

Guidelines for Nurses in the Kangaroo Mother Care Unit. (ward 4) Kalafong hospital

Admission Criteria to the KMC unit

The main function of the KMC unit is:

- To accept healthy, low birth weight (<2,5kg) and premature babies from the high care unit (HCU) as soon as full oral feeds have been established. This is in order to prevent overcrowding of the HCU and to practise continuous KMC as soon as possible.
- The KMC unit also takes care of O₂-dependent infants who receive intermittent KMC. They should receive continuous KMC as soon as they are off oxygen therapy.
- The KMC unit is able to accommodate 20 mother-and-infant pairs and 5 infants cared for in bassinets without mothers. The maximum number of infants in the unit at any one time may not exceed 30.
- Infants without mothers will be accepted if discussed with the consultant before transfer from the HCU. It is important that the nursing staff is consulted and informed about these patients.
- The KMC unit is a low care unit but blood transfusions and short periods of intravenous therapy may be provided in the unit if the baby is well and stable and the nursing personnel is happy to keep the patient in the unit.
- Infants who are jaundiced, but otherwise healthy will receive phototherapy in the KMC unit and do not have to be transferred to another ward.

Admission Criteria to Ward 4A

1. Admissions to ward **4A** include term neonates (0 - 28 days old) and premature infants weighing less than 3.5 kg or specific patients arranged by the consultant with the nursing staff.
2. Maximum number of babies in the ward will be 10:- 6 mother-and-baby pairs and 4 babies with mothers lodging in the main lodger unit or staying at home. If the unit is full further babies should be admitted to ward 6. Under no circumstances may mothers from ward **4A** lodge in the KMC unit except if a KMC baby is transferred to **4A** for treatment.
3. Mothers lodging in the unit will make use of the KMC unit's washing facilities. It must be explained to them that the bathrooms should be kept clean and tidy. Their food will be delivered with the food for the mothers in the KMC unit.
4. During the night there will be a nurse allocated to the KMC unit and another to ward **4A**. The sister on duty will be responsible for both units. The emergency trolley in the KMC unit is to be used for emergencies in ward **4A**.

Admissions to the KMC unit

1. Admit mother and infant by completing the following documentation:
 - Complete the TPH3 admission form for the infant and the lodger admission form for the mother.
 - Complete the ward admission register with the infant's details.

- Complete the pink KMC statistics form for each KMC patient admitted to the unit. The month of admission to the unit is written in the right-hand corner of the form.
- 2. Contact the Dietician to inform about new admissions and arrange food for the mother and milk or special supplements for the infant if necessary.
- 3. Welcome and introduce mother to staff members and fellow mothers.
- 4. Orientate the mother and show her the different areas in the ward for example:
 - Bathroom facilities and lounge for mothers and visitors
 - The dining room where mothers receive their meals
 - The linen room where mothers receive their linen and the room where the dirty linen is placed for washing
 - Provide the mother with a KMC wrap (thari) and show her how to secure her infant to the chest in the KMC position
- Explain ward routine:
 - Eating
 - Washing
 - Visiting hours
 - Ward rounds

Give the mother a copy of the **Guidelines for Mothers**.

- Explain KMC - give the mother a copy of the **KMC brochure**.
- *Explain that all of the staff members are there to help her care for her premature baby. If she has any questions or if she is at all unsure of what to do, she must feel free to ask for assistance.*

Daily Observations and Monitoring in the KMC unit

1. Daily Weighing

- Weigh and record weight daily in the weight book on all KMC babies.
- The patient's name and registration number must be noted in the weight book.
- Acceptable weight gain is 15 – 30 grams daily. If an infant gains too little or too much weight, weigh the infant again to make sure that there was not a mistake in weighing the infant the first time.
- If an infant has lost a large amount of weight inform the sister and call the doctor. The infant may be dehydrated and may need resuscitation.

2. Monitoring temperatures

Check temperatures twice daily on all infants at 10h00 & 22h00. Normal range is 36.5 – 37.5°C. If an infant's temperature is too high or too low the following steps must be taken:

- a) Raised body temperature (Temp >37.5°C)

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The causes of a raised temperature could be due to infection or due to hyperthermia. Infection should always be suspected unless there are very obvious external reasons for the infant to becoming overheated.

Management of raised temperature

- Remove baby from source of heat and uncover or undress infant partially or fully.
- Repeat temperature after 30 minutes. If temperature is still high the infant can be cooled down with tepid sponging. Suspect infection and inform sister or doctor immediately.

b) Decreased body temperature (Temp <36.5)

Preterm and low birth weight infants have difficulty in maintaining their body temperatures. They need to be placed close to a heat source. Swaddling a cold baby does not help. The baby cannot produce the heat to warm himself without the help of an outside source. Hypothermia is divided into different degrees

- Cold stress (Temp 36 – 36.5°C) – baby will not gain weight
- Moderate hypothermia (Temp 32 – 35.9°C) – baby may die suddenly
- Severe hypothermia (Temp <32°C) – poor prognosis, death may be imminent

Management of Hypothermia

- Place infant immediately skin-to-skin and check every 30 minutes whether temperature is improving.
- If infant is already in skin-to-skin position and baby is cold in spite of it inform the sister and doctor immediately.
- If the infant's temperature does not improve within 30 – 60 minutes of skin-to-skin care inform the sister and inform the doctor. The infant may have an infection.

3. Monitoring infants' breathing

Check the infants **breathing rate** at least twice a day. (Normal 40-60 breaths per minute) Check also whether they are breathing comfortably. Their airways are very small and may become blocked very easily.

- a) Infants receiving oxygen via nasal catheters should also be checked for blocked noses. Infants can only breathe through their noses. If their noses become blocked they may collapse or develop apnoea. The infants in the KMC unit receive oxygen that is not humidified and this may dry out the airways and cause blockages.
- To prevent noses becoming blocked, each infant on oxygen must receive one drop of saline nose drops in each nostril every 3 hours. The mothers can instil the drops before each feed.

- If an infant's nose is blocked or the baby has difficulty in breathing call the sister to carefully suction the baby's nose. Instil saline drops while suctioning. If this does not improve the infant's breathing call the doctor and continue administering oxygen.
- b) All infants should be assessed whether they are in need of oxygen by doing daily pulse oximeter measurements. The oxygen saturations should be above 85%. If the saturations fall below 85% or if the infant develop tachypnoea (breathing rate >60/min), inform the sister and place infant on oxygen. Also inform the doctor.
- c) An infant who is receiving oxygen should have daily pulse oximeter measurements. The saturation should never be more than 95%. Decrease the oxygen flow until the saturations are below 95%. High oxygen saturation levels may cause blindness in premature infants.
- On weaning an infant from oxygen the pulse oximeter measurements should be performed frequently during the day. The oxygen saturation of infants being weaned should be between 85 – 95%. If it drops below 85% and stays below 85% saturation the infant should be placed back on O2 therapy.
 - To wean an infant from oxygen and to see whether he can manage without oxygen the following must be done: The oxygen flow meter must be closed and the tube must also be disconnected from the oxygen flow meter. (There is often a leakage of oxygen through the flow meter if the tube is not disconnected.)
 - When a decision is made regarding the weaning of oxygen, always inform the mother especially if the oxygen is stopped completely. The mother can keep watch to see if the infant does not develop cyanosis or apnoea. Wean according to the Oxygen Weaning Standing order.

4. Monitoring the heart rate

The normal heart rate range is 115 – 185. If the heart rate is too slow or too fast inform the sister and the doctor.

- Causes for a slow heart rate – hypothermia, infection, apnoea etc
- Causes for a fast heart rate – hyperthermia or fever, infection, heart failure etc

5. Monitoring urine and stools

- a) Infants should have about 6 wet nappies daily. If the baby does not pass urine it may be because it does not receive enough feeds and is becoming dehydrated.
- b) Breastfed infants can have 7 stools in one day or 1 stool in 7 days. As long as the baby does not have a distended abdomen you can reassure mothers who are concerned when their baby has not passed any stools for a couple of days.
- If a baby passes bloody stools, keep the nappy and stools and call the sister and doctor. This may be the first symptoms of a serious life threatening condition called necrotising enterocolitis.

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Infant Care

1. Demonstrate and supervise baby baths.
 - Top and tail < 1,400 kg
 - Wash > 1,400 kg
2. Administer medication or supervise the administration of the medication by the mother. All babies in the KMC unit should receive the following medication:
 - **Vidaylin 0,6 ml/day orally**, starting from the 5th -10th day of life.
 - **Vit. D 400 IU /day orally**, starting from the 5th -10th day of life
 - **Kiddivite 0,8ml/kg/day** (6 mg elemental Fe3+/kg) starting when babies are **on full oral feeds**.
3. Complete the daily scoring chart for each baby and assess for possible discharge. Discuss poor weight gain or problems with the doctor. (see pre-discharge readiness scoring chart).

General

1. Feeds

Read the Infant feeding policy of the KMC unit and adhere to this policy in all feeding advice and decisions given to the mothers.

2. KMC position versus bassinet or incubator care:

- All infants who are not on oxygen should receive continuous KMC.
- Bassinets should only be available for infants without mothers or in the case of triplets.
- Very small infants (<1250g) receiving conventional care in a bassinet because the mother is not available, may lose body heat. These very small infants may need care in an incubator to ensure good weight gain and prevent hypothermia.
- The unit should be heated during winter nights to maintain a temperature of 24°C to prevent hypothermia and weight loss in the infants. The unit is very hot during summer and if the temperature reaches 28°C, the windows can be opened and the fans turned on to reduce the temperature and prevent the discomfort of working in such a hot environment.

3. KMC:

- It is important that the concept and the benefits of KMC should be explained to the mother as soon as possible after admission to the unit. She must understand that for her infant to benefit from KMC, the infant should be kept in the KMC position as much as possible.
- The infant should be tied in the KMC position with the KMC thari (a special wrap) that should be provided to the mother on admission to the unit. Mothers should be shown how to tie their infant in the KMC position. They must be informed that it is important that the infants' head and neck is supported when tied in the skin-to-skin position. The wrap should not be tied too tightly because the infant needs to be able to breathe without restriction.

- All mothers whose infants are still receiving oxygen therapy should do intermittent KMC, as often as possible. It is important that the mothers should sleep with their babies in the KMC position.
- Continuous KMC should be started as soon as a baby is well, stable and off oxygen therapy. Weight is not a deciding factor and even babies of 900g can receive KMC, but then the mother should strictly adhere to skin-to-skin contact throughout the day and night. The baby may only be removed when feeding or when the mother has a shower. Babies receiving formula milk are not excluded from KMC!

4. Daily ward round with the doctor

1. During the week the house doctor in charge of the ward will do a ward round on all the babies.
2. Twice or more per week the house doctor and the consultant will do a thorough ward round to sort out any medical and social problems that may be present, to assure that all the infants are thriving, to confirm that all the necessary investigations are done and to discuss possible discharges.
3. Problem cases and any new admissions need to be seen on weekend rounds. Please make a note of any problem cases on the black board as well as to add the names of any new admissions.
4. Confirm discharges and new admissions with the doctor.

5. Washing of the KMC Tharis

- It is important to always have a clean supply of tharis for new admissions and someone should be given the responsibility to manage the linen and the weekly cleaning of the soiled linen in the KMC unit.
- The tharis should be washed once or twice a week depending on the number of admissions to the unit and the need for clean tharis. The washing is done in the washing machine and dried in the tumble drier in the sluice room in ward 4A. Dr van Rooyen is in charge of the washing materials and she will make arrangements that there are enough washing materials in stock when she is away, in order for the washing to be carried out.
- Instructions of how the washing machine and the drier work are attached to the washing machine. Both machine and drier must **not** be operated at the same time otherwise the power trip switch is triggered because both machines together use too much power.
- When opening the washing machine one finds in the middle a white plastic holder where the fabric softener is poured into, up to the line indicated by the arrow. The soap powder should not be placed in this holder. The soap powder is to be placed inside the stainless steel bin of the washing machine before the washing machine is switched on. The best cycle to use is the maroon coloured cycle. The knob is turned to the beginning of the cycle and the pulled out. This action switches the machine on and the washing will be done automatically without further action from you.

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- It is important not to fill the machine with too much washing otherwise the engine will burn out. It is better to rather do 2 smaller bundles of washing at a time.

Discharges

- The decision to discharge a patient is a **team decision**. If you are concerned that the mother may not be ready to care for her baby at home or there are social problems that may affect the well being of the infant on discharge, please communicate it to the doctor.
- Confirm discharges with the doctor:
 - Make sure that the infants who are for discharge receive their immunisations. Complete the Road to Health Chart and make sure that the mother received the completed Card. She must be informed to bring the Road to Health Chart with her whenever she visits the hospital or clinic. Also complete the appropriate code for HIV status in the chart.
 - Ask the doctor to order TTO's early. Order the TTO when a patient is considered for discharge within the next couple of days. In doing this patients are not delayed in going home. When the doctor prescribes the TTO it does not automatically mean that the infant has been discharged. First confirm with the doctor that the patient is definitely for discharge on that day.
 - Make sure that the mother has appointment cards for the appropriate follow-up clinics. Make follow-up appointments for patients as discussed with doctor, in the appointment book provided.
 - Make sure that the pink statistic form is removed from the infant's file and placed in the appropriate envelope in the doctor's room.
 - Make sure that the mother has returned the KMC thari that was provided to her during her stay in the unit. There are tharis available for sale, which the mother can buy for use at home. Encourage mothers to leave with their infants in the KMC position and to continue with this practice at home.
- The Green KMC Statistic form**
 - This form has to be completed for all infants admitted to the KMC unit!
 - When the infant is admitted in ward 4 the patient's name and birth detail should be completed on the pink statistic form and the form should be placed in the patient's file.
 - This form is removed from the file if an infant is transferred out of the unit; the transfer date must be recorded on the form. The form is placed in the correct A4 envelope in the suitcase in the doctor's room, according to the admission month on the form. If the child is transferred back, the same statistics form is placed in the infant's file until discharge.
 - The form is removed from the file when the patient is discharged and filed in an A4 envelope according to the **patient's month of admission to ward 4** and placed in the suitcase in the doctors room. **NB! At discharge the doctor must complete the statistics form!** If the form is not completed, please call the doctor to complete it, before filing it in the envelope.

- If an infant dies in the unit, the statistic form should be completed, removed from the file and placed in the appropriate envelope.
- These forms are used in the KMC follow up clinic and are used to do an ongoing audit of the KMC unit.

Screening for retinopathy of prematurity (ROP)

- Appointments for this clinic must be made by the house doctor and the patient's name should be written in the clinic book. Screening for ROP must be executed on all infants who were born with a birth weight $\leq 1300g$.
- The first screening examination must be done when the baby is chronologically 6 weeks old. Every Thursday morning an ophthalmologist evaluates the infants' eyes at an eye clinic, which is held in the KMC unit.
- The pupils of the patient should be dilated with Cyclomydril eye drops. (Cyclopentolate 2mg/ml, Phenylephrine 10mg/ml). (NB! These eye drops may cause apnoeic episodes in these babies and special attention must be given to them for 2 hours after instilment of the drops.) **(NB Keep the resuscitation trolley close by!) Also see the standing order regarding the instilment of the drops in the infants' eyes.**

Administrative Duties

Responsible for the following (with the help of the ward clerk of ward 4):

- Keep daily statistics.
- Keep patient records up to date:
 - Complete the daily nursing notes
 - Complete 12hourly temperature charts
 - Complete feeding, urine and stool charts
- Complete the daily scoring chart each day.
- Order and supervise meals for mothers.
- Order feeds for those infants requiring supplements.
- Order linen.
- Ensure that the ward is kept clean and tidy - mothers to participate by making their own beds and cleaning their own lockers.
- Liaise with social worker when social problems are identified.
- Arrange that any broken equipment or fixtures be repaired.

General Management tasks in the ward

Supervise the following duties:

- Hand out blankets to babies receiving intermittent care or conventional care.
- Hand out ward tharis to tie the baby in the KMC position.

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3. Responsible together with doctor Van Rooyen for arranging the weekly washing and cleaning of the towels, baby blankets and tharis.
4. Bed linen should be changed once a week or when a lodger mother is discharged.
5. Mothers should receive clean dresses every day to prevent infection.
6. Keep a good record of the tharis to prevent theft. The tharis are numbered and each mother must sign that she received that specific thari. When the tharis are washed, the mother must make sure that she receives the correct numbered thari when they have been dried and are returned to the mothers in the ward.
7. Keep a good check on all stock
 - Check that enough nappies, paper hand towels and toilet paper are ordered and make sure that the stock is stored in a secure place to prevent theft.
 - Check that the doctors' trolley in both KMC and ward 4A is stocked with the necessary equipment for suctioning, blood taking, inserting intravenous lines and intravenous solutions. Keep the trolley neat and tidy and well stocked.
 - Check that the emergency trolley is stocked with the correct resuscitation equipment and that everything is clean and in working order.
 - Check that the mothers are supplied with hand cleaning solutions in order to maintain a high standard of hygiene in the ward and to prevent infections in the infants.
 - Check that the routine medications used in the KMC unit are in stock. Place orders for ward stock when necessary.
 - Check that the surfaces of the lockers next to the mothers are washed and cleaned with a disinfecting solution on a daily basis to prevent infection.

Maternal Care

1. Demonstrate and supervise baby baths.
2. Assess maternal milk supply and assist with tube, cup and breast-feeding.
3. Assess the mother's mental state and if you are concerned about any aspect of her mental health report it to the doctor as soon as possible. A mother, who is ill, especially when she is mentally ill, may pose a threat to the well being of her infant or other infants in the unit. It is important to notice this as soon as possible in order to make arrangements for the mother to be admitted in another ward until she has received treatment and her mental state has improved. The infant will stay in the unit and receive conventional care until the mother is better or until other arrangements for the care of the infant has been made.
4. Assess the mother's comprehension of infant care. If the mother is slow and not very clever she needs extra supervision regarding the care of her infant.
5. Assess whether the mother has a communication problem and try to address this by finding someone to speak to her in a language that she understands. In order to support and educate

the mother regarding the care of her premature infant it is important that you are able to communicate with her.

6. Encourage personal hygiene and tidiness.
7. Supervise and assess application of KMC.
8. Demonstrate and assess the different feeding methods practiced in the unit.
9. Mothers who are ill - inform the intern to complete a consultation form or refer the mother to the correct facility in order that she may be examined and receive the correct treatment. Ill mothers cannot take proper care of their infants and extra nursing supervision of these infants are necessary.
10. Mothers with social problems – refer to social worker. (Referrals can be made by the nursing staff as well as the medical staff.)

Maternal Education

1. Explain what looking after a premature baby entails.
 - Explain KMC to the mothers by using the KMC brochure or other educational material
 - Encourage mothers to participate in activities in the KMC ward.
 2. Ongoing education of individual mothers in KMC ward
 - Support the mother during the transition process from tube to cup feeding.
 - Give support with breastfeeding and cup / syringe feeding.
 - Show the mothers how to hold the baby when cup feeding to prevent possible aspiration.
 - Inform the mothers that their premature infants do not have good gastric sphincters and may regurgitate or reflux if not kept in an upright position during and after feeding or if they do not rub out their winds.
 - Help with babies who are still oxygen dependent -
 - Explain that babies on oxygen need regular saline nose drops, because the constant oxygen-flow dries out their nasal passages.
 - The mothers should inform you if her baby is breathing with difficulty or irregularly. (Explain that as babies increase in size their lungs also grow and they will eventually become oxygen independent.)
 - Explain KMC policies and answer questions about KMC. **See KMC-brochure**
 - Discuss social problems, support systems etc.
- Explain to the mother danger signs when they need to seek urgent medical help for their infants. The following are danger signs that a newborn or premature baby may present with. Remember: Regardless of a baby's weight, the newborn danger signs remain the same.
- A decline in the infants ability to suck or feed
 - Hypothermia in spite of efforts to re-warm
 - Fever

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- Convulsions
 - Breathing problems: apnoea, retractions, grunting, flaring, cyanosis
 - Lethargy (notable decline in activity, excessive sleepiness)
 - Jaundice (very soon or prolonged)
 - Redness, swelling and/or discharge from the eyes, cord and skin
3. Group demonstrations and lectures (including visiting & lodger mothers)

Topics

- KMC & KMC at home..
- Breastfeeding and cup / syringe feeding.
- Clinic Card and immunisation.
- Personal hygiene and skin care of the infant.
- Family planning.
- Diet and Introduction of solids.
- Prevention of HIV.
- **Only for mothers who give formula milk:** Demonstrate the preparation of formula milk.

Student Education in the KMC unit

1. The 3rd year medical students involved in Block 9 receive a questionnaire, which needs to be completed. They have to observe the practice of KMC and may ask questions in order to complete the questionnaire. (Lasts 8 weeks, July - Sept each year, on Tues., Wed & Thurs. From 08h30 - 11h50)
2. On Friday mornings throughout the year, 4th year students from the Communication Pathology Department visit the unit to do practical sessions with the mothers and infants regarding early communication, feeding practices as well as correct positioning and handling of their infants.

Staff Education and orientation in the KMC-unit.

1. We expect that, as soon as possible all staff members should be orientated regarding KMC and the practice of it. Several scientific journal articles regarding KMC are in the KMC educational folder.
2. The staff should also familiarise themselves with the guidelines, policies and standing orders of the KMC unit. These are updated each year and are filed in a folder, which is kept in the nurse manager's office.
3. Whenever the department of Human nutrition at Kalafong hospital provides training in lactation it is recommended that the staff of ward 4 attend it. This will enable the staff to help mothers feed their premature infants and establish breastfeeding successfully.
4. It is important that staff is orientated regarding Neonatal Resuscitation as soon as possible in order to be proficient in resuscitation of premature infants.

5. It is to the patient's advantage if the staff in the unit, attend conferences and workshops about neonatal matters including KMC.
6. It is to the advantage of the staff and the patients if the staff involves themselves in research projects. They may participate actively in these projects or give full co-operation to research assistants involved in research in the unit.

Organisational matters

1. It would be advisable for the nursing staff to have regular weekly meetings to discuss organisational matters and any problems arising in the work.
2. A combined multidisciplinary meeting with the medical and para-medical staff once a month will also improve communication and the smooth running of the ward.
3. **Communications** between staff members are essential to ensure good care of their clients and for the ward to function properly. Start a communication book to inform one another about arrangements and decisions taken about organisational matters as well as specific problems with patients in the ward.

Follow-up Clinic

This clinic is run and organised by Dr Van Rooyen with the help of dieticians and the registrar working in the unit. It is very seldom that the nursing staff of ward 4 is involved in the running of this clinic. It is more for your understanding and insight of what occurs at the Tuesday clinic that the following information is supplied.

1. All babies discharged from the KMC unit will be followed up at the KMC clinic, which is held on a Tuesday morning from 8h00 – 12h00 in ward 4 and Thursday 9h00-12h00. All babies who are discharged home must be followed up within a week.
2. If weight gain is poor or there is any other factors of concern, the baby should be re-admitted and where necessary, investigations should be done to exclude possible infection.
3. Appointments for this clinic are given to the patients on discharge and the name of the patient and registration number is written in the Clinic Appointment Book.
4. For the purpose of the follow-up clinic, the statistic form of each patient is necessary as the weight gain and other details are recorded on the forms.

Dr E van Rooyen drew up these guidelines in consultation with the nurses of the KMC unit.

Date reviewed: 08/04/2012. These guidelines will be reviewed each year.