Policy : Kangaroo Mother Care

1. The common problems of small babies – hypothermia, hypoglycaemia, and hypoxia - are alleviated, if not cured, by a common solution: **Kangaroo Mother Care** (KMC).
2. KMC involves caring for a baby skin-to-skin with a mother or designated surrogate.
3. KMC should begin as soon as possible after birth, and continue until the baby is no longer comfortable.
4. It must be seen as a place of care not a type of care. All usually required care should be given in the skin-to-skin position where feasible.
5. KMC should be considered as the **preferred (default) place of care for all newborns** and should

Advantages:

- Improved homeostasis - stable temperature & heart rate, ↑ Sats (SpO_2), ↓ apnoea
- Improved sleep organisation
- Improved immunity - ↓ infection rates
- Improved neurobehavioral development
- Improved & earlier feeding - ↓ aspiration, ↑ growth rate, ↑ absorption/digestion, ↑duration of breast feeding
- Formation of healthy microbiome
- ↑ Bonding - ↑ maternal self-esteem, ↓ depression & separation anxiety, ↑family involvement & empowerment
- ↓Stress, crying and pain levels (stable cortisol levels)
- ↓ Length of hospital stay (early discharge).
- ↓mortality

Skin-to-skin Care for well term Newborns:

1. Skin-to-skin care must be offered to all stable newborns immediately after birth. Where resources and experience permit this can also be offered to unstable babies.
2. Uninterrupted skin-to-skin for well term babies should be offered for a minimum of one hour in **labour ward/ theatre/recovery** thereafter the baby can be weighed, measured and examined.
3. Well term babies should be transferred in the skin-to-skin position from labour ward/theatre to the postnatal unit.
4. Skin-to-skin should continue in the **postnatal unit** and on discharge and only be discontinued at home when the baby no longer tolerates it.
5. Due to shortage of beds, once mother has been discharged, term babies with persistent problems may be nursed in 24 hour KMC awaiting completion of treatment. See table below for problems that can be managed in KMC.

Commencing KMC in sick/small babies

1. **At birth:** Unless baby is requiring resuscitation, skin-to-skin should be offered to all babies at birth. Evidence shows that babies stabilize quicker when managed and monitored in skin-to-skin position. Where feasible babies should be transported to the neonatal unit in skin-to-skin position.
2. **Intermittent KMC** should be practised while the baby is still in the neonatal unit and should be commenced as soon as possible (At least within the 1st 48 hours). It can be offered with babies on oxygen and IV therapy and even stable CPAP or ventilated babies. Frequency is determined by how stable the baby is. A common sense approach is best. Aim for a minimum of 3 times a day. Each session should last at least one hour (one sleep cycle).
3. **Continuous / 24 hour KMC** – Admission Criteria.
   Currently 24 KMC is only offered for stable babies (able to maintain temperature, BP, glucose and oxygen levels without medical support.) However babies requiring additional support to achieve stability may receive 24 hour KMC in units with adequate resources available. (High care KMC/KMC+).

Standard criteria	Down referral to KMC	Term babies in KMC	HC KMC/KMC+
✓ Condition stable	✓ Condition stable	✓ Condition stable	✓ Well prems 1500 - 2000g Day1of life
✓ Gaining weight steadily	✓ Gaining weight steadily	✓ Physiological jaundice	✓ Sick prems >4days Condition stable
✓ Tolerating full feeds (oral or NGT)	✓ Tolerating full feeds (oral or NGT)	✓ Feeding problems	✓ Tolerating NGT feeds
✓ Off IV fluids (May have a short line)	✓ Off IV fluids (May have a short line)	✓ Completion of antibiotics via short line	✓ IV fluids - weaning
✓ No significant respiratory distress	✓ No significant respiratory distress	✓ Outstanding investigations	✓ Oxygen-weaning/static
✓ Intermittent KMC practiced for 48hrs-Mother orientated to KMC	✓ 48 hrs of 24hr KMC at referring hospital	✓ Rehabilitating neonatal encephalopathy	✓ Respiratory distress-resolving
✓ Mother well-physically and psychologically	✓ Mother discharged	✓ Mother discharged	

Transport:

KMC also offers benefits during transport including maintenance of normothermia, reducing apnoea and improving saturations, supporting stabilisation, reducing stress for mother and baby and supporting additional monitoring by the mother. It is a feasible, safe and frequently superior means of transporting babies particularly with limited numbers of available incubators/ambulances/paramedics. Babies should still be closely monitored by the paramedic including use of a sats (SpO_2) monitor if necessary.

The KMC position should preferably be used in the following circumstances:

- Babies born at home or in clinics - mothers should be advised to commence KMC immediately, prior to the arrival of the ambulance and during transfer to hospital.
- Pre-transfer – preferred means of keeping stable babies warm in hospital.
- Up referral of small stable babies.
- Down referral or discharge of all babies.

Providing a supportive environment

The KMC ward should be in close proximity to the Neonatal unit and under the supervision of the neonatal staff, with 24 hour nursing coverage.

- The ward should be comfortable, homely and warm but not heated.
- There should be a lounge/dining area and entertainment (TV, radio, magazines) should be provided.
- Appropriate ablution facilities are required.
- Each bed should have $7.5m^2$ of space. There should be no cribs.
- Educational / social activities for the mothers should be built into the unit routine. Involve the social workers and occupational therapists. Mothers should be free to walk around in and outside the unit (weather dependant) and receive visitors.

The 4 Cornerstones of KMC

1) Kangaroo Position

- It is not necessary to specially warm the room in which KMC is practiced. As long as the mother is comfortable she will maintain the baby's warmth.
- Dress the baby in a nappy and cap and place in an upright position against the mother's bare chest, between her breasts and inside her blouse. The arms and legs should be flexed and midline and the neck slightly extended in the neutral position. The baby must be **tightly tied** on with the wrap across the baby's ear in order **to secure the airway**.
- A variety of KMC wrap designs are available. Mothers should be encouraged at ANC to come to hospital with a clean KMC wrap and baby cap. Cover both mother and baby with a blanket or jacket if it is cold. The baby must remain in skin-to-skin position 24 hours a day except when the mother uses the toilet or shower/bath. The baby must never be left alone on the bed. Initially close supervision may be required to ensure mothers (particularly teenagers) are compliant.

2) Kangaroo Nutrition

Feeding breast milk and the establishment of exclusive breast feeding are central to the success of KMC.
Daily, babies should be assessed and feeding plans reviewed.

- Keep babies in the KMC position whilst being tube fed.
- Mothers should gather in a central location 3 hourly to facilitate monitoring and support of feeding by nursing staff
- If not yet breastfeeding on demand, they should receive EBM 160 ml/kg/day via nasogastric tube, in 8 feeds 3 hourly adjusted according to weight gain.
- In the KMC position, babies will declare themselves ready to suckle, as their rooting and suckling reflexes become manifest. This ability to coordinate sucking/swallowing and breathing usually matures from 34 - 36 weeks but may be earlier in KMC. Allow them to try to suckle during the tube feed. Use the "Transitioning to oral feeding" SOP to guide commencement and acquisition of oral feeding.
- Once the baby is able to suckle, allow the baby to breast feed on demand but at least every three hours.
- There is no need to offer cup feeds unless baby is formula fed. Formula feeding should be discouraged if possible and pasteurised breast feeds encouraged until discharge (or beyond) even if mother meets AFASS criteria for formula.
- Change nasogastric tubes twice a week.
- Ensure babies continue to gain weight steadily as oral feeding is established. Babies should be weighed and plotted daily and growth monitored weekly and plotted. Babies should gain 10 – 20 gm/day. If baby is not gaining weight or is gaining slowly:
  - ✓ Assess mother's milk supply. May require MAXALON® 10mg 8 hourly and meal supplements. (NB Consult a dietician).
  - ✓ Assess babies latching and sucking-weak suck or drooling (spilling of milk) return to nasogastric feeds for a week and then gradually reintroduce breast feeds.
  - ✓ Reduce the number of breast feeds and increase number of nasogastric feeds.
  - ✓ Consider introducing FM 85 1 scoop/20 ml EBM if HIV negative or on pasteurised breast milk.
  - ✓ If adequate nutrition and feeding volume is being provided assess the baby for possible infection or other causes for failure to thrive.

3) Kangaroo Support

- The KMC unit should be staffed by permanent, non-rotating, appropriately trained/experienced staff (ENA/EN) overseen/managed by a professional nurse. This should be further supplemented with daily medical rounds and regular visits and teaching from the dietetics, OT and speech/physio departments. The team's assessment and emotional support of the baby and mother, support and supervision of feeding and KMC position and preparation for discharge is critical in ensuring effective KMC:
  - ✓ All observations medical assessments, observations and feeds should be recorded on the daily KMC assessment chart.
  - ✓ Monitor, assess and support mother's confidence in caring for her baby and in administering supplements.
  - ✓ Monitor vital signs 6 – 12 hourly for any change in condition or signs of infection. Monitor and document compliance with correct KMC position.
- A daily routine should be displayed and daily activities provided e.g. knitting, sewing, crafts, talks etc. A weekly debriefing/support session with the social worker should be provided to screen mothers for depression and to support them whilst away from home.
- It is very important to explain and demonstrate KMC to the mother until she is motivated and confident in KMC care. In Kwazulu-Natal the word "Ukugona" (to hug or embrace) is used.
- The concept should be explained to other family members (especially the maternal grandmother), and they can also practise KMC (especially the father). It is important that her family supports the mother as she will need to continue KMC at home following discharge.

4) Kangaroo Discharge and follow up

- Discharge is mainly dependant on the stability of the baby, effective feeding and weight gain, maternal compliance with KMC and home circumstances (support for ongoing KMC at home). This can be assessed using the daily KMC discharge scoring tool. Once baby is scoring 19 or more s/he can be discharged.
- It is crucial to establish a trusting relationship with the mother in order to ensure she honestly reports her readiness for discharge and ability to continue KMC at home. If there is any doubt about mother's ability to continue KMC at home and easily return for follow up or in case of emergency, delay discharge until baby is 1.7 – 2 kg.
- As part of discharge planning - assess:
  - ✓ Home location - distance from clinic/hospital.
  - ✓ Availability of transport.
  - ✓ Whether mother will be returning to work or school i.e. who will actually be caring for baby following discharge.
  - ✓ Support available from the family/community.
  - ✓ Compliance with KMC and likelihood of KMC being continued at home.
- Discharge on medications as below (usually it is appropriate to stop the vitamin D at discharge). Iron and multivitamins should be continued for the first year of life.
- Staple the discharge summary, KMC follow up form and Percentile Growth chart into the Road-to-Health Booklet (RTHB). The clinic must use the Growth chart until the baby is one year then must continue using the charts in the RTHB.
- KMC must continue at home until baby is 40 weeks and/or 2.5 kg or baby no longer tolerates it.
- Bring the baby back for follow up in the unit (KMC clinic) **on day 3 and 7 post discharge** to ensure that baby is well and growing:
  - ✓ Continue to plot weight on the same percentile chart.
  - ✓ Use the same scale to weigh them when they come for follow up.
- Thereafter the baby should be followed up **1 - 2 weekly** at the clinic until baby is 40 weeks or 2.5 kg.
  - ✓ Baby should return in the KMC position.
  - ✓ If there is little evidence that mother is continuing KMC at home despite repeat counselling consider readmission unless the baby is thriving.

Other care required:

1) Medication

- From two weeks of age, commence multivitamin supplementation.
  - ✓ VIDAYLIN® 0,6 ml/dose/day (NB if < 1.5 kg give 0.3 ml/day)
  - ✓ VITAMIN D 400 U/dose 24H.
  - ✓ FOLATE 2.5 mg weekly.
- Add iron supplementation from day 21. FERRODROPS® 0,3ml/dose 24H (NB if < 1.5 kg give 0.3 ml/day).
- All preterm babies should be on CAFFEINE base 2.5-mg/kg/dose daily until 34 weeks or they weigh about 1800 g.
- Mothers should be taught to administer all oral medication themselves.
- Some babies may have short lines for the completion of IV antibiotic administration.

2) Immunisation

Give the birth BCG and Polio vaccines when baby once baby stable and gaining weight well. Baby may also require 6 week immunisations if baby is still in hospital at that time.

3) Complications

It is important to watch out for:

a. Anaemia of immaturity

Transfuse preterm babies if their Hb is less than 9 g%. This can be done in the KMC unit if a registered nurse is available to supervise.

b. Patent Ductus Arteriosus (PDA)

Bounding pulses are the hallmark of PDA's in small babies. Check pulses daily, and if they are bounding, listen for a murmur. Refer to a regional hospital if a PDA is present, and reduce intake to 120 ml/kg/day.

c. Sepsis Neonatorum

Babies in KMC are less likely to acquire infections, but they are still at risk. At any sign of infection, fully and carefully assess baby, and manage according to the "Neonatal Infections" guideline.

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