



KANGAROO MOTHER CARE TRAINING MANUAL

Federal Ministry of Health
November 2008



This publication was made possible through support provided to ACCESS under Cooperative Agreement #GHS-A-00-04-00002-00. The opinions expressed herein are those of the contributors and do not necessarily reflect the views of the United States Agency for International Development, © 2008

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FOREWORD

Every year, more than four million babies less than one month of age die, most of them during the first week of life. About 20% of these deaths occur among low birth weight (LBW) and preterm babies.

In Nigeria about 14,584 babies are born every day. For every 1,000 babies born alive, 48 die in the neonatal period i.e. the first 28 days of life. In other words, 1 in 21 babies dies during the first month of life i.e. 695 babies are dying every day in some parts of Nigeria. In addition, about 448 babies are dying inside their mother's wombs or born dead daily. Most of these deaths are a consequence of the poor health and nutritional status of the mother coupled with inadequate care before, during, and after childbirth. Those babies who survive are at risk for poor growth and increased rates of illness from infectious diseases in infancy and childhood. They also may have compromised cognitive, motor, and behavioral development.

The causes of LBW are many and complex. The main problems of a low birth weight baby are low body temperature, breathing and feeding problems. LBW babies require special attention if they are to survive, particularly with regard to warmth, feeding, hygiene practices, and prompt identification and treatment of complications.

Kangaroo Mother Care (KMC) was first started in 1979 in Bogota, Colombia in response to shortages of manpower and congestion in their neonatal nursery i.e. they didn't have enough incubators to cope with the high numbers of babies born prematurely. Just like in Colombia, Nigeria also has challenges of manpower and adequate numbers of incubators in its health facilities and thus the need for KMC. This method of care emulates the Kangaroo animal which is found in Australia. The baby kangaroo (Joey) is born premature and gets into its mother's pouch where it will be kept warm and exclusively breast fed for several months until it is big enough to survive outside. Similarly, human babies born prematurely also need warmth, exclusive breast feeding and love. Kangaroo Mother Care copies this efficient method, where the baby is kept "skin-to-skin" with its mother. KMC addresses these problems as the baby is easily kept warm, easily breast fed and any breathing problems can be easily identified. Kangaroo mother care (KMC) is therefore a simple, cost-effective approach that can meet many of the basic needs of these newborns.

It is against this background that this KMC training manual has been put together to address the dearth in the knowledge and skills required to effectively manage these babies in a cost-effective but yet high quality manner. It is my sincere hope that with the effective usage of this manual, especially at the lower levels of health care, there will be a reduction in neonatal mortality and that it will contribute to Nigeria's achievement of achieving the fourth millennium development goal.

Honourable Minister,
Federal Ministry of Health,
Abuja

ABOUT THIS MANUAL

The Kangaroo Mother Care Training Manual provides information about the needs and essential health care of low birth weight (LBW) (i.e., preterm and small for gestational age) babies from birth up to the time of discharge from kangaroo care. Essential health care for LBW babies begins at the time of birth and continues in the nursery, in the community, at home, and at local health centers. The essential care elements for all LBW babies are: kangaroo position, nutrition, early discharge, follow-up, and support.

This training manual is competency-based and may be used to teach health workers how to care for LBW babies. It is intended for in-service training of health workers who already have basic skills in maternal and newborn care.

Eight units comprise the core of this manual, and two additional or supplementary units—KMC Supervision, Monitoring and Evaluation, and Establishing a Kangaroo Mother Care Unit—have been added for those who may need guidance in these two areas. There are, in addition, a number of annexes.

HOW TO USE THIS MANUAL

Each unit is divided into a number of sessions, with one or more handouts for each session. (A chart called Unit Overview appears at the beginning of each unit and shows all the sessions, handouts, etc., at a glance.) To prepare for presenting each unit, trainers should carefully review the content of the various sessions in that unit (which consist mainly of handouts) and then decide which sessions are appropriate/necessary for their group of trainees. You may decide to do all the sessions in each unit or only certain sessions.

In either case, after you select the sessions, be sure to make copies of the handouts for those sessions to distribute to each participant.

Performance Checklists

There are also a number of checklists throughout the manual where the trainer is asked to rate the performance of participants in various skills. These checklists break each skill down each into a sequence of discrete, small, clearly observable steps. A trainer can use the checklists in several ways:

- To assess competency on key skills before training
- To monitor trainees' progress during training
- To assess skills at the end of training
- To assess retention and skill retention later (at some time after the completion of training, such as during supervision)

ACKNOWLEDGEMENTS

The ACCESS project would like to extend its sincere appreciation to individuals and organizations that contributed considerable time and effort to the development of this KMC Training Manual. The process of writing, reviewing and revising the materials several times required dedication and patience, and there are many people to thank for their invaluable efforts.

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Mr. Abdullahi Maiwada	USAID Nigeria
Dr. Karla Fossand	USAID Nigeria
Dr Ochi Ibe	USAID Nigeria

We would also like to extend our special thanks to the authors and contributors of the *Care of the Newborn Reference Manual* (Save the Children/US—Saving Newborn Lives Initiative), Saving Newborn Lives/Malawi, and the staff at the Kangaroo Mother Care Learning Center at Zomba Central Hospital, Malawi, whose original manuscripts and efforts informed the development of this manual.

ABBREVIATIONS

AFASS	Acceptable, feasible, affordable, sustainable, and safe
AIDS	Acquired immune deficiency syndrome
BCC	Behavior change communication
EBM	Expressed breast milk
HIV	Human immunodeficiency virus
KMC	Kangaroo mother care
LBW	Low birth weight
M&E	Monitoring and evaluation
NG	Nasogastric
SGA	Small for gestational age
WHO	World Health Organization
LGA	Local Government Area

UNIT 1: INTRODUCTION TO PRETERM/LOW BIRTH WEIGHT BABIES

General objective: At the end of the workshop learners will be able to describe the issues related to preterm/low birth weight (LBW) babies.

Specific objectives:

- Define low birth weight
- Identify LBW babies
- Describe the contribution of LBW to poor neonatal outcome
- Explain the common causes of LBW
- List the needs and problems of LBW babies
- Describe current care of LBW babies

Time: 6 hours 45 minutes (including lunch and breaks)

List of sessions:

Session 1.1: KMC Pre-Training Knowledge Assessment

Session 1.2: Definition of LBW

Session 1.3: Causes of LBW

Session 1.4: Identification and Physical Examination of LBW Babies

Session 1.5: Needs and Problems of LBW Babies

Session 1.6: Current Care of LBW Babies

Training materials:

Baby models (LBW and term newborn babies), chalkboard, chalk, flip charts, and markers

Handouts:

- KMC Pre-Training Questionnaire
- Categories of LBW Babies
- Contribution of LBW to Newborn and Infant Outcomes
- Causes of LBW: Maternal, Fetal and Placental
- Physical Features of Preterm Babies
- Physical Features of Small-for-Gestational Age Babies
- How To Assess the Maturity of LBW Babies
- Checklist for Initial Physical Examination of the Newborn Baby
- Needs and Problems of LBW Babies
- Current Care of LBW Babies: Conventional, Open-Air, Traditional, and KMC

Videos:

- Identification of LBW babies

Teaching methods:

- Brainstorming
- Discussion
- Presentation
- Clinical demonstration

UNIT 1 OVERVIEW: INTRODUCTION TO PRETERM/LOW BIRTH WEIGHT BABIES

SESSION	TIME	CONTENT	TEACHING METHOD	MATERIALS NEEDED
Overview	5 min	Overview of the day's sessions	Discussion	Flip chart and markers
1.1: KMC Pre-Training Knowledge Assessment	30 min	Pre-test	Questionnaire	Handout for Session 1.1
1.2: Definition of LBW	30 min	Categories of LBW babies Contribution of LBW to neonatal and infant outcomes	Ask learners to brainstorm on the definitions of LBW babies and contribution to neonatal outcomes. Discuss and provide correct definitions.	Flip chart and markers Handouts for Session 1.2
1.3: Causes of LBW	45 min	Causes of LBW: <ul style="list-style-type: none">● Maternal● Fetal● Placental	Ask learners to brainstorm the causes. Presentation of causes.	Handouts for Session 1.3
	15 min		BREAK	

SESSION	TIME	CONTENT	TEACHING METHOD	MATERIALS NEEDED
1.4: Identification and Physical Examination of LBW Babies	1 hour, 40 min	Physical features of preterm babies Physical features of small-for-gestational-age babies How to assess the maturity of LBW babies Checklist for initial physical exam of the newborn baby	Discuss the physical features of the different types of LBW babies (preterm and small-for-gestational-age babies). Describe the physical examination protocol for LBW babies using a checklist. Clinical demonstration of the physical features of LBW babies. Clinical demonstration of the physical examination protocol. Evaluation: Return demo and practice on models. Subsequent clinical demo.	Handouts for Session 1.4 Video on physical features of LBW babies Preterm babies
	60 min		LUNCH BREAK	
Session 1.5: Needs and Problems of LBW Babies	30 min	Possible needs and problems of LBW babies: <ul style="list-style-type: none"> • Warmth • Breathing • Feeding • Infections • Physical and emotional support 	Brainstorm and discussion	Flip chart and markers Handouts for Session 1.5
Session 1.6: Current Care of LBW Babies	30 min	Current care of LBW babies: <ul style="list-style-type: none"> • Conventional care • Open-air/crib care • Traditional/home care • KMC or skin-to-skin care 	Brainstorm and discussion	Flip chart and markers Handouts for Session 1.6
Case studies	30 min		Discussion	Case study at end of Unit 1
Summary	15 min		Trainer asks one or more participants to summarize followed by clarification from the rest of participants. Question and answer	

GLOSSARY

Chorioamnionitis: inflammation of the membranes that cover the fetus

Congenital anomalies: abnormalities present at birth

Foremilk: the milk that comes from the breast at the beginning of a feed

Hind milk: breast milk at the end of a feed. The hind milk contains more fat than the foremilk and has a higher calorie density

Hypothermia: body temperature (axillary) below 36.5 °C (97.7 °F)

Intrauterine growth retardation: impaired growth of the fetus due to fetal disorders, maternal conditions or placental insufficiency

Lanugo: fine downy hairs that cover the body of the fetus; fine soft immature hair especially when preterm

Placenta abruption: preterm separation of the placenta

Placenta previa: placenta that is implanted in the lower uterine segment

Preterm infant: infant born before 37 weeks of gestational age

Small for gestational age (SGA): infant with a birth weight below the 10th percentile for his/her gestational age. An SGA baby may be preterm or full-term

Twin-to-twin transfusion: inter-fetal blood exchange which occurs exclusively in monochorionic (monozygotic) twins in which circulation is shared

Vernix: thick white cheese-like oily substance covering the fetus. It is protective during intrauterine life.

SESSION 1.1: KANGAROO MOTHER CARE PRE-TRAINING KNOWLEDGE ASSESSMENT

Trainers should score and analyze the results of the pretest questionnaire as soon as possible, so that content or teaching methods of a course or unit module can be adapted, if needed, to meet the learning needs of a particular group of trainees. Any questions that are found to be too difficult or invalid should be deleted before the post-test is administered.

HANDOUT: PRE-TRAINING QUESTIONNAIRE

Name: _____ Date: _____

Instructions:

- Fill in your name and the date
 - Circle the letter of the single **BEST** answer to each question
1. Baby Nasiru is born and weighs 2000 grams. Baby Nasiru is:
 - a) Normal weight for a term newborn
 - b) LBW
 - c) Very LBW
 - d) Above normal weight for male infants
 2. What is baby Nasiru's chance of survival?
 - a) About the same for other newborns in his community
 - b) Better than the average male newborn
 - c) Lower than babies with a birth weight of 2500 grams
 - d) A little lower than those babies who are very LBW
 3. LBW babies are more likely to have a problem with:
 - a) Low blood sugar
 - b) Warmth
 - c) Infections
 - d) All of the above
 4. A typical LBW baby will benefit most from:
 - a) A bath soon after birth to prevent infection
 - b) Prolonged skin-to-skin contact with the mother
 - c) Antibiotics by injection
 - d) A small amount of sugar water in the first day of life

5. Kangaroo mother care is a method that:
 - a) Should only take place in hospitals
 - b) Should only be practiced by the birth mother
 - c) Both a and b
 - d) Is a natural method for caring for LBW infants
6. The advantages of KMC compared to conventional care include:
 - a) Can be done by health care providers if mothers are busy
 - b) Similar cost to the client
 - c) Longer duration of breastfeeding
 - d) More access to skilled care due to longer hospital stay
7. The duration of KMC depends on all of the following except:
 - a) The condition of the baby
 - b) The baby's weight
 - c) The method of family planning the mother decides to use
 - d) How the baby tolerates KMC
8. Baby Sarah was born at 34 weeks gestation and is being prepared for KMC. The midwife should dress Baby Sarah in the following clothing to ensure that she stays warm
 - a) Socks
 - b) A long sleeved shirt
 - c) A hat to cover Sarah's head
 - d) Only a and c
9. The midwife explains that babies can lose heat when:
 - a) The baby remains in KMC for too many hours
 - b) The bath is delayed for more than 24 hours
 - c) The baby is near, but not in contact with cool objects
 - d) Antiseptics are applied to the cord
10. Baby's Sarah's father wants to help care for his daughter. He can safely do which of the following while practicing KMC?
 - a) Take a shower
 - b) Go swimming in shallow water
 - c) Play a short game of football if he is gentle
 - d) Take a long nap

11. Baby Ngozi was born at home and is now being cared for with the KMC method. Her suck reflex is present but not very strong. In order to ensure that Baby Ngozi gets enough nourishment, the midwife teaches the mother to:
- a) Give infant formula by cup
 - b) Bottle-feed expressed breast milk (EBM)
 - c) Give sugar water between feeds
 - d) Give EBM by cup
12. All of the following are true about cup feeding except:
- a) Breathing is easier than in bottle-feeding
 - b) The jaw action prepares a baby to breastfeed later
 - c) The baby cannot control the amount of milk taken in
 - d) It takes less energy than bottle-feeding
13. The quantity and frequency of baby Ngozi's feeds during the first two weeks will depend on:
- a) Her birth weight
 - b) Her age
 - c) How much she sleeps
 - d) Both her birth weight and age
14. While observing a mother expressing breast milk, the doctor notices that she massages the breast from the outside toward the nipple. The doctor encourages the mother to:
- a) Massage the breast in the opposite direction
 - b) Massage both breasts at the same time
 - c) Continue this correct technique
 - d) All of the above
15. Tube feeding is advised for all LBW infants who:
- a) Weigh less than 1000 grams
 - b) Cannot cup feed
 - c) Cannot breastfeed
 - d) Both a and b
 - e) B and C
16. Early feeding of LBW babies with breast milk can result in:
- a) More dehydration and eventual hypoglycemia
 - b) Superior rates of weight gain
 - c) High incidence of vomiting and diarrhea in preterm babies
 - d) Slow gastric emptying in babies less than 37 weeks
 - e) both b and c

17. Danger signs in LBW babies are:
- a) Different than for normal weight babies
 - b) Not as common as they are in normal weight babies
 - c) Serious and include feeding and breathing problems
 - d) Not very serious since the infant is small
18. Essential newborn care for ALL babies, regardless of weight, should include which of the following?
- a) Cord care
 - b) Intermittent KMC
 - c) Preventive drugs for malaria
 - d) All of the above
19. A baby in the KMC unit becomes sick and needs to be referred. During referral the nurse should encourage the following EXCEPT:
- a) The mother keeps the baby in skin-to-skin contact during transport
 - b) The mother refrains from feeding the sick infant to avoid breathing problems
 - c) The mother keeps the baby in a cot to avoid cross-infection
 - d) The mother and health staff should ensure that the baby is periodically given oxygen during the referral
20. A mother has been practicing KMC at home for four weeks. Her baby now weighs 2500 grams. When she returns for a follow-up visit, the doctor advises her that she can:
- a) Continue KMC until the baby gains more weight
 - b) Discontinue KMC if the baby is otherwise well
 - c) Return in two weeks for a follow-up visit
 - d) None of the above responses are appropriate for this baby

Pre-Training Questionnaire: Answer Key

Name: _____

Date: _____

Instructions:

- Fill in your name and the date.
 - Circle the letter of the single **BEST** answer to each question.
1. Baby Akbar is born and weighs 2000 grams. Baby Akbar is:
 - a) Normal weight for a term newborn
 - b) **LBW**
 - c) Very LBW
 - d) Above normal weight for male infants
 2. What is baby Nasiru's chance of survival?
 - a) About the same for other newborns in his community
 - b) Better than the average male newborn
 - c) **Lower than babies with a birth weight of 2500 grams**
 - d) A little lower than those babies who are very LBW
 3. LBW babies are more likely to have a problem with:
 - a) Low blood sugar
 - b) Warmth
 - c) Infections
 - d) **All of the above**
 4. A typical LBW baby will benefit most from:
 - a) A bath soon after birth to prevent infection
 - b) **Prolonged skin-to-skin contact with the mother**
 - c) Antibiotics by injection
 - d) A small amount of sugar water in the first day of life
 5. Kangaroo mother care is a method that:
 - a) Should only take place in hospitals
 - b) Should only be practiced by the birth mother
 - c) Both a and b
 - d) **Is a natural method for caring for LBW infants**

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 - a) Can be done by providers if mothers are busy
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 - c) **Longer duration of breastfeeding**
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7. The duration of KMC depends on all of the following except:
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8. Baby Sarah was born at 34 weeks gestation and is being prepared for KMC. The midwife should dress Baby Sarah in the following clothing to ensure that she stays warm
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 - d) Only a and c
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 - a) The baby remains in KMC for too many hours
 - b) The bath is delayed for more than 24 hours
 - c) **The baby is near, but not in contact with cool objects**
 - d) Antiseptics are applied to the cord
10. Baby's Sarah's father wants to help care for his daughter. He can safely do which of the following while practicing KMC?
 - a) Take a shower
 - b) Go swimming in shallow water
 - c) Play a short game of football if he is gentle
 - d) Take a long nap
11. Baby Ngozi was born at home and is now being cared for with the KMC method. Her suck reflex is present but not very strong. In order to ensure that Baby Ngozi gets enough nourishment, the midwife teaches the mother to:
 - a) Give infant formula by cup
 - b) Bottle-feed expressed breast milk (EBM)
 - c) Give sugar water between feeds
 - d) **Give EBM by cup**

12. All of the following are true about cup feeding except:
- a) Breathing is easier than in bottle-feeding
 - b) The jaw action prepares a baby to breastfeed later
 - c) **The baby cannot control the amount of milk taken in**
 - d) It takes less energy than bottle-feeding
13. The quantity and frequency of baby Ngozi's feeds during the first two weeks will depend on:
- a) His birth weight
 - b) His age
 - c) How much he sleeps
 - d) **Both his birth weight and age**
14. While observing a mother expressing breast milk, the doctor notices that she massages the breast from the outside toward the nipple. The doctor encourages the mother to:
- a) Massage the breast in the opposite direction
 - b) Massage both breasts at the same time
 - c) **Continue this correct technique**
 - d) All of the above
15. Tube feeding is advised for all LBW infants who:
- a) Weigh less than 1000 grams
 - b) **Cannot cup feed**
 - c) Cannot breastfeed
 - d) Both a and b
16. Early feeding of LBW babies with breast milk can result in:
- a) More dehydration and eventual hypoglycaemia
 - b) **Superior rates of weight gain**
 - c) High incidence of vomiting and diarrhea in preterm babies
 - d) Slow gastric emptying in babies less than 37 weeks
17. Danger signs in LBW babies are:
- a) Different than for normal weight babies
 - b) Not as common as they are in normal weight babies
 - c) **Serious and include feeding and breathing problems**
 - d) Not very serious since the infant is small

18. Essential newborn care for ALL babies, regardless of weight, should include which of the following?
- a) **Cord care**
 - b) Intermittent KMC
 - c) Preventive drugs for malaria
 - d) All of the above
19. A baby in the KMC unit becomes sick and needs to be referred. During referral the nurse should encourage the following EXCEPT:
- a) **The mother keeps the baby in skin-to-skin contact during transport**
 - b) The mother refrains from feeding the sick infant to avoid breathing problems
 - c) The mother keeps the baby in a cot to avoid cross-infection
 - d) The mother and health staff should ensure that the baby is periodically given oxygen during the referral
20. A mother has been practicing KMC at home for four weeks. Her baby now weighs 2500 grams. When she returns for a follow-up visit, the doctor advises her that she can:
- a) Continue KMC until the baby gains more weight
 - b) **Discontinue KMC if the baby is otherwise well**
 - c) Return in two weeks for a follow-up visit
 - d) None of the above responses are appropriate for this baby

HANDOUT: CATEGORIES OF LBW BABIES

LBW is defined as birth weight of less than 2500 grams. There are three types of LBW babies:

- Preterm: born before 37 completed weeks*
- Very preterm: born before 32 completed weeks
- SGA: birth weight lower than
- expected for gestational age (may be term or preterm)

In addition, some LBW babies may be:

- Very LBW: birth weight of less than 1500 grams
- Extremely LBW: birth weight of less than 1000 grams

*LBW infants may be born at term.

HANDOUT: CONTRIBUTION OF LBW TO NEONATAL AND INFANT OUTCOMES

Each year, about 20 million LBW babies are born. Birth weight strongly influences the chances of a newborn to survive and thrive in the neonatal period and through infancy. About a fifth of the nearly 4 million neonatal deaths each year occur among LBW and preterm babies. In some countries, as high as 40 to 80 percent of all neonatal deaths occur among LBW babies. In industrialized nations, preterm birth is the main contributor to LBW. In less developed nations, high rates of LBW are due to both preterm birth and impaired uterine growth.

Compared to normal birth weight babies, LBW babies have a much greater risk of dying in the neonatal period as well as in the infancy period (29–365 days). Those babies who survive are at risk for poor growth and increased rates of illness from infectious diseases in infancy and childhood. They also may have compromised cognitive, motor, and behavioral development.

LBW babies require special attention if they are to survive, particularly with regard to warmth, feeding, hygiene practices, and prompt identification and treatment of complications. Kangaroo mother care (KMC) is a simple, cost-effective approach that can meet many of these basic newborn needs.

HANDOUT: FACTORS ASSOCIATED WITH LBW

The causes of LBW are many and complex. There is no single direct cause, but it happens more frequently to certain mothers or in the case of certain fetal problems or placental conditions.

Mothers who:

- Had an LBW baby before
- Are young (less than 20) or older (over 35)
- Do physical work for many hours without rest
- Have pregnancies that are closely spaced (less than three years between pregnancies)
- Have problems of pregnancy and labor such as:
 - Poor nutrition or low pregnancy weight gain
 - Severe anemia
 - Pre-eclampsia and eclampsia
 - Infections during pregnancy (sexually transmitted infections, Human immunodeficiency virus [HIV]/Acquired Immune Deficiency Syndrome [AIDS], bladder and kidney infection, hepatitis)
 - Preterm rupture of the membranes
 - Chorioamnionitis or infection of amniotic fluid
 - Malaria
 - Multiple pregnancy
 - Hypertension
 - Renal disease
 - Chronic illness
 - Sickle cell anemia
 - Drugs (alcohol, cigarettes, certain illicit substances)
 - Excessive stress, poor social support, physical or emotional abuse

Fetal problems: Babies with the following problems or conditions during pregnancy:

- Chromosomal disorders and/or certain congenital anomalies
- Chronic fetal infections (e.g., congenital rubella, syphilis)
- Multiple gestation

Placental conditions:

- Placental insufficiency (resulting in intrauterine growth restriction)
- Placenta previa
- Infiltration of placenta by malaria parasites
- Infarction
- Preterm placental separation (placenta abruption)
- Twin-to-twin transfusion

SESSION 1.4: IDENTIFICATION AND PHYSICAL EXAMINATION OF THE LOW BIRTH WEIGHT BABY

HANDOUT: PHYSICAL FEATURES OF A PRETERM BABY

Demonstrate features on a live preterm baby if possible. The chart below lists the physical features of preterm babies.

PHYSICAL FEATURES	
Weight	<ul style="list-style-type: none">• Less than 2500 grams<ul style="list-style-type: none">– Some preterm infants may weigh more than 2500 grams.
Skin	<ul style="list-style-type: none">• Thin with visible veins due to lack of fat under the skin• May be covered at birth with thick white cheese-like oily substance (vernix)• Covered with fine, soft hair (lanugo)
Head	<ul style="list-style-type: none">• Relatively large when compared with size of body• Sutures and soft spot (fontanelle) are wide• Ear has no cartilage before 25 weeks, the ear can be folded and does not return immediately to the normal place
Chest	<ul style="list-style-type: none">• No breast tissue before 34 weeks of pregnancy
Suck Reflex	<ul style="list-style-type: none">• May be weak or absent
Legs/Arms	<ul style="list-style-type: none">• May be floppy• Legs mostly extended or minimally flexed• Arms only occasionally flexed or even extended
Feet	<ul style="list-style-type: none">• Foot creases on anterior 1/3 of foot
Genitals	<ul style="list-style-type: none">• Small• Girls: labia majora do not cover the labia minora• Boys: testes may not have descended into the scrotum, absent or few creases on scrotum

HANDOUT: PHYSICAL FEATURES OF A SMALL-FOR-GESTATIONAL-AGE BABY

This baby is usually born at or near term but has a LBW. (It should be noted that the SGA baby might also be preterm.) Small-for-gestational-age babies are also known as “small for dates”.

The chart below lists the physical features of small-for-gestational-age babies.

PHYSICAL FEATURES	
Weight	<ul style="list-style-type: none">• Less than 2500 grams
Skin	<ul style="list-style-type: none">• Lack of fat under the skin• Dry and cracked
Head	<ul style="list-style-type: none">• Large when compared with small size of body• Ear has cartilage and returns to normal when folded• Eyes are often large and wide open
Chest	<ul style="list-style-type: none">• Breast tissue present
Suck Reflex	<ul style="list-style-type: none">• Usually vigorous, sometimes excessive
Legs/Arms	<ul style="list-style-type: none">• Thin, usually flexed
Feet	<ul style="list-style-type: none">• Skin creases cover the soles of feet
Activity	<ul style="list-style-type: none">• Active, alert; seems too alert for small size

HANDOUT: HOW TO ASSESS THE MATURITY OF THE LBW BABY

The gestational age of the newborn may be estimated by observation and examination of the following physical features:

FEATURE	VERY PRETERM	PRETERM	TERM
Lanugo	None	Abundant	Mostly bald
Creases on Soles	None	Few creases near toes	Creases over entire sole
Genitalia	Smooth empty scrotum; testes undescended Protruding labia minora	Scrotum has few creases; testes high in canal Labia minora equal to majora	Scrotum has many creases; testes in scrotum Majora cover minora
Breasts	Faint flat areolae	Nipple, minimal or no breast tissue	Breast tissue >10 mm diameter
Ears	Flat soft pinna without recoil	Springy flat pinna	Edge curved with cartilage; firm recoil
Skin over abdomen	Thin skin, visible veins	Thin skin, veins less visible	Thick skin, dry, wrinkled, cracked, or peeling
Posture	Limbs straight	Frog posture	Full flexion

Preterm



Few creases near toes

Term



Creases over entire sole

HANDOUT: CHECKLIST FOR INITIAL PHYSICAL EXAMINATION OF THE NEWBORN BABY

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

- 1. Needs Improvement:** Step or task not performed correctly, is omitted or out of sequence (if sequence necessary).
- 2. Competently Performed:** Step or task performed correctly and in proper sequence (if sequence necessary).

PHYSICAL EXAMINATION OF LBW BABIES	CASES OBSERVED				
	1	2	3	4	5
GETTING READY					
1. Prepare equipment you will need: Clean surface, low reading thermometer, watch, timer or clock with second hand, scale for weighing, clean clothes					
2. Explain to the mother and family what you are going to do and encourage them to ask questions.					
3. Wash your hands thoroughly with soap and water.					
4. Dry with a clean dry cloth or air-dry.					
5. Put on gloves (do not need to be sterile).					
HISTORY					
6. Ask the mother or look at her antenatal clinic record to find out (1) her expected date of delivery (2) if she had any health problems that may affect the baby: <ul style="list-style-type: none"> • Syphilis • Tuberculosis • HIV/AIDS • Bag of water broken before labor or more than 18 hours • Fever during labor 					
7. Ask the mother what she has observed about the baby.					
8. Ask if the baby has passed meconium stool or urine.					
9. If the mother or family is worried about anything, listen to their concerns.					
EXAMINATION					
10. Throughout the exam: <ul style="list-style-type: none"> • The baby should be kept warm; therefore, uncover only parts that are being examined while keeping the head covered. • Explain to the mother and family what you are doing and answer any questions they ask. • Handle the baby gently. 					
11. Weigh the baby (if weight not recorded).					
12. Look at the baby's activity and movement.					
13. Look at the color and condition of the skin (rashes, other abnormalities pink, blue, gray or pale, jaundiced) shiny or peeling, thick or thin.					
14. Check baby's temperature (using a low reading axillary thermometer).					

PHYSICAL EXAMINATION OF LBW BABIES	CASES OBSERVED				
	1	2	3	4	5
15. Examine the head, face, neck and mouth: <ul style="list-style-type: none"> • Check the skull contours and feel for the normal sutures, fontanelle, caput and bruises. • Check for any abnormalities of the face, especially for asymmetrical movement. • Open the eyelids and check that the eyes have normal appearance (no opacity). • Feel in the mouth with index finger to check if the palate is intact. • Check the neck for webbing and the clavicles for abnormalities. 					
16. Examine the chest: <ul style="list-style-type: none"> • Check for symmetrical movement. • Check breathing rate (count breaths in one minute). • Check heart rate (check pulse as well). • Check respiration: chest in-drawing, grunting, retractions, flaring, signs of respiratory distress. • Cyanosis 					
17. Examine the umbilicus for bleeding: <ul style="list-style-type: none"> a. Check that the cord tie is tightly applied. 					
18. Examine the genitalia for abnormalities: <ul style="list-style-type: none"> • In boys: check position of urethral opening/anus and scrotum (feel the scrotum for testes). • In girls: check presence of urethral and vaginal openings/anus and labia. 					
19. Examine the spine for abnormalities: <ul style="list-style-type: none"> • Check full length of spine for unevenness. • Check posture: limbs straight, frog position, full flexion. 					
20. Examine the limbs: <ul style="list-style-type: none"> • Check soft tissues and bones for abnormalities. • Check abduction of hips. • Check toes and fingers for webbing. • Check creases on soles (none, few, or all over). 					

SESSION 1.5: NEEDS AND PROBLEMS OF LBW BABIES

Although LBW newborns have special needs, all babies need basic care to help ensure their survival and well-being. This care (often called essential newborn care) includes warmth, establishment and maintenance of regular breathing, adequate and appropriate feeding, physical and emotional support, and protection from infections. Care of the cord at birth and in the days following birth is also part of this essential care. Addressing these basic needs help to prevent serious or life-threatening problems. Below is an outline of the basic newborn needs, problems and corresponding preventive actions.

NEED	PROBLEM	ACTION
Warmth	Hypothermia	<ul style="list-style-type: none">• Kangaroo mother care• Delay bathing• Keep baby's head covered
Breathing	Asphyxia, Apnea, Respiratory Distress Syndrome	<ul style="list-style-type: none">• Stimulation/ resuscitation• Monitor for breathing difficulties• Oxygen as needed
Feeding	Hypoglycaemia Undernourishment	Initiate breastfeeding soon after birth <ul style="list-style-type: none">• Exclusive breastfeeding• Avoid mixed feeds• KMC helps stimulate production of breast milk
Protection from infections	Sepsis	<ul style="list-style-type: none">• Clean delivery and cord care practices• Hygienic practices• Early and exclusive breast feeding
Prompt management of infection	Sepsis	<ul style="list-style-type: none">• Prompt recognition and treatment/ referral
Physical and emotional support	Interference with bonding Neglect and abandonment	<ul style="list-style-type: none">• Kangaroo mother care• Involve family in support

Because of their size and immature organs or systems, LBW babies are more likely to develop health problems than normal weight babies. In addition to essential newborn care, the LBW baby needs special attention and care to prevent or address these problems. The following chart lists the possible problems of LBW babies and recommended care.

Possible Problems in the LBW Baby

PROBLEMS	RECOMMENDED CARE
Breathing problems at birth and later (especially preterm babies)	Resuscitate if the baby is not breathing, is gasping, or is breathing less than 30 breaths per minute. Premature babies have immature lungs, get cold easily, and are more prone to infections, all of which lead to breathing problems.
Low body temperature because there is little fat on the body and the newborn's temperature regulating system is immature	Kangaroo mother care with the baby in continuous skin-to-skin contact helps keep the LBW newborn warm.
Low blood sugar because there is very little stored energy in the LBW baby's body	These babies need breast milk (colostrum) as soon as possible after birth and very frequent feedings (every 2 hours) in the first weeks.
Feeding problems because of the baby's small size, lack of energy, small stomach, and inability to suck	LBW babies can usually breastfeed well with help. The LBW baby may need many small frequent feeds. Preterm babies may not be strong or mature enough to breastfeed well at first. KMC helps stimulate production of breast milk. Cup feeding may be needed for some babies.
Infections because the immune system is not mature	Caregivers must use infection prevention practices and wash their hands carefully before caring for LBW babies. At the health care facility, do not house uninfected LBW babies in the same room with septic newborns or sick children. Keep sick people (visitors and staff) away from LBW babies.
Jaundice (high bilirubin) because the liver is not mature	Preterm LBW babies become yellow earlier and it lasts longer than in term babies. If there is any jaundice in the first 24 hours or after 2 weeks or if the baby is yellow with any other danger sign, refer to a higher-level facility. The mother should breastfeed the jaundiced LBW newborn more often (at least every 2 hours) to help the baby get rid of the bilirubin through the stool.
Bleeding problems due to immature clotting ability at birth	Give vitamin K at birth.

Chart from: *Care of the Newborn Reference Manual (Save the Children 2004)*

CONVENTIONAL CARE/INCUBATOR CARE

An incubator is a ventilated box-like apparatus in which the environment can be kept sterile, at constant temperature, humidity and oxygen levels. It is used as a life support system for preterm, LBW, and other newborn babies who are not yet stabilized.

With typical incubator care, the baby is dressed lightly and placed in the machine with the head slightly raised to prevent choking. The baby's temperature must be checked and recorded at least every four hours to detect any hyper/hypothermia. In older machines, incubator temperature must also be monitored and adjusted according to the baby's condition. For example, if the baby is hypothermic, the temperature is adjusted upwards.

While incubators are available in some hospitals, there may be several problems associated with them. The first is the shortage of incubators. Due to the high cost, many hospitals only have one. Even in hospitals which have more than one, the number of incubators is often inadequate for the number of babies who need to use them. Often there are two or three babies sharing an incubator, which puts them at greater risk of infection.

The other problem is related to maintenance. Incubators are often not in good working condition due to the cost of and difficulty in obtaining spare parts and the lack of personnel trained to make repairs. These problems are worsened by frequent power cuts which contribute to babies becoming hypothermic when heat is no longer generated. The other problem is cost; a prolonged stay in the nursery with incubator care can be very costly to the average family.

When adequate incubators are available that are properly maintained, care for sick, very LBW or unstable LBW babies can be enhanced. In such cases, incubators can sometimes be used intermittently with KMC.

Open-Air Crib Care

Open-air cribs or baby cots are usually used for stable as well as sick term babies. The babies are usually fully dressed and wrapped in warm blankets before being placed in the crib. Those babies who have stabilized in the incubator are also transferred to these open-air cribs in a warm environment to prevent drops in body temperature. Additional heat in the room may be provided by electric heaters.

Traditional or Home Care

This type of care is provided to newborn babies who are born at home and may or may not have access to a health facility. Health facility access may be limited when there is lack of transport, or in some cases families may lack confidence in the health staff or facilities. At home, the primary caretakers include extended family like a grandmother or an aunt. The baby is wrapped in warm clothes/blankets, a fire may be lit for warmth, the baby is not taken outdoors, and there is restriction of visitors until the cord has fallen off. In some settings, the mother and baby are kept inside for a period of about 40 days or 6 weeks.

Kangaroo Mother Care/Skin-to-Skin Care

This method is used for stable LBW babies. In kangaroo mother care, the baby is held upright between the mother's breasts in continuous contact with her skin (skin-to-skin contact). The baby is positioned under a cloth on the mother's chest to keep the temperature stable, to stimulate the baby's breathing, to enable breastfeeding on demand and to promote mother and baby bonding.

CASE STUDY

Case 1

A three-day-old baby boy weighing 1500 grams is found in kangaroo position and appears not to be breathing. What will you do? Please list your answers in order of priority.

CASE STUDY: ANSWER KEY

Case 1

- A. Tell the mother you need to examine the baby.
- B. Check the baby's respirations:
1. If the respirations are below 30 breaths per minute or the baby is not breathing or gasping, BEGIN NEWBORN RESUSCITATION.
 2. Follow resuscitation steps until the baby is breathing at least 30 breaths per minute.
 3. If resuscitation is successful and the baby is otherwise stable, give the baby back to the mother for continued KMC. Have the mother assist you with monitoring the baby for further breathing problems.
- C. Signs that a baby needs referral for breathing problems after resuscitation:
1. Not sustaining adequate breathing (less than 30 breaths in one minute) or gasping: continue resuscitation efforts during transport.
 2. More than 60 breaths in one minute, indrawing of the chest, grunting, the tongue and lips are blue or the whole body is bluish or very pale.

WHAT TO DO IN THE CASE OF APNEA
<ul style="list-style-type: none">• Teach the mother to observe the baby's breathing pattern and explain the normal variations.• Explain what apnea is and what effects it has on a baby.• Demonstrate the effect of apnea by asking the mother to hold her breath for a short time (less than 20 seconds) and a long time (20 seconds or more).• Explain that if breathing stops for 20 seconds or more, or the baby becomes blue (blue lips and face), this may be a sign of a serious disease.• Teach her to stimulate the baby by lightly rubbing the back or head, and by rocking• Movement until the baby starts breathing again. If the baby is still not breathing, she should call staff.• Help the mother to ensure that the baby is not wrapped too tightly (especially preterm infants). Babies must be secured snugly, but must be allowed to breathe, move, and breastfeed freely.• Always react immediately to a mother's call for help.• In case of prolonged apnea, when breathing cannot be restarted through stimulation, resuscitate according to the hospital resuscitation guidelines.• If spells of apnea become more frequent, examine the baby: this may be an early sign of infection. Treat according to the institutional protocol.

Adapted from WHO 2003

- D. If the baby's breathing is normal: Explain to the mother that it is normal for a baby to have irregular breathing for very short periods of time (up to 20 seconds without a breath). Watch the baby closely for any signs of breathing problems and have the mother continue KMC and other newborn care as usual. Unit 2: Kangaroo Mother Care for Low Birth Weight Babies.

General objective:

At the end of the session, learners will be able to explain how to practice the kangaroo mother care method.

Specific objectives:

- Define kangaroo mother care
- Describe the background of kangaroo mother care
- State two types of kangaroo mother care
- Explain the elements of kangaroo mother care
- Identify babies eligible for KMC
- Discuss how to practice KMC
- Describe the feeding of babies and how to monitor growth during KMC
- Explain physical and emotional support during KMC
- Compare kangaroo mother care with the conventional method of care (incubator care)

Time: 7 hours 25 minutes (including lunch and breaks)

List of sessions:

Session 2.1: Overview of Kangaroo Mother Care

Session 2.2: How to Practice Kangaroo Mother Care

Session 2.3: Nutrition and Growth Monitoring during Kangaroo Mother Care

Session 2.4: Emotional and Physical Support

Session 2.5: Comparing Kangaroo Mother Care and Conventional Care

Training Materials:

Chalkboards, chalk, flip charts, markers, baby model (newborn), wrapper, overhead projector

Handouts:

- Background and Definition of KMC
- Types of Kangaroo Mother Care
- When To Start KMC and Eligibility Criteria
- How To Practice Kangaroo Mother Care
- Feeding Techniques During KMC
- Quantity and Frequency
- Feeding LBW Babies When the Mother is HIV-Positive
- Growth Monitoring in an LBW Baby
- Support from Health Personnel and Family Members
- Requirements for Practicing Kangaroo Mother Care and Conventional Care
- Advantages of KMC
- Problems Associated with KMC

- Advantages and Disadvantages of Incubator Care

Videos:

- Rediscover the natural way to care for your newborn baby (2001) by Dr. Nils Bergman

Teaching methods:

- Discussion
- Brainstorming
- Demonstration
- Clinical practice

UNIT 2 OVERVIEW: KANGAROO MOTHER CARE FOR LOW BIRTH WEIGHT BABIES

SESSION	TIME	CONTENT	TEACHING METHOD	MATERIALS NEEDED
Overview	5 min	Overview of the day's sessions	Discussion	Flip chart and markers
1.1: Overview of Kangaroo Mother Care	25 min	Background and definition of KMC	Ask learners to brainstorm on the definition of KMC. Discuss and provide correct definition. Discuss the two types of KMC.	Flip chart and markers Handouts for Session 2.1
2.2: How to Practice Kangaroo Mother Care	2 hours	<ul style="list-style-type: none"> • Positioning of mother and baby • Steps in positioning the baby for KMC 	Ask learners to brainstorm on eligibility criteria. Discuss and provide correct information. Discuss positioning of mother and baby and the steps in positioning the baby. Give a demonstration. Return demonstration and practice.	Handouts for Session 2.2 Flip chart and markers Illustration of KMC positioning Video explaining KMC position
	15 min		BREAK	

SESSION	TIME	CONTENT	TEACHING METHOD	MATERIALS NEEDED
2.3: Nutrition and Growth Monitoring During Kangaroo Mother Care	60 min	Feeding techniques during KMC Quantity and Frequency Feeding LBW babies when the mother is HIV-positive Growth monitoring of LBW Babies	Brainstorm, discuss, and demonstrate. Return demonstration and practice.	Handouts for Session 2.3 Willing lactating mothers Video on EBM
	60 min		LUNCH	
Session 2.4: Emotional and Physical Support	60 min	Support from health personnel and family members.	Discuss and provide correct information.	Illustration on family members helping with KMC Handout for Session 2.4
	15 min		BREAK	
Session 2.5: Comparing Kangaroo Mother Care and Conventional Care	45 min	Requirements for practicing KMC and conventional mother care Advantages of KMC. Problems associated with KMC Advantages and disadvantages of incubator care	Ask learners to brainstorm on KMC vs. conventional mother care. Discuss and provide correct information.	Flip chart and markers Handouts for Session 2.5
Case Studies	30 min		Discussion	Case studies at end of Unit 2
Summary	15 min		Trainer asks one or more participants to summarize followed by clarification from the rest of participants. Question and answer.	

HANDOUT: BACKGROUND AND DEFINITION OF KMC

Kangaroo mother care is a simple, inexpensive way to care for LBW infants. The method was first introduced in Bogotá, Columbia in the late 1970s by Dr. Martinez and Rey to deal with overcrowded neonatal units and a shortage of incubators. In KMC, the stable LBW baby is placed skin to skin against the mother's chest, wearing only a diaper (nappy), hat and socks. The baby is then kept upright between the mother's breasts, inside the mother's blouse, and held in place by a cloth wrapped around the mother and baby. In continuous KMC, the baby is kept in this position constantly except for short periods for bathing, diaper changing, or when the mother is attending to personal needs. During these times the father or other relatives may assist with keeping the baby warm with skin-to skin contact.

The KMC method facilitates breastfeeding on demand, maternal-infant bonding, and keeps the baby warm. It has since been introduced into the medical establishment of both the developed and developing world as a safe and effective alternative or complement to incubator care for LBW babies. Many hospitals in Europe and the Americas have adopted KMC, and it has also been introduced in several countries in Africa and Asia.

To date, most of the published experience and evidence regarding KMC has come from hospitals or health facilities with stable infants and skilled providers. The mother then continues care at home with close supervision and regular follow-up at the facility. However, several studies are underway to test the effectiveness of the method in other settings where referral and skilled care are limited.

The Story of the Pouch

A newborn kangaroo (Joey) is even more helpless than a human infant. Blind and the size of a honeybee, the newborn Joey is essentially a fetus, still enclosed in a bag-like amnion.

The tiny creature bursts out of the amnion and immediately “swims” through its mother's fur to reach the pouch. To find its way, the Joey uses its sense of smell and built-in gravity receptors (located in the middle ear)—the only two senses functional at this point.

When it finds the nipple, the Joey latches on and stays physically fused for four to five weeks. Usually the newborn is alone; twins are extremely rare. But while a newborn is attached, an older sibling that has left the pouch and is not yet weaned may poke its head in to feed. Each of the offspring feeds only from its own individual teat, and the two teats each supply different mixes of nutrients depending on the age of the young.

Definition of Kangaroo Mother Care

Kangaroo mother care is a universally available and biologically sound method of care for newborns, in particular those who are preterm or of LBW. It is defined as early, prolonged skin-to-skin contact between a mother and her LBW newborn. This can take place both in hospital and at home, and is usually continued until the baby reaches at least 2000 grams in weight.

If desired, program managers can be encouraged to select local terms that are appropriate for describing KMC and other relevant concepts. In some countries, new phrases have been

developed, as many languages do not have translations for the word “kangaroo” since it is not a known animal in their region. In some settings, it is even offensive to equate human action with those similar to an animal. A few places have therefore opted to use words close to the phrase “skin-to-skin” or something similar to describe KMC. The Hausa name for KMC is GOYON DANGATA which means cuddling a precious baby.

Who Can Provide Kangaroo Mother Care?

Everyone can provide KMC as long as they understand the method and are motivated to practice it. All those who want to assist the mother can practice KMC, such as grandmothers, sisters, aunts, husbands, and even friends.

HANDOUT: TYPES OF KANGAROO MOTHER CARE

Continuous KMC

This is when KMC is practiced 24 hours every day (except for very short periods when the mother has to bathe or attend to other personal needs) and requires support from family members, including the husband. It is the ideal type of KMC for LBW babies.

Intermittent KMC

This type of KMC is not done on a 24-hour basis but only for certain periods of the day. The mother stays at home or within the hospital but comes to the neonatal unit to do KMC at specified times; the newborn is left in an incubator for the remainder of the time. This type is mostly used for very small and sick babies, and/or for mothers who do not want or are not yet ready or able to practice continuous KMC. Examples include very LBW infants or mothers who are recovering from surgery (e. g., C-section).

Duration of KMC

Both types of KMC are practiced as long as possible until the baby no longer tolerates the method. Babies who outgrow KMC become restless and will usually try to get out of the skin-to-skin position. Local KMC protocols may vary regarding the weight when babies are discharged from KMC follow-up. It is important to note, however, that babies should still be breastfed and kept warm even when KMC is no longer practiced.

HANDOUT: WHEN TO START KMC AND ELIGIBILITY CRITERIA

When to Start KMC

KMC should be started when the small preterm or LBW baby is stable; otherwise it will have to be delayed. Exactly when KMC can begin depends on the condition and status of the baby and the mother. It is important, however, to encourage the mother to adopt KMC very early on.

Eligibility Criteria for KMC

The following criteria should be used to decide whether a mother should begin KMC:

- The willingness of the mother to do KMC
- The baby should be in a stable condition:
 - No major illness present such as sepsis, pneumonia, meningitis, respiratory distress and convulsions.
 - Babies who have been started on antibiotics for suspected infection can start KMC as soon as they are stable.
 - Intermittent KMC can be used until the baby is fully stable.
- Babies under phototherapy may be evaluated to receive intermittent KMC.

Refer all LBW babies with a weight below 2000 grams to the nearest health facility with KMC services or to a higher level of care.

HANDOUT: HOW TO PRACTICE KANGAROO MOTHER CARE

Positioning of the Mother and Baby

In KMC the baby, wearing only a nappy, socks and a hat, is held upright between the mother's breasts in continuous contact with her skin (skin-to-skin contact). The position of the baby against the mother's chest underneath the cloth should secure the position of the baby's head and neck.



Mother with baby in kangaroo position.

The mother covers her baby with her own clothes and an additional blanket or shawl to cover the baby. While resting, the mother should be in a comfortable, moderately inclined position at about a 30-degree angle, supported with pillows to keep her comfortable.

When the mother walks around, the baby is still kept upright by a cloth. It is important that the nappy is changed soon after wetting or soiling, not only for the comfort of mother and baby but to reduce the body's heat loss.

Keeping the baby in the KMC position can be demanding for the mother, as continuous KMC practice is a tiring job. To assist the mother when she is tired or is attending to personal needs such as bathing, other family members (such as husbands, grandmothers, mothers-in-law, or older siblings) can be taught how to care for the baby in the kangaroo position so they can give the mother relief when necessary.

Steps in Positioning the Baby for KMC:

1. Dress the baby in socks, a nappy, and a cap.
2. Place the baby between the mother's breasts.
3. Secure the baby on to the mother's chest with a cloth.
4. Put a blanket or a shawl on top for additional warmth.
5. Instruct the mother to put on a front-opened top: a top that opens at the front to allow the face, chest, abdomen, arms and legs of the baby to remain in continuous skin-to-skin contact with the mother's chest and abdomen.
6. Instruct the mother to keep the baby upright when walking or sitting.
7. Advise the mother to have the baby in continuous skin-to-skin contact 24 hours a day (or less in the case of intermittent KMC).
8. Advise the mother to sleep in a half-sitting position in order to maintain the baby in a vertical position.



Put on loose clothing over the wrap.

(Illustration adapted from *Home Based Life Saving Skills - Baby Information*. Buffington, Sibley, Beck and Armbruster. 2004. American College of Nurse-Midwives. ISBN 0-914324-09-8.)



Securely wrap the baby with a cloth tied around the mother.

(Illustration adapted from *Home Based Life Saving Skills - Baby Information*. Buffington, Sibley, Beck and Armbruster. 2004. American College of Nurse-Midwives. ISBN 0-914324-09-8.)



Position the baby for KMC.

(Illustration adapted from *Home Based Life Saving Skills - Baby Information*. Buffington, Sibley, Beck and Armbruster. 2004. American College of Nurse-Midwives. ISBN 0-914324-09-8.)

******There are several types of cloths or wraps that may be used to secure the infant. Use whatever is available and appropriate for your setting. However, keep in mind that it must be able to secure the infant safely for an extended period of time but allow for adequate breathing and some movement. This is especially important for preterm infants. Examples of different types of wraps are listed below:

Bolivia	T-shirt secured with a belt or binder around the waist
Malawi	locally made multi-purpose cloth with open blouse or dress
Columbia	Lycra: wrap, a synthetic material that is elastic, but firm
India	sling or binder with open blouse, sari or shawl
Zimbabwe	locally made cloth to wrap the baby with open blouse or dress
USA	loose fitting blouse or sling

HANDOUT: FEEDING TECHNIQUES DURING KMC

The LBW baby should be fed exclusively with breast milk. If feasible, immediate and exclusive breastfeeding is recommended for all babies. Initiate feeding as soon as possible, preferably immediately after birth. However, breastfeeding LBW babies can be tiring and frustrating at times, so mothers will need lots of support and encouragement to properly feed their babies.

Newborns must be fed on demand—at least every 2 to 3 hours. However, the mother may need to wake her baby to be sure he or she is getting adequate feeds. LBW and preterm babies may need to be fed as often as every 1.5 to 2 hours. If the baby cannot breastfeed, another feeding method using breast milk will need to be selected. The most important consideration is the baby's ability to suck, swallow, and coordinate swallowing and breathing as outlined in the following table:

CRITERIA	RECOMMENDED FEEDING METHODS	REMARKS
If there is no sucking reflex or the baby is not able to swallow and to coordinate swallowing and breathing:	Give EBM by tube feed (nasogastric [NG] or orogastric tube).	Tube feeds can be done when baby is in the KMC position.
If the baby is able to drink from a cup:	Give EBM with a cup. OR Express breast milk directly into the baby's mouth OR Feed with a syringe or dropper.	Transition gradually from tube feeding to cup feeding—start with tube feeds and cup feeding and gradually reduce the number of tube feeds. Wrap the baby with a warm blanket when he is taken out of KMC for cup feeds.
If the sucking reflex is established, signs of readiness for breastfeeding are the baby moves the tongue and mouth and is interested in sucking:	Breastfeed exclusively.	Transition gradually from cup feeds to breastfeeding. From time to time let the baby lick the nipple first, then suckle a little bit while continuing cup feeding, and breastfeed when the baby can suck well and effectively.

HANDOUT: QUANTITY AND FREQUENCY

The frequency of feeding depends on the quantity of milk the baby can tolerate per feed and the required daily amount according to weight. As a guide, the amount per feed for small newborn preterm babies should be steadily increased by 5.0 ml daily or every other day. Tables 1 and 2 are good guides for calculating amounts of feeds.

If the baby is not growing and if there is no abdominal distension or vomiting, the amount may be increased. The maximum amount is normally about 200 ml/kg per day divided into eight feeds.

Remember: Preterm babies may not feed on demand, so they may need to be fed on a schedule.

Very small babies should be fed every two hours, larger babies every three hours. If necessary, wake the mother and baby during the day and night to ensure regular feeding.

Tables 1 and 2 adapted from the World Health Organization (WHO) KMC Manual 2003

TABLE 1. AMOUNT OF MILK (OR FLUID) NEEDED PER DAY BY BIRTH WEIGHT AND AGE								
Birth weight	Feed every	Day 1	Day 2	Day 3	Day 4	Day 5	Days 6-13	Day 14
1000-1499g ≥1500g	2-3 hours	60ml/kg	80ml/kg	90ml/kg	100ml/kg	110ml/kg	120-180 ml/kg	180-200 ml/kg

TABLE 2. APPROXIMATE AMOUNT OF BREAST MILK NEEDED PER FEED BY BIRTH WEIGHT AND AGE								
Birth Weight	Number of feeds	Day 1	Day 2	Day 3	Day 4	Day 5	Days 6-13	Day 14
1000g	12	5ml/kg	7ml/kg	8ml/kg	9ml/kg	10ml/kg	11-16ml/kg	17ml/kg
1250g	12	6ml/kg	8ml/kg	9ml/kg	11ml/kg	12ml/kg	14-19ml/kg	21ml/kg
1500g	8	12ml/kg	15ml/kg	17ml/kg	19ml/kg	21ml/kg	23-33ml/kg	35ml/kg
1750g	8	14ml/kg	18ml/kg	20ml/kg	22ml/kg	24ml/kg	26-42ml/kg	45ml/kg
2000g	8	15ml/kg	20ml/kg	23ml/kg	25ml/kg	28ml/kg	30-45ml/kg	50ml/kg

Encourage the start of breastfeeding as soon as the baby shows signs of readiness. At the beginning, the baby may not suckle enough, but even short sucking stimulates milk production and helps the baby get used to sucking. Keep reassuring the mother and helping her with breastfeeding the baby. As the baby grows, gradually replace scheduled feeding with feeding on demand.

When the baby moves on to exclusive breastfeeding and measuring the amount of milk intake is not possible, weight gain remains the only way to assess whether feeding is adequate.

HANDOUT: FEEDING LBW BABIES WHEN THE MOTHER IS HIV-POSITIVE

Breast milk is always the best food for a newborn—especially the LBW baby who is more likely to develop health problems. The baby of an HIV-infected mother has about a 15% chance of getting the HIV infection through breastfeeding. The risk of HIV infection is lower if:

- The baby breastfeeds exclusively
- The mother seeks immediate care for cracked nipples/breast infection
- The baby is breastfed for only a few months

- The mother and baby are given antiretroviral medications

The risk of HIV is greater:

- The longer a baby breastfeeds
- If a mother becomes infected while breastfeeding
- If the mother has mastitis or cracked nipples or if there is oral thrush or intestinal infections in the baby
- If the mother shows signs of AIDS
- If the baby is given mixed feeds (i.e., breast milk and other foods or liquids)

Health providers must give women all available information on the risks and benefits of the different feeding options and then support the women's feeding choice. According to the latest UN policy statement on HIV and infant feeding (2001):

“When replacement feeding is acceptable, feasible, affordable, sustainable, and safe [AFASS], avoidance of all breastfeeding by HIV infected mothers is recommended. Otherwise, exclusive breastfeeding is recommended during the first months of life. To minimize HIV-transmission risk, breastfeeding should be discontinued as soon as feasible, taking into account local circumstances, the individual woman's situation, and the risks of replacement feeding (including infections other than HIV and malnutrition). When HIV-infected mothers choose not to breastfeed from birth or stop breastfeeding later, they should be provided with specific guidance and support for at least the first 2 years of the child's life to ensure adequate replacement feeding. Programs should strive to improve conditions that will make replacement feeding safer for HIV-infected mothers and families.”

Never use sweetened condensed milk, skimmed milk, fruit juices, sugar water, or diluted porridges for replacement feeding. These foods do not provide enough energy and micronutrients.

If replacement feeding is AFASS for the LBW baby, give the appropriate formula using cup feeding—in the same amounts and frequency as recommended for small babies who are cup fed with breast milk.

If even one of the AFASS criteria is not met, health workers should recommend safer breastfeeding practices including:

- Early initiation of breast milk fed with a cup or breastfeeding, depending on the baby's ability to swallow or to suck at the breast.
- Feed only breast milk, with no other foods, fluids, or even water.
- Feed breast milk on demand and follow the same recommendations as for other babies.
- Counsel the woman to prevent or seek prompt treatment for oral lesions in the LBW baby and for any breast problems. Breast problems include cracked nipples, engorgement, breast abscess, and mastitis.
- Avoid mixed feeding. The baby who receives other foods in addition to breast milk before six months gets sick more often and may have an increased risk of getting HIV.

- Follow safer sex practices.

DESCRIPTION OF THE AFASS CRITERIA	
Acceptable:	The mother perceives no barrier to replacement feeding. Barriers may have cultural or social reasons, or be due to fear of stigma or discrimination. According to this concept the mother is under no social or cultural pressure not to use replacement feeding, and she is supported by family and community in opting for replacement feeding, or she will be able to cope with pressure from family and friends to breastfeed, and she can deal with possible stigma attached to being seen with replacement food.
Feasible:	The mother (or family) has adequate time, knowledge, skills and other resources to prepare the replacement food and feed the infant up to 12 times in 24 hours. According to this concept the mother can understand and follow the instructions for preparing infant formula and with support from the family can prepare enough replacement feeds correctly every day, and at night, despite disruptions to preparation of family food or other work.
Affordable:	The mother and family, with community or health-system support if necessary, can pay the cost of purchasing/producing, preparing and using replacement feeding, including all ingredients, fuel, clean water, soap and equipment, without compromising the health and nutrition of the family. This concept also includes access to medical care if necessary for diarrhea and the cost of such care.
Sustainable:	Availability of a continuous and uninterrupted supply and dependable system of distribution for all ingredients and products needed for safe replacement feeding, for as long as the infant needs it, up to one year of age or longer. According to this concept there is little risk that formula will ever be unavailable or inaccessible, and another person is available to feed the child in the mother's absence, and can prepare and give replacement feeds.
Safe:	Replacement foods are correctly and hygienically prepared and stored, and fed in nutritionally adequate quantities, with clean hands and using clean utensils, preferably by cup. This concept means that the mother or caregiver: <ul style="list-style-type: none"> – has access to a reliable supply of safe water (from a piped or protected-well source) – prepares replacement feeds that are nutritionally sound and free of pathogens – is able to wash hands and utensils thoroughly with soap, and to regularly boil the utensils to sterilize them – can boil water for preparing each of the baby's feeds – can store unprepared feeds in clean, covered containers and protect them from rodents, insects and other animals.
From: What are the options? Using formative research to adapt global recommendations on HIV and infant feeding to the local context (WHO 2004)	

HANDOUT: MONITORING GROWTH IN A LBW BABY

Weigh babies daily and check weight gain to assess:

- Adequacy of milk intake
- Rate of growth

There are no universally accepted recommendations regarding frequency of growth monitoring for LBW and preterm infants.

Growth monitoring, especially for daily weight gain, requires accurate and precise scales and a standardized weighing technique. Spring scales are not precise enough for frequent monitoring of weight gain when weight is low and may lead to wrong decisions. Analogue maternity hospital scales (with 10 grams intervals) are the best alternative. If such accurate and precise scales are not available, do not weigh KMC infants daily but rely on weekly weighing for growth monitoring. Record weight on a chart and assess weight gain daily or weekly.

Small babies lose weight in the first few days after birth, as their bodies lose extra water in the transition from the amniotic fluid environment. It is normal for babies to lose up to 10 percent of birth weight. Therefore, weight loss of up to 10 percent in the first few days of life is considered acceptable.

After this initial weight loss, newborn babies begin to gain weight steadily and usually regain birth weight seven to fourteen days after birth. No weight loss is acceptable, though, after this initial weight loss period.

Babies should be assessed for weight gain twice weekly. Schedule these assessments on the same two days each week until the baby is gaining weight for three consecutive assessments. Then weigh the baby weekly for as long as the baby is hospitalized. WHO recommends desirable weight gain as follows:

- A minimum daily weight gain of 15 grams per kilogram per day over three days (after the initial period of weight loss);
- After birth weight has been regained, weight gain during the first three months should be:
 - 150 to 200 grams per week for babies weighing less than 1.5 kg (i.e., 20 to 30 grams per day)
 - 200 to 250 grams per week for babies weighing 1.5 to 2.5 kg (i.e., 30 to 35 grams per day)
- Steady and appropriate weight gain is considered a sign of good health in a newborn infant following the initial few days of weight loss. Poor weight gain or no weight gain indicates a problem that must be addressed.

If there is weight loss or if weight gain is not adequate for three days (i.e., gaining less than 15 grams/kg per day) then:

- If cup or tube feeding, assess the 24-hour volume of feeding. Is it sufficient? Could the baby take more?
- If breastfeeding, assess if there are problems with the breast or the technique.
- If breastfeeding, assess the frequency and the duration of feedings for the past 24 hours.

- Ensure that the infant is being fed around the clock (especially at night).
- Check that night feeds are given.

When assessing weight loss, it is also important to:

- Ensure that the baby is in KMC continuously
- Advise the mother to increase the frequency of feeds for the baby
- Feed the baby on demand
- Look for danger signs or specific conditions that can cause poor weight gain, such as poor suckling, lack of warmth (e. g., long periods of wet nappies), infections, and congenital malformations



Mother resting with baby in KMC position.

HANDOUT: SUPPORT FROM HEALTH PERSONNEL, FAMILY, AND COMMUNITY

Experience shows that in order for mothers to have adequate KMC support from health staff including cleaners, all staff must be well informed about the method, be convinced of its effectiveness, and accept it as an appropriate method for caring for LBW babies. Health workers also need skills to assist mothers to exclusively breastfeed their babies, including how to express breast milk, help feed small babies with cups and how to store EBM.

Health personnel can provide support for KMC by:

- Explaining the advantages of KMC.
- Integrating family members (father, grandmother, aunts), depending on cultural norms.
- Helping mothers with any problem related to positioning, feeding, and care of the newborn.
- Talking daily with mothers about any problem they may have and consistently encouraging them to continue KMC.
- Encouraging mothers and family members to express concerns and ask questions.
- Carrying out health education, awareness campaigns, behavior change communication (BCC) activities to sensitize the community about KMC and to create demand for KMC as the norm.
- Facilitating modeling of KMC in the community to minimize ridicule and stigma.
- Providing consistent physical and emotional support.

Mothers and family members have also to be convinced of KMC's effectiveness. Staff must be very patient and consistent in urging the mothers to perform their task conscientiously. Talks with the mothers and family members should be held daily and whenever needed.

It is also critical to remember that continuous skin-to-skin contact is tiring for mothers. They may be reluctant to continue kangaroo mother care after discharge if there is no assistance from the family at home. Family members like the husband or the grandmother should be included in the KMC talks so that they can support the mother at home.

Health Personnel Can Also Provide Support After the Mother is Discharged By:

- Discussing the experiences and the problems of the mother concerning KMC
- Giving support in problems with position and feeding
- Monitoring the babies for activity and weight gain
- Supporting mothers and families when they return to the KMC unit with problems or for follow-up visits

Family members can also provide support for KMC—at home and in the KMC unit—by:

- Taking the baby from time to time in the kangaroo position to allow the mother to relax
- Encouraging the mother to continue KMC at home
- Providing consistent physical and emotional support

Community Support

Carrying the baby in the KMC position will not seem normal in most societies because the need for skin-to-skin contact is often not known or recognized in many community settings. It is therefore important for health workers to be involved in both educating and sensitizing communities in the significance of KMC for LBW infants.

Since extended family and community support is the norm in many cultures, health administration and personnel must keep community members and stakeholders involved and informed as much as possible. In this way, community members can help each other to access health care and information when needed and support those who are implementing such care.

Communities can also provide support for KMC by:

- Educating those who are not aware of how to care for LBW
- Supporting health education and sensitization activities
- Participating in helping mothers/babies to access care when needed



Fathers can also do KMC!

SESSION 2.5: COMPARING KANGAROO MOTHER CARE AND CONVENTIONAL CARE

HANDOUT: REQUIREMENTS FOR PRACTICING KANGAROO MOTHER CARE AND CONVENTIONAL CARE

KANGAROO MOTHER CARE (KMC)	CONVENTIONAL METHOD OF CARE (Conventional Mother Care)
<ul style="list-style-type: none"> Stable LBW infant who is not very sick Willing mother or guardian 	<ul style="list-style-type: none"> Can accommodate sick infants Incubator for each infant plus spare parts
<ul style="list-style-type: none"> Health worker less frequently needed 	<ul style="list-style-type: none"> Health worker more frequently needed
<ul style="list-style-type: none"> Can be done even at home 	<ul style="list-style-type: none"> Hospital based
	<ul style="list-style-type: none"> Disinfectant
	<ul style="list-style-type: none"> Distilled water
	<ul style="list-style-type: none"> Electricity to power the incubator
<ul style="list-style-type: none"> Shorter facility stay—less costly 	<ul style="list-style-type: none"> Longer facility stay—funds to cover costs of specialized facility care
	<ul style="list-style-type: none"> Funds for incubator maintenance Training for staff to maintain and repair incubators

When available and functioning properly, incubators can be a valuable resource for the initial care of sick and very small babies. Ideally, there should be one incubator for each infant, and staff must know how to operate and provide basic maintenance for the machines. Once they are stable, most LBW babies can then be managed with KMC.

HANDOUT: ADVANTAGES OF KMC

- Efficient way of maintaining the correct body temperature of the newborn
- Promotes breastfeeding, leads to a higher rate and longer duration of breastfeeding
- May increase the quantity of EBM for cup feeding or naso/orogastric tube feeding
- Babies gain weight faster (grow faster). This is due to the fact that babies receiving KMC may easily feed on demand and have lower caloric expenditures to maintain body temperature (i.e., lower metabolic rate).
- Decreases mortality of preterm and LBW babies due to reduction of apneic attacks, irregular breathing, and hypothermia. This is achieved through the action of the mother's heart, respiration, and voice which act as stimulants to the baby's breathing control center in the brain.
- Fewer infections; serious infection is less common in the baby.
- Increases mother's confidence in handling her small newborn and improves bonding.
- Reduces hospitalization of mother and baby (i.e., early discharge).

- Reduces costs (it is cheaper than incubator care), both to the hospital facility and to the mother/guardian.
- Requires less equipment.
- Increases facility's ability to cope with higher numbers of underweight and preterm newborns as less nursing staff are required.

HANDOUT: PROBLEMS ASSOCIATED WITH KMC

PROBLEM	SOLUTION
Kangaroo mother care is tiring for the mothers.	Encourage family members to assist by putting the baby in the kangaroo position when the mother needs a break.
A strong belief in high technology may lead to some resistance by mothers because of the simplicity of KMC.	Provide correct information about KMC to the mothers and family members. Obtain institutional support for KMC and make the KMC unit attractive and desirable.
Cultural barriers, e.g., grandmothers may not accept the method. In some traditions, the babies are separated from their mothers and the granny takes care of the baby during the first weeks. Also, babies are usually carried on the back rather than in front.	Educate mothers, grandmothers and others in the community regarding importance of keeping the mother and newborn baby together. Model and support the KMC unit in the community. Have providers from local facilities give community education talks about KMC.
Relatives, neighbors, and other members of the community may laugh at the mother who is practicing KMC.	Conduct awareness campaigns and model KMC within the community. Obtain support for KMC from leaders and well-known people; have these people promote KMC.
Noncompliance of mothers and health staff.	Convince mothers and staff about the benefits of the KMC method through continuous information, education and support. Share successful KMC experiences.
Mothers may be concerned about getting enough sleep if sleeping with KMC is uncomfortable.	Reassure mothers that they can sleep in a variety of positions while maintaining KMC. The mother should sleep in the position in which she is most comfortable. Show her how she can use pillows to rest in a semi-reclining position on her back or sides.
Mothers may be concerned about suffocating the baby while sleeping with the baby in the KMC position.	Reassure mothers that if the baby is secured in the proper KMC position while the mother is sleeping, there is no risk of smothering; it is actually very safe. It has been observed that maintaining KMC while in a reclined or semi-recumbent position may actually reduce the risk of apnea for the baby. There is no known experience of any baby smothering while in the KMC position.

HANDOUT: ADVANTAGES AND DISADVANTAGES OF INCUBATOR CARE

The advantages of incubator care are:

- Useful to stabilize sick babies and can be used intermittently with KMC
- Provides warmth to small preterm babies unsuitable for KMC
- Useful for babies with mothers unable to provide KMC
- Easier to apply oxygen or give IV fluids if needed

The disadvantages of incubator care include:

1. Hypothermia or hyperthermia due to:
 - Lack of staff may mean the baby's temperature is not checked regularly
 - Incubator temperature is not adjusted according to the age, weight, and temperature of the baby
 - There may be problems with the power supply
 - If the nursery is understaffed, incubator breakdowns may not be immediately detected to prevent hypothermia
2. Infections due to:
 - Lack of staff/inadequate training on proper incubator use and hygiene procedures
 - Lack of thorough disinfection between uses
 - Inadequate number of incubators, so several babies are nursed in one incubator leading to cross-infection
3. Repair and maintenance problems due to:
 - Lack of skilled personnel to maintain/repair incubators
 - Lack of spare parts
 - High running cost
4. Delay in mother baby-bonding due to:
 - Mother and baby are separated
 - Mothers often feel afraid to have contact with their baby in an incubator
5. Breastfeeding is more difficult.

6. Longer hospitalization:

- The baby stays in hospital for extended period of time
- More hospital resources are required
- High cost to mother and family

CASE STUDIES

Case 1

Miriam delivered a baby boy one week ago with a birth weight of 1800 grams. The baby has lost 150 grams and is breastfeeding about six times/day. He is not on any supplemental feeds.

- What are the possible problems?
- How would you proceed?

Case 2

Mrs. Dale is a young mother of one preterm baby named Sara. Sara was admitted and managed at the Kangaroo Care Unit for 10 days because she was a very tiny baby weighing 1200 grams. Mrs. Dale was an orphan and was brought up by her grandmother. Her grandmother did not assist her during her stay at the KMC unit.

At the time of discharge, Mrs. Dale was told to continue with KMC at home and that she should come for KMC follow-up at the unit. Mrs. Dale lives with her 30-year-old sister-in-law and her grandmother who is elderly and unable to assist her. Mr. Dale is supportive of KMC, but works out of town and only comes home on weekends. When Mrs. Dale came for her first KMC follow-up, she looked tired and baby Sara appeared to have lost weight. During history taking, Mrs. Dale revealed that she was tired of KMC and did not want to continue doing it at home. She mentions that her grandmother and neighbor suggest she carry the baby on her back as is the tradition.

- Based on the information provided, what could be the problems affecting Mrs. Dale and Sara and why?
- Based on the identified problems, what will be your plan of care (action) for Sara and why?

Two weeks later, Mrs. Dale brought Sara for continued KMC follow-up visits. The health worker at the KMC unit examined Sara. It was established that Sara had gained weight and her mother was happier too. She has become friends with a mother in her community who provided KMC to her baby last year.

- If this was a problem in the area where Mrs. Dale comes from, what intervention measures would you institute to solve the problem?

CASE STUDIES: ANSWER KEY

Case 1

1. What are the possible problems?

- Baby is not getting enough breast milk
 - Should be at least 8 times/day (every 2-3 hours)
- Baby is not attaching to the breast properly.
- The duration of feeding is too short.
- The baby is sick (infection) resulting in poor feeding.
- Weight loss could be normal (may lose up to 10% in the first week of life) if the baby is otherwise well and exam reveals normal findings.

2. How would you proceed?

- Question the mother about any danger signs, including feeding problems.
- Perform a physical exam to ensure that baby is stable and does not have any signs of problems.
- Observe the baby breastfeeding to ensure proper positioning and attachment.
- Review with Miriam the importance of adequate feeds:
 - The baby should feed at least 8 times in a 24-hour period, including during the night.
 - The baby should remain at the breast until satisfied.
 - Do not limit the length of feeds.
 - The baby should feed on demand, not on a specific schedule.
 - If the baby is not getting at least 8 feeds at the breast, the mother may need to express milk and feed her baby with a cup in between breast feeds.
 - Advise Miriam to drink fluids when she is thirsty and to eat at least one extra serving of staple food per day while lactating.
- Once the baby is feeding adequately, continue to monitor weight.
 - Weigh the baby daily until he starts to gain weight.
 - Weight gain should be approximately 25 grams per day for a baby of 33-36 weeks post-menstrual age.
 - If the baby fails to gain weight and feeding is normal, consider other problems such as oral thrush in the baby, breast problems in the mother, or infection in the baby. Treat these problems or refer to a higher level of care.

Case 2

1. Based on the information provided, what could be Mrs. Dale's problems and why?

- Mrs. Dale is tired as she may not be getting help with KMC at home:
 - Grandmother is elderly and not supportive.
 - Husband is away at work so cannot assist with KMC.
 - Breastfeeding may not have been established, so Mrs. Dale may still be feeding Sara EBM by tube or cup which can be tiring.
- Cultural barriers may discourage Mrs. Dale from providing continuous or adequate KMC:
 - Neighbors and relatives may ridicule the KMC method.
 - Community may not be sensitized to KMC and its benefits.
- Baby Sara may not be getting adequate feeding or warmth and is therefore prone to infection and other problems.

2. Based on the identified problems, what will be your plan of care (action) for Sara and why?

- Examine baby Sara, ensure that there are no danger signs, and address any problems.
 - Weigh baby Sara and compare with birth weight.
 - Rewarm baby Sara if needed.
- Review feeding schedule and appropriate amount of feeds (per weight) if breastfeeding is not established.
- If breastfeeding is established:
 - Observe Mrs. Dale breastfeeding to ensure adequate positioning and attachment.
 - Discuss importance of adequate and exclusive breastfeeds (at least 8 times/day and feeds on demand).
- If baby Sara is healthy, stable and there are no additional problems:
 - Talk with Mrs. Dale about the possibility of her sister-in-law or another relative assisting with KMC. Offer KMC instruction and assistance as needed.
 - Review KMC positioning with the mother and importance of warmth and adequate feeds.
 - Discuss ways mother can get enough rest at home, for example, to sleep while the baby sleeps, and comfortable positions to rest while the baby is in KMC position.
 - Review danger signs and appropriate response.
- Link Mrs. Dale with other mothers who are providing or who have successfully provided KMC at home for support.

- Have the mother spend a part of the day at the KMC unit to participate in group discussions for support and encouragement.
 - Arrange a follow-up visit.
3. **If this was a problem in the area where Mrs. Dale comes from, what intervention measures would you institute to solve the problem?**
- If possible, facilitate promotion of KMC in the community and obtain support from community leaders.
 - Have providers from the facility help create awareness about KMC through giving health education talks and share successful KMC experiences.
 - Facilitate and participate in continuing information, education and support of the KMC method and its benefits.
 - Create awareness about LBW and KMC in the community, starting with education of all mothers during the antenatal visit.

UNIT 3: DANGER SIGNS AND COMMON PROBLEMS OF LOW BIRTH WEIGHT BABIES

General objective:

At the end of the session learners will be able to identify and refer LBW babies with signs of medical complications.

Specific objectives:

- Identify common problems in the LBW baby.
- Explain management of common problems in LBW babies.
- Recognize danger signs in LBW babies.
- Explain the referral protocol for LBW babies with complications.

Time: 6 hours 20 minutes (including lunch and morning tea break)

List of sessions:

Session 3.1: Common Problems in LBW Babies and Their Management

Session 3.2: Identifying Newborn Danger Signs

Session 3.3: Referral of Babies with Danger Signs

Training materials:

- Chalkboard, chalk, flip charts, markers, newborn models
- Other supplies and materials as relevant: digital or low reading thermometer, Ambu bag/mask, referral form, etc.

Reference resources:

- Managing Newborn Problems (WHO)
- Care of the Newborn Reference Manual (Saving Newborn Lives)
- Essential Newborn Nursing for Small Hospitals (AIIMS)

Handouts:

- Managing Common Problems of LBW Babies
- Newborn Danger Signs
- Types of Referrals
- Transportation

Teaching methods:

- Demonstration
- Case study
- Discussion
- Brainstorming and clinical drill

UNIT 3 OVERVIEW: DANGER SIGNS AND COMMON PROBLEMS FOR LOW BIRTH WEIGHT BABIES

SESSION	TIME	CONTENT	TEACHING METHOD	MATERIALS NEEDED
Overview	5 min	Overview of the day's sessions	Discussion	Flip chart and markers
3.1: Common Problems in LBW Babies and Their Management	60 min	Managing common problems of LBW babies	Brainstorm on management of common problems in LBW baby. Discuss and provide correct information.	Flip chart and markers Handout for Session 3.1
	15 min		TEA BREAK	
3.2: Identifying Newborn Danger Signs	115 min	Newborn danger signs	Clinical drills Role-play	Newborn models Other supplies and materials as relevant (low reading thermometer, Ambu bag/mask, referral form, etc.) Handout for Session 3.2
	60 min		LUNCH	
3.3: Referral of Babies with Danger Signs	70 min	Types of referral Transportation First time and subsequent referral	Explain and discuss the criteria and procedure for referral from: <ul style="list-style-type: none"> • home • a health center • within the health institution/ maternity unit Explain how the LBW should be transported and discuss first time and subsequent referral.	Flip chart and markers Charts and handouts for Session 3.3
Case Studies	30 min		Discussion	Case studies at the end of Unit 3
Summary	15 min		Trainer asks one or more participants to summarize followed by clarification from the rest of participants. Question and answer.	

SESSION 3.1: COMMON PROBLEMS IN LOW BIRTH WEIGHT BABIES AND THEIR MANAGEMENT

HANDOUT: MANAGING COMMON PROBLEMS OF LBW BABIES

For further treatment details, refer to local policy or see Managing Newborn Problems: a guide for doctors, nurses and midwives (WHO).

PROBLEM	MANAGEMENT
Oral thrush	<ul style="list-style-type: none"> • Apply GV every 6 hours until it clears OR • Nystatin (100,000 u/ml) give 1ml p.o. every 6 hours until it clears
Skin pustules **	<ul style="list-style-type: none"> • Keep skin clean and dry. • Apply GV 0.5% to pustules every 6 hours. • Give antibiotics if signs of sepsis or spreading lesions: • Give Gentamicin 5mg/kg IM once daily for 5 days plus benzyl penicillin 50,000units/kg IM or IV every 12 hours for 5 days. • Flucoxacin 15mg/kg every 8 hours.
Eye discharge	<ul style="list-style-type: none"> • Wash eyes with clean water/saline ideally every 2 hours until the purulent discharge is cleared. • Treat with Gentamicin 5mg/kg IM once daily (7.5 mg/kg if the infant is older than 7 days). • Treat with benzyl penicillin 50,000 units IM every 6 hours for 5 days. Apply Tetracycline or Chloramphenicol eye ointment/drops in both eyes every 8 hours until symptoms are cleared. <p><i>Ref: Management of Sexually Transmitted Infection using syndromic management approach</i></p>
Redness of cord ** (mild cord infection)	<ul style="list-style-type: none"> • Clean with normal saline. • Leave to dry. • Ask appropriate clinician to prescribe antibiotics.

** These conditions may spread to the blood stream and lead to sepsis. Sepsis is an infection affecting the whole body. The infection may be in the blood (septicemia) or in one or more organs of the body. Organisms that cause sepsis may enter the body during pregnancy, labor and delivery, or after birth. They may spread in the body from an infection of the skin, cord or other organs. Sepsis is a serious illness and can quickly cause death in the newborn. Prompt treatment with antibiotics is therefore critical.

HANDOUT: NEWBORN DANGER SIGNS

Danger signs pose a serious problem in the newborn. Many babies die due to illnesses which present with these danger signs. To prevent such deaths, the mother and family need to recognize the danger signs so as to seek attention in a timely manner. Many times caregivers do not recognize these signs and delay in getting appropriate health care. Similarly, health providers need to know and recognize danger signs in the newborn to be able to manage and/or refer the baby appropriately.

It is crucial to minimize delays in identifying danger signs and in referring the baby to an appropriate facility; delays often cost the lives of innocent babies. There are four types of delays widely recognized as contributing to neonatal mortality:

- Delay in recognizing danger signs
- Delay in deciding to seek health care
- Delay in reaching the health facility (due to lack of transport)
- Delay in receiving appropriate care after arriving at the health facility

The following are danger signs that a newborn baby may present with. Remember: Regardless of a baby's weight, the newborn danger signs remain the same:

- Poor feeding or not sucking*
- Hypothermia in spite of efforts to re-warm
- Fever
- Convulsions
- Breathing problems: apnea, retractions, grunting, flaring, cyanosis
- Lethargy (excessive sleepiness, reduced activity)**
- Jaundice***
- Redness, swelling and discharge from the eyes, cord and skin

*For preterm babies, especially those less than 34 weeks gestation, poor sucking may be “normal.” For term babies, poor feeding is an obvious danger sign. It should be noted that, irrespective of gestational age, apparent decline in the level of the baby's interest in or ability to suck/feed is a serious danger sign.

**Preterm babies sleep more and are less active than term babies. A notable decline in activity or increased sleepiness from previous days should be regarded as a worrisome danger sign in a preterm baby.

***There are two types of jaundice in newborns: Physiologic jaundice usually occurs after day two of birth and clears within one week. Pathological jaundice is the type that occurs within the first 24 hours of birth and persists beyond two weeks; bilirubin levels rise rapidly and the condition requires urgent attention.

A baby who is losing weight or gaining less than 15 grams/kg per day for at least three consecutive days should be re-evaluated for possible problems and be treated for them. If there is still no improvement, then refer to the hospital so that management can be carried out by a doctor (pediatrician)

SESSION 3.3: REFERRAL OF BABIES WITH DANGER SIGNS

HANDOUT: TYPES OF REFERRALS

Referral from Home

When counseling the mother and family about danger signs, advise them to go to the nearest health facility (primary health care center, General hospital or Tertiary hospital).

Referral from a Primary Health Care Center

Refer all LBW babies with danger signs to the nearest health facility with a higher level of care.

Advise health center staff to refer babies to the district hospital when they cannot manage the danger signs at their facility level. The health providers should stabilize the babies before they refer to the next level (i.e., the babies must be started on treatment if they have any infection and they must be protected from becoming hypothermic). Exclusive breastfeeding should be started before referral if possible.

Referral from Within the Health Institution/Maternity Unit

Refer all babies who develop danger signs to the clinician/pediatrician for higher level of care within the facility, including:

- Newborn/LBW/preterm babies born at the maternity unit
- Babies within the KMC unit
- Babies within the nursery

HANDOUT: TRANSPORTATION

Every LBW and preterm baby or sick newborn referred to the hospital should be transported in the KMC position; transporting in this position can avoid hypothermia of the baby. If KMC is not possible, ensure the baby is kept warm during transportation. The mother should continue to breastfeed if possible while in transit.

First Time and Subsequent Referral

In the KMC unit, inform the doctor on call for:

- All babies with weight gain less than 15 grams/kg per day for at least three consecutive days
- All babies who are losing weight
- All babies with danger signs (e.g., diarrhea, difficulty in breathing, fever or reduced activity and difficulty with feeding or poor suck)

Remember: Any baby who fails to gain weight after the exclusion or treatment of the common causes (oral thrush, rhinitis, severe bacterial infection) should be referred to a higher level of care for further investigation and treatment.

CASE STUDIES

Case 1

A mother in the KMC unit notices that her one-week-old baby girl is having twitches. She had a birth weight of 1500 grams and now weighs 1450 grams. The mother is crying as she reports this to the KMC nurse. She asks if her baby is dying.

- How will you handle this situation?
- What are the possible causes of “twitches”?
- What is your management?

Case 2

While doing evening rounds, the KMC unit nurse finds a mother sleeping with her baby in KMC, but the baby’s face is jaundiced. She notes that the baby was born five days ago with a birth weight of 1400 grams. She awakens the mother to inform her that she needs to examine the infant. Initial assessment reveals that the baby’s face and chest are slightly jaundiced.

- What are the possible causes of jaundice in an infant of this age?
- What is your management?
- How will you counsel the mother?

Case 3

A one-week-old baby girl with a birth weight of 1800 grams, at 32 weeks gestation, has lost 150 grams, and is breastfeeding about 6 times/day. She is not on any supplemental feeds.

- What are the possible problems?
- How would you proceed?

CASE STUDIES: ANSWER KEY

Case 1

1. How will you handle this situation? And what is your management?

- First provide privacy where you can examine the baby and talk with the mother. Reassure her that you will do everything you can and that there are a few possible causes of the twitches, but that you will need to first gather some more information from her and then examine the baby. First ask about and observe for any danger signs needing immediate attention; also see if you observe the twitches in the baby. Then obtain a brief history of the problem to include:
 - History of the “twitches”—when she first noticed it, how long it lasted, what part(s) of the body was twitching and when (what time, while sleeping?, after feeding, etc).
 - Find out about current status of the baby (e.g., if stable, feeding well, history of lethargy or irritability) and if there have been any problems since birth. Is the baby in continuous or intermittent KMC care?
 - Date, place and mode of delivery (Were there any birth injuries? History of difficult delivery?)
 - Check mother’s antenatal clinic record and ask her about any problems during labor or delivery (especially infection). Also ask about Tetanus Toxoid.
 - Take the baby’s vital signs and do full physical exam. If physical exam is normal, the baby is feeding well, is warm and there are no signs of problems: reassure the mother and closely monitor the baby for any signs of problems. Explain that occasional muscle twitches in a newborn (especially preterm) in the absence of any other problems is normal. Review danger signs with the mother and continue previous care of the baby.
 - If there are any abnormal findings consult a higher level of care for this infant or prepare for referral following local referral guidelines.

2. What are the possible causes of “twitches”?

- Infection, sepsis, tetanus, birth injury, normal random muscle twitches as baby sleeps or rests

Case 2

1. What are the possible causes of jaundice in an infant of this age?

- Prematurity
- Physiologic jaundice
- Infection or other illness
- Poor feeding

2. What is your management?

- Review the baby’s records and ask the mother about:
 - The baby’s feeding and activity—the baby should be feeding at least 8 times in 24 hours.

- How often the baby is passing urine and stool. The baby should urinate about 6 times per day.
- Examine the baby in good daylight—jaundice is hard to see in artificial light.
- Look for signs of serious jaundice:
 - Jaundice of the hands or feet
 - Jaundice with any other danger sign
- Ensure that there are no danger signs.
- Check the baby's axillary temperature.
- Check the baby for signs of dehydration (dry mouth, sunken fontanelle, persistent skin fold). A baby who is dehydrated may not be getting enough milk and therefore unable to get rid of the bilirubin.
- Observe the mother breastfeeding to ensure adequate positioning, attachment and suck.
- Continue to observe the baby for increasing jaundice that spreads down the body and to the hands and feet.

3. How will you counsel the mother?

- For the baby that is otherwise well and has no signs of infection or other danger signs:
 - Explain to the mother what jaundice is, why it occurs and that physiologic jaundice can be normal—especially in preterm babies. Reassure her that the yellow color will eventually go away (by about 2 weeks).
 - Reassure the mother that she did not do anything to cause the jaundice.
 - Review with the mother how to keep the baby warm.
 - Keep breastfeeding often and exclusively. Frequent feeds will help the baby get rid of the bilirubin through the stool.
 - Review newborn danger signs and the appropriate response with the mother.

Case 3

1. What pertinent information should be given to Amina's mother at the time of discharge?

- Breastfeeding: it is critical that the baby receives adequate feeds and that she breastfeeds exclusively and on demand. Poor sucking/poor feeding can indicate infection or illness.
- Danger signs: review with the mother newborn danger signs and ensure that she understands how to respond.
- Warmth: it is critical that the baby keeps warm. Review ways to prevent heat loss and ways to keep the baby warm with the mother. In order to ensure continuous KMC, encourage Amina's mother to have family members help her with providing KMC from time to time so she can rest and have time for personal care.
- Follow-up visits: The smaller the baby is at discharge, the earlier and more frequent follow-up visits he will need. Advise the mother of the importance of keeping follow-up appointments so that the baby's progress can be monitored and that any problems can be addressed.

2. What will you do when Amina is brought to you for her first KMC follow-up visit?

- Weigh the baby.
- Obtain history from the mother:
 - Whether or not she is doing continuous KMC at home
 - KMC positioning
 - Duration of skin-to-skin contact
 - Breastfeeding and other feeding options as appropriate
 - Whether there are any danger signs
 - Whether the baby is showing signs of intolerance
 - Ask the mother if there are any other related concerns
- Perform a physical assessment of the baby.
- Encourage the mother and family to continue KMC and advise them to seek immediate care when there are any danger signs.
- Praise the mother for coming and schedule the next visit.

3. During the review process you discover that Amina did not gain weight. Based on these findings, what will be your continuing plan of care for Amina?

- If there are no danger signs and no other abnormality detected, apart from no weight gain, during the physical exam, the following continuing care plan would be followed:
 - Address any breastfeeding problems the mother may have (including checking for appropriate position and attachment of the baby)
 - ask mother to increase frequency of breastfeeding
 - ask mother to increase amount of breastmilk per feeding session (by ensuring baby is showing signs of adequate intake before ending the breastfeeding session)
 - ask mother to bring Amina back for review after week

UNIT 4: KANGAROO MOTHER CARE FOR LOW BIRTH WEIGHT BABIES (PRACTICE)

General objective: At the end of the session, learners will be able to demonstrate competency in the practice of kangaroo mother care.

Specific objectives:

- Position babies in KMC
- Demonstrate how to feed babies during KMC
- Document clinical care during KMC

Time: 5 hours 5 minutes (including lunch and breaks)

List of sessions:

Session 4.1: Admitting an LBW Baby to a KMC Unit

Session 4.2: Positioning for KMC

Session 4.3: Breastfeeding

Session 4.4: Expressing Breast Milk

Session 4.5: Cup Feeding

Session 4.6: Feeding through a NG Tube

Training materials:

Mother and baby or newborn models, breast and breastfeeding models, cups, NG tubes, KMC baby package, Annex 2: KMC Group Discussions

Handouts:

- Checklist for Admitting an LBW Baby to a KMC Unit
- Checklist for KMC Positioning
- Benefits of and Tips for Breastfeeding
- Checklist for Observation of Breastfeeding
- Checklist for Observation of Expressing Breast Milk
- Benefits of Cup Feeding and How To Cup Feed
- Details of Tube Feeding

Teaching methods:

- Classroom demonstration
- Clinical practice using a skills checklist
- Discussion
- Role-play

UNIT 4 OVERVIEW: KMC FOR LOW BIRTH WEIGHT BABIES

SESSIONS	TIME	CONTENT	TEACHING METHOD	MATERIALS NEEDED
Overview	5 min	Overview of the day's sessions	Discussion	Flip chart and markers
4.1: Admitting an LBW Baby to a KMC Unit	30 min	Checklist for admitting an LBW baby to a KMC unit	Discussion Demonstration/ Role-play Return demonstration	Mother and baby KMC baby package Handout for Session 4.1. KMC Group Discussions: Annex 2 (for role-play)
4.2 Positioning for KMC	30 min	Checklist for KMC positioning	Practice positioning of babies in KMC position— Demonstration Return demonstration	Mother and baby or models for demonstration and practice Handout for Session 4.2
	15 min		BREAK	
4.3 Breastfeeding	60 min	Benefits of and tips for breastfeeding Checklist for observation of breastfeeding	Discussion Demonstration Return demonstration	Mother and baby or model for demonstration and practice Handouts for Session 4.3
4.4: Expressing Breast Milk	30 min	Checklist for observation of expressing breast milk	Discussion Demonstration	Lactating mother or model of breast Handout for Session 4.4
	60 min		LUNCH	
4.5: Cup Feeding	30 min	Benefits of cup feeding and how to cup feed	Discussion Demonstration Return demonstration	Baby or model for demonstration and practice Cups Handout for Session 4.5
4.6: Feeding Through a NG Tube	30 min	Details of tube feeding	Discussion Demonstration	Model for demonstration and practice NG tube Handout for Session 4.6
Summary	15 min		Trainer asks one or more participants to summarize followed by clarification from the rest of participants.	

SESSION 4.1: ADMITTING AN LBW TO A KMC UNIT

HANDOUT: CHECKLIST FOR ADMITTING AN LBW BABY TO A KMC UNIT

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

- 1. Unsatisfactory:** Step or task not performed correctly, is omitted or out of sequence (if sequence necessary).
- 2. Satisfactory:** Step or task performed correctly in proper sequence (if sequence necessary).

ADMISSION OF LBW TO KMC UNIT	CASES OBSERVED				
	1	2	3	4	5
1. Explain what you are going to do and encourage mother to ask questions.					
2. Dress the baby in nappy, hat and socks.					
3. Review records (from labour ward or referral notes).					
4. Perform the quick assessment of the baby's condition including color and vital signs: <ul style="list-style-type: none"> • Temperature (this should be axillary, not rectal) • Respiratory rate • Heart rate 					
5. Weigh the baby.					
6. Perform physical examination of the baby.					
7. Communicate findings to the mother regarding the physical examination.					
8. Counsel the mother about KMC:* <ul style="list-style-type: none"> • KMC initiation • Maintenance of KMC • Feeding • KMC positioning • Advantages of KMC • Danger signs • Family support 					
9. Document the following: <ul style="list-style-type: none"> • Enter baby's information in the LBW register and baby's file • Chart vital signs 					

* **NOTE:** Refer to handout on KMC discussions for information on initiation and maintenance of KMC (see Annex 2)

HANDOUT: CHECKLIST FOR KMC POSITIONING

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

1. **Unsatisfactory:** Step or task not performed correctly, is omitted or out of sequence (if sequence necessary).
2. **Satisfactory:** Step or task performed correctly in proper sequence (if sequence necessary).

KEY KMC POSITIONING STEPS	CASES OBSERVED				
	1	2	3	4	5
1. Greet the mother and make her comfortable.					
2. Explain what you are going to do and encourage mother to ask questions.					
3. Dress the baby in nappy, hat and socks.					
4. Instruct mother to put on a front-opened top.					
5. Place the baby upright on skin to skin between the mother's breasts in a frog-like position.					
6. Secure the baby to the mother's chest: <ul style="list-style-type: none"> • Maintain support of the baby with the mother's hand. • Cover the baby with a cloth. • The top of the cloth should be under the baby's ear. • The bottom of the cloth is tucked under baby's buttocks. • Make sure the tight part of the cloth is over the baby's back (chest). • Baby's abdomen should not be constricted. • Baby should be able to breathe. • Tie the cloth securely at the mother's back 					
7. Cover the baby with a blanket or shawl and let the mother tuck in at the front or side (under the arms).					
8. Ensure the mother is able to perform the same process to position the baby.					

HANDOUT: BENEFITS OF AND TIPS FOR BREASTFEEDING

Mothers must be shown how to breastfeed their infants. They should be instructed on the importance of:

- Warmth
- Frequent breastfeeding
- Good nutrition
- Good hygiene, particularly hand washing
- Maintenance of upright position

It is possible to feed almost all LBW babies on their mothers' milk; a mother's milk is especially suited for her own baby.

Benefits of early feeding of LBW babies on breast milk

- Protects against illnesses and enhances the baby's immune system (antibodies)
- Results in superior rates of weight gain
- Reduces incidence of hypoglycemia
- Results in less dehydration
- Reduces incidence of diarrhea and vomiting
- Gastric emptying is faster with breast milk



Mother breastfeeding her baby the correct way.

TIPS TO HELP A MOTHER BREASTFEED HER PRETERM BABY

1. Express a few drops of milk onto the nipple to help the baby start nursing.
2. Give the baby short rests during a breastfeed.
 - Feeding is hard work for the preterm baby.
 - Preterm babies have immature nervous systems and can be overwhelmed by noise, lights, and activity.
3. If the baby coughs, gags or spits up when starting to breastfeed, the milk may be letting down too fast for the preterm baby. Teach the mother to:
 - Take the baby off the breast.
 - Hold the baby against her chest while he/she regains her breathing.
 - Put the baby back to the breast after the letdown of milk has passed.
 - If the baby does not have the energy or a strong enough suck reflex:
 - Teach the mother to express breast milk.
 - Feed the baby the EBM by cup.

HANDOUT: CHECKLIST FOR OBSERVATION OF BREASTFEEDING

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

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

1. **Needs improvement:** Step or task not performed correctly, is omitted or out of sequence (if sequence necessary).
2. **Competently performed:** Step or task performed correctly in proper sequence (if sequence necessary).

OBSERVE BREASTFEEDING	CASES OBSERVED				
	1	2	3	4	5
1. Greet the mother and make her comfortable.					
2. Explain what you are going to do and encourage mother to ask questions.					
3. Ask the mother to put the baby to breast and observe the baby feeding.					
4. Check for good positioning at breast: <ul style="list-style-type: none"> Baby's ear, shoulder and hip should be straight. Baby's face should be facing the breast with nose opposite nipple. Baby's body should be held close to mother. Baby's whole body should be supported. 					
5. Check for good attachment at breast: <ul style="list-style-type: none"> Chin touching breast Mouth wide open Lower lip turned outward More areola visible above than below the mouth 					
6. Check for effective suckling: <ul style="list-style-type: none"> Slow, deep sucks Occasional short pauses Mother reports that breast feels softer after the feed 					
7. Document findings.					

Adapted from the ENC Reference Manual

SESSION 4.4: EXPRESSING BREAST MILK

All breastfeeding mothers should learn how to hand express breast milk (see checklist below). Mothers often develop their own style of hand expression once they have learned the basic principles.

HANDOUT: CHECKLIST FOR OBSERVATION OF EXPRESSING BREAST MILK

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

1. **Needs improvement:** Step or task not performed correctly, is omitted or out of sequence (if sequence necessary)
2. **Competently performed:** Step or task performed correctly in proper sequence (if sequence necessary)

EXPRESSING BREAST MILK CASES OBSERVED					
	1	2	3	4	5
1. Greet the mother and make her comfortable.					
2. Greet the mother and make her comfortable.					
3. Explain what you are going to do and encourage mother to ask questions.					
4. Listen to what the mother has to say.					
5. Wash hands; also let the mother wash hands.					
6. Obtain a clean cup or bowl.					
7. Demonstrate and then ask mother to re-demonstrate the following: <ul style="list-style-type: none">• Put clean warm wet cloths on breasts for 5 minutes if engorged.• Massage the breast from the outside towards the nipple to help the milk come down.• Hold the breast with thumb on top and other fingers below pointing away from the areola.• Have mother lean slightly forward so the milk will go into the container.• Squeeze thumb and other fingers together, move them towards the areola so the milk comes out.• Press and release and try using the same rhythm as the baby sucking.• Move hands around the breast so milk is expressed from all areas of the breast.• Express one breast until breast softens (usually at least 3–5 minutes).• Express the other side and then repeat both sides.					
8. Document findings.					

Steps for expressing breast milk



1. Massaging the breast



2. Expressing breast milk into a cup

HANDOUT: BENEFITS OF CUP FEEDING AND HOW TO CUP FEED

Cup feeding is using a cup to feed a baby with breast milk or other milk. It is used when it is not possible for the baby to suck at the mother's breast.

CHART: BENEFITS OF CUP FEEDING VS. BOTTLE-FEEDING		
REASON	TYPE OF FEED	
	CUP	BOTTLE
1. Easier for babies born too early	✓	x
2. Prepares a baby to breastfeed later (the mouth and jaw action of cup feeding are more like what is used to breastfeed): <ul style="list-style-type: none"> Exercises the back of the tongue, an important skill for breastfeeding Encourages a baby to stretch the tongue forward over the gums, helps with breastfeeding attachment 	✓	x
	✓	x
	✓	x
3. Does not take a lot of baby's energy	✓	x
4. Baby can control the feed: how quick, how much, when to rest	✓	x
5. Breathing is easier, baby takes in more oxygen	✓	x
6. Does not require special equipment	✓	x
7. Preparation and clean up are easy	✓	x
8. Does not cause dental problems	✓	x
9. Makes switching to cup feeding easier after weaning	✓	x

HOW TO CUP FEED

1. Hold awake baby sitting upright or semi-upright in your lap:
 - Support the baby's shoulders and neck with your hand, so you have control over the baby's head, OR
 - Hold baby in a "cuddle" against the chest with the mother's left arm encircling the baby. The left hand can hold a saucer under the baby's chin to catch milk that spills¹
2. Hold a small cup* of milk, half-filled, to the baby's lips:
 - Tip the cup so the milk just reaches the lips.
 - The cup should rest lightly on the baby's lower lip, and the edges of the cup should touch the outer part of the baby's upper lip.
3. The baby will become alert and open it's mouth and eyes:
 - A LBW baby will start to take up the milk with the tongue.
 - A full-term or older baby will suck or sip the milk, spilling some of it.
4. **Do not pour the milk into the baby's mouth.** Keep the cup at the baby's lips, letting the baby take the milk.
5. When a baby has had enough, the baby will close its mouth and refuse to take more:
 - A baby who has not taken enough may take more next time, or
 - You may increase the frequency of feedings.
6. Measure the baby's intake over 24 hours, rather than at each feeding.
7. Fathers can cup feed too!

*cups should be quite small—very often medicine cups or a plastic bottle cap are used. Do not use adult sized cups.

Note: Feeding with a cup and spoon is also possible and is the standard in some settings. There are a few considerations when choosing cup and spoon: 1) the feeding is slower than with a cup alone; 2) more milk may be spilt; 3) the spoon must be small enough to allow the baby to sip milk since larger spoons may damage the baby's mouth; and 4) it's easier for the baby to breath in milk (especially during forced feedings).



Mother cup feeding her baby

HANDOUT: DETAILS OF TUBE FEEDING

NG tube feeding means introducing liquid food into the stomach by placing a tube down the infant's throat and esophagus. Tube feeding is used when the baby cannot yet swallow, or coordinate swallowing and breathing, tires too easily and does not get enough milk.

Criteria for NG tube feeding:

- Infants who are too immature to suckle or cup feed, e.g., those less than 32 weeks gestational age
- Extremely small infants of less than 1000 grams
- Infants who suck and swallow poorly

Method

A NG feeding tube is passed through the nose into the stomach. The tube is then secured to the infant's nose and head; otherwise, manipulation of the infant or tube could dislodge the tube into the esophagus or pharynx where any infusion of feed could lead to aspiration.

Feeding Schedule

Frequency of feeding will depend on the quantity of milk the baby tolerates per feed and the required daily amount. Ideally feed the baby with 5 ml per feed every 2 hours daily up to day 5. Thereafter, gradually increase by 1-2 ml daily up to day 13. When the infant reaches 1500 grams change the feed to 15 ml every 3 hours.

As soon as the baby shows signs of readiness for breastfeeding or cup feeding, feed at first once or twice a day, while the baby is still mostly fed through the tube. Oral feeding is slowly introduced when the infant is mature enough to use a nipple or breast. Feeding by nipple or breast should be encouraged because it encourages growth and maturity of gastrointestinal tract and provides comfort for hunger and oral gratification.

UNIT 5: HYPOTHERMIA IN THE NEWBORN

General objective: At the end of the session learners will be able to describe the appropriate management of hypothermia.

Specific objectives:

- Define hypothermia
- Explain ways through which babies lose heat
- Discuss the prevention of hypothermia
- Discuss the management of hypothermia

Time: 3 hours 50 minutes (including tea break)

List of sessions:

Session 5.1: Description of Hypothermia

Session 5.2: Prevention and Treatment of Hypothermia

Training materials:

Flip chart and markers, newborn model, KMC linen, KMC baby package

Handouts:

- Description and Signs of Hypothermia
- Causes of Heat Loss in the Newborn and Corrective Action
- Prevention of Heat Loss
- Treatment and Steps for Re-warming

Teaching methods:

- Demonstration
- Clinical practice
- Discussions

UNIT 5 OVERVIEW: HYPOTHERMIA IN THE NEWBORN

SESSIONS	TIME	CONTENT	TEACHING METHOD	MATERIALS NEEDED
Overview	5 min	Overview of the day's sessions	Discussion	Flip chart and markers
5.1: Description of Hypothermia	1 hour, 15 min	Description and signs of hypothermia Ways through which newborn babies lose heat Causes of heat loss in the newborn and corrective action	Ask learners to brainstorm definition of hypothermia Discuss and provide correct definition Lecture and discussion on ways through which newborn babies lose heat Brainstorm on causes of heat loss and corrective action. Discuss and correct answers	Flip chart and markers Handouts for Session 5.1
	15 min		BREAK	
5.2: Prevention and Treatment of Hypothermia	90 min	Prevention of heat loss Treatment and steps for re-warming	Explain the prevention of hypothermia Discuss management and treatment of hypothermia and describe the steps for re-warming the baby. Demonstration on prevention of hypothermia Return demonstration	Newborn baby model KMC linen KMC baby package Flip chart and markers Handouts for Session 5.2
Case studies	30 min		Discussion	Case study at the end of Unit 5
Summary	15 min		Trainer asks one or more participants to summarize followed by clarification from the rest of the participant Discussion Question and answer	

HANDOUT: DESCRIPTION AND SIGNS OF HYPOTHERMIA

Hypothermia is often caused more by a lack of knowledge rather than a lack of equipment. It is important that all health care providers involved in the process of birth and newborn care be trained on the principles of thermal protection for the newborn. On-the-job training and supervised practice should be provided to ensure that the warm chain becomes part of the routine care of the newborn. Family and community should be educated about the risks of hypothermia.

Hypothermia occurs when the newborn's axillary temperature drops below 36.5 °C (97.7 °F). Most cooling of the newborn occurs during the first minutes after birth. After delivery an infant's skin temperature may fall quickly, if precautions are not taken, resulting in a loss as high as 2–3 °C

(3.5–5 °F) of core body temperature. This can happen within minutes. The smaller the newborn, the greater the risk of heat loss.¹

Hypothermia may also be caused by serious systemic infection, so all babies with hypothermia should be assessed for infection. Hypothermic newborns—especially if they are sick, preterm or SGA—are more at risk of developing health problems and of dying.

Newborns are not able to maintain their body heat as well as adults. They get cold or hot much more quickly and can only tolerate a small range of environmental temperatures. This is because they have:

- Large body surface area relative to the body weight
- Small amount of insulating fat under the skin
- Immature brain center that controls their temperature
- Thin layer of skin (which allows more evaporation and hypothermia), especially in the first week of life

Signs of hypothermia

The signs of **moderate** hypothermia—temperature 32 to 36.4 °C (89.6 to 97.5 °F)—are:

- Breathing difficult
- Heart rate less than 100 beats per minute
- Poor or no feeding
- Lethargy
- Cold to touch

¹ Source: WHO 1997: Thermal Protection of the Newborn. WHO/RHT/MSM/97.2 Geneva

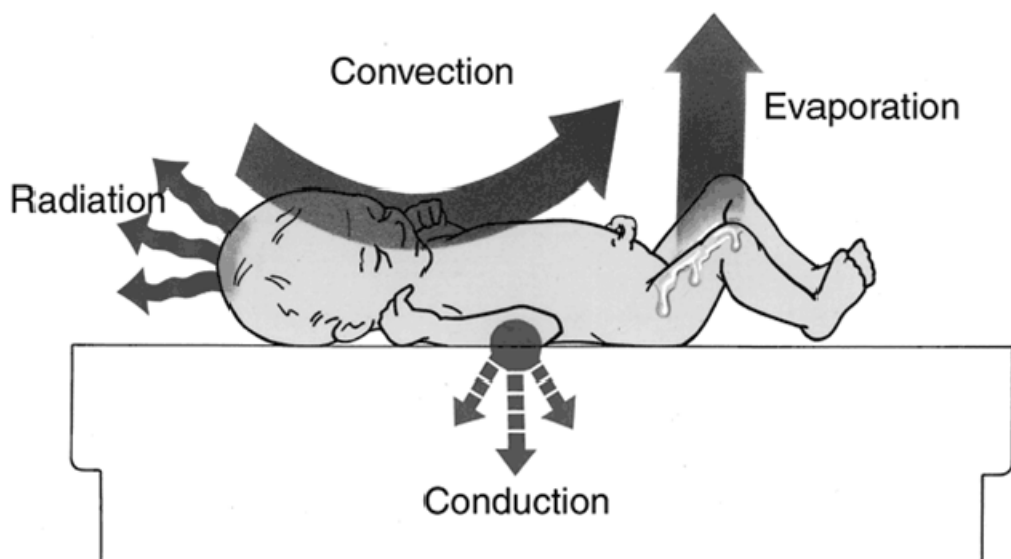
The signs of **severe** hypothermia—temperature less than 32 °C (89.6 °F)—are:

- Breathing difficult
- Heart rate less than 100 beats per minute
- Poor or no feeding
- Lethargy
- Hardened skin
- Slow, shallow breathing
- Cold to touch

How babies lose heat

There are several ways a newborn can lose body heat as illustrated below. Babies that are underdressed for their size, age or environment are also more likely to lose heat. In addition, a newborn can also lose up to 25 percent of body heat through the head, so it is important to keep the head covered as often as possible, even when indoors and especially in colder climates.

Four ways a newborn may lose heat to the environment



Source: WHO 1997: *Thermal Protection of the Newborn*.
WHO/RHT/MSM/97.2 Geneva

The chart below explains the four main ways heat is lost and the actions to stop the heat loss.

HANDOUT: CAUSES OF HEAT LOSS IN THE NEWBORN AND CORRECTIVE ACTION

WAYS A BABY LOSES HEAT		ACTION TO STOP THE HEAT LOSS
1.	When amniotic fluid or water evaporates (dries into the air) from the skin (EVAPORATION)	<ul style="list-style-type: none"> • Dry the baby as soon as it is born or bathed. Be sure to dry the head well. • Remove the wet cloth used for drying.
2.	When the baby is naked and put on a cool surface (such as a table, weighing scales, or cold bed) (CONDUCTION)	<ul style="list-style-type: none"> • Make sure a warm blanket covers a scale, table or bed. • Put the baby skin-to-skin with the mother. • Cover the baby's head with a cap.
3.	When the baby is in cool air or there is a draft from open doors, windows, or a fan (CONVECTION)	<ul style="list-style-type: none"> • Keep the baby covered. • Put a hat on the baby so the head will not be in the cool air. • Prevent drafts. • Make sure the room is warm.
4.	When the baby is near, but not in contact with, cool objects (walls, tables, or cabinets) (RADIATION)	<ul style="list-style-type: none"> • Keep baby in contact with the mother or another person.

Source: WHO 1977: *Thermal Protection of the newborn*. WHO/RHT/MSM/97.2 Geneva

HANDOUT: PREVENTION OF HEAT LOSS

Heat loss in the newborn can be prevented by a set of interlinked actions carried out at birth and during subsequent hours and days. This process, called the warm chain, minimizes the likelihood of hypothermia, which is the biggest killer in preterm and LBW babies. These interlinked actions are:

- Warmth during delivery
 - The temperature of the delivery room should be at least 25 °C (77 °F).
 - There should be no drafts.
 - Items needed to keep the newborn warm should be prepared ahead of time.
- Immediate drying and skin-to-skin-contact
 - Immediately dry the newborn after birth with a warm towel while he/she is on the mother's chest or abdomen.
 - Cover the baby and mother with another cloth or blanket and put a hat on the baby's head.
 - Maintain continuous skin-to-skin contact between the mother and baby.
- Feeding
 - Initiate breastfeeding within one hour of birth.
 - Continue breastfeeding, cup feeding or NG tube feeding as appropriate for the baby when hypothermic.
 - Follow recommendations for breastfeeding when the mother is HIV positive (page 43__).
- Delay bathing
 - Bathing should be delayed for at least 24 hours.
 - When sponge-bathing the newborn, it should be done quickly in a warm room using warm water.
 - The baby should then be dried quickly and thoroughly, dressed in a hat, nappies, and socks and placed in skin-to-skin contact.
- Warmth during transportation
 - If the newborn needs to be transported to a hospital or within a hospital, i.e., labor ward to nursery, there is a real risk that it will develop hypothermia during transportation.

- KMC is a simple and safe way to transport a newborn baby. However, it is very important the mother understands the proper positioning during transport—especially if the baby is preterm—to ensure adequate breathing. If the mother is new to KMC, she may need to be accompanied by the provider to help monitor the baby and to ensure warmth and safety.
- Warmth during procedures
 - Special attention should be given to keeping babies warm during procedures.
 - Avoid unnecessary exposure of the baby during such procedures.
 - Expose only those body areas needed for assessment of breathing and for certain procedures such as physical exam, phlebotomy or injections.
 - Use additional source of heat (radiant heat) if needed.

HANDOUT: TREATMENT AND STEPS FOR RE-WARMING

Treat moderate hypothermia by re-warming. Steps for re-warming include:

- Ensure that the room is warm, at least 25 degrees Celsius and free from drafts.
- Remove cold or wet clothing and dress the baby in a hat, nappy, and socks.
- Place the baby skin-to-skin with the mother. Cover both mother and baby with mother's clothes and light warm blankets.
- Alternatively use an incubator or radiant heat source in circumstances where KMC is not possible.
- Encourage breastfeeding. Energy is required to make body heat. If the baby is too weak to suck at the breast, give EBM by cup.

Monitor the temperature hourly for three hours. These should be axillary (under the arm) and not rectal temperatures.

- If the baby's temperature is increasing at least 0.5 °C per hour over 3 hours or has returned to normal, rewarming is successful. Continue to monitor the temperature and check it again in two hours.
- If the temperature remains normal, monitor the temperature every 3 hours for the next 12 hours.
- If the temperature remains within normal range, you may discontinue measuring the temperature, review the danger signs with the mother and review how to keep the baby warm.
- If the temperature does not return to normal or is rising slowly (at a rate of less than 0.5 °C per hour), look for other danger signs—especially signs of sepsis (vomiting, poor sucking/feeding, lethargy, breathing difficulty).

If the baby does not respond to the actions above, refer in KMC position to a higher-level health facility.

For severe hypothermia put the baby in skin-to-skin contact with the mother and refer immediately.

CASE STUDY

Case 1

A woman brings her one of her twin granddaughters to the KMC unit, concerned that the baby is feeling cold. You notice that although the baby is skin-to-skin, the head is partially uncovered. The woman says that the other twin is with the mother at home. Both babies are being breastfed, but the grandmother says the mother is exhausted, so she helps by keeping one twin in KMC for most of the day. “I only take her away from my skin when I’m cooking or washing clothes,” says the grandmother. The twins were born one week ago at 35 weeks gestation and were healthy at birth.

- What are the potential problems with twins regarding KMC?
- What additional information will you need to assess the baby’s condition?
- How would you counsel this woman?

CASE STUDY: ANSWER KEY

Case 1

1. What are the potential problems with twins regarding KMC?

- Establishing lactation may take longer since twins are usually preterm.
- Often one twin is smaller than the other and care must be taken to ensure that the weaker twin gets adequate breast milk.
- Caring for two babies in KMC position can be very tiring and may discourage the mother from implementing KMC adequately.

2. What additional information will you need to assess the baby's condition?

- Birth weight of each baby
- Current weight of each baby
- Ensure that there are no danger signs for this baby
- Whether or not breastfeeding has been established
 - Is either baby being fed by EBM, tube, or cup?
 - How often does each baby feed?
 - Are babies exclusively breastfed?
 - How many stools per day?

3. How would you counsel this woman?

- The mother should feed one baby at a time until breastfeeding is established.
- Reassure the grandmother that once breastfeeding is established, the mother will have enough breast milk for both babies.
- The mother should alternate the breast that each baby is offered on a daily basis.
- Each baby should feed every 2-3 hours (at least 8 times per day).
 - If there is a much smaller or weaker baby, that baby may need additional milk. The mother can express breast milk and feed this baby by cup after breastfeeding.
- Review the fact that babies cannot keep warm like adults can—this is especially the case with preterm or LBW babies. Cold babies are more prone to problems. Some ways to prevent the baby getting cold are:
 - Keep the head completely covered at all times. This is because babies can lose up to 25% of their heat through the head. This can be done with a hat or with a blanket.
 - Place socks on the baby's feet.
 - Ensure that the grandmother understands KMC positioning and placement so that the baby is secured and warm.

- Advise grandmother to alternate twins with the mother so that each twin is in KMC position with the mother at least part of the day—especially the weaker twin if applicable.
- Review danger signs and make appointment for follow-up visit for both twins as soon as possible.

UNIT 6: COUNSELING ON KANGAROO MOTHER CARE

General objective: At the end of the session, learners will be able to counsel mothers on kangaroo mother care.

Specific objectives:

- Define counseling
- Describe the principles of interpersonal communication
- Explain how to counsel on KMC initiation
- Explain how to counsel on KMC maintenance within the KMC unit
- Explain counseling on KMC maintenance after discharge from the KMC unit

Time: 2 hours 50 minutes (including break)

List of sessions:

Session 6.1: Definition and Principles of Counseling

Session 6.2: KMC Group Discussions

Training materials:

Flip charts, markers, Annex 2: KMC group discussions

Handouts:

- Definition of Counseling
- Principles of Counseling and Interpersonal Communication
- The Aim and Content of Group Discussions

Teaching methods:

- Discussion
- Demonstration
- Role-plays

UNIT 6 OVERVIEW: COUNSELING ON KANGAROO MOTHER CARE

SESSIONS	TIME	CONTENT	TEACHING METHOD	MATERIALS NEEDED
Overview	5 min	Overview of the day's sessions	Discussion	Transparencies/ flip chart and markers
6.1: Definition and Principles of Counseling	45 min	Definition of counseling Principles of counseling and interpersonal communication	Ask learners to brainstorm on definition of counseling. Discuss and provide correct definition. Brainstorm and discuss principles of interpersonal communication. Role-play	Flip chart and markers Handouts for Session 6.1
6.2: KMC Group Discussions	1.5 hours	The aim and content of group discussions: <ul style="list-style-type: none"> • when the mother is admitted to the KMC unit • during mother's stay at the KMC unit • at the time of discharge from the KMC unit 	Ask the learners to brainstorm on the aim and content of KMC group discussions. Discuss and provide correct information. Role-play	Flip chart and markers Handout for Session 6.2 Annex 2: KMC group discussions
	15 min		BREAK	
Summary	15 min		Trainer asks one or more participants to summarize followed by clarification from the rest of participants. Question and answer	

SESSION 6.1: DEFINITION AND PRINCIPLES OF COUNSELING

HANDOUT: DEFINITION OF COUNSELING

Counseling is the process of helping an individual or a group of individuals to their own decision by providing appropriate, accurate and **unbiased** information and emotional support.

Counseling is an ongoing process that is initiated at the time of admission, continues in the ward and upon discharge, and continues at home and in the community. Counseling involves giving health advice or guidance and/or helping mothers to solve health-related problems. It can also include helping mothers make decisions about themselves or their babies' health. In this context, it is giving advice and guidance to mothers or guardians who are practicing or are about to start practicing KMC.

Counseling also involves not only dialogue but also demonstration of skills needed to practice an identified behavior such as KMC. Dialogue will include encouraging the mother and her relatives to ask any questions they may have and providing answers to all the questions accurately and honestly. Skills such as positioning of the baby, expressing breast milk, cord care, breastfeeding, and feeding by cup or NG tube should not only be explained to the mother and guardian but demonstrated as well.

Who Should Provide KMC Counseling?

Depending on the facility, there may be varied levels of caregivers for both babies and mothers. And it is not always possible for KMC mothers to have continuity of care with the same providers throughout their stay. It is critical, however, that mothers and families receive appropriate and technically sound KMC counseling and advice for the care of their LBW babies during their facility stay or when returning for follow-up visits.

Those that provide KMC counseling should therefore be health workers who have training and experience in caring for LBW babies and mothers who are practicing KMC. Ideally, because counseling is an ongoing process, all staff involved in the care of mothers and newborns should have some level of training on KMC. Staff includes midwives, nurses, physicians, and ancillary staff such as maids and other facility or community providers. This training should be standardized so that staff in all facilities receive the same information and opportunity for practicing the skills appropriate for their roles. Training can take the form of workshops, seminars or on-the-job training arrangements.

Peer counseling is also very effective and can be done by mothers experienced in KMC. This can take place in a group setting within the facility or community. Individual peers or peer groups can help encourage and support other mothers and families in many instances, such as those who are new at KMC or who are adjusting to KMC at home.

HANDOUT: PRINCIPLES OF COUNSELING AND INTERPERSONAL COMMUNICATION

Interpersonal communication is the face-to-face verbal and nonverbal exchange of information or feelings between two people.

Counseling is a person-to-person interaction in which the counselor provides adequate information to enable the client to make an informed choice about the course of action that is best for her or him.

Basic Counseling Principles:

- **Receptive atmosphere:** the counselor should greet the client politely and make him/her feel comfortable. She/he should show interest and pay attention to the client's verbal and nonverbal communication.
- **Informed decision:** the counselor should provide clear and adequate information for the client to understand. The counselor should be unbiased and explain all the benefits, risks and any side effects, advantages and disadvantages.
- **Confidentiality:** the counselor protects the client's privacy by keeping information confidential unless the client gives permission.
- **Nonjudgmental:** the client's attitude and behavior should be assessed objectively without preconceived ideas.
- **Freedom of expression:** the client must be allowed to speak her mind even if it means not agreeing with the counselor. The client should be encouraged to ask questions and express her concerns.
- **Communication without emotional involvement:** the counselor should be responsive and empathetic to the client's feelings without getting emotionally involved.
- **Privacy:** the place for counseling must be free from noise and disturbances from other people. No one else should be able to see or hear what is being said or done between the client and provider.
- **Recognize limitations:** the counselor should be honest when he/she does not have the information or answer to a client's question. The counselor must recognize his/her limitations and refer when necessary.

HANDOUT: THE AIM AND CONTENT OF GROUP DISCUSSIONS

The aim of the group discussions is to provide information to mothers and guardians/family members on how to care for a preterm/small newborn while in the KMC unit and at home after discharge. Conduct group discussions on the following topics during the times indicated.

When the Mother is Admitted to the KMC Unit:

- Meaning of KMC
- Basic needs of LBW baby
- Advantages/disadvantages of KMC
- How to practice KMC
- Care of the baby

During the Mother's Stay at the KMC Unit:

- Feeding
- Support to the mother
- Potential problems
- Discharge criteria
- General personal hygiene
- Activities while in the KMC Ward
- Information about family planning

At the Time of Discharge from the KMC Unit:

- Experience in KMC unit and implications of KMC at home
- General care for the baby at home
- Support for the mother for continued KMC at home
- Dealing with community and family opposition to KMC
- Follow-up after discharge
- Discontinuation of KMC
- Sleeping with male partners

For more information on KMC group discussions see Annex 2.

UNIT 7: KMC UNIT DISCHARGE, FOLLOW-UP, READMISSION, AND DISCONTINUATION OF KMC

General objective: At the end of the session, learners will be able to describe criteria for discharge, readmission to the KMC unit, and for discontinuing KMC.

Specific objectives:

- Explain the criteria for discharge from KMC unit
- Explain guidelines for follow-up after discharge
- State the criteria for readmission to the KMC unit
- Explain reasons for discontinuation of KMC

Time: 2 hours 10 minutes (including tea break)

List of sessions:

Session 7.1: Criteria for Discharge from the KMC Unit

Session 7.2: Guidelines for Following Up after Discharge from the KMC Unit

Session 7.3: Guidelines for Readmission and for Discontinuing KMC

Training materials:

Flip chart and markers

Handouts:

- Discharge Criteria
- Timing and Content of Follow-Up Visits
- Form for KMC Follow-Up Visits
- Guidelines for Readmission
- Guidelines for Discontinuing KMC

Teaching methods:

- Interactive presentation
- Discussion
- Brainstorming

UNIT 7 OVERVIEW: KMC UNIT DISCHARGE, FOLLOW-UP, READMISSION, AND DISCONTINUATION OF KMC

SESSIONS	TIME	CONTENT	TEACHING METHOD	MATERIALS NEEDED
Overview	5 min	Overview of the day's sessions	Discussion	Flip chart and markers
7.1: Criteria for Discharge from the KMC Unit	15 min	Discharge criteria	Ask learners to brainstorm on discharge criteria. Discuss and provide correct information.	Flip chart and markers Handout for Session 7.1
7.2: Guidelines for Following Up After Discharge from the KMC Unit	25 min	Timing and content of follow-up visits Form for KMC follow-up visits	Discuss timing and content of follow-up visits. Answer any questions. Review for form KMC follow-up visits.	Flip chart and markers Handouts for Session 7.2
7.3: Guidelines for Readmission and Discontinuing KMC	25 min	Guidelines for readmission	Discuss and provide correct information on criteria for readmission and reasons for discontinuing KMC.	Flip chart and markers. Handout for Session 7.3
Case Studies	30 min		Discussion	Case studies at end of Unit 7
Summary	15 min		Trainer asks one or more participants to summarize followed by clarification from other participants. Question and answer	

HANDOUT: DISCHARGE CRITERIA

Consider early discharge of the baby from facility if:

- The kangaroo position is well tolerated by the baby and mother.
- The condition of the baby is stable:
 - Vital signs are normal:
 - Respirations are normal without any difficulty breathing.
 - Temperature is within the normal range in the KMC position for at least three consecutive days (axillary temperature of 36.5-37.5 °C (97.7-99.5 °F)).
 - There are no signs of infection, illness, or other danger signs.
- There is appropriate weight gain (15 grams/kg per day) for three consecutive days (after birth weight regained).
- The baby feeds well (with coordinated sucking and swallowing) and is exclusively or nearly exclusively breastfeeding.

These criteria are usually met for babies weighing more than 1500 grams. Follow local protocols for babies below that weight or wait until the baby reaches at least 1500 grams and meets the other criteria above before considering discharge.

In addition, criteria for the mother include:

- The mother is capable of breastfeeding and expressing breast milk.
- The mother accepts the method, is willing to continue with KMC at home and has support from family, and is able/willing to come for follow-up visits.

SESSION 7.2: GUIDELINES FOR FOLLOWING UP AFTER DISCHARGE

HANDOUT: TIMING AND CONTENT OF FOLLOW-UP VISITS

After discharge from the KMC Unit, it is important to ensure follow-up for the mother and the baby, either at your facility or with a skilled provider near the baby's home. The smaller the baby is at discharge, the earlier and more frequent follow-up visits he will need.

While situations and local protocols may vary, WHO advises that the following guidelines will be valid in *most* circumstances:

- Two follow-up visits per week until 37 weeks of post-menstrual age
- One follow-up visit per week after 37 weeks

However, in very LBW babies, daily follow-up may be needed. If this is not possible, the discharge may need to be delayed until fewer visits are required. Follow the local KMC protocol. The content of the visit may vary according to the mother's and baby's needs; at a minimum, however, check the following at each follow-up visit:

KMC—Check the duration of skin-to-skin contact, the position, clothing, body temperature, support for the mother and the baby. Is the baby showing signs of intolerance? 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.

Breastfeeding—is it exclusive? If yes, praise the mother and encourage her to continue. If not, advise her on how to increase breastfeeding and decrease supplements or other fluids. Ask about and look for any problem and provide support. If the baby is taking formula supplements or other foods, check their safety and adequacy; make sure that the family has the necessary supply.

Growth—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, ask and look for possible problems, causes, and solutions; these are generally related to feeding or illness. To check feeding amounts for adequate daily weight gain, please refer to chart on page 42.

Illness—Ask and look for any signs of illness, reported by the mother or not. Manage any illness according to your local protocols and guidelines. In case of non-exclusive breastfeeding, ask and look particularly for signs of nutritional or digestive problems.

Drugs—If the infant is prescribed any drugs, give a sufficient supply to last until the next follow-up visit.

Immunization—Check that the local immunization schedule is being followed.

Mother's concerns—Ask the mother about any other problem, including personal, household, and social problems. Try to help her find the best solution for all of them.

Next follow-up visit—Always schedule or confirm the next visit. Do not miss the opportunity, if time allows, to check and advise on hygiene, and to reinforce the mother's awareness of danger signs that need prompt care.

Special follow-up visits—If these are required for other medical or somatic problems, encourage the mother to attend them and help her if needed.

Routine child care—Encourage the mother to attend routine child care once the baby reaches 2500 grams or 40 weeks of post-menstrual age.

From Kangaroo mother care: a practical guide. WHO 2004

Note: A baby may refuse KMC by becoming restless and crawling out when put in the KMC position. This baby may be ready to discontinue KMC if she/he is stable and weight and other criteria are met.

During a follow-up visit:

- Weigh the baby

- Obtain a history from the mother:
 - If she is doing KMC at home
 - KMC positioning
 - Duration of skin-to-skin contact
 - Breastfeeding and other feeding options as appropriate
 - Whether there are any danger signs
 - Whether the baby is showing signs of intolerance
 - Ask the mother if there are any other related concerns
- Perform a physical assessment of the baby
 - If available, schedule a follow-up eye exam for preterm infants as they are at risk for developing eye problems.
- Encourage mother and family to continue KMC and advise them to seek immediate care when there are any danger signs.
- Praise the mother for coming and schedule the next visit.

HANDOUT: FORM FOR KMC FOLLOW-UP VISITS

Kangaroo mother care: follow up sheet

Name of Mother: _____

Address: _____

Date of Birth: / /

Birth weight: ____gms. Sex: __

Date of admission / /

Admission weight: ____gms

Date KMC started: _____

Weight at start of KMC: _____gms

Date of discharge / /

Weight on discharge: ____gms

Diagnosis: _____

Treatment given: _____

Feeding after discharge: _____

Any drugs given at home (specify): _____

Signed

Name of Health Care Provider

Note: A follow-up sheet (such as the sample given below) should be used for every follow-up visit and records maintained by the provider and the mother.

Date of review: / /

Weight: ____gms

Weight gain: ____gms

How is the baby feeding? _____

Any complaints or problems experienced: _____

Findings on examination: _____

Treatment and follow-up plan: _____

Date of next review: / /

Date of review: / /

Weight: ____gms

Weight gain: ____gms

How is the baby feeding? _____

Any complaints or problems experienced: _____

Findings on examination: _____

Treatment and follow-up plan: _____

Date of next review: ____/____/____

Date of review: ____/____/____

Weight: _____gms

Weight gain: _____gms

How is the baby feeding? _____

Any complaints or problems experienced: _____

Findings on examination: _____

Treatment and follow-up plan: _____

Date of next review: ____/____/____

SESSION 7.3: GUIDELINES FOR READMISSION AND FOR DISCONTINUING KMC

HANDOUT: GUIDELINES FOR READMISSION

Readmit the baby to the hospital if:

- The baby is losing weight
- The baby gained less than 15 grams/kg per day over a period of two weeks
- The baby is sick
- The mother is not doing KMC for a baby who is less 2000 grams

HANDOUT: GUIDELINES FOR DISCONTINUING

Discontinue KMC if:

- The baby reaches weight 2500 grams
- The mother has no desire to continue KMC for a baby who is less than 2000 grams even with additional counseling
- The mother is sick or unable to provide KMC
- The baby does not tolerate KMC: that is, if the baby is very active and not content with the KMC position
- The baby is sick

Note: If baby needs to be referred, please see Unit 3 on “Danger Signs and Common Problems of the LBW babies.”

CASE STUDIES

Case 1

A mother presents at the KMC unit from which she was discharged three days earlier. She complains that her three-week-old infant “sleeps too much.” The mother says that she has continued KMC at home and is exclusively breastfeeding, though sometimes she uses a cup with EBM. However, she reports that the baby refused to feed all morning and vomited on the way to the hospital.

- What is the likely diagnosis for this infant?
- How will you proceed?

Case 2

A two-week-old baby boy now weighs 1550 grams, a weight gain of 100 grams since birth. The mother is anxious to go home and wants to know when they can be discharged. She is doing well with feeding EBM to the baby, alternating with breastfeeds.

- What additional information do you need before you can make a decision?
- How will you respond to this mother?

Case 3

Amina, a three-week-old LBW (1500 grams) baby, was admitted at the kangaroo mother care unit for seven days and will now be discharged from the KMC unit together with her mother. At the time of discharge, Amina's mother will need to be counseled on a number of issues pertaining to KMC at home.

- What pertinent information should be given to Amina's mother at the time of discharge?

Amina's mother was told to have her first KMC follow-up visit at your health facility because the distance from her village to the KMC unit is very far. As a trained KMC provider:

- What will you do when Amina is brought to you for her first KMC follow-up visit?
- During the review process you discover that Amina did not gain weight. Based on these findings, what will be your continuing plan of care for Amina?

CASE STUDIES: ANSWER KEY

Case 1

1. What is the likely diagnosis for this infant?

- Sepsis

2. How will you proceed?

- Sepsis is serious in a newborn, so it is important to act promptly.
- While proceeding to examine the baby, obtain a history from the mother:
 - Duration of lethargy
 - History of convulsions or fits
 - History of any problems or danger signs such as jaundice or eye, skin or cord infection
 - History of feeding:
 - frequency, duration
 - duration of poor feeds or refusal to feed
 - history of vomiting
- Examine the baby completely. Look for:
 - Difficulty in waking the baby
 - Poor or difficulty in sucking (while observing feeds)
 - Hypothermia or fever
 - Limp or rigid limbs
 - Distended abdomen
- Attempt to feed the baby by cup or tube with EBM.
- Ensure that the baby is warm.
- Follow local protocols for treatment or prepare the baby to be referred to a higher level of care. If being referred, give starting dose of antibiotics according to local protocol.
- Explain the baby's condition to the mother and answer any questions or address any concerns she may have.

Case 2

1. What additional information do you need before you can make a decision?

- Ensure that the following conditions are met:
 - Kangaroo position is well tolerated by baby and mother.
 - The condition of the baby is stable:
 - Vital signs are normal.
 - There are no signs of infection, illness, or other danger signs.
 - There has been a minimal weight gain (15g/kg per day or more) for three consecutive days.
 - The baby feeds well and is exclusively or nearly exclusively breastfeeding.
 - Mother is willing to continue with KMC at home and has support from family, and is able/willing to come for follow-up visits.
 - The mother/baby meet any other criteria according to local or facility protocols.

2. How will you respond to this mother?

- Advise the mother on the baby's progress.
- Explain the criteria for discharge.
- Ensure the mother that she and the baby can be discharged when it is safe to do so for the baby.
- Facilitate discharge as soon as it is safe and appropriate to do so with the counseling on follow-up visits, care at home and danger signs.

Case 3

1. What pertinent information should be given to Amina's mother at the time of discharge?

- Breastfeeding: it is critical that the baby receives adequate feeds and that she breastfeeds exclusively and on demand. Poor sucking/poor feeding can indicate infection or illness.
- Danger signs: review with the mother newborn danger signs and ensure that she understands how to respond.
- Warmth: it is critical that the baby keeps warm. Review ways to prevent heat loss and ways to keep the baby warm with the mother. In order to ensure continuous KMC, encourage Amina's mother to have family members help her with providing KMC from time to time so she can rest and have time for personal care.
- Follow-up visits: The smaller the baby is at discharge, the earlier and more frequent follow-up visits he will need. Advise the mother of the importance of keeping follow-up appointments so that the baby's progress can be monitored and that any problems can be addressed.

2. What will you do when Amina is brought to you for her first KMC follow-up visit?

- Weigh the baby.
- Obtain history from the mother:
 - Whether or not she is doing continuous KMC at home
 - KMC positioning
 - Duration of skin-to-skin contact
 - Breastfeeding and other feeding options as appropriate
 - Whether there are any danger signs
 - Whether the baby is showing signs of intolerance
 - Ask the mother if there are any other related concerns
- Perform a physical assessment of the baby.
- Encourage the mother and family to continue KMC and advise them to seek immediate care when there are any danger signs.
- Praise the mother for coming and schedule the next visit.

3. During the review process you discover that Amina did not gain weight. Based on these findings, what will be your continuing plan of care for Amina?

- Find out the reason why she is not gaining weight.
- Readmission if required.
- Counsel members of the family to give necessary support.
- Reassure the mother and encourage her to continue KMC
- Arrange for any necessary immunization.

UNIT 8: ACHIEVING COMPETENCY IN KANGAROO MOTHER CARE KNOWLEDGE AND SKILLS

General objective: At the end of the session, learners will be able to demonstrate appropriate knowledge and skills in KMC.

Specific objectives:

Demonstrate KMC knowledge and skills by meeting the following competency criteria:

- Practical: 100% on critical steps of skills checklist
- Theoretical: 75% on post-training knowledge assessment

Time: 2 hours 5 minutes (including break)

List of sessions:

Session 8.1: Assessment of skills

Session 8.2: KMC Post-Training Knowledge Assessment

Training materials:

Mothers and babies and/or models, KMC baby package, flip chart, markers

Handouts:

- Skills checklist: Skin-to-Skin Care of a LBW Baby
- KMC Post-Training Knowledge Assessment

**UNIT 8 OVERVIEW: ACHIEVING COMPETENCY IN KANGAROO
MOTHER CARE KNOWLEDGE AND SKILLS**

SESSION	TIME	CONTENT	TEACHING METHOD	MATERIALS NEEDED
Overview	5 min	Overview of the day's sessions	Discussion	Transparencies or flip chart and markers
8.1: Assessing Skin-to-Skin Care of an LBW Baby	60 min	Skills checklist	Read each case situation in the skills checklist and the instructions to the participants and ask them to explain the necessary information to the mother. Evaluate their performance using the checklist.	Flip chart and markers Mothers and babies Handout for Session 8.1
8.2: KMC Post-Training Knowledge Assessment	30 min	Post-test	Administer post-test. Discuss post-test and provide correct answers.	Handout for Session 8.2
	15 min		BREAK	
Summary	15 min		Trainer asks one or more participants to summarize followed by clarification from other participants. Question and answer	

SESSION 8.1: ASSESSING SKIN-TO-SKIN CARE OF A LOW BIRTH WEIGHT BABY

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

Each participant should score 20—or 100%—on this checklist. For those steps where the participant did not score “1,” the trainer should review the step and have the participant repeat it.

HANDOUT: SKILLS CHECKLIST: SKIN-TO-SKIN CARE OF A LBW BABY

Skills Checklist: Skin-to-Skin Care of a LBW Baby					
Participant's Name:					
Evaluator: Read the following case situation and instructions to the participant: “You are caring for a mother and her LBW baby 4 hours after a normal birth. The baby cried at birth and did not need resuscitation. The mother had no complications of birth. The baby breastfed and received eye care and vitamin K during the first hour after birth. You are ready to help the mother start skin-to-skin care for the LBW newborn. “Please explain the information you will give the mother and family about the reasons for skin-to skin care for a LBW baby.” (Note: This information may be given in any order.)					
STEPS		SCORES (0 OR 1)			
1. Explains that skin-to-skin is the best way to care for LBW babies, starting as soon as possible after birth.					
2. Explains that skin-to-skin care: <ul style="list-style-type: none"> • Helps stabilize the baby's temperature • Keeps the baby near the mother's breasts for frequent small feeds, which he needs • Promotes the mother's milk let-down reflex and helps breastfeeding succeed • Promotes faster newborn weight gain • Protects the baby from injury and infection • Reduces newborn mortality 					
3. Explains that the mother is the best person to provide skin-to-skin care because her breast milk helps the baby resist infections they are exposed to. No one else can give the baby this specific protection from infections.					
Evaluator: Now say to the participant: <i>“Please demonstrate teaching the mother to give skin-to-skin care to her LBW baby.”</i>					
4. Explains that he or she will teach the mother how to give skin-to-skin care so that she can do it herself.					
5. Washes hands and dries them on a clean towel, or air-dries them. Explains to the mother that she should also wash her hands before handling the baby; has her wash her hands.					

6. Explains that the baby should be naked except for a diaper and a hat. Undresses the baby except for a diaper and hat.					
7. Explains that the baby will be carried next to the mother's skin, inside her warm clothing.					
8. Helps the mother position the baby upright between her breasts, feet below her breasts and hands above.					
9. Helps the mother position the baby so that they are chest-to-chest with the baby's head turned to one side.					
10. Shows the mother how to snugly wrap the baby to her body: <ul style="list-style-type: none"> Places the center of a long cloth or wrapper over the back of the baby on the mother's chest. Crosses the ends of the cloth behind the mother's back, brings them back around, and ties them in the front underneath the baby. 					
11. Shows the mother how to tie the cloth or wrapper tightly enough to maintain skin-to-skin contact, loose enough so the baby can breathe easily. (Note: The baby should not slip out when the mother stands up or moves around.)					
12. Shows the mother how to support the baby's head by pulling the cloth or wrapper up to just under his outside ear.					
13. Helps the mother put on her own clothing (a loose dress or blouse) over the baby. It should be open enough to allow easy breastfeeding and the baby's face should not be covered.					
14. Washes hands and dries them on a clean cloth or air-dries them.					
Evaluator: Now say to the participant: <i>"Please explain what other information about skin-to skin care you will give to the mother and family."</i> (Note: This information can be given in any order.)					
15. Advises the mother to go about her normal activities with the baby attached to her body in this way.					
16. Advises the mother to maintain an upright or partly upright position and sleep with the top half of her body somewhat raised to keep the baby in a head-up position.					
17. Advises the mother to loosen the cloth or wrapper to breastfeed on demand, at least every 2-2½ hours.					
18. Explains that other family members should supply whatever the mother and baby need without separating them, when possible. Explains that the mother will need a lot of support.					
19. Explains that another family member may replace the mother briefly to provide skin-to-skin care when needed.					
20. Explains that the mother and family should provide skin-to-skin care continuously 24 hours a day (day and night) until the baby weighs at least 2500 grams. After that, he can be gradually weaned from skin-to-skin care, spending increasing amounts of time unattached, for as long as he can tolerate.					
Add up all the ones (1) and write the total number in this box					
Date and signature of the person who scored the performance:					

SESSION 8.2: KANGAROO MOTHER CARE POST-TRAINING KNOWLEDGE ASSESSMENT

After participants complete this post-training questionnaire, the trainer should collect the questionnaires and score them. A passing or satisfactory score is 75% correct responses.

HANDOUT: POST-TRAINING QUESTIONNAIRE

Name: _____ Date: _____

Instructions:

- Fill in your name and the date.
 - Circle the letter of the single **BEST** answer to each question.
1. Baby Nasiru is born and weighs 2000 grams. Baby Nasiru is:
 - a) Normal weight for a term newborn
 - b) LBW
 - c) Very LBW
 - d) Above normal weight for male infants
 2. What is baby Nasiru's chance of survival?
 - a) About the same for other newborns in his community
 - b) Better than the average male newborn
 - c) Lower than babies with a birth weight of 2500 grams
 - d) A little lower than those babies who are very LBW
 3. LBW babies are more likely to have a problem with:
 - a) Low blood sugar
 - b) Warmth
 - c) Infections
 - d) All of the above
 4. A typical LBW baby will benefit most from:
 - a) A bath soon after birth to prevent infection
 - b) Prolonged skin-to-skin contact with the mother
 - c) Antibiotics by injection
 - d) A small amount of sugar water in the first day of life
 5. Kangaroo mother care is a method that:
 - a) Should only take place in hospitals
 - b) Should only be practiced by the birth mother
 - c) Both a and b
 - d) Is a natural method for caring for LBW infants
 6. The advantages of KMC compared to conventional care include:
 - a) Can be done by health care providers if mothers are busy
 - b) Similar cost to the client
 - c) Longer duration of breastfeeding

- d) More access to skilled care due to longer hospital stay
7. The duration of KMC depends on all of the following except:
- a) The condition of the baby
 - b) The baby's weight
 - c) The method of family planning the mother decides to use
 - d) How the baby tolerates KMC
8. Baby Sarah was born at 34 weeks gestation and is being prepared for KMC. The midwife should dress Baby Sarah in the following clothing to ensure that she stays warm
- a) Socks
 - b) A long sleeved shirt
 - c) A hat to cover Sarah's head
 - d) Only a and c
9. The midwife explains that babies can lose heat when:
- a) The baby remains in KMC for too many hours
 - b) The bath is delayed for more than 24 hours
 - c) The baby is near, but not in contact with cool objects
 - d) Antiseptics are applied to the cord
10. Baby's Sarah's father wants to help care for his daughter. He can safely do which of the following while practicing KMC?
- a) Take a shower
 - b) Go swimming in shallow water
 - c) Play a short game of football if he is gentle
 - d) Take a long nap
11. Baby Ngozi was born at home and is now being cared for with the KMC method. Her suck reflex is present but not very strong. In order to ensure that Baby Ngozi gets enough nourishment, the midwife teaches the mother to:
- a) Give infant formula by cup
 - b) Bottle-feed EBM
 - c) Give sugar water between feeds
 - d) Give EBM by cup

12. All of the following are true about cup feeding except:
 - a) Breathing is easier than in bottle-feeding
 - b) The jaw action prepares a baby to breastfeed later
 - c) The baby cannot control the amount of milk taken in
 - d) It takes less energy than bottle-feeding
13. The quantity and frequency of baby Ngozi's feeds during the first two weeks will depend on:
 - a) Her birth weight
 - b) Her age
 - c) How much she sleeps
 - d) Both her birth weight and age
14. While observing a mother expressing breast milk, the doctor notices that she massages the breast from the outside toward the nipple. The doctor encourages the mother to:
 - a) Massage the breast in the opposite direction
 - b) Massage both breasts at the same time
 - c) Continue this correct technique
 - d) All of the above
15. Tube feeding is advised for all LBW infants who:
 - a) Weigh less than 1000 grams
 - b) Cannot cup feed
 - c) Cannot breastfeed
 - d) Both a and b
 - e) B and c
16. Early feeding of LBW babies with breast milk can result in:
 - a) More dehydration and eventual hypoglycemia
 - b) Superior rates of weight gain
 - c) High incidence of vomiting and diarrhea in preterm babies
 - d) Slow gastric emptying in babies less than 37 weeks
17. Danger signs in LBW babies are:
 - a) Different than for normal weight babies
 - b) Not as common as they are in normal weight babies
 - c) Serious and include feeding and breathing problems
 - d) Not very serious since the infant is small
18. Essential newborn care for ALL babies, regardless of weight, should include which of the following?
 - a) Cord care
 - b) Intermittent KMC
 - c) Preventive drugs for malaria
 - d) All of the above
19. A baby in the KMC unit becomes sick and needs to be referred. During referral the nurse should encourage the following EXCEPT:
 - a) The mother keeps the baby in skin-to-skin contact during transport
 - b) The mother refrains from feeding the sick infant to avoid breathing problems
 - c) The mother keeps the baby in a cot to avoid cross-infection

- d) The mother and health staff should ensure that the baby is periodically given oxygen during the referral
20. A mother has been practicing KMC at home for four weeks. Her baby now weighs 2500 grams. When she returns for a follow-up visit, the doctor advises her that she can:
- a) Continue KMC until the baby gains more weight
 - b) Discontinue KMC if the baby is otherwise well
 - c) Return in two weeks for a follow-up visit
 - d) None of the above responses are appropriate for this baby

COURSE EVALUATIONS

For trainers who would like to evaluate this course, two forms are provided below.

Please rate each of the following aspects of the training program in appropriate column using the scale.

UNIT EVALUATION FORM

	UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 5	UNIT 6	UNIT 7	UNIT 8
CONTENT								
1 Irrelevant to my job	2	3	4 Relevant to my job					
1 Unclear	2	3	4 Clear					
TEACHING/LEARNING METHOD								
1 Passive	2	3	4 Participatory					
1 Not Well Conducted	2	3	4 Well Conducted					
TRAINERS/INSTRUCTORS								
1 Unclear about objectives	2	3	4 Clear about objectives					
1 Communicated poorly	2	3	4 Communicated well					

Comments

COURSE EVALUATION FORM

Please evaluate each of the following aspects of the training program by putting a check (v) in the appropriate column.

	EXCELLENT	VERY GOOD	GOOD	FAIR	SATISFACTORY	POOR
Achievement of Training Objectives	6	5	4	3	2	1
Achievement of Personal Goals (Expectations)	6	5	4	3	2	1
Relevance of Content	6	5	4	3	2	1
Effectiveness of Training Methodologies and Techniques	6	5	4	3	2	1
Organization of Training Program	6	5	4	3	2	1
Usefulness of Training Materials	6	5	4	3	2	1
Effectiveness of Facilitators	6	5	4	3	2	1

1. The duration of Training was:

Too long _____ Too short _____ Just right _____

2. Please list the four units that were the most relevant to you in order of preference/priority

3. Please list the four units that were the least relevant to you, in order of preference.(list relevant first)

4. On which unit would you have preferred to spend more time?

5. Which additional topics would you like to have been included in this course?

6. Please evaluate each of the following aspects of the course by circling a number on the scale:

	Excellent	Very Good	Good	Fair	Poor
Accommodations	5	4	3	2	1
Food	5	4	3	2	1
Training Room	5	4	3	2	1
Administrative Support	5	4	3	2	1
Transportation	5	4	3	2	1

Any other comments?

SUPPLEMENTARY UNIT 1: KMC SUPERVISION, MONITORING AND EVALUATION

General objective: At the end of the session learners will be able to describe the principles of supervision, M&E of KMC activities within their respective facilities.

Specific objectives:

- Describe supervision
- Explain the KMC supervision protocol
- Explain the KMC indicators
- Describe the KMC M&E system

Time: 5 hours (including lunch and breaks)

List of sessions:

Supplementary Session 1.1: Supervision

Supplementary Session 1.2: M&E

Training materials:

Flip charts, markers

Handouts:

- The Elements of Supervision
- The KMC Supervision Process
- Supervisory Checklist for a KMC Unit
- Supervisory Responsibilities of a District KMC Team Leader
- Data Collection and Use
- Annex 3: On Site KMC Register/Baseline Data Sheet
- Annex 4: Data Summary Sheet for LBW Babies

Teaching methods:

- Brainstorm
- Discussion
- Role-play

SUPPLEMENTARY UNIT 1 OVERVIEW: SUPERVISION, MONITORING AND EVALUATION OF KMC

SESSION	TIME	CONTENT	TEACHING METHOD	MATERIALS NEEDED
Overview	5 min	Overview of the day's sessions	Discussion	Flip chart and markers
1.1: Supervision	110 min	<p>The elements of supervision</p> <p>The KMC supervision process</p> <p>Supervisory checklist for a KMC unit</p> <p>Supervisory responsibilities of a facility KMC team leader</p> <p>Data collection and use</p>	<p>Ask the learners to brainstorm.</p> <p>Discuss and provide correct answers.</p> <p>Explain the KMC supervisory checklist.</p> <p>Role-play using the supervisory checklist</p>	Handouts for Supplementary Session 1.1
	15 min		BREAK	
1.2: M&E	1.5 hours	Data collection and use	<p>Describe the KMC M&E system.</p> <p>Describe and discuss data collection and use in the KMC unit.</p>	<p>Flip chart and markers</p> <p>Handout for Supplementary Session 1.2.</p> <p>Annexes 3 and 4</p>
Summary	15 min		<p>Trainer asks one or more participants to summarize followed by clarification from other participants.</p> <p>Question and answer</p>	
	60 min		LUNCH	

HANDOUT: THE ELEMENTS OF SUPERVISION

Supervision is a process wherein one person with a set of knowledge and skills assists or supports other colleagues to improve their work attitudes and practices. The purpose of supervision is to promote continuing improvement in the performance of health workers. Supervision is done where performance is critically dependent on the adoption of not only appropriate but generally shared objectives by all parties making sure that:

- The staff is assisted to surmount any difficulties which they may be faced with.
- Necessary steps are taken to motivate staff.
- Relevant support is provided to help staff improve performance and competence.

Supervision may involve demonstrating, training, supporting, helping and encouraging workers to do their work well. This may involve solving worker's problems when needed and ensuring a good working environment, physically and socially. Supervision requires the following supervisory tools in order to be effective:

- Schedules/timetables/programs—because much of a supervisor's work consists of getting certain things done at certain times (e. g., KMC follow-up, supervisory, and support visits).
- Instruction guides and procedures—to help with work which is supposed to be of a systematic nature (e. g., KMC follow-up register at the health facility, number of LBW babies seen/born at a health facility).

Supervision is not a one-time activity; rather, it is a continuing process with the following sequential and interacting phases:

1. The Preparatory Phase: when the necessary instruments for the supervisory tasks should be assembled, priorities set and the schedule of supervision communicated to relevant parties.
2. The Implementation Phase: when the supervisor studies performance in the work place and identifies the worker's support needs.
3. The Follow-up Phase: this involves working out and introducing supervisory and supportive measures to help improve working performance.

A GOOD SUPERVISOR PROVIDES KNOWLEDGE, SUPPORT, AND SKILLS TO THOSE THEY SUPERVISE

Handout: The KMC Supervision Process

To prepare for supervision:

- Identify members of the supervisory team
- Develop a supervisory schedule/plan with the team
- Develop objectives for the supervision visit with the team
- Liaise with the facility in charge prior to the supervision visit
- Review the KMC Supervisory Checklist* with the team
- Share the KMC checklist, supervisory schedule and objectives with supervisees prior to the exercise
- Review the most recent KMC supervisory reports for the facilities and providers to be supervised
- Ensure supplies needed at the supervision sites are available
- Make arrangements for transportation for supervisors when needed

* Note: The KMC Supervisory Checklist may be adapted to the local setting

Steps of a supervisory visit:

- Meet with the matron or facility in-charge and KMC staff.
- Review data and record keeping with KMC unit head.
- Observe how KMC is being practiced at the facility using the observation checklist (see next handout).
- As necessary, provide advice and information on the following KMC practices:
 - Maintenance of warmth
 - Feeding
 - Growth monitoring
 - Identification and management of danger signs
 - Infection prevention practices
- Conduct client interviews (at least two).
- Assess the KMC skills of health workers using the Skills Checklist (see page 131).
- Hold discussions with whole KMC staff and provide immediate feedback.
- Write draft report stating key next steps and leave copy at the facility.
- Write the final report within a week of the supervisory visit and send copies to the facility head and district chief.

HANDOUT: SUPERVISORY CHECKLIST FOR A KMC UNIT

Rate the performance of each item using the following rating scale:

Yes – Item being carried out or available

No – Item not being carried out or not available

ITEM	FINDINGS	
	YES	NO
1. Availability and Functionality of the following items:		
• Baby weighing scales		
• Clinical thermometers		
• Heaters		
• LBW register		
• Graduated feeding cups		
• Feeding tubes		
2. Record Keeping:		
• Recording of all LBW babies		
• Recording of weights		
• Recording of temperature		
• Recording of feeds		
• Recording of physical exam findings		
• Recording of treatments/medications		
3. Procedures (in the KMC unit):		
• Infection prevention practices		
– wash hands with soap and water before and after handling each baby and after changing nappies		
– disinfect feeding cups before EBM and after cup feeding		
– mop floor with disinfectant (chlorine) when appropriate		
– disinfect all soiled linen before sending to laundry		
• Maintenance of continuous skin-to-skin contact		
• Counseling of mothers:		
– On admission/initiation of KMC		
– On maintenance of KMC		
– On discharge		
Document Findings:		

This image shows a blank sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page, typical of notebook paper. There are no margins, text, or other markings on the page.

Signature of _____ Date _____
Supervisor

Signature of Provider _____ Date _____

HANDOUT: SUPERVISORY RESPONSIBILITIES OF A FACILITY KMC TEAM LEADER

- Make sure that the baby's weight and temperature have been taken or measured and recorded on appropriate charts.
- Make sure that babies are fed (breastfed, cup or tube). Apart from feeding on demand, the prescribed amount of breast milk should be given and recorded.
- Ensure that appropriate KMC counseling is given to the mothers.
- Check if infection prevention measures are being adhered to (this includes restricting human traffic into the KMC unit).
- If there are babies on treatment, make sure that they get their treatment on time.
- Ensure that all care given to the babies is documented (e. g., resuscitative measures); also document any changes in the condition of babies.
- Ensure that required data is recorded in a timely and accurate manner.
- Ensure that collected data is computerized every two weeks.
- Ensure that collected data is analyzed and findings are used to improve KMC services on a monthly basis.

HANDOUT: DATA COLLECTION AND USE

M&E of the KMC unit are necessary to ensure appropriate data can be collected to measure the impact of the program (the KMC unit).

Data collection

For collecting data, there should be registers at the KMC site containing the information on the following:

- Mother's name
- Gravida
- Parity
- Mother's age
- Date of delivery
- Admission date and reason for admission
- Type of delivery
- Birth weight (in grams)
- Admission weight
- Gender of baby
- Feeding method (breastfeeding, cup, tube, etc.)
- Baby's discharge date
- Baby's survival status
- Baby's discharge weight
- Problems specific to KMC
- Cause of death
- Complications (specify)
- Baby treated with any antibiotics

For data collection form see Annex 4.

Use of data for continued KMC

All KMC data should be collected daily and analyzed bi-monthly. This information should be shared with KMC staff so as to promote discussions on findings and use of data for continued KMC. This information can also be shared with stakeholders for decision-making purposes.

Note: Data collection (of baseline information) should start six months before the beginning of the actual program. This pre-KMC data is used for comparing the impact of the KMC program on survival and other aspects of LBW baby care at the institution. Refer to Data Summary Sheet for LBW Babies in Annex 4.

SUPPLEMENTARY UNIT 2: ESTABLISHING KANGAROO MOTHER CARE SERVICES

General objective: At the end of the session, learners will be able to establish kangaroo mother care services at a health facility.

Specific objectives:

At the end of this session, participants will be able to:

- List the steps in implementing KMC services.
- List the steps and discuss the process in seeking institutional support for KMC services.
- Evaluate a facility and identify areas that need improving in order to implement KMC services in a facility.
- Prepare a facility and staff to implement KMC services and develop an action plan.
- Provide supervision and support to those who are carrying out KMC services.
- Evaluate a KMC program.

Time: 2 hours 50 minutes (including break)

List of sessions:

Supplementary Session 2.1: Introduction to and Steps in Establishing Kangaroo Mother Care Services

Supplementary Session 2.2: Seeking Institutional Support (Steps 1-4)

Supplementary Session 2.3: Preparing for and Implementing KMC Services (Steps 5-7)

Handouts:

- Introduction
- Steps in Establishing KMC Services
- Seeking Institutional Support
- Preparing the Facility and Staff for Implementation of KMC Services

Training materials:

Chalkboards, chalk, flip charts, markers

Teaching methods:

Lecture/discussion

Brainstorming

Role-play

SUPPLEMENTARY UNIT 2 OVERVIEW: ESTABLISHING KANGAROO MOTHER CARE SERVICES

SESSION	TIME	CONTENT	TEACHING METHOD	MATERIALS NEEDED
Overview	5 min	Overview of the day's sessions	Discussion	Flip chart and markers
2.1: Introduction to and Steps in Establishing KMC Services	30 min	Introduction Steps in establishing KMC services	Brainstorm and discussion	Flip chart, markers Handouts for Supplementary Session 2.1
2.2: Seeking Institutional Support (Steps 1-4)	45 min	Seeking institutional support: <ul style="list-style-type: none"> • Collect vital information • Work with policymakers at all levels • Plan and implement community mobilization and BCC activities 	Brainstorm, discussion, role-play	Flip chart, markers Handout for Supplementary Session 2.2
	15 min		BREAK	
2.3 Preparing for and Implementing KMC Services	60 min	Preparing the facility and staff for implementation of KMC services <ul style="list-style-type: none"> • Conduct administrative and protocol meetings • Touring a facility • Conduct an orientation workshop • Develop an action plan Provide support and supervision Evaluate the KMC program	Brainstorm and discussion Role-play of a meeting with policymakers, etc. Facility tour (if there is time and availability of facility to do so—will require additional time and planning) Discuss developing an action plan Brainstorm and discuss support, supervision, and evaluation.	Flip chart, markers Handout for Supplementary Session 2.3
Summary	15 min		Trainer asks one or more participants to summarize followed by clarification from other participants. Question and answer	

SUPPLEMENTARY SESSION 2.1: INTRODUCTION TO AND STEPS IN ESTABLISHING KANGAROO MOTHER CARE SERVICES

HANDOUT: INTRODUCTION

KMC is early, prolonged and continuous skin-to-skin contact between a woman and her preterm, LBW, or full-term newborn baby. Along with the essential newborn care components, it enhances a baby's ability to maintain a normal body temperature, and supports the baby to breastfeed and to breastfeed longer, which may help with weight gain and reduce infection. It also helps the mother to feel less stress and increased confidence, self-esteem, fulfillment, and empowerment to do something positive for her preterm or LBW infant. The cost-effectiveness of the method is a positive factor as it offers an appropriate alternative to long hospitalization. The method introduces a model with a good cost-benefit ratio whose objective is to increase survival rates of preterm and LBW babies as well as increase their quality of life. It can be used in a facility or at home. In short, it is a powerful and easy method to use for promoting the health and well-being of all babies, especially those that are preterm or LBW.

Policymakers, health facility administrators, staff and families all have critical roles in implementing and supporting KMC. This document explains and guides the orientation and implementation process for those wishing to establish KMC in a health facility setting. A carefully planned orientation and implementation process assists all involved to learn how to be more supportive and to understand:

- The advantages of the practice to newborns, mothers and families
- The process to implement KMC
- The clinical skills needed to support the practice
- What is needed to implement the practice in a health facility and support it at home

HANDOUT: STEPS IN ESTABLISHING KMC SERVICES

Depending on the scope of the program, all or some of the following steps will be included in the program design.

STEPS TO IMPLEMENT KMC	
STEP 1	Collect and assess vital information related to KMC practices
STEP 2	Work with policymakers and health administrators at all levels state federal LGA
STEP 3	Work with health authorities at all needed levels (community (primary health care) LGA, state, and federal)
STEP 4	Implement community mobilization and bcc activities (if included in program design)
STEP 5	Prepare the facility and staff for the implementation of KMC
STEP 6	Support and supervise KMC program staff
STEP 7	Evaluate the KMC program

HANDOUT: SEEKING INSTITUTIONAL SUPPORT

Step 1: Collect Vital Information

Before beginning the design and implementation of a KMC program, collect information to use in working with policymakers, health authorities, and personnel at all levels. This information may include but is not limited to:

- Baseline data on preterm and LBW babies for the latest 6 to 12 month period (nationally and/or in program geographic area). See annex 3 for this information.
- Present cost of care to preterm and LBW babies and how KMC can reduce those costs
- KMC policies
- National, Federal/State, and facility level standards and protocols for care of LBW babies
- M&E related to LBW babies
- Feasibility and interest in KMC
- Resources for KMC:
 - Staff to be trained in KMC
 - Equipment, supplies (note that the items below are helpful to have, but are not critical for a mother to have in her home setting):
 - Beds, mattresses, linens, pillows (if bed is not adjustable, need to have enough pillows, sacks of sand, or wedges to put under the mattress to achieve an upright or semi-recumbent position when needed).
 - KMC linen for mothers and babies (wrappers, caps, blouses, socks); this can also be supplied by the family
 - Feeding items (cups, NG tubes)
 - Plastic bucket with decontamination solution to disinfect cups and NG tubes
 - Weighing scale
 - Comfortable chair for mother
 - Recreational facilities (examples: wool, needles, magazines, board games, radio, TV)
 - Bedside lockers for mother
 - Rooms in facility
 - As close as possible to maternity ward and neonatal nursery
 - Good ventilation
 - Power supply with a socket for every 2 beds for connection of heaters and other appliances (may not be available in every facility)
 - Adequate shower and toilet facilities (at least 1 shower and 1 toilet for a 10 bed unit)

Step 2: Work with Policymakers at the State/Federal, LGA Level

Conduct an orientation and working meeting with policymakers, health administrators, and representatives of the site(s) that will be introducing KMC. During this activity the following information is reviewed:

- LBW babies, their contribution to neonatal morbidity and mortality
- LBW babies: scope of the problem in the country/area
- KMC: what it is and how it helps (this may include film, power point presentation and discussions)
- Should KMC be introduced (feasibility, cost implications, possible location of implementation, as a pilot or field test or full scale)
- A program design and draft implementation plan that can be used when implementing KMC at other levels
 - Policy needs and how to implement
 - Protocol needs and how to implement
 - Resources available and needed
 - Preparing administrators and staff: roles and responsibilities, training
 - Linkages between facility and home
 - Community mobilization/BCC needs
 - Support and supervision
 - Evaluation and MIS

Step 3: Work with Health Authorities at All Other Needed Levels (Community, State, Federal)

Orientation and working meetings similar to what was done at the national level should also be done at other appropriate levels within the program area. These meetings provide opportunities for administrators and others to understand the “what” and “why” of KMC and to encourage their input into the program design and implementation. The inclusion of some policymakers and health administrators who participated at the national level meeting as co-facilitators helps with the development of support at all levels.

Step 4: Plan and Implement Community Mobilization and BCC Activities on KMC (If Included in Program Design)

SUPPLEMENTARY SESSION 2.3: PREPARING FOR AND IMPLEMENTING KMC SERVICES (STEPS 5-7)

HANDOUT: PREPARING THE FACILITY AND STAFF FOR IMPLEMENTATION OF KMC SERVICES

Step 5: Prepare the Facility and Staff to Implement KMC

Preparation of the facility where KMC will be introduced is a critical step in a successful KMC program. This gives administrators and staff an opportunity to: (1) learn and think about the program, (2) provide recommendations on its design within their institution, (3) provide needed KMC knowledge and skills to administrators and staff, and (4) guide program implementation. This preparation includes the following activities:

PREPARING THE FACILITY TO IMPLEMENT KMC
<ul style="list-style-type: none">• Conduct administrative meeting No. 1• Tour the facility• Conduct a protocol meeting with administrators and clinical managers• Conduct an orientation workshop for all staff that will have contact with the KMC program• Conduct a KMC workshop for all staff that will directly provide KMC services• Develop an action plan• Conduct administrative meeting No. 2

1. Conduct administrative meeting No. 1: This initial meeting at the health facility begins the preparation activity. Administrators, managers, doctors, and the individuals facilitating the KMC program planning, implementation, and evaluation meet to discuss KMC, advantages to introducing KMC, and, if KMC is to be introduced, the process to do so. The following is a guide that can be used for this first meeting:

MEETING NO. 1 GUIDE

Participants:

- Medical Officer
- Hospital or clinic administrator
- Clinical unit managers/head nurses or midwives: labor and delivery, postpartum, newborn
- Doctors providing client services in labor and delivery, postpartum, and newborn areas

Agenda:

- Greetings and introductions
- Ask someone to take minutes
- Explain the purpose of this meeting:
 - To begin the process together of understanding why KMC should be implemented
 - To discuss how to implement KMC: decisions to be made and steps to be taken
- Explain what KMC is and what are its advantages to the baby, mother, family, and health facility (have written research and regional experience information available).
- Discuss issues of feasibility, cost implications, number of LBW babies born at the health facility, staff responsibilities and time, and equipment and supplies needed.
- Discuss preparing the facility:
 - Purposes
 - Activities (tour, protocol discussion, preparing general staff, preparing staff directly supporting KMC services, decisions about staff assignments, KMC room, shower and bathroom facilities, equipment, monitoring, and follow-up)
 - Facility preparation schedule
- Reach agreement on desire for KMC, decisions to be made, schedule for preparation, monitoring and follow-up plans, and date and time of the next administrative meeting.
- Thank everyone for their cooperation and support!

2. Tour the Facility: Conducting a tour together with hospital staff helps to identify areas of need. These can then become areas to discuss or to incorporate into the general orientation workshop and KMC workshop. The following is a guide that can help while conducting the tour.

FACILITY TOUR CHECKLIST	
AREAS TO EVALUATE	COMMENTS
EQUIPMENT, SUPPLIES:	
• Beds, mattresses, pillows (or sacks of sand or wedges locally made to put under the mattress to result in a 15 degree angle), linens	
• KMC linen for mothers and babies (wrappers, caps, blouses, sock); these can also be supplied by the family	
• Feeding items (cups, NG tubes*)	
• Plastic bucket with decontamination solution to disinfect cups and NG tubes*	
• Weighing scale*	

FACILITY TOUR CHECKLIST	
AREAS TO EVALUATE	COMMENTS
• Comfortable chair for mother*	
• Recreational facilities (examples: wool, needles, magazines, board games, radio, TV)*	
• Lockers for mother*	
*Note: Items which are helpful to have in the facility, but will not be critical for a mother in her home	
ROOMS IN THE FACILITY:	
KMC room:	
• Is it as close as possible to maternity ward and neonatal nursery?	
• Does it have good ventilation?	
• Is there power supply with a socket for every two beds for connection of heaters and other appliances? (May not be available in every facility.)	
– Are there adequate shower and toilet facilities (at least 1 shower and 1 toilet for a 10 bed unit)?	
BREASTFEEDING:	
• Does the staff support good breastfeeding practices?	
• Does the staff counsel mothers and families before discharge?	
• If a baby is unable to breastfeed, what method is used to feed the baby (bottle, spoon, cup)?	
INFECTION PREVENTION PRACTICES:	
• Use good environmental cleaning practices (good frequency of cleaning, use decontamination/soap solution to clean beds, tables, floors, door handles)	
• Use good hand washing practices	
• Use all steps correctly for preparing equipment and supplies (decontamination, cleaning, high-level disinfection or sterilization)	
• Properly dispose of contaminated items	
KEEPING BABIES WARM:	
• Is the baby dried immediately after birth?	
• Is skin-to-skin contact used between mother and baby immediately after birth?	
• Are babies kept with mothers, covered and out of drafts?	
• Is the baby's temperature monitored regularly?	

FACILITY TOUR CHECKLIST	
AREAS TO EVALUATE	COMMENTS
STAFF COMMUNICATION WITH FAMILIES AND MOTHERS:	
• Show respect	
• Speak clearly, using words the mother and family understand	
• Listen actively	
• Are not judgmental	
• Use good body language (smile, have eye contact while talking and listening, use a gentle voice, keep body height at same level as mother/family)	
• Have patience	
STAFF COUNSELING WITH FAMILIES AND MOTHERS:	
• Make the mother and family feel welcome	
• Use effective questions	
• Give clear, useful, and correct information	
• Help the mother and family make their own choices	
• Help mother and family remember the counseling	
• Praise the mother and family	
• Discuss needed follow-up	

3. Conduct a Protocol Meeting with Administrators and Clinical Managers: Having a specific meeting to discuss protocols for KMC is a way to engage doctors, nurse administrators, and managers who may not be able to attend a full KMC workshop. Conducting protocol discussions will provide an opportunity for them to fully understand KMC and the process in an environment that allows them to ask questions freely. Conducting this meeting early in the preparation process can gain their support for other preparation activities.

4. Conduct an Orientation Workshop for All Staff Having Contact with KMC: Not all staff will be able to attend the full KMC workshop. In addition, in some areas staff regularly rotate through the different wards or units. Other staff, such as secretaries and cleaners also need to have an understanding of what KMC is and how it works. An orientation for these personnel can last one or two days, depending on the amount of information provided and how much time is used for practice. The content for the orientation usually includes:
 - What is KMC
 - Advantages of using KMC to the baby, mother, family and health facility (this can include showing a KMC film)
 - KMC protocols
 - How to do KMC (both knowledge and skill)

- How to cup feed if the baby is unable to breastfeed
- Reaching agreement on using KMC in the health facility
- Suggestions on how to implement KMC in the health facility

With this type of orientation, staff will feel part of the new KMC program and become strong supporters. They may even be able to help answer questions that mothers or families raise when fully trained staff is not around.

5. Conduct a KMC Workshop for All Staff that will directly Provide KMC Services: It is important to conduct a full KMC workshop for all staff that will directly provide KMC services. During the process participants will gain knowledge and skills related to doing KMC and will also understand the management aspects of implementing and maintaining the program (preparing the environment, equipment and supplies, support and supervision, evaluation). It is critical the workshop be participatory and competency based. The Kangaroo Mother Care Training Manual can be used as the curriculum to conduct the workshop.
6. Develop an Action Plan: After the above activities are done, a meeting is conducted to develop the actual KMC action plan. Health facility administrators, doctors, and participants of the KMC workshop conduct this planning. The following action plan guide can be used:

ACTION PLAN GUIDE		
ACTIVITY	RESPONSIBLE PERSON/GROUP	DATE COMPLETED
Prepare for and collect baseline data		
Prepare KMC room, shower, toilets		
Prepare equipment and supplies		
Update infection prevention practices (if needed)		
Give staff assignments		
Develop a support and supervision plan: <ul style="list-style-type: none"> • Health care provider level • Supervisor level • State level 		
Develop and implement data collection, analysis plan, and how to distribute and use data		
Plan regular KMC meetings (develop a process, set the agendas, and identify participants)		

7. Conduct Administrative Meeting No. 2: A final meeting at the end of the preparatory activities helps to clarify what has been done, agreements reached, and confirm the action plan. The following guide can help in doing this activity.

MEETING NO. 2 GUIDE

PARTICIPANTS:

- Medical Officer
- Hospital or clinic administrator
- Clinical unit managers/head nurses or midwives: labor and delivery, postpartum, newborn
- Doctors providing client services in labor and delivery, postpartum, and newborn areas

AGENDA:

- Greetings
- Ask someone to take minutes.
- Review preparation activities and agreements made:

Tour: Findings on equipment/supplies needed by the facility

- **Protocol Meeting:**

- Thank everyone for their willingness to discuss openly all issues around protocols, and procedures.
- Review protocol/procedure agreements made.
- Provide recommendations for any needed changes in the facility to implement KMC.

- **Orientation Workshop:**

- Give overview of activities/results and ask one of the staff who attended the workshop to give a short report.

- **KMC Workshop:**

- Give overview of activities/results and ask one of the staff who attended the workshop to give a short report.

- **Action Plan:**

- Review agreed upon action plan and confirm with all.
- Discuss any other issues that came up during the week.
- Thank everyone for their cooperation and support!

Step 6: Support and Supervision

Support and supervision is a proven way of maintaining staff knowledge and skills. It has been shown that if not done, or done poorly, staff quickly lose new skills and interest. Support and supervision also ensures that a mechanism to identify areas of need and solutions is in place and helps to further strengthen the program. See the Kangaroo Mother Care Training Manual for more detailed information on support and supervision.

Step 7: Evaluate the KMC Program

Data related to KMC helps to measure the program impact. The collection of pre-KMC data should start six months before initiating the actual program. It is used to compare the impact of introducing KMC on survival and other aspects of LBW baby care at the health facility. All KMC data should be collected daily and analyzed bi-monthly. This information can be shared with KMC staff on a regular basis to promote discussions on findings and to change and strengthen the program. Stakeholders also can use this information for future decision-making. See the Kangaroo Mother Care Training Manual for more detailed information on program evaluation.

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Kangaroo Foundation

WHO Managing newborn problems

ANNEXES

ANNEX 1: KMC REFERRAL LETTER

To: _____ Hospital.

Name of Referring Health Unit: _____

Patient Information

Name of Mother: _____ Sex of baby: _____

Date of Birth _____ Mode of Delivery: _____ Birth Wt.: _____

Place of Delivery: _____

Address: _____

History: _____

Physical Assessment: _____

Provisional Diagnosis: _____

Treatment Given: _____

Reason for Referral: _____

Position of baby during referral: _____

Name of Referring Officer

Signature _____

(In Capitals) _____ *Date* _____

Name of Receiving Officer

(In Capitals) _____ *Date* _____

ANNEX 2: KMC GROUP DISCUSSIONS

Introduction

The group discussions are conducted where kangaroo mother care (KMC) is provided, whether in a KMC Unit or Maternity Unit where KMC is offered. Preferably, a KMC-trained staff member should lead these discussions. The discussions are held with mothers and guardians or other family members involved in providing support to the mother and baby. The discussions are held at the time of admission, during the mother's and guardians' stay at the KMC unit, and at the time of discharge from the unit.

Adult learning principles, such as dialogue and reflection, should be used to provide the knowledge and skills needed by the mothers and their relatives to enable them to practice KMC appropriately. The group discussions should be participatory and must engage mothers and their relatives in the educational process. This approach will help to incorporate the group participants' needs and questions and assist them in their own capacity to reflect and analyze situations. In doing so, mothers and guardians will better practice and support KMC.

Counseling cards and other BCC materials like videos for KMC should also be used to enhance these discussions. The facilitator should create an environment where the participants are free to share their own knowledge and also ask questions. Role-plays are another effective way to communicate behaviors, such as how to deal with opposition to KMC in the community.

Aim

The aim of the group discussions is to provide information to mothers and guardians/family members on how to care for a preterm/small newborn while in the KMC unit and at home after discharge.

Group Discussions during Admission to the KMC Unit

Participants: Mothers and guardians/family members

Purpose: To discuss the KMC method and components, how it is done, the advantages and disadvantages, and what is expected from the mothers and family members, especially the guardians who support the mother during her stay at the KMC ward.

Initiating the discussion: Start by asking the group participants what they know about the care of preterm/small babies in the communities where they live. If KMC is not mentioned, ask if they have heard or seen anyone practicing KMC.

If someone has heard about KMC or seen it done, ask them to describe what they know about it. Probe for other details like:

- Why KMC is done?
- Who can do KMC?
- How is KMC done?
- For how long can KMC be done?
- What are the benefits to mother and baby?

- What are the challenges?

This and other questions will help start the discussion and provide information to the participants.

Ensure that the following aspects of KMC and the preterm/small newborn or LBW baby are covered during the discussion:

- Three basic needs of a LBW baby: **warmth, food and love.**
- The meaning of KMC (use the local name or description for KMC if it exists in the community)
- Advantages of KMC:
 - *Warmth:* the mother provides warmth to the baby the whole day.
 - *Food:* breastfeeding on demand is easily done, so babies are breastfed more often and for longer periods.
 - *Love:* skin-to-skin contact promotes bonding between mother and baby, so babies cry less as they have continuous contact with their mothers.
 - Babies grow faster as they need less energy to heat up their bodies.
 - Babies can be discharged much earlier as KMC can be done at home.
 - KMC can be done without increased cost or technology.
- Disadvantages of KMC:
 - KMC is tiring for the mothers.
 - A strong belief in high technology may lead to some resistance by mothers because of the simplicity of KMC.
 - Cultural barriers: grandmothers may not accept the method. In some traditions the babies are separated from their mothers and the granny takes care of the baby during the first weeks. Also babies are usually carried on the back rather than in front.
 - Relatives, neighbors and other members of the community may laugh at the mother who is practicing KMC.
 - Non-compliance of mothers and health staff.
- How KMC is done:
 - Position: the baby is held in an upright position between the mother's breasts, held by cloth.
 - The mother should sleep in an upright slanting position to prevent the baby from choking.
 - Skin-to-skin contact has to be practiced for 24 hours, interrupted only when the mother is attending to her own basic needs like going to the bathroom or toilet, etc.
 - The baby only wears a nappy and a cap (*if available*).
- General care of the baby:
 - The baby is not bathed but wiped with a wet warm cloth to avoid heat loss.

- The baby is fed every 3 hours either by NG tube, by cup or by breast; the baby should not get more than the prescribed amount of milk.
- The baby is weighed daily to see if it is gaining or losing weight.
- Movements of mothers or guardians/relatives while at the KMC unit:
 - Two immediate/close relatives and mother's partner will usually be allowed into the KMC ward.
 - Mothers are allowed to leave the KMC ward from 3p.m. to 6 p.m. with their babies in KMC position; they should however, **not** leave the hospital compound or enter any other ward.

During all discussions make sure to answer any questions the participants may have and clarify issues that may not be clear to them.

Group discussions during the stay at the KMC unit

Purpose: To provide mothers and guardians with the knowledge and skills needed to provide quality care for their babies while at the KMC ward and when they go home.

Participants: Mothers and guardians/family members

Facilitators: KMC unit staff including Maids

The KMC ward should be seen as a place for educating and empowering mothers to provide quality care for their babies. Informal discussions and video shows about KMC, infant and child health issues should be used to reinforce messages on essential newborn care and on neonatal and maternal danger signs. Include the following key points in discussions on the KMC ward:

- Feeding preterm/small newborns (LBW babies)
- Find out from the mothers about their previous experience with breastfeeding.
- Discuss the following issues related to feeding:
 - Positioning of the baby for breastfeeding
 - How to express, measure and store breast milk
 - How to feed by cup and NG tube
 - Breastfeeding problems

(Show mothers a video on infant feeding)

- Providing support to the mother:
 - Emphasize the role of guardians/family members when they come to visit or whilst they stay in the ward.
 - Create different ways to communicate and discuss issues with mothers and guardians.
 - Provide an environment that promotes discussion of related issues that are of concern to mothers and guardians/family members.
- Potential problems of preterm/small newborns; discuss the common problems these small babies may have, such as:
 - Fever
 - Hypothermia
 - Breathing problems
 - Diarrhea
 - Bleeding from the cord

Inform mothers that it is very important that they alert a health worker as soon as they see or recognize these problems.

[Show mothers videos about newborn problems, diarrhea, breathing problems (ARI)]

- Discharge criteria: Explain to mothers/guardians that the following must be fulfilled before a baby is discharged from the KMC ward
 - Baby should have an appropriate weight gain.
 - Mothers and guardians should have adequate knowledge about KMC.
 - Mothers and guardians should know the danger signs.
 - Mothers should be able to breastfeed and also express breast milk.
 - Baby should be able to suckle well.
 - The mother and baby should have family support available.
 - The mother is willing to continue KMC at home.
- General and personal hygiene. Provide information about hygiene and prevention of infections. Discuss what should be done to ensure cleanliness and good hygiene for both mother and baby:
 - Feeding utensils should be kept clean, washed after use and ensure they are clean before each feed.
 - Hands should be washed before feeding the baby, after use of the toilet and after touching soiled items.
 - Breasts should be cleaned before expressing milk or breastfeeding.
 - Umbilical cord should be kept clean by wiping with spirit or plain water and kept dry.
 - Baby should be wiped when soiled but not bathed.

- Baby should wear clean nappies and cap.
- Mothers should wash clothes and bathe appropriately.
- Activities permitted while in the KMC Ward:
 - Mothers can eat, chat, wash clothes and wash dishes and other utensils.
 - Mothers should be encouraged to read (if they can read).
 - Mothers can leave the ward in the afternoon to chat with friends and relatives but they should not leave the hospital compound or enter other hospital wards.
- Family planning. To ensure that mothers give enough time for their small babies to grow, discuss family planning issues with them:
 - Inform mothers of the advantages of family planning.
 - Advise mothers on the importance of spacing their children and how it can be done.
 - Provide information on the different family planning methods.
 - Inform mothers on where to get these services.

As you explain procedures like positioning of the baby, expressing breast milk and breastfeeding, feeding by cup or NG tube cord care, etc. you should also demonstrate these to help mothers and guardians better understand the messages you are giving. Use humanistic models, if possible, like newborn dolls and breast models.

Discharge from the KMC unit

Purpose: To reinforce the KMC related practices that mothers and their guardians already have, to enable them continue practicing at home and ensure their babies survive.

Participants: Mothers, guardians and other family members

Facilitator: KMC unit staff

Initiating the discussion

- Ask mothers/guardians how they have found their stay in the KMC unit. At this time take the opportunity to clarify any issues of concern and discuss any immediate problems. Also assess if there is an acceptance of KMC for continuance at home or if there is any indication of giving up or being tired of the method.
- Ask mothers to describe how they will care for their babies at home.
- Discuss continuing KMC in relation to performing necessary tasks at home such as cooking, when fetching water or collecting firewood, going to the market, sleeping—whether alone or with others (other children on same bed/mat, when with the male partner, etc.).
- Discuss other activities that might disrupt KMC at home.

Ensure the following are discussed and emphasized:

- General care for the baby:
 - Continuing KMC at home

- Keeping the baby warm in the KMC position
 - Breastfeeding on demand, or feeding EBM by cup
 - Other essential newborn care, including cord care, need for immunization and immunization schedule, etc.
 - Recognizing danger signs and action to take, where to go when these danger signs occur
- Support for the mother for continued KMC:
- Performing necessary light duties at home, including going to the market, while continuing to put the baby in KMC position.
 - Getting support from relatives including their carrying the baby in the KMC position when needed.
 - Sleeping in an upright position e. g., by using sand bags as a back rest, to prevent the baby from choking.
 - How to handle negative situations related to KMC, including discouraging remarks from relatives or other community members. Emphasize that the best way to cope with these situations is to explain to others what KMC is about.
 - Follow up after discharge from the KMC unit. Explain the importance of follow-up visits.
 - Explain when and where to go for follow-up.
 - Inform mothers that health facility staff will make home visits especially for those who miss a scheduled visit and need closer follow-up.
- Discontinuation of KMC:
- Explain when KMC can be discontinued.
 - Ensure mothers/guardians understand that the baby must have gained weight appropriately, be feeding well and generally doing well.
 - Thank mothers/guardians/family members for all their support in successfully caring for their baby with KMC.

Encourage successful mothers to become role models for others needing similar care within their communities.

ANNEX 3: ON-SITE KMC REGISTER/BASELINE DATA SHEET

Institution _____ Month _____

No.	Mother's Name	Gravida	Parity	Age of Mother	Date of Delivery	Type of Delivery	Birth Wt. (gms)	Admission Wt. (gm)	Sex	Baby Discharge Date	Baby Survival Status	Baby's Discharge Weight (gms)	Cause of Death if Available	Complications	Antibiotics Yes/No
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															

ANNEX 4: DATA SUMMARY SHEET FOR LOW BIRTH WEIGHT BABIES

Name of Unit _____

Month(s) _____ Year _____

Table 1: Numbers of admissions, babies discharged and deaths

VARIABLE	FREQUENCY
Number of admissions	
Total number of LBW babies admitted	
No. referred in	
No. of babies born before arrival (BBA)	
New KMC admissions	
Continuing KMC cases	
Number of babies discharged	
Normal discharge	
Abscond	
Discharged against medical advice	
<i>Number of cases referred for special medical care</i>	
Number of deaths (NND)	
Number of NND	

Table 2: Weight gain in grams for those discharged from the unit

VARIABLE	VALUE (GM)
Weight gain for those with positive gain (n=)	
Average	
Range	
Weight loss for those with negative gain (n=)	
Average	
Range	

Table 3: KMC death audit (death by background characteristic)

CHARACTERISTIC	NO. IN THE CATEGORY (N)	NO. DIED (B)	CASE FATALITY RATE (B/N*100)	PERCENTAGE (B/T*100)
Weight (gram)				
<1000				
1000 – 1499				
1500 – 1999				
2000 – 2500				
Age of mother (years)				
<=20				
21 – 30				
31 – 40				
>40				
Parity				
1				
2 to 5				
>5				
Total Number of deaths (T)				

N – Number in category, B – Number who have died in that category, T – Total number of deaths

Table 4: Complications audit (characteristics of babies and mothers vs. complications)

CHARACTERISTIC	NO. WITH COMPLICATIONS						
	Pneumonia	Septicaemia	Cyanosis	Convulsions	Apnea	Other	Total
WEIGHT							
<1000							
1000- 1499							
1500 – 1999							
2000 – 2500							
AGE OF MOTHER							
<=20							
21 – 30							
31 – 40							
>40							

CHARACTERISTIC	NO. WITH COMPLICATIONS						
	Pneumonia	Septicaemia	Cyanosis	Convulsions	Apnea	Other	Total
PARITY							
1							
2 to 5							
>5							
Total							
No. who had KMC interrupted							

Table 5: length of stay of babies under KMC practice for those discharged in the period (in days)

VARIABLE	MEASURE (DAYS)
Length of stay of baby in the KMC unit for those discharged alive (n=)	
Average	
Range	
Length of stay of baby in the KMC unit for those who absconded (n=)	
Average	
Range	
Length of stay of baby in the KMC unit for those discharged against medical advice (n=)	
Average	
Range	
Length of stay of baby in the KMC unit for those who died (n=)	
Average	
Range	
Length of stabilization of babies	
Average	
Range	

Table 6: follow-up after discharge from the KMC unit for the Two-month period under review

Visit	No. Expected For Follow-Up	No. Who Came For Scheduled Follow-Up	No. Who Came Later Than Scheduled	No. Of Dropouts	Dropouts Visited At Home	Dropouts Known To Have Died	Comments
First visit							
Second visit							
Third visit							
Fourth visit							

**Dropout – Those who did not come for follow-up one month after scheduled date.

ANNEX 5: INTERVIEW GUIDELINE FOR CLIENTS (MOTHERS)

What did you learn in the KMC unit?

What did you find helpful during your stay at the KMC unit?

What did you like in the KMC unit?

In what ways did the KMC unit staff support you during your stay?

What did you not like in the KMC unit?

What could be improved?

Did you continue with KMC at home? Yes_____ No_____

If no, why not?

Were you counseled on how to take care of your baby at home? Yes/No

Do you think KMC is a good method for caring for LBW babies? Yes/No

Do you think other people like KMC? Yes/No

Why?

ANNEX 6: KMC SUPERVISORY REPORT FORM

Quarterly/Monthly Report for _____ (Month)

Facility _____

Name of Reporter _____

Findings

Previous Recommended Action Steps

Action Steps

ANNEX 7: RECOMMENDED SUPPLIES AND EQUIPMENT FOR KMC

For Facility-Based KMC Services:

- Rooms separate from nursery or sick infants equipped with
 - Beds for mothers
 - Comfortable chairs
 - Pillows
 - If possible, beds and chairs that can adjust to upright or semi-recumbent position. Otherwise adjust with pillows.
 - Ability to keep rooms warm: 22-24 °C (71.6 – 75 °F)
 - Curtains or doors to provide privacy and to minimize noise level
- Bathroom facilities (with running water)
- Separate room for educational and recreational activities if possible
- Clothing for the mother
 - Mother can wear usual clothing or dress if it accommodates the baby and is not too tight.
 - A support binder (piece of cloth or fabric measuring about 1 meter square) which will be used to wrap around the mother and baby to help keep the baby close to the mother
 - A shirt, pouch or other type of binder for this purpose may also be used as appropriate
- Clothing for the baby
 - Caps
 - Socks
 - Diapers (nappies)
 - A shirt is recommended if the environmental temperature is below 22 °C (71.6 °F). The shirt should be sleeveless open at the front and cotton (WHO KMC manual).
- Other supplies
 - Feeding utensils
 - Small cups (disposable or those that can be cleaned thoroughly or autoclaved)
 - No. 5 to no. 8 French gauge feeding tubes and syringes (for tube feeding EBM)
 - Refrigerator for storing EBM
 - Newborn weighing scales (with 10 grams measurement intervals)
 - Thermometer for measuring body temperature
 - Basic newborn resuscitation equipment (Ambu bag, masks for neonate and preterm sizes and oxygen)
 - Infection prevention supplies/equipment (follow local protocol or procedures)
 - KMC log/registry or other records

For KMC at Home:

- Clothing for the mother and baby as above
 - Support binder suitable for other family members(s) who may assist with KMC
- Feeding utensils if needed as above
- Pillows to adjust to comfortable sleeping or sitting position

ANNEX 8: TECHNICAL RESOURCES FOR KMC AND CARE OF THE LBW BABY

Videos

- Kangaroo Mother Care: Rediscover the Natural Way to Care for Your Newborn Baby (Video) by Dr. Nils Bergman
 - Overview of KMC and research
 - 26 minutes
 - Order from: www.kangaroomothercare.com or Geddes Productions: telephone: 323-344-8045 (USA)
 - DVD available from www.capersbookstore.com.au
- Kangaroo Mother Care II (Video)
 - Instructional video for health professionals
 - 51 minutes
 - Order from: www.kangaroomothercare.com or Geddes Productions: telephone: 323-344-8045 (USA)

Publications

- Care of the Newborn Reference Manual (Save the Children)
- The manual has a focus on essential newborn care with a module devoted to care of the LBW infant. A PDF version is available at:
[http://www.savethechildren.org/publications/snl/00%20-%20Care%20of%20the%20Newborn%20Reference%20Manual%20\(3.6MB\).pdf](http://www.savethechildren.org/publications/snl/00%20-%20Care%20of%20the%20Newborn%20Reference%20Manual%20(3.6MB).pdf)
- Kangaroo Mother Care: a practical guide (World Health Organization)
 - A PDF version in English, French or Spanish can be downloaded from:
<http://www.who.int/reproductive-health/publications/kmc/>
- Managing Newborn Problems: A guide for doctors nurses and midwives (WHO)
 - Part of the IMPAC series (Integrated Management of Pregnancy and Childbirth)
 - Facility-based clinical management of small and sick newborns
 - PDF version (English) may be downloaded at:
<http://www.who.int/reproductive-health/publications/mnp/>

- Also available free to developing countries:
 - World Health Organization
Department of Reproductive Health and Research
Documentation Centre
1211 Geneva 27
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- Perinatal Education Programme
 - Developed in South Africa, a self-study course in various perinatal care topics for nurses, midwives and doctors.
 - <http://www.pepcourse.co.za/index.html>
 - Has two units devoted to KMC (units 43 & 44):
 - <http://www.pepcourse.co.za/Mother%20Baby%20Friendly%20Care/Unit44w.html>

Websites

- International Network for Kangaroo Mother Care (INK)
 - <http://kangaroo.javeriana.edu.co/>
 - Kangaroo Foundation based in Bogota, Columbia
 - Aims to promote research, evaluate and enhancing interventions, and disseminate results through publication and training
 - Resources, research, photos and recent news
 - Extensive list of links to relevant sites, publications and resources
 - Spanish version available also
- Kangaroo Mother Care
 - www.kangaroomothercare.com
 - Info about KMC for health professionals
- Kangaroo Mother Care Initiative (India)
 - <http://www.kmcindia.org/>
 - Has links for both parents and health professionals
 - Includes info about evidence basis for KMC
 - Direct link to a video about KMC (in Hindi)

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