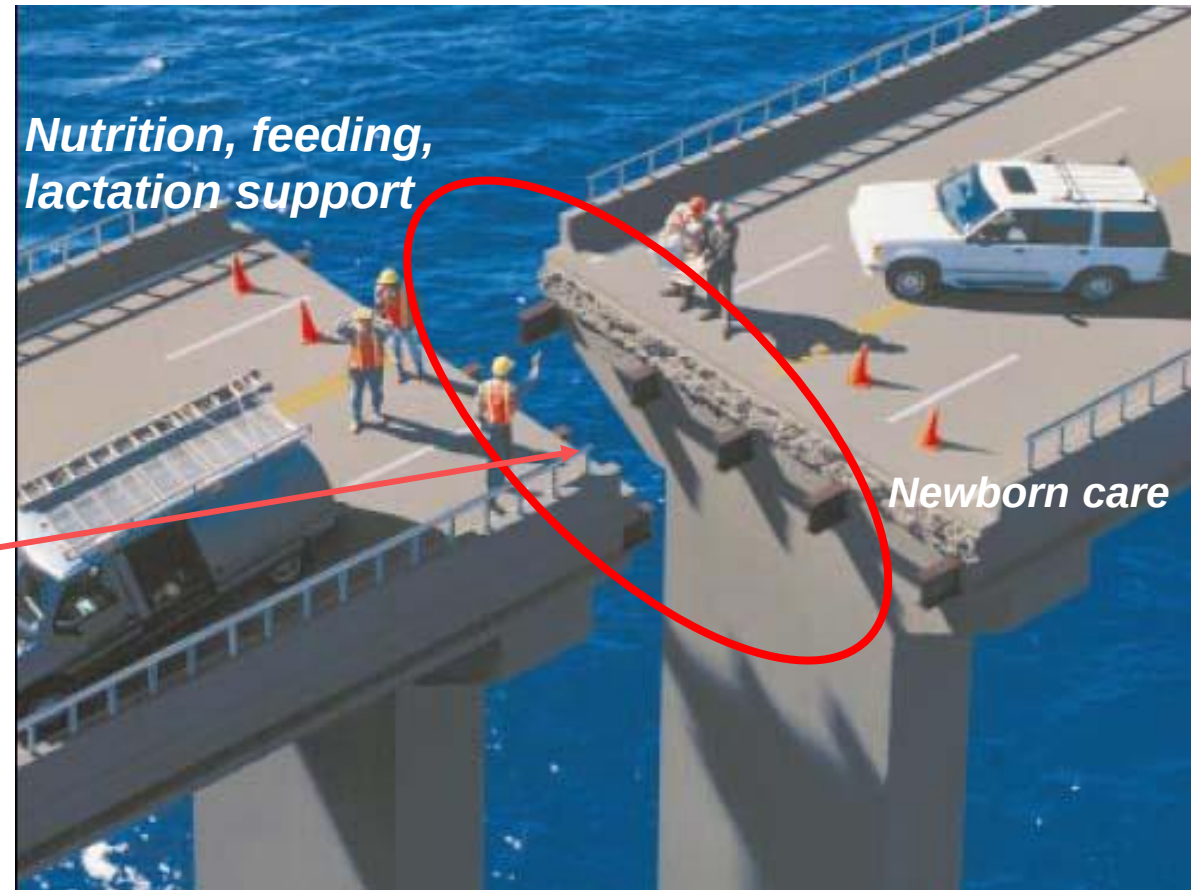
**Insufficient
milk volume
to meet
newborn
nutritional
needs**



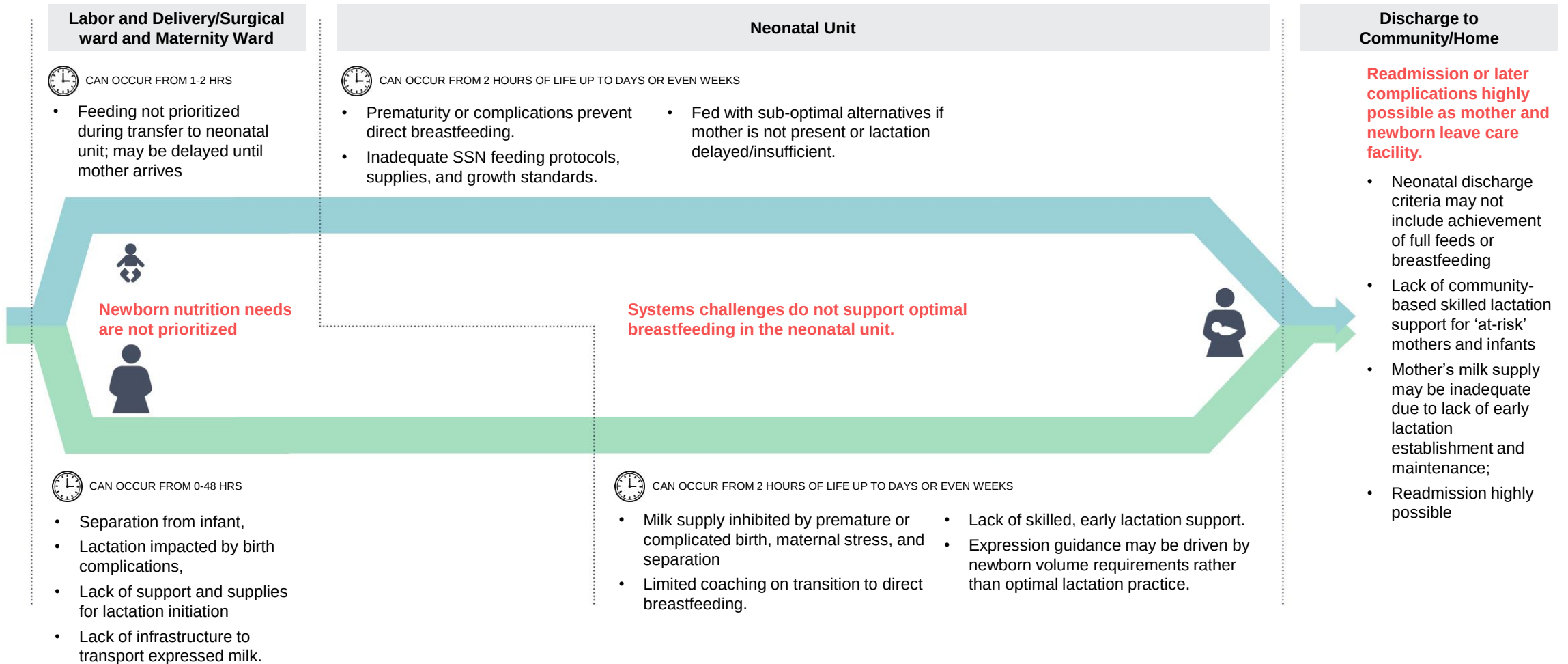
**Maternal
reliance on milk
expressing for
establishing
milk supply
instead of direct
feeding**

Lack of alignment or integration between newborn and nutrition: a critical gap remains in meeting the special needs of small and sick newborns and their mothers

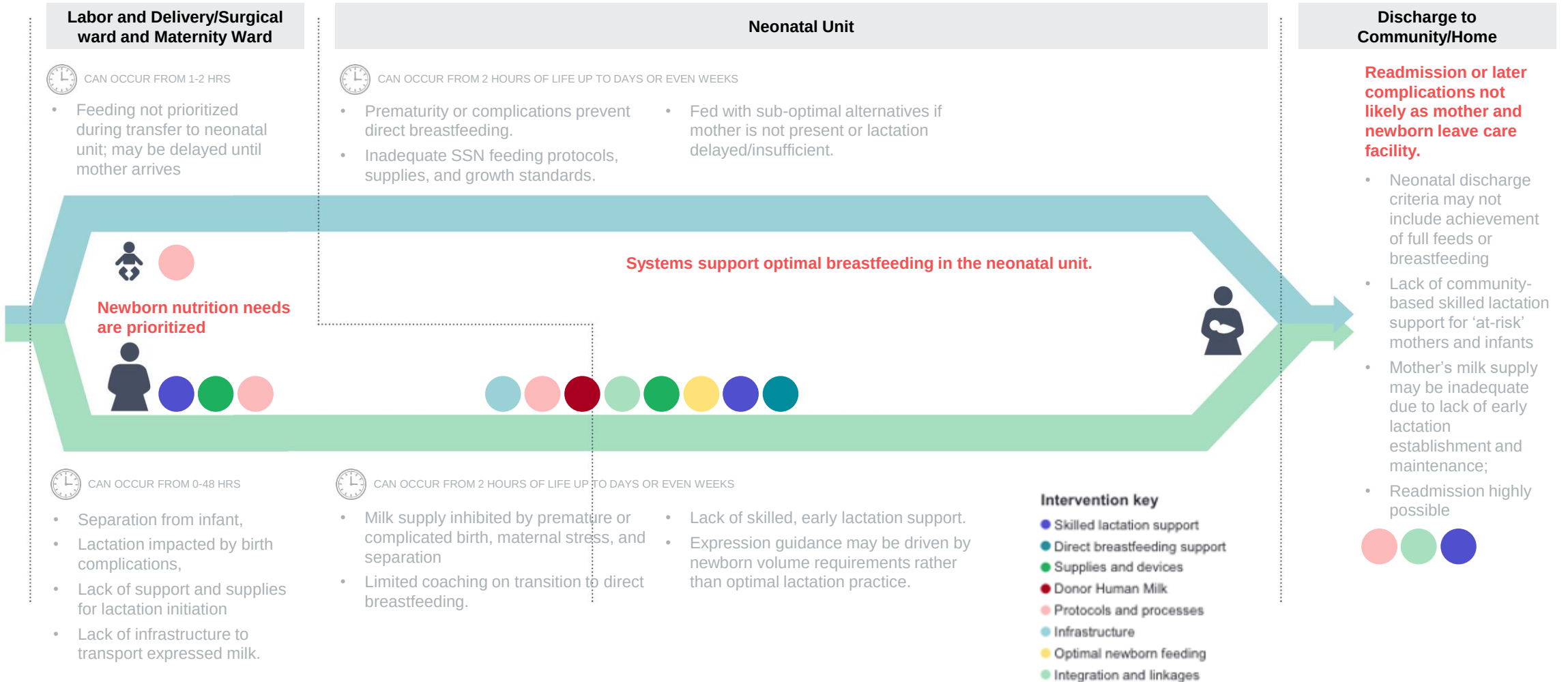
- PATH is working to address this gap with strategic integration of newborn and nutrition to ensure access to exclusive human milk diets



Gaps exist in current care systems for SVN and their mothers, preventing optimal access and intake of human milk



Purposeful intervention along pathways of care would create an enabling environment for optimizing newborn nutrition



WHO recommends human milk as a critical component for optimal care for small and sick newborns (2022)



A. PREVENTIVE AND PROMOTIVE CARE

A.1a Any KMC

Kangaroo mother care (KMC) is recommended as routine care for all preterm or low-birth-weight infants. KMC can be initiated in the health-care facility or at home and should be given for 8–24 hours per day (as many hours as possible). (*Strong recommendation, high-certainty evidence*)

A.1b Immediate KMC

Kangaroo mother care (KMC) for preterm or low-birth-weight infants should be started as soon as possible after birth. (*Strong recommendation, high-certainty evidence*)

A.2 Mother's own milk

Mother's own milk is recommended for feeding of preterm or low-birth-weight (LBW) infants, including very preterm (< 32 weeks' gestation) or very LBW (< 1.5 kg) infants. (*Strong recommendation, low-certainty evidence*)

A.3 Donor human milk

When mother's own milk is not available, donor human milk may be considered for feeding of preterm or low-birth-weight (LBW) infants, including very preterm (< 32 weeks' gestation) or very LBW (< 1.5 kg) infants. (*Conditional recommendation, moderate-certainty evidence*)

A.4 Multicomponent fortification of human milk

Multicomponent fortification of human milk is not routinely recommended for all preterm or low-birth-weight (LBW) infants but may be considered for very preterm (< 32 weeks' gestation) or very LBW (< 1.5 kg) infants who are fed mother's own milk or donor human milk. (*Conditional recommendation, low-to-moderate-certainty evidence*)

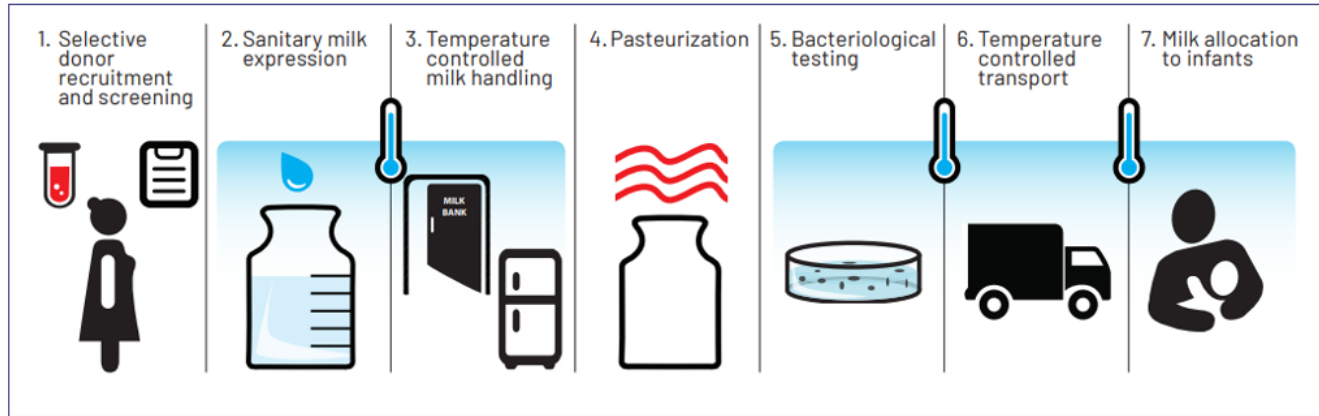
A.5 Preterm formula

When mother's own milk and donor human milk are not available, nutrient-enriched preterm formula may be considered for very preterm (< 32 weeks' gestation) or very low-birth-weight (< 1.5 kg) infants. (*Conditional recommendation, low-certainty evidence*)

UP TO 40%

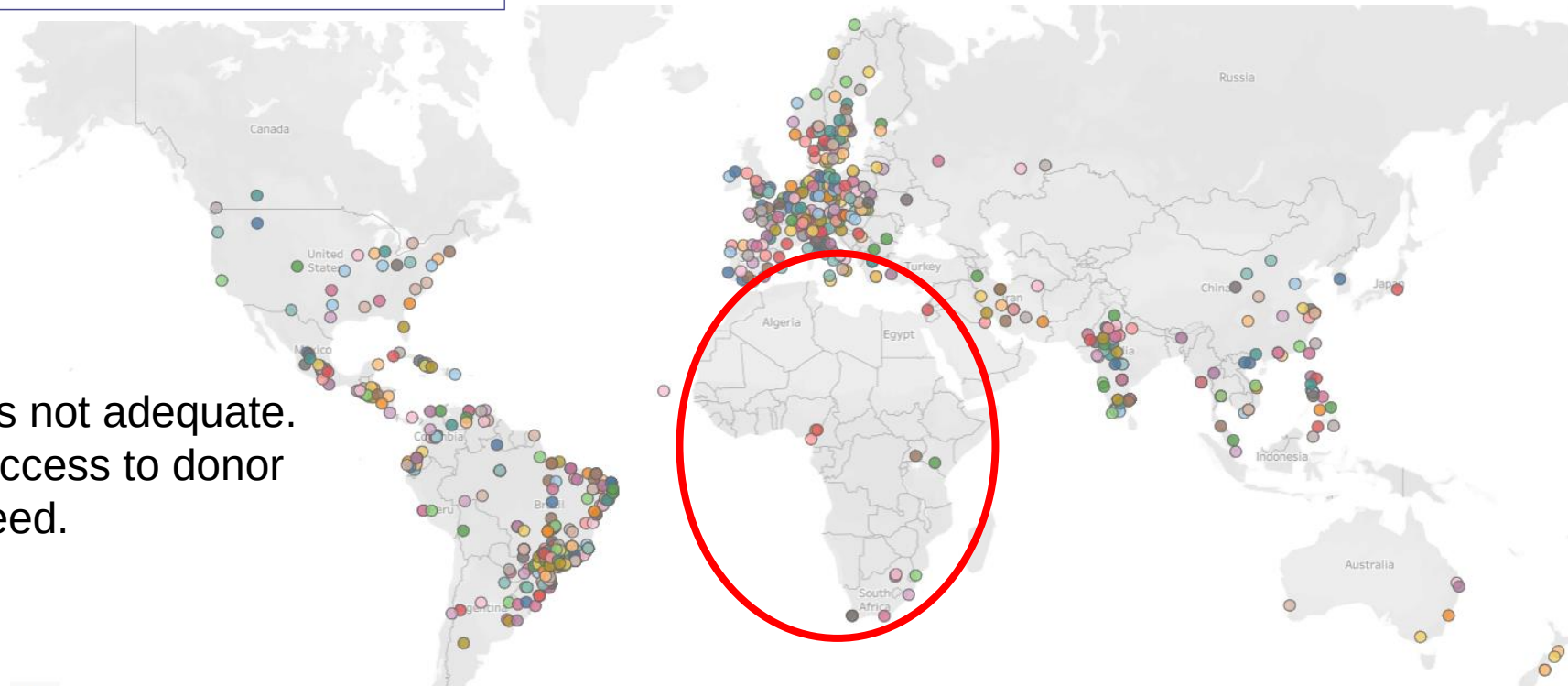
OF VULNERABLE INFANTS IN NEONATE WARDS ARE NOT RECEIVING MOTHER'S OWN MILK

Global state of human milk banking is inequitable, yet LMIC-appropriate implementation is feasible



Human milk bank: A service established to recruit volunteer breast milk donors, collect donated milk, and then process, screen, store, and distribute the milk to meet infants' specific needs for optimal health.

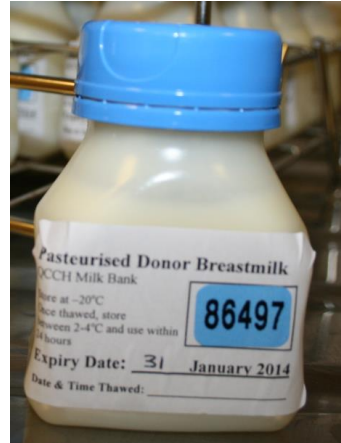
~700 human milk banks worldwide is not adequate. Lack of scale-up has led to limited access to donor human milk in regions of greatest need.



The role of donor human milk: Establishing systems to support appropriate use



...as a **bridge** to exclusive direct feeding at the breast

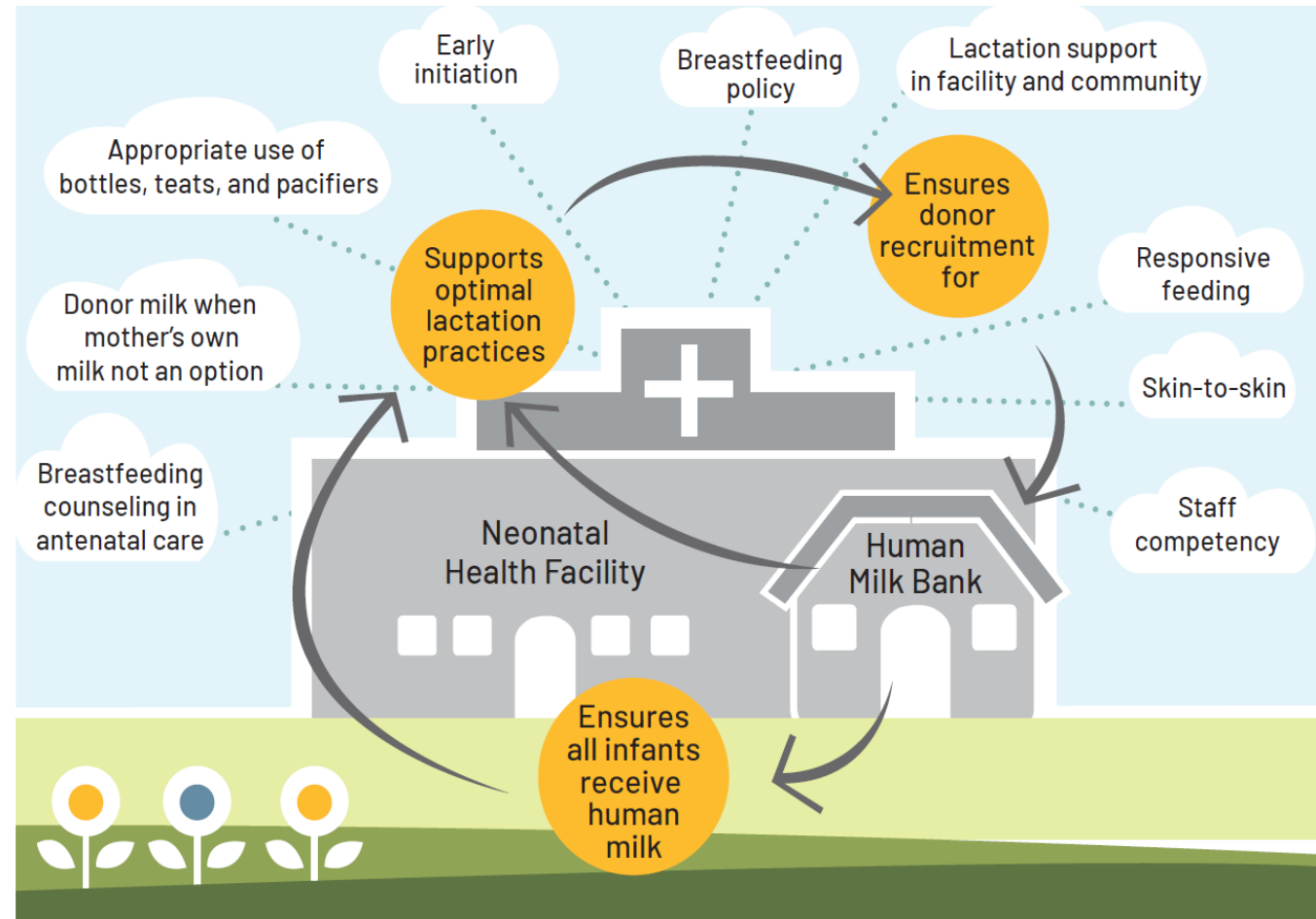


...as a **replacement to formula**, not mother's own milk



PATH's Mother-Baby Friendly Initiative Plus (MBFI+) Model: A comprehensive and integrated approach

The Mother Baby Friendly Initiative plus (MBFI+), centers exclusive human milk achieved through specialized lactation, quality newborn feeds and a human milk bank, where appropriate.



Building on a decade of intensive learning – a phased approach to establish a sustainable country-led model

- PATH has led deep exploration and active learning; listening to mothers, health workers, stakeholders to map the unique needs facing mothers and the small and sick newborn (SSN)
- Country-led partnership is required to drive sustainability and integration into health systems for long-term impact. A phased approach to implementation has been successful.

PHASE I: ESTABLISHING OWNERSHIP

- DEVELOP LEARNING EXCHANGES
- CONDUCT FORMATIVE ASSESSMENT
- INSTILL LOCAL OWNERSHIP FOR MOTHER-BABY FRIENDLY INITIATIVE PLUS (MBFI+)
- DEVELOP COUNTRY-SPECIFIC STRATEGY AND GUIDANCE

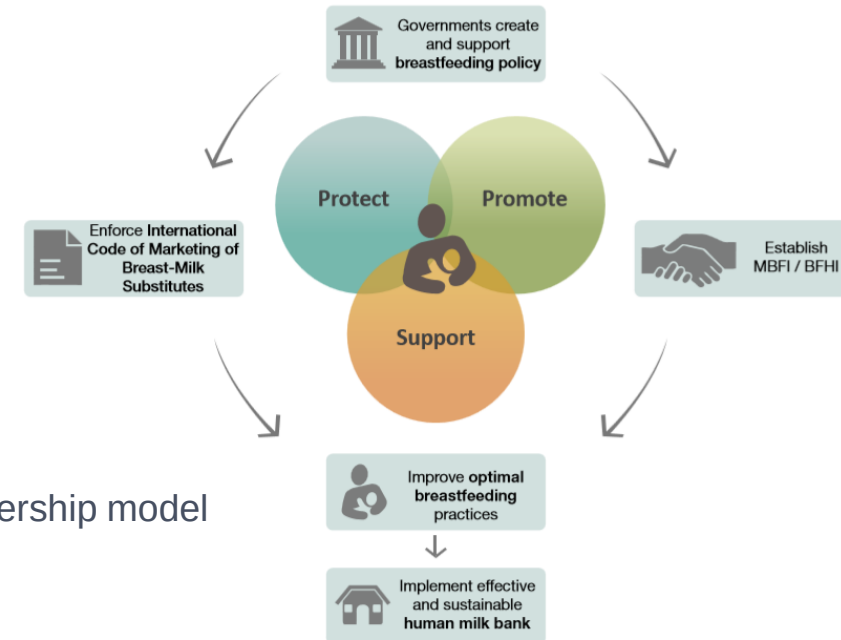
PHASE II: OPERATIONALIZING

- CONDUCT BREASTFEEDING PROMOTION
- ESTABLISH HUMAN MILK BANK QUALITY CONTROL SYSTEMS
- IMPLEMENT MBFI+ HUMAN MILK BANK PILOT PROGRAM AT LOCAL FACILITIES

PHASE III: RESEARCH AND EVALUATION

- CONDUCT RIGOROUS EVALUATION
- DISSEMINATE FINDINGS TO ENSURE SUSTAINABLE EXPANSION
- REVISE SYSTEM BASED ON PILOT RESULTS
- FINALIZE SCALE-UP PLAN

Country-led partnership model





Brazil's 'House of Lactation'



Processing

HM



Promoting

BF



Integrated systems embed donor human milk within breastfeeding promotion - India



Sevanti

Bhopal

The onset of my labour pain was sudden at 30 weeks. My daughter was born ill and weighed only 1500 grams. She was shifted to the sick newborn care unit of the hospital immediately. I was also not able to produce sufficient milk for my child. I felt dejected and was eager to help my child in any way I could. The support of the doctors and nurses at the hospital proved to be a blessing.

My daughter was provided pasteurized donor milk from the milk bank, which improved her health greatly. In addition, my nurse told me about kangaroo mother care and its benefits. She also taught me the ways to practice it. Now I give skin-to-skin contact to my daughter two to three times every day. She has started gaining weight and has been discharged from the care unit.

“I am thankful for all the support given to me by the hospital.”

Ramanjeet Kaur

Punjab

My daughter was born at just 1700 grams and was admitted to the neonatal intensive care unit soon after birth. I could not produce enough milk for my baby after delivery. I was upset that I will not be able to feed my child but then the hospital staff came to my aid. They helped me express my breast milk and counseled me on my diet. Now, my baby is growing well and I am not only feeding my baby but also donating breast milk to a human milk bank for helping other mothers and sick babies.

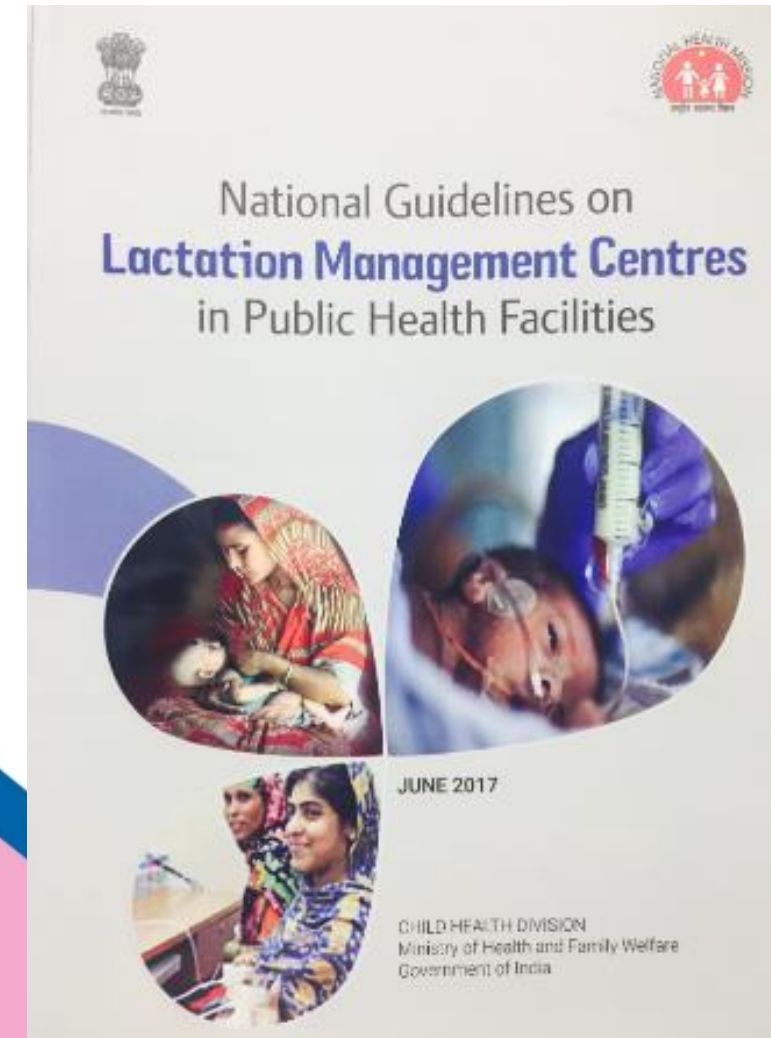
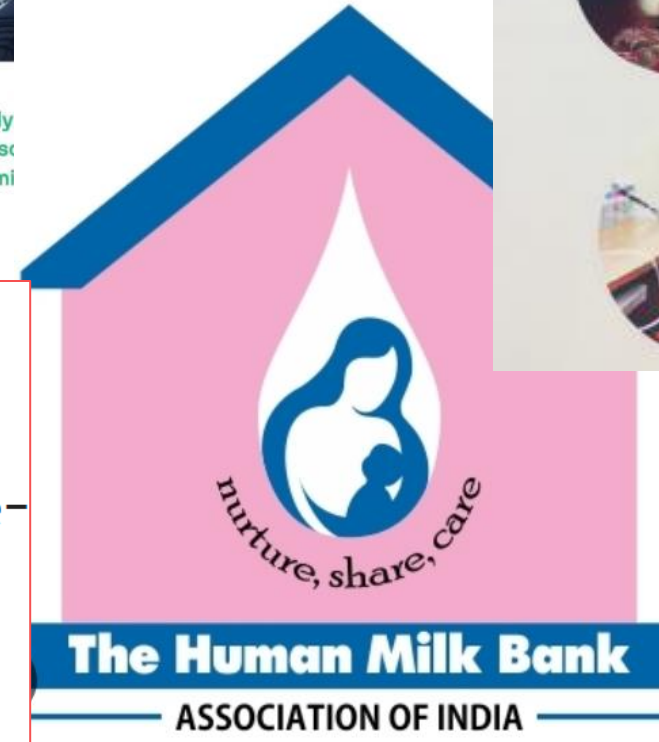


“I am not only baby but also my breast mi

> [Eur J Pediatr.](#) 2022 Jan;181(1):107-116. doi: 10.1007/s00431-021-04141-9. Epub 2021 Jul 3.

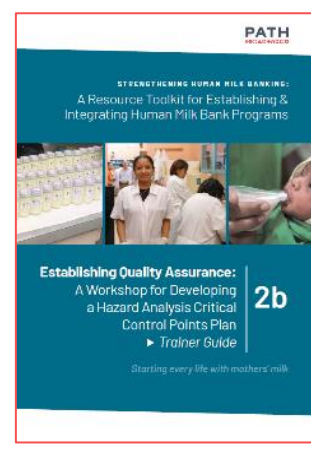
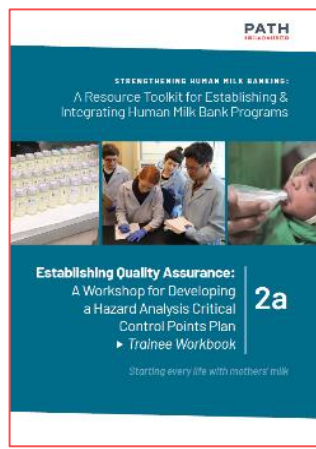
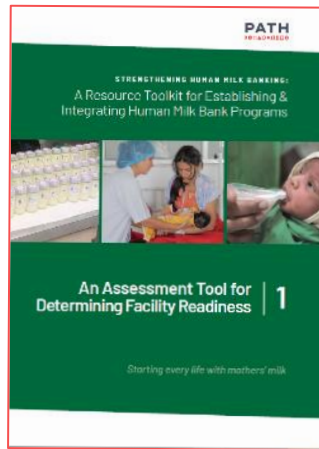
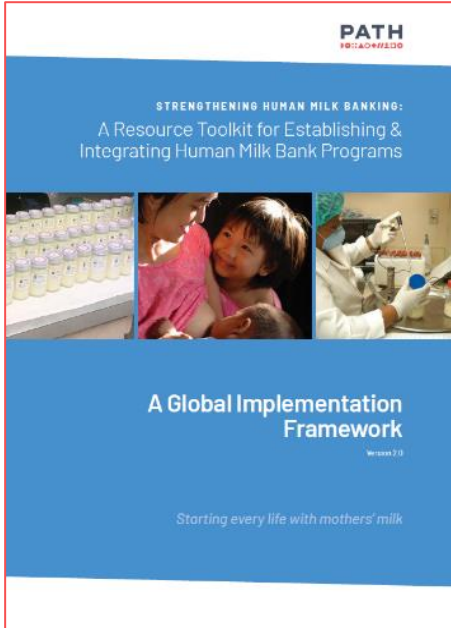
Impact of mother-baby friendly initiative plus approach on improving human milk feeding for neonates in hospital: a quality improvement before-and-after uncontrolled study

Jayashree Mondkar¹, Deepak Chawla², Ruchika Chugh Sachdeva³, Swati Manerkar⁴, Sunita Shanbhag⁵, Aisha Khan⁵, Minu Manuhar⁶, Maya Ganesh Wankhede⁶, Vidya Thakur⁶, Kiersten Israel-Ballard⁷

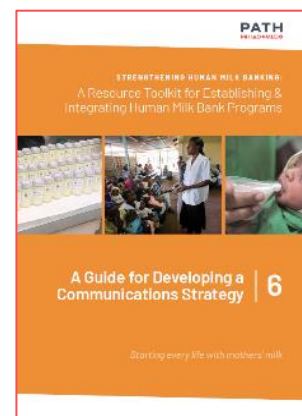
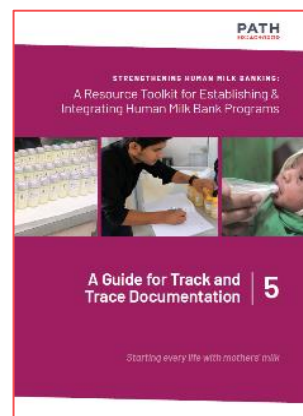
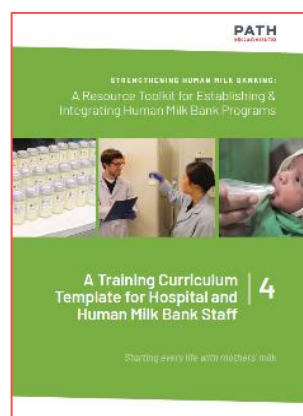
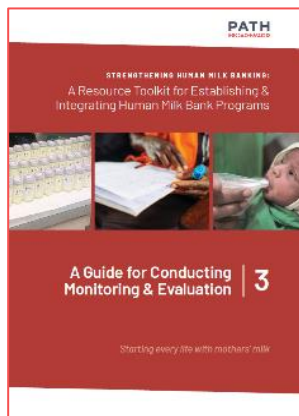
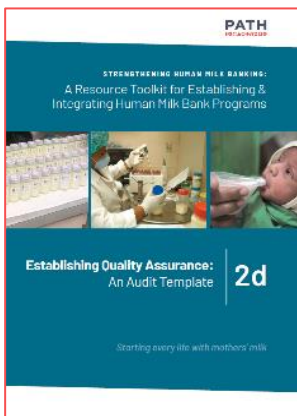


Advancing integration and systems strengthening for exclusive human milk diets

In the absence of global guidelines, in 2019 PATH published the first standards – Strengthening Human Milk Banking: A Resource Toolkit for Establishing and Integrating Human Milk Programs – currently used around the world.



Available at:
www.path.org/hmb-toolkit



Aligned systems to ensure equitable access to safe and quality donor human milk: WHO Guidelines underway (2022-24)

- July 2019 WHO co-sponsored “International Expert Consultation on the Donation and Use of Human Milk.”
- WHO formal process to develop safety and quality guidelines will be available to inform minimum requirements



Harnessing global momentum to optimize care for the small and sick newborn: nutrition must be a core component

PATH is included in global consultations to develop a 'model of care' for small and sick newborns.

We are advocating that a package of care, with interlinked multi-faceted components, is required to advance newborn nutrition, as a key strategy to reduce neonatal mortality.



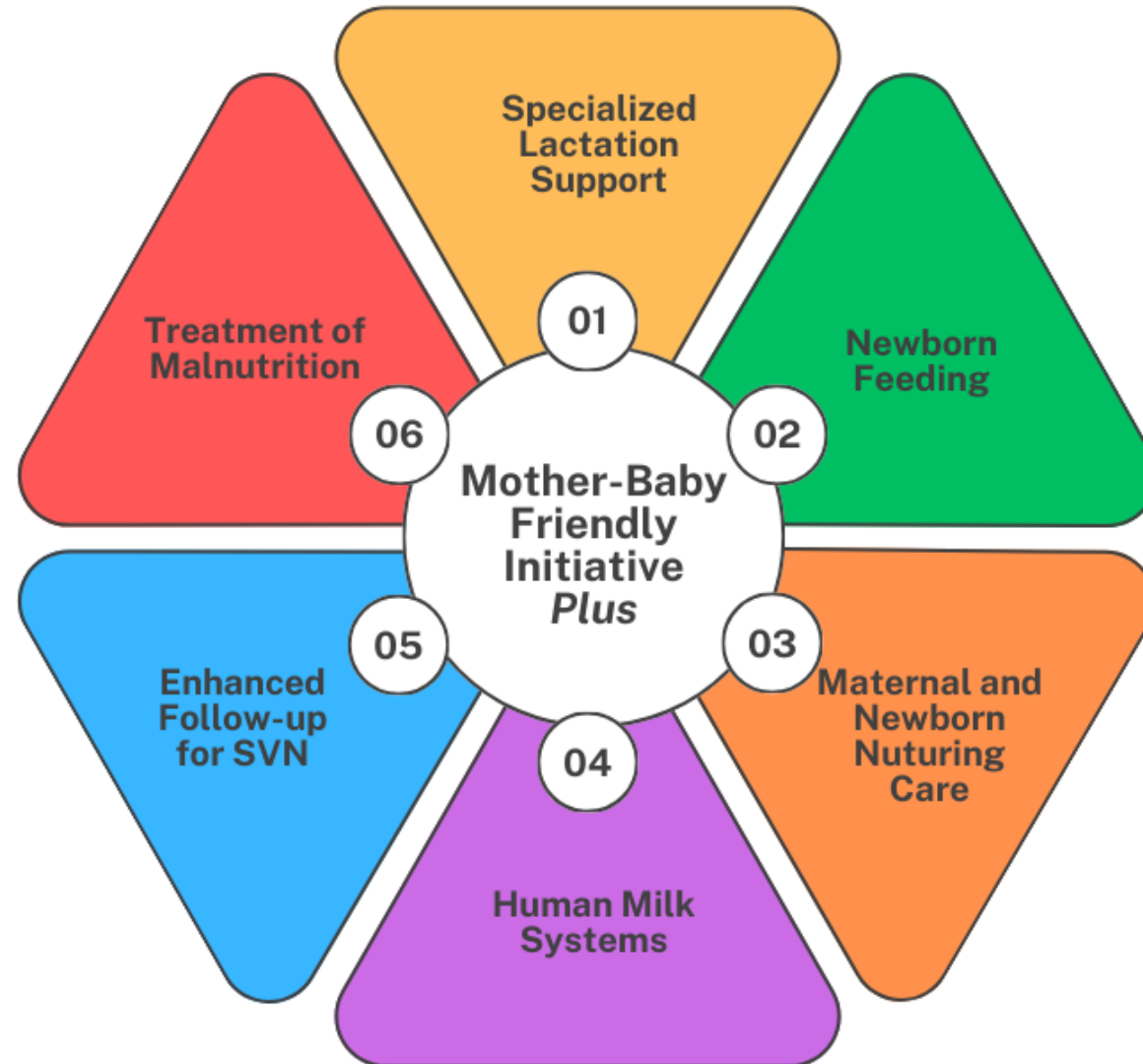
> [J Glob Health](#). 2023 Apr 21;13:03023. doi: 10.7189/jogh.13.03023.

A comprehensive model for scaling up care for small and/or sick newborns at district level-based on country experiences presented at a WHO-UNICEF expert consultation

Strengthening provision of mother-centered care:

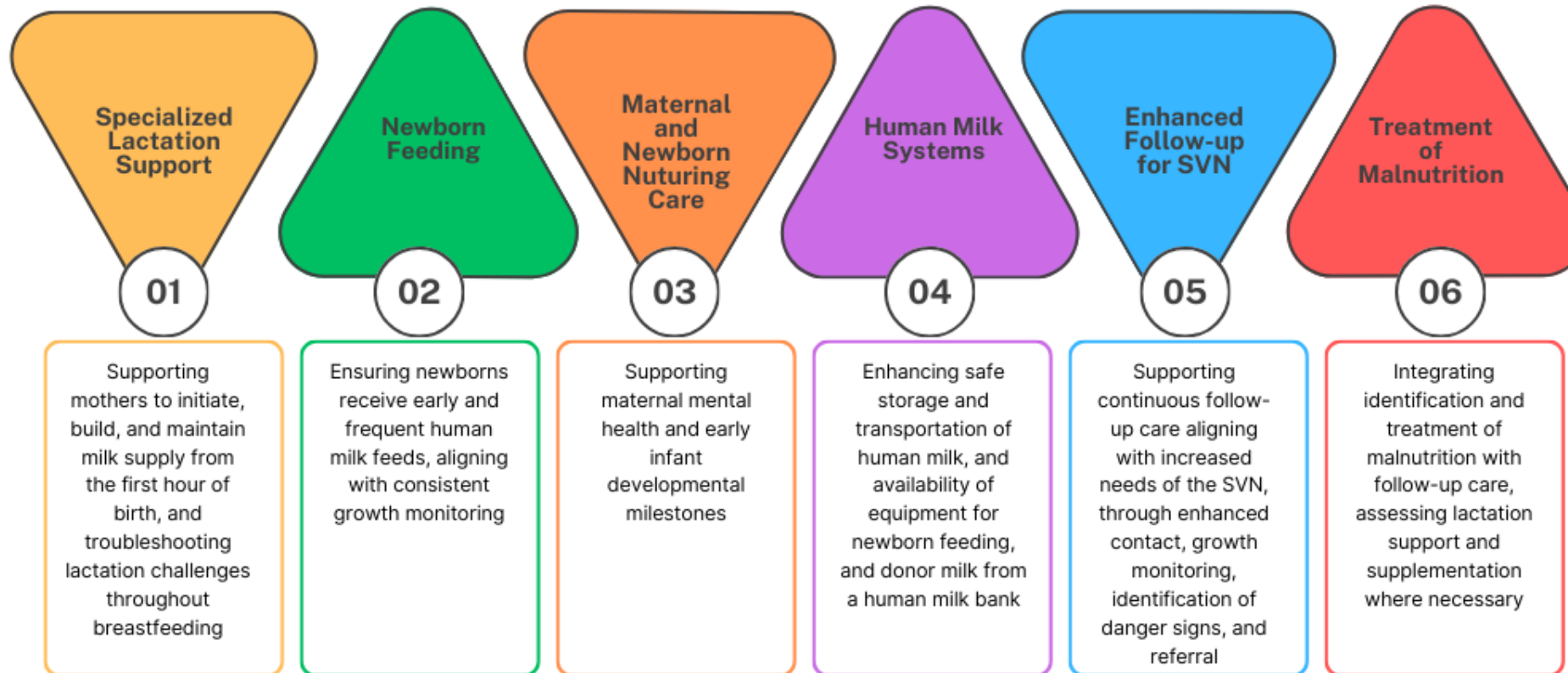
MBFI+ components for establishing a comprehensive model

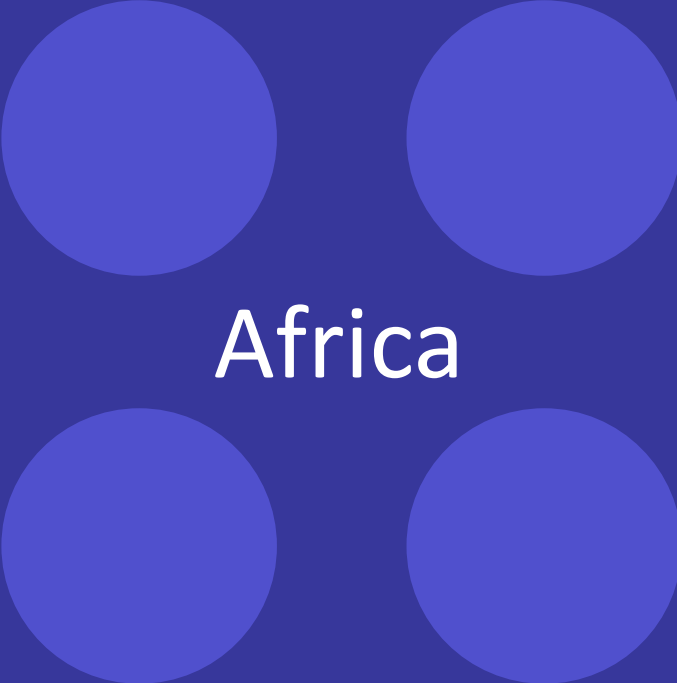
A coordinated, comprehensive approach, with interlinked multi-faceted components, is required to support mothers and SVN in facility and post-discharge.



Strengthening provision of mother-centered care:

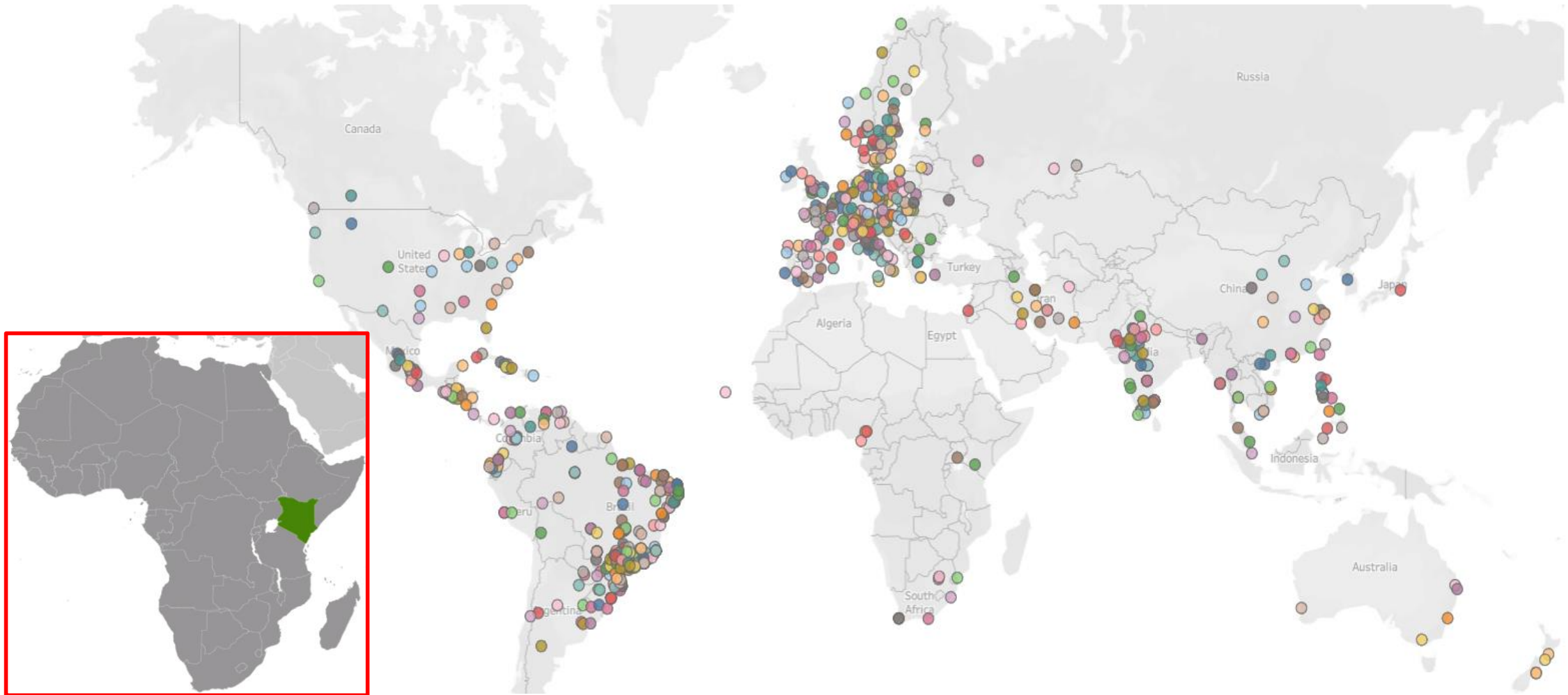
MBFI+ components for establishing a comprehensive model





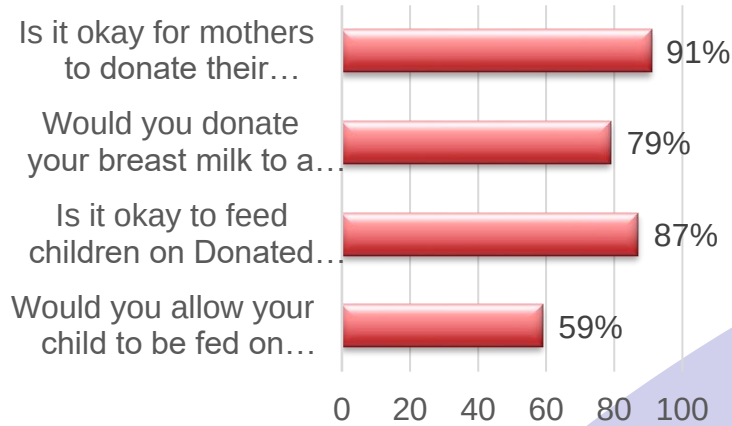
Africa

Establishing MBFI+ human milk bank in Kenya: A first for East and Central Africa



PHASE I: ESTABLISHING A FOUNDATION (2016-2017)

Acceptability of Human Milk Banking



- 44% of newborns separated from their mothers for >1 hour to days
- Only 14% fed on MOM
- 36% not fed on anything.
- 23% fed on formula or cow's milk

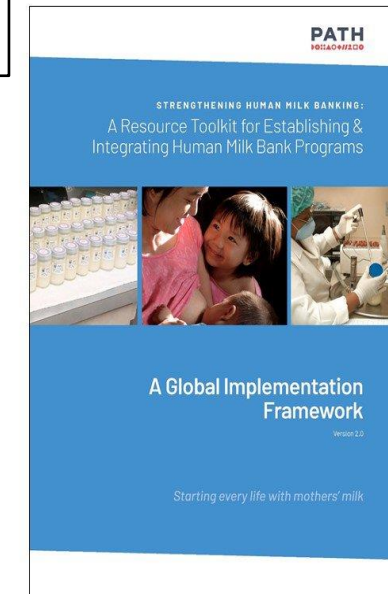
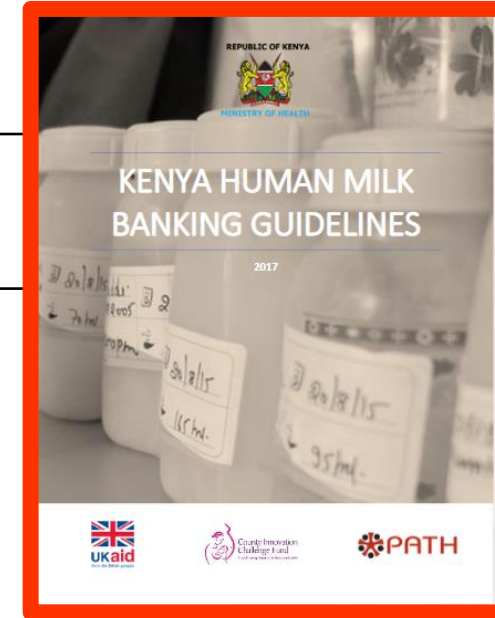
Formative assessments

**Stakeholder engagement-
National Technical
HMB Committee**



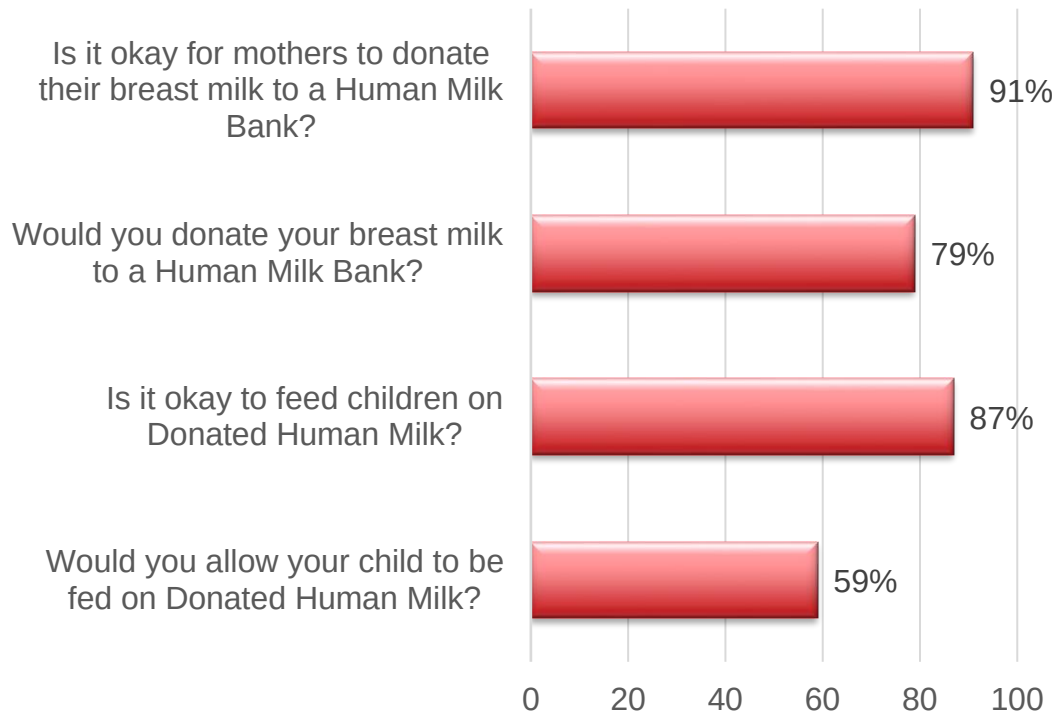
**Develop Kenya
specific strategy
and guidance**

**Gather global and
local evidence
around best
practices; technical
support, learning
exchange**

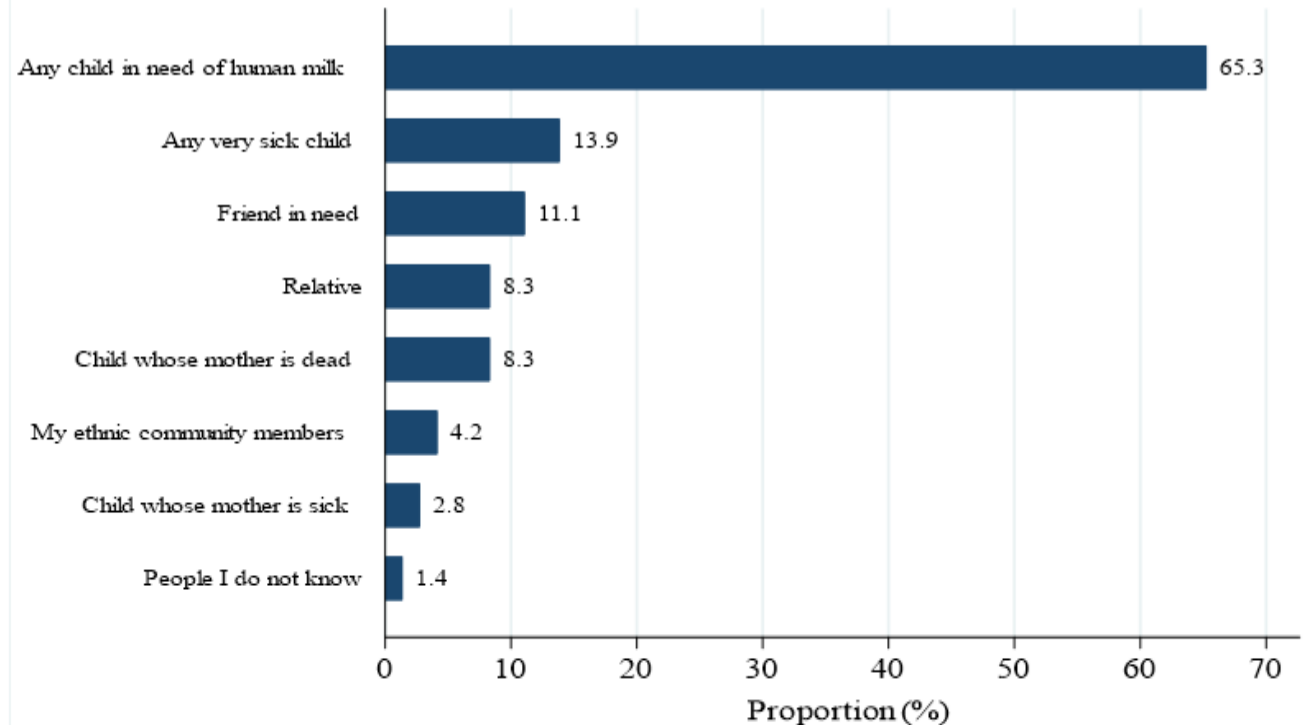


FORMATIVE RESEARCH INDICATED ACCEPTABILITY OF HUMAN MILK BANK

Acceptability of Human Milk Banking



Who would you prefer to receive your donated breast milk? (n=72)

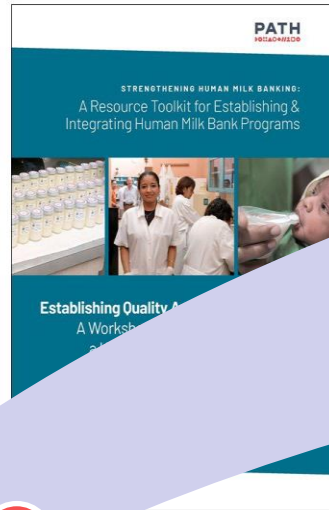


PHASE II: IMPLEMENTATION (2018-2019)



- Largest public maternity hospital in EA
- ~ 80 deliveries per day
- Serves low-income population
- 400 newborns per month
- 25-30% are preterm
- 21 bed KMC unit

Select site, infrastructure and equipment



Build capacity on integrated model, HAACP, BFHI and HMB

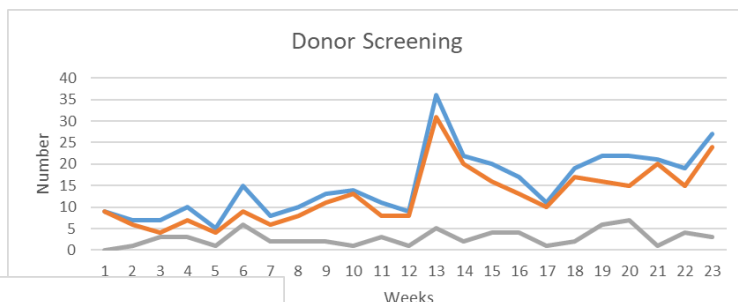


Launch- March 2019

Technical training at Glasgow HMB



PHASE II: IMPLEMENTATION (2018-2019)



Strengthen and expand policy and regulatory support

Evaluate impact

Quality improvement and mentorship + audits

Primary Objectives

To explore the **potential feasibility and acceptability** of the MBFI+ model

Secondary Objectives

To assess the **potential effectiveness** of the MBFI+ model on:

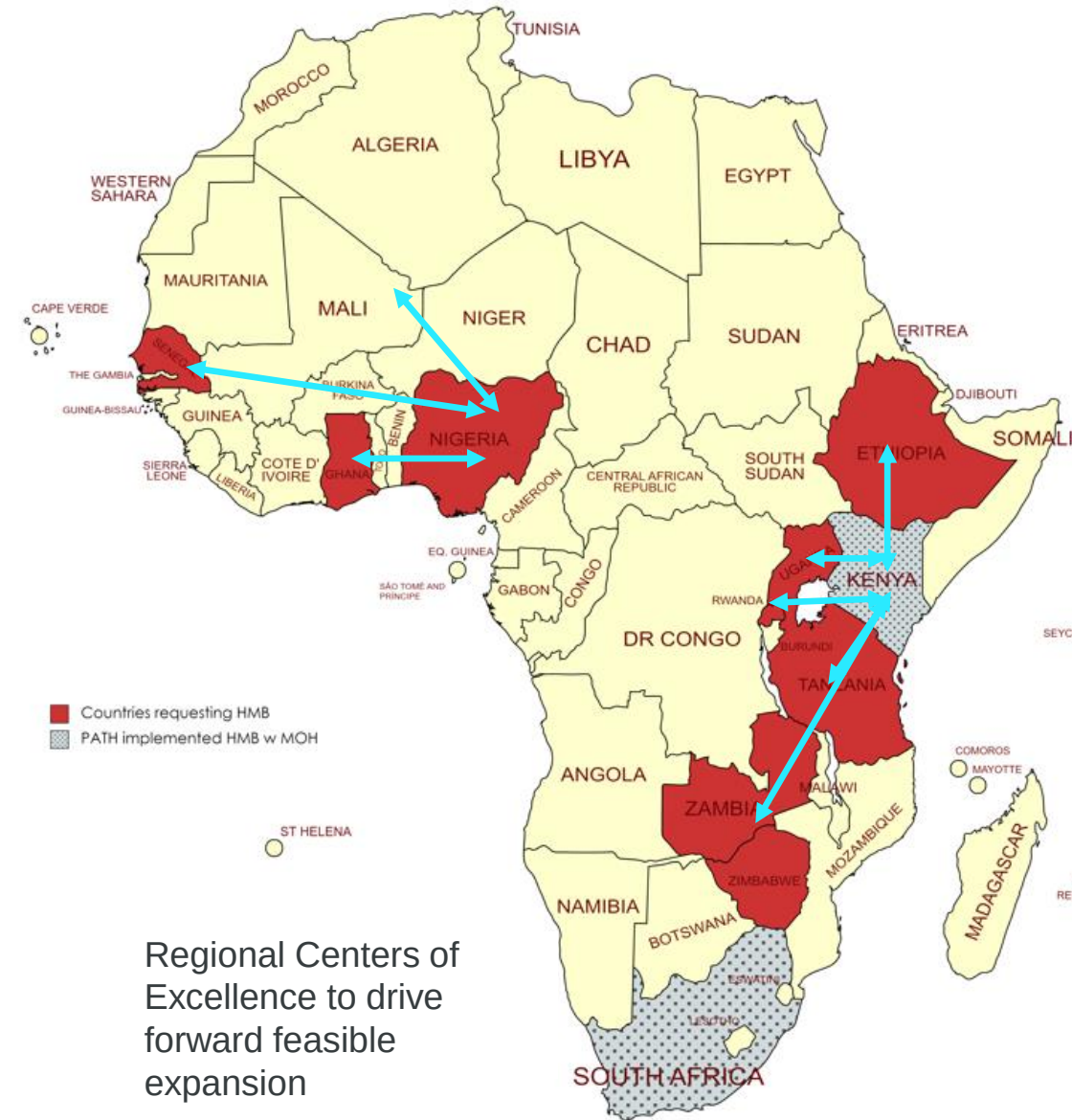
- **Breastfeeding/provision** of human milk
- **Neonatal outcomes**

To estimate the **cost of implementing** the MBFI+ model



A Vision for Optimizing Care for the SSN: Establishing Centers of Excellence for newborn nutrition through local leadership

- **Africa-led** innovation is needed to inform and guide context-appropriate models for the continent
- Increased momentum and awareness is driving Ministries of Health to seek technical assistance in establishing a human milk bank; this interest should be the **catalyst** and **leveraged** to achieve greater impact through a systems strengthening approach
- Establishment of **regional platforms** would enable strategically positioned cross learning, sharing of resources and communications platforms to facilitate increased cost-effectiveness and improved feasibility in implementation
- Harnessing the **power of local leadership** for strategic linkages and integration of agendas



Current initiatives

- Development of curriculum for specialized lactation support
 - Targeting neonatal clinical staff, created to address gaps in newborn/BF training
 - Pilot (USAID), research underway (AAU, Ariadne Labs)
 - Ethiopia, Tanzania, Malawi, India, Kenya, Nepal and Nigeria

Current initiatives

- WHO human milk banking guidelines; PATH as coordinating entity
- WHO consultation for feeding of at-risk infants; PATH as consultant
 - Landscaping process which will work towards the development of a suite of materials to HCWs and CHWs in supporting mothers in the feeding of small and sick newborns or infants <6 months with feeding difficulties.



Kiersten Israel- Ballard:

kisrael-ballard@path.org

Dr. Emily Njuguna:

enjuguna@path.org