Kangaroo Mother Care is a low-cost, high-impact intervention for premature/low-birth weight newborns and should be implemented in all refugee health operations.

It is estimated that globally approximately 16% of newborns are born with a low birth weight (<2500 g). This includes both premature newborns (11%) and those small for gestational age. The health consequences are significant with complications from preterm birth representing the leading cause of death for children under 5 globally. Fortunately, the majority of these deaths can be prevented with proper care, including in low-resource settings and during humanitarian emergencies.

Kangaroo mother care is a low-cost, high-impact method of improving outcomes for the low birth weight (LBW) newborn. It targets the small newborn's essential needs – warmth, exclusive breastfeeding, and infection prevention. KMC should not be confused with routine skin-to-skin care at birth. World Health Organization (WHO) recommends skin-to-skin care immediately after delivery for **every newborn** to ensure warmth and early initiation of breast feeding in the delivery room.
KMC involves providing long-duration, sustained skin-to-skin contact for **low birth weight newborns**, along with exclusive breast milk feeding (breastfeeding or feeding expressed breastmilk through feeding tube, spoon or cup); and early discharge home in the kangaroo position once stable and gaining weight.

Research has shown that KMC reduces mortality up to 40%; reduces infection/sepsis including nosocomial infections; and improves breastfeeding and weight gain compared to conventional care[1]. Due to these benefits, the WHO recommends KMC for babies weighing less than 2000g at birth[2], and some national systems recommend it for all babies <2500g.

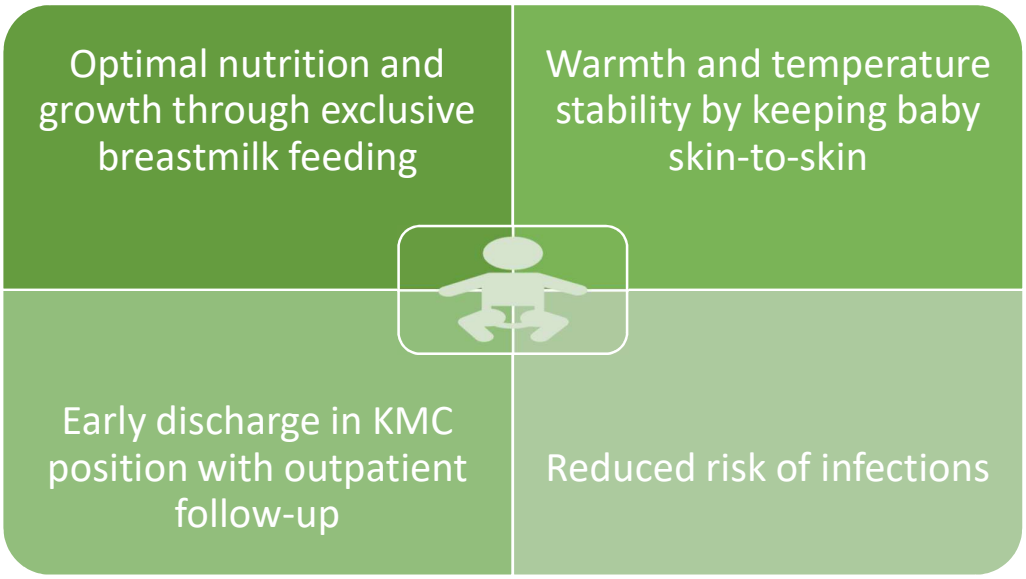
WHO Recommendations: [2]

- Kangaroo mother care is recommended for the routine care of newborns weighing 2000 g or less at birth, and should be initiated in health-care facilities as soon as the newborns are clinically stable
- Newborns weighing 2000 g or less at birth should be provided as close to continuous Kangaroo mother care as possible.
- Intermittent Kangaroo mother care, rather than conventional care, is recommended for newborns weighing 2000 g or less at birth if continuous Kangaroo mother care is not possible.

[1] Conde-Agudelo A, Belizán JM, Diaz-Rossello J. Kangaroo mother care to reduce morbidity and mortality in low birthweight infants. 2011. Cochrane Database of Systematic Reviews
https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD002771.pub2/full

[2] World Health Organisation. 2015. WHO recommendations on interventions to improve preterm birth outcomes. Available from:
https://apps.who.int/iris/bitstream/handle/10665/183037/9789241508988_eng.pdf?sequence=1

Based on this guidance, it is recommended that all health services under UNHCR's responsibility implement Kangaroo Mother Care as the primary method of management of the premature/low birth weight newborn. This short guide will assist operations to assess, launch or strengthen KMC in UNHCR-supported health programs**.**



Please note: All stable low-birth weight newborns should be placed in kangaroo position without delay. It is not necessary to implement any of the operational improvements prior to beginning to use the method on individual babies.

Preparing for KMC Implementation

Policy

- Determine if KMC is part of your national Newborn Action Plan or supported by national health policy
- Engage the health cluster and SRH working group to support KMC implementation (in the emergency phase of response).
- With NGO health partners, develop a written policy supporting use of KMC in UNHCR supported health facilities. This may include a policy of non-separation of mothers and newborns.

Service Mapping

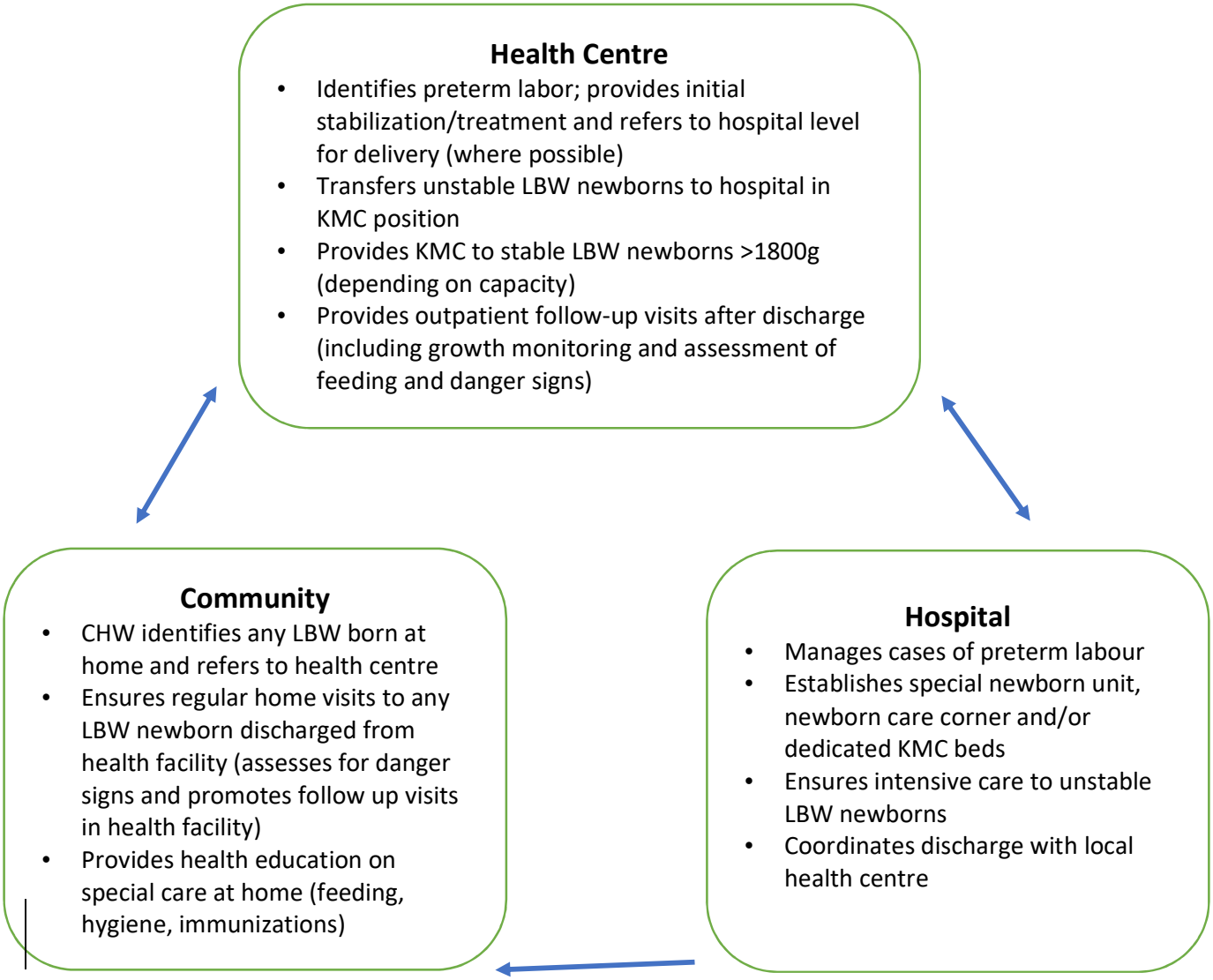
- Check if Centres of Excellence or any established KMC units exist in your country that may act as a local resource
- Determine the expected numbers of low birth weight newborns using health facility records and/or UNHCR iRHIS statistics
- Conduct a service mapping of primary and referral facilities' capacity to provide special newborn care, noting any gaps in infrastructure, medical equipment and medications, staff availability, knowledge and training, and referral network
- Collaborate with the Ministry of Health and national professional associations (medical, nursing, midwifery) whereever possible

Implementation

- Jointly determine the role of each level of care (community, health centre, hospital) in the management of LBW newborns
- Establish written admission/discharge/referral criteria for low birth weight newborns, coordinated across levels of care.
- Consider strengthening/developing a Newborn Care Unit, Newborn Care Corner, or dedicated beds for Kangaroo Mother Care in the postnatal area
- Ensure essential equipment and supplies are in place including written protocols and clinical records
- Ensure training on care of low birth weight and KMC for front-line health providers and community health workers
- Provide outpatient follow-up visits for discharged low-birth weight newborns

KMC and the Continuum of Care

All levels of care have a role to play in the care of the low birth weight or premature newborn. How services are divided will depend on the resources available in your setting and the capacity of referral hospitals to provide specialized care. In areas where referral hospitals are difficult to access or do not have the capacity to provide a higher quality of care, closer-to-home management is preferable.



Space, Supplies and Equipment

Few additional materials are required to provide KMC beyond the basic materials for newborn management. Any fabric can be used to secure the newborn in kangaroo position. However, it may be more comfortable and convenient to use a specially designed KMC wrap. These can be ordered through UNHCR's Essential Medicine List or through Laerdal Global Health (see below). Local fabrication of wraps using a tailor may be more cost effective.

If establishing or improving a KMC program, consider the following items:

- Fabric for kangaroo wrap
- Beds semi-reclining
- Storage space/locker for mothers
- Mattresses
- Pillows
- Bed sheets
- Adult blankets
- Baby Blankets
- Digital scale (with 10g sensitivity)
- Pediatric stethoscope
- Resuscitation bag and mask with mask sizes 0 (preterm) and 1 (neonate)
- Thermometer
- One-minute timer (for respiratory rate)
- Room thermometer
- Heaters to keep room >24C
- Well lit, well ventilated room
- Cups and spoons
- Covered container for storing breastmilk
- Feeding tubes
- Clothes for newborns (hat, diaper, socks)
- Water point and soap
- Documentation: clinical guidelines/Registers/patient chart

A separated space and dedicated equipment that is not shared with other services (including sick newborns) is preferred wherever possible to reduce cross-infection risks for LBW newborns.

What about incubators?

Incubators require reliable (24/7) electricity; regular maintenance from biomedical technicians; strong infection control procedures; frequent patient monitoring; and well-trained staff in order to be safely used. In many low-resource settings these minimum standards are difficult to meet and incubators can therefore create additional risks for the newborn. KMC has been proven to be the safer and more effective option.

Training Courses and Materials

- *Essential Care for Small Babies* is a 1-day training course on management of low birth weight newborns that is suitable to the majority of UNHCR-supported health facilities in low-resource settings. Training materials can be downloaded for free online (email registration required before download) in multiple languages at: https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/helping-babies-survive/Pages/Essential-Care-Small-Babies.aspx

- *Threatened Preterm Birth* is a 2-day course which covers key aspects of the management of threatened preterm labour (including correct determination of gestational age, administration of antenatal corticosteroids and other interventions). It is available from: https://hms.jhpiego.org/threatened-preterm-birth-care/ with French language materials available directly from UNHCR Geneva.

- Preemie Natalie (newborn simulator), breast models, and hard copies of the above course materials can be ordered from Laerdal Global Health: https://laerdalglobalhealth.com/products/newborn-health/

- *Kangaroo Mother Care* by UNICEF is a 4 day course which uses the same core materials as *Essential Care for Small Babies*, with additional materials and resources. It can be accessed at: https://www.healthynewbornnetwork.org/resource/facilitators-guide-for-training-on-kangaroo-mother-care/

When planning a training it may be useful to consider the following:

- Discuss with the Ministry of Health and other UN Agencies (UNICEF, UNFPA) to check for the availability of experienced trainers in your area.
- Consider conducting a training-of-trainers course with the participation of one trainer from each health facility or cluster of facilities. Roll-out is best provided on-site in the health facility, with the participation of the entire health team.
- Community health workers should also receive trainings essential care for LBW; the basics of KMC; how to identify low birth weight newborns in the community (for home births); and danger signs in newborns. They will play a key role in providing support and follow up in the community after discharge.
- For assistance to connect with experienced master trainers, please contact UNHCR Geneva.

Clinical Guidance

A number of guidelines are available to provide direction in management of preterm births, optimal feeding of low birth weight newborns, and how to set up kangaroo care services:

WHO recommendations on interventions to improve preterm birth outcomes (2015):
http://www9.who.int/reproductivehealth/publications/maternal_perinatal_health/preterm-birth-guideline/en/

Kangaroo Mother Care: A practical guide:
http://www9.who.int/maternal_child_adolescent/documents/9241590351/en/

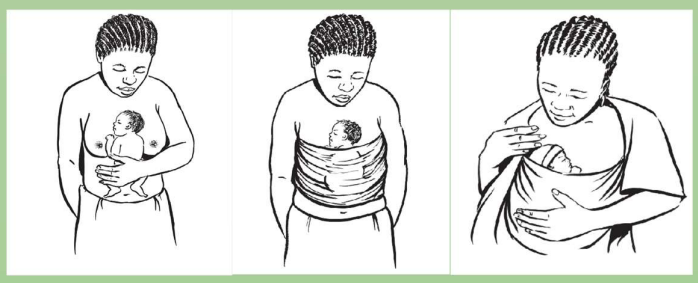
Optimal feeding of low birth weight newborns:
http://www9.who.int/maternal_child_adolescent/documents/9241595094/en/

Essentials of KMC

KMC involves 3 pillars – kangaroo position; kangaroo feeding; and early discharge home.

Positioning:

- ✓ The newborn is put skin to skin (except for nappy and hat) against the mother's chest in a frog-like position (upright, the head turned to one side and slightly extended, legs flexed to either side)
- ✓ The newborn is secured in this position with a fabric wrap
- ✓ He/she should stay in this position for as close to 24 hours/day as possible.
- ✓ If the mother cannot provide KMC due to illness, another relative can do so.
- ✓ Babies that are unstable and cannot tolerate continuous KMC should be provided with intermittent KMC for periods of at least one hour at a time.



Feeding:

- ✓ Breastmilk is recommended for the preterm and low birth weight newborns. Depending on the gestational age, the preterm newborn may not be mature enough to coordinate sucking, swallowing and/or breathing. The newborn should be assessed for its ability to feed and expressed breast milk may be given through cup or spoon feeding, or gastric tube if he/she is unable to breastfeed initially.
- ✓ Feeding guidelines that outline the volume and frequency of each feed (based on the baby's weight and day of life) should be available in the clinical setting

Early Discharge:

- ✓ The newborn is stable and not on parenteral medication
- ✓ Maintaining normal temperature for 3 consecutive days
- ✓ Gaining 15-20 grams per day for at least 3 consecutive days
- ✓ Accepting feeds directly from breast (preferable) and/or by spoon or cup
- ✓ Education given to caregivers/family and caregivers able to continue KMC at home
- ✓ Outpatient follow-up visits arranged

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