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Kangaroo Mother Care

Implementation Guide







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Maternal and Child Health
Integrated Program

Kangaroo Mother Care

Implementation Guide



Save the Children



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ACKNOWLEDGMENTS

This *Kangaroo Mother Care (KMC) Implementation Guide* brings together the knowledge and experience of people and organizations from many countries in the world who have introduced KMC services in health systems. The ultimate aim is to introduce, expand and strengthen KMC practices to improve survival of low birth weight and preterm babies.

Thanks to the KMC Technical Working Group (TWG) of the USAID-funded Maternal and Child Health Integrated Program (MCHIP) that initiated and supervised the process, and to various TWG members and others for drafting chapters and/or reviewing the guide as a whole. In particular, these include Joseph de Graft-Johnson, Winnie Mwebesa, Stella Abwao, Frances Ganges, Indira Narayanan, Allisyn Moran, Abdullah Baqui, Kate Kerber, Goldy Mazia, Steve Wall and Judith Standley.

ABBREVIATIONS AND ACRONYMS

ACCESS	Access to Clinical and Community Maternal, Neonatal and Women’s Health Services [Program]
BASICS	Basic Support for Institutionalizing Child Survival [Program]
BCC	Behavior change communication
DHS	Demographic and Health Survey
HBB	Helping Babies Breathe [Program]
HMIS	Health management information systems
IEC	Information, education and communication
IMNCI	Integrated management of newborn and childhood illness
KMC	Kangaroo Mother Care
LBW	Low birth weight
M&E	Monitoring and evaluation
MCHIP	Maternal and Child Health Integrated Program
MDG	Millennium development goal
MOH	Ministry of Health
NGO	Nongovernmental organization
SSC	Skin-to-skin care
TWG	Technical working group
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
WHO	World Health Organization

CHAPTER 1: INTRODUCTION TO KANGAROO MOTHER CARE

1.1 PURPOSE OF THE KANGAROO MOTHER CARE IMPLEMENTATION GUIDE

This *Kangaroo Mother Care (KMC) Implementation Guide* provides pertinent guidelines primarily for national-level policymakers and managers of maternal and newborn health programs. Chapters detail key steps in the development, implementation and expansion of sustainable, facility-based KMC services in developing countries.

Background

Newborn deaths¹ currently account for approximately 40% of all deaths of children under five years of age in developing countries—the three major causes being birth asphyxia, infections, and complications due to prematurity and low birth weight (LBW).² To achieve Millennium Development Goal (MDG) 4,³ developing countries must address and reduce the excessively high neonatal mortality rate: more than 20 million babies are born premature and/or with LBW each year, with 95% occurring in the developing world.

Birth weight is a significant determinant of newborn survival. LBW is an underlying factor in 60–80% of all neonatal deaths. In fact, prematurity is the largest direct cause of neonatal mortality, accounting for an estimated 29% of the 3.6 million neonatal deaths every year (Lawn et al. 2010). LBW infants are approximately 20 times more likely to die, compared with heavier babies (Kramer 1987). One-third of LBW babies die within the first 12 hours after delivery. One of the main reasons that LBW/premature babies are at greater risk of illness and death is that they lack the ability to control their body temperature—i.e., they get cold or hypothermic very quickly. A cold newborn stops feeding and is more susceptible to infection.

Standard Thermal Care

In most countries, the use of incubators is standard for thermal care of LBW babies. However, “incubator care” is not widely available in developing countries, especially outside of large cities. Even in the limited cases where incubator care is available, the use of this method can be very challenging. Problems such as poor maintenance, power outages and lack of replacement parts reduce the number of available, functional incubators. In addition, excess demand resulting from too many LBW/preterm newborns and insufficient machines results in many babies sharing an incubator. This practice, along with inadequate disinfection of incubators, can lead to increased infection rates. Untrained or poorly trained health personnel or insufficient staff available on a 24-hour basis can also impact the quality of incubator care provided in these settings. Since it largely excludes the participation of the mother, incubator care can also lead to decreased breastfeeding and maternal-newborn bonding.

Given the cost of incubators and the operational and programmatic challenges, making incubator care available and accessible to the majority of families of LBW babies is simply not an option in most developing countries. Fortunately, there is an alternative approach for

¹ Neonatal death is defined as a death of a live-born infant during the first 28 days after delivery. For the purposes of this document, “newborn death” is synonymous with neonatal death.

² LBW is defined by the World Health Organization (WHO) as weight at birth of less than 2,500 gm. However, most facilities admit only babies <2,000 gm to KMC wards.

³ MDG 4 is to reduce under-five child mortality by two-thirds.

providing thermal care for and improving survival of LBW infants that is both effective and affordable—namely, Kangaroo Mother Care, or KMC.

About Kangaroo Mother Care

Kangaroo Mother Care (KMC)⁴ is a strategy created and developed by a team of pediatricians in the Maternal and Child Institute in Bogota, Colombia. It was invented by Dr. Edgar Rey in 1978, and developed by Dr. Hector Martinez and Dr. Luis Navarrete until 1994, when the Kangaroo Foundation was created. KMC was an innovative method developed to provide thermal care for LBW newborns. The first trial of KMC was launched to address over-crowding, cross-infection, poor prognosis and extremely high LBW mortality rates. The goals of the trial were to improve outcomes for LBW infants, humanize their care, and reduce the length and cost of hospitalization. While much of this was accomplished, the most dramatic result, documented through a pre- and post-intervention study of the trial, showed a drop in neonatal mortality from 70% to 30%. Thirty-two years later, KMC is now recognized by global experts as an integral part of essential newborn care.⁵

KMC must not be confused with routine skin-to-skin care (SSC), which the World Health Organization (WHO) recommends immediately after delivery for every baby as part of routine care to ensure that all babies stay warm in the first two hours of life, and for sick newborns during transport for referral. LBW infants, however, require SSC for a longer period of time, depending on their weight and condition. KMC is “the early, prolonged, and continuous skin-to-skin contact between the mother (or substitute) and her low birth weight infant, both in hospital and after early discharge, until at least the 40th week of postnatal gestation age, with ideally exclusive breastfeeding and proper follow-up” (Cattaneo, Davanzo, Uxa 1998). Ideally, small babies should stay in the skin-to-skin position all day and night to maintain a stable temperature.

KMC for LBW babies is initiated in the hospital after the condition of the baby is stabilized. Infants who are not stable and require medical attention can practice intermittent KMC (spending some hours in the KMC position, gradually increasing the time as the baby gets stronger). Early discharge after delivery is a hallmark of the KMC approach and occurs when the baby is suckling well and growing, and when the mother or family caregiver demonstrates competency in caring for the baby on her own. The pair is discharged to continue KMC at home with an agreed-upon schedule for follow-up visits at the hospital, outreach clinic or at home to monitor the health of the baby.

Skin-to-Skin Care is recommended for all babies immediately after delivery to ensure warmth. It is also a recommended method when transferring sick newborns to a health facility.

Kangaroo Mother Care is the early, prolonged, and continuous skin-to-skin contact between the mother (or substitute) and her baby, both in hospital and after early discharge, with support for positioning, feeding (ideally exclusive breastfeeding), and prevention and management of infections and breathing difficulties.

Despite the recognition, benefits and longevity of KMC, few developing countries have made the intervention available and accessible to families with LBW babies. With the exception of Colombia, South Africa, Malawi and Brazil, most developing countries have only a handful of facilities that offer KMC services. Notably, South Africa, after recognizing the benefits of KMC, chose to integrate KMC with facility-based services for LBW babies despite the fact that most of its health facilities have accessible incubator care. South Africa has since been in the forefront

⁴ KMC terminology was derived from how kangaroos care for their young: keeping them warm in the maternal pouch and close to the breasts for unlimited feeding until they are mature.

⁵ Essential newborn care is a comprehensive strategy to improve the health of newborns through preventive care, and early identification and treatment of problems.

of developing KMC policies, implementation guidelines and model hospital units for training. The country currently has more than 70 facilities practicing KMC.

Countries Implementing KMC		
Africa	Asia	Americas
✓ Democratic Republic Congo	✓ Bangladesh	✓ Bolivia
✓ Ghana	✓ Indonesia	✓ Dominican Republic
✓ Malawi	✓ Nepal	✓ El Salvador
✓ Mali	✓ Vietnam	✓ Guatemala
✓ Nigeria		✓ Nicaragua
✓ Rwanda		✓ Paraguay
✓ Senegal		
✓ Tanzania		
✓ Uganda		
✓ Zimbabwe		

Introducing and expanding KMC services on a national level require commitment from the government, in particular, ministries of health, and the support of local professional bodies, local “champions,” international organizations, and governmental and nongovernmental agencies. The U.S. Agency for International Development (USAID), United Nations Children’s Fund (UNICEF) and the Bill & Melinda Gates Foundation, among others, have supported the initiation and expansion of KMC services in a number of countries through different global programs.

In countries with limited KMC services, the services provided are often initiated by personally motivated doctors who have learned about KMC through colleagues, at conferences or through sponsorship by donor organizations. However, to improve the survival of LBW infants and contribute significantly to the reduction of newborn death in developing countries, it is imperative that limited KMC services be scaled up nationwide and made available and accessible to the majority of families with LBW infants. A national scale-up means expanding KMC services from the current handful of facilities to cover most, if not all, hospitals and health centers where deliveries take place.

KANGAROO MOTHER CARE:

1. Ensures **warmth** by keeping the baby skin-to-skin with the mother or a substitute such as the father.
2. Ensures **nutrition** by supporting the mother to breastfeed her baby frequently and exclusively (or other appropriate choice as per the mother’s status).
3. Provides **infection prevention** while in the facility and is emphasized before discharge. Mothers and families are given instruction on hygiene, how to identify signs of infection if the baby is getting sick, and the importance of early care-seeking.
4. Enables **early discharge** with follow-up: Mother and newborn can be discharged early, once the baby is able to suckle and is growing well. Timely follow-up is a necessity.

KEY DEFINITIONS AND DISTINCTIONS

Intermittent Kangaroo Mother Care refers to recurrent but not continuous skin-to-skin contact between mother and baby, with the same support from health workers as continuous KMC. It is practiced when the caregiver is unable or unwilling to practice continuous KMC in a health facility, or the baby is unstable.

Post-Discharge Kangaroo Mother Care is when the mother and baby are discharged from the facility because the baby is feeding well, growing and stable, and the mother or caregiver demonstrates competency in caring for the baby on her own.

Continuous Kangaroo Mother Care is maintained at home with an agreed-upon schedule for follow-up visits at the hospital, outreach clinic or at home to monitor the health of the baby.

Community-initiated skin-to-skin care is the practice of continuous KMC being initiated and continued at home. This practice is also called community KMC, but it does not necessarily link to the full package of supportive care. It has been practiced in settings where referral to a health facility is either challenging or not possible.

Skin-to-skin positioning for referral is recommended for babies who are identified at home or in facilities without capacity to provide appropriate care, and need referral to a higher-level health facility.

1.2 THE EVIDENCE FOR KANGAROO MOTHER CARE

To date, more than 200 hospital-based studies have compared incubator care with KMC, in both developing and developed countries. Methods for these studies range from pre- and post-intervention without controls to randomized control trials. Notably, most studies demonstrated KMC to be more effective than incubator care for stable newborns in: maintaining adequate thermal care, reducing nosocomial infections, improving exclusive breastfeeding and weight gain, and fostering greater maternal and family involvement in care—all at a lower cost than incubator care. As a result of these studies, the practice of KMC was introduced in more than 25 countries by 2004. In 2003, WHO formally endorsed KMC and published KMC practice guidelines. (See **Chapter 9**.)

The Cochrane Reviews

The Cochrane Collaboration conducted a review of KMC in 2003. For this review, three trials of KMC for LBW infants were assessed (14 initially identified, 11 excluded for various methodological reasons). Results of these three studies, which assessed 1,362 infants, found that KMC “reduce[d] severe illness, infection, breastfeeding problems and maternal dissatisfaction with method of care, and improve[d] some outcomes of mother-baby bonding (Conde-Agudelo, Diaz-Rossello, Belizan 2003).” Infants cared for with KMC also demonstrated better weight gain after the first week of life, compared with babies cared for with incubators. At the time of the 2003 study, however, the Cochrane Collaboration stated that there was insufficient evidence to recommend the routine use of KMC for LBW infants.

In 2011, an updated Cochrane review assessed 35 studies. This second review demonstrated even more positive results. Compared with conventional neonatal care, KMC was found to reduce: mortality at discharge and at the latest follow-up, severe infection/sepsis, nosocomial infections, hypothermia, severe illness, lower respiratory tract disease and length of hospital stay. The 2011 review also revealed that KMC resulted in improved weight and length, head circumference, breastfeeding, mother-infant bonding and maternal satisfaction with the method of care, as compared with conventional methods (Conde-Agudelo, Diaz-Rossello, Belizan 2011).

The 2011 Cochrane review included seven trials that assessed mortality at discharge or 40–41 weeks. These trials reported a statistically significant 3.4% reduction in the risk of mortality

among KMC infants, compared with 5.7% for babies receiving traditional care. The review ultimately concluded that there is now **sufficient evidence** to recommend the use of KMC in stabilized infants (Conde-Agudelo, Diaz-Rossello, Belizan 2011).

Other Studies

Evidence of the effects of KMC on **temperature** showed almost no fluctuation among babies cared for with KMC, compared with considerable swings in temperature for babies receiving incubator care (**Figure 1**). A comparative study of KMC and incubator re-warming of hypothermic newborns demonstrated that, within the same time period, a higher proportion of KMC-warmed babies reached normal body temperature faster than incubator-warmed babies (**Figure 2**).

Four studies examining **breastfeeding** outcomes found that: 1) daily volume of milk for babies managed by KMC was 640 mL, versus 400 mL for babies managed in incubators (Schmidt and Wittreich 1986); 2) breastfed babies fed 12 times a day versus nine times for control babies (Syfrett et al. 1993); 3) 77% of babies cared for with KMC were breastfeeding at discharge, versus 42% for the control group (Wahlberg, Alfonso, Persson 1992); and 4) 55% of KMC babies were breastfeeding after six weeks, versus 28% for control babies (Whitelaw et al. 1998).

In two studies of **weight gain** (Ramanathan et al. 2001, Cattaneo et al. 1998), KMC babies gained more weight (15.9 gm per day in one study, 21.3 gm in the other) than those in the control group (10.6 gm, 17.7 gm). The studies also showed that KMC babies were discharged from the hospital three to seven days earlier.

There were lower rates of serious and nosocomial infections among KMC-managed newborns, as compared with control newborns. Only 5% of KMC-managed babies had a serious illness versus 18% in the control group. The rates of respiratory infection in the KMC and the control groups were 5% and 13%, respectively.

While most studies examined the effects of providing KMC to LBW newborns only after the babies were stabilized, at least two studies suggest that infants could be put in the KMC position during stabilization. The first, Bogale and Assaye (2001), determined that KMC leads to **faster stabilization** than incubator care, resulting in 16% fewer infant deaths. The second, Bergman, Linley, Fawcus (2004), found that:

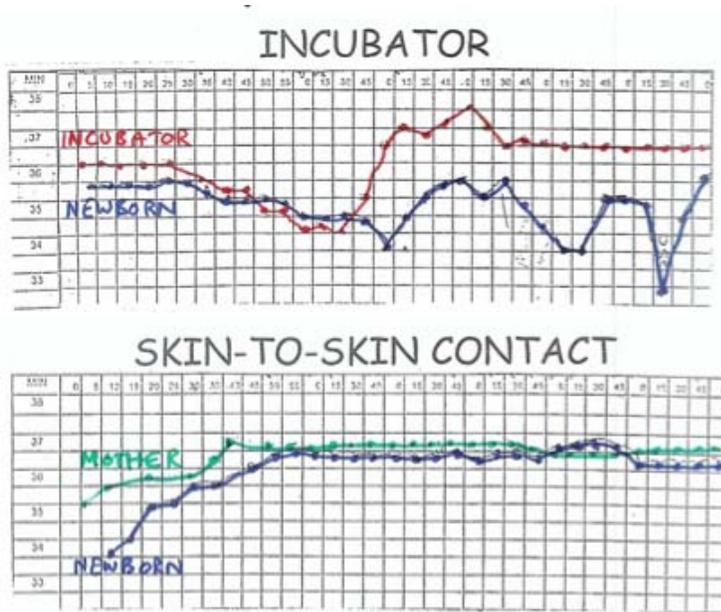
- All 18 LBW newborns receiving KMC were stable in the sixth hour, compared with six out of 13 incubator babies.
- Eight of 13 incubator babies suffered from hypothermia, compared with none of the KMC babies. Stabilization (cardio-respiratory) score was higher for the KMC group.
- Mean temperature was higher in the KMC group in the first hour.

A study by Johnson et al. (2008) demonstrated an additional advantage of KMC: **reduced response to painful stimuli** by babies undergoing various invasive medical procedures. Arraes de Alencar et al. (2008) also found a likelihood of **decreased postpartum depression** among mothers enrolled in KMC.

In a 2010 meta-analysis of three randomized controlled trials from low- or middle-income settings (Lawn et al. 2010), researchers found that, when initiated in the first week of life, KMC **significantly reduced neonatal mortality** almost 50%, compared with incubator care. Despite some questions regarding study design and implementation, the meta-analysis concluded that there is clear evidence that KMC is at least as good as incubator care in reducing mortality among LBW infants.

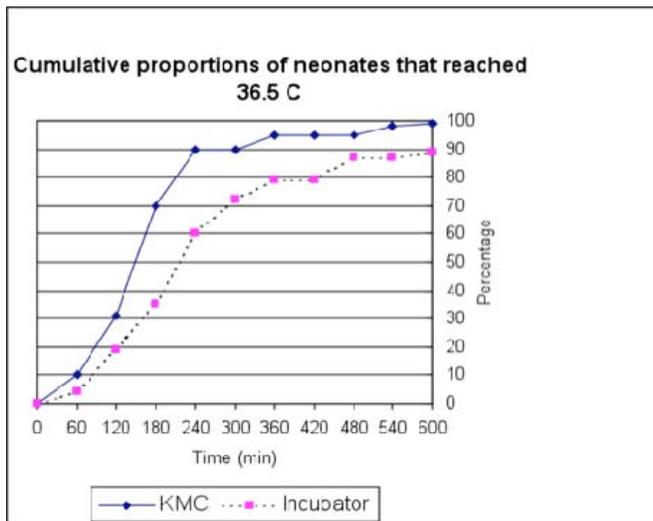
Well-equipped neonatal intensive care units in many developed, and in some resource-poor, countries have incorporated KMC with standard care for LBW newborns based on these and other findings.

Figure 1. Comparison of thermal control of LBW baby in incubator care versus KMC in a South African hospital



Source: Dr. Nils Bergman

Figure 2. Re-warming with KMC and incubator care in a teaching hospital in Zambia



- Teaching Hospital, Lusaka, Zambia
- 80 babies with temperature <36°C (low-risk hypothermia)
 - 41 treated with skin-to-skin care (SSC)
 - 39 treated in incubator
 - Reaching 36.5°C at three hours:
 - SSC (KMC) 90%
 - Incubator 60%

Source: Dr. Nils Bergman

1.3 RATIONALE FOR FACILITY-BASED KANGAROO MOTHER CARE SERVICES

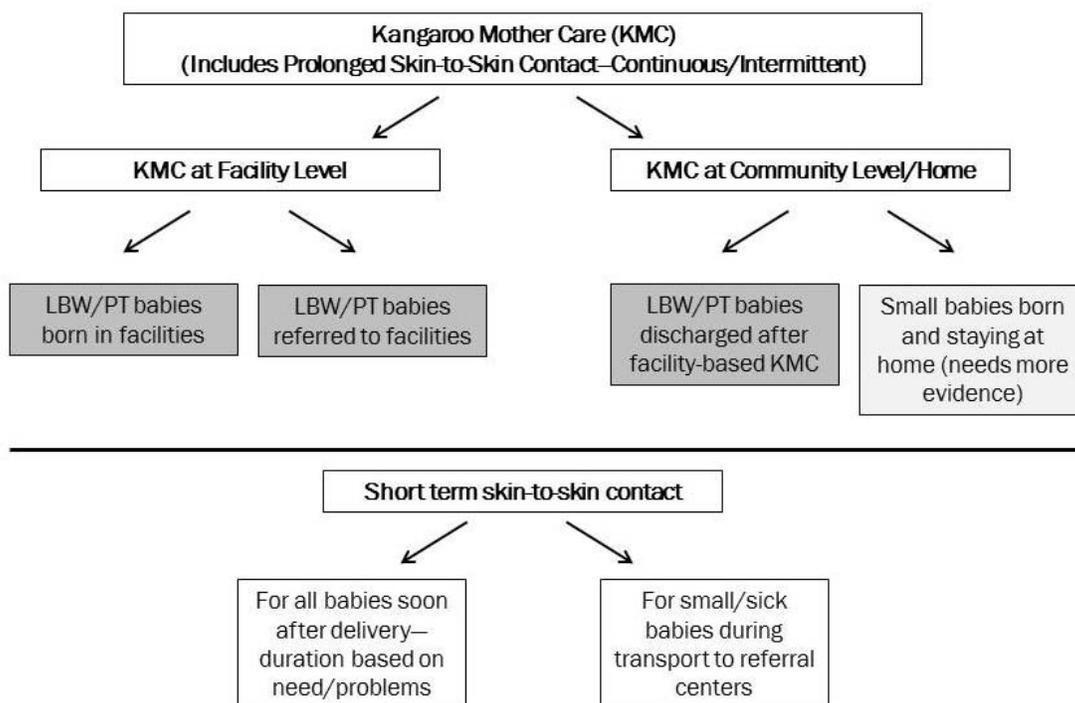
Facility-based KMC is an underutilized, affordable and effective method suited for all premature and LBW babies, particularly those in the developing world, where need is great and resources scarce. The current evidence proves that facility-based care works. For these reasons, this *KMC Implementation Guide* focuses specifically on the introduction and expansion of KMC services in health facilities.

Many LBW babies who are delivered in health facilities do not have access to incubator care or are cared for by ineffective, makeshift and even dangerous thermal contraptions—another argument for the use of KMC over incubator care in facilities. If KMC can be provided early (i.e., SSC at birth), a significant proportion of LBW babies born in facilities could be saved.

Once KMC is accepted by health facilities and medical professionals, it will be easier to extend the approach to the community, where KMC has the potential to reach numerous LBW babies. Therefore, it is important to have well-functioning facility-based services available before introducing KMC in the community, as community KMC must link with facility-based services for successful implementation. Community health workers and staff in facilities without KMC units should also be trained on KMC benefits and positioning, if not the full package of care. (See **Figure 3**.) (Despite the potential benefits, there is currently insufficient evidence for scaling up community KMC.)

Community support for mothers practicing KMC, which is crucial for success, has been identified as a weak link in current programs (Charpak and Ruiz-Pelaez 2006). To strengthen this weakness, facility-based KMC services should incorporate a community sensitization component with their programs (see **Chapter 6**), and explore innovative ways to link with community-based health initiatives.

Figure 3. Types of Kangaroo Mother Care/skin-to-skin contact



Source: Dr. Indira Narayanan

One specific area that needs greater emphasis in the community is the use of SSC during the transport of small babies to the health facility. Half of all deliveries in the developing world still take place at home, and local ambulance or transport systems are usually poor. As a result, moving LBW babies to the facility can be difficult. If a sick baby gets very cold on the way to the facility, his/her condition can deteriorate. According to WHO and UNICEF (2009), the best way to transfer the baby is to place the baby skin-to-skin with the mother, covering both with a cloth and blanket.

Ultimately, scaling up KMC services in all facilities where deliveries take place can have a meaningful impact on the health of LBW babies. Lawn et al. (2010) concluded that “if KMC were to reach high coverage through implementation at lower levels of the health system, the world’s annual one million neonatal deaths due to preterm birth could be substantially reduced.”

Figure 4: KMC



Figure 5: Securely wrap the baby in KMC.



Figure 6: Put on loose clothing over



CHAPTER 2: INTRODUCTION AND EXPANSION OF KANGAROO MOTHER CARE SERVICES

2.1 PREPARATION

In any country, the successful introduction and expansion of KMC services requires thorough preparation. Introducing KMC services in a limited number of facilities can be achieved without extensive resources. However, the best way to achieve a reduction in newborn mortality is to scale up KMC services nationwide, ensuring that all LBW babies have access to the care needed to improve survival. KMC is a simple, low-cost technology, but including the services as part of a national strategy to reduce neonatal mortality is not an easy endeavor. The introduction of national-level KMC services requires extensive planning, sufficient resources and, most importantly, a paradigm shift in both national policy and care of LBW babies.

A number of obstacles may be encountered during the introduction and expansion of services. **Key obstacles** include:

- **Knowledge:** Medical professionals, managers, policymakers and the public have no knowledge of the benefits of KMC.
- **Policy:** Policies and guidelines for addressing the care of LBW and preterm babies do not exist.
- **Resources:** There are no resources for:
 - Development or adaptation of KMC training materials and job aids
 - Implementation of KMC at the facility (arrange space, furniture, equipment, supplies)
 - Support staff training
 - Supervision of KMC services in facilities
 - Follow-up visits and support in communities after mothers and babies are discharged

2.2 STEPS FOR NATIONAL-LEVEL KANGAROO MOTHER CARE PROGRAM DESIGN

Knowledge, policy and resource barriers must be addressed during the design phase. These obstacles are best addressed through a national review and dialogue led by a **multi-disciplinary team**. This team should continually engage a variety of stakeholders—including medical professionals, policymakers, ministries of health and planning/finance, civil society groups, etc.—in a participatory and open process.

Key steps during the national-level design phase:

1. Conduct a situational analysis of LBW babies.
2. Convene a stakeholders' meeting to discuss findings.
3. Visit functioning KMC sites in-country or abroad.
4. Develop a plan of action or next steps for the adoption of KMC by national policy, curricula, service delivery, etc. (Discussed in depth in Chapter 8.)

Step 1: Conduct a Situational Analysis of LBW Babies

Before making any recommendations, the multi-disciplinary team should have a solid understanding of the current situation of LBW/preterm babies in the country. To understand a country's particular situation, the team needs to gather information on the scope of the problem and how it is managed, and identify gaps, possible solutions and opportunities. Some countries have performed a situational analysis of the newborn⁶ as part of their process to develop national policy and plans of action to reduce newborn mortality to meet MDG 4.⁷

A national situational analysis should include:

- Basic statistics on neonatal mortality
- Contribution of LBW/preterm babies to neonatal mortality
- Number or percentage of women delivering in facilities and at home; how women delivering at home access care for LBW babies
- Current care provided for LBW/preterm babies in facilities at each level: primary, secondary, tertiary
- Quality of care of LBW babies
- Cost of providing current care to LBW babies
- Analysis of gaps in providing effective care

Gathering the above information entails reviewing existing national/provincial statistics; relevant special studies; national and hospital policies, protocols and guidelines; and training and health education materials. While information on the scope of the problem may be available from existing data, national surveys or management information systems, there will most likely be gaps—especially in cause of death, birth weight and quality of care. If gaps are found, there may be a need for specially designed surveys or assessments.

Facility-Based Surveys and Assessments

For a thorough analysis, assessors should collect data from multiple facilities that currently manage LBW babies, choosing facilities based on the number of deliveries and admissions of LBW/preterm babies. Possible facilities include **teaching hospitals**, where better levels of care are expected, and **district/regional hospitals** that typically have larger volumes, but are not always equipped with incubators or providers with the skills needed to manage small babies.

To ensure a sufficient number of cases for assessment, it is recommended that data be collected over a period of three to six months, using standard questionnaires in each facility. Assessors should analyze protocols, examine registers and charts, and if possible, interview key staff and clients and observe the care being given. (Focus groups and/or individual interviews are also useful.) The data collected will provide a clearer picture of the number of LBW/preterm babies accessing care, the current management of such babies, the quality of care and the challenges faced in providing this care. Assessors need to do the best they can to get an overview of the care being provided to inform the decision-making, planning and implementation processes.

⁶ See <http://www.healthynewbornnetwork.org>. Situational analyses of the newborn have been carried out in many countries, including Bangladesh, Nepal, Nigeria, Uganda and Cambodia. Nepal detailed how their situational analysis was compiled, which may be of use.

⁷ MDG 4 is to reduce under-five child mortality by two-thirds.

The following data should be collected at each facility:*

- Number of deliveries per month
- Number of LBW/preterm babies born and admitted to the facility
- Outcomes of LBW/preterm babies: survival rates, complications, causes of death
- Duration of hospitalization
- Type of care provided:
 - Conventional care (incubator): use of and access to conventional care, proportion of LBW babies managed by incubator care
 - KMC: if provided, determine proportion of LBW babies managed by KMC, if it was continuous or intermittent, when KMC started, and if there was early discharge and follow-up
- Equipment and supplies:
 - Availability of incubators and functionality: number available, number functioning optimally, average number of babies per incubator, number requiring repairs, maintenance of incubators, availability of electricity
 - Presence of alternative sources of heat, such as naked light bulbs or heaters in the room
- Existence of protocols and standards for management of LBW/preterm babies, including management of hypothermia, feeding protocols and infection protocols
- Adequacy of staff and provider skills
- Cost of treatment for facility and for families
- Condition of rooms for mothers
- Attitudes and views of mothers in regard to caring for their LBW/preterm babies
- Challenges in managing LBW/preterm babies
- *Some facilities will not have all information available.

Assessment of Quality of Care for LBW/Preterm Babies

An assessment of the quality of care provided for LBW babies will identify weaknesses and gaps that require improvement for better outcomes and survival of LBW/preterm babies.

The quality of care assessment should:

- Be completed as part of the situational analysis.
- Include reviewing registers and conducting observations.
- Compare actual performance with current guidelines and protocols (if they exist), gauging it against international evidence for best practices.
- Use standard checklists to assess all facilities. (These checklists can be developed if they do not exist.)
- Identify gaps in care.

Specific quality of care assessment questions include:

- How are small babies kept warm? Are there incubators? Are they shared?
- What is the frequency of monitoring vital signs (temperature, pulse, respiratory rate)?
- What support is given to mothers regarding breastfeeding, expression of breast milk and feeding techniques?
- What role do mothers have in the care of their LBW/preterm baby? Do they reside in the facility while the baby is admitted? Do they breastfeed their baby or supply expressed breast milk? Is food available for mothers?
- What are the ratios of LBW/preterm babies to qualified nursing staff?
- Are staff trained in neonatal critical care? If not, where are critically ill LBW/preterm babies referred to and how?

Step 2: Convene a Stakeholders' Meeting

After the situational analysis is completed, a national-level stakeholders' meeting can be organized. This meeting provides an opportunity to engage the Ministry of Health (MOH) and other partners involved in maternal and newborn health programming.

The goals of the stakeholders' meeting are to:

- Disseminate the situational analysis findings.
- Make the case for the introduction and/or expansion of KMC services.
- Build partnerships and map support and resources for KMC services.

Potential attendees include:

- Ministries of health and planning/finance
- Maternal and newborn health programming experts
- Medical professionals
- Policymakers
- Academia representatives
- Professional bodies
- Private practitioners
- Donors
- Bilateral aid groups
- Faith-based organizations
- Civil society groups
- Others, as appropriate

Stakeholders will be “sensitized” to the contribution of LBW/preterm births to newborn mortality in the country. They should also hear the evidence and advantages of introducing KMC services on a national scale. Some countries have found it useful to share KMC experiences from neighboring countries, as well. During the meeting, stakeholders can discuss how adding KMC

services would impact newborns, mothers and families—specifically, the impact on the management of LBW/preterm babies by the health service.

Example meeting outputs are:

- Achieving consensus on adopting KMC for managing LBW babies nationwide
- Identifying key policy and technical protocols or guidelines needed to support the adoption of KMC
- Identifying opportunities for financial and material support from interested stakeholders and partners
- Identifying in-country technical resources to facilitate adoption or adaptation of KMC materials

MOH buy-in and leadership—which can be achieved by supporting the MOH to organize and sponsor the meeting—are critical throughout the process. Further, identifying a local “champion,” such as a prominent pediatrician or health professional with experience managing LBW babies in-country, will bring credibility to the cause and assist with MOH endorsement of KMC. The local champion may also be tasked with facilitating the stakeholders’ meeting.

NOTE

Resources are needed to introduce and support new KMC services. These resources include financial and technical aid needed to provide physical space, necessary equipment and supplies required for KMC, capacity-building of providers and other implementation costs. A dialogue among partners, agencies and other organizations willing to provide these resources is needed and can be undertaken before the stakeholders’ meeting, so that stakeholders have a better sense of what they can commit to KMC.

Step 3: Visit Functioning KMC Sites (Domestic or International)

Visiting functioning KMC sites allows stakeholders and decision-makers to witness firsthand the impact of KMC services. They are also afforded the opportunity to hear directly from KMC providers and beneficiaries. Preference should be given to KMC sites in-country. However, in most cases, these sites do not exist; thus, a need to identify sites abroad exists.

Selection criteria for KMC site visit:

- Similar context: language, region, income (developing country versus developed country)
- Scaled-up implementation of KMC, which demonstrates results in improving survival of LBW/preterm babies

The visit can be scheduled before or after the stakeholders’ meeting. Having it before offers an opportunity for decision-makers to better understand KMC and to share their experience during the meeting.

When planning a KMC visit, the following should be taken into consideration:

- Participants should plan to spend approximately five days during an in-country visit to develop a good sense of activities in the KMC unit and to provide time for meetings with the MOH and other partners.
- In-country visits can accommodate a larger group or several visits of various groups at different times. This is advantageous because a “critical mass” of participants may help move the case forward—both at the national level for decision-making and planning, and in specific facilities for the implementation phase.

- For an external trip, it is better to have a small and manageable group (maximum of five people), given the cost and need for travel arrangements. Participants could include: MOH (point person for maternal and newborn health), one or two providers involved in managing LBW/preterm babies who might take the lead in introducing KMC, and a representative of the medical/nursing professional bodies.
- A crucial element of a field visit is to ensure that a debriefing is conducted soon after the visit. This helps convey not only important information about the value of KMC services, but also the excitement and passion that participants usually embody once they have seen a functioning service. For this reason, it may be advantageous to arrange the debriefing at the stakeholders' meeting.

Step 4: Develop a Plan of Action or Next Steps

An action plan or set of next steps would be the logical outcome of the national preparatory process. The action plan should identify the tasks needed for the next phases of scale-up, those responsible for carrying out each task, and the date each task is to be completed. This step is discussed in detail in **Chapter 8**.

CHAPTER 3: DEVELOPMENT AND ADAPTATION OF KANGAROO MOTHER CARE POLICY AND MATERIALS

Once the decision has been made to introduce or expand KMC services as a component of national standard LBW/preterm management, planning for and developing the following materials is essential:

- National KMC policy and service guidelines
- KMC training materials and job aids
- KMC information, education and communication (IEC) and behavior change communication (BCC) materials
- KMC monitoring and evaluation (M&E) plans/tools including supervisory checklist

National stakeholders' meetings also need to be held throughout the country (at least at the district level) to ensure a common understanding of why KMC is being introduced and to foster local participation in developing plans for implementation. (See **Chapter 2**.)

3.1 NATIONAL KANGAROO MOTHER CARE POLICY AND SERVICE GUIDELINES

National KMC policy and service guidelines clarify the need for KMC services and elaborate on how these services will be organized. These related documents become a unified force when implementing KMC nationwide; they are vital for program validity. Specifically, a national policy will ensure the coherent and effective integration of the practice within pre-existing policies (i.e., newborn policy) and within essential components of the health system, including education and training. These important documents can also help garner support and resources for KMC expansion and scale-up from the government and donors.

Several countries have already developed national KMC policies, service guidelines and protocols, which can be used to guide other countries. Naturally, these documents must be reviewed and adapted to specific country needs (**Chapter 9**).

If policy and service guidelines are already in place, they should be reviewed regularly (i.e., every five years) to ensure that they are up-to-date and address the current operation of KMC services at the national level. If a national KMC policy and/or service guidelines do not exist, a process should be initiated to develop these documents with input from relevant stakeholders.

To facilitate the development or review of national policy and service guidelines:

- Hold discussions with relevant MOH leaders on the need to review/develop KMC policy or service guidelines and provide support to the MOH to lead the process.
- Bring key stakeholders together who will influence the development and endorsement of KMC policy. Be sure to include leading neonatologists, pediatricians, obstetricians, midwives, nurses, administrators, academic institutions and other professionals involved in defining and providing maternal and newborn care. Seek support and input with the aim to create ownership of the policy at national, regional and provincial levels.

- A subset activity of a broader KMC policy would be the development and/or review of KMC service guidelines and standards. Seek support and input from relevant stakeholders and service providers, especially those who may have already established units in their facility, or have visited functioning KMC facilities internationally. Ensure that facility guidelines and standards for KMC services include and emphasize the importance of follow-up in the community.

National standards and guidelines must be clear and feasible, and include appropriate criteria for M&E. Local protocols will be easier to implement if national policies and guidelines are clearly spelled out.

To ensure effectiveness, national KMC guidelines should include:

- Introduction to prematurity and LBW
- Definition of KMC, rationale, benefits and how it is practiced
- Where, when, who and how to start KMC services, tailored to different levels of care
- Description of the KMC position, KMC nutrition and appropriate feeding modalities
- Care of the baby under KMC, including vital monitoring of the baby, infection prevention, immunization and other related care, as relevant
- Appropriate physical and emotional support for the mother/caregiver from health staff, family and community
- KMC discharge criteria, follow-up and re-admission as necessary
- Criteria for discontinuation of KMC
- Maintenance of high-quality KMC services
- M&E to document outcomes

A lack of national policy or guidelines may be a barrier. If this is the case, KMC units can be implemented in facilities with motivated staff. Positive experiences in these small units often promote the development of national policies and guidelines.

Facility-Level KMC Policy and Service Guidelines

Each health facility implementing KMC services should have a written policy and guidelines that are based on national documents (if available) and adapted to its specific level of health care. Protocols should include other appropriate components related to the care of LBW/preterm babies, including infection prevention, integrated management of newborn and childhood illness (IMNCI), critical care for the neonate and follow-up of babies discharged from KMC units/wards.

Community-level KMC protocols should be specifically developed where community KMC is to be implemented and in coordination with the nearest KMC facility. Protocols can be reviewed and revised for improvements as tailored to the needs of the local site.

NOTE

Facilities will need to plan how they will adapt their current management of care to include KMC services. Resources exist to guide this adaptation: a detailed step-by-step process described by Bergh (2002) and the *Kangaroo Mother Care Facilitator's Guide* (ACCESS 2009).

3.2 KANGAROO MOTHER CARE TRAINING MATERIALS

Training materials are necessary to facilitate the comprehensive and uniform training of KMC trainers and service providers. Several countries have already developed KMC training manuals, including the Kangaroo Mother Care Training Package comprising a Facilitator’s Guide and a Participant’s Guide (see Chapter 9). These guides provide good examples of the content that should be included in country-specific KMC training materials. They can also be adapted or adopted, as recommended by the country teams, and suited to the country needs and situation. (For more information on training materials, see **Chapter 4**.)

3.3 INFORMATION, EDUCATION AND COMMUNICATION AND BEHAVIOR CHANGE COMMUNICATION MATERIALS FOR KANGAROO MOTHER CARE

One of the biggest obstacles to adopting KMC is the mistaken belief that KMC is second-rate care that is more time-consuming than regular care for small babies (Charpak and Ruiz-Pelaez 2006). These misconceptions must be dispelled through advocacy, training, education and behavior change communication (BCC). A national communication strategy to support KMC implementation is ideal if funding permits. This type of strategy would target providers and pregnant mothers/families, sensitizing them to the benefits of KMC. A communication strategy can also bring awareness to the “new” KMC services provided at hospitals and clinics and the importance of families accessing care early.

In the absence of a coordinated communication strategy, specific information, education and communication (IEC) and BCC materials aimed at mothers, families and the general public should be produced. IEC and BCC materials need to encourage the active acceptance of KMC as the best method of care for LBW/premature babies (without precluding medical conditions), and promote the added benefit of including the mother, father and other family members as key care providers.

IEC and BCC materials may include:

- KMC posters placed at health facilities, KMC unit/ward/rooms or other public place, as appropriate
- KMC brochures/leaflets to inform mothers, family, community and community health workers
- Recorded radio/TV spots with KMC content for the general public
- Scripts for skits/drama and songs

Specific KMC flip charts, posters and other materials already exist and can be adapted for local use (see **Chapter 9**).

3.4 MONITORING AND EVALUATION TOOLS FOR KANGAROO MOTHER CARE SERVICES

See **Chapter 7**.

CHAPTER 4: TRAINING SERVICE PROVIDERS IN KANGAROO MOTHER CARE

The introduction or expansion of KMC requires the training of service delivery personnel at all relevant levels. For some, training will involve learning new knowledge and skills. For others, an update or refresher training will suffice. KMC training must not, however, be limited to health personnel only. For facility-level KMC, each cadre of health professionals providing care to mothers and newborns should be trained. Training different cadres together has been successful in other programs. Face-to-face facilitation and follow-up/supervision while on-the-job have also proven to be successful approaches, as health care providers have the opportunity to practice what they are learning in their working environment.

NOTE

Linking facility training programs and community sensitization from the beginning helps establish successful community linkages, as does engaging the community in the planning and implementation process. Consequently, some form of training or sensitization of communities and families is needed.

4.1 KEY FEATURES OF EFFECTIVE CLINICAL TRAINING

Effective clinical training is planned and facilitated according to the way adults learn; they are actively involved in the learning, they can relate it to their work, and they can use what they learn. This kind of training:

- Uses behavior modeling;
- Is competency-based; and
- Uses humanistic training techniques.

Learning theory states that, when conditions are ideal, a person learns most rapidly and effectively from watching someone perform (or model) a skill or activity. For modeling to be successful, the trainer must clearly demonstrate the skill or activity to provide learners an understanding of how they are expected to perform. Once learners have a mental image, they practice performing the procedure, usually under supervision. Learners continue to practice until skill competency is reached and they feel confident performing the procedure. The final stage, skill proficiency, occurs only with regular practice over time.

Skill Acquisition:	Knows the steps and their correct order (if necessary) to perform the required skill or activity but needs help
Skill Competency:	Knows the steps and their correct order (if necessary) and can perform the required skill or activity
Skill Proficiency:	Knows the steps and their correct order (if necessary) and efficiently performs the required skill or activity

4.2 SELECTION OF TRAINERS AND LEARNERS

At a minimum, KMC trainers should have a background in maternal and newborn health care and be experienced in maternal and newborn care service delivery, including care of LBW newborns. At least some prior experience in KMC practice is also desirable. Trainers must be oriented to the learning materials, becoming familiar with the objectives, learning methods, activities and resources. Training expertise is required with skills in the competency-based approach.

KMC training is not designed to serve as a course in essential newborn care. Rather, it is designed to train health workers how to properly implement KMC. Learners are, however, expected to have some training or experience in health care provision, specifically maternal and newborn care.

4.3 SELECTION OF TRAINING SITE

Facilities already providing KMC services should be selected for development as training sites, centers of excellence and/or models for expansion. Research from South Africa (Bergh, van Rooyen, Pattison 2008) has shown that the site of learning, whether on-the-job where the program is implemented or at a center of excellence, is not the defining component—both can be successful. Local plans should be devised, with a realistic timeframe for establishing new sites for both service delivery and training.

To accommodate learning, consider the following preferences when selecting a training site:

- Physical structure is adequate to accommodate a separate KMC unit or to support modifications to existing structure; or, there is physical structure available to accommodate additional personnel and clients. (This can be an extension of an existing unit such as a Neonatal Intensive Care Unit.)
- Physical space is on or near KMC unit to accommodate classroom learning for providers.
- Physical space is on or near KMC unit to accommodate privacy for clients and their families while learning KMC:
 - This can be a curtain around a bed or separate space.
- The service delivery, management and supervision systems:
 - Comply with current service delivery guidelines
 - Support clinical learning
 - Protect client rights
 - Have the capacity to provide clinical supervision
- The environment is similar to where most learners will work.

Additional issues to consider:

- The presence of other learners competing for clinical experiences, such as pre-service learners (medical and nursing students), residents, interns or other in-service learners.
 - Client load
 - Adequate clinical preceptors for all learners
- Staff:
 - Staff practices that correctly demonstrate or model KMC
 - Adequate or near adequate staff-to-client ratios:

- Pre-service students cannot replace trained service providers.
- Learners can place extra burden on staff.
- Link to pre-service education:
 - KMC must be integrated with pre-service training for all providers, so that students' clinical experiences reinforce learning. This should be addressed with national-level and pre-service curricula, and relevant in-service training amended (e.g., essential newborn care, IMNCI, breastfeeding, neonatal critical care). (See **Chapters 2 and 3.**)
 - Clinical sites where pre-service students undertake their practical training should be prioritized in the expansion program.

4.4 KANGAROO MOTHER CARE TRAINING MATERIALS

When possible, existing KMC training modules or curricula should be adapted or revised to local needs or target audiences. (See **Chapter 9** for available training materials.) Modular training materials are particularly useful, as trainers can use only what they need for specific groups of learners. For example, individual modules can:

- Be integrated with existing pre- or in-service training programs for providers;
- Serve as a technical resource for KMC; and
- Enable separate in-service training for practicing providers.

Efficient and effective training materials include the following components:

- Learning objectives
- Session plans (a model outline that can be adapted) including:
 - Teaching methods
 - Supplies needed
 - Learning activities
 - Pre- and post-course questionnaires with answer keys (in trainer's guide)
 - Performance learning guides and checklists
- Performance checklists:
 - These checklists break each skill down into a sequence of discrete, small, clearly observable steps. Checklists can be used to:
 - Assess competency on key skills before training.
 - Monitor trainees' progress during training.
 - Assess skills at the end of training.
 - Assess knowledge and skill retention at a later time (after completion of training, possibly during supportive supervision).
- Supplies:
 - Supplies include newborn models for practice, cloths for practicing KMC positioning, clothing for newborn models, supplies for expression and feeding of breast milk (when direct breastfeeding is not possible or needs to be supplemented) and infection prevention supplies/equipment.

- Trainers should not expect to use supplies and equipment at clinical sites, which are often lacking and in short supply, but should plan ahead and bring everything necessary.

CHAPTER 5: ACHIEVING AND MAINTAINING QUALITY OF CARE WITH SUPPORTIVE SUPERVISION

Training is the first step in building competency in health workers, especially in areas that are not familiar to them. However, well-delivered competency-based training alone is not sufficient to improve and maintain the quality of care that mothers, babies and their families need. Health workers tend to lose their skills with time, especially if they are not practicing them regularly or adequately. Although some service providers will take the initiative to maintain and improve their performance, the majority will need additional assistance, which can be provided by supportive supervision. Health workers may also benefit from the increased motivation that effective supervision provides.

Supportive supervision is an ongoing, dynamic and interactive process. Plans for supervision must be made and, ideally, be in place before or soon after training is completed. Long delays are likely to be associated with a decrease in competency and poor implementation.

5.1 COMPONENTS OF SUPPORTIVE SUPERVISION

Preferably, the components noted below should be covered during supervision. However, because supervision and M&E activities are challenging, especially in developing countries, it is essential for countries to prioritize activities and indicators in order to focus on key components that are likely to have the greatest impact on implementation and documentation at scale.

Key components of supportive supervision:

- Evaluation of:
 - Health worker competence
 - Knowledge of mothers and their competence in implementing KMC
 - Existence of adequate space and supplies to promote effective implementation of KMC
 - Relevant data/information to use for improving performance (see **Chapter 7**), such as:
 - Percentage of LBW/premature babies who receive KMC
 - Mean hours babies are held in KMC position
 - Reasons why KMC was not practiced (for the babies not receiving KMC during supervisor’s visit), or not practiced for more time
- Identification of problems (by analyzing available M&E data, observing how the service functions, listening to and discussing issues with staff and mothers) and the development and implementation of solutions
- Provision of feedback and updates
- Provision of a report to concerned authorities

5.2 PREPARATION FOR AND INTRODUCTION OF SUPPORTIVE SUPERVISION

Preparatory Phase

The preparatory phase, in which key, preliminary tasks are undertaken, includes the development and pretesting of appropriate tools and consensus-building on methods of supervision and schedules to be followed.

Actions to be completed during this phase:

- Develop and pre-test appropriate tools to ensure that the supervision is objective and effectively implemented and documented. Tools should be made available during training workshops, so that both supervisors and the health workers become familiar with them. Such tools should be used not only to evaluate the competence of participants, but also to identify where additional support is required to improve performance.
- Determine the methods for implementing supervision and the personnel to be involved. Ideally, each health worker should be assessed onsite in his/her own facility using the pre-designed tools and given feedback. However, this may not always be feasible. Supervision can be both internal and external.
 - It is beneficial to have an **external** national/regional/district core group of supervisors, including appropriate representatives from selected hospital(s) in which KMC is functioning well, the MOH and a facilitating nongovernmental organization (NGO). Involvement of the government and an NGO is advantageous as it promotes sustainability and expansion. The team members can visit sites for evaluation. External supervisory visits are feasible once every three to six months. At these sessions, health workers can present and review data; share experiences, challenges and solutions implemented; and receive updates.
 - In larger hospitals where there are several health workers involved, it is feasible and in fact convenient to have **internal** supervision, perhaps by an internal supervisory committee. Such a committee does not involve additional costs (e.g., for transportation), and benefits from the flexibility of being “on-the-spot.” An internal supervisory committee is useful to facilitate and sustain more frequent, preferably monthly, meetings.
 - A combination of internal and external supervision would be ideal.
- Train supervisors during the workshop for training of trainers and also during the training of the health workers.

Implementation Phase

During the implementation phase, cycles of the following steps or activities are carried out:

- Supervisory visits and evaluation of the program site(s) and the health workers with relevant supportive feedback. Visits by the supervisory committee or its members should take place periodically (monthly for internal supervision and every three to six months for external supervision) to observe how individual staff members perform in the ward, as well as how KMC services are delivered as a whole.
- Conduct ongoing review of trends in the results (through links with M&E activities) and institution of appropriate changes as required to achieve desired goals. The supervisory committee should promote an open dialogue with staff members to review “trends” and discuss particular cases, listen to staff feelings and suggestions, provide feedback and jointly

solve any problems. Supportive supervision is key to maintaining and improving staff motivation and job satisfaction.

- Carry out updates and remedial measures to improve results.

5.3 CHALLENGES OF QUALITY IMPROVEMENT AND SUPPORTIVE SUPERVISION

Maintenance and improvement of quality of services and their documentation through appropriate M&E strategies are among the most challenging components of program implementation.

Challenges include, but are not limited to, the following:

- **Lack of Motivation:** Many health professions do not consider supervision as a part of their regular job description. In fact, they often seek additional remuneration for this activity beyond just reimbursement of expenses incurred. Very often, although this may be started by certain NGOs and donor agencies, this is not always sustainable by the government.
- **Insufficient Skills:** Supervisors from the MOH are frequently working in government offices and are not exposed to clinical practice to maintain their skills; this can adversely affect their confidence and ability to improve staff skills. Possible solutions include having all the important steps noted in the checklists and including competent clinical staff from hospitals in the supervising team. In addition, supervisors benefit from specific training to improve communication skills and to promote supportive attitudes conducive to motivating workers and improving their skills.
- **Inadequate Numbers of Cases:** Hospitals and health centers that do not have adequate numbers of cases needing KMC are at a disadvantage, which may pose challenges. This makes it difficult for supervisors to observe health workers' competence with babies. A lack of cases, in fact, does not even permit the health workers to have sufficient practice to achieve and maintain skills. Solutions in such centers include provision of dolls or models that are available for practice, evaluation, support during supervision and continued advocacy efforts for KMC.

5.4 TOOLS FOR SUPPORTIVE SUPERVISION

Key tools include two checklists found in the appendices. The first (**Appendix A**) can be used to evaluate health worker competence in implementing the important steps of KMC at training workshops and during supervision as noted below. The second (**Appendix B**) checklist is for evaluating the functioning of the unit implementing KMC.

Since KMC will be a part of the programmatic activities of essential newborn care within the larger maternal and newborn health strategy, other major components should be evaluated and documented during supervisory visits and/or as part of the M&E activities.

5.5 FUNDING FOR KANGAROO MOTHER CARE RESOURCES

Funds are required for, but are not limited to, the following.

KMC implementation at the facility level:

- Structural adaptations to the unit to permit mothers' stay and for the follow-up clinic
- Additional staff, if required and feasible. While KMC generally requires fewer staff because care of the newborn is largely in the hands of the mother, there is still a need for staff to monitor the

care given and to provide information and education on keeping the baby warm, breastfeeding, proper use of expressed breast milk, dangers signs, etc. This may necessitate moving staff from critical care departments or hiring new staff. Staff are also needed for the follow-up clinic.

- Material support for the mothers: appropriate beds, chairs, tables, lockers for personal items, KMC wrappers, linen, curtains, food, household utensils and cutlery, and, where feasible, appropriate recreational material
- Supplies needed for KMC components: expression of milk (including a refrigerator for storage of milk) and prevention of infection (including handwashing with soap)
- Management including appropriate registers for documenting information or noting features of individual babies, referral notes, etc.

Supervision and improvement of quality:

- Transportation for visits in the community or the facility for follow-up
- Meals and incidental expenditure for supervisors
- Meals/refreshments for meetings
- A controversial component is additional payment for supervisors that may be provided by some donors/NGOs

Where funds are inadequate, suitable adaptations or additional leveraging/fundraising will be required.

CHAPTER 6: INCREASING SUPPORT FOR FACILITY-BASED KANGAROO MOTHER CARE THROUGH SENSITIZATION AND MOBILIZATION

WHO recommends that skin-to-skin care (SSC)—a key component of facility-based KMC—be included with the routine warm chain for all newborns. SSC, however, is not widely practiced in maternity and postnatal wards, nor is it a common practice at home or within the community. Policymakers, program managers, politicians, service providers, community leaders, families, mothers and caretakers must all be sensitized to this type of care to make it an acceptable practice.

Community sensitization on SSC can lead to increased utilization of facility-based KMC services, as community members are able to witness the benefits of this approach. Sensitization can also create demand for facility-based KMC by encouraging women who deliver LBW/preterm babies at home to seek care at the facility. Ensuring that all facility-based KMC programs are accompanied by appropriate BCC strategy and community mobilization at all levels is imperative.

Ultimately, sensitization to KMC at the national, health facility and community levels is needed for KMC services to succeed.

6.1 NATIONAL-LEVEL SENSITIZATION AND MOBILIZATION

Ongoing sensitization and mobilization activities are needed during the introduction and expansion phases of KMC service implementation. The goal of these activities at the national level is to ensure that necessary policies and guidelines are in place and disseminated to all appropriate personnel, including national, regional, district and facility managers of the MOH, as well as other key service providers such as the mission and private sector health facilities. Sensitization at the national level also assists in generating the political and financial commitment needed to provide the human resources, space and supplies necessary for the introduction and expansion of KMC services. Activity at this level should continue until services are established at all health facilities, including health centers where most deliveries take place. (National-level activities for creating an enabling environment are described in **Chapter 2**.)

Key sensitization and mobilization actions to take at the national level (apart from the national stakeholders' meeting) include:

- Integrate KMC service coordination and monitoring with existing maternal and newborn health national task force or technical working group. A new, national coordinating and monitoring group may be formed if stakeholders identify it as a need.
- Share periodic reports on service coverage and KMC success stories with the MOH, Ministry of Finance and politicians.
- Engage the media to report on the burden of the problem and what is being done to improve it. Reports can include testimonies by mothers or relatives of LBW/preterm babies who survived with KMC. A discussion on LBW/preterm babies and KMC on public radios and televisions could also be organized.
- Invite the first lady of the country or other prominent politicians or celebrities to visit KMC service sites—which is another effective way of creating awareness of and mobilizing resources for the expansion KMC services.

- Identify a “champion” who can advocate and support the cause.
- Engage existing national advocacy groups, such as White Ribbon Alliances, to put care and survival of LBW/preterm infants on their agenda. These national groups could organize national campaigns, including walks and special days dedicated to LBW/preterm infants.

6.2 HEALTH-FACILITY-LEVEL SENSITIZATION AND MOBILIZATION

KMC is often well-received by health workers when the evidence is presented to them. However, many health professionals in developing countries currently do not have an in-depth knowledge of the effectiveness and benefits of KMC. Most of those who have been introduced to KMC—through national or international conferences, peer review articles, discussions with colleagues or visits to KMC sites—may have difficulty implementing the intervention in their own health institutions for a variety of reasons. A study conducted by Charpak and Ruiz-Pelaez (2006) identified some of the **major factors that limit the introduction and expansion of KMC services in developing countries**:

- KMC is considered sub-standard care compared with incubator care.
- The provision of KMC services creates extra work for health staff.
- SSC is unacceptable to some health professionals.
- Health institution policies do not permit relatives, in particular males (fathers), to stay in the ward for long periods of time.
- There is a lack of support from health institution management.

Program managers must identify potential obstacles to implementation of KMC from health professionals and address these concerns. The idea of KMC as sub-standard care for LBW/preterm babies can be addressed through multiple channels: onsite KMC orientations; presentations at professional association meetings; and incorporation of KMC evidence with nursing, medical and other health pre-service training.

In most countries, there may be a pediatrician or medical doctor who has introduced this type of care in his/her health institution and is ready (with minimal support) to serve as a KMC champion. If such a person is found, engaging this KMC advocate/practitioner in the national stakeholders’ meeting to share his/her experience will help address the practical concerns of health professionals. In countries where there are no such champions or early adopters of KMC, a visit to a neighboring country can assist in addressing concerns health professionals may have. Identifying major concerns before arranging a site visit is important to ensure that the visit is tailored to these specific concerns.

One of the above obstacles cited by Charpak and Ruiz-Pelaez (2006) is a lack of support from health institution management. This critical barrier must be addressed if KMC services are to take hold in the facility. Therefore, programs must make the effort to orient facility managers to the effectiveness and benefits of KMC services, including a reduction in overcrowded wards, lowered cost due to early discharge and improved survival rate for LBW/preterm babies.

Discussions on institutional policies that need to be revised to permit successful KMC implementation in the facility (and the possible rearrangement of various wards) should happen before training staff on KMC.

6.3 COMMUNITY-LEVEL SENSITIZATION AND MOBILIZATION

Community and individual attitudes toward LBW/preterm babies influence the type of care people seek. If these attitudes and beliefs are understood, concerns that the community may have about KMC will be better addressed, thus improving the likelihood that mothers and caregivers will continue the skin-to-skin component of KMC when discharged from the health facility. Keeping the baby skin-to-skin is beneficial for adequate growth and survival of the baby after discharge. As such, this practice should not be stopped prematurely.

Understanding the prevailing beliefs, attitudes and practices around LBW/preterm babies may require formative research, and possibly a review and analysis of existing secondary data or the collection and analysis of primary data. Findings from formative research will assist in developing appropriate sensitization and counseling messages for the relevant target audience.

Activities for community sensitization and mobilization ensure that mothers and caregivers have the community support needed to practice KMC. These activities include:

- Group and individualized counseling at the health facility during antenatal care, at admission, during the stay at the facility and at the time of discharge
- Testimonies from mothers, fathers or relatives who have successfully cared for LBW/preterm babies using KMC
- Celebration at health facilities or within communities for the graduation of a LBW/preterm baby from KMC
- Radio, newspaper and other public forum discussions on KMC
- Discussion on the magnitude of the problem and appropriate care for LBW/preterm infants integrated with existing community activities (e.g., religious groups, women's and men's groups, village health committees and village development committees)

Figure 7: Fathers can do KMC, too!



Without community support, mothers and caregivers of LBW/preterm infants may resist practicing skin-to-skin contact at the health facility or discontinue the practice when discharged home. All facility-based KMC services must have a strategy for ensuring community support for the practice, as well as individual support for mothers and families for follow-up at home or the facility.

Community Concerns about Skin-to-Skin Contact

The practice of skin-to-skin contact will be new for almost all countries that currently do not provide KMC services at scale. However, KMC is generally well-received, even though some people in the community may still consider SSC as unusual and inappropriate and discourage the practice. Mothers discharged from the health facility who continue KMC at home may be ridiculed, making the home/community environment non-conducive for early discharge. A good way to address this issue is through community dialogues and testimonies from mothers whose children have been cared for through KMC and survived.

Some communities (particularly conservative ones) may be concerned with mothers exposing their chest while the baby is skin-to-skin. Seek local solutions for this matter. In Northern Nigeria, this topic was addressed with the development of a special cloth for women to cover their chest

without affecting the baby. In other countries, women have used open blouses and covered the upper part of their chest with a local cloth.

Mothers and families may be wary about **privacy issues** at the health facility, especially if men are permitted to stay in the ward after visiting hours to assist their wives to practice KMC. Health facility staff need to communicate with the community to agree on a solution—if separate (private) rooms or screened areas cannot be provided for all women practicing KMC or if the KMC service is in a general postnatal ward. A possible solution is to restrict ward visitors to only female relatives, or have a separate space available for male relatives to interact with the mother and baby.

Mothers may also be anxious about providing SSC 24 hours a day for **extended periods**. Typical complaints include being tired, interference with household chores or other activities, and difficulty sleeping. These complaints could be addressed through counseling the mother and her family to understand the necessity for 24-hour (or almost 24-hour) SSC for the infant to maintain proper body temperature. In addition, other family members, including husbands, can be encouraged to support the mother by practicing KMC part of the time to relieve her.

Figure 8: Mother sleeping while practicing KMC



CHAPTER 7: MONITORING, EVALUATION AND DOCUMENTATION OF KANGAROO MOTHER CARE SERVICES

7.1 RATIONALE FOR THE MONITORING AND EVALUATION OF KANGAROO MOTHER CARE

Monitoring and evaluation (M&E) are key components of any well-managed health program. M&E provides information on program functioning, if program strategies need mid-course corrections, and the impact of the program on the target population. Specifically, M&E:

- Provides data on program progress and effectiveness.
- Improves program management, quality and decision-making.
- Allows accountability to stakeholders, including funders.
- Provides data to plan future resource needs.
- Provides data useful for policymaking and advocacy.⁸

DEFINITIONS

Monitoring refers to the routine tracking of program activities with regular, ongoing measurements to assess whether and how planned activities were conducted. The findings indicate whether program activities were implemented according to the program plan (Adamchak et al. 2000).

Evaluation is a systematic assessment of a program that determines whether there is a change in what is being measured, and if so, if the change is consistent with program objectives. Both monitoring and evaluation are essential to ensure program progress toward objectives and to assess whether those objectives have been attained.

Monitoring and Evaluation Indicators

The M&E system is dependent on the program plan or logical framework to achieve desired program results. Indicators are selected, based on program objectives outlined in the program plan, to monitor and evaluate whether the program objectives are being achieved.

Criteria for selecting indicators:

- **Validity:** Indicator measures what it purports to measure.
- **Reliability:** Indicator can be measured consistently.
- **Importance:** Indicator captures something that is likely to make a difference for program effectiveness.
- **Usefulness:** Results point to areas for improvement and can be used for decision-making at programmatic and national levels.
- **Feasibility:** Data can be obtained with reasonable and affordable effort.

⁸ http://www.theglobalfund.org/documents/me/ME_Concepts.pdf

A variety of data sources can be used to collect KMC indicators, once selected. Two such sources are program-based data and population-based data. **Program-based data** can come from multiple sources (e.g., facility records, program reports, client records, health management information systems [HMIS] data, etc.) or information obtained from specific, facility-based activities as part of routine monitoring or an evaluation (e.g., observation, client exit interviews). The latter can capture the quality of care provided and how families perceive the care, both of which are important for program success. **Population-based data** are drawn from a representative sample of the population (e.g., a catchment area of a demonstration project, a district, national level). The primary sources for population-based data are large-scale national surveys, such as the Demographic and Health Surveys (DHS) conducted by IFC Macro; these DHS do not provide birth weight data, so this information needs to come from special studies. The data sources for the KMC indicators listed in **Appendix C** are program-based, and focus on coverage and quality. Data sources for each indicator are also specified.

As these indicators are measured across country programs, data will become available to assess program implementation and effectiveness. Indicators can be measured on a number of levels, including input, output and outcome. The KMC indicators detailed in the next section include output and outcome indicators, both of which are important to measure program progress and effects.

There are tested indicators for KMC programs that are universally used to monitor and evaluate programs. As a result, a group of U.S.-based experts has recommended a specific set of core indicators for all KMC programs (See **Appendix C**).

DEFINITIONS

Inputs are human and financial resources, physical facilities, equipment and operational policies that enable program activities to be implemented.

Output refers to the results of the efforts at the program level, such as numbers trained, facilities that are functional, quality of care provided, etc.

Outcome generally refers to results of programs measurable at the population level. The evaluation of outcome measures the effect that the program has had on the general population in the given catchment area.

7.2 SELECTION OF KEY INDICATORS

The indicators listed in this section are the core set of indicators used to monitor and evaluate KMC programs at a national level, including two indicators recommended for integration with the national HMIS. **Supplemental indicators** are also recommended for use in areas where programs have the capacity to measure them. The focus of all these indicators is national-level scale-up of KMC—the measurement of program implementation or quality of services at the facility level is not the focus. This exclusion is a gap that needs to be better addressed in the future. However, assessment of the quality of care at the facility level is discussed in **Chapter 5**, and supervisory checklists are provided for monitoring and improving individual staff member performance as well as the KMC unit’s overall performance (**Appendices A and B**).

The full set of indicators for KMC, as proposed by the MCHIP KMC Technical Working Group, follows.

Core Indicators

Output:

1. Number of health providers trained in KMC, by level of health provider
2. Proportion of facilities with in-patient capacity where KMC is operational, by level of facility and type of KMC service [Note: the denominator here is “facilities with in-patient capacity.”]
3. Proportion of targeted facilities with in-patient capacity where KMC is operational, by level of facility and type of KMC service

INDICATORS TO INCLUDE IN HMIS

Indicator 2: The proportion of facilities with in-patient capacity where KMC is operational

Indicator 5: The proportion of LBW babies who received KMC and survived to discharge from facility

Outcome:

1. Proportion of LBW babies who received KMC in catchment area of the KMC facility(ies)
2. Proportion of LBW babies who received KMC and survived to discharge from facility, by birth weight category
3. Proportion of LBW babies who received KMC lost to follow-up after discharge

Supplemental Indicators

Output:

1. Proportion of health providers trained in KMC, by level of health provider
2. Number of health facility staff oriented to KMC

Outcome:

1. Average length of stay in KMC services (days)
2. Average number of follow-up visits among KMC babies discharged from facility
3. Proportion of LBW babies on admission who “graduated” from KMC

A more detailed description of these indicators can be found in **Appendix C**.

Monitoring and Evaluation Tools

KMC indicators are collected from a variety of M&E tools, including:

- List/database of health providers trained in KMC
- List/database of KMC facilities established
- Patient charts/forms
- KMC register (Ensure that all information required for key indicators is available in the register to facilitate data collection.)
- Monthly/quarterly KMC summary forms to summarize key data

A suggested KMC register sheet and a data summary sheet for LBW babies are included in **Appendices D and E**.

7.3. UTILIZATION OF DATA FOR PROGRAM IMPROVEMENT AND ADVOCACY

Collecting data is only meaningful and worthwhile if the data are reviewed and subsequently used for evidence-based decision-making, whether internally for program improvement or externally for setting policy.

Data for Program Improvement

Information collected during routine M&E can and should be used to improve program performance. As discussed in **Chapter 5**, supportive supervision can improve individual performance as well as the unit's performance as a whole. When improvement occurs in all facilities, impact can be measured in the overall program. Merely documenting improved competency of health workers, while very important, may not necessarily lead to improved newborn health outcomes, which depend on a number of factors. Documenting, monitoring and evaluating all program components (e.g., training, staffing, supervision, equipment, medicines) is important. As such, it is essential that program managers and other program decision-makers are included in the process of selecting indicators.

When indicators are selected based on both the larger program design and the intended program results, the data generated will be meaningful to the larger program and conducive to program improvement. In other words, does the indicator provide information that will tell assessors if the program is reaching, or on its way to reaching, its intended results?

Data for Advocacy and Setting Policy

All KMC indicators proposed by the MCHIP KMC Technical Working Group (as listed above) can provide information essential to policy-making. The key is how to present these data to different audiences. Data can be shared **externally** through a variety of fora: public meetings, news releases, briefings, and online and direct meetings with policymakers. Briefings typically begin with a short presentation of the overall program and final results, followed by discussion of key findings or other issues. Panel presentations can be used to bring together stakeholders to present key M&E findings and recommendations. Panels are usually composed of three to four people. Each individual makes a short presentation on some aspect of the evaluation. A moderator then facilitates discussion among panelists and between panelists and the audience (Kusek and Rist 2004). Broadcast media can be useful when evaluation findings need to be disseminated beyond the primary stakeholders. Radio is a very effective way to disseminate information.

Whenever data are shared externally, they should be presented in a straightforward and simple manner. Bar and line graphs that show change over time are often the most compelling way to show program impact. Ultimately, data you collect are only as useful as you make them, whether for internal programmatic decision-making or advocating for policy change.

CHAPTER 8: ACTION PLANNING FOR KANGAROO MOTHER CARE IMPLEMENTATION AND SCALE-UP

Action planning is the process that further defines and details the steps to KMC implementation and identifies the human, material and financial resources required to successfully carry out these steps. An action plan should consider the following elements:

- Specific tasks that need to be completed and by whom
- Timeline of when tasks will need to be completed
- Allocation of resources for specific activities

8.1 NATIONAL-LEVEL ACTION PLAN

When drafting the national programmatic action plan, it is important to consider whether the KMC program will be introduced in the country for the first time or whether initial pilot areas will be expanded. If KMC is being introduced, more time and resources may need to be allocated for orientation and advocacy, and for adapting/developing KMC policy, protocols, guidelines and training packages. If a KMC pilot area is being expanded, policies, protocols and training packages used in the pilot areas could be adapted for the national level. The actual situation in each country will determine the breadth of the action plan and budgeting.

The national plan should consider the number of facilities available in the country and the KMC service they could provide. Specifically, the action plan should identify:

- Higher-level centers where KMC can be applied in full (including high-risk follow-up)
- Lower-level centers where the method can be applied in full, plus follow-up for growth, essential newborn care and health promotion either at centers or home visits
- Health posts with no hospitalization: ambulatory initiation in the center and basic follow-up or referral as required

A road map of facilities will need to be developed at the regional or provincial levels to assist with the planning process. The action plan needs to reflect the strategy and timeline for rolling out KMC services. For an example of a national action plan, see **Appendix F**. Plans at regional, provincial and district levels should follow the same pattern as the national action plan, only focused on their respective tasks.

Facility-Level Planning

KMC implementation and expansion require two kinds of plans. The first is the national-level action plan (perhaps regional, provincial and district levels), as discussed above. The second is a plan for establishing KMC services at the facility level. Each clinical site at the facility level will need to develop a modified, more detailed action plan with a personalized timeframe. The *South African Implementation Workbook* by Anne-Marie Bergh (2002) is geared toward institution-level planning and implementation of KMC, and is a valuable resource.

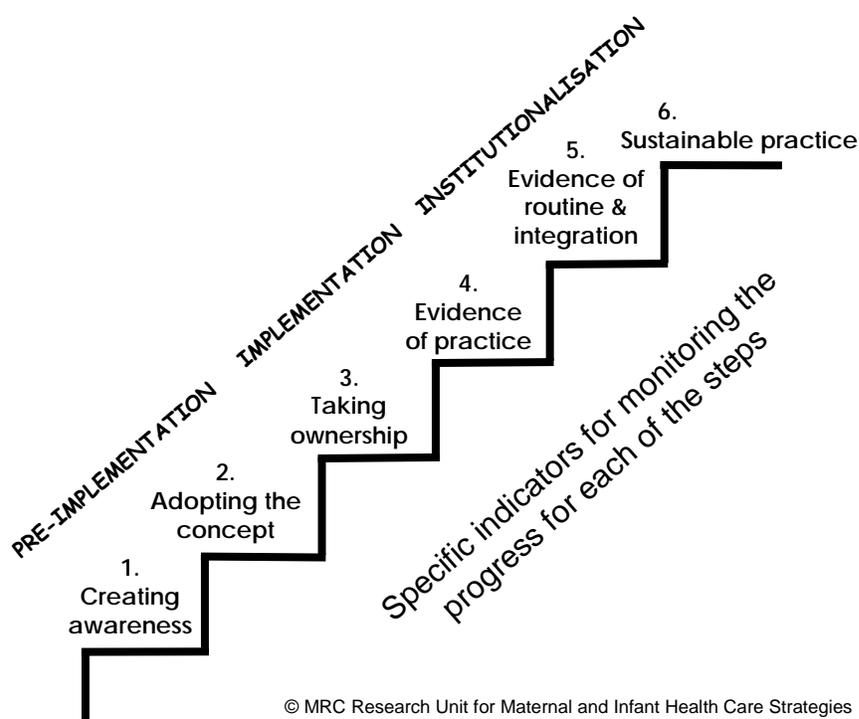
When planning and budgeting for KMC at the facility level, planners must consider linkages with the community (through outreach or other strategies). While KMC starts in the facility, key components of care are early discharge when the baby is stable and growing, continued

skin-to-skin contact at home and follow-up visits. See **Appendix G** for a sample action plan for introducing KMC at the facility level.

8.2 IMPLEMENTATION AND SCALE-UP

Whether KMC is started as a pilot project in one or two facilities and then expanded, or is introduced at the national level and rolled out in facilities at scale, the process needs to be monitored, assessed and corrected (when necessary) to ensure smooth implementation and high-quality services. Adopting a new way of working is not easy at the facility level. Health workers are used to doing things a certain way and are sometimes resistant to change. Incorporating a new method of care within the workplace, such as introducing KMC as an option for eligible LBW/preterm newborns, is similar to learning and practicing a new behavior; there are various stages or steps that need to be experienced before the method or behavior is accepted and fully practiced. The diagram below illustrates the steps in this process.

Figure 9. Steps to learning a new behavior



During implementation of the KMC program, managers and supervisors need to be aware of these steps and use specific process indicators (see **Chapter 7**) to keep track of progress.

Two indicators that can be used to measure implementation and scale-up are:

- Percentage of health providers trained in KMC, by level of provider
- Percentage of facilities with in-patient capacity where KMC is operational, by level of facility and type of KMC service provided

As previously noted, supervision plays a key role during program implementation. Information gleaned from ongoing data collection and monitoring needs to be analyzed and used by managers and supervisors to improve service delivery and quality of care. Supportive supervision is crucial to improving health worker skills and motivation, strengthening ward

management, and fostering an environment of respect (see **Chapter 5**). For this process to work well, good communication among managers, supervisors, health workers and families need to be promoted and maintained.

Steps to Implement KMC

A logical process for KMC service implementation has been suggested (ACCESS 2009).

Step 1: Collect and assess vital information related to KMC practices, essentially the situational analysis (**Chapter 2**).

Step 2: Work with policymakers and health administrators at the national level. This is the stakeholders' meeting (**Chapter 2**). This step would also include developing national policies, guidelines and training materials (**Chapter 3**).

Step 3: Work with health authorities at all needed levels (community, district, provincial and regional). This includes stakeholder meetings, including local plans of action.

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. Specific facility assessments and analyses are required in institutions introducing KMC. Staff need training; some adaptation of the physical hospital/clinic space will be required (**Chapters 2, 3, 4**).

Step 6: Support and supervise KMC program staff (**Chapter 5**).

Step 7: Evaluate the KMC program (**Chapter 7**).

CHAPTER 9: AVAILABLE KANGAROO MOTHER CARE RESOURCES

9.1 INTRODUCTION TO THE KANGAROO MOTHER CARE RESOURCES

Each section below lists relevant examples and material with regards to the implementation and practice of KMC. This is not an exhaustive list of KMC materials.

9.2 VISUAL MATERIALS

KMC Posters

- Johnson & Johnson KMC made easy poster, Gauteng Province, South Africa
- KMC made easy, South African poster developed by the Medical Research Council Unit for Maternal and Infant Health Care Strategies, University of Pretoria and Kalafong Hospital
- Malawi posters (Chewa)
- Tanzania posters (Swahili)

PowerPoint Presentations

- KMC introduction, components and benefits
- Overview of evidence for benefit of facility KMC (J. Johnson)
- KMC in Malawi overview presentation (R. Ligowe)
- Scaling up KMC overview presentation (AM. Bergh)
- Intermittent KMC
- Neuro-endocrine mechanisms in KMC (E. van Rooyen)
- KMC evidence and experiences (J. Lawn)

9.3 KANGAROO MOTHER CARE IMPLEMENTATION

Articles on Implementation

Bergh AM, Pattinson RC. 2003. Development of a conceptual tool for the implementation of Kangaroo Mother Care. *Acta Paediatrica*; 92:709–714.

Bergh AM, Arsalo, Malan AF, Patrick M, Pattinson RC, Phillips N. 2005. Measuring implementation progress in Kangaroo Mother Care. *Acta Paediatrica*; 94: 1102–1108.

Pattinson RC, Arsalo I, Bergh A, Malan AF, Patrick M, Phillips N. 2005. Implementation of Kangaroo Mother Care: A randomized trial of two outreach strategies. *Acta Paediatrica*; 94: 924–927.

Bergh AM, Van Rooyen E, Pattinson RC. 2008. ‘On-site’ versus ‘off-site’ facilitation: a randomised trial of outreach strategies for scaling up Kangaroo Mother Care. *Human Resources for Health*; 6:13. (Access online: <http://www.human-resources-health.com/content/pdf/1478-4491-6-13.pdf>).

Cattaneo A, Davanzo R, Uxa F, Tamburlini G. 1998. Recommendations for the implementation of Kangaroo Mother Care for low birth weight infants. *Acta Paediatrica*; 87(4): 440–445.

Workbooks

KMC workbook: Bergh AM. 2002. *Implementation workbook for Kangaroo Mother Care*. Pretoria: MRC Research Unit for Maternal and Infant Health Care Strategies. (Word and PDF)

9.4 KANGAROO MOTHER CARE TRAINING MATERIALS

Articles and Resources

Bergman N. 1998. Introducing Kangaroo Mother Care. *Pedmed*; Sept/Oct: 9–10.

Blencowe H, Molyneux EM. 2005. Setting up kangaroo mother care at Queen Elizabeth Central Hospital, Blantyre - a practical approach. *Malawi Medical Journal*; 17(2): 39–42.

Cattaneo A., Davanzo R, Bergman N, Charpak N. 1998. Kangaroo Mother Care in Low-income countries. *Journal of Tropical Pediatrics*; 44 (Oct. 1998): 279–282.

Conde-Agudelo A, Belizán JM, Diaz-Rossello J. 2011. Kangaroo mother care to reduce morbidity and mortality in low birthweight infants. *Cochrane Database of Systematic Reviews 2011*, Issue 3. Art. No.: CD002771. DOI: 10.1002/14651858.CD002771.pub2. (Access online: <http://www2.cochrane.org/reviews/en/ab002771.html>).

Kirsten G, Bergman NJ, Hann FM. 2001. Kangaroo Mother Care in the nursery. *Pediatric Clinics of North America*; 48 (2) April 2001:443–452.

Lawn JE, Mwansa-Kambafwile J, Horta BL, Barros FC, Cousens S. 2010. 'Kangaroo mother care' to prevent neonatal deaths due to preterm birth complications. *International Journal of Epidemiology*: i1–i10. (Access online: http://ije.oxfordjournals.org/content/39/suppl_1/i144.long).

Moore ER, Anderson GC, Bergman N. 2007. Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database of Systematic Reviews 2007*(3): CD003519.

Pattinson RC, Bergh AM, Malan AF, Prinsloo R. 2006. Does kangaroo mother care save lives? *Journal of Tropical Pediatrics*; 52(6):438–441.

Ruiz-Pelaez JG, Charpak N, Cuervo LG. 2004. Kangaroo Mother Care, an example to follow from developing countries. *BMJ* 2004;329(7475):1179–81.

Van Rooyen E, Pullen AE, Pattinson RC, Delpont SD. 2002. The value of the kangaroo mother care unit at Kalafong Hospital. *Geneeskunde/The Medical Journal*; April: 6–10.

World Health Organization. 1997. *Thermal Protection of the Newborn: a practical guide*. Geneva: World Health Organization. Maternal and Newborn Health/Safe Motherhood Unit.

Armbruster D, Beck D, Goldman S, Long P. 2005. *Care of the Newborn Training Guide*. Save the Children.

Beck D, Ganges F, Goldman S, Long P. 2004. *Care of the Newborn Reference Manual*. Save the Children.

Beck D, Ganges F, Goldman S, Long P. 2004. *Care of the Newborn Reference Manual*. Save the Children. (French)

Beck D, Ganges F, Goldman S, Long P. 2004. *Care of the Newborn Reference Manual*. Save the Children. (Portuguese)

KMC Curriculum Options

- Half-day curriculum
- One-day curriculum
- Two-day curriculum

Training Manuals

- World Health Organization. 2003. *Kangaroo mother care: a practical guide*. Geneva: World Health Organization, Department of Reproductive Health and Research.
- Woods DL. 2005. Principles of Kangaroo Mother Care unit 43 in Woods DL (ed). *Mother and baby friendly care*. Cape Town: Perinatal Education Programme.
- Woods DL 2005. Practice of Kangaroo Mother Care unit 44 in Woods DL (ed). *Mother and baby friendly care*. Cape Town: Perinatal Education Programme.
- Save the Children. 2005. Malawi Kangaroo mother care training manual. Lilongwe.
- National Neonatology Forum of India. 2005. *Kangaroo Mother Care Guide*.
- National Neonatology Forum of India. 2005. *Kangaroo Mother Care Teaching Aids*.
- Save the Children, ACCESS. 2006. *Kangaroo Mother Care Training Manual*. (French)
- Save the Children, ACCESS. 2007. *KMC Training Guide Nepal*.
- Ministry of Health, Government of Tanzania. 2008. *Kangaroo Mother Care Training Manual: Facilitator's Guide*.
- Ministry of Health, Government of Tanzania. 2008. *Kangaroo Mother Care Training Manual for Participants*.
- Nigeria Federal Ministry of Health, ACCESS. 2008. *Kangaroo Mother Care Training Manual*.
- Save the Children, ACCESS. 2008. *Community Kangaroo Mother Care Training Guide*, Bangladesh.
- Ministry of Health, Mali. 2009. *Kangaroo Mother Care Training Manual: Facilitator's Guide*. (French)
- Ministry of Health, Mali. 2009. *Kangaroo Mother Care Training Manual for Participants*. (French)
- Ministry of Health, Mozambique. *Kangaroo Mother Care Training Manual*. 2009. (Portuguese)
- World Health Organization. 2010. *Essential Newborn Care Training File* (5 modules). Geneva.

9.5 KANGAROO MOTHER CARE PRACTICE

Clinical Records

- Intermittent KMC chart example from Kalafong Hospital, South Africa
- KMC daily notes used in the KMC unit at Kalafong Hospital, South Africa
- KMC follow-up document from the WHO KMC practical guide
- KMC individual patient statistics form used in Kalafong Hospital, South Africa
- Pre-discharge score sheet
- Pre-discharge score sheet; explanation of how to complete the sheet

Guidelines

- Malawi National KMC Guidelines, 2009
- Nepal National Guidelines for Care for Low Birth Weight Neonates, 2007
- South Africa Policy and Guidelines for KMC in the Western Cape province, South Africa
- Tanzania National KMC Guidelines, 2010
- South Africa KMC guidelines at Kalafong Hospital:
 - Guidelines for doctors working in the KMC unit
 - Guidelines for nurses working in the KMC unit
 - Instructions to nurses working in the KMC unit
 - Guidelines for the ward clerk
 - Guidelines for mothers admitted to the KMC unit
 - Feeding guidelines
 - Guidelines to manage the electronic scale
 - Admission and discharge guidelines

Job Aids

- Outreach counseling cards for birth preparedness, danger signs, caring for the newborn after delivery from Save the Children Malawi
- Checklist for discharge from the KMC unit from Kalafong Hospital, South Africa
- Feeding guide for low birth weight infants from Kalafong Hospital, South Africa
- Feeding guide from the Managing Newborn Problems WHO guide
- How to express breast milk visual guide
- How to feed expressed breast milk visual guide
- How to hand express breast milk visual guide
- Why express breast milk visual guide
- How to identify the low birth weight baby from the Malawi KMC training manual
- What to do with apnea from the Malawi KMC training manual

- What to do in case of a newborn death from ACCESS KMC training manual
- KMC information brochure for mothers from Kalafong Hospital, South Africa
- KMC information brochure for mothers from Bangladesh
- Guide to cup feeding procedures
- Jaundice management guide
- AFASS HIV feeding choice assessment guide
- Nursing daily observations and monitoring
- Early communication intervention
- KMC positioning during transport
- Yezingane Network and UNICEF. 2010. *Frequently Asked Questions about breastfeeding in the context of HIV*. South Africa.

Standing Orders

- ROP eye drops standing order from Kalafong Hospital
- Oxygen therapy standing order from Kalafong Hospital

9.6 KANGAROO MOTHER CARE MONITORING AND EVALUATION

- KMC workbook: Bergh A-M. 2002. *Implementation workbook for kangaroo mother care*. Pretoria: MRC Research Unit for Maternal and Infant Health Care Strategies.
- KMC workbook—parts 2 and 3 (section 2.4)—Word and PDF format
- KMC workbook—part 4 (section 4.32)—Word and PDF format
- KMC register and summary tools:
 - Electronic ambulatory KMC register
 - Electronic KMC register
 - KMC progress monitoring tool, version 4
 - Monthly report of KMC follow-up visits
 - Monthly KMC summary report
- Saving Newborn Lives. 2010. Monitoring indicators.
- MCHIP.2010. KMC performance standards checklist.
- Tanzania supervision checklist. 2010.
- Bergh AM, Arsalo, Malan AF, Patrick M, Pattinson RC, Phillips N. 2005. Measuring implementation progress in kangaroo mother care. *Acta Paediatrica*; 94: 1102–1108.
- Malawi KMC assessment report. 2007.
- ACCESS LBW Project. 2006. Nepal, Kanchanpur District Monitoring and Evaluation Plan.

9.7 COMMUNITY KANGAROO MOTHER CARE

- Community-Based Care for Low Birth Weight Newborns: The Role of Community Skin-to Skin Care. Report of a meeting. May 2008
- Bangladesh Community KMC Manual, Draft 2008
- Malawi Community KMC training module.
- Sloan et al. Draft 2007. *Generic community KMC training manual for adaptation.*
- Sloan NL, Ahmed S, Mitra SN, et al. 2008. Community-based kangaroo mother care to prevent neonatal and infant mortality: a randomized, controlled cluster trial. *Pediatrics*;121:e1047-59. (Access online: <http://pediatrics.aappublications.org/content/121/5/e1047.abstract>).
- Ahmed S, Mitra SN, Chowdhury SMR, Camacho LL, Winikoff B, Sloan NL. 2011. Community Kangaroo Mother Care: implementation and potential for neonatal survival and health in very low-income settings. *JPer*;31,361–367; doi:10.1038/jp.2010.131. (Access online: <http://www.nature.com/jp/journal/v31/n5/abs/jp2010131a.html>).

9.8 MISCELLANEOUS

- Kangaroo Mother Care Internet links, 2011
- KMC wraps example and pattern—Kalafong KMC thari (wrap) method of tying the wrap, illustrated with photos and the pattern for the wrap
- References of KMC articles—WHO International Network of Kangaroo Care Bibliography
- Web sites for further information:
 - <http://www.mchip.net/resources>
 - <http://www.healthynewbornnetwork.org/>
 - www.who.int

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- Adamchak S, Bond K, MacLaren L, et al. 2000. *Monitoring and Evaluating Adolescent Reproductive Health Programs*. FOCUS on Young Adults. FHI: Washington, D.C.
- Arraes de Alencar A, Arraes L, Cavalcanti de Albuquerque E, Alves JGB. 2008. Effect of Kangaroo Mother Care on Postpartum Depression. *J Trop Pediatr* (2009) 55 (1): 36–38. First published online: December 9, 2008.
- Bergh AM, van Rooyen E, Pattison RC. 2008. Scaling up Kangaroo Mother Care in South Africa: 'on-site' versus 'off-site' educational facilitation. *Human Resources for Health* 6:13 <http://www.human-resources-health.com/content/6/1/13>.
- Bergh AM. 2002. *South African Implementation Workbook for KMC*. MRC Research Unit for Maternal and Infant Health Care Strategies. University of Pretoria: South Africa.
- Bergman NJ, Linley LL, Fawcus SR. 2004. Randomized controlled trial of skin-to-skin contact from birth versus conventional incubator for physiological stabilization. *Acta Paediatrica* 93(6): 779-85.
- Bogale W, and Assay K. 2001. Kangaroo Mother Care: A randomized controlled trial on effectiveness of early Kangaroo Mother Care for Low Birthweight Infants in Addis Ababa, Ethiopia. *J. Trop. Pediatrics* 51(2):93–97.
- Cattaneo A, Davanzo R, Uxa F. 1998. Recommendations for the Implementation of Kangaroo Mother Care for Low Birthweight Infants. *Acta Paediatrica* 87: 440–5.
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APPENDIX A: SUPERVISORY/EVALUATION CHECKLIST FOR KANGAROO MOTHER CARE IMPLEMENTATION

ADAPTED FROM BASICS PROGRAM IN SENEGAL

To evaluate how KMC is being implemented by the health worker during training (on a mother or through simulation) or during supervisory visits (on a mother in a facility).

Directions - Rate the performance of each step or task using the following rating scale:					
1 = Step performed correctly.					
2 = Step not performed correctly.					
N/A (not applicable) = Step was not needed in a particular situation.					
STEP	RATING				
Date					
Points for skill/activity					
Placement of the baby (5 points)					
1. The baby is vertical.					
2. The baby is in direct skin-to-skin contact on the mother's chest.					
3. The legs are flexed in a frog position.					
4. The cheek is in contact with the chest of the mother.					
5. The baby is fixed firmly to the chest of the mother/care giver with a cloth/shawl or lycra band.					
Clothing for the baby (4 points)					
6. A diaper/napkin					
7. Cap/bonnet/scarf covering the head					
8. Socks					
9. A light vest if used covers only the back and not the baby's chest. If not used note "N/A"					
Miscellaneous (3 points)					
10. The baby and the clothes in contact are clean.					
11. The baby is breastfed/receiving breast milk.					
12. The mother can list when she should wash her hands.					
A: Total points for the cases observed =					
B: Total points that were not applicable (N/A) =					
C: Total possible points for the case observed (12 - B) =					
Score (percentage): A divided by C multiplied by 100 =					
Facilitator's or supervisor's signature/initials					

APPENDIX B: SUPERVISORY CHECKLIST FOR KANGAROO MOTHER CARE UNIT

Note: This checklist covers only selected items related to KMC and basic care of the low birth weight baby and can be adapted as required depending on the care provided by the unit.

During the visit:

- Talk with the doctor and nurse.
- Review the registers and forms.
- Visit the KMC unit.
- Observe a counseling session.
- Interview at least two mothers.

ITEM/ELEMENT	YES	NO
Policies, Guidelines and Checklists Available Related to:		
▪ Criteria for and actions and counseling at admission		
▪ Criteria for and actions and counseling at discharge		
▪ Handwashing		
▪ Handling of linen		
– Disinfection		
– Washing		
– Sterilization		
▪ Handling of feeding utensils		
– Disinfection		
– Cleaning		
– High-level disinfection/sterilization		
▪ Feeding of the LBW/preterm babies		
▪ Cleaning of floors and surfaces (ideally per shift)		
▪ Counseling of mother on KMC and follow-care of the baby		
– At admissions/initiation of KMC		
– During stay at facility		
– At discharge		
– At follow-up visits		
Availability and Functionality of Equipment/Supplies		
▪ Baby weighing scales		
▪ Feeding tubes [#5 (preferable), #6]		
▪ Cups/suitable devices for feeding small babies		
▪ Resources to note volume of milk (graduated cups or 10 mL syringes)		
▪ Registers that record key information about LBW babies		
▪ Room heaters for centers in areas requiring room heating		

ITEM/ELEMENT	YES	NO
Records for Individual Babies, Including at Least:		
▪ Baby's periodic changes in weight		
▪ Body temperature (at least per nursing shift for LBW babies)		
▪ Recording of all feeds and any related problems such as vomiting		
▪ Daily notes on physical examination findings and tests and treatment ordered		
▪ Notes of treatment given with timings		
▪ Notes on whether KMC is continuous or intermittent		
Registers to Collect the Following Information:		
▪ Numbers of LBW/preterm babies		
▪ Numbers of LBW/preterm babies receiving KMC		
▪ The types of feeding received by the babies		
▪ Weight categories of the babies		
▪ Gestational age categories of the babies		
▪ Weights at admissions		
▪ Weights at discharge		
▪ Status at discharge (numbers alive, referred, dead)		
▪ Causes of death where babies have died		
Availability and Functionality of Maternal Support Components		
▪ Room for mothers implementing KMC		
▪ Beds available for mothers to sleep in a suitable position with the babies		
▪ Privacy for the mothers such as the presence of curtains		
▪ Facilities and supplies for handwashing		
▪ Facilities for expression of breast milk		
▪ Food provided for the mother		
▪ Recreational facilities available		

APPENDIX C: KANGAROO MOTHER CARE INDICATORS AND DATA SOURCES

RECOMMENDED INDICATORS FOR FACILITY-BASED KMC

This appendix includes a minimum set of indicators to monitor and evaluate facility-based KMC. There are two different types of indicators: core indicators and supplementary indicators. Core indicators should be collected for all KMC facilities. Supplementary indicators are suggested for research settings. Other indicators may also be collected as needed and country context should be considered.

NO.	INDICATOR	DEFINITION		DISAGGREGATED VARIABLES	SOURCE	FREQUENCY
		Numerator	Denominator			
Core Indicators						
1.1	Proportion of LBW babies on admission 1 who received KMC in catchment area of KMC facility(ies) 2	# of LBW babies on admission who received KMC in catchment area of KMC facility(ies)	# of LBW babies in catchment area of KMC facility(ies) 3 (estimate)		Registers, Monthly summaries	Annual
1.2a	Proportion of facilities where KMC is operational 4	# of facilities where KMC is operational	# of health facilities	Level of facility 5, Type of KMC service6	Supervision checklist, Program records	Semi-annual
1.2b	Proportion of targeted 7 facilities where KMC is operational 4	# of targeted facilities where KMC is operational	# of targeted health facilities	Level of facility 5, Type of KMC service 6	Supervision checklist, Program records	Quarterly
1.3	Number of health providers 8 trained in KMC	# of health providers trained in KMC	NA	Level of health provider 8	Program documents	Quarterly
1.4	Number of KMC admissions by birth weight category 9	# of KMC admissions by birth weight category	N/A	Birth weight category 9	Registers, Monthly summaries	Quarterly
1.5	Number of babies who received KMC that are discharged from health facility, by birth weight category 9	# of babies who received KMC that are discharged, by birth weight category	N/A	Birth weight category 9	Registers, Monthly summaries	Quarterly
1.6	Proportion of LBW babies on admission who received KMC lost to follow-up after discharge from health facility 10	# of LBW babies on admission who received KMC lost to follow-up after discharge	# of LBW babies on admission who received KMC		Registers, Monthly summaries	Quarterly

Supplementary Indicators						
1.7	Number of health facility staff 12 oriented 13 in KMC	# of health facility staff oriented in KMC	NA		Program documents	Quarterly
1.8	Average length of stay in KMC services (days)	NA	NA		Registers, Monthly summaries	Quarterly— Research only
1.9	Average number of follow-up visits among KMC babies discharged from facility	NA	NA		Registers, Monthly summaries	Quarterly— Research only
1.10	Proportion of LBW babies on admission who graduated KMC 14	# of LBW babies on admission who graduated from KMC	# of LBW babies on admission who received KMC		Registers, Monthly summaries; Special study	Annual— Research only

Notes

1	LBW babies on admission – Birth weight on admission to KMC facility
2	All LBW babies (home and facility births) born in the catchment area of the KMC facilities
3	Number of LBW babies – The denominator should be estimated based on LBW (<2500 g) in population and total estimated population in catchment area of KMC facility(ies)
4	Operational – Facilities that routinely practice continuous skin-to-skin and breastfeeding (or appropriate feeding) for babies who are LBW (<2500 g) on admission to facility
5	Level of facility – 1) Tertiary (National Hospital, Training institution/teaching hospital); 2) Regional (central/regional/provincial hospital); 3) District (District hospital); 4) Periphery health center/health post)
6	Type of KMC service – 1) Separate KMC unit; or 2) KMC integrated into PNC ward
7	Targeted facilities – Facilities selected to implement KMC services
8	Level of health provider – 1) Doctor; 2) Other medically trained provider (nurse, midwife, clinical officer, medical assistant, auxiliary nurse); 3) Non-medically trained provider (assistant, etc.)
9	Birth weight categories – <1000 g, 1000 g-1499 g, 1500 g-1999 g, 2000 g-2500 g
10	Lost to follow-up – Missed two subsequent follow-up visits
11	Health providers who provide KMC services – All health providers who are supposed to provide KMC services. In countries where there is rotation among providers, this denominator may be difficult to determine. Clarification on how the denominator was ascertained should be noted.
12	Staff – Hospital administrator, health provider, etc.
13	Oriented – Orientation/information session on KMC, typically for facility administrators and managers responsible for approving and supporting KMC implementation
14	Graduated – based on health provider determination that baby is no longer required to be in KMC position

APPENDIX D: ONSITE KANGAROO MOTHER CARE 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's Discharge Date	Baby's Survival Status	Baby's Discharge Wt. (gms)	Cause of Death if Available	Complications	Antibiotics Yes/No
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															

APPENDIX E: 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	
Number referred in	
Number of babies born before arrival (BBA)	
New KMC admissions	
Continuing KMC cases	
Number of babies discharged	
Normal discharge	
Abscond	
Discharged against medical advice	
Number of cases referred for special medical care	
Number of deaths (NND)	
Number of newborn deaths	

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)				
<1,000				
1,000–1,499				
1,500–1,999				
2,000–2,500				
Age of mother (years)				
<=20				
21–30				
31–40				
>40				
Parity				
1				
2–5				
>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	NUMBER WITH COMPLICATIONS						
	Pneumonia	Septicemia	Cyanosis	Convulsions	Apnea	Other	Total
Weight							
<1000							
1,000–1,499							
1,500–1,999							
2,000–2,500							
Age of mother							
<=20							
21–30							
31–40							
>40							
Parity							
1							
2–5							
>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.

APPENDIX F: SAMPLE NATIONAL ACTION PLAN FOR A KANGAROO MOTHER CARE PROGRAM

TASK	RESPONSIBLE	TIMELINE	RESOURCES NEEDED	FUNDS AND SOURCE
1. Introducing and/or Expanding KMC services				
Meet with MOH to raise awareness and initiate process	Ms. R/STC		Refreshments	
Initial meeting with MOH and partners to secure funding for situation analysis and stakeholders' meeting: <ul style="list-style-type: none"> Prepare budget: Situation Analysis Stakeholders' meeting 	MOH/Ms R		Consultant(s) Computer Local transport	MOH
Situation Analysis on Preterm/LBW and feasibility of introducing KMC	Mr. K/UNICEF Consultant		Data collection tools (prints, photocopies)	UNICEF approx \$3,000
2. National-Level Stakeholders' Meeting			Who: National policy makers, health administrators, academic institutions, professional associations, NGOs and agencies	\$1,500/MOH and STC
Planning: <ul style="list-style-type: none"> Identification of date and venue Preparation of agenda Invitations to participants/confirmation of attendance Preparation of presentations, videos, handouts Procurement of office supplies 	MOH/STC Ms R			
	MOH/STC Ms R			
	MOH			
	Consultant/MOH		Venue and food	
	MOH		Office supplies/printing	
Present Situation Analysis	Consultant		Funding/logistics	
Possible visit to functional KMC site in country or abroad	MOH/US Gov.			\$10,000 USAID
Identify National Committees Develop Next Steps Action Plan and Budgeting	KMC Committees		Venue and food	MOH

TASK	RESPONSIBLE	TIMELINE	RESOURCES NEEDED	FUNDS AND SOURCE
5. Plan and Implement Community Mobilization and BCC Plan (if resources available or consider implementation at later stage)	MOH/BCC Committee	2-3 months	Consultant or social marketing firm	Approx. \$1,800 UNICEF for development
Formative research	Marketing firm	1 month		
Development/adaptation and pre-testing of materials (written, pictorial, scripts for radio or plays, etc.)		3 weeks		
Testing of materials		15 days		
Implementation and monitoring	MOH/facilities			Approx. \$3000
Evaluation	Consultant	15 days		
6. Identify Implementation Site(s) and Teams (include staff from all areas involved and hospital administration)			This could be accomplished in meetings with authorities mentioned before so no extra planning or resources are required.	
7. Provide Supportive Supervision to KMC Staff and Monitor KMC Services	MOH/KMC committees			
Identify supervisors at all levels (national, district and facility)	MOH at different levels		Try for already existing staff	
Develop KMC monitoring and supportive supervision checklist/performance standards and quality improvement tool	MOH/KMC committees		Supervision forms	
Train supervisors in supportive supervision and use of checklist	Master trainers	2 days	Venue, food, per diem	Approx. \$500
Develop and implement a schedule for supervisory visits**	MOH at different levels		Per-diem for supervisors Visit facility every 3 months Transport for supervisors	From local budgets Standard per diem rate
Use monitoring data to improve individual and KMC unit performance	MOH at different levels		Consider cell phones for data collection	
8. Evaluate the KMC Program <ul style="list-style-type: none"> - Use facility based registers and statistics for quantitative data - Use Interviews and observations for qualitative data - Present evaluation findings - Use findings to improve/expand implementation 	MOH/KMC committees Consultant(s)	1 month	Consultant(s)/ Data analyst; Forms and registers Venue and food for dissemination of results	Approx. \$2,000 Joint MOH/donor funds

APPENDIX G: SAMPLE FACILITY-LEVEL ACTION PLAN FOR KANGAROO MOTHER CARE PROGRAM

TASK	RESPONSIBLE	TIMELINE	RESOURCES NEEDED	FUNDS AND SOURCE
1. Prepare the Facility and Staff for Implementation of KMC				
First meeting with administrators, managers, doctors, nurses, and support staff in delivery and postpartum wards	National KMC Committee		Food/drinks handouts	Facility
Facility carries out analysis of Preterm/LBW care	Head nurse NICU			
Plan and conduct orientation meeting for staff involved in KMC Establish Facility KMC Committee	MOH/National KMC Committee Administrator	1 day	Food/drinks Office supplies, handouts	Facility
Plan and conduct tour of the facility: <ul style="list-style-type: none"> ▪ Identify structural adaptations required ▪ Develop budget for structural adaptations required 	Local KMC Committee, Administrator	½ day	With engineer or architect	
Plan and conduct training of implementing staff (locally or in regional center of excellence*)	Master Trainers Administrator KMC Committee	4 days	Venue and meals Trainers Educational materials Office supplies Equipment and supplies for training (dolls, cloth, infection prevention supplies, etc.) Transportation for participants (to “classrooms” and clinical sites for practice)	District funds Approx. \$200 per participant x 15 participants = \$3,000
2. Develop an Action Plan for Site(s)				
	Administrator KMC Committee	1–3 months	Venue and food Computer and LCD projector (if available) or easels and paper Office supplies Handouts	Facility or District

TASK	RESPONSIBLE	TIMELINE	RESOURCES NEEDED	FUNDS AND SOURCE
Prepare and collect baseline data	Head Nurse NICU	2 weeks	Chart review or prospective	none
Preparation of the environment: structural changes	Administrator KMC Committee Engineer, carpenters	Based on work required	Facility adaptation	Cost based on work required
Prepare equipment and supplies (nursery, rooming-in beds, chairs, refrigerator, follow-up clinic) (see Bergh's KMC Workbook for lists)	Administrator KMC Committee	1–3 months		Depending on need
Give assignments to staff	Administrator			none
Develop supportive supervision plan	KMC Committee Head Nurse	Already designed		none
Develop data collection, analysis, and use plan	Facility MIS team KMC Committee	Already designed		none
Plan regular KMC meetings	Administrator KMC Committee	monthly		none
3. Develop a Plan for Outreach for the Community				
Carry out meeting(s) with community leaders and members	KMC Committee Public Health Nurses		Venue and food Office supplies and printing of handouts	Facility
Develop an M&E and supervision plan and data collection tools Follow-up of discharged Kangaroo newborns	KMC Committee Postnatal staff		Based on national M&E plan Venue and food for meetings Production/adaptation and printing of tool kit (translation, culturally acceptable pictures, etc.)	Facility
Identify and train CHV or CHW for home visits		2 days in-service	Venue and meals Trainers Educational materials Transportation for participants	Facility/District

TASK	RESPONSIBLE	TIMELINE	RESOURCES NEEDED	FUNDS AND SOURCE
4. Implement KMC in Facility Provide KMC to eligible Preterm/LBW newborns Arrange staffing for inpatient care of mothers and KMC babies	Administrator KMC Committee Del room and Postnatal staff	1-6 months	Use new registers, protocols	Facility District
Follow-up visits scheduled before discharge	Postnatal staff Public Health Nurses			
Collect data on KMC provided	Staff KMC Committee	ongoing		
5. Provide Internal Supportive Supervision to KMC staff	KMC Committee		Supervision forms	Facility
Identify supervisors (at facility, include head midwife or NICU nurse)	Administrator			
Weekly supervision on ward or for every Kangaroo baby (depending on work load)	Internal Supervisors		Supervision forms	
6. Evaluate the KMC Program	KMC Committee Administrator		Forms and registers Electronic database	Facility National KMC
Daily data collection	Health workers	daily		
Periodic data analysis	KMC committee	monthly	Data analyst time	District and Facility
Periodic dissemination of results and analysis of required next steps	Administrator KMC Committee Health Workers District/Province/National	As required	Venue and food for dissemination of results	