





# Ministry of Health

## **KANGAROO MOTHER CARE: Clinical Implementation Guidelines 2023**

## Foreword

Kenya has achieved significant reduction in mortality among children aged below 5 years but newborn deaths remain unacceptably high. The Kenya Demographic Health Survey (KDHS 2022) shows that under-five mortality rate has decreased from 52 to 41 per 1,000 live births, and infant mortality rate from 39 to 32 deaths per 1,000 live births. The neonatal mortality has decreased at a slower rate and currently stands at 21 from 22 deaths per 1,000 live births. According to the same report, neonatal deaths account for 66 percent of infant mortality and 51 percent of under-five mortality.

The kangaroo Mother Care Clinical Implementation Guideline describes the Kangaroo Mother Care (KMC) method for care of preterm and low birth weight newborns and gives recommendations on how to introduce, organize and carry out KMC at health facilities as per the standards. The guideline is largely adapted from the WHO's "Recommendation for care of the preterm or low birth weight infants 2022" and a Global position paper on Kangaroo Mother Care "A transformative innovation in health care".

Kangaroo Mother Care as outlined in this guideline is defined as early, prolonged and continuous skin-to-skin contact between a mother or her surrogate and her low-birth-weight infant. In Kenya, KMC has been identified as a low-cost high impact intervention for management of preterm and low birth weight newborns whose aim is to improve survival of these babies and contribute to the overall reduction of newborn deaths.

This guideline is meant for use by policy makers, planners, managers and health care providers. It will also be useful to students in health training institutions.

I am confident that the implementation of these guidelines will contribute to the reduction of preventable newborn deaths in Kenya and I urge all stakeholders to support required implementation efforts for scale in order to meet the targets we have set as a country for newborn and child health.



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**Ag. Director General for Health**

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## ABBREVIATIONS

AFASS	Acceptable, Feasible, Affordable, Sustainable and Safe
ANC	Antenatal Care
CHP	Community Health Promoter
cMNH	Community Maternal Newborn Health
EmONC	Emergency Obstetric and Newborn Care
ENC	Essential Newborn Care
IEC	Information Education Communication
iKMC	Immediate Kangaroo Mother care
IMNCI	Integrated management of newborn and childhood illness
IYCF	Infant and young Child Feeding
KAP	Knowledge Attitude and Practice
KMC	Kangaroo Mother Care
LBW	Low Birth Weight
MCH	Mother and Child Health
MIYCN	Maternal, Infant and Young Child Nutrition
MNH	Maternal and Neonatal Health
MNCU	Maternal and neonatal care units
NG	Nasogastric
POPC	Paediatric Outpatient Clinic
PMTCT	Prevention of mother to child transmission of HIV

## DEFINITION OF TERMS

- **Term birth:** delivery occurring between 37 and 42 weeks of gestation
- **Preterm birth:** delivery occurring before 37 completed weeks of gestation
  - **Extremely preterm:** < 28 weeks of gestation
  - **Very preterm:** 28 to <32 weeks of gestation
  - **Moderate to late preterm:** 32 to <37 weeks of gestation
- **Post-term birth:** delivery occurring after 42 weeks of gestation
- **Low-birth-weight infant:** infant with birth weight less than 2500g regardless of gestational age
- **Very low-birth-weight infant:** infant with birth weight from 1000g to less than 1500g regardless of gestational age.
- **Extremely low-birth-weight infant:** infant with birth weight lower than 1000g regardless of gestational age.
- **Stable Baby:** a newborn baby who is able to breathe spontaneously, is not in shock and does not need mechanical ventilation. The infant's clinical condition (including heart rate, breathing, color, temperature and oxygen saturation) remains stable and does not require continuous medical support and monitoring.
- **Unstable Non-Critical:** A sick infant on medical interventions but hemodynamically stable and not on mechanical ventilation.
- **Unstable Critical Baby:** An infant who is unable to breathe spontaneously after resuscitation, is in shock or needs mechanical ventilation.
- **Surrogate** - Fathers, partners and other family members who take on an active role in the care of preterm or LBW infants including offering KMC



# 1. The introduction

## 1.1. The magnitude of the problem

Prematurity, defined as babies who are born alive before 37 weeks of pregnancy are completed, is estimated to be one of the leading causes of neonatal mortality in Kenya with the others being asphyxia and congenital anomalies (UNICEF Count down to 2030). Globally, 13.4 million babies were born preterm in 2020, representing 9.9% of total live births. More than 60% of the preterm births are in sub-Saharan Africa and south Asia. In 2020 it is estimated that about 127,500 babies in Kenya were born too soon accounting for about 12% of all live births. (Born too soon 2023 report).

According to the Kenya demographic and Health Survey 2022, neonatal deaths accounted for 66% of the infant deaths and more than half (51%) of under five deaths. Despite a significant reduction in Under five and infant mortality, neonatal mortality in Kenya remains largely unchanged. Under-five mortality decreased from 52 per 1000 live births in 2014 to 41 per 1000 live births in 2022 while infant mortality reduced from 39 per 1000 live births in 2014 to 32 per 1000 live births in 2022. There was minimal decline in neonatal mortality from 22 per 1000 live births in 2014 to 21 per 1000 live births in 2022.

The majority of cases of premature labour happen with no identifiable risk or cause making prevention difficult. However, some causes such as maternal diseases including infections, diabetes or hypertension can be identified and treated during antenatal care visits. In Kenya, only 66% of women attend four or more ANC visits and not all of them have the necessary screening tests carried out to identify and treat these maternal conditions (KDHS 2022). Premature babies are at risk of death due to hypothermia, hypoglycaemia and respiratory diseases, as well as the long-term consequences of being born too soon. According to global estimates, 85% of preterm births occur between 32 and 37 weeks of gestation where survival is usually possible without neonatal intensive care (Born too soon 2023). This means that the care of preterm babies requires well trained staff and only a small proportion require specialized equipment such as incubators for thermoregulation and respirators to support breathing for their care.

In many health facilities in Kenya, there is a shortage of health care providers that are trained to handle premature and low birth weight babies and the necessary equipment is inadequate. Where incubators are available, they are often inadequate meaning that newborns have to share thus increasing the risk of hospital acquired infections. In addition, incubators are poorly maintained and the lack of a reliable power source means that the temperatures fluctuate which may cause hypothermia or hyperthermia.

This guideline describes Kangaroo Mother Care (KMC), a low cost and high impact intervention for care of preterm and low birth weight babies. It also describes KMC implementation at home and at all levels of newborn care (primary, secondary and tertiary) and how health services can ensure family involvement in the care of their preterm or LBW infant, irrespective of the infant's clinical condition. It provides guidance on how to organize services at the health facilities and at the community level and the requirements for introducing and carrying out KMC at health facilities. This guideline is meant for use by policy makers, planners, health care providers, trainers and health training institutions at all levels.

## 1.2. Definition of KMC

**Kangaroo Mother Care** is defined as the care of preterm or LBW infants in continuous and prolonged (8–24 hours per day, for as many hours as possible) skin-to-skin contact between a mother or her surrogate and her preterm/ low birth weight infant, recommended to be initiated immediately after birth, with support for exclusive breastfeeding or breast-milk feeding.

- The difference between KMC and skin-to-skin care (which is recommended for all newborns at birth) is in the duration of contact. Skin-to-skin care is usually done immediately after birth for at least one hour for every newborn to ensure that all babies stay warm in the first hours of life and helps in early initiation of breastfeeding.

### Immediate KMC:

This is defined as kangaroo mother care for preterm or low birth weight infants started as soon as possible after birth, within 2 hours, for all stable or unstable premature or low birth weight infants except those unable to breathe spontaneously after resuscitation, are in shock, or need mechanical ventilation.

The baby is placed in the skin to skin contact with the mother/ surrogate immediately after birth before stabilization. It should be initiated at home for all infants before and during referral to a health facility for assessment, or at health care facilities before the infant is clinically stable. During referral from primary care facilities, all premature and low birthweight newborns should be on Kangaroo Mother Care.

Immediate kmc reduce mortality, reduce infection , improve breastfeeding rate and prevent hypothermia ( WHO 2021 )

**N/B:** All home deliveries should be referred to a health facility immediately.

The key elements of KMC are:

- *Position*- early, continued and prolonged skin-to-skin contact between the mother/surrogate and the LBW or preterm baby
- *Nutrition* - exclusive breastfeeding (ideally)/ exclusive breast milk feeding
- *Discharge* with adequate support and follow up
- *Supportive environment* in the health care facility and at home

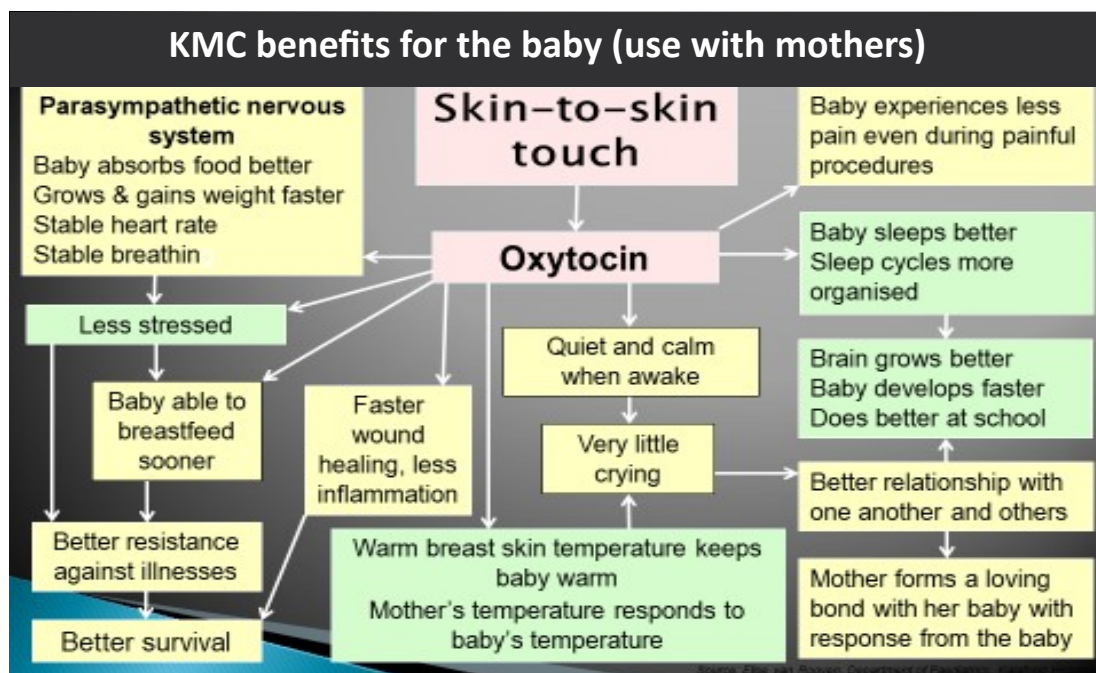
### 1.3. Rationale for KMC

KMC was begun in Bogota, Colombia in 1978 by Dr. Edgar Rey & Hector Martinez. Research and experience show that KMC is at least equivalent to conventional care (incubators), in terms of safety and thermal protection. KMC, by facilitating breastfeeding, also offers noticeable advantages in cases of severe morbidity. KMC contributes to the humanization of neonatal care and to better bonding between mother and baby in both low and high-income countries.

According to 2016 Cochrane review, KMC reduces risk of mortality of LBW by 40%. A multi-country randomized control trial conducted by the WHO immediate KMC study group demonstrated a reduction in mortality at 28 days among infants 1.0 to 1.799g who received immediate kangaroo care (before stabilization) compared those who had received conventional KMC.(references)

The table below lists the benefits of KMC to the baby, the mother and the health facility

Baby	Mother/care giver	Facility
<ul style="list-style-type: none"><li>• Improved cardiac and respiratory stability</li><li>• KMC can successfully treat mild respiratory distress</li><li>• Improved gastrointestinal function</li><li>• Higher initiation &amp; duration of breastfeeding</li><li>• Low energy expenditure &amp; satisfactory weight gain</li><li>• Protection against nosocomial infections</li><li>• Better thermoregulation</li><li>• Infants are less stressed and this provides neurological protection to the infant</li><li>• More organized sleep less pain during procedures</li></ul>	<ul style="list-style-type: none"><li>• The mother's confidence in caring for her infant is boosted</li><li>• Improved bonding between mother and infant due to the physical closeness between them</li><li>• Mothers are empowered to play an active role in their infants care</li><li>• Mothers are enabled to become the primary care giver of their infants</li><li>• Breast feeding is promoted which has benefits for both mother and baby</li></ul>	<ul style="list-style-type: none"><li>• Significant cost-savings as well as</li><li>• Less dependence on incubators</li><li>• Additional nursing staff not required (compared to incubator care)</li><li>• Shorter hospital stay</li><li>• Improved morale &amp; quality of care</li><li>• Better survival</li></ul>



The long-term effects of KMC have recently been elucidated from the Bogota's KMC cohort on both the families that practiced KMC and on the preterm babies who received KMC. KMC parents were found to be more protective and nurturing than the controls. There was a long lasting social and behavioral protective effect 20 years after the intervention, as evidenced by a reduction in school absenteeism, reduced aggressiveness and social deviancy.

Ways of doing KMC

- I. Immediate KMC
- II. Early KMC after stabilization
- III. Intermittent KMC- A session must be more than 60min and total duration per day atleast 8-24 hours

## 2. Establishing KMC services

This section describes the establishment and organization of services from the community to the national level from provision of suitable space, essential equipment and supplies for mothers and newborns, staffing and capacity building of health providers including community health promoters.

Implementation of KMC will require facilitation by supportive health authorities at National level, County level and in all health facilities. These include the Division of Newborn and Child Health, County Executive Committee, County Directors of Health, County Chief Officers of Health, County Health Management Team (CHMT), Sub County Health Management Team (SCHMT), Medical Superintendents, facility in- charges and the community health assistants.

This policy guideline aims to ensure a coherent and effective integration of the KMC within pre-existing structures of the health system, education and training. Preterm babies should be cared for in a health facility that is able to provide special medical care required for managing their frequent complications. Thus, when a premature baby is expected, antepartum corticosteroids should be given for gestation less than 34weeks before the mother is transferred to such a health facility for safe delivery. If this is not possible, low birth weight babies should be initiated on iKMC and transferred as soon as possible. For those born at home, iKMC should be started and prompt referral to the facility for assessment. The referral system should be organized in such a way as to guarantee the safety of the baby. The family unit should be at the centre of care at all times during the care of a low birthweight or premature newborn.

Kangaroo Mother Care as a clinical intervention can be carried out at home or at a health facility. KMC should be continued at home after discharge.

Implementation of KMC shall be anchored in the six-health system building blocks

## 2.1. Conducting a facility assessment

It is important to conduct a facility assessment before setting up a KMC service. This is in order to determine the facility's capacity to provide the service and identify any gaps for resource mobilization. A tool for facility assessment has been provided in annex 1 and the minimum standards for a KMC unit are highlighted in the sections below

## 2.2. Leadership and governance

Premature birth is the leading contributor to newborn deaths, therefore, leadership for change is necessary from the highest level of governance structures.

There shall be an established MOH-led Technical Working Group (TWG) responsible for newborn health at the national, county and sub-county levels.

KMC implementation at the facility shall be led by the facility in charge with support from the Hospital Management Team, Quality Improvement Team and the departmental Work Improvement Teams. KMC champions should be identified and supported.

At the community level KMC will be championed by the Community Health Promoters under the supervision of the Community Health Assistants and the link facility in charges. KMC champions at the community level should be identified and supported.

## 2.3. Health care financing

Health care financing is necessary for the establishment and maintenance of MNCU and KMC wards including human resource development. To meet operational costs in national and county plans, budget should be included in annual work plans and County Integrated Development Plan (CIDP). Health insurance packages should be expanded to include KMC services.

## 2.4. Infrastructure

KMC is integrated in all levels of care, and is to be implemented at all levels of facilities and community. The most common settings are:

### Level three facility (Health centres)

Health centres conduct deliveries and they are designated to provide Basic Emergency Obstetric Care. If the facility provides inpatient services, Kangaroo Mother Care should be established at this level in a special area within the postnatal ward. Low Birth Weight (LBW) babies with complications or with weight below 1500g should be referred to a higher level of care while still on KMC.

### Level four hospitals

These facilities should have newborn units. Kangaroo mother care services should be established in all Sub County Hospitals.

Minimum infrastructure at this level of care includes:

- Designated area for KMC (KMC ward)
- MNCUs- (maternal and neonatal care units) where breathing support i.e. CPAP and oxygen administration, intravenous fluids etc. are offered, and a bed for the mother is provided. An obstetrician will supervise essential obstetric care provided to mothers.

## Level 5 Hospitals

These facilities should have newborn units. Kangaroo mother care services should be established in all County Hospitals.

Minimum infrastructure at this level of care includes:

- Designated area for KMC – (KMC wards)
- MNCUs- (maternal and neonatal care units) where breathing support i.e. CPAP and oxygen administration, intravenous fluids etc. are offered, and a bed for the mother is provided. An obstetrician will supervise essential obstetric care provided to mothers.
- NICU/Special care units-that offer mechanical ventilation and other specialized care where a couch for the mother/surrogate should be availed.

## Level 6 Hospitals

Low birth weight babies delivered or referred to these facilities should have access to Kangaroo Mother Care services in addition to the highly specialized services that exist here such as neonatal intensive care.

The minimum infrastructure at this level of care includes:

- Designated area for KMC – (KMC wards)
- MNCUs- (maternal and neonatal care units) where breathing support i.e. CPAP and oxygen administration, intravenous fluids etc. are offered, and a bed for the mother is provided. An obstetrician will supervise essential obstetric care provided to mothers.
- NICU/Special care units-that offer mechanical ventilation and other specialized care where a couch for the mother/surrogate should be availed.

KMC **does not require special facilities** but simple arrangements can be made to make the mother's stay more comfortable and should include the following:

- Sufficient space that can accommodate enough beds, side cupboards and chairs according to the workload
- This policy guideline recommends that:

Ward	Level 6 Hospitals	Level 5 hospitals	Level 4 facilities	Level 3 Facilities
KMC	Minimum of 40beds	Minimum of 20 beds	Minimum of 10 beds	At least 2 beds
MNCH	Minimum of 20 beds	Minimum of 10 beds	Minimum of 5 beds	N/A

Essential facilities to go with the rooms include:

- Bathrooms and toilets
- A facility where they can wash clothing items
- Sinks with running water and soap for effective hand washing/handwashing stations
- Dispenser for disposable paper towels

Additional support could include:

- Access to Kitchenette for making refreshments
- A day room or yard for sunning themselves

- Where possible, a small room would be useful for individual work with mothers, discussion of private and confidential issues and for reassessing babies. Most hospitals have a counselling room within maternity and this can be used for this purpose i.e. a family conference room.
- The beds should be comfortable and adjustable with enough pillows to maintain an upright or semi-recumbent position
- Access to the KMC wards should be limited to health workers, mothers and their selected helpers
- Rooms should have privacy and adequate warmth (25-28°C). Curtains or screens can help to ensure privacy. Heaters should be available for periods when temperatures may fall below 25°C.
- Facility for health education, promotion and entertainment

## 2.5. Health workforce for KMC

Kangaroo Mother Care does not require additional staff at the health facility and it is recommended that the existing staff should have adequate training in all aspects of KMC. The KMC services should be integrated into Comprehensive newborn care and maternal and newborn care training packages. The basic complement of staff should include nurses, clinicians, counsellors and nutritionists.

### Capacity building requirements

The skills and competencies of the staff providing KMC services should be updated through KMC training, mentorship and supervision. Each health facility should have a programme of continuing education with regular review of areas such as KMC and breastfeeding. Mentorship and support supervision should be carried out by KMC champions. KMC should be incorporated in pre-service training curricula for all health workers.

## 2.6. Equipment and supplies

The equipment and supplies required for KMC are (see annex 1) for specifications for the equipment):

- Adjustable beds with pillows to allow for reclining
- Bedside cabinets
- Heaters
- Chairs
- A low reading thermometer
- A wall thermometer
- A low reading glucometer
- Wall clock
- NG tubes
- Appropriate size name tags
- Measuring cups
- Feeding cups
- Graduated feeding cups
- Expressing bowl
- Fridge to store expressed breast milk
- Neonatal scales with 10g intervals should be used
- Basic resuscitation equipment to include a suction device and a bag-valve-mask device. The bag should be the 200ml-300ml size and the mask should be of preterm (0) and term (1) sizes
- Oxygen should be available both in low and high flow forms. In our settings where concentrators are in wide use oxygen from cylinders should be available for high flow use e.g. during resuscitation. Piped oxygen caters for both situations

- A resuscitation corner preferable with a resuscitator / warmer to be used in case of an emergency
- Paediatric flowmeters, nasal prongs, masks and pulse oximeters
- Drugs for preventing and treating frequent problems of preterm newborn babies maybe added according to the National guidelines
- KMC wrappers/ carriers
- Baby hats, socks and mittens
- Diapers

## 2.7. HMIS

Health care providers should ensure accurate data capturing and reporting using the appropriate KMC register (MOH 374) and summary tool (MOH 711). The data should be used to gauge performance and plan for improvement of KMC services.

## 3. Initiating and maintaining kangaroo mother care

### 3.1. Who can do KMC?

The mother or other family members such as father, grandmother, aunts and older siblings can do KMC.

### 3.2. Eligibility Criteria for Admission to KMC

#### 3.2.1 Admission criteria for the baby

It is recommended that all preterm and LBW babies weighing 1000g and 2499g should be initiated on iKMC after birth except for those unable to breath spontaneously, require mechanical ventilation or are in shock or have congenital malformations that interfere with KMC or KMC interferes with the required care for the congenital malformation.

#### I. Eligibility for admission into KMC

All babies with birth weight of 1000 to 2499g should be started on iKMC

- Babies from 2000g to 2499g should be evaluated by a health worker and if stable the mother counselled on KMC, the baby continued on KMC and discharged once lactation is established to continue with KMC at home.
- All babies below 2000g should be admitted into a KMC unit and started on KMC
  - Babies weighing from 1000g to 1999g should be started on iKMC at birth unless the infant is unable to breathe spontaneously after resuscitation, is in shock or needs mechanical ventilation.
  - All babies born below 1000g should be stabilized and initiated on KMC when stable.

#### II. Eligibility for admission into KMC by level of facility

There are different eligibility criteria for admitting LBW babies for KMC at the various health facilities.

##### Level 6 hospitals

- All LBW babies below 2000g
- The Mother or surrogate accepts to practice KMC

##### Level 5 and 4 hospitals

- All LBW babies below 2000g

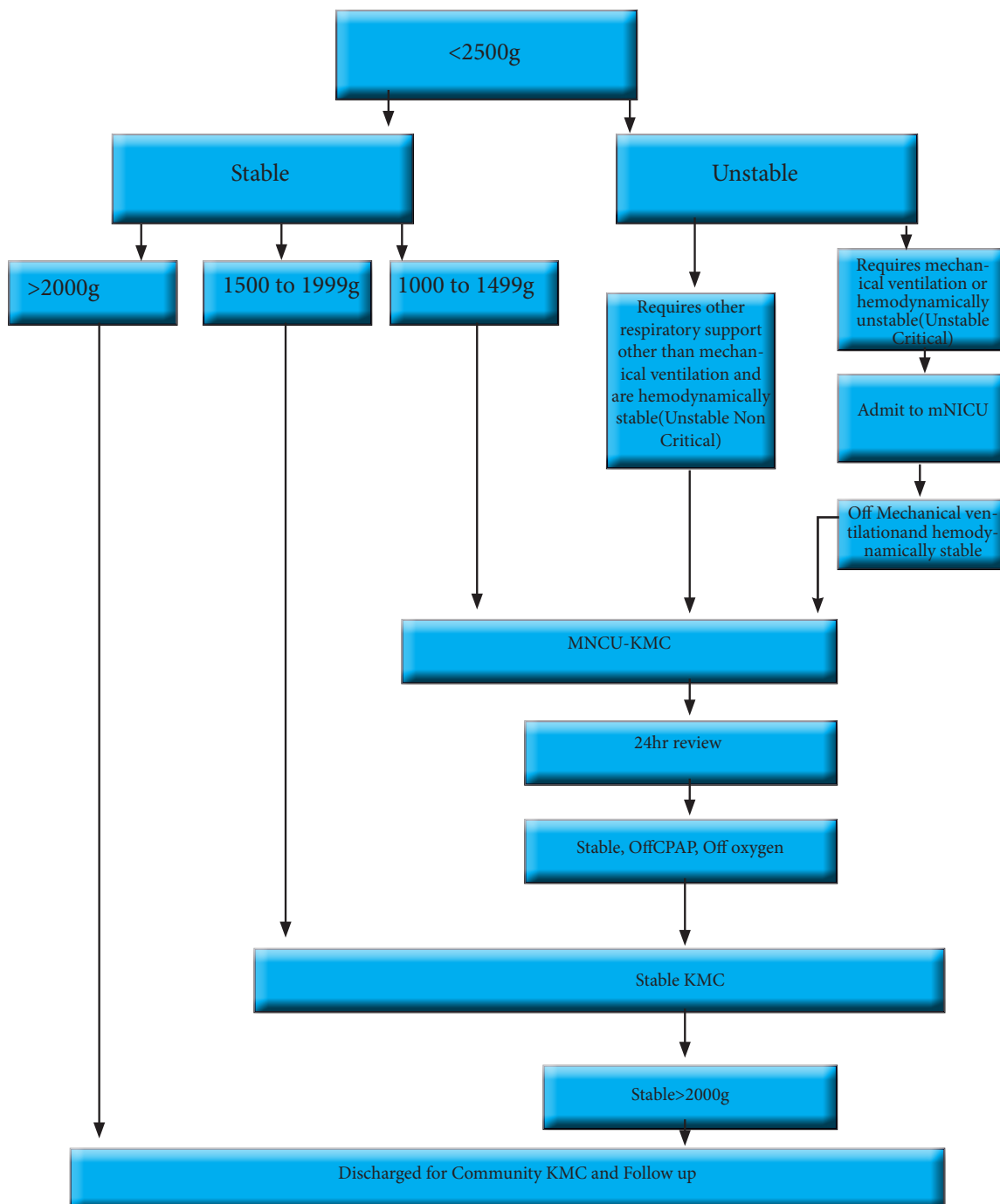
- The Mother or surrogate accepts to practice KMC

### Level 3 facilities

All preterm/LBW babies born at the level 3 facility and those delivered at home and brought to the facility should be assessed as follows:

- All stable preterm and LBW babies weighing above 1500g should be started on iKMC.
- The Mother or surrogate has no major adverse medical or mental condition
- Babies who have been discharged home on KMC from higher level institutions can be followed up at health centres with trained staff
- Stable babies from higher facilities who are not ready for discharge but just need to continue KMC with no other intervention can be down referred to health centers near their home area to continue KMC.

The figure below illustrates how various categories of low birthweight/premature newborns are managed





### Community Maternal Newborn health services

Community Health Promoters (CHPs) should provide home-based follow-up care for preterm/ LBW babies discharged from health facilities on KMC. The CHPs should initiate iKMC and refer immediately all preterm/LBW babies delivered at home to a health facility for assessment. CHP should help to ensure minimal neonatal out patient care : baby is getting suppliments , gets vaccinations where applicable , goes for scheduled screening( hearing , ROP Screening ) and follow-up.

### 3.2.2 Maternal criteria for admission into KMC

The following points should be taken into consideration when counselling on KMC:

- *Willingness: the mother must be willing to provide KMC*
- *Full-time availability to provide care: other family members can offer KMC*
- *General health: if the mother suffered complications during pregnancy or delivery or is otherwise ill, she should recover before initiating KMC*
- *Being close to the baby: she should be able to stay in hospital until discharge of the baby*
- *Supportive family: she will need support to deal with other responsibilities at home*
- *Supportive community: this is particularly important when there are social, economic or family constraints*

If the mother is a smoker, advise her on the importance of stopping smoking or refraining from it in the room where the baby is. Explain to her, the danger of passive smoking for her and other family members and the small infants.

### 3.3. Initiating KMC

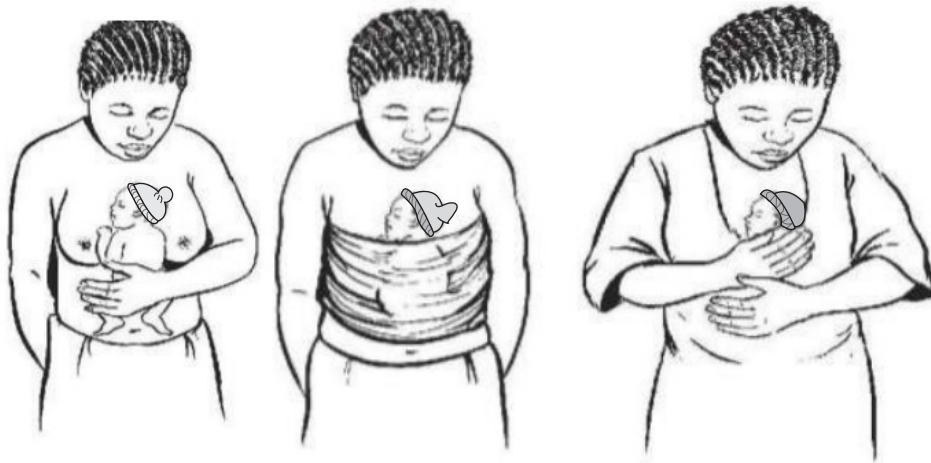
KMC education should be initiated during the ANC period including a practical demonstration of how it is done, after delivery KMC information should be re enforced using standard IEC material. The first session after delivery is important and requires time and undivided attention. Ask the mother to wear light, loose clothing. Use a private room that is warm enough for the small baby. Encourage her to have her partner or a companion of her choice present if she so wishes. It helps to lend support and reassurance.

Carefully describe the various aspects of this method to the mother: the position, feeding options, care in the institution and at home, what she can do for the baby attached to her body and what she should avoid. Explain the advantages and the implications of such care for her and her baby and always give the reasons behind a recommendation. Emphasize that skin-to- skin contact is essential for keeping the baby warm and protecting him from illness. Adopting KMC should be the result of an informed decision.

While the mother is holding her baby, describe to her each step of KMC, then demonstrate and let her go through all the steps herself. Always explain why each step is important.

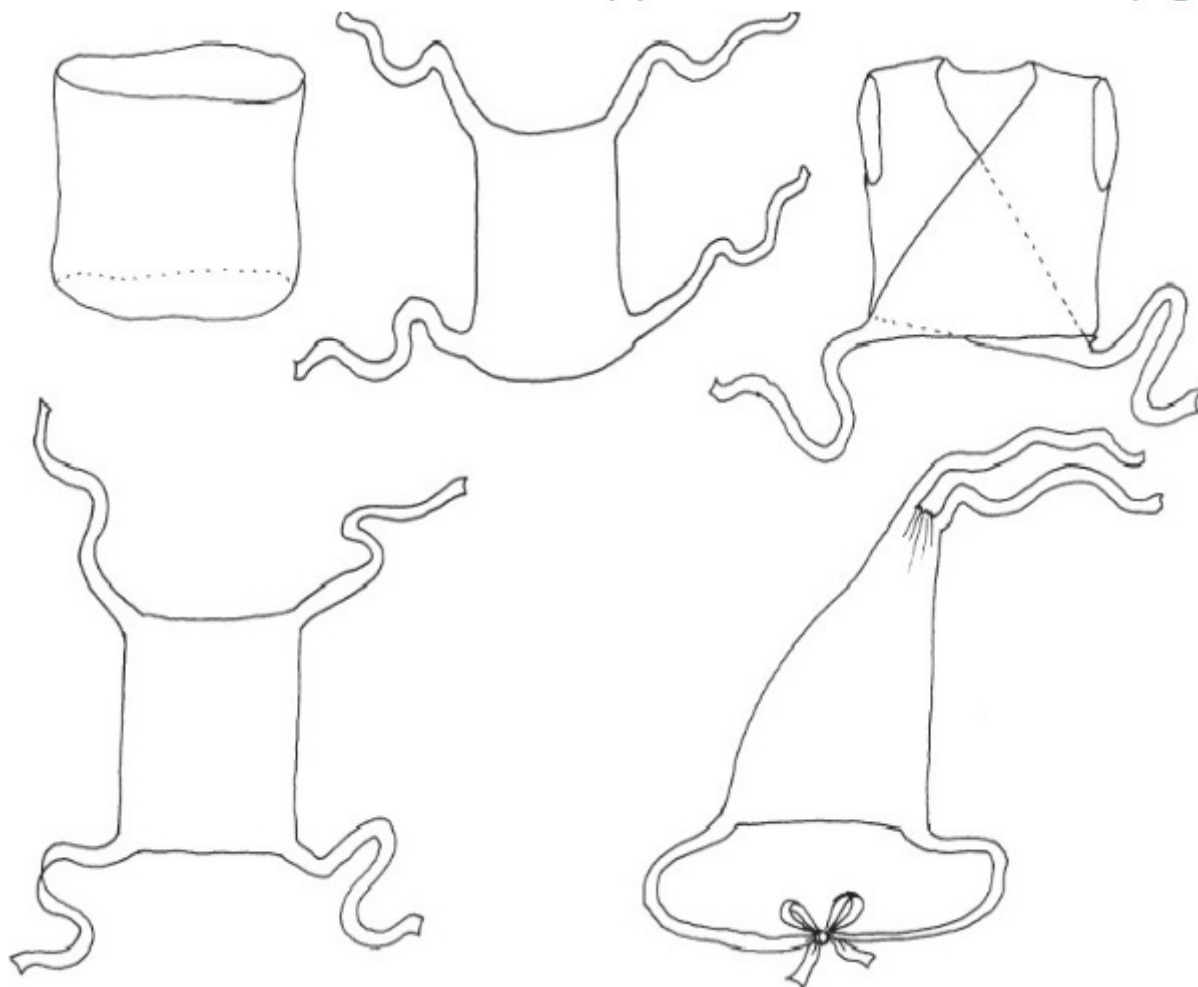
### 3.4. Key KMC Positioning Steps

- a) Dress the baby in socks, a diaper/nappy and a hat (kofia).
- b) Place the baby between the mother's breasts chest to chest
- c) The head is turned to one side in a slightly extended position with the top of the binder being just under the baby's ear. This extends the head position slightly, keeps the airway open and allows eye-to-eye contact between the mother and the baby
  - Both forward flexion and hyperextension of the head should be avoided
  - The hips should be flexed and extended in a "frog" position
  - The arms should also be flexed



**Figure 1: Positioning the baby for KMC**

- d) Secure the baby on to the mother's chest with a clean lessa or soft cloth or any of the other recommended KMC wrappers that are available (figure 2)



**Figure 2: Carrying pouches for KMC**

- i. Secure the head
- ii. Secure the buttocks
- iii. Apply appropriate tightness

The baby's abdomen should not be constricted and should be somewhere at the level of the mother's epigastric region. This way the baby will have enough room for abdominal breathing.

- (e) Put a blanket or a shawl on top for additional warmth
- (f) Instruct the mother to put on a top that is open at the front
- (g) Instruct the mother to keep the baby upright when walking or sitting
- (h) Advise the mother to have the baby in continuous skin-to-skin contact for 8 to 24 hours per day



**Figure 3: Baby in KMC position**



**Figure 4: Father's turn for KMC**

### 3.5. Sleeping and resting in KMC

The mother will best sleep with the baby in kangaroo position in a reclined or semi-recumbent position, about 15 degrees from the horizontal plane. This can be achieved with an adjustable bed, if available, or with several pillows on an ordinary bed (figure 5). It has been observed that this position may decrease the risk of apnea for the baby. If the mother finds the semi-recumbent position uncomfortable, allow her to sleep as she prefers because the advantages of KMC are much greater than the risk of apnea. Some mothers prefer sleeping on their sides in a semi-reclined bed (the angle makes sleeping on the abdomen impossible) and if the baby is secured as described above there will be no risk of smothering.



Figure 5: Sleeping and resting during KMC

### 3.6. Care of the Baby in the KMC Unit

#### 3.6.1 Infection prevention

- Wash hands
  - Before handing the baby*
  - Before and after feeding the baby
  - Before and after changing the nappies
  - After using the toilet
- Clean or wipe baby daily (“head to toe”)
- Ensure the baby always wears clean diapers/nappies
- Ensure all cups and feeding utensils properly cleaned before and after use
- Controlled access to non-essential personnel and visitors
- Apply all other standard infection prevention measures

### 3.6.2 Cord care during KMC

Cord care is important in preventing the newborn from cord infections, tetanus and septicaemia. Cord care should include the following:

- Apply 7.1% chlorhexidine digluconate gel to the cord immediately after cutting the cord
- Apply 7.1% chlorhexidine digluconate gel to the cord once daily for 7 days.
- For the preterm baby the single application after birth suffices
- The baby should be given only sponge baths until the cord falls off and the umbilicus has healed
- Avoid contact with urine or stool (If it happens the cord should be washed with cleanwater and soap and dried with a clean cloth)
- Look for the signs of infection of the cord daily until it heals. Such signs include pus, foul smelling discharge, redness or swelling of the skin around the umbilicus
- Put the baby on appropriate medical treatment immediately the signs of infection are identified.

**NB:** A wet Cord is not a contraindication for KMC. Mothers should be assured that the baby is safe and cord healing will take place normally while the baby is cared for in KMC. The mother should also be advised on her personal cleanliness and hygiene.

### 3.6.3 Daily clinical review

Babies in KMC should be reviewed every day through clinical history taking, physical examination and vital signs monitoring.

Initiate supplements at two weeks or on attainment of full enteral feeds. These are folic acid, iron and vitamin services for ROP (as per National ROP guidelines), metabolic disease of prematurity (bone biochemistry) and cranial ultrasound where indicated i.e. babies born less than 32 weeks GA and/or birth weight less than 1500g. Refer if services are not available in your facility.

### 3.6.4 Monitoring of babies admitted into the KMC unit

For this the Comprehensive Newborn Monitoring Chart should be used.

- Monitor vital signs (respiratory rate, pulse rate, temperature) 3-hourly.
- Record feeds given as per the schedule used.
- Monitor growth by taking daily weight of the baby. Target a daily weight gain of 15g/kg/day after regaining birth weight. Birth weight is regained within 14 days after birth. If weight gain is not adequate assess possible causes such as inadequate amount and frequency of feeds, inadequate skin to skin contact and signs of infection
- Use the KMC daily score sheet to evaluate progress of the baby (see Annex 3).
- Weekly head circumference and length.

### 3.6.5 Immunisation

Immunise all babies soon after birth, according to the National Immunisation schedule and guidelines.

N.B: Prematurity/low birth weight is not a contraindication for immunisation. All babies should be immunized before discharge irrespective of the weight.

## 3.7. Discharge from the KMC unit

The baby is ready for discharge when the following criteria have been met:

#### **Baby factors**

1. Continuous weight gain of at least 15g/kg per day for 3 consecutive days

2. Has regained birth weight and has a minimum weight of 2000g
3. Able to breastfeed and/or feed well by cup
4. The overall condition is stable (temperature, respiration, feeding, no signs of infection or danger signs, HB above 7g/dL)
5. Baby initiated on supplements (iron, vit-D and Folate)

#### **Maternal factors**

1. Accepts the KMC method and is observed to be confident about caring for the baby with KMC (i.e. feeding, bathing, changing)
2. Able to breastfeed or express breast milk for feeding
3. Willing to continue KMC at home
4. Has support from the family to continue KMC including having a spouse/partner and/or close relative who is familiar with KMC

#### **Follow up factors**

1. Health facility with KMC capacity available and accessible to mother (context specific) for follow-up.
2. The ability of mother to return to the health facility with KMC capacity (original facility of discharge or nearest local health facility with KMC capacity) in line with the follow-up updates provided to her on discharge.

### **3.8. Readmission criteria**

Readmit baby to hospital if:

- The baby gained less than 15g/kg/day in two consecutive weekly follow up visits
- The baby has not gained weight at all
- The baby has lost weight
- The baby is sick (febrile/cold, fast or difficult breathing, inability to feed, jaundice, lethargy, dehydration, convulsions, vomiting)
- If there is no one to continue providing KMC and baby is less than 2000g

### **4. KMC Nutrition**

Mother's own milk confers important immune and nutritional advantages for preterm and low birth weight (LBW) infants and is the recommended feed for preterm or LBW infants, including very preterm (<32 weeks gestation) or Very LBW (<1500g) infants. Infants who are able to breastfeed should be put to the breast as soon as possible, within 1 hour, after birth. Stable infants who are unable to breastfeed should be given expressed mother's own milk as soon as it becomes available. Scheduled feeding (every 2-3 hours) is associated with faster weight gain in comparison to responsive feeding for infants born before 34 weeks and is recommended for these infants (WHO recommendations for care of the preterm or low-birth-weight infant, 2022). If mother's own milk is not available, alternative feeding options include donor human milk or appropriate infant formula in line with the recommended guidelines on breastfeeding.

The kangaroo position is ideal for breastfeeding. As soon as the baby shows early signs of readiness to breastfeed (early feeding cues) that include opening the mouth and turning the head trying to find the breast ("rooting" or "searching"), salivating, making hand-to-mouth movements, and

sucking fingers, help the mother to get into a breastfeeding position as shown in Figure 6.



**Figure 6: Breastfeeding in KMC**

- ✓ Mother's own milk should be provided through direct breastfeeding wherever possible
- ✓ The LBW having no problem with breastfeeding should be initiated on breastfeeding within the first hour of birth
- ✓ Ensure that all babies on KMC are exclusively breastfed on demand for 6 months of life with sustained breastfeeding for two years and beyond
- ✓ Small babies should be breastfed frequently every 2-3 hours and require to be awakened for feeding. Mothers with preterms should be shown how to breastfeed (positioning and attachment of the baby to the breast) and how to maintain lactation as shown in Figure 7

#### **4.1. Signs of good positioning and attachment**

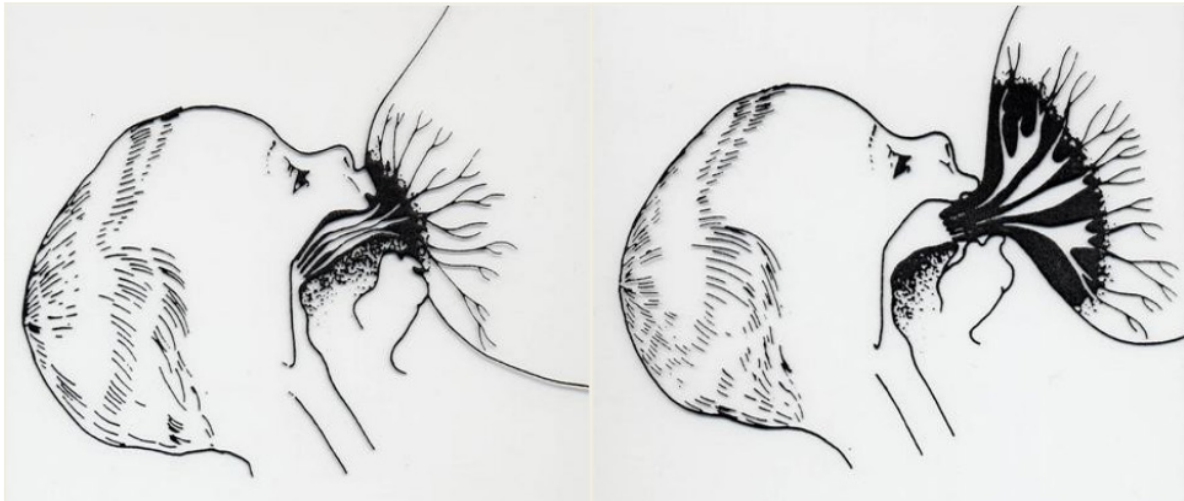
Positioning refers to how the baby is placed during breast feeding. To check for correct positioning, ensure the following:

- Infant's head and body are in a straight line
- Infant is facing the breast and the baby's nose is opposite the mother's nipple
- Infant's body close to the mothers' body (infant's tummy to mother's tummy)
- Mother supporting the baby's whole body, not just the neck and shoulders

To check for good attachment, ensure the following;

- Chin is touching the breast
- Mouth is wide open
- Lower lip is turned outward

- More areola is seen above than below the mouth



Good attachment

Poor attachment

**Figure 7: Good and poor attachment**

Signs of effective suckling are:

- Infant taking slow deep suckles, sometimes pausing and you may be able to see or hear the baby swallowing
- Cheeks round when suckling
- Baby releases breast when milk is finished or when he/she is satisfied
- Mother feels relaxed

How to attach:

- Hold breast using a C-grip
- Stimulate baby to open mouth wide by touching the baby's upper lip with the nipple
- Once the baby's mouth is open wide, introduce the breast into the mouth by aiming the baby's lower lip well below the nipple.

## 4.2. Alternative feeding methods

- Stable babies who are not able to suckle well need to be fed with expressed breast milk or appropriate formula by cup or through a nasogastric (NG) or orogastric (OG) tube. These are the babies without respiratory distress, convulsions or contraindications to enteral feeding but with poor rooting, sucking and swallowing reflexes.
- Babies who are less than 1500 g should be fed through nasogastric or orogastric tubes. This is because of their inability to suck effectively, or to coordinate sucking, swallowing and breathing.
- In preterm or low-birth-weight (LBW) infants, including very preterm (< 32 weeks' gestation) or very LBW (< 1.5 kg) infants, who need to be fed by an alternative feeding method to breastfeeding (e.g. gastric tube feeding or cup feeding), feed volumes can be increased by up to 20 ml/kg per day.
- While the sucking reflex is emerging, supplement these feeding methods by having the baby put to the breast for brief periods
- Once the baby is suckling effectively and gaining weight, the baby should be exclusively breast-fed.
- Ensure that supplies for feeding (NG tubes, feeding cups) are available and that infection control measures are observed at all times.
- Before every feed teach the mother to check that the NGT/OGT is still in the right place by checking on the marking placed at insertion .



## Cup feeding



**Figure 8: baby sitting upright at almost 90 degrees and cup placed on lower lip**



**Figure 9: Cup tilted so that the baby can lick EBM**

## Nasal gastric tube feeding

### Items required

Hand washing sink with running water, soap and disposable hand towels or alcohol-based hand rub	Blue litmus paper
Clean gloves	Trans pore medical adhesive
Gastric tube size 4, 6 or 8	Kidney dish or procedure tray
Marker pen or tape	Stethoscope
2cc syringe	20cc syringe

### Inserting and using a NGT/OGT

**Step 1:** Select the appropriate size of the nasal/oral gastric tube to use. Should be the minimum sized tube, which is most effective for the purpose. Less than 1500gm – size 5- 6 and equal to and above 1500gm size 6 – 8.

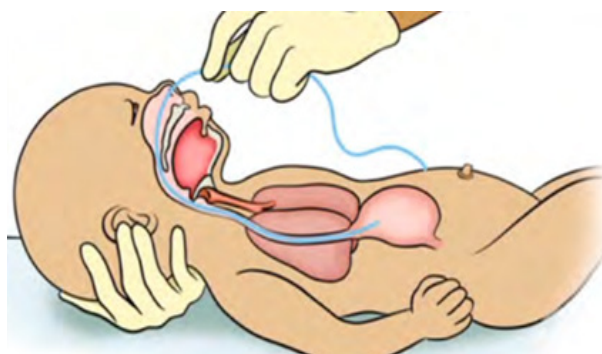
**Step 2:** Size the nasal/oral gastric tube. Measure the distance from the nose to the tragus of the ear, then to the midpoint between xiphisternum (epigastrium) and umbilicus (OGT measure from the corner of the mouth). Mark the tube at this point. (Figure 9)

**Step 3:** Insert the nasal/oral gastric tube (Figure 10)

- Lubricate the tip of the NGT with breast milk/water
- Slightly flex the baby's head
- Insert the tube through the nose (NGT) or mouth (OGT) until the measured distance is reached.
- Secure the gastric tube on the cheek if it is inserted in the nose and on the chin if it is inserted in the mouth using a transparent medical adhesive (figure 9 and figure 12)



**Figure 10: Correct sizing of nasal/oral gastric tube**



**Figure 11: correct insertion of the nasal/oral gastric tube**

**Step 4:** Confirm the position of the nasal/oral gastric tube

- Aspirate 2mls of the presumed gastric aspirate using a 2mls syringe
- Check that aspirate turns blue litmus paper pink.
- If no aspirate is obtained, inject 2mls of air down the tube using a 2mls syringe and listen over the abdomen with a stethoscope.
- Before feeding always confirm the tube is in the correct position by making sure the mark of the measured distance is visible (Figure 11)

**Step 5:** Using the Gastric tube. To be demonstrated to the mother until she is able to do it herself.

- Keep the gastric tube well secured to maintain the correct position.
- Use the tube for the purpose it was inserted.
- For feeding purposes

To prevent gastric distension during oxygen therapy via nasal catheter and CPAP – When used to feed, close it for 30minutes after the feed then open it again.

1. Confirm the correct volume to feed
2. Observe hand hygiene protocol
3. Check correct tube placement
4. Pour correct volume of EBM needed in a cup
5. Remove the barrel from a 10 – 20cc syringe
6. Pinch the end of the NG/OG tube, open it and attach the empty syringe
7. Pour milk into the empty syringe, remove the pinch & hold the tube above the baby (figure 13)
8. Let the milk flow slowly by gravity



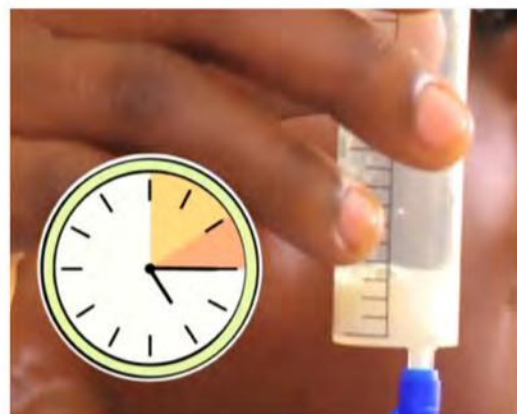
**FIGURE 12: CONFIRM CORRECT PLACEMENT BEFORE USE**



**FIGURE 13: SAFELY SECURED ORAL GASTRIC TUBE**



**FIGURE 14:**



## 4.3 Expressing breast milk.

Mothers expressing breastmilk should be shown techniques on how to express and the breast should be emptied in order to maintain adequate supply. The technique is as described below:

### 4.3.1 Items required

- ✓ Hand washing equipment with running water, soap and disposable hand towels
- ✓ Wide open bisphenol A (BPA) free plastic bowl to collect the milk
- ✓ BPA free storage containers for storing the milk
- ✓ Comfortable chair for the mother with a foot stool if necessary

### 4.3.2 Steps to express breast milk

Step 1: Observe hand hygiene protocol

Step 2: Obtain clean safe containers to express and store the milk. Expression container should have a wide opening

Step 3: Relax and massage the breast all round to stimulate let down

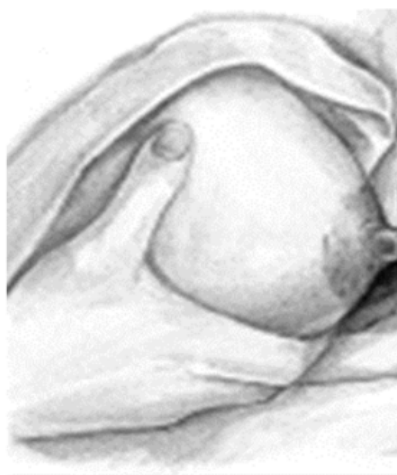
Step 4: Hold the breast in a 'C' grip with your index finger and thumb near but not touching the areolar

Step 5: Push the breast back towards the chest wall

Step 6: Compress the breast between the thumb and the finger without lifting them from your breast. Release without moving your hand from the breast.

Step 7: Repeat this step until the breast is 'empty'. Begin the next breast until completely drained

Step 8: Use the expressed breast milk immediately or store safely for later use



**Figure 15: Hold Breast Using 'C' Grip**



**Figure 16: Push Breast to Chest Wall, Press And Release**



**Figure 17: Expression of Breast Milk**

Fortification of human milk is not routinely recommended for all preterm or low-birthweight (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.

## 4.4 Use of infant formula

Mothers should be encouraged and supported to provide their own milk to their infants. 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 infants.

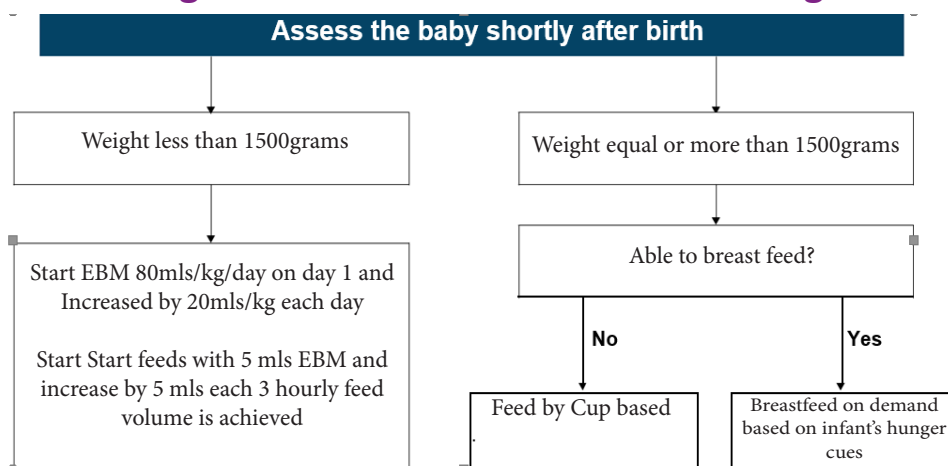
## 4.5 Feeding for HIV exposed babies

- All HIV positive mothers should be encouraged and supported to exclusively breastfeed for the first 6 months of life, with timely introduction of appropriate complementary foods after 6 months, and continued breastfeeding up to 24 months or beyond.
- Breastfeeding women living with HIV should be put on, and supported to adhere to, optimal ART regimens in order to achieve HIV viral load suppression aimed at preventing the vertical transmission of HIV to the child through breastfeeding/breast milk.
- HIV exposed infants should receive infant ARV prophylaxis consisting of AZT and NVP prophylaxis for 6 weeks and thereafter NVP should be continued until 6 weeks post cessation of breastfeeding. Infant prophylaxis can be discontinued after a minimum of 12 weeks on NVP if the child is not breastfeeding (death of mother or separation from mother).

## 4.6 Quantity and frequency of feeds

- The frequency of feeding will depend on the quantity of milk the baby tolerates per feed and the required daily amount.
- The calculation of feeds should be done according to up-to-date guidelines (The Basic Paediatric Protocol and the comprehensive newborn care protocol).
- Expect an initial weight loss of 5-15% of the birth weight during the first week of life but the birth weight should be regained at 10-14 days after birth.
- Monitor the growth rate by taking the daily weight of the baby. Target a daily weight gain of 15 g/kg/day after regaining the birth weight. If weight gain is poor, assess possible causes such as inadequate amount and frequency of feeds, inadequate skin to skin contact, anaemia and infections.

### 4.6.1 Feeding Stable and Well Babies - birth weight < 1.5 kg vs ≥1.5kg



#### Example: 1000gm baby

Day 1: 80mls/kg/day → 1kg X 80 = 80ml ÷ 8 feeds/day = 10mls 3hrly feeds. First feed 5mls, then 10mls 3hrly

Day 2: 100ml/kg/day

Day 3: 120ml/kg/day

Day 4: 140ml/kg/day

Day 5: 160ml/kg/day

Day 6: 180ml/kg/day

Age	0.6kg	0.7kg	0.8kg	0.9kg	1.0kg	1.1kg	1.2kg	1.3kg	1.4kg	1.5kg
Day 1	6	7	8	9	10	11	12	13	14	15
Day 2	8	9	10	11	13	14	15	16	18	19
Day 3	9	11	12	14	15	17	18	20	21	23
Day 4	11	12	14	16	18	20	21	23	25	26
Day 5	12	14	16	18	20	22	24	26	28	30
Day 6	14	16	18	20	23	25	27	29	32	34

Three hourly NGT feed volumes in milliliters (mls) for stable newborns with a birthweight 1000-1499g (Table includes NGT feed volumes for birth weight less than 1000grams if unsafe to give IVF)

#### 4.6.2 Feeds and Fluids for UNSTABLE neonates

- **Unstable newborn-** Sick baby (convulsions, unconscious, severe respiratory distress evidenced by severe chest wall indrawing, absent bowel sounds)
- Day 1:
  - ✓ Start IV 10% Dextrose for 24hrs.
  - ✓ V Birthweight less than 1.5kg start with 80ml/kg/day.
  - ✓ V Birthweight equal or greater than 1.5kg start with 60ml/kg/day
  - ✓ To stimulate the gut, give 2ml/kg of colostrum via NGT every 3hours – to be started when A, B and C are stabilized— do not deduct this from the IVF. (If you think it is unsafe to give IV fluids then start immediate NG feeding with colostrum)
- Day 2:
  - ✓ Start feeding with EBM via NGT at 30mls/kg/day EBM.
  - ✓ Increase the EBM feeds by 30mls/kg/day and reduce IV fluids to keep within the total daily volume until IVF stopped i.e. until full 3 hourly enteral feed volume achieved appropriate for weight and postnatal age in days.
  - ✓ Increase total feeds (IVF + EBM) by 20mls/kg/day to max of 150mls/kg/day. Once no longer on IVF increase EBM to max of 180mls/kg/day, but it may be possible to increase volumes further to as much as 200mls/kg/day but seek expert advice.
- Example- equal or greater than 1.5kg.
- Day 1: Total intake- 60mls/kg/day IVF
- Day 2: Total intake- 80mls/kg/day (30mls/kg/day EBM + 50mls/kg/day IVF)
- Day 3: Total intake- 100mls/kg/day (60mls/kg/day EBM + 40mls/kg/day IVF)
- Always feed with EBM unless contra-indicated.
- For babies who have hypoglycemia, after correction measure, monitor blood glucose prior to feeding. If 3 consecutive blood glucose measurements are normal then monitor 6hrly
- Prescribe daily the type and volume of IVF to be given per hour PLUS the EBM to be given 3hourly.
- IVF and EBM intake should be monitored using the feeding charts, ensuring that there is no

unexplained deficit that would make the neonate be dehydrated or/and fail to gain weight as expected.

### Feeds and Fluids for UNSTABLE neonates <1.5kg

Age	0.6kg		0.7kg		0.8kg		0.9kg		1.0kg		1.1kg		1.2kg - 1.3kg		1.4kg - 1.5kg		Total daily fluid/ milk volume
	EBM 3hrly	IVF mls/hr	EBM 3hrly	IVF mls/hr	EBM 3hrly	IVF mls/hr	EBM 3hrly	IVF mls/hr	EBM 3hrly	IVF mls/hr	EBM 3hrly	IVF mls/hr	EBM 3hrly	IVF mls/hr	EBM 3hrly	IVF mls/hr	
Day 1		2		2		3		3		4		4		4		5	80ml/kg/day
Day 2	2	2	3	2	3	2	3	3	4	3	4	3	5	4	5	4	100ml/kg/day
Day 3	5	2	5	2	6	2	7	2	8	3	8	3	9	3	11	4	120ml/kg/day
Day 4	7	1	8	1	9	2	10	2	12	2	12	2	14	3	16	3	140ml/kg/day
Day 5	9	1	11	1	12	1	14	1	16	1	16	1	19	2	22	2	160ml/kg/day
Day 6	11	0	13	0	15	0	17	0	20	0	20	0	23	0	27	0	180ml/kg/day
Day 7	14	0	16	0	18	0	20	0	24	0	24	0	28	0	33	0	180ml/kg/day

### Feeds and Fluids for UNSTABLE neonates <1.5kg

Age	1.5 – 1.6kg		1.7 – 1.8kg		1.9 – 2.0kg		2.1 – 2.2kg		2.3 – 2.4kg		2.5 – 2.6kg		2.7 – 2.8kg		2.9 – 3.0kg	
	EBM 3hrly	IVF mls/hr	EBM 3hrly	IVF mls/hr	EBM 3hrly	IVF mls/hr	EBM 3hrly	IVF mls/hr	EBM 3hrly	IVF mls/hr	EBM 3hrly	IVF mls/hr	EBM 3hrly	IVF mls/hr	EBM 3hrly	IVF mls/hr
Day 1		4		4		5		5		6		6		7		7
Day 2	6	3	7	4	7	4	8	4	9	5	10	5	10	6	11	6
Day 3	12	3	13	3	15	3	16	4	18	4	19	4	21	5	22	5
Day 4	17	2	20	2	22	2	24	3	26	3	29	3	31	3	33	4
Day 5	23	1	26	2	29	2	32	2	35	2	38	2	41	2	44	2
Day 6	29	1	33	1	37	1	40	1	44	1	48	1	52	1	55	1
Day 7	35	0	39	0	44	0	48	0	53	0	57	0	62	0	66	0

## 5. Physical and emotional support

For KMC to be successful, mothers, family members and staff have to be sensitized about using this method. A mother/guardian who is using KMC needs the following support:-

### 5.1. Support from Health Care Providers (facility and community based)

- Confirm that the mother is in a stable health condition
  - Health Care Providers need to be updated on the knowledge, skills and competencies in KMC
  - Explain the concept of KMC to the mother and demonstrate how it is done
  - Explain the benefits of KMC
  - Integrate family members like father, grandmother, aunts, or other persons, depending on the cultural set up
  - Support the mother to maintain lactation throughout the breastfeeding period and stimulation for milk supply
  - Help the mothers with any problems related to positioning, attaching, feeding and care of the newborn
  - Discuss daily with the mothers about any problems they may have and address them promptly. Consistently encourage them to continue KMC
  - Encourage mothers and family members to express concerns and to ask questions
  - Provide health education messages and raise awareness to sensitize families and communities about KMC, to promote behaviour change and create demand for KMC as a norm for LBW babies
  - Facilitate the identification of role models (modelling) of KMC in the community to minimise ridicule and stigma
  - Health care provider identifies a KMC Champion from mothers who are implementing KMC successfully. Their role will be to give peer support: Encourage mothers with preterm or low birth weight babies undergoing KMC at the facility.
  - Encourage formation of KMC support groups: Support groups for mothers with newborns undergoing KMC can greatly enhance adherence and retention to follow up
  - Facilitate Mother to mother pairing to encourage one another: This arrangement has proved useful in many programs. Mothers with newborns enrolled in KMC are paired and during their clinic appointments are given time to exchange their experiences
- NB: Ensure the postnatal care of the mother is offered as per the guidelines.

### 5.2. Support from Family Members

Encourage family members to do the following:

- Provide support both at home and while in the KMC Unit
- Assist the mother in doing KMC from time to time to allow the mother to rest
- Support the mother to continue KMC at home
- Provide adequate nutritional care and ensure that she has enough to eat
- Provide consistent physical and emotional support e.g. support with housework, care for other children, cooking and cleaning
- Families should avoid situations that create stress to the mother and offer emotional support at all times
- Support the mother to refrain from unhealthy practices such as child neglect and substance abuse
- Provide recreational, educational and income generating activities for mothers as deemed necessary

### 5.3. Male involvement

The involvement of fathers or partners and families is important to support mothers in providing KMC while in the facility and at home after discharge. Father and family involvement is especially important when the mother is medically unstable or mother has more than two babies or while recovering from surgery. KMC provides an opportunity for fathers to participate actively in the care of their baby, which can help them have a sense of fulfillment and is beneficial to the family unit. This participation should begin from the pre- conception period, through the antenatal period and during delivery where they can be involved as birth partners. During the intra partum period of an expected preterm delivery, the father should be counselled in preparation for a preterm baby and the supportive care thereafter. Continue to advocate for male involvement in the care of newborns, including carrying the baby in the KMC position. The benefits of KMC to the father are that he becomes central to the caring team, it improves bonding with the baby and he is empowered to care for the baby.

## 6. Follow up for KMC babies

Follow-up for the mother and the baby should be at the facility of discharge or at the nearest health facility the baby has been referred to. If the baby is discharged in accordance with the above criteria, the following suggestions will be valid in most circumstances:

### 6.1. KMC follow up at Facility.

When setting up KMC services, it is important for the health care provider to establish the structures for follow up of preterm/LBW babies. These clinics should have the following characteristics:

- The actual location of the clinic should be well known
- They should be managed by staff who are competent in the care of the preterm baby
- Individual patient records should be available
- Registers and booking diaries should be maintained, a reminder system and a defaulter tracing mechanism
- The clinic should have linkage with other complementary services (laboratory, occupational therapy, nutrition, imaging, Maternal Child Health Clinic)

In this regard, it is important to build on existing structures. The Paediatric Outpatient Clinic (POPC) and the Neonatal Outpatient Clinic (NOPC) are traditionally well-known components of the Kenya health services organization for children who need long term follow up and they can be improved to meet the requirements in this guideline.

After discharge from the facility;

- A baby whose weight is 2000gms continues KMC at home. While at home, the CHP continues the routine newborn care follow up as outlined in the Community Maternal and Neonatal Health (cMNH) package. The baby is followed up at the discharging facility or the nearest health facility that offers KMC every week while on KMC until the baby reaches 2500gms. The catchment facilities for referral hospitals are identified and health care workers updated and sensitized on KMC
- Babies with a weight gain of less than 15gms/kg/day after two consecutive visits should be re-admitted to a KMC unit
- Once the baby attains 2500gms KMC is no longer necessary and may be discontinued
- The baby on KMC at home should be seen at the POPC/NOPC on a weekly basis until discharge from KMC (2500gms) then on a monthly basis up to the age of 24 months.



## 6.2. Care during a follow up visit:

- i. Conduct triage  
Do a quick assessment of the baby to exclude danger signs.
- ii. Growth monitoring  
Weigh the baby and check weight gain in the last period. If weight gain is adequate, i.e. at least 15g/kg/ day on average, praise the mother. If it is inadequate (less than 15gms/kg/day), ask and look for possible causes and solutions- these are generally related to feeding or illness. In case of non-exclusive breastfeeding, ask and look particularly for signs of nutritional or digestive problems. Also monitor head circumference.
- iii. History Taking- KMC  
Obtain history from the mother/guardian to establish the duration of skin-to-skin contact, KMC positioning, clothing, body temperature and support for the mother and the baby.  
Is the baby on supplements? Ask about the dosage of each supplement given to the baby  
Is the baby showing signs of intolerance to KMC? Assess whether the baby is showing signs of intolerance (baby too active and uncomfortable in KMC position)  
Is it time to wean the baby from KMC (usually at around 40 weeks of post-menstrual age, or just before)? If not, encourage the mother and family to continue KMC as much as possible
- iv. Breastfeeding  
Establish if the baby is exclusively breastfed. If yes, praise the mother and encourage her to continue. If not, advise her on how to increase breastfeeding and discourage breast milk substitutes, supplements or other fluids. Ask and look for any problem and provide support.
- v. Alternative feeds  
If the baby is taking formula supplements, check their safety and adequacy (amount and dilution) and make sure that the family has the necessary supply. Confirm that the family is able to make the feeds hygienically.
- vi. Physical examination  
Perform a physical assessment of the baby, ask and look for any signs of illness reported or not reported by the mother. Check and rule out any neonatal danger signs. Manage any illness according to IMNCI protocols and guidelines. Counsel the mother and family to continue KMC as much as possible.  
Continue educating the mother on the Neonatal danger signs. Give a sufficient supply of medicines as needed, based on the current weight, to last until the next follow-up visit.
- vii. Routine child care/Immunisation integrated MCH services  
Once discharged from the ward encourage the mother to attend routine child care and to follow the National Immunisation schedule on immunisation. During each KMC visit check whether the child was taken to the child welfare clinic by checking the Mother and Child Health (MCH) handbook. If a vaccine has been missed, it should be given at this visit  
PMTCT – Check the mother’s HIV status. If HIV positive assess adherence to Antiretrovirals. If HIV negative, ensure that they are being retested every six months according to the National PMTCT guidelines.
- viii. Mother’s concerns  
Ask the mother about her own health and her social support networks. Discuss the experiences and the problems the mother has concerning continuing KMC and give support.  
Encourage her to join a KMC support group at facility or community level. Discuss and link the mother to family planning and other services.
- ix. Next follow-up visit  
Always schedule and confirm the next visit. Do not miss the opportunity to check and advise on hygiene and to reinforce the mother’s awareness of danger signs that need prompt care.
- x. Special follow-up visits  
If these are required for other medical problems, encourage the mother to attend them and help her if needed.

### 6.3. KMC follow up at the Community Health unit

- For babies still being followed up at a health facility, a CHP should visit the baby a day after the scheduled follow up date at a health facility to check if they attended the scheduled visit, to reinforce any health messages and as part of the routine post-natal visit
- The CHP is required to conduct more frequent household visits for a preterm baby than for a normal term baby ensuring neonatal minimum care: supplements, and honoring follow up visits.

### 6.4. KMC follow up after discharge where there is no functional Community Unit

- The baby is followed up every week while on KMC until the baby reaches 2500gms
- Once the baby attains 2500gms the baby should be seen at the POPC on a monthly basis up to the age of 24 months then discharged and if there are no medical issues to continue follow up with routine care at the Maternal Child Health Clinic.
- Advise the mother to join a community KMC support group
- Advise to seek care at the nearest facility before the monthly appointment when the need arises

## 7. Roles and responsibilities for the scale up of KMC

### NATIONAL LEVEL- MOH Division of Newborn and Child Health

- ✓ Provide leadership planning and coordination of KMC services in the country
- ✓ Develop and disseminate national KMC guidelines
- ✓ Capacity building of health care workers
- ✓ Resource mobilization for KMC services
- ✓ Advocacy and social mobilization for KMC
- ✓ Develop standards and protocols to oversee coordination, training and monitoring of KMC activities
- ✓ Create partnerships between the government and various stakeholders to support local KMC implementation efforts
- ✓ Ensure KMC is incorporated in pre-service education curriculum and in-service training of health care providers
- ✓ Receive and analyse KMC status reports from the counties and provide feedback
- ✓ Advocate for the inclusion of KMC as part of the First Lady's initiative at national and county level
- ✓ Make a national report on status of KMC services from the collated reports from the counties and share with stakeholders
- ✓ Conduct studies and research in KMC
- ✓ Use data to analyse gaps and make continuous quality improvements of KMC services in the country

### COUNTY HMT RESPONSIBILITIES

- ✓ Establish a Newborn TWG in the county
- ✓ Conduct county situation analysis of KMC services- contextualize
- ✓ Adopt and disseminate KMC guidelines in the County
- ✓ Advocate for inclusion of KMC as part of 1<sup>st</sup> lady initiative
- ✓ Resource mobilization for KMC
- ✓ Conduct studies and research on KMC
- ✓ Allocate a yearly budget in Annual Work Plan for improving KMC infrastructure, training and staff motivation
- ✓ Identify a County KMC Champion
- ✓ Facilitate implementation and scale up of KMC services in the county
- ✓ Monitoring and evaluating KMC activities in the county

- ✓ Submit a report on status of KMC services in the county to the Ministry of Health Division of New-born and Child Health

### **SUB-COUNTY HMT RESPONSIBILITIES**

- ✓ Support Implementation and scale up of KMC services in the sub-county facilities
- ✓ Offer mentorship and support supervision for KMC services in facilities in the sub-county
- ✓ Monitor and evaluate KMC services in the Sub- County on quarterly basis
- ✓ Identify Sub- County KMC Champion

Submit a report on the status of KMC services in the sub-county to the CHMT

### **FACILITY LEVEL HMTs**

- ✓ Implementation and scale up KMC services in the facility as per guidelines
- ✓ Allocate a budget for KMC services in the facility
- ✓ Identify a KMC Champion in the facility
- ✓ Ensure KMC data is captured accurately and timely
- ✓ Submit KMC data to the Sub- County monthly
- ✓ Use collected data to identify gaps and formulate quality improvement action plans in the facility

### **HEALTH CARE PROVIDERS RESPONSIBILITIES**

- ✓ Promote, practice and advocate for KMC as a standard of care for low birth weight and premature newborns at all levels
- ✓ Counsel and demonstrate KMC to mother/surrogate throughout their hospital stay and ensure that mothers are confident to continue KMC at home.
- ✓ Offer peer to peer mentorship on KMC
- ✓ Ensure accurate documentation of KMC data at point of service
- ✓ Act as a linkage between facility and community

### **COMMUNITY HEALTH PROMOTERS**

- ✓ Champion KMC at community level
- ✓ Support families to continue offering KMC at home post discharge
- ✓ Ensure that families offering KMC attend scheduled hospital visits
- ✓ Ensure immediate referral of small sick newborns to the health facilities
- ✓ Conduct frequent household visits to reinforce KMC messages and practice
- ✓ Trace infants lost to follow up and link them back to the facility
- ✓ Identify champions in the community and Work with the Community Health Assistants (CHAs) to form KMC support groups
- ✓ Submit timely reports to the CHA on clients practicing KMC in the community

## **8.1. Monitoring and Evaluation**

A monitoring and evaluation plan is designed to continuously monitor implementation practice against the standards in the National guidelines and targets. Recording KMC practices using specific indicators as part of the Kenya Health Information System is vital for tracking and improving the coverage and quality of these practices.

The table below lists the key indicators for monitoring KMC services

Indicators	Indicator Classification	NUMERATOR	DENOMINATOR	DATA SOURCE
Facility neonatal death rate per 1000 live births	Outcome	Number of neonatal deaths reported in the Health Facilities	Total live births in the health facilities	KHIS
Facility neonatal mortality rate disaggregated by birth weight(<1000g, 1000- <1500g, 1500 – <2000g, 2000 – <2500g.	Outcome	Number of neonatal deaths per weight category	Total number of live births per weight category	Survey
Proportion of neonatal deaths due to prematurity	Outcome	Number of babies born before 37weeks of gestation who die before discharge	Total neonatal deaths	KHIS
Proportion of low-birth-weight babies (<2500g) delivered at the health facility	Output	Number of low-birth-weight babies delivered in the health facility	Total number of live births in the health facility during the reporting period	KHIS
Proportion of newborns in the health facility who are weighed	Process	Number of newborns who are weighed	Total number of newborns born in the health facility during the reporting period	Survey/Facility Assessment
Percentage of infants weighing less than 2500 g initiated on KMC in the facility	Process/output	Number of infants weighing less than 2500g initiated on KMC in the facility	Total number of infants weighing less than 2500g in the health facility during the reporting period	KHIS
Proportion of infants weighing less than 2500 gms delivered at the health facility initiated on immediate KMC	Process/output	Number of infants weighing less than 2500g initiated on KMC in the facility	Total number of infants weighing less than 2500g in the health facility during the reporting period	Survey/Facility Assessment
Percentage of infants weighing less than 2000g initiated on KMC in the facility	Process/output	Number of infants weighing less than 2000g initiated on KMC in the facility	Total number of infants weighing less than 2000 g in the health facility during the reporting period	Survey/Health Facility assessment

Proportion of newborns born in a health facility who are breastfed within 1 hour after birth	Process	Number of newborns in a facility who are breastfed within 1 hour after birth	Total number of live births in the health facility during the reporting period	KHIS
Proportion of health care providers who are trained or received refresher sessions on KMC in the last 12 months	Output	Number of health care providers trained on KMC	Total number of clinical staff managing newborns	Survey
The proportion of community health promoters trained in community maternal newborn health care	Output	Number of CHPs trained on cMNHC	Total number of CHPs in the Community Health Units linked to the facility	Survey
Percentage of preterm and LBW newborns discharged from facility-based KMC followed-up as per protocol	Process	Number of preterm/LBW followed up as per schedule post-discharge until attainment of 2500g	Total number of preterm/LBW discharged from KMC unit during a specified period	Facility assessment
Percentage of facilities providing delivery services with functional KMC units	Inputs	Number of facilities with functional KMC units	Total number of facilities providing comprehensive newborn care (level 3+)	Facility assessment
Average length of stay disaggregated by birth weight (<1000, 1000-in facility KMC services (days)	Output	Cumulative number of days of stay for a specified period of time disaggregated by weight	Number of babies admitted disaggregated by weight for a specified period of time	Facility assessment
Number of beds dedicated for KMC as a proportion of the recommended per level of care (National, county, sub-county, facility)	Output	Number of beds dedicated for KMC in the facility	Recommended number of dedicated KMC beds per level of care as per the guideline	Facility Assessment

## 8.2. Monitoring and Evaluation Tools

KMC indicators are collected from a variety of tools, including;

- Neonatal Inpatient register- MOH 373
- Kangaroo Mother Care register- MOH 374

- MOH 711 Summary Form
- Longitudinal register for newborns with special needs (Outpatient)
- Newborn admission record form
- Comprehensive Newborn Monitoring chart
- KMC Facility Readiness assessment tool
- Weight gain charting tools (INTERGROWTH CHART)
- KMC Health Facility Assessment tool for assessment and surveys
- Daily KMC score Sheet
- After discharge follow up tools
- A tool to assess health worker Knowledge Attitude and Practice (KAP)
- A tool to assess user perception of care

## REFERENCES:

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- 2) *GoK, 2013.National guidelines for Nutrition care of premature and LBW infants, Nairobi. GoK, 2013.National Maternal, Infant and Young Child Nutrition Policy Guidelines, Nairobi. GoK, 2012. National guidelines for formation and Management of support groups: Enhancing Individual Health, Nairobi.*
- 3) *GoK, 2012.Guideline for Prevention of Mother to Child Transmission (PMTCT) of HIV and AIDS in Kenya. 4th ed., Nairobi: National AIDS and STI Control Programme.*
- 4) *b, 2012.Kangaroo Mother Care - Implementation guide, Washington DC. MOH Malawi, 2013. KMC GUIDELINE DOCUMENT MALAWI, Lilongwe.*
- 5) *MoHSW Tanzania, 2008.Kangaroo Mother Care guideline, WHO, 2003.Kangaroo Mother care: A practical guide, Geneva*
- 6) *WHO recommendations for care of the preterm or low- birth weight infant.*
- 7) *KMC Implementation guidelines Jan.2023, Ethiopia*
- 8) *Global position paper, kangaroo mother care-A transformative innovation in health care.*
- 9) *Hiv Prevention & Treatment Guidelines 2022, Kenya*
- 10) *Comprehensive newborn care protocol 2022, Kenya*

## ANNEXES

### ANNEX 1: Facility assessment tool

KMC ASSESSMENT CHECKLIST FOR KMC UNITS: This checklist covers only selected items related to KMC and basic care of the low birth weight babies.

How to use the checklist:

- Talk to a nurse and/or clinician
- Review the registers and forms
- Interview at least 3 mothers

<b>Name of Health Facility/Hospital:</b> _				
<b>County:</b>				
<b>Sub County:</b>				
<b>Date Site Assessment conducted:</b> _				
<b>Names of Assessors:</b>				
Facility representative:				
Sub county representative:				
County representative:				
National representative:				
<b>Burden of disease</b>				<b>Comments</b>
Number of live births in the facility in the last 12 months				
Number of preterm babies(<37 weeks) born in the last 12 months				
Number of low-birth-weight babies(<2500g) born in the last 12 months				
2000 – 2499g				
1500 – 1999g				
1000 – 1499g				
<1000g				
Number of babies born out of the hospital (home deliveries) *				
Number of neonatal deaths (0-28 days) in the facility in the last 12 months				
Number of neonatal deaths (0-28 days) due to infection (pneumonia, meningitis, omphalitis, skin infection, tetanus)				
Number of neonatal deaths (0-28 days) due to prematurity (<37 weeks gestation)				
Number of neonatal deaths (0-28 days) who were of low birth weight (<2500gms) *				
2000 – 2499g				

1500 – 1999g				
1000 – 1499g				
<1000g				
Number of neonatal deaths (0-28 days) who had asphyxia (APGAR <6 at 5 minutes)				
<b>Element/Item:</b>	<b>Y=Yes</b>	<b>N=No</b>	<b>Number</b>	<b>Comments</b>
Electricity				
Back up electricity system				
Availability of ideal KMC Unit				
<input type="checkbox"/> Availability of room for Maternal Newborn Care Unit (MNCU) that has mothers' beds, incubator per bed, CPAP, Oxygen, IV accessories				
<input type="checkbox"/> Availability of room within the facility for regular KMC				
<input type="checkbox"/> Appropriate beds- adjustable beds/ Bed with pillows				
<input type="checkbox"/> Facilities for expressing and storing breast milk				
<input type="checkbox"/> Facilities and supplies for hand washing (running water and soap)				
<input type="checkbox"/> Toilets and wash-room within the unit (Gender sensitive)				
<input type="checkbox"/> Basic furniture (chairs with backrest, and cupboard) per bed				
<input type="checkbox"/> Windows with intact louvers /window Panes				
<input type="checkbox"/> Room walls well painted preferably decorated with KMC IEC materials/pictures				
<input type="checkbox"/> Examination couch for babies				
<input type="checkbox"/> Post board- for placement of posters				
<input type="checkbox"/> Adequate light				
<input type="checkbox"/> Recreation area with benches with backrest, TV				
<input type="checkbox"/> Recreation facilities				
<input type="checkbox"/> Maternal examination area				
<b>Availability of Functional Equipment and Supplies</b>	<b>Y=Yes</b>	<b>N=No</b>	<b>Number</b>	<b>Comments</b>
<input type="checkbox"/> Digital/electronic /manual baby weighing scales (10g intervals)				
<input type="checkbox"/> Feeding tubes –size 4, 6, 8				
<input type="checkbox"/> Feeding cups- calibrated 40 to 60 ml clear cups OR 10 ml syringes				
<input type="checkbox"/> Functional radiant warmers				
<input type="checkbox"/> Incubators				
<input type="checkbox"/> Pulse-oximeters /oxygen saturation Monitoring				
<input type="checkbox"/> Low reading digital thermometers				



<input type="checkbox"/> Wall thermometer				
<input type="checkbox"/> Room heaters				
<input type="checkbox"/> Oxygen				
<input type="checkbox"/> Oxygen flow meters (paediatric)				
<input type="checkbox"/> Oxygen blenders				
<input type="checkbox"/> Oxygen splitters				
<input type="checkbox"/> Nasal prongs or masks*				
<input type="checkbox"/> Bag-valve-mask device				
o 200ml to 300ml bag				
o Preterm (0) mask				
o Term (1) mask				
<input type="checkbox"/> Bilirubin blanket/ phototherapy unit *				
<input type="checkbox"/> Suction device				
<input type="checkbox"/> CPAP devices				
<input type="checkbox"/> Water dispenser with safe water				
<input type="checkbox"/> *KMC wrappers*				
<input type="checkbox"/> Hats				
<b>Availability of medicines for prevention and treatment of common neonatal conditions</b>	<b>Y=yes</b>	<b>N=no</b>	<b>Number</b>	<b>Comments</b>
<input type="checkbox"/> 7.1% chlorhexidine digluconate gel				
<input type="checkbox"/> Tetracycline eye ointment				
<input type="checkbox"/> Vitamin K				
<input type="checkbox"/> Multivitamin drops				
<input type="checkbox"/> Iron				
<input type="checkbox"/> Folic acid				
<input type="checkbox"/> Caffeine citrate				
<input type="checkbox"/> Gentamicin				
<input type="checkbox"/> Crystalline penicillin				
<input type="checkbox"/> Syringes (ml size)				
o 2ml				
o 5ml				
o 10ml				
o 20ml				
<input type="checkbox"/> Needles				
o Gauge 23				
o Gauge 25				
Cannulas				
· Gauge 24				
· Gauge 26				
Does the facility have a functional infection control committee (confirm using last minutes)				

Does the facility have a functional quality improvement committee (confirm using last minutes)				
<b>Quality of care for preterm/LBW babies</b>				
Does the facility have guidelines and job aids for management of LBW/preterm babies				
Confirm by observing				
<input type="checkbox"/> Availability of Comprehensive Newborn protocol and Basic Paediatric Protocol				
<input type="checkbox"/> Standardized newborn files.				
<input type="checkbox"/> Management of hypothermia				
<input type="checkbox"/> Management of possible severe bacterial infection				
<input type="checkbox"/> Apnoea of prematurity				
<input type="checkbox"/> Feeding				
<input type="checkbox"/> Infection prevention and control				
<input type="checkbox"/> Neonatal resuscitation				
Does the facility have: the KMC register (MOH 374)?				
Neonatal inpatient register MOH 373, Maternity Register MOH 333, Summary tool MOH 711				
Is the KMC register completed filled?				
Is the KMC register accurately filled?				
Does the facility keep individual patient records? (Including electronic records)				
<input type="radio"/> At outpatient level				
<input type="radio"/> At in patient level				
Are the patient records correctly filled (wards rounds and observations)?				
Do you have nursing staff assigned to the				
newborn unit only (hospital)?				
Do you have a clinician (Doctor, RCO) available to conduct a daily ward round?				
Do you have a nutritionist available to conduct a daily ward round				
Have staff received any of the following trainings or refresher sessions in the last 12 months				
· ETAT plus				
· NEWBORN ETAT				
<input type="checkbox"/> EMONC				
<input type="checkbox"/> EENC				
<input type="checkbox"/> KMC				

<input type="checkbox"/> IYCF				
<input type="checkbox"/> MIYCN				
Does the staff practice Essential Newborn Care at delivery as per the guidelines? (Observe 1 delivery-drying, skin to skin, delayed cord clamping, early initiation of breastfeeding for stable newborns)				
How are small babies kept warm?				
How many functional incubators are available in the facility (doors intact, functioning humidifier, functional heating system and a temperature sensor)?				
Is there sharing of incubators (observe)				
Are observations monitored and charted 3 hourly? (Observe comprehensive monitoring charts)	Yes/No, Comments.....			
Does your facility have a system in place to support mothers to breastfeed?	Yes/No			
Describe the system in place (health talk, demonstration, psychosocial support) observe)				
What role do mothers have in the care of their LBW/preterm babies (describe)				
Is there provision for the mother to be with her baby in the facility?	Y e s / no			
Is food available for mothers?	Y e s / no			

## ANNEX 2: Comprehensive Newborn Monitoring Chart

Name	IP NO	Sex <input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Indeterminate <input type="checkbox"/>	D.O.A	D.O.B
Date today				
Birth Wt	gm	CPAP <input type="checkbox"/>	Oxygen <input type="checkbox"/>	Phototherapy <input type="checkbox"/>
<b>Daily Clinician Feed and Fluid prescription</b> Day of life _____ gm Current Wt = _____ gm Total feed + fluid = _____ mls/kg/day = _____ mls Feed: BF <input type="checkbox"/> EBM <input type="checkbox"/> Term Formula <input type="checkbox"/> Pre-Term Formula <input type="checkbox"/> Route: Cup <input type="checkbox"/> NGT <input type="checkbox"/> OGT <input type="checkbox"/> Volume & Frequency = _____ mls 3hrly <input type="checkbox"/> 2hrly <input type="checkbox"/> 24hr Feed Volume = _____ mls				
<b>Vitals</b>				
Monitoring F req _____ hrs   Time _____				
Temp (°C) _____				
Pulse (b/min) _____				
Resp Rate (b/min) _____				
Oxy Sat (% or Cy° Cy°) _____				
Resp Distress D,+,+++ _____				
CPAP Pressure (cm H <sub>2</sub> O) _____				
<b>Assessment</b>				
FIO <sub>2</sub> (%) _____				
Jaundice O, +, +++ _____				
XXXX Y/N _____				
Blood sugar (m mol/l) _____				
Completed by (name) _____				
<b>Feed</b>				
Breastfeeding sufficient Y/N _____				
EBM vol given (ml) _____				
Formula vol given (ml) _____				
IV volume given (ml) _____				
Iv Line working Y/N _____				
Vomit Y/N _____				
Urine Y/N _____				
Stool Y/N _____				
Complete by (name) _____				
<b>Fluid</b>				
Clinician's name _____ Time: _____				
<b>Daily IV Fluid Nursing Plan</b>				
Start time = _____				
Hourly rate = _____ m/s ( _____ drops/min)				
Planned vol = _____ m/s in _____ hrs				
Morning shift notes				
Category: A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/>				
Afternoon shift notes				
Category: A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/>				
Night shift notes				
Category: A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/>				
Total feed + fluid in this _____ mls Shift deficit _____ mls Total feed + fluid in this _____ mls Shift deficit _____ mls Total feed + fluid in this _____ mls Shift deficit _____ mls Total food + fluid input in 24hrs _____ mls				
Completed by (name) _____ Completed by (name) _____ Completed by (name) _____ 24-hr deficit _____				

jaundice D name, +mild(face)      Tick the category of baby after assessment      Alert: circle readings outside normal range with red pen action

### Annex 3: KMC Daily Score Sheet

KMC Daily Score Sheet		Date →	
Based on the Intra-hospital KMC Training Programme in Bogotá, Colombia		Started 24h KMC: .....	
Name:		...../...../.....	
Reg No:	Formula:		Weight →
	0	1	
Evaluation	0	1	2
Remarks	Remarks		
Socio-economic support	No help or support	Occasional help or support	Good support system
Mother's milk production	Expresses 0-10 ml breast milk	Expresses 10-20 ml breast milk	Expresses 20-30 ml breast milk
Positioning and latching baby onto breast	Always needs assistance	Occasionally needs assistance	No assistance needed
Baby's ability to suckle at the breast	Gets tired quickly	Gets tired infrequently	Takes all feeds well
Confidence in handling baby i.e. feeding, bathing, changing	Always needs assistance	Occasionally needs assistance	No assistance needed
Baby's weight gain per day	0-10g	10-20g	20-30g
Confidence in administering vitamin and iron drops	No confidence	Some confidence	Fully confident
Knowledge of KMC	No knowledge	Some knowledge	Knowledgeable
Acceptance and Application of KMC	Does not accept or apply KMC method	Partly accepts & applies KMC method	Fully accepts and applies KMC method
Confidence in caring for baby at home	Does not feel sure or able	Feels slightly unsure & unable	Feels confident
<b>TOTAL SCORE per day</b>			

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