Facilitators Guide for Training on Kangaroo Mother Care

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ACKNOWLEDGEMENTS

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Find all presentations and key documents here.

CONTENTS

BACKGROUND

The global neonatal mortality rate fell from 37 (36, 38) deaths per 1,000 live births in 1990 to 19 (18, 20) in 2016, and 2.6 (2.5, 2.8) million children died in the first month of life in 2016 – approximately 7,000 newborn deaths every day – most of which occurred in the first week, with about 1 million dying on the first day and close to 1 million dying within the next six days[1]. Complication related to preterm births is the leading cause of death among children under five. Three-quarters of all neonatal deaths occur during the first week of life, 25–45% in the first 24 hours[2,3] globally, nearly 1 million babies die each year from complications of premature birth and preterm birth is one of the leading causes of newborn morbidity and mortality globally.

Low coverage of proven interventions and large disparities in coverage across population, particularly in the postnatal and childhood periods, result in millions of preventable deaths of newborns. Despite strong evidence regarding the improved health outcomes among preterm or low birth weight infants receiving KMC, including a recent recommendation by the World Health Organization that KMC should be routine care for newborns weighing less than 2000 g[4], only modest KMC coverage has been achieved globally. Millions of LBW babies still do not have access to KMC and other essential neonatal care interventions, such as those to prevent and cure infections and ensure adequate nutrition. A previous systematic review identified barriers to health system adoption of KMC and noted that families play an important role in KMC adoption[5]. Further, the review noted that family interactions with the health system were critical to KMC adoption. Caregivers (e.g. mothers, fathers, and families) are key implementers and beneficiaries of KMC. Health system and social barriers for KMC implementation includes lack of awareness on the benefits of KMC, expectation that KMC could be done with no or little instruction, lack of social support, caregivers' medical concern including the clinical conditions of the mother and the baby, lack of space for privacy and KMC resources and lack of money for transportation[6]. Studies have shown that strategies that can improve the presence of staff, supplies, and space for KMC is a prerequisite for quality implementation of KMC as well as the qualityof key components of KMC—skin–to–skin care, exclusive breastfeeding and discharge and outpatient follow-up care—is also needed to achieve meaningful process evaluation and scale–up of this life–saving intervention[7].

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1 UNICEF UN Inter-agency Group for Child Mortality Estimation. Levels and Trends in Child Mortality. New York: UNICEF, 2017 report

2 Lawn JE, Cousens S, Zupan J. 4 million neonatal deaths: when? Where? Why? Lancet, 2005, 365:891–900.

3 Born Too Soon: The Global Action Report on Preterm Birth. World Health Organization. Geneva: World Health. Organization Geneva, 2012. Available: www.who.int/pmnch/media/news/2012/preterm_birth_report/en/.

4 WHO. WHO recommendations on interventions to improve preterm birth outcomes. In. Geneva: World Health Organization. (2015).

5 Chan GJ, Labar AS, Wall S, Atun R. Kangaroo mother care: a systematic review of barriers and enablers. Bull World Health Organ. 2016; 94(2):130–41J.

6 Emily R. Smith, Ilana Bergelson, Stacie Constantian, Bina Valsangkar and Grace J. Chan. Barriers and enablers of health system adoption of kangaroo mother care: a systematic review of caregiver perspectives. *BMC Pediatrics* 2017 17:35 DOI: 10.1186/s12887-016-0769-5

7 Kondwani Chavula , Dyson Likomwa, Bina Valsangkar, Richard Luhanga, Lydia Chimtembo, Queen Dube, Wasihun Andualem Gobezie, Tanya Guenther. Readiness of hospitals to provide Kangaroo Mother Care (KMC) and documentation of KMC service delivery: Analysis of Malawi 2014 Emergency Obstetric and Newborn Care (EmONC) survey data. www.jogh.org • doi: 10.7189/jogh.07.020802

This Facilitator's Manual originally designed for a five-day training course on Kangaroo Mother Care (KMC) clinical skills and program planning, monitoring and evaluation, maternal, perinatal death audits and surveillance (MPDSR) and Infection Prevention and Control(IPC). It was pretested in four trainings in Beirut for MENA region, in Nepal and Pakistan for ROSA and South Africa for ESARO and WCAR. Participants in these trainings pointed out that time was not sufficient to adequately cover the MPDSR and IPC components and the need to include health workers who are responsible for these activities who may not be represented by participants selected for the KMC training. The current revision includes three and half day training on KMC while two modules on IPC and MPDSR are developed and will soon be pretested. By applying the knowledge and skills acquired at the workshop; participants are expected to change their facilities' ability to address newborn health issues specifically the provision of quality care for management of LBW/preterm infants and ensure better outcomes.

How should this document be used?

The workshop intends to equip participants with knowledge and skill to manage Low Birth Weight/preterm baby and provide essential newborn care, train health workers, plan and implement KMC at scale, monitor and analyze data related to ENC, LBW/preterm and KMC, and follow-up at home while caring for the LBW/preterm infants. This capacity building workshop is designed to support the roll-out of the 2015 WHO recommendations on Interventions to Improve Preterm Birth Outcomes. If you have comments or suggestion for improving this document contact Dr. Tedbabe at thailegebriel@unicef.org

What is to be taught and how?

- There is a need to have a training schedule or agenda
- The agenda should contain date, time, and sessions/topics to be covered and responsible persons, tea/coffee and lunch breaks
- The agenda should also include the objectives of the training program, introduction of participants and of the training program, and methods of evaluation

Who is responsible for what?

- A training program needs a course coordinator, five facilitators with relevant skills and experience, administrative and support staff
- Facilitators should divide tasks among themselves before hand and be well prepared on the tasks they are going perform
- The course coordinator organizes the training program and coordinates activities
- Facilitators provide information, organize learning tasks, demonstrate and supervise skill practice, evaluate the progress of participants and provide feedback
- Administrative and support staff provide administrative, secretarial, logistics and other services for the training

D **Powerpoint slides for lectures.**
The facilitators can use all the slides or select based on the need and capacity of the participants. There are video demonstrations of key clinical skills. Show each video demonstrations of skills in plenary, let facilitators demonstrate on each table followed by practice among pair of participants.

PLANNING AND ORGANIZING

A successful training needs good planning and preparation ahead of time. The concept note for the training should include these three points 1) Background information that highlights why topic is important to prospective audience; 2) What the attendee can expect to happen? How will the learning objectives be achieved? and 3) What the attendee can expect to take away? -knowledge and/or skills as well as tangibles (resource material, handouts). It is important to stress the interactive portions of the workshop. In planning a training course, the facilitator needs to answer the following questions:

Aim

This facilitators guide was developed as a reference to guide health workers responsible for the training of health care providers at primary and district level health facilities. The aim is to standardize the knowledge of health professionals in the management of preterm and/or low birth weight infants through essential newborn care, to train health professionals in the implementation of two components of KMC; kangaroo position and nutrition and feeding strategies for preterm and low birth infants, and to sensitize health care providers on the importance of early discharge with outpatient follow-up and the relevance and impact of prematurity and low birth weight on newborn mortality.

Who is the intended audience?

The organization that is planning the training need to identify the skills level of the learner/participant, and since health workers have different training backgrounds and functions, it is best to establish aims and tailor the training accordingly. This workshop is intended for doctors, nurses and midwives who provide care for preterm and low birth weight infants and who are responsible for planning and managing newborn health programs in health facilities and the Ministry of Health. Trainees should possess basic competences in maternal and newborn care. Their knowledge and basic experience in caring for preterm and low birth weight infants can be strengthened under the concepts of Kangaroo Mother Care, as expressed through its three components: kangaroo position, kangaroo nutrition and early discharge with outpatient follow-up.

What skills will be acquired?

- Providing essential newborn care for preterm and low birth weight babies
- Routinely assessing the baby and mother
- To counsel and support mother initiate breast feeding
- To identify, prevent and mange hypothermia
- To use interpersonal communication to counsel and support mother to put baby in KMC position in the facility and at home after discharge
- To teach mothers to express breast milk, to cup, syringe or dropper feed the baby, to feed baby through naso gastric tube
- To teach and support mothers in home care for the baby and to recognize danger signs and ask her to promptly seek care when concerned
- To provide follow-up care
- To mobilize institutional support, plan, implement and monitor KMC program

How many participants will be in the training course?

The training requires extensive practical skills and should accommodate a number that is easy to manage. The number should not exceed 25 to 30 participants per class.

What is to be taught and how?

- There is a need to have a training schedule or agenda
- The agenda should contain date, time, and sessions/topics to be covered and responsible persons, tea/coffee and lunch breaks
- The agenda should also include the objectives of the training program, introduction of participants and of the training program, and methods of evaluation
- A training program needs a course coordinator, five facilitators with relevant skills and experience, administrative and support staff with following clear delineation of responsibilities:
  - Facilitators should divide tasks among themselves before hand and be well prepared on the tasks to be performed
  - The course coordinator organizes the training program and coordinates activities
  - Facilitators provide information, organize learning tasks, supervise skill practice, evaluate the progress of participants and provide feedback
  - Administrative and support staff provide administrative, secretarial, logistics and other services for the training

How many facilitators are needed and what qualifications should they have?

- The number of facilitators should be determined based on the number of staff and trained facilitators available. It is good to have up to 5 facilitators conducting a training program. Ensuring that facilitators have relevant skills and experience is key, maximum facilitator to trainee ratio should be 1:6
- Facilitators should know the content of the training modules and be skilled in the aspects they teach
- Facilitators should be well versed in pedagogical techniques and imparting skills as stipulated in the training guides
- Facilitators should be KMC experts. A KMC expert is a health professional with practical (i.e. has worked in a certified Kangaroo Mother Care Program) and theoretical expertise in all three components of Kangaroo Mother Care, and is able to train and show others how to properly apply the Kangaroo Mother Care Method and has the capacity to evaluate the functioning of a Kangaroo Mother Care Program.

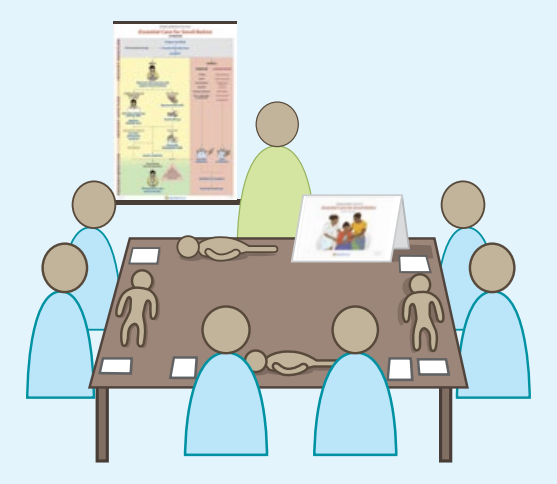
What facilities/preparations are needed?

A **Administrative Notes for the training event.**

Administrative note should include essential information on dates, visa, venue, security, etc is sent at least 4-6 week ahead of the workshop date. Similarly, the lead facilitator need to inform participants about necessary preparations, documents or data they need to bringso participants come prepared. It is crucial to follow-up and compile list of participants with their responsibility, past training experience on the topic and current role in newborn care.

B **Venue**

When selecting a venue consider a place that allows the intended number of patcipants to attend and is suitable for the educational objectives.
A large room with chairs and tables) is required in which all participants can sit comfortably. The room also needs to have provisions for video demonstration in plenary.



Participants will be organized in groups of 6 per facilitator. Each group will need to refer to an Action Plan and a Facilitator Flip Chart. Each participant will need a Provider Guide and recording sheets for the Knowledge Check (multiple choice questions) and Objective Structured Clinical Evaluations (OSCE A and B). Each pair or group of 3 participants will work with a small baby simulator, manikin or doll and additional equipment.
A premature newborn simulator is available for insertion of a nasogastric tube, and a breast model can be used for training manual expression of milk.

C **Visit to KMC Facilities**

A visit to a functioning KMC service should be a mandatory component of this training. The course coordinator should write an official paper to the health facility. It is necessary to assign a focal person who selects and keeps sick children for the participants according to a given schedule. Encourage participants to observe and learn from the visit, adhere to the facilities SOP and share their learning which they could use in their facility.

D **Powerpoint slides for lectures.**

The faciltators can use all the slides or selct based on the need and capacity of the partcipants.

E Essential Equipment and Materials

No	Description	Quantity
1.	Action Plan	one for six participants
2.	Flip Chart	one for six participants
3.	Provider Guide	one for each participant
4.	Parent Guide	one for each participant
5.	Small baby simulator, manikin or doll in which a nasogastric tube can be placed	one for two participants
6.	Breast model (if available)	one for two participants
7.	Alcohol-based hand rub or soap and water	one for six participants
8.	Bag/mask device, small and premature masks (if available)	one for two participants
9.	Head covering, diaper and socks	one for two participants
10.	Extra blankets	one for two participants
11.	Scale (if available)	one for six participants
12.	Support binder for skin-to-skin care	one for each participant
13.	Thermometer	one for two participants
14.	Stethoscope	one for two participants
15.	Weighing scale, measuring tape and torch	one of each per table
16.	Water to simulate breast milk	one for two participants
17.	Cup, or paladai for feeding	one for two participants
18.	Measuring container for collecting breast milk	one for two participants
19.	Clean nasogastric tube (5 or 6 French)	one for two participants
20.	20 mL syringe	one for two participants
21.	Tape to secure nasogastric tube	one for two participants
22.	Table to calculate collected breast milk	one for two participants
23.	Growth chart (optional)	one for two participants
24.	Mother's Observation Form (in Provider Guide)	one for each participant
25.	Newborn Assessment Form (in Provider Guide)	one for each participant
26.	Newborn Referral Form (in Provider Guide)	one for each participant
27.	Pen, and paper	one for each participant
28.	Course Registration Form	1 per room
29.	ICD forms	
30.	Stickit notes (two to three colors)	1 per table

FACILITATORS' PREPARATION

Facilitators need to review the five sections of each Flip Chart page

1. **Explain and demonstrate –** Emphasize key points and be practical.
2. **Invite discussions –** Suggest questions that will provoke discussion among the providers about the local context of care. These questions will also help participants identify changes to improve care.
3. **Facilitate practice –** guidance about how providers should practice skills required for each action.
4. **Background –** a summary of details about the action which will help you answer questions.
5. **Educational advice –** advice that will assist you in creating the ideal learning experience. You will need to collect and familiarize yourself with national and facility guidelines for such practices as eye care, cord care, and immunizations.

There are four exercises that combine a series of actions to help the learner integrate the steps of aspect of care. They also focus on how to communicate with the mother and teach her some of the skills. Familiarize yourself with exercises and evaluations in the Flip Chart

1. The Knowledge Check can be given as both a pre- and post-course evaluation if desired.
2. OSCE A and B evaluate knowledge, skills, and decision-making.
3. Review the four sections of each Provider Guide page
4. Review Key Knowledge – a summary of important facts.

Review and prepare for the "Practice Key Skills" section. It is a section to guide practice during and after the workshop and includes what to monitor - some key indicators that can be used for data collection as part of efforts to improve quality of care as well as quality improvement. Conduct demonstration using videos from the global health media at the indicates session timing in the lesson plan. (https://globalhealthmedia.org/videos/smallbaby/). The videos on follow up can be downloaded from www.fundacioncanguro.co after registering and creating an account. To avoid connection issues; it is recommended to download the videos ahead of the session.

YOUR ROLE AS FACILITATOR

Explain to participants that, as facilitator your role throughout this course will be to guide them through the course activities, answer questions as they arise or find the answer if you do not know, clarify information they find confusing, give individual feedback on exercises where indicated lead group discussions, demonstrations on mannequins, video demonstration and role plays, help them learn skills.

Remember adults learn what they need or want to learn – unlike children who like to learn almost everything. As facilitator; you should continually relate course content to the "real world" of the adult learner. Due to the many pressures adults face whether family, business, or social etc. Adults must feel that attending and participating in a course gives them information they can use. Establish relevance for learners by asking them to list their expectations for the course and paste the expectations on a flipchart. At end of the course, review the list of the participants' objectives. Determine if each has been met by the workshop. Explain how to resolve any issues that have not been addressed in class.

The adult learner comes to class with a wide variety of experiences, both personal and professional. The facilitator should respect the learner's life experiences and relate the learning topics to those experiences. You can show respect by asking participants' opinions, allowing participants to answer, and offering positive responses when the learner shares experiences. A component of respect is inclusion. Adults need to feel included as an equal in the group. You can accomplish this by drawing each learner into discussions, rotating volunteers and attempting to give each participant equal attention. Consider that students generally remember:

- 50% of what they hear and see;
- 70% of what they say and
- 90% of what they do and talk about.

Active participation in the learning process ensures that participants gain and retain the most information from class.

TRAINING PLAN BY EACH DAY (AGENDA)

This agenda is illustrative for four and half to five days training. When you organize the training, you can adapt the time based on partcipants experience and available time. For daily recap session, select and inform one or two participants in advance. Encourage them to use participatory methods.

Type of Activity		Time
Day One		
Section 1: Introduction 8:30-9:55am		
Activity 1.1	Registration of participants	10 mins
Activity 1.2	Introduction of participants	15 mins
Activity 1.3	Lay ground rules and announce any administrative arrangements	10 mins
Activity 1.4	Pre-test assessment	30 mins
Activity 1.5	Expectations	20 mins
Activity 1.6	Presentation on workshop rationale, leaning objective and methods	15 mins
Section 2: KMC Clinical Knowledge and Skills 9:55am-1:00pm		
Activity 2.1	Presentation on essential newborn care	30 mins
TEA BREAK at 9.55am		**15 mins**
Activity 2.2	Preparing for the birth ofLBW/preterm and essential care for small babies	40 mins
Activity 2.3	Classify the LBW/preterm	30 mins
Activity 2.4	Presentation on KMC physiologic mechanism of effect	40 mins
LUNCH BREAK at 12.20-3:00 pm		**60 mins**
Activity 2.5	Maintaining thermal care for the LBW/preterm	90 mins
Day Two 8:30am-5:00pm		
Activity 2.6	Recap of day two and administrative announcements	30 mins
Activity 2.7	Feeding the LBW/preterm babies-support breast feeding	80 mins
TEA BREAK at 10:00am		**10 mins**
Activity 2.8	Support feeding the LBW/preterm-feeding by cup, inserting NGT and feeding NGT	145 mins
LUNCH BREAK at 1:00pm		**60 mins**
Activity 2.9	Explain and demonstrate assessing sings of readiness of breastfeeding when using alternative feeding methods	50 mins
Activity 2.10	Routine assessment of LBW/preterm babies for change of care or referral	60 mins

Type of Activity		Time
Day Two 8:30am-5:00pm (cont'd)		
TEA BREAK at 3:00pm		**10 mins**
Activity 2.11	Routine assessment of LBW/preterm babies	120 mins
Day Three 8:30am-5:00pm		
Activity 2.12	Recap of day two and administrative announcements	30 mins
Activity 2.13	Prompt referral and stabilization	60 mins
Activity 2.14	Planning for successful discharge and home care	20 mins
TEA BREAK at 10:00am		**10 mins**
Activity 2.15	Practice on counseling the mother and other caregivers for home care	60 mins
Activity 2.16	Proper hygiene and preventing infection	90 mins
Activity 2.17	Conduct OSCE B	60 mins
LUNCH BREAK at 1:00pm		**45 mins**
Section 3: KMC Implementation Experiences, Challenges and Possible Solutions		
Activity 3.1	Introduction to KMC implementation and scale-up Learners start to think about what they will include in their action plans	40 mins
Activity 3.2	Quality of care and supportive supervision Learners work in country or facility teams to document ideas to include in country/facility action plans	30 mins
TEA BREAK at 3:00pm		**10 mins**
Activity 3.3	Multidisciplinary care and teamwork in KMC	30 mins
Activity 3.4	Mobilizing support for KMC (national level, health facilities and community)	40 mins
Day Four 8:30am-5:00pm		
Activity 3.6	Recap of day three and administrative announcements	30 mins
Activity 3.7	Documentation for monitoring and evaluation	60 mins
TEA BREAK at 10am		**15 mins**
Activity 3.8	Action planning for KMC implementation and scale-up	180 mins
Activity 5.5	Orientation to resource materials	30 mins
Activity 5.6	Post-sessions self-assessment and Course Evaluation and closing	60 min

INTRODUCTION TO KEY RESOURCES

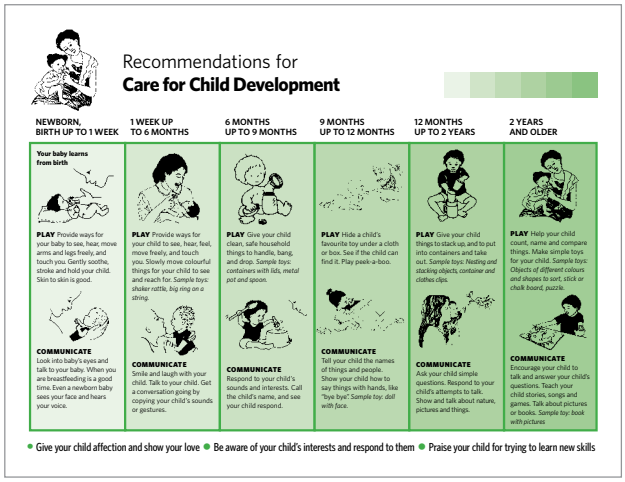
This resource package is compiled from different sources and this brief description is intended to aid the user to smoothly navigate and use as needed for clinical care as well as to plan and execute trainings.

1. **Helping Babies Survive, Essential Care for Every Baby:**
Helping Babies Survive (HBS) is an initiative of the American Academy of Paediatrics (AAP), developed in collaboration with WHO, and supported by the US Agency for International Development (USAID), Save the Children, Latter-day Saint Charities, Laerdal Global Health, Johnson & Johnson, and a number of other global health partners. The Neo-Natalie mannequin in a size of preterm infant has a "stomach" that allows skills practice for Naso- Gastric Tube (NGT) insertion, feedings and NGT removal. The breast Mama Breast Simulator is used for hands on practice on expressing breast milk. Laerdal is the provider of these materials and AAP has the copy right. Prior approval is needed for translation and adaption of the materials in the event you can not have the mannequins; locally develop dolls/models can be used to practice skills.

Contents of ECSB Training Materials

- PremieNatalie newborn simulator
- MamaBreast
- Nifty feeding cup
- HBS ECSB Facilitator Set that includes: 1 action plan wall poster, flip chart, OSCEs, provider and parent guide

2. **Early Childhood Devlopment(ECD):** includes an article on A Guide for Monitoring Child Development in Low and Middle-Income Countries, glossary of terms use in ECD, UNICEF document on standards for ECD programming. The aim of this document is to guide practitioners interested in early childhood development through a set of recommended standards for parenting programmes. The standards cover a range of good practices that programmes could offer to parents and key caregivers. These standards provide statements of expectations of what programmes should offer to parents and, in doing so, support them in raising their children. The poster on recomndation for care for child devlopment covers from for first two years of child's live and could be translated and adapted to local context.



3. **Lessons Plan:** Executing competency based training session's entails a clear plan, expected skill acquisitions, how they are measured and evaluated. This becomes even more important when the capacity building activity is expected to be delivered at scale, concurrently by different trainers than as a small-scale initiative. The competency based training on care of small babies is run by five facilitators in one session for 30 participants. Having one lessons plan allows coherent session flow for facilitators. In addition, the plan guides facilitators in the preparation required for each session. The lesson plan guide facilitators in step by step process and indicates the pages in the flip chart for the specific session. The videos are meant to enhance skill demonstration and are best delivered in plenary. If the venue does not allow for video demonstration in plenary session, this could be done in each of the five small groups. For organising and executing such a training for the first time; the lesson plan helps organisers in determining the number of facilitators, supplies and venue required.

4. **Technical Presentations:** The training is competency based and there is a minimal number of presentations or theoretical discussions. The selected few presentations provide important background information on history of kangaroo mother care, its immediate and long-term benefit, physiologic mechanism of skin to skin contact, importance of infection prevention and control and KMC program implementation. Faciltators are adviced to select the relevant slides for their audience.

    a. **On history, mechanism of action, immediate and long term benefit of kangaroo mother care:** This presentation provides background information on the beginning of KMC in Colombia and its start in South Africa. The presentation has a break point to allow delivering of the presentation a brief 15-20 minutes' presentation. Indicative grouping of the slides is included in the session plan. You as a faciliator can determine which slides to include and number in each presentation. For example, if particpants are aware of the information; you can skip this presentation. The physiologic mechanisms of skin to skin contact in maintaining baby's temperature include stimulating breathing, neurophysiologic outcomes fostering bonding of mother and infant, physiological stress, effects on stress, nosocomial infections and mortality reduction, brain development and epigenetics, early intervention and developmental outcomes. This up-to-date information with current evidence provides learner the knowledge they need to understand the importance of KMC in the care of preterm and low birth weight infants. The current evidence on brain development provides knowledge on the importance of early childhood development and KMC's role in the early stimulation, nurturing care and follow-up to prevent, promptly identify and provide care for disabilities associated with preterm birth. All presentations and different tools and templates can be accessed here.

b. Implementation, monitoring and evaluation of kangaroo mother care program There are six sessions on the agenda devoted to the implementation of a KMC program. Much of the materials that are provided serve as hints and reminders for facilitators and are not necessarily presentations that you can repeat as is with workshop participants. All the handouts serve as examples of activities that can be included in working sessions for brainstorming and compiling plans of action.

5. Technical Briefs: The technical briefs by Every Preemie-SCALE highlights the safe and effective use of specific inpatient newborn care interventions. Central to this series of technical briefs is the guiding principle of "Do No Harm". The briefs are designed to provide stakeholders with evidence-based information regarding safe and effective inpatient care in low resource settings as an important step to avoid harm and improve health outcomes for newborns. The series covers:


Safe and Effective Oxygen Use for Inpatient Care of Newborns

DO NO HARM TECHNICAL BRIEF

Oxygen is important in the care of newborn infants because many conditions that affect babies in the first days of life can result in low levels of oxygen in the body. Hypoxemia, or low level of oxygen in the blood, is a life-threatening condition that results in increased mortality and morbidity. Prematurity and respiratory distress syndrome (surfactant deficiency), pneumonia and other severe infections, asphyxia and difficulties in the transition from fetal to neonatal life can all result in hypoxemia. Supplemental oxygen is an essential lifesaving treatment.

Why is Safe Oxygen Use Important?

Access to appropriate oxygen therapy has been demonstrated to reduce death from childhood pneumonia and neonatal respiratory distress. Improved detection of hypoxemia and the safe administration of oxygen has resulted in a 35% reduction in the risk of death from childhood pneumonia in high-burden settings.[1] Historically, the administration and delivery of oxygen with pressure that helps maintain lung inflation has resulted in a dramatic improvement in survival of premature infants.[2] Oxygen therapy remains an essential element in the treatment of newborn respiratory distress, with specialized delivery methods being increasingly used in low and middle-income countries.[3,4]

How can unsafe oxygen use cause harm?

Oxygen is fundamental for sustaining life, but it is also toxic. Unique developmental vulnerabilities of newborns put them at a greater risk of injury from oxygen use than adults. Injury may occur from high levels of oxygen in the blood, regardless of the administered oxygen concentration, and from exposure of the lungs to high concentrations of oxygen. The two main complications of oxygen use with newborns are retinopathy of prematurity (ROP) and lung injury. The historical success of improving survival of premature infants was tempered by blindness in some survivors that was caused by low, but unmonitored, oxygen exposure. Even with low concentrations of administered oxygen, levels in the blood can rise far above normal. ROP is the abnormal development of blood vessels in the retina of the eye. In its most severe form, ROP can result in blindness. Exposure to supplemental oxygen also produces complications from direct oxygen toxicity to lung tissue. Chronic lung disease (also known as bronchopulmonary dysplasia) is a serious consequence in extremely preterm infants, but cumulative oxygen exposure also leads to lung problems in infancy among moderately preterm babies.[5]

There are multiple ways in which inadequately regulated oxygen use can cause harm. In the special care of newborns the most common include:

- 100% oxygen administration
- Unmonitored oxygen saturation during any supplemental oxygen administration
- "Prophylactic" administration of oxygen to sick or at-risk newborns without clinical indication
- Environmental enrichment with oxygen (i.e. oxygen in incubator)
- Use of non-rebreathing mask or funnel to deliver oxygen
- Interrupted oxygen administration (rotating allocation of available oxygen)

What are current WHO recommendations for oxygen therapy?

Current WHO recommendations and clinical guidelines address several aspects of oxygen therapy (Table 1).

Clinical indications for oxygen use include resuscitation of preterm infants and advanced resuscitation of term infants as well as the full spectrum of respiratory illness from mild hypoxemia to moderate/severe respiratory distress and respiratory failure. Routine resuscitation of term and moderate-to-late preterm infants begins with bag-and-mask ventilation using room air. However, preterm infants < 32 weeks should receive ventilation beginning with 30% oxygen or air if blended oxygen is not available (rather than 100% oxygen). Oxygen concentration should be guided by blood oxygen saturation levels. Titrating the concentration of oxygen to meet time-specific saturation targets (Table 2). The adjustment of the concentration of oxygen levels should be by 10% (FiO2=0.1) per 30 seconds and must be guided by oxygen saturation levels reached.[6]

- Current evidence based recommendations on safe and effective use of oxygen,
- Infection prevention,
- Thermal protection and
- Human milk for inpatient newborn care.

They can be translated to local language if needed and can be accessed www.everypreemie.org/resources/

6. Guidelines: The clinical guidelines are from Kalafong Hospital KMC unit in South Africa. The guidelines are standard operating procedures of the KMC unit. To provide guidelines and compliance requirements regarding admission, transfer and discharge procedures. They are intended to serve as an example and each health facility may adapt them to the specific situation and need.

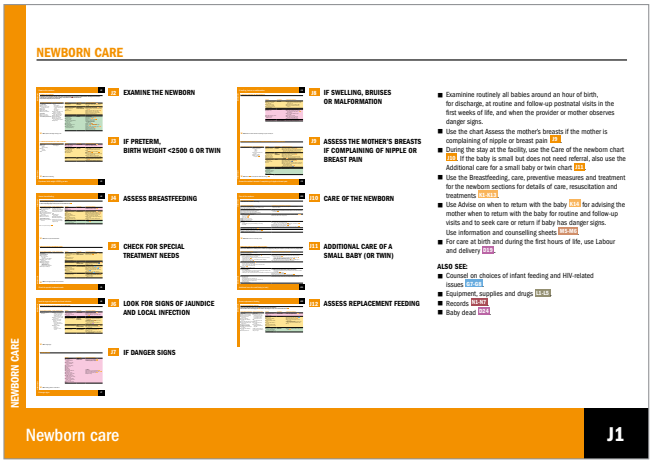
a. Feeding: infant feeding policy of the hospital is clearly defined to be breast milk. The policy indicated the choice and volume of feeds, caloric requirement of premature infants, and use of breast milk fortifiers, method of feeding and management of breast milk bank. The resource also includes a guide to daily feeding requirements by weight and age, cup feeding procedures and protocol and method of use of breast milk fortifier.

b. **For doctors:** Clinical guideline for doctors include neonatal jaundice management flow chart, admission and discharge criteria that includes clinical conditions of both the infant and the mother as well as the social circumstances of as well. Similarly, the ward protocol describes detailed roles and responsibilities of doctors, work organization and allocation among different teams, discharge arrangements and procedures, and routine care and clinical rounds in the unit.

c. **For nurses:** includes standard operating procedures of the unit, clear instruction for weighing the infant and recoding it regularly and clearly, KMC unit checklist that describes admission producers, routine investigation and treatment, discharge procedure and documentation.

7. **Ward documents:** are useful guides in using different equipment and tools in the care of the premature infants. It includes how to care and correctly use electronic or mechanical baby scales to maintain their precision, postnatal daily checklist, admission book, information brochure for mothers and monthly statistics from. Recommended standards for described essential care, environmental design, infection prevention, levels of newborn care in the facility and human resource requirements.

8. **Key WHO Guidelines:** Pregnancy, Childbirth, Postpartum and Newborn Care: A guide for essential practice' (PCPNC) has been updated to include recommendations from recently approved WHO guidelines relevant to maternal and perinatal health. These include pre-eclampsia & eclampsia; postpartum haemorrhage; postnatal care for the mother and baby; newborn resuscitation; prevention of mother-to- child transmission of HIV; HIV and infant feeding; malaria in pregnancy, tobacco use and second-hand exposure in pregnancy, post-partum depression, post-partum family planning and post abortion care. This revised guide brings a full range of updated evidence – based norms and standards that enable health care providers at the first health care level to provide high-quality, integrated care during pregnancy and childbirth and after birth, both for mothers and babies. All recommendations are for skilled attendants working at the primary level of health care, either at the facility or in the community. WHO recommendations on interventions to improve preterm birth outcomes



useful to those directly providing care to pregnant women and preterm infants, such as obstetricians, paediatricians, midwives, nurses and general practitioners. The information in this guideline will be useful for developing job aids and tools for pre- and in-service training of health workers to enhance their delivery of maternal and neonatal care relating to preterm birth. In includes list of the nine-evidence based maternal and newborn interventions to improve health outcomes for the preterm infants. The file also includes the new WHO IPC guideline. It is the core components of IPC programmes form a key part of WHO strategies to prevent current and future threats, strengthen health service resilience and help combat antimicrobial resistance (AMR). The guide is useful to develop protocols for IPC and AMR action plans and to support health care facilities as they develop or strengthen their own approaches to IPC.

9. **Training Supplies:** The list contains essential supplies required to organise in- services capacity building and training on Kangaroo Mother Care (KMC). The list assumes that participants have skills on essential newborn care and helping babies breathe/resuscitation. The supply is for one session for 30 participants and five facilitators.

10. **Articles:** Born Too Soon, the Global Action Report on Preterm Birth, published in 2012. It reports the magnitude of the problem, evidence based interventions and delivery platforms, global action agenda for research and advocates for increased resource and accelerated progress. The 2010 Plos article describes new strategies that can prevent, diagnose, and treat neonates with sepsis are needed in both low- and high-income settings. The review of neonatal sepsis gives an overview of the burden of bacterial sepsis and meningitis in the newborn population in developing countries. It is focused on the pathogens mostly implicated, their antibiotic susceptibility patterns, and management. The 2005 Lancet paper on hospital acquired neonatal infection in developing countries reviewed the burden of hospital-acquired bacterial infections, the range of neonatal pathogens and antimicrobial resistance, potentially modifiable intrapartum and postnatal risk factors for infection, and low-cost quality improvement, infection prevention strategies for resource constrained settings and further research needs. In Journal of Hospital Infection, 2008, authors describe strategies for the prevention of nosocomial infections to include hand hygiene practices, prevention of central venous catheter (CVC)-related bloodstream infections (CRBSIs), judicious use of antimicrobials for therapy and chemoprophylaxis, enhancement of host defenses, skin care and early enteral feeding with human milk.

LESSON PLAN

WORKSHOP TITLE: Kangaroo Mother Care (KMC)

Facilitators _____

Learning Objectives

At the end of the sessions, participants will be able to acquire knowledge and skills to manage LBW/preterm babies and counsel and support mothers and caregivers with LBW/preterm babies

- Preparation and/or anticipating for birth of LBW/preterm newborns and Essential newborn care
- Maintaining thermal care for the LBW/preterm and KMC positioning
- Feeding LBW/preterm babies
- Routine assessment of LBW/preterm babies for change of care or referral
- Referral, discharge, re-admission and follow-up of LBW/preterm babies
- KMC Implementation Experiences, challenges and Possible Solutions
- Increasing KMC support, and Action Planning for Implementation and Scale-up
- Perinatal Death Reviews using WHO guidelines
- IPC (Infection Prevention & Control) in Health Care Facilities (HCF)

Sitting arrangement/ Resources/Preparation required

Sitting arrangement
One facilitator per table
3 pairs of two Participants per table

Resources

- Facilitator Agenda
- ECSB Action Plan (on wall, or easel)
- ECSB Flipchart
- ECSB Kit
- PowerPoint presentation
- Videos
- Participant Agenda (1 per person)
- ECSB Provider Guide (1 per person)
- ECSB Parent Guide (1 per person)
- PremieNatalie (1 per pair)
- MamaBreast (1 per pair)

Other resources per table

- Alcohol handrub for hand washing
- Thermometers (type used locally)
- Vials of antibiotics
- Vial to simulate eye drops
- Vial to simulate Vitamin K
- 1.0 mL Syringe for Vitamin K
- 1.0 mL Syringe for antibiotics
- Cloth binder for skin-to skin care
- Baby blanket, cap, socks and nappy
- Measuring container for breast milk
- Cup, spoon, for feeding baby
- Clean nasogastric tube (5 or 6 French)
- Clean 20ml syringe
- Weighing scale, measuring tape and torch

Preparation required

- Organise venue for PowerPoint presentation
- Translate to local language if needed

Timing	Facilitator/ Participant Activities	Resources/tools required
	DAY 1	
	Objective 1: Preparation for birth of LBW newborns & essential care– 100 mins	
30 mins	• Explain, counsel and demonstrate essential care for small babies (ECSB flip chart 1/1b) • Explain on preparation for birth of LBW, and coordination and collaboration among different teams (ECSB flip chart 2/2b) • Explain and demonstrate essential newborn care - show video (7 mins) • Explain and demonstrate essential care of the small baby at birth (ECSB flip chart 3/3b) - show video (7 mins)	• ECSB flip chart • Videos • PremieNatalie • Vitamin K vial and syringe • Antibiotics vial and syringe • Baby blanket
40 mins	• Participants practice preparing for birth of a small baby, and communicating with the family • Participants practice on identifying steps that keep a small baby well and support breathing, warmth, feeding, and preventing infection • Using a manikin, participants practice on essential care of the small baby at birth	
15 mins	• Explain and demonstrate classifying LBW babies (ECSB flip chart 4/4b, 5/5b) –show video (6 mins)	
15 mins	• Participants practice classifying the small baby	
	Objective 2: Maintaining thermal care for the LBW and KMC positioning – 90 mins	
40 mins	• Explain and demonstrate assisting mothers to provide skin-to-skin care for small babies in the first 24 hours, checking the temperature, and wrapping the baby when no longer using skin-to-skin care (ECSB flip chart 6/6b) • Facilitator demonstrate interpersonal counseling skills • Explain, counsel and demonstrate assessing a baby during continuous skin-to-skin care for activity, breathing, color and temperature (ECSB flip chart 7/7b, 8/8b)	• PowerPoint presentation (slides 1-28) • ECSB flip chart • Videos • PremieNatalie • Cloth binder • Thermometers • Baby blanket
7 mins	• Show video (7 mins)	
23 mins	• Using the manikin, participants practice continuous skin-to-skin care, and assessing activity, breathing, color and temperature (ECSB flip chart 9/9b)	
20 mins	• Participants practice recording feedings and wet or dirty diapers on a simple form	

Timing	Facilitator/ Participant Activities	Resources/tools required
DAY 2		
Objective 3: Feeding LBW babies – 300 mins		
30 mins	• Q & A session for Day 1 lessons Participants get a chance to ask questions on day 1 sessions and clarify any issues	• Videos • ECSB flip chart • PremieNatalie • MamaBreast • Measuring container for breast milk • Cup, spoon, for feeding baby • Clean NGT (5 or 6 French) • Soap & water/Alcohol hand rub • Water to simulate milk
20 mins	• Explain, counsel and demonstrate supporting breastfeeding and evaluating the baby's effectiveness at breastfeeding (ECSB flip chart 10/10b)	
20 mins	• Working in pairs, participants practice evaluating baby's effectiveness at breastfeeding using case scenario (ECSB flip chart 10b)	
20 mins	• Explain, counsel and demonstrate expressing breastmilk, and storing expressed milk (ECSB flip chart 11/11b) show video (7 mins)	
20 mins	• Using MamaBreast, participants practice on expressing breastmilk and correctly storing breast milk	
20 mins	• Explain, counsel and demonstrate cup feeding (ECSB flip chart 12/12b)- show video (8.43 mins)	
20 mins	• Participants practice feeding by cup, including proper/ thorough cleaning of cup/spoon before each feeding, and assessing the baby's ability to take cup or spoon feedings	
25 mins	• Explain, counsel and demonstrate inserting and removing a nasogastric tube (ECSB 13/13b)–show video (7 mins) • Explain, counsel and demonstrate feeding with NGT (ECSB flip chart 15/15b)–show video (6.15 mins)	
20 mins	• Using a manikin, participants practice inserting NGT, feeding with a NGT, and safely removing NGT	
10 mins	• Explain feeding options for babies with HIV+ mothers	
15 mins	• Explain and demonstrate determining appropriate volume of breastmilk (ECSB flip chart 14/14b)	
30 mins	• Participants discuss determining appropriate volume of breastmilk using case scenarios (ECSB flip chart 14b)	
20 mins	• Explain and demonstrate assessing signs of readiness for breastfeeding (ECSB flip chart 16/16b) https://globalhealthmedia.org/portfolio-items/breastfeeding-the-small-baby/?portfolioID=5623(9) (10.35 mins)	
30 mins	• Participants discuss assessing breastfeeding readiness using case scenarios (ECSB flip chart 16b)	

Timing	Facilitator/ Participant Activities	Resources/tools required
Objective 4: Routine assessment of LBW babies for change of care or referral – 120 mins		
20 mins	• Explain and demonstrate on routine assessment of LBW babies for change of care or referral (ECSB flip chart 18/18b)	• PowerPoint presentation (slides 29-52) • Daily weight follow-up, ward observation • Daily PNC check form • Ward statistics forms
60 mins	• Participants work in groups of 3 (mother, provider, colleague assuming care of the baby) practice case scenario (ECSB flip chart 18b)	
40 mins	• Participants practice on filling daily follow-up of vital signs, adequacy of feeding, weight gain, danger signs and filling forms and clinical notes • participants practice interpersonal counseling skills	
DAY 3		
Objective 5: Referral, discharge and re-admission of LBW babies – 240 mins		
30 mins	• Q & A session for Day 2 lessons Participants get a chance to ask questions on day 2 sessions and clarify any issues	• Power Point presentation (slides 53-64) • Referral form (provider guide, pg 60)
15 mins	• Explain and demonstrate prompt referral, and stabilization for transport when a baby needs advance care (ECSB flip chart 19/19b)	
45 mins	• Participants work in pairs, discuss case scenarios (ECSB flip chart 19b)	• Power Point presentation (slides 65-111) • Parent Guide or local materials • Soap and water/ Alcohol hand rub • Bag and mask (optional)
20 mins	• Explain and demonstrate on planning for successful discharge and home care (ECSB flip chart 20/20b)	
40 mins	• Using parent guide or local materials, participants practice on counselling the mother for home care (ECSB flip chart 20b)	
30 mins	• Explain and demonstrate proper hygiene and preventing infection (ECSB flip chart 21/21b)	
45 mins	• Discharge and outpatient high risk follow-up of preterm and low birth weight infants **Note:** The slides on neurological examination (Amiel Tison and INFANIB exam) will be used ***when*** it is feasible. A pediatrician must be available to provide mentoring support.	
60 mins	• Participants practice on teaching the mother how to wash hands • Participants discuss hygiene practices and immunizations given in the first 6 months (ECSB flip chart 21b)	
45 mins	• Administer OSCE B to all participants	• OSCE B

Timing	Facilitator/ Participant Activities	Resources/tools required
Objective 6: KMC Implementation Experiences, challenges and Possible Solutions- 135 mins		
40-60 mins	**Introduction to KMC implementation and scale-up** • Expectations: what do learners want to be able to do at the end of the workshop • Learners share their own experience with KMC implementation (if any) (a few short presentations or discussion in group with plenary feedback) **Inform participants to include the following key information:** • Total number of births (percentage of premature and low birth weight infants) • Neonatal mortality (percentage of deaths that are attributed to prematurity or low birth weight) • Place of birth (i.e. concentrated cities of the country, number of births in the community VS. institutional births) • Basic description of the health system (i.e. different levels of care, private institutions VS. public institutions distribution, number of public hospitals, who pays for health care in the government; health insurance, out of pocket) • Ethnic minorities and geographic distribution • Current medical care that is being delivered to premature and low birth weight infants and the cost of providing such care • Available data on screening and referral from lower health facilities and follow-up babies monitored (in both facility and community level) • Nutrition profile (TIBF, EBF, wasting, stunting) • Available policies or guidelines on infant and neonatal care (i.e. Has the country being sensitized to KMC? is KMC included in policies and national guidelines?) • Institutions that offer traditional neonatal care/ institutions that offer neonatal care and KMC (if any) • Learners are prepared for further disseminating knowledge and skills through training, orientation, on-the-job training, etc. appropriate to the context	• Discussion • Short presentations by participants • PowerPoint presentation to guide the session • Use training slide table as handout • USAID/MCHIP KMC implementation guide
30 mins	**Quality of care and supportive supervision – short presentation with group activities in between** • Learners work in country or facility teams to document ideas to include in country/facility action plans	• Power Point presentation • Activity handout • Example supportive supervision checklists • USAID/MCHIP KMC implementation guide

Timing	Facilitator/ Participant Activities	Resources/tools required
40 mins	**Multidisciplinary care and teamwork in KMC – short presentation with group activities in between** • Participants brainstorm on categories of health services, professionals and other health workers that should be involved in KMC at different levels of the health system per what is available in their country or health facility (Examples: nutritionists/ dieticians, speech-language therapists, psychologists, occupational therapists, physiotherapists, ophthalmologists, neurologists, community health workers) • Discussion on the need for multidisciplinary care in KMC and role of KMC for early childhood development	• PowerPoint presentation • Activity handouts
40 mins	**Mobilizing support for KMC – short presentation with group activities in between (national level, health facilities and community)** • Participants brainstorm on KMC sensitization and mobilization at different levels (Who? What? Where? When? How?) • Participants brainstorm how to look beyond barriers and transform barriers into enablers	• Power Point presentation • Activity handouts • USAID/MCHIP KMC implementation guide
DAY 4		
Objective 7: Increasing KMC support, and Action Planning for Implementation and Scale-up – 180 mins		
30 mins	• Q & A session for Day 3 lessons Participants get a chance to ask questions on day 3 sessions and clarify any issues	
60 mins	**Documentation for monitoring and evaluation** • Rationale for the monitoring and evaluation of KMC • Utilization of data for program improvement and advocacy • Documentation and record keeping – case scenarios and learners practice filling or interpreting patient records and collective registers and and reflect on the use of the results of the analysis	Power Point presentation (Presentations: 3.5 and 3.6 and handouts: 3.5) • Facilitator(s)and participant(s) share experiences • Completed stats form and KMC register for discussion and interpretation

Timing	Facilitator/ Participant Activities	Resources/tools required
30 mins	**Action planning for KMC implementation and scale-up** • Different interpretations of KMC, stages of change, tools for measuring change, deciding on an approach for scale-up	• Power Point presentation (Presentations: 3.1 and 3.6 and handouts: 3.6
90 mins	**Learners work in country/facility teams to develop short- and long-term action plans (immediate, 3, 6, and 12 months) – use available templates or design own template** • Facility level: implementation or quality improvement • District or regional level • National level Working groups hand in a copy of their action plan to the lead facilitator – if hand written, the facilitator could make a photocopy or take a picture so that participants take the original plan with them	• Design templates for country brain storming (action plans [stages of change/simple/ PPT template], prioritizing activities)
40-60 mins	Learners report back to other country/facility teams on their plans – what will be done immediately, what will be done immediately, within 1month, within 3 months, 6 months and one year (Could also be done on the next day)	• Power Point • Electronic copy to lead facilitator
60 mins	• Participants take a post-test assessment for the course and do course evaluation	
10 mins	• Closing, and post-course remarks	

Formative/Summative Assessment

- Q & A
- Making presentations/being able to provide feedback
- Multiple Choice Questions Examination (MCQ): a 30-item examination pre-and-post training.
- Objective Structured Clinical Exams (OSCEs): two OSCEs.
- OSCE A to evaluate the skills of positioning, counseling and assessment with skin-to-skin care.
  - If time allows.
  - If not conduct only B
- OSCE B to evaluate the skills of family counseling, NG placement and NG feed administration.

KNOWLEDGE CHECK (PRE-AND POST-TEST)

Essential Care for Small Babies – Knowledge check

Select the best answer to each question or statement Circle the letter of the correct answer

1. Which of the following statements correctly describes a well small baby?

(a) Feeds by cup, stays warm with skin-to-skin care, has convulsions

(b) Feeds by cup, stays warm with skin-to-skin care, weighs 1600 grams

(c) Breastfeeds poorly, breathes at 100 times per minute, maintains temperature in an incubator

(d) Feeds by cup, weighs 1200 grams, maintains temperature in an incubator

2. Which of the following is an important step in the care of a small baby?

(a) Teaching the mother to give a bath

(b) Giving the small baby lots of time in the sunlight

(c) Preventing infection by washing hands before touching the baby

(d) Weighing the small baby five times a day

3. Which of the following statements describes preparation for the birth of a small baby?

(a) Identify a skilled helper, provide extra warmth in the area for delivery, anticipate need to help the baby breathe at birth.

(b) Prepare an area for the baby's bath, check equipment, review emergency plan.

(c) Wash hands, prepare herbs for babies first feeding.

(e) Anticipate need to help baby breathe at birth, identify a skilled helper, prepare an area for the baby's bath.

4. A 1700-gram baby has been placed skin-to-skin with the mother after birth. What other care should be provided in the first 90 minutes after birth?

(a) Showing the baby to the extended family

(b) Feeding the baby with a nasogastric tube

(c) Monitoring breathing and measuring temperature

(d) Bathing the baby

5. At 90 minutes after birth, an 1800-gram baby is placed skin-to-skin with the mother and has a temperature of 36.7° C. What should you do to help maintain the baby's temperature?

(a) Bathe the baby in warm water.

(b) Place in direct sunlight.

(c) Assist mother with continuous skin-to-skin care.

(d) Place the baby on an open warmer set for high heat output.

6. Shortly after birth, a small baby is classified based on the temperature, weight, and physical exam. The baby is 1400 grams, is breathing at 90 breaths per minute, and has a temperature of 35°C. What should you do?

(a) Put the baby to the breast to assess breastfeeding.

(b) Continue to watch for improvement.

(c) Place a nasogastric tube to administer a feeding.

(d) Arrange a transfer for advanced care.

7. How many feedings should a small baby receive in a day?

(a) Two to four

(b) Five to six

(c) Eight to twelve

(d) Twenty-four

8. Which of the following techniques can help a mother to support or improve a small baby's latch?

(a) Wrapping the breasts in tight clothing between feedings

(b) Supporting the head of the baby so he is positioned to take the nipple and surrounding area into an open mouth

(c) Putting oils on the breast

(d) Feeding first with a bottle until sucking is strong

9. What is the skin temperature of a well small baby?

(a) 35.0-35.5˚C

(b) 35.5-36.5˚C

(c) 36.5-37.5˚C

(d) 37.0-38.0˚C

10. Shortly after birth, the temperature of an 1800-gram baby is 36˚C. After placing the baby skin-to-skin, the baby's temperature remains the same. Which of the following actions should be taken?

(a) Place the baby in direct sunlight.

(b) Place warm stones around the baby.

(c) Bathe the baby in warm water.

(d) Remove wet diaper and cover the mother and the baby with a blanket.

11. A 1600-gram baby has been maintaining temperature with continuous skin-to-skin care. The baby will not breastfeed or cup feed and requires nasogastric feeding. What do you advise the mother about skin-to-skin care?

(a) The mother can continue skin-to-skin care even while the baby is receiving nasogastric feedings.

(b) The baby will need to be in an incubator while receiving nasogastric feeding.

(c) The baby will need to be on a radiant warmer while receiving nasogastric feeding.

(d) The mother must stop skin-to-skin care during nasogastric feeding.

12. When a baby cannot feed directly from the breast after support is provided, what should you advise a mother to do next?

(a) Give the baby formula.

(b) Keep trying to breastfeed the baby.

(c) Express her breast milk to feed to the baby by a safe, alternate feeding method.

(d) Wait until the baby can feed directly from the breast.

13. When a mother expresses her breast milk, how can it be stored safely?

(a) In a covered container in a cool place for up to 6 hours

(b) In an open container in a shaded area

(c) In an open container in direct sunlight

(d) In a covered container heated in warm water until used

14. When breastfeeding is not effective, which of the following are safe and recommended alternate feeding methods for a small baby?

(a) Attempt cup feedings and if not successful, insert a nasogastric tube.

(b) Use a syringe to pour milk directly into the baby's mouth.

(c) Dip finger or tongue depressor into milk and allow the baby to lick the milk.

(d) Give bottle feedings and insert a nasogastric tube.

15. Which of the following best describes a 3-day-old 1800-gram baby who needs nasogastric tube feeding?

(a) The baby is breastfeeding 8-12 times per day.

(b) The baby is gaining 15 grams/kilograms per day.

(c) The baby shows feeding readiness cues every 2-4 hours.

(d) The baby takes 5-10 mL by cup per feeding for 4 feedings.

16. What is the proper length for nasogastric tube insertion?

(a) From the tip of the nose to earlobe to half way between the tip of the breast bone and the umbilicus

(b) From the mouth opening to the nipple to the umbilicus

(c) From the earlobe to the umbilicus

(d) From the tip of the nose to the chin to the bottom of the breast bone

17. You have just inserted a nasogastric tube into a small baby who cannot breastfeed or receive cup feedings. Which of the following best describes a method for confirming proper placement of the nasogastric tube?

(a) Measure the tube outside the nose.

(b) Inject 2 mL of air while listening with a stethoscope for the sound of air entering the stomach.

(c) Administer 5 mL of a feeding and then withdraw it back to see if it is mixed with gastric contents.

(d) Evaluate the baby's breathing.

18. What should a mother be taught to do before administering a nasogastric feeding?

(a) Wash her hands and reinsert the nasogastric tube.

(b) Wash her hands and confirm placement of the nasogastric tube by checking that the mark on the tube is at the edge of the nose.

(c) Wash her hands and confirm placement of the nasogastric tube by checking that the mark on the tube is at the sternum.

(d) Wash her hands and inject 10 mL of air into the tube.

19. After initial weight loss, how much weight should a small baby gain each day?

(a) 5 grams per kilogram per day on average

(b) 15 grams per kilogram per day on average

(c) 25 grams per kilogram per day on average

(d) 30 grams per day on average

20. On the day after birth, a 1600-gram baby cannot breastfeed or cup feed, and will be fed every three hours by a nasogastric tube. What volume should be administered for the baby's first feeding?

(a) 1 mL

(b) 5 mL

(c) 12 mL

(d) 25 mL

21. A 1600-gram baby is fed by a nasogastric tube. After the initial day of feedings, what is the daily increase in the volume of each feeding?

(a) 4 mL

(b) 5 mL

(c) 10 mL

(d) 15 mL

22. Which of the following indicates feeding intolerance and the need for advanced care?

(a) Spitting up small amounts

(b) Tense abdominal distension

(c) Stooling 6-8 times per day

(d) Crying before each feeding

23. In a small baby being fed by an alternative method, how often should breastfeeding readiness be assessed?

(a) At least once per day

(b) At least once per week

(c) At least once every two weeks

(d) At least once per month

24. A small baby is now 10 days old and has been fed by nasogastric tube since birth. During the first attempt to breast feed, he sucks actively, and swallowing sounds are heard. What should be done next to make the transition to breastfeeding?

(a) Stop nasogastric feeding immediately, pull out the nasogastric tube, and breastfeed only.

(b) Continue with nasogastric feeding, while gradually increasing the number of breastfeeding attempts per day.

(c) Stop nasogastric feeding immediately and breastfeed only throughout the daytime.

(d) Continue with nasogastric feeding, wait two days, and try breastfeeding again.

25. A 1600-gram baby has been receiving nasogastric feeding for 10 days and now has started to feed at the breast. Which of the following is an indication that the baby is ready to receive all the feedings by breast?

(a) Waking and crying in between feedings.

(b) Choking during occasional feedings

(c) Sucking and swallowing audibly for 10 minutes during each feeding

(d) Weight gain of 5 grams per day when no nasogastric feedings are provided

26. Small babies should be regularly assessed for:

(a) Frequency and success at feeding, temperature, presence of hiccups

(b) Activity, breathing, color, temperature and weight gain

(c) Breathing problems, temperature, and white blood cell count

(d) Frequency and success at feeding, cough, presence of convulsions

27. A 2-day-old 1700-gram baby has a normal examination and breathing rate. How often should the baby be assessed for temperature, breathing and feeding tolerance?

(a) Once per day

(b) Every 2 to 3 hours

(c) At least once per shift.

(d) Only if the baby seems ill

28. When should the mother or other providers wash their hands in order to protect a small baby?

(a) Before touching the baby and before preparing a feeding

(b) Before greeting the family

(c) Before closing a window

(d) Before leaving the hospital at the end of the day

29. A small baby needs to be referred for advanced care to a hospital 1 hour away. What should you do to prepare the baby for transport?

(a) Place a nasogastric tube so that mother can feed through the tube during transport.

(b) Continuation of KMC in transit and communicate with health providers at the receiving facility and the family, and prepare a referral note.

(c) Bathe the baby to prevent infection.

(d) Use a radiant warmer to warm the baby to 38˚C so that the baby will maintain temperature during transport.

30. Which of the following statements below describes a small baby who should be considered for discharge from the birth facility?

(a) The mother has not demonstrated competence with infant feeding, the baby has adequate weight gain documented over 3 consecutive days, and breathes 40 breaths per minute.

(b) The mother has demonstrated competence with infant feeding, the baby has adequate weight gain documented over 3 consecutive days, and the baby breathes 40 breaths per minute.

(c) The mother has demonstrated competence with infant feeding, the baby has adequate weight gain documented over 3 consecutive days, and the baby is breathing 80 breaths per minute.

(d) The mother has demonstrated competence with infant feeding, the baby has adequate weight gain documented over 5 consecutive days, and the baby is under a radiant warmer.

Answer to Knowledge Check (Pre and post-test)

1. B	**7.** C	**13.** A	**19.** B	**25.** C
2. C	**8.** B	**14.** A	**20.** C	**26.** B
3. A	**9.** C	**15.** D	**21.** A	**27.** C
4. C	**10.** D	**16.** A	**22.** B	**28.** A
5. C	**11.** A	**17.** B	**23.** A	**29.** B
6. D	**12.** C	**18.** B	**24.** B	**30.** B

ID:_____

OSCE A – Classify, Provide continuous skin-to-skin care and monitor

"I am going to read a role play case. Please show and tell me what you would do to take care of this small baby. I will only give indication about the baby's condition when you ask. No other feedback will be given until the end of the case."

"A 28-year-old mother has given birth to a 1700 gram baby. You have provided essential care, including cord care, vitamin K, and eye care. You perform your first assessment. You find that the baby is breathing well and the rest of the exam is normal; the temperature is 36.3˚C. Tell me what information you will use, how you will classify the baby and what thermal care the baby will need."

Classify the small baby	**Done**	**Not Done**
Uses the weight, temperature and exam to classify the baby	☐	☐
Recognizes a well small baby	☐	☐
Plans to provide continuous skin-to-skin care	☐	☐

Prompt: This is a well small baby who will need continuous skin-to- skin care. Describe and show how you will help mother begin continuous skin-to-skin care.

Show the mother how to do skin-to-skin care		
Explains to mother the steps and advantages of skin-to-skin care	☐	☐
Dresses baby with diaper, hat and socks (if available)	☐	☐
Places the baby upright on mother's skin between breasts	☐	☐
Positions baby with arms and legs flexed, head turned	☐	☐
Secures snugly with a cloth pulled up to the ear	☐	☐
Covers with a garment or closes mother's shirt	☐	☐

Prompt: The baby and mother are comfortable. Please demonstrate how you will monitor the baby and show the mother about how to monitor the baby while in skin-to-skin.

Monitors baby's activity, breathing, color, temperature	☐	☐
Advises mother how to monitor activity, breathing, color, temperature	☐	☐

SCORING:
Successful completion requires a total score of 9 of 12. Incompletely done items should be marked as "Not Done."

SCORE: _____/ 12

ID:_____

OSCE B – Feeding with a nasogastric tube and daily assessment

"I am going to read a role play case. Please show and tell me what you would do to take care of this small baby. I will only give indication about the baby's condition when you ask. No other feedback will be given until the end of the case."

"A 1700 gram baby is 8 hours old. The baby has a normal physical exam, and has been maintaining a temperature of 36.7˚C with continuous skin-to-skin care. The baby did not latch well at the breast and did not tolerate cup feeding. Mother has successfully expressed 15mL of milk. Describe and show what you will do next to feed this small baby."

	Done	Not Done
Insert a nasogastric tube		
Communicates with the mother about need for nasogastric feeding	☐	☐
Washes hands	☐	☐
Measures depth tube should be inserted and marks tube	☐	☐
Lubricates tube with expressed breast milk	☐	☐
Inserts tube	☐	☐
Confirms proper placement	☐	☐
Tapes tube on face	☐	☐

Prompt: Show how you will feed breast milk with the nasogastric tube.

Feed with a nasogastric tube		
Determines amount of feeding baby requires (12 mL)	☐	☐
Measures the amount to be fed	☐	☐
Connects syringe and transfers milk with tube pinched	☐	☐
Allows milk to slowly enter stomach	☐	☐
Removes syringe, recaps tube	☐	☐

Prompt: The baby is now five days old and you are doing your daily assessment. Tell me what you will assess and I will provide the findings. After completing your assessment please tell me your plan.

Describe a daily assessment		
Maternal concerns ***(none)***	☐	☐
Physical assessment ***(active, breathing well, pink, warm)***	☐	☐
Temperature ***(36.7^{0}C)***	☐	☐
Weight ***(1550 grams)***	☐	☐
Intake ***(nasogastric feeds 24 mL every 3 hours, good tolerance)***	☐	☐
Output ***(7 wet diapers, 3 stools)***	☐	☐
Recognizes that the baby remains well	☐	☐
Advance feedings to 28 mL every 3 hours	☐	☐

SCORING:
Successful completion requires a total score of 16 of 20. Incompletely done items should be marked as "Not Done."

SCORE: _____/20

DISCUSSION GUIDES FOR GROUP WORKS/TEMPLATES

The template below can be used over time during the implementation and expansion of kangaroo mother care (KMC) services. Some of the points to consider relate to higher levels of the health system, some to facilities, and others to both. These points are the *ideal*. Also consider how one would go about getting there within the *reality* and constraints within the region, districts, sub districts, health facilities and communities. Concentrate on Stages 1 and 2 and parts of Stage 3 for identifying the initial actions needed to get the ball rolling for the implementation and expansion of kangaroo mother care in your district/region/country. Relevant statements and descriptions your country's strategic plans and other policy and guideline documents should also inform the planning. Organise the outcomes of your discussion and actions that will be initiated according to the following timeline and allocate a specific person or persons for each action as well as a date, timeline or deadline. Identify at least five main action points for each time period: 1. immediately; 2. within 3 months; 3. within 6 months, 4. within 1 year and 5. Beyond 1 year

Template for SWOT ANALYSIS

STRENGTHS How are we going to use these strengths in the implementation of KMC?	**WEAKNESSES** How are we going to try to improve on or avoid these weaknesses in the implementation of KMC?
OPPORTUNITIES How can we use these opportunities to provide quality KMC?	**THREATS** What can we do to minimise these threats in the unit or ward where KMC is practised?

Template for Follow-up monitoring and national scale-up plan

Name of hospital / country: _____

Action (key word)	What needs to be done?	Responsible person(s)	Deadline for action / Date for report back	Remarks

Template for Prioritising Actions

Name of hospital / country: _____

Action	Must do immediately (within 2 weeks)	Must do within 1 month	Should be completed within 3 months	Things to do later

TIPS FOR FACILITATORS FOR CRINKLE-FREE WORKSHOP

Administrative note

Six to eight weeks prior to the workshop send out adminstatrative note to all partcipants. In the note include key informations such as dates of arrival, departure and the training, venue and list of possible accomodations, visa requirments and arrangments, security and weather situation, transportation arrangement, restaurant and medical facilties and contact information of key personell. In a seprate e mail is is important to guide on preprations that partcipants need to make before coming to the traning.

Introduction to workshop participants

Prepare an introduction package with participants' bios and pictures that allow better acquaintance. In addition this will allow facilitators to understand participants' educational background, experience in newborn care etc. that will be useful for sitting arrangement and facilitation process.

At least one day prior to the workshop; it is important to arrange the room in small groups and ensure AV equipment is working properly. On the day of the workshop arrive early to prepare the room, get to know your audience, do an icebreaker, assess the range of prior knowledge/experience with the topic, glean what they hope to accomplish by attending, don't deviate from the timeline, designate a time-keeper, utilize effective presentation skills and group facilitation strategies. Remember to station someone at the exit door to collect evaluations.

Team building at the beginning and introductions Ice breakers

Ice breakers can be an effective way of starting a training session or team-building event. As interactive and often fun sessions run before the main proceedings, they help people get to know each other and buy into the purpose of the event.

If such a session is well-designed and well-facilitated, it can really help get things off to a great start. By getting to know each other, the facilitators, and learning about the objectives of the event, people can become more engaged in the proceedings and so contribute more effectively towards a successful outcome.

When to Use Icebreakers

As the name suggests, these sessions are designed to "break the ice" at an event or meeting. The technique is often used when people who do not usually work together, or may not know each other at all, meet for a specific, common purpose.

Consider using an ice breaker when:

- Participants come from different backgrounds.
- People need to bond quickly to work towards a common goal.
- Your team is newly formed.
- The topics you are discussing are new or unfamiliar to many people involved.
- As facilitator, you need to get to know participants and have them know you better.

Introductory Ice Breakers

These are used to introduce participants to each other and to facilitate conversation amongst them.

The Little-Known Fact: ask participants to share their name, department or role in the organization, length of service, and one little known fact about themselves. This "little known fact" becomes a humanizing element that can help break down differences such as grade/status in future interaction.

True or False: ask your participants to introduce themselves and make three or four statements about themselves, one of which is false. Now get the rest of the group to vote on which fact is false. As well as getting to know each other as individuals, this exercise helps to start interaction within the group.

Interviews: ask participants to get into twos. Each person then interviews his or her partner for a set time while paired up. When the group reconvenes, each person introduces their interviewee to the rest of the group.

Problem Solvers: ask participants to work in small groups. Create a simple problem scenario for them to work on in a short time. Once the group have analyzed the problem and prepared their feedback, ask each group in turn to present their analysis and solutions to the wider group.

Facilitator meetings

Each day, review the teaching activities that completed. Review what worked well and what needs to be improved in the next day. Identify which participants need more support. Review what will occur the next day and agree on each roles and responsibilities. Preprare the venu for next day's session, print group work guides, templates, formats, pre-post test and evaluation forms. The meeting should not be more than an hour and each facilitator could take part in leading the meeting.

Sample Budget for the KMC training[8]

	Details	Costs US$
1	Facilitators travel and honorarium (4 facilitators x 6 days)	10,080.00
2	Tentative travel cost of facilitators (direct economy fare and DSA - rounded off though travel cost would vary for individuals joining from different countries) : (4x 5000= 20,000)	20,000.00
3	Training materials including manikins	500.00
4	Printing, documentation etc	200.00
4	Training venue including accommodation of participants & interpretation services	10,685.00
5	Travel and DSA of 30 participants (4 each from 8 countries)	45,504.00
6	Hospital Visit (transport costs)	500.00
7	Follow-up monitoring	10,300.00
	Total	**97,769.00**

8 This is hypothetical budget. Modify to fit the need

WORKSHOP EVALUATION

Workshop Location: _____

Facilitator(s): _____ Date: _____

Your feedback is important for planning future workshops. Please respond to the following statements by using the 5-point rating scale to indicate the extent to which you agree or disagree with each statement. Thank you.

① = Strongly Disagree
② = Disagree
③ = Neutral
④ = Agree
⑤ = Strongly Agree

	Circle your response
Workshop objectives were stated clearly and met	① ② ③ ④ ⑤
The workshop was well organized	① ② ③ ④ ⑤
The workshop met my expectations	① ② ③ ④ ⑤
The information and/or skills presented were relevant and useful	① ② ③ ④ ⑤
The workshop activities stimulated my learning	① ② ③ ④ ⑤
This workshop increased my knowledge/skills in caring for LBW and small babies	① ② ③ ④ ⑤
The facilitator(s) had a good understanding of the topics	① ② ③ ④ ⑤
The handouts were helpful	① ② ③ ④ ⑤
The workshop materials and facilities were adequate and comfortable	① ② ③ ④ ⑤
The length of the workshop was appropriate	① ② ③ ④ ⑤
I recommend that the workshop be repeated for other providers	① ② ③ ④ ⑤

What were the most useful aspects/strengths of the workshop?

What changes should be made to enhance/improve this workshop?

Additional comments:

December 2018