Guidelines for the Doctor working in ward 4

Please remember that these are guidelines and not rules cast in stone!

- The intern in ward 4 is expected to do a daily ward round of all patients. Patients should also be seen at weekends and the ward rounds should be divided between the 4 interns working in ward 28, ward 8 and Immunology.
- The intern will also be expected to help with the ROP clinic on Tuesdays between 10h00 – 11h00 in ward 4.
- As soon as the ward round and ward work has been completed, the intern is expected to help in POPD or the HIV clinic.
- Protocols for jaundice are on the notice board in ward 4.

GUIDELINES WITH REGARDS TO THE KMC UNIT

Admission Criteria for 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 take care of O2-dependent infants. They receive intermittent KMC. They should receive continuous KMC as soon as infants are off oxygen therapy.
- Infants without mothers will be accepted if discussed with the registrar or consultant before transfer from the HCU. It is important that the nursing personnel are consulted with regards to these patients.
- Acceptance of healthy premature babies from Pretoria Academic Hospital:
  - Infants will only be accepted if there are enough beds available, because Kalafong neonatal unit has first priority to beds.
  - Infants may only be accepted if the mother accompanies the patient and if the infant is stable, on full feeds and do not require any oxygen. The patient must also have a summary of treatment and special investigations performed.
  - Before transfer of the patient arrangements has to be made with the registrar or consultant of the KMC unit.
- The KMC unit is able to accommodate 20 mother-and-infant pairs and a maximum of 5 infants cared for in bassinets without mothers. The maximum number of infants in the unit at any one time may not exceed 30.
- Blood transfusions and short periods of intravenous therapy may be acceptable if the baby is well and stable and the nursing personnel is happy to keep the patient in KMC.
- The retrovirus status of a baby is not a contra indication for practice of KMC.

GENERAL

1. Incubator versus Bassinets:
   - Bassinets should only be available for infants without mothers or in the case of triplets.
2. Feeds (See separate KMC feeding policy.)
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, it should be tied in the KMC position as much as possible.
   - Continuous KMC should be implemented as soon as an infant 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.
   - It is beneficial to the infant if the mother moves around with the infant in the KMC position. Mothers should be informed of this fact and they should be encouraged to have the infant in the KMC position when they move about in the ward. On discharge this practice should continue at home.
   - The infants should be tied in the KMC position with special wraps that should be provided to the mother on admission.
   - Intermittent KMC should be done as much as possible by all mothers whose babies are still receiving oxygen therapy. It is important that the mothers should sleep with their babies in the KMC position.
   - Babies on formula milk are not excluded from KMC!
4. Medication
   - All infants in ward 4 should receive the following medication:
     - Vidaylin 0,6 ml/day orally. (Start as soon as the infants are on full oral feeds.)
     - Vitamin D 400 IU /day orally. (Start as soon as the infants are on full oral feeds.)
     - Kiddivite 0,8 ml/kg/day (6 mg elemental Fe3+/kg). (Start as soon as the infants are on full oral feeds.)
     - Saline nasal drops instilled in each nostril every 3 hours when infants receive oxygen therapy.
Guidelines for the Doctor working in ward 4

1. If the infant has a low phosphate level (<1.80 mmol/l) the infant should receive Diabetic Phosphate Solution (1000 mg /60 ml) 1ml with each feed . total of 8 ml/day for 7-10 days. The blood test is to be repeated after 7 – 10 days.

2. Caffeine 2mg/kg per dose 3x/day. Caffeine is given to prevent apnoea of prematurity. Apnoea occurs commonly in infants with gestational ages of less than 34 weeks. If the infant is more than 34 weeks of age the caffeine treatment can safely be discontinued.

3. Babies are weighed daily and their feeds should be adjusted according to their weight gain. Special follow-up notes are used in ward 4. If stocks are low please ask the ward clerk to make copies of these pages.

4. Infants receiving Oxygen therapy in the unit.
   - Daily saturation measurements of all the babies who are O2-dependent are advisable.
   - Saline nasal drops instilled in each nostril every 3 hours when infants receive oxygen therapy.
   - All babies who are O2-dependent for more than a month and are suffering from broncho-pulmonary displasia may receive steroid inhalations (Clenil (Beclometasine) inhalations 50 µg puff 2x/day), via a spacer device - Neonatal Aerochamber. (You will have to motivate for the aerochamber.)
   - When weaning the infant from the oxygen please read the oxygen weaning procedure described in the standing order regarding oxygen weaning.
   - Infants who have successfully been weaned from the oxygen may only be discharged from the unit when they have been off oxygen for 3 whole days.

5. Special Investigations
   - No routine investigations are performed in the KMC unit.
     a) Screening investigations that are necessary
        • **Skull sonar:** All infants weighing 1500g and less at birth need to have a skull-sonar for screening purposes before discharge from the unit. The result of the sonar investigation should be noted on the statistics sheet.
        • **Phosphate levels:** All infants weighing 1300g and less at birth need to have a screening test for blood calcium, phosphate and Alk Phos levels, at 4 weeks of age or before discharge from the unit. If the phosphate is low (<1.80 mmol/l), the infant should receive oral Diabetic phosphate solution and the infant’s phosphate levels should be checked after 7-10 days’ therapy. This is especially important in infants receiving oxygen due to bronchopulmonary displasia.
        • **Screening for retinopathy of prematurity (ROP)** Screening must be done on all babies who were born with a birth weight < 1301g or a gestational age of < 32 weeks. The screening must be done when the baby is 6 weeks old.
     b) Other investigations
        • Infants that had a birth weight of 1200g or less should have FBC and reticulocyte investigations at 10 –14 days intervals depending on the haemoglobin value of the infant.

6. Infants who develop a heart murmur should have a heart-sonar if the murmur becomes louder and changes in character, or if the infant has bounding pulses, tachycardia, signs of heart failure and is not thriving.

7. Jaundiced infants should have their bilirubin levels checked each day and the results should be checked as soon as they are available. They should also be handed over to the on call team.

8. The following investigations should be done in suspected cases of possible sepsis: FBC & diff, platelets & reticulocyte count, CRP, and a blood culture. A lumbar puncture should also always be considered.

**MANAGEMENT OF COMPLICATIONS THAT MAY OCCUR**

1. Jaundiced babies may receive phototherapy in the KMC unit. The infant should receive phototherapy according to the bilirubin management guidelines.

2. If the baby is not well and an infection is suspected the management is as follows: Blood for FBC, platelets and CRP investigations are taken. If the results indicate a possible bacterial infection, the baby is transferred back to the HCU and then a lumbar puncture can be performed under more controlled conditions.

3. Babies who develop a problem in the ward must be transferred to the High Care Unit if they are at all seriously ill; i.e. apnoea attacks, aspiration of feeds, bloody stools & distended abdomens or signs of septicaemia (shock, lethargy, cyanosis, acidosis, etc.).

4. **Blood transfusions** in the KMC unit.
   - Premature infants, older than 3 weeks of age, do not need blood transfusions for anaemia unless the anaemia is very severe (Hb < 7.5 g%) or if the infant has other complications. Even if the Hb is low, it is not necessary to transfuse the infant if there is a good reticulocyte response indicating an active bone marrow.
   - A blood transfusion will not wean infants with bronchopulmonary displasia faster from their oxygen dependency.
   - Infants with severe anaemia (Hb less than 7.5 g%) may receive a blood transfusion in the unit after discussion with the consultant in charge. The infant should preferably receive packed cells. (Maximum volume of 15ml/kg).
   - When ordering the blood please request leukocyte depleted packed cells. The reason why leukocyte depleted blood is requested is to prevent a possible CMV infection in the infant. The CMV organisms are situated in the leucocytes and if the leucocytes are filtered out the chance that the infant may develop an infection via the blood transfusion are much less.
   - The blood must be given via a blood set and administered at a rate of 1 large drop/minute (6 ml/hour if total volume is less than 40 ml).
   - Please discuss with a consultant or senior registrar whether to give blood to an infant in the KMC unit. If the consensus is that blood should be given it does not have to be ordered during the night as an emergency procedure. The arrangements for the blood transfusion should be made during the day. If the blood has been ordered during the day, but it was delayed being
Guidelines for the Doctor working in ward 4

issued by the blood bank the infant may receive the blood during the night. The infant can receive the blood in the KMC unit and does not have to be transferred to another ward.

**Discharge Criteria and Guidelines in Infants Receiving KMC**

KMC babies may be discharged if they meet the following criteria:

- **Breastfeeding should be fully established or infant should take all feeds via cup if it is receiving pasteurised milk or formula (NO BOTTLES TO BE USED!!).**
- **Consistent weight gain of 20g/day on breastfeeding &/or cup feeding for 3 consecutive days.**
- **The mother should have acquired the feeding & caring skills to take care of her infant at home.**
- **The mother should be doing KMC without having to be reminded of it all the time. KMC has to continue at home. If the mother does not do KMC in the ward she cannot be trusted to do it at home.**
- **Consider the circumstances at home. If poor social circumstances - be more conservative in discharge weight and do not discharge too early. Also applicable with teenage mothers.**
- **If a mother has twins be more conservative when considering discharge. Only consider discharge when the smallest twin weigh at least 1600g.**
- **An infant for adoption should only be discharged when the weight is 2000g or more.**

**Other matters to consider with regards to discharge**

- **If all the criteria are met, an infant can be discharged if weight is more than 1500g. Discuss all discharges under 1650g with Dr. Van Rooyen or a consultant.**
- **Infants weighing less than 1500g – These infants can be considered for discharge but only when the doctor is convinced that the mother is capable of taking care of the infant, that the infant is taking feeds well, that there is good co-operation from the mother and very good follow-up arrangements.**
- **If a mother refuses hospital treatment and threatens to take her infant home against our wishes and advice she should not be allowed to take the infant. Security should be called to prevent her from leaving with the infant. This situation needs to be reported to the registrar, consultant and the superintendent if the mother does not want to listen to reason. A court order is not necessary if we are convinced that it is not in the infant’s best interest to be taken home by the mother.**
- **An infant who has been on Qs therapy has to be off oxygen for at least 3-4 days before the infant can be considered for discharge.**

**Discharge Check list**

**Eye exam appointments:** All infants BW < 1301g or <32 weeks gestation). The eyes should be screened when the infant is 6 weeks old. The eye clinic is on a Tuesday after the KMC clinic and takes place in ward 4. During the KMC clinic Cyclomydral eye drops are instilled into the eyes. Appointments must be made in the eye appointment book.

**Skull sonar:** All infants, BW < 1501 g, should have a skull sonar before discharge from the KMC unit. The result of the sonar should be noted on the pink statistics form.

**Phosphate results:** All infants with a BW < 1301g should have an s-Phosphate level done at one month of age or at discharge. If the s-Phosphate level is less than 1,800 the infant should be placed on oral diabetic phosphate solution, 1 ml with each feed. The result should be noted on the pink statistics form.

**Hip sonar:** All infants born in the breech position must have a hip sonar before discharge from the unit. If the hip is dysplastic and is classified as a Harke 4 or 5 the infant must be referred to the Orthopaedic Paediatric clinic for management.

**Growth chart completion:** Make sure that all the infants have a completed growth chart which should be attached to the pink statistics form.

**Immunisations:** All infants must receive their immunisation before leaving the hospital. The sisters who give immunisations are instructed to immunise all babies who have reached a weight of 1500g to 1 600g. Infants are sent to ward 10 for their immunisations. No baby may be discharged without receiving BCG and Polio drops. Make sure of the next immunization appointment date. Provide the mother with a clinic referral note informing the community clinic that the baby may receive immunisations.

**Road to Health Chart:** On discharge a summary of the clinical problems and appointments should be written in the Road to Health chart.

**Birth certificate for the infant:** Mothers can register their babies in ward 25 (ANC reception desk) as soon as they have received the Road to Health Chart.

**Grant application forms:** Where applicable assist the mothers to obtain grant application forms to receive the child care grant.

**HIV exposed infants Immunology appointment:** All infants who are HIV exposed need to be followed up at the Baby Immunology Clinic on Wednesdays at 10h00 in the Paediatric Outpatient Department. Complete the immunology referral form in duplicate. An appointment should be made at the POPD clinic at Ext 6818 and an appointment card should be provided to the mother on discharge.

**HIV exposed infants PCR results:** Send blood for HIV PCR at 6 weeks of age and check the results. Make sure the infant is placed on Cotrimoxazole prophylaxis where necessary.

**HIV exposed infants’ feeding choices:** Find out what the preferred method of feeding will be on discharge. If the mother decides to formula feed send her to the dietician’s clinic to learn how to prepare formula feeds correctly. If she decides on exclusive breastfeeding explain what exclusive breastfeeding is.

**Hearing screening appointment:** All infants admitted to ICU must have a hearing appointment on discharge. Martha Rabothata in the HCU [x6550] makes the appointments for Wednesdays at the ENT clinic. If the patient did not receive a date, phone Martha to get an appointment date.

**Contraceptives for the mother:** Discuss family planning choices with the mother and refer where necessary.

**KMC clinic follow up date:** An appointment must be made in the KMC appointment diary on a Tuesday. The KMC clinic is situated in the ANC clinic building. The clinic takes place on Tuesday mornings from 8h00-12h00. The mothers must bring the Road to Health charts with them. They do not have to fetch their files.

**KMC pink Statistics forms:** NB! At discharge a KMC patient statistics form must be completed. Complete the statistics form and remove it from the patient’s file together with the growth chart and place it in the appropriate brown envelope in the KMC box. The KMC clinic cannot function without these forms!

**Appointment cards:** Make sure that the mother receives the appointment cards for the respective clinics.

3 Kangaroo Mother Care Unit, Kalafong Hospital, E van Rooyen; 18/7/07
Guidelines for the Doctor working in ward 4

**Ward Statistics and ICD 10 Codes:** Complete the Ward statistics form and the appropriate ICD10 codes for each patient that is discharged. This form with the list of discharges for the past week must be handed to Dr Snyman or the secretary of Paediatrics each week on a Thursday.

**TTO: Medication**
- **a)** Vidaylin 0.6 ml/day orally. (Started as soon as the infants are on full oral feeds and continues until the infants are 6 months old.)
- **b)** Vitamin D 400 IU/day orally. (Started as soon as the infants are on full oral feeds and continues until the infants are 6 months old.)
- **c)** Kiddivite 0.8 ml/kg/day (6 mg elemental Fe3+/kg). ( Started as soon as the infants are on full oral feeds and continues until the infants are 6 months old.)
- Infants with a low serum phosphate should be discharged on Diabetic phosphate solution 1ml/feed x 8 (8 ml/day). At the follow-up clinic the phosphate levels should be checked.
- Babies whose mothers are retro-positive need Cotrimoxazole prophylaxis from the age of 6 weeks until 1 year or until the PCR results are available.

**FOLLOW-UP CLINICS**

1. **KMC follow-up clinic**
   - All babies discharged from the KMC unit will be followed up at the KMC clinic, which is held on a Tuesday morning 8h00 – 12h00 in the Antenatal clinic. All babies receiving KMC who are discharged home must be seen at the clinic after a week. If a mother stays far away other arrangements for follow-up is allowed, but it has to be documented on the statistics form.
   - At the clinic we need to establish whether the baby has gained weight or not. Satisfactory weight gain is 20 – 30 grams/day or 150 - 200 grams/week.
   - If infants have gained weight satisfactorily they do not have to be seen on a weekly basis, but could be evaluated after 2-3 weeks. If they have not gained weight or have lost weight, they should be re-admitted to the unit to evaluate the infant for possible infection. Most often the poor weight gain is because the mother is not doing KMC consistently at home, or she is not feeding the infant often enough.
   - At the clinic infants are evaluated for the following:
     - Satisfactory weight gain
     - Skull circumference and length measurements
     - Check for any heart murmurs
     - Check for skin rashes.
     - Check all male infants whether the testes are in the scrotum, exclude hypospadias and make the mother aware of possible inguinal hernias that may develop.
     - Check whether the mother continues to breastfeed. If on formula feeds, the mother should show the bottle and explain how she mixes the feeds.

2. **Screening for retinopathy of prematurity (ROP)**
   - Every Tuesday morning at 10h00-11h00 an ophthalmologist screens for ROP at an eye clinic, which is held in the TV room of ward 4. The intern from the KMC unit is expected to be of assistance in this clinic.
   - On discharge of the infants the intern should make appointments for this clinic in the ROP diary on the closest date that the infant is 6 weeks old chronologically.
   - 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.). The drops will be instilled in the eyes of the infants at the KMC clinic. From the KMC clinic the mothers shall bring the infants to ward 4 for ROP screening.

3. **Neonate High-Risk Neurodevelopmental Clinic – Tuesdays 10h00 in the ANC unit.** The following babies need to follow up at this clinic when they reach 4 months corrected age.
   - Babies < 1300g birth weight or < 30 weeks gestational age.
   - Babies who were admitted to ICU with severe asphyxia or respiratory distress and who received long-term care in ICU.
   - Any neonate with an Apgar of < 6.
   - Any neonate with neonatal convulsions.
   - Any neonate with dysmorphic features.
   - Babies who had long-standing broncho-pulmonary displasia.
   - Babies with grade 3 - 4 intraventricular bleeds or hydrocephalus.
   - Any neonate that is considered by the doctor to need special follow-up.

4. **Hearing Screening clinic - This clinic takes place on Wednesdays at 10h00 in the ENT OPD on the first floor.** All infants treated in the Neonatal ICU are given an appointment by Martha Rabothata to attend this clinic.