Ministry of Public Health

Reproductive, Maternal, Newborn, Child, and Adolescent Health Directorate

Kangaroo Mother Care Guideline

May, 2017

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FOREWORD

There has been a remarkable decline in under five mortality rates in Afghanistan over the past decade from 257 in 2003 to 55 in 2015. Consequently, neonatal mortality has increased from 15% to 22% as a proportion of under-five mortality. The significant reduction in infant and child mortality rates will largely depend upon the reduction in neonatal mortality. Newborns are still dying each year from largely preventable causes.

According to the 2010 Afghanistan Mortality Survey, 35 percent of neonatal deaths were caused by perinatal related disorders, 26 percent infection, 11.8 percent pre-term and low birth weight (LBW), and KMC is an intervention to address the preterm and LBW which is among those top causes of newborn death.

Kangaroo Mother Care is an effective way to meet baby's needs for warmth, breastfeeding, protection from infection, stimulation, safety and love. It is one of the evidence-based and cost-effective interventions that will contribute to the reduction of neonatal mortality. It is easy to implement and requires few/limited resources than conventional care, hence financially and economically feasible.

The MOPH has developed the National Newborn Care Comprehensive Operational Plan for Afghanistan (NNCCOP) in response to the global Every Newborn Action Plan (ENAP) launched at the World Health Assembly in June 2014, in which aims is to significantly reduce preventable newborn deaths to bring down the Neonatal Mortality Rate.

In light of NNCCOP Ministry of Public Health/Directorate of Reproductive Maternal Newborn Child and Adolescent Health (RMNCAH) with the support of key stakeholder mainly UNICEF, WHO, and HEMAYAT, succeeded to develop the Kangaroo Mother Care Guideline, which define the standards of facility based Kangaroo Mother Care.

MoPH of Afghanistan expects that, the Kangaroo Mother Care guideline will guide the policy makers, planners and BPHS/EPHS implementers and partners on the establishment and implementation of Kangaroo Mother Care services at Central, Regional, and provincial health facility levels to ensure survival and optimal growth and development of preterm and low birth weight babies.

I take this opportunity to extend my sincere gratitude to all members of newborn technical working group for the continuous technical and financial support provided towards the initiation and production of this document.

Regards,

DR. FEDA MOHAMMAD (PAIKAN)

Deputy Minister for Health Care Services Provision

ACKNOWLEDGMENTS

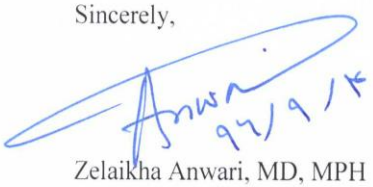
I am pleased to introduce the Kangaroo Mother Care guideline which will be helpful for health professionals and service providers of public and private sector involved in maternity services; and they will be able follow facility-based Kangaroo Mother Care.

Availing this opportunity, I would like to extend my sincere gratitude and thanks to all individuals and organizations involved in the process of development of this guideline including the RMNCAH technical team, HEMAYAT, UNICEF, and WHO.

Some special thanks go to the members of newborn care working group who provided valuable inputs throughout the process.

Finally, we at RMNCAH Directorate gratefully acknowledge the technical and financial supports of UNICEF that led to the development of this very important document for reduction of newborn mortality in Afghanistan.

Sincerely,



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ABBREVIATIONS

BF	Breast Feeding
ADHS	Afghanistan Demographic Health Survey
IEC	Information, Education and Communication
KMC	Kangaroo Mother Care
LBW	Low Birth Weight
M&E	Monitoring and evaluation
MCHIP	Maternal and Child Health Integrated Program
MDGs	Millennium development goals
MOPH	Ministry of Public Health
MSF	Medicines Sans Frontiers
SNCU	Special Newborn Care Unit
SSC	Skin to Skin Care/Contact
UNICEF	United Nations Children's Fund
VLBW	Very Low Birth Weight
WHO	World Health Organization

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GLOSSARY

Terms in this glossary are listed under key words in alphabetical order.

Age:

• **Chronological age:** Age calculated from the date of birth.

• **Gestational age:** Age or duration of the gestation, from the last menstrual period to birth.

• **Post-menstrual age:** gestational age plus chronological age.

Birth

• **Term birth:** Delivery occurring between 37 and 42 weeks of gestational age.

• **Preterm birth:** Delivery occurring before 37 weeks of gestational age.

• **Post-term birth:** Delivery occurring after 42 weeks of gestational age.

Birth weight

• **Low-birth-weight infant:** Infant with birth weight lower than 2500g (up to and including 2499g), regardless of gestational age.

• **Very low-birth-weight infant:** Infant with birth weight lower than 1500g (up to and including 1499g), regardless of gestational age.

• **Extremely low-birth-weight infant:** Infant with birth weight lower than 1000g (up to and including 999g), regardless of gestational age. Different cut-off values are used in this guideline since they are more useful for clinical purposes.

Body temperature

• **Hypothermia:** Body temperature below 36.5°C.

Growth

• **Intrauterine growth retardation:** Impaired growth of the fetus due to fetal disorders, maternal conditions (e.g. maternal malnutrition) or placental insufficiency.

Feeding

• **Breast feeding:** Feeding the baby from the breast

• **Alternative feeding method:** Not breastfeeding but feeding the baby with expressed breast milk by cup or tube; expressing breast milk directly into baby's mouth.

Preterm/full-term infant

• **Premature or preterm infant:** Infant born before 37 weeks of gestational age.

• **Preterm infant small for gestational age (SGA):** Infant born preterm with a birth weight below the 10th percentile for his/her gestational age.

• **Full-term infant small for gestational age (SGA):** Infant born at term with birth weight below the 10th percentile for his/her gestational age.

Small baby: In this guide, a baby who is born preterm with low birth weight.

Stable preterm or low-birth-weight infant: A newborn infant whose vital functions (breathing and circulation) do not require continuous medical support and monitoring, and are not subject to rapid and unexpected deterioration, regardless of inter-current disease.

1. INTRODUCTION

The newborn's ability to survive and thrive in the neonatal period and through infancy is strongly influenced by the birth weight. Low birth weight (LBW) is the most important contributing factor to neonatal morbidity and mortality. Between 60 and 80 percent of all neonatal deaths occur among low birthweight babies. Compared to babies with normal birth weight, low birth weight babies have a much greater risk of dying. Preterm babies are prone to serious illness or death during the neonatal period. Without appropriate treatment, those who survive often face lifelong disability and poor quality of life. Complications of prematurity are the single largest cause of neonatal death and currently the leading cause of death among children under 5 years. Therefore, global efforts to further reduce child mortality demand urgent actions to address preterm birth. Infant death and morbidity following preterm birth can be reduced through interventions provided to the mother at imminent risk of preterm birth and to the preterm infant after birth. These interventions target immediate and future morbidities of the preterm infant, lung immaturity, susceptibility to infection and neurological complications.

2. BACKGROUND

Newborn deaths currently account for approximately 40% of all deaths of children under five

years of age in Afghanistan (AfDHS -2015), the three major causes being birth asphyxia, infections and complications due to prematurity and low birth weight (LBW). To achieve SDGs 3 developing countries must address and reduce the excessively high neonatal mortality rate: .

Birth weight is a significant determinant of newborn survival. LBW is an underlying factor in 60–

80% of all neonatal deaths. In fact, prematurity is the largest direct cause of neonatal mortality,

According to UNICEF data in 2013 nearly 22 million babies are born LBW / and are premature an estimated 16 percent of all babies born globally that year.

.One-third of LBW babies die within the first 12 hours after delivery.

One of the main reasons that LBW/premature babies are at greater risk of illness and death is that they lack the ability to control their body temperature; they get cold or hypothermic very quickly. A cold newborn stops feeding and is more susceptible to infection, and due to immature immune system the infections suddenly lead to septicemia and neonatal death.

3. ABOUT KANGAROO MOTHER CARE

Definition: Kangaroo mother care (KMC) is care of a preterm/ low birth infant carried skin-to-skin with the mother. Its key features include early, continuous and prolonged skin-to-skin contact between the mother and the baby, and exclusive breastfeeding (ideally) or feeding with breast milk. (WHO guideline on prematurity).

Kangaroo Mother Care (KMC) is a strategy created and developed by a team of pediatricians' in

the Maternal and Child Institute in Bogota, Colombia. It was invented by Dr. Edgar Rey in

1978, and developed by Dr. Hector Martinez and Dr. Luis Navarrete until 1994, when the

Kangaroo Foundation was created. KMC was an innovative method developed to provide thermal care for LBW newborns. The first trial of KMC was launched to address over-crowding,

Cross-infection, poor prognosis and extremely high LBW mortality rates.

The goals of the trial were to improve outcomes for LBW infants, humanize their care and reduce the length and cost of hospitalization. While much of this was accomplished, the most dramatic result,

documented through a pre- and post-intervention study of the trial, showed a drop in neonatal mortality from 70% to 30%. Thirty-two years later, KMC is now recognized by global experts as an integral part of essential newborn care.

KMC must not be confused with routine skin-to-skin care (SSC), which the World Health

Organization (WHO) recommends immediately after delivery for every baby as part of routine

care to ensure that all babies stay warm in the first two hours of life, and for sick newborns

during transport for referral. LBW infants, however, require SSC for a longer period of time,

depending on their weight and condition. KMC is "the early, prolonged, and continuous skin-to skin contact between the mother (or substitute) and her low birth weight infant, both in hospital and after early discharge, until at least the 40th week of postnatal gestation age, with ideally exclusive breastfeeding and proper follow-up" (Cattaneo, Davanzo, Uxa 1998). Ideally, small babies should stay in the skin-to-skin position all day and night to maintain a stable temperature.

KMC for LBW Babies is initiated in the hospital after the condition of the baby is stabilized .Infants who are not stable and require medical attention can practice intermittent KMC (spendingsomehoursintheKMCposition,graduallyincreasingthetimeasthebabygetsstronger).Earlydischargea fterdelivery is a hallmark of the KMC approach and occurs when the baby is suckling well and growing, and when the mother or family caregiver demonstrates competency in caring for the babyonherown.ThepairisdischargedtocontinueKMCathomewithanagreed-uponscheduleforfollow-upvisitsatthehospital,outreachclinicorathometomonitorthehealthofthebaby.

Benefits of KMC are:

- Breastfeeding: Studies have revealed that KMC results in increased breastfeeding rates as well as increased duration of breastfeeding. Even when initiated late and for a limited time during day and night, KMC has been shown to exert a beneficial effect on breastfeeding.
- Thermal control: Prolonged skin-to-skin contact between the mother and her preterm/ LBW infant provides effective thermal control with a reduced risk of hypothermia. For stable babies, KMC is at least equivalent to conventional care with incubators in terms of safety and thermal protection.
- KMC promote bonding between mothers (and others family members) and their babies, and it also improve the developmental outcome of the babies.
- Early discharge: Studies have shown that KMC cared LBW infants could be discharged from the hospital earlier than the conventionally managed babies. The babies gained more weight on KMC than on conventional care.
- Less morbidity: Babies receiving KMC have more regular breathing and are less predispose to apnea, incubator is a source of hospital acquired infections, while
  KMC protects against nosocomial infections. Even after discharge from the hospital, the morbidity amongst babies managed by KMC is less.
  Other effects: KMC helps both infants and parents. Mothers are less stressed during kangaroo care as compared with a baby kept in incubator. Mothers prefer skin-to-skin contact to conventional care. They report a stronger bonding with the baby, increased confidence and a deep satisfaction that they were able to do something special for their babies. Fathers felt more relaxed, comfortable and better bonded while providing KMC.

Key Definitions and Distinctions:

- Intermittent Kangaroo Mother Care is the practice of skin-to-skin care alternated with the use of either a radiant warmer or an incubator care for the baby. It is practiced when the caregiver is unable or unwilling to practice continuous KMC in a health facility, or the baby is unstable.
- Post-Discharge Kangaroo Mother Care is when the mother and baby discharged from the facility because the baby is feeding well, growing and stable, and the mother or caregiver demonstrates competency in caring for the baby on her own.
- Continuous Kangaroo Mother Care is defined as the practice of skin-to-skin care continuously throughout the day without breaking the contact between mother and baby, it is maintained at home with an agreed-upon schedule for follow-up visits at the hospital, outreach clinic or at home to monitor the health of the baby.
- Community-initiated skin-to-skin care is the practice of continuous KMC being initiated and continued at home. This practice is also called community KMC, but it does not necessarily link to the full package of supportive care. It has been practiced in settings where referral to a health facility is either challenging or not possible.
- Skin-to-skin positioning for referral is recommended for babies who are identified at home or in facilities without capacity to provide appropriate care, and need referral to a higher-level health facility.

4. THE PURPOSE OF THE GUIDELINE

This guideline describes the KMC method for care of stable preterm/LBW infants (those who can breathe and have no major health problems) who need thermal protection, adequate feeding, frequent observation, and protection from infection.

It provides guidance on how to organize services at the health facilities and on what is needed to introduce and carry out KMC, focusing on settings where resources are limited.

This guideline is meant for policy makers, planners, health care providers, trainers and health training institutions at all levels. Each health facility should have and use the KMC guidelines

5. KMC IN AFGHANISTAN

KMC was initially developed for low income countries, now it is standard of care worldwide.
Previously KMC was considered too difficult to be implemented in Afghanistan given the reasons of high workload in maternity facilities and cultural barriers.
In Afghanistan KMC was initially introduced in MSF's (Medicins Sans Frontieres) Dasht-e-Barchi facility (District hospital) in early 2015.

Implementation:

MSF dedicated five beds for KMC and a separate female nurse for the KMC room.

Results:

- Data from 1st January 2016
- 35 admissions ≥7 days
- Birth weight 1100-2000g (mean 1600g), admission to KMC weight 1510-1950g (mean 1650g), discharge weight 1750-2800g (mean 2055g).
- Mean length of stay 16 days
- Weight gain: mean 26.2g/day (16g/kg/day)
- Mortality: zero deaths among babies admitted to KMC

Challenges:

- Practical (clothing and temperature): specially designed gowns
- Competing family priorities: need to counsel fathers
- Cultural acceptance: better than we presumed
- Staff motivation: requires ongoing reinforcement and education

Conclusion:

- KMC proven in newborn settings across the world
- Can be implemented in Afghanistan, if done thoughtfully, with excellent results (Requires separate staff and staff training, requires ongoing reinforcement and should be followed with rigorous data collection and supportive supervision).

6. ESTABLISHING KMC SERVICES

6.1 Preparation:

In any country, the successful introduction and expansion of KMC services requires thorough preparation. Introducing KMC services in a limited number of facilities can be achieved without extensive resources. However, the best way to achieve a reduction in newborn mortality is to scale up KMC services nationwide, ensuring that all LBW babies have access to the care needed to improve survival.KMC is a simple, low-cost technology, but including the services as part of a national health strategy to reduce neonatal mortality is not an easy endeavor.

The introduction of national-level KMC services requires extensive planning, sufficient resources and most importantly, a paradigm shift in both national policy and care of LBW babies.

A number of obstacles may be encountered during the introduction and expansion of services.

Key obstacles May include:

Knowledge: Medical professionals, managers, policymakers and the public have no knowledge of the benefits of KMC.

- sociocultural barriers: lack of public awareness from the benefits ofKMC and social norms of the society.
- Resources: There are no resources for:
  - Implementation of KMC at the facility (arrange space, furniture, equipment, supplies).
  - Hiring of separate staff
  - Support staff training
  - Supervision of KMC services in facilities
  - Follow-up visits and support in communities after mothers and babies are discharged.

6.2 KMC implementation

The most important resources for KMC are the mother, personnel with special skills and a

supportive environment. The requirements described in this chapter are formulation of policy,

Organization of services and follow-up, equipment and supplies for mothers and babies, and

skilled providers for the facilities

6.2.1 Setting

KMC can be implemented in various facilities and at different levels of care.

The most common settings where such care can be implemented are described below:

Provincial and Regional hospitals:

These facilities should have neonatal units. Kangaroo mother care services should be established for all low birth weight babies. However, babies with complications (who need mechanical ventilation or surgical interventions) should be referred to higher level of care (national/ teaching hospitals).

National and teaching hospitals:

Low birth weight babies delivered at these facilities should have access to Kangaroo Mother Care services. A common feature is the availability of skilled personnel, specialized equipment and supplies for special neonatal care, therefore all low birth weight babies and neonates with complications should be managed at this level.

6.2.2: Requirements

6.2.2.1: Capacity building

- Training of nurses, physicians and other staff involved in the care of the mother and the baby (2 days).
- Supportive supervision and on the job training by supervisors and experienced staff to new and less experienced staff.
- Educational material such as information sheets, posters and video films on KMC in local language should be available to the mothers, families and community. Ensure adequate IEC material, including video films on KMC in local language for mothers, families and community. Counseling of the mothers, fathers and relatives by service providers is catalytic in ensuring KMC practice during their stay at the hospital and after discharge so that they can continue to practice KMC till the infant requires it. Community awareness activities should be conducted to maximize the benefits of KMC and breastfeeding.

6.2.2.2: Staffing

Kangaroo Mother Care requires additional staff at the health facilities, generally one nurse is needed for 6-8 beds in each 8 hourly shift, at some of the health facilities due to availability of the required staff based on the standard newborn tool kit there may be no need for hiring of extra staffs.

6.2.2.3: Facility, Equipment and Supplies

KMC does not require special facilities, but simple arrangements can be made to make the mother's stay more comfortable.

- Rooms near Special Newborn Care Unit (SNCU) or postnatal ward that can accommodate enough beds, side cupboard and chairs according to the level of care. Ideally 1500 feet square space is required for 8 bed KMC unit, from which 120 feet square should be allocated for each bed (8*120 = 960) and the remaining should be use for the ancillary areas. however, provision of KMC should not wait for the establishment of KMCU
- Provincial hospital may have 2-4 or more beds based on the delivery load, number of premature /LBW according to the availability of space and nursing staff.
- Regional and tertiary hospitals should have 6-8 & 6-10 beds respectively depending on the availability of space, number of nursing staff & delivery load/ number of the babies.

- The beds should be comfortable, if possible adjustable or with enough pillows to maintain an upright or semi-recumbent position.
- Rooms should have privacy for expression of the breast milk and adequate warmth (25-28˚C), so there is needed for warming equipments especially in cold seasons such as air condition, electric heaters or stove, Curtains can help to ensure privacy.
- Bathroom facilities, running water and soap should be available. Daily shower or washing is sufficient for maternal hygiene; strict hand-washing should be encouraged after using the toilet and changing the baby. Mothers should have the opportunity to change or wash clothes during their stay at the KMC facility.
- Where possible, a small room would be useful for individual work with mothers, discussion of private and confidential issues and for reassessing babies. Recreational, educational and income-generating activities can be organized for mothers during KMC as deemed necessary.
- The support binder: This is the only special item needed for KMC. It helps mothers hold their babies safely close to their chest. To begin with, use a soft piece of fabric, about a meter square, folded diagonally in two and secured with a safe knot or tucked up under the mother's armpit. Later a carrying pouch of mother's choice (Fig. 2) can replace this cloth. All these options leave the mother with both hands free and allow her to move around easily while carrying the baby skin to- skin. Some institutions prefer to provide their own type of pouch, shirt or band.

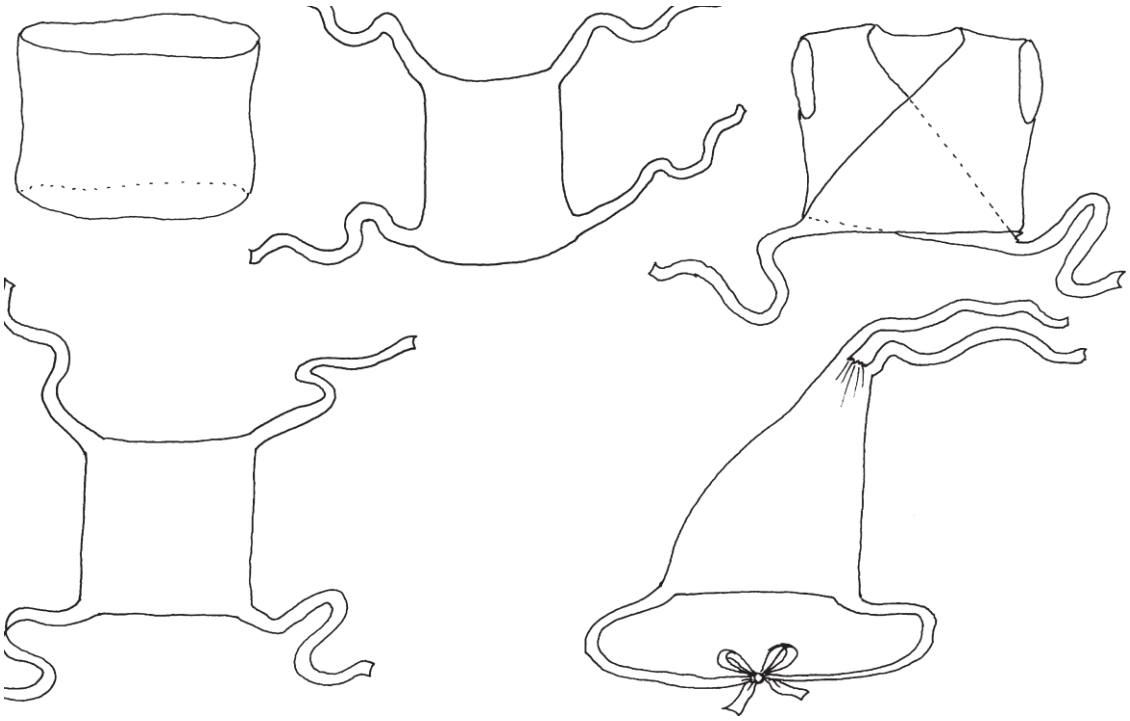


Figure 1: Required dress for KMC

It is not mandatory to have any special dress, garment or binder for KMC. It can be provided using any front- open, light dress as per the culture that is acceptable to the mother and the family.

- The infant should be dressed in cap, socks, disposable diapers and front-open sleeveless shirt or 'jhabala' made of a soft natural fabric like cotton.

Figure 2: Essential Newborn dress during KMC

Other required equipments and supplies include: For the details of equipment supply see Annex - III

• A low reading thermometer

• A room thermometer

• Scales: ideally neonatal scales with 10g intervals should be used;

• Basic resuscitation equipment (at least Bulb sucker, neonatal size ambo bag with preterm size masks) and oxygen where possible, should be available where preterm babies are cared for.

• Medicines for preventing and treating frequent problems of preterm newborn babies may be added according to national guidelines.

- Special medicines are sometimes needed, but are not recommended in this guide. Treatment of medical problems is not part of this guide. These special medicines should be available at least in the neonatal unit and could be ask in the case of need.
- Basic materials for express breast milk such as breast pump, cup, spoon/catori spoon.

Record keeping

Each mother-baby pair needs a record sheet to note daily observations, information about

feeding and weight, and instructions for monitoring the baby as well as specific instructions

for the mother. The baby vitals should be recorded at least every 3 hours and weight should be done on daily basis. Accurate standard records are the key to good individual care; accurate

standard indicators are the key to sound programme evaluation.

A register (logbook) contains basic information on all infants and type of care received, and

provides information for monitoring and periodic programme evaluation. Annex I includes an

example of the type of record sheet that can be used for this purpose and adapted to different

settings. The data thus collected would also allow for regular calculation (quarterly and

annually) of important indicators, listed also in Annex I.

7. INITIATING AND MAINTAINING KANGAROO MOTHER CARE

This part describes how to practice Kangaroo Mother Care (KMC) in the health facility. It describes each component: thermal protection through the correct position, feeding, observing the baby, identifying and managing arising problems and also explains the criteria for discharge, continuum of KMC at home, follow-up needed to ensure adequate growth and support given to the mother.

8.1 WHEN TO START KMC:

Baby

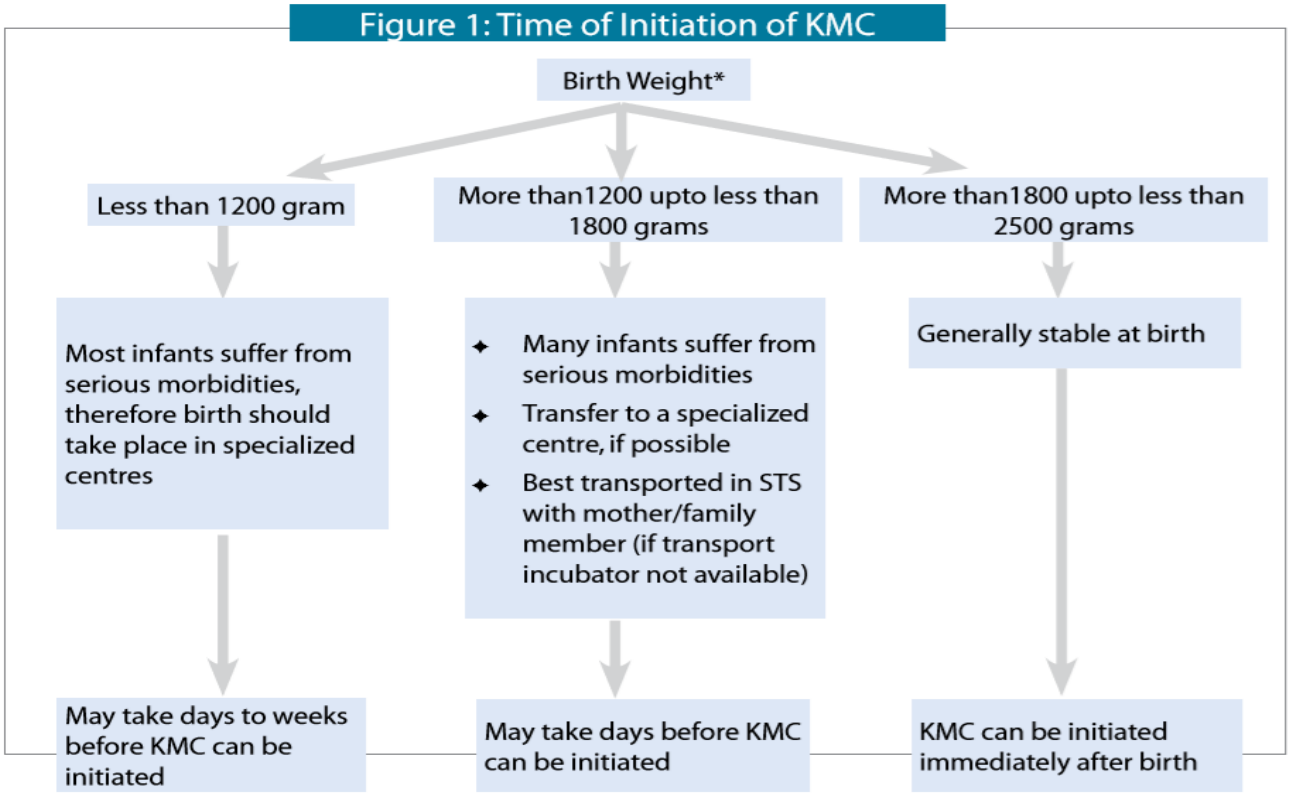
All stable LBW babies are eligible for KMC. However, very sick babies needing special care should be cared under radiant warmer initially. KMC should be started after the baby is hemo -dynamically stable. When starting KMC, measure axillary temperature every 6 hours until stable for three consecutive days. Later measure only twice daily. If the body temperature is below 36.5°C, rewarm the baby immediately: cover the baby with a blanket and make sure that the mother is staying in a warm place. Measure the temperature an hour later and continue rewarming until within the normal range. Also look for possible causes of hypothermia in the baby (cold room, the baby was not in KMC position before measuring the temperature, the baby had a bath or has not been feeding well). If no obvious cause can be found and the baby continues to have difficulty in maintaining normal body temperature, or the temperature does not return to normal within 3 hours, assess the baby for possible bacterial infection.

Guidelines for practicing KMC include:

I. Birth weight >1800 grams: These babies are generally stable at birth. Therefore, in most of them KMC can be initiated soon after birth.

II. Birth weight 1200-1799 grams: Many babies of this group have significant problems in neonatal period. It might take a few days before KMC can be initiated. If such a baby is born in a place where neonatal care services are inadequate, he should be transferred to a proper facility immediately after birth, along with the mother/ family member. He should be transferred to a referral hospital after initial stabilization and appropriate management, one of the best ways of transporting small babies is by keeping them in continuous skin-to-skin contact with the mother / family member during transport.

III. Birth weight <1200 g: Frequently, these babies develop serious prematurity-related morbidities often starting soon after birth. They benefit the most from in-utero transfer to the institutions with neonatal intensive care facilities. It may take days to weeks before baby's condition allows initiation of KMC.



* Cut-off birth weight for KMC has been based on Operational Guideline of Facility Based Newborn Care

Mothers:

All mothers and family members can provide KMC, irrespective of age, parity, education, culture and religion. The following points must be taken into consideration when counseling on KMC

i. Willingness: The mother must be willing to provide KMC. Healthcare providers should counsel and motivate her. Once the mother realizes the benefits of KMC for her baby, she will learn and undertake KMC.

ii. General health and nutrition: The mother should be free from serious illness to be able to provide KMC. She should receive adequate diet and supplements recommended by her physician.

iii. Hygiene: The mother should maintain good hygiene: daily bath/sponge, change of clothes, hand washing, short and clean finger nails. Family members involved in care should also practice proper hand washing.

iv. Supportive family: Apart from supporting the mother, family members should also be encouraged to provide KMC when mother wishes to take rest. Mother would need family's cooperation to deal with her conventional responsibilities of household chores till the baby requires KMC.

v. Supportive community: Community awareness about the benefits should be created. This is particularly important when there are social, economic or family constraints**.**

8.2 Who can provide KMC?

KMC can be provided by mothers, fathers and other adult family members. The KMC provider

should be willing, in good health, free from serious illness and should maintain basic standards of hygiene such as hand washing, daily bath, clipped fingernails, tied up hair and clean clothes. It is recommended that jewelry, watches and sacred threads must be removed as they may be a barrier to maintain hygiene and might cause injury to the newborn.

8.3 How to provide KMC?

8.3.1: Counseling

Effective counseling for the initiation of KMC is a prerequisite to overcome socio-cultural barriers and anxiety regarding handling a LBW infant both by the mother and other care providers. When the infant is ready for KMC, the first counseling session should be organized at a time convenient to the mother. The first few sessions are important and require extended interaction to develop a rapport with the mother and to alleviate any fear. KMC procedure should be demonstrated to her explaining correct positioning a caring, gentle manner and with patience. Her queries should be answered to allay her anxieties. Encourage her to bring her mother/mother-in law, husband or any other member of the family. It helps in building a positive attitude of the family and ensuring family support to the mother which is particularly crucial for post-discharge home based KMC. It is helpful that the mother and family members starting KMC interact with someone already practicing KMC for her infant.

8.3.2: KMC Position

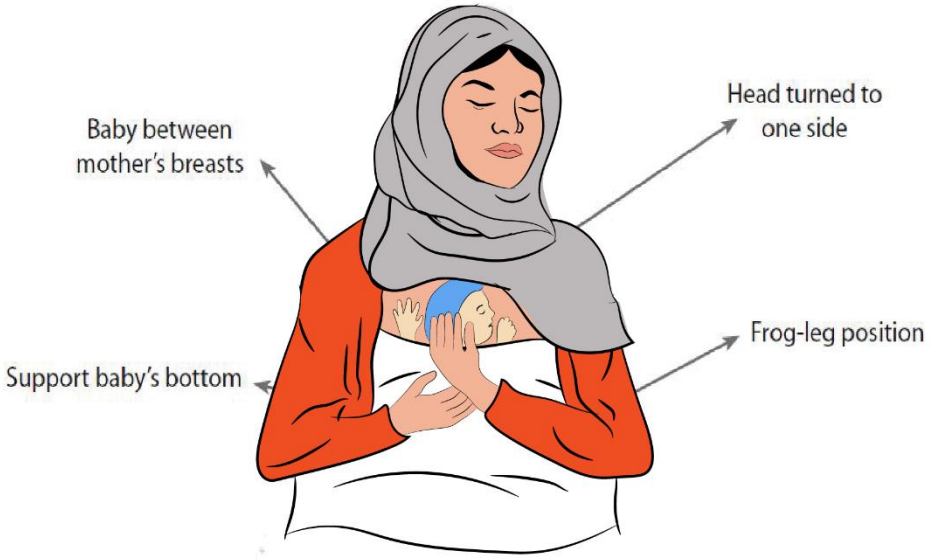


Figure 3: KMC in standing Position

Baby:

- The infant should be placed between the mother's breasts in an upright position.
- The head should be turned to one side and in a slightly extended position. This slightly extended head position keeps the air way open and allows eye to eye contact between the mother and her infant.

- The hips should be flexed and abducted in a “frog” position; the arms should also be flexed.
- The infant’s abdomen should be at the level of the mother’s epigastrium. Mother’s breathing stimulates the infant, thus reducing the occurrence of apnea.
- Support the infant from the bottom with a sling/binder up to the top the top of the binder or cloth is just beneath the baby’s ear

Health provider should help the mother initiate KMC by assisting in positioning the infant and explaining how to handle the infant during KMC. Repeated training helps the mother overcome the fear of handling her newborn and improves her skill related to KMC.

Mother:

- A semi-reclining position (15º 30º) is to be adopted while sleeping. This can be achieved

with the help of pillows on the hospital bed or special semi-reclining chairs,

The mother carrying an infant in the KMC position can walk, stand, sit, or engage different activities. If comfortable, the mother can sleep with the infant in kangaroo position in a reclined or semi recumbent position

- A semi-sitting position helps the baby to breathe normally.

Figure 4: KMC in semisetting Position

8.3.3 Duration of KMC

Minimum duration of a KMC session should be one hour because frequent handling may be stressful for the infant. The duration of each KMC session should be gradually increased for as long as the mother can comfortably provide KMC. The infants in KMC need to be removed from skin-to-skin contact only for changing diapers and clinical assessment according to hospital schedules.

If the mother needs to have a bath and the air temperature is not too low the baby can be wrapped in warm towels, cloths and laid on the mother’s bed for 10 – 20 minutes without any harm.

8.3.4 Monitoring baby's condition

Babies receiving KMC should be monitored carefully especially during the initial stages. Nursing staff should make sure that baby's neck position is neither too flexed nor too extended, airway is clear, breathing is regular, color is pink and baby is maintaining temperature. Mother should be trained to observe her baby for danger signs, like hypothermia, respiratory problems, feeding difficulty, change in color during KMC so that she herself can continue monitoring at home.

8.3.5 Feeding during KMC

The mother should be explained how to breastfeed while the baby is in KMC position. Holding the baby near the breast stimulates milk production. She may express milk while the baby is still in KMC position. The baby could be fed with *paladai*, spoon, syringe, dropper or tube depending on the condition of the baby.

8.3.6 Privacy

KMC unavoidably requires some exposure on the part of the mother. This can make her nervous and could be de-motivating. The staff must respect mother's sensitivities in this regard and ensure culturally-acceptable privacy standards in the nursery and the wards where KMC is practiced.

Summary of the Steps for providing Kangaroo Mother Care

1	Counsel the mother, provides privacy to the mother. Request the mother to sit or recline comfortably
2	Undress the baby gently, except for cap, nappy and socks
3	Place the baby prone on mother's chest in an upright position with the head slightly extended, between her breasts in skin to skin contact in a frog like position; turn baby's head to one side to keep airway clear. Support the baby's bottom with a sling/binder.
4	Cover the baby with mother's 'pallu' or gown; wrap the baby-mother duo with an added blanket or shawl depending upon the room temperature
5	Advise mother to breastfeed the baby frequently
6	Ensure warm room with room temperature maintained between 25 – 28° C.
7	Advise the mother to provide KMC for at least 1 hour per session. The length of skin-to-skin contact should be as long as possible

8.4 Discharge Criteria

Generally, the following criteria are accepted at most centers:

Baby:

- Baby's general health is good and no evidence of infection.
- Feeding well and receiving exclusively or predominantly breast milk (Some cup/spoon feeding if mother is confident and competent to continue at home).

- Ideally weight >2kg, but we can accept weight up to 1.8kg.
- Infants who are above 1,800 grams' birth weight, and are stable do not require admission into a nursery/SNCU, are given KMC soon after birth and can be sent home once adequacy of breastfeeding is established.
- Gaining weight (at least 15-20 gm/kg/day for at least three consecutive days)
- Maintaining body temperature satisfactorily for at least three consecutive days in room temperature.

Mothers:

- The mother and family members are confident to take care of the baby in KMC.
- The mother is not welling to provide KMC to her baby.
- Mother has serious illness, unable to provide KMC and there are no other family members who can provide KMC.

After successful discharge from KMC mothers should be asked to come for follow-up visits regularly. Where there are no follow-up services and the hospital is far away, mother and baby should be discharged later.

At discharge, the mother and family members must be taught to ensure that the infant is nursed in a warm room and is breastfed (Given expressed milk using paladai or cup). They should be adequately told about hygiene, danger signs, follow-up visits, immunization and prompt care seeking at a health facility.

KMC should be continued as long as required; baby and mother should not be discharged in a hurry.

At the time of discharge, the infant should be taken home in KMC position by the mother or relatives so as to encourage continued KMC at home.

Immunize the baby according to national policy before discharge from the hospital.

8.5 Post-discharge follows up

Close follow up is a fundamental pre-requisite of KMC practice. Although each unit should formulate its own policy of follow up.

In general, a baby is followed once or twice a week till 37-40 weeks of gestation or till the bay reaches 2.5-3 kg of weight. (Smaller the baby at discharge, the earlier and more frequent follow-up visits should be). Thereafter, a follow up once in 2-4 weeks may be enough till 3 months of post-conventional age. Later the baby should be seen at an interval of 1-2 months during first year of life.

The baby should gain adequate weight (15-20 gm/kg/day up to 40 weeks of post-conventional age and 10 gm/kg/ day subsequently). More frequent visits should be made if the baby is not growing well or his condition demands.

The content of the visit discussion may vary according to mothers and baby's needs but the following should be checked routinely at each follow-up visit:

- KMC practice
- Feeding: Appropriate Exclusive Breastfeeding or alternative feeding
- Growth monitoring: Weight gain of at least 15g/kg/day on average is expected. During the follow-up visits anthropometric measurements (e.g., weight, length, head circumference) of the infant should be recorded to monitor the growth. For plotting the measurements Fenton chart is attached as annex –IV.
- Illness: Babies should be assessed for possible signs of illness, whether the mother has complained or not.

- Medicines: Babies on medication should be given adequate medicine supply as per indication with proper instructions.
- Immunization: The baby should receive immunizations as per National immunization schedule.
- Routine child care: Mother should be encouraged to attend routine child care once the baby reaches 2500g or 40 weeks of gestational age.
- Mother's concerns: Mother/family concerns should be discussed as much as possible aiming at solutions.
- Next follow-up visit: Should be discussed and agreed on the next visit, reinforcing specific discussed issues. The mother should be encouraged to keep the next appointment.
- Detailed follow-up protocols are attached as annexure-II

8.6 Don'ts of Kangaroo Mother Care

- Do not bathe till infant weighs 2,500 gr, sponging may be done.
- Do not handle infant too frequently.
- Do not give bottle feed.
- Do not allow infant to be in contact with sick people.

8.7 When should KMC be discontinued?

When the mother and baby are comfortable, KMC is continued for as long as possible, at the institution and then at home. Often this is desirable until the baby's gestation reaches term or the weight is around 2500 g. She/he starts wriggling to show that she is uncomfortable, pulls her limbs out, cries and fusses every time the mother tries to put her back skin to skin. This is the time to wean the baby from KMC. Mothers can provide skin to skin contact occasionally after giving the baby a bath and during cold nights.

9. MONITORING, EVALUATION &DOCUMENTATION OF KMC SERVICES

Monitoring and evaluation are key components of any well-managed health program.

M&E provides information on program functioning, if program strategies need mid-course

Corrections and the impact of the program on the target population. Specifically, M&E:

- Provides data on program progress and effectiveness.
- Improves program management, quality and decision-making.
- Allows accountability to stakeholders, including funders.
- Provides data to plan future resource needs.
- Provides data useful for policymaking and advocacy.

9.1Selection of Key indicators

The following are a number of aspects that health facilities should take into account when planning the follow-up of the implementation of KMC:

- Collection of pre-KMC data should start 6 months before initiating the actual services; this will be used for comparing impact of KMC introduction on survival and other aspects of LBW baby care at the health facility.
- All KMC data should be recorded daily and analyzed monthly at the facility level using list of indicators in annex I
- At quarterly intervals, supportive supervisory visit will be done at each health facility implementing KMC by a supervisory team including a national trainer.
- KMC monitoring should be incorporated in other tracking and assessment mechanisms of the quality of newborn care.

10. ANNEX:

ANNEX- I: LIST OF KMC INDICATORS

1. Total number of LBW babies admitted.

2. Total number of babies admitted for KMC care.

3. Average length of stay of baby in the KMC Unit for those discharged alive.

4. Total number of babies discharged from KMC Unit alive.

5. Number of KMC babies with positive weight gain discharges from the unit.

6. Total number of KMC babies who came for follow-up after discharge from the KMC Unit for the two months' period under review.

ANNEX II: FOLLOW UP PROTOCOL AFTER DISCHARGE OF HIGH RISK INFANT

FOLLOW-UP PROTOCOL AFTER DISCHARGE OF A HIGH-RISK INFANT

S. No	Area	Frequency	Details	Remarks
A	Anthropometry	Every visit	Weight HC L	Always estimate if the gain is adequate
B	Breastfeeding	Every visit	Attachment Positioning Problems	Observe a breastfeeding session if possible
C	Counselling	Every visit	Feeding Hygiene KMC Innocuous issues	Ask mother about her concerns
D	Development screening	3, 6, 9 , 12 months	Use TD screening chart	Fill up the chart and refer where needed for detailed developmental evaluation
E	Eye	1 month for infants <1750 grams to <2000 grams with stormy NICU course. Detailed examination at 9-12 months of age	Emphasize on getting a retinopathy (ROP) screening from a skilled ophthalmologist	Review in next visit
F	Follow-up USG	At discharge and at 40 weeks PMA	To rule out PVL and other abnormalities	
G	Growth Monitoring	Every Visit	Plot the growth of the infant on the WHO growth charts	Use of the Fenton chart till the infant is 40 wks PMA and WHO charts thereafter
H	Hearing	At 40 wks PMA and in case questionable, at 6 weeks of age	One can use the OAE/ BERA or combination as per the policy	
I	Immunization	As per schedule		
J	Others	Language/speech at 1,2 3 years Behavior at/after 1 year IQ testing at 3 years of age		Any delay detected should prompt early intervention

ANNEX – III

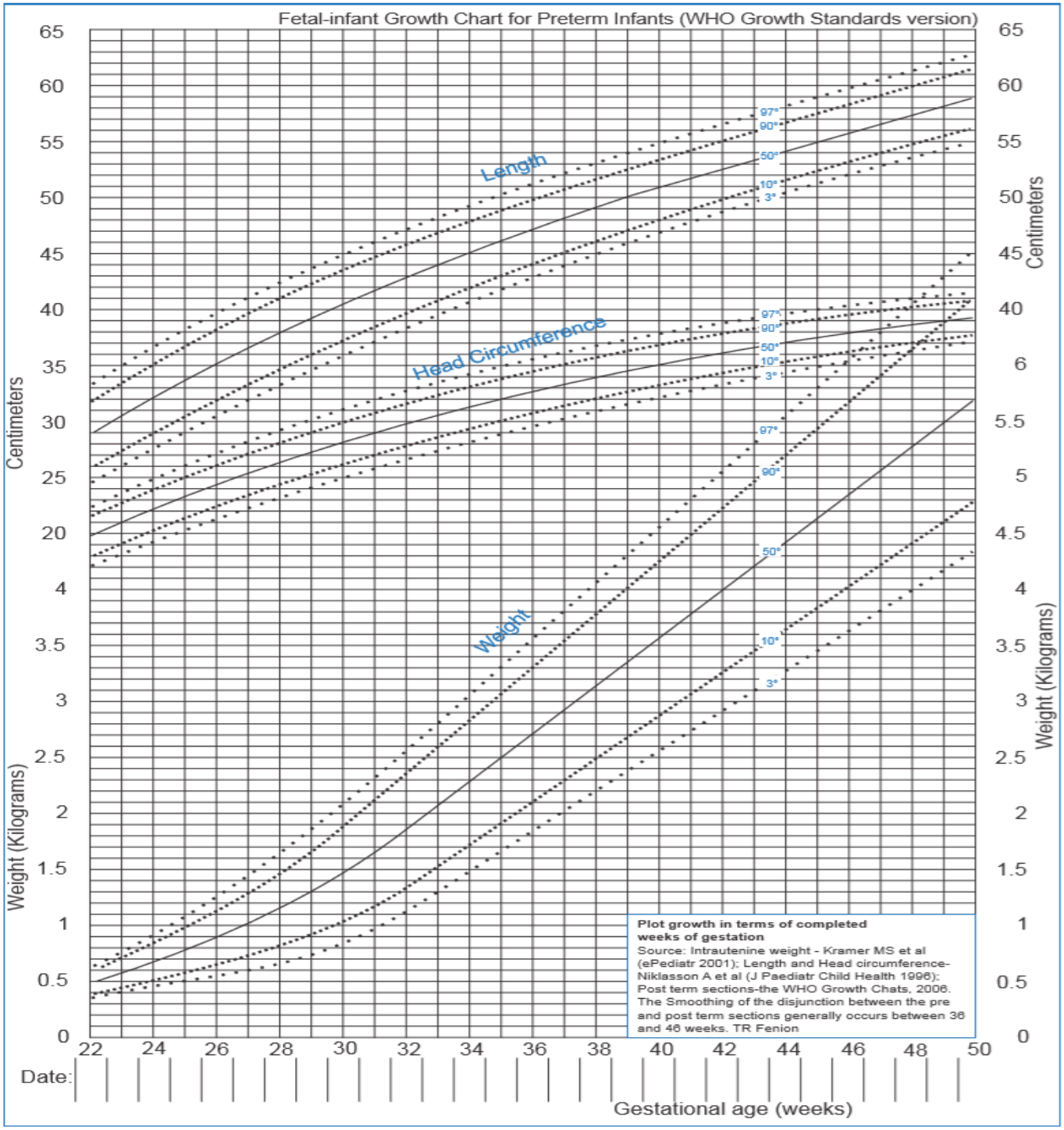
The needs of 4 beds
KMC unit

S/No	Heads	Essential	Desirable	Unit needed	Unit Cost in USD	Total cost
A	**Infrastructure**					
1	Renovation	√		1	1500	1500
B	**Furniture**					
2	Beds semi-reclining	√		4	250	1000
3	Easy chairs (reclining with foot support)	√		4	60	240
4	Storage space/locker for mothers	√		4	25	100
5	Office chairs	√		4	50	200
C	**Furnishing**					
6	Mattress	√		8	40	320
7	Pillows	√		8	15	120
8	Bed sheets	√		8	7	56
9	Adult blanket	√		8	45	360
10	Baby blanket	√		8	8	64
11	Mobile screen	√		From hospital budget		
12	Dust bins	√		From hospital budget		
13	Refrigerator (165L - 230L)		√	1	300	300
14	AV aids (Television & CD player)	√	√	1	200	200
D	**Equipment**			1	30	30
15	Bag & Mask (Size 0 & 1)	√		1	40	40

16	Digital Weighing machine	√		1	50	50
17	Pediatric stethoscope	√		4	10	40
18	Digital low reading clinical thermometer	√		4	1	4
19	Room thermometer			2	7	14
20	Heater (Radiant/air conditioner)		√	From hospital budget		
21	Oxygen cylinder & Oxygen hoods		√	From hospital budget		
E	**Recurring cost per annum**					0
22	Feeding equipment (Tubes, Katoris & Spoons)	√		100*	2	200
23	Clothes for newborns (Disposable Diapers, Cap & Socks)	√		100*	1.5	150
24	Gowns for Mothers		√	100*	10	1000
25	KMC wraps/binders	√		100	8	800
26	Soap & other cleaning agents	√		From hospital regular budget		
27	Emergency medicines, cotton, gauge	√		From hospital regular budget		
28	Record registers/case sheets	√		From hospital regular budget		
29	Other maintenance cost and food	√		From hospital regular budget		
	Total Budget					**6788**

ANNEX- IV

FENTON GROWTH CHART



ANNEX- V

Kangaroo Mother Care Positioning Checklist

Rate the performance of each step or task observed using the following rating scale:

1. Needs Improvement: Step or task not performed correctly, is omitted or out of sequence (if Sequence necessary).

2. Competently Performed: Step or task performed correctly and in proper sequence (if sequence necessary).

Kangaroo Mother Care	**Cases Observed**				
Key Steps	**1**	**2**	**3**	**4**	**5**
1. Greet the mother and make her comfortable.					
2. Explain what you are going to do and encourage the mother to ask question.					
3. Dress the baby in nappy, hat and socks.					
4. Instruct the mother to put on a front-opened top.					
5. Place the baby upright on skin-to-skin between the mother's breasts in a frog-like position					
6. Secure the baby to the mother's chest:					
a) Maintain support of the baby with the mother's hand.					
b) Cover the baby with a cloth.					
c) The top of the cloth should be under the baby's ear.					
d) The bottom of the cloth is tucked under baby's buttocks.					
e) Make sure the tight part of the cloth is over the baby's back (Chest)					
f) Baby's abdomen should not be constricted.					
g) Baby should be able to breathe.					
h) Tie the cloth securely at the mother's back.					
7. Cover the baby with a blanket or shawl and let the mother tuck in at the front or side (Under the arms)					
8. Ensure the mother is able to perform the same process to position the baby.					

Reference: Kangaroo Mother Care training manual (Access to clinical and community maternal, neonatal and women's health services) 2009.

ANNEX- VI

Assessing Skin-To-Skin Care of a LBW Baby Checklist

Participant's Name:

Evaluator: Read the following case situation and instructions to the participant

"You are caring for a mother and her LBW baby 4 hours after a normal birth. The baby was put skin to skin with the mother other immediately after birth. The baby breastfed and received eye care and vitamin K during the first hour after birth. The mother did not receive any KMC counseling during pregnancy, but she is interested in KMC.You are ready to help the mother start KMC for her baby.

"Please explain the information you will give the mother and family about the reasons for KMC for a LBW baby." (Note: This information may be given in any order.)

Key Steps	SCORES (0 OR 1)				
1. Explains that skin-to-skin is the best way to care for LBW babies, starting as soon as possible after birth.					
2. Explains that skin-to-skin care: • Helps stabilize the baby's temperature • Keeps the baby near the mother's breasts for feeding on demand • Promotes the mother's milk let-down reflex and helps breastfeeding succeeds • Promotes faster newborn weight gain • Protects the baby from injury and infection					
3. Explains that the mother is the best person to provide KMC because her breast milk helps the baby resist infections they are exposed to. No one else can give the baby this specific protection from infections.					
Evaluator: Now say to the participant: "Please demonstrate teaching the mother to provide KMC for her baby." The participant can use a combination of methods to teach the mother such as pictures, use of a doll and demonstration with the mother's baby.					
4. Explains that he or she will teach the mother how to give KMC so that she can do it herself.					
5. Washes hands and dries them on a clean towel, or air-dries them. Explains to the mother that she should also wash her hands before handling the baby; has her wash her hands.					
6. Explains that the baby should be naked except for a diaper, hat and socks. Undresses the baby except for a diaper and hat (Socks if desired)					
Key Steps	**SCORES (0 OR 1)**				
7. Explains that the baby will be carried next to the mother's skin, inside her warm clothing.					
8. Helps the mother position the baby upright between her breasts, feet below her breasts and hands above.					

9. Helps the mother position the baby so that they are chest-to-chest with the baby's head turned to one side.					
10. Shows the mother how to snugly wrap the baby to her body: • Places the center of a long cloth or wrapper over the back of the baby on the mother's chest. Crosses the ends of the cloth behind the mother's back, brings them back around, and ties them in the front underneath the baby.					
11. Shows the mother how to tie the cloth or wrapper tightly enough to maintain skin-to-skin contact, loose enough so the baby can breathe easily. (Note: The baby should not slip out when the mother stands up or moves around.)					
12. Shows the mother how to support the baby's head by pulling the cloth or wrapper up to just under his outside ear.					
13. Helps the mother put on her own clothing (a loose dress or blouse) over the baby. It should be open enough to allow easy breastfeeding and the baby's face should not be covered.					
14. Washes hands and dries them on a clean cloth or air-dries them.					
Evaluator: Now say to the participant: "Please explain what other information about KMC you will give to the mother and family." (Note: This information can be given in any order.)					
15. Advises the mother to go about her normal activities with the baby attached to her body in this way.					
16. Explains how the mother can sleep comfortably with baby in the KMC position. Shows her pictures of sleeping positions.					
17. Show the mother how to loosen the cloth or wrapper to breastfeed on demand, at least every 2-3 hours.					
18. Explains the importance of delayed bathing; show the mother how to give the baby a sponge bath.					
19. Explains that other family members should supply whatever the mother and baby need without separating them, when possible. Explains that the mother will need a lot of support.					
20. Explains when and how another family member may replace the mother briefly to provide KMC when needed.					
Key Steps	**SCORES (0 OR 1)**				
21. Explains that the mother and family should provide KMC continuously 24 hours a day (day and night) until the baby no longer tolerates KMC. Explains signs that the baby no longer desires KMC (baby is restless in KMC position, fidgets/tries to get out of KMC position, ets.)					
22. Explains what the mother should do if she or family members become sick with a minor illness(Such as a cold)					
23. Encourage the mother to ask questions throughout the demonstration; address her questions and concerns.					
24. Reviews danger signs of all newborns and what to do; be sure the woman demonstrates her understanding of danger signs and what do to.					
Add up all of the "Once" (1) and write the total number in this box.					
Date and signature of the person who scored the performance:					

After completing the checklist for each participant, add up the score. A passing or satisfactory grade (minimal competency) is achieved when there is a score of "1" for each step. Therefore, the number of steps for each skill will equal the number of points required to achieve competency. The trainer then signs and dates the assessment on completion.

Each participant should score 24 or 100% on this checklist. For those steps where the participant did not score "1," the trainer should review the step and have the participant repeat it.

Reference: Kangaroo Mother Care training manual (Access to clinical and community maternal, neonatal and women's health services) 2009.

ANNEX- VII

Observation of Breast Feeding Checklist

Rate the performance of each step or task observed using the following rating scale:

1. Needs Improvement: Step or task not performed correctly, is omitted or out of sequence (if Sequence necessary).

2. Competently Performed: Step or task performed correctly and in proper sequence (if sequence necessary).

Observation of Breast Feeding	**Cases Observed**				
Key Steps	**1**	**2**	**3**	**4**	**5**
1. Greet the mother and make her comfortable.					
2. Explain what you are going to do and encourage mother to ask questions.					
3. Ask the mother to put the baby to breast and observe.					
4. Check for good positioning at breast:					
a) Baby's ear, shoulder and hip should be straight.					
b) Baby's face should be facing the breast with nose opposite nipple.					
c) Baby's body should be held close to mother.					
d) Baby's whole body should be supported.					
5. Check for good attachment at breast:					
a) Chin touching breast					
b) Mouth wide open					
c) Lower lip turned outward					
d) More areola visible above than below the mouth					
6. Check for effective suckling:					
a) Slow, deep sucks					
b) Occasional short pauses					
c) Mother reports that breast feels softer after the feed					
7. Document findings.					

*Note: Some preterm babies may not be able to achieve all of the attachment and sucking criteria. This checklist assumes that the baby is already stable and able to feed well.

Reference: Kangaroo Mother Care training manual (Access to clinical and community maternal, neonatal and women's health services) 2009.

11. REFERENCES:

- Kangaroo Mother Care implementation guide MCHIP (Maternal and Child Health Integrated Program) April 2012.
- WHO Kangaroo Mother Care Practical guide 2003
- Indian Kangaroo Mother Care and Optimal feeding of LBW babies' Operational guideline 2014
- Tanzania-Kangaroo Mother Care guideline,2008
- Afghanistan Demographic Health Survey, Kabul 2015