



Institutionalizing Kangaroo Mother Care in Health Facilities

LAMB Integrated Rural Health and Development

Purpose: To reduce neonatal mortality by improving quality of care for low birth weight newborns and hypothermic normal weight babies.

Approach: Kangaroo mother care (KMC) has great potential to reduce neonatal deaths in Bangladesh where the rate of low birth weight is among the highest in the world. However, uptake of KMC in the country to date has been limited. LAMB Integrated Rural Health and Development was first to introduce KMC in Bangladesh in 1998, and has established itself as a strong in-country KMC training resource. As Bangladesh recently committed to accelerating the implementation of KMC in facilities across the country, LAMB can be highlighted as a successful model and source of important lessons learned.

Positive Change: LAMB has succeeded at enabling a strong KMC team culture within LAMB Hospital, where KMC is now part of routine care for low birth weight (LBW) babies. Mothers are empowered to provide care to their low birth weight, often preterm, babies and the hospital has seen a temporal relationship between improved neonatal survival before discharge and the time period of KMC institutionalization. Remarkable survival stories of very low birth weight neonates successfully cared for with KMC have inspired and sustained the motivation of health providers and families of small babies to encourage and support the practice.

LAMB Hospital nurse assists patient with Kangaroo Mother Care



BACKGROUND

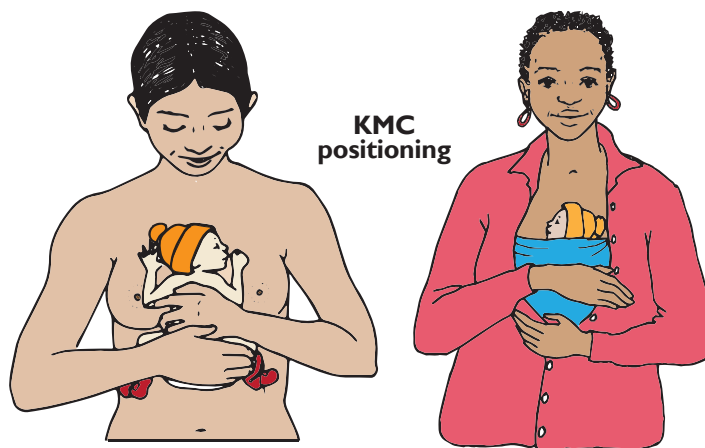
Kangaroo mother care (KMC), an evidence-based method of caring for low birth weight newborns, has been shown to prevent hypothermia and decrease neonatal mortality as compared to incubator care. Furthermore, KMC encourages mother-infant bonding, improves growth and weight gain, facilitates breastfeeding, and reduces the incidence of infections.¹ KMC comprises three key components: 1) continuous skin-to-skin contact between a neonate and his or her mother's bare chest, 2) early and frequent breastfeeding, and 3) early discharge from a health facility with follow-up.^{2,3}

"I felt very well keeping my grandchild to my chest in skin-to-skin contact. It was a very good feeling. She never cried at my chest, I felt that she was getting comfort there. When she got hungry I gave her to her mother to feed."

Mother-in-law

Bangladesh has made remarkable progress over the past decade in reducing under-5 deaths, and indeed has already achieved Millennium Development Goal (MDG) 4. However, progress in reducing neonatal mortality has been slower, and now 61% of all under-5 deaths occur during the neonatal period.⁴ Low birth weight may contribute to 60-80% of neonatal deaths globally,⁵ and studies have estimated Bangladesh's low birth weight rate to be near 30%, which is among the highest in the world.⁶ Low birth weight babies are at increased risk for developing hypothermia and infections,⁷⁻¹⁰ and thus attention to thermal regulation of newborns in Bangladesh is critically important. It has been estimated that universal coverage of measures to prevent neonatal hypothermia in addition to quick identification and treatment could eliminate up to 40% of neonatal deaths globally.¹¹

In renewed commitment to addressing neonatal mortality and acknowledging KMC's potential to save newborns' lives in Bangladesh, the National Core Committee on Neonatal Health endorsed KMC for national scale up in July 2013, and the Minister of Health and Family Welfare included KMC as a key intervention for scale up in his *Call to Action to End Preventable Child Deaths Before 2035*. As the Government of Bangladesh works to scale up KMC implementation in facilities nationally, it can draw lessons from the long history of KMC implementation at LAMB Integrated Rural Health and Development.



Figures adapted from Kangaroo Mother Care: a Practical Guide (WHO, 2003)

INTRODUCTION OF KMC AT LAMB HOSPITAL

LAMB Integrated Rural Health and Development is a faith based NGO working in Parbatipur, northwest Bangladesh. In 1998, two midwives from LAMB Hospital were introduced to KMC at the International Confederation of Midwives Conference in Manila, Philippines and returned to implement KMC initially for babies less than 2000 grams at LAMB Hospital. Although KMC has low financial cost and requires little technology to implement effectively, it proved harder than expected to sustain implementation. Initially, LAMB faced challenges from both the provider side and the patient side when trying to incorporate KMC into standard care in the hospital. The doctors were not open to changing their previous best practice of incubator care, nurses were overloaded and could not handle the additional workload of assisting mothers in initiating KMC, and new mothers and their families were resistant to the practice because of its unfamiliarity and often complained of feeling too hot. For the first several years, KMC implementation was unsteady, but the presence of a few “KMC champions” on staff continuously pushed for its institutionalization. These champions, comprising key pediatric doctors, strong nursing leadership, and nursing education consultants, worked together to innovate solutions to the challenges inhibiting the uptake of KMC at LAMB Hospital and, through their perseverance, have succeeded in nurturing a KMC team culture where KMC is now routine care for all small babies.

LAMB Hospital at a Glance

- Staff management under two directors: Medical Director and Nursing Director
- Approx. 22 doctors
- Approx. 100 nursing staff
- Approx. 17 medical assistants
- Approx. 200 total staff
- 150 beds
- 24/7 emergency care
- Patient fees charged at-cost; 66% of patients receive subsidies from a Poor Fund, 20% pay nothing
- 60,000 outpatients per year; 10,000 inpatients (50% pregnancy/birth related); 3700 births/year
- Catchment population of 1.5 million

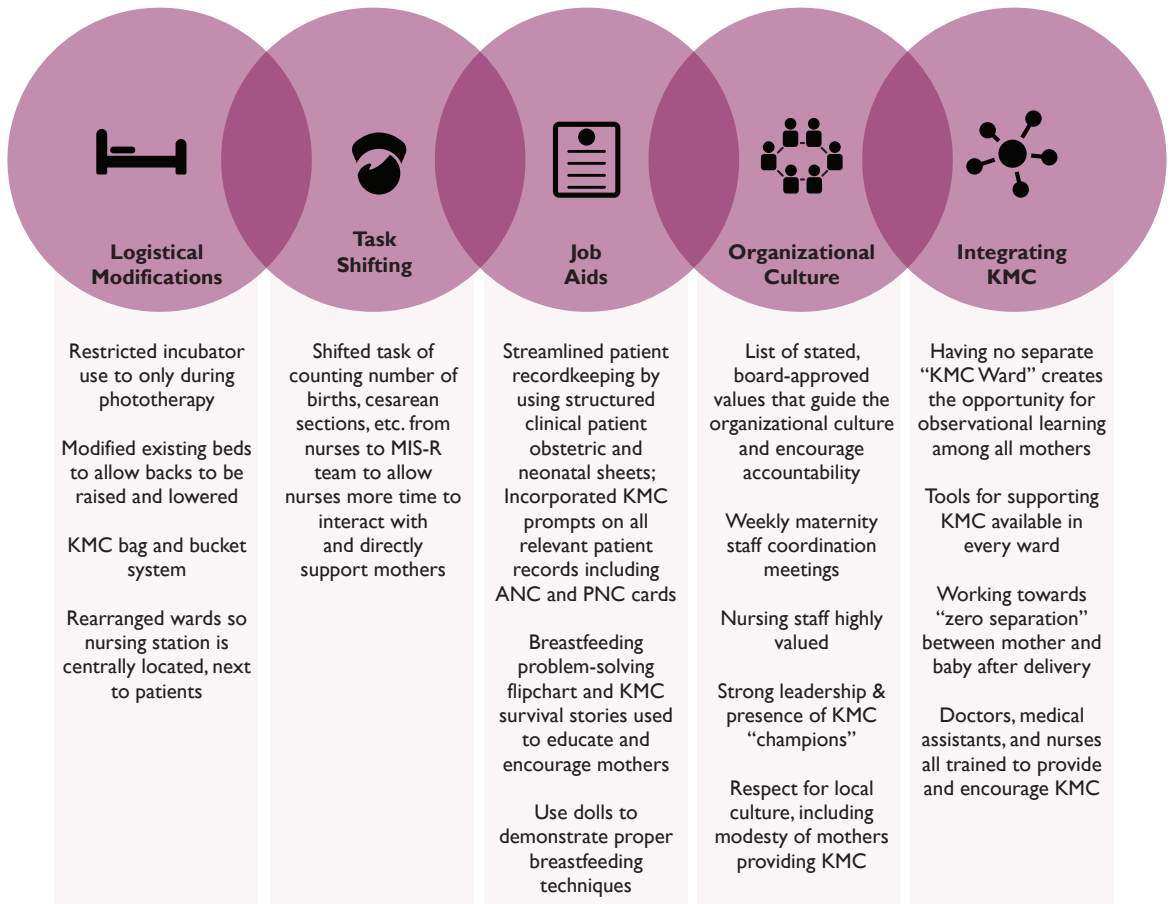
LAMB Integrated Rural Health and Development comprises:

- Community Health and Development Division
- 150 bed hospital
- Lamb Training Center (LTC)
- Nursing Institute
- Monitoring and Research Division
- English-medium school



INNOVATING TO OVERCOME CHALLENGES

The keys to LAMB's institutionalization of KMC comprise factors across five categories: logistical modifications, task shifting, job aids, organizational culture, and the integration of KMC across the facility.





LOGISTICAL MODIFICATIONS

Restriction on incubators

During the early days of KMC implementation, consensus was lacking among LAMB doctors on appropriate care for low birth weight babies, which caused confusion for nurses implementing the care. Some doctors prescribed the use of hot water bottles or room heaters while some insisted upon incubator use. Because of the scientific evidence showing the benefit of KMC over incubator care, a Consultant Pediatrician championing KMC ultimately managed to limit the incubators for use only during phototherapy treatment and KMC has become the sole method of thermal care for neonates.

Adapting hospital beds

In effort to increase comfort for women providing KMC, the hospital modified all their existing beds in the maternal, neonatal, and pediatric wards to allow the backs to be raised and lowered. This allows women to sit upright or rest in a semi-reclined position with their babies in the kangaroo position. Purchase of new, high-technology adjustable beds or chairs was not necessary.

“When the doctors are united and giving a clear message about quality of care, then it is helpful for the nurses. When one consultant does it one way, another consultant does it another way, it’s difficult for nurses. That’s an important leadership point—that the unit has to decide what is our quality of care, then everyone is clear-- every doctor and every nurse so that you move in the same direction. Otherwise, the nurses hear one thing one day and another thing another day.”

Consultant Pediatrician

Nurse preparing a hospital bed that LAMB Hospital modified to allow the back to be adjusted





A Training Officer demonstrates use of the KMC bag at the LAMB Training Center

KMC bag and bucket system

During the first few years of implementation, nurses helped mothers to use triangular bandages or strips of fabric to secure their babies in the kangaroo position. By 2002, nurses were routinely encouraging mothers to use their own cloths like *orna*, *gamcha* or *lungi* brought from home. Then in 2006, LAMB designed and piloted a “bag” specifically for KMC, based on a photo seen in a KMC presentation from India. LAMB’s early KMC bag prototypes were made with thicker, soft fabrics like flannel (brushed cotton), which ultimately proved too hot for use in Bangladesh and did not dry quickly enough after washing. Providing multiple sizes proved to be too logistically challenging, and thus the finalized version in use today is one standard size, made of cotton poplin fabric. Mothers’ and their attendants’ acceptance of KMC increased substantially after the introduction of the KMC bags, thus LAMB Hospital lends unlimited bags to admitted patients who then purchase 4 bags for home use upon discharge from the hospital. In 2012, LAMB began providing tailoring training to their cured obstetric fistula patients who now produce the KMC bags and knit baby hats and sell them back to LAMB Hospital as part of their income generation rehabilitation.

In 2009, LAMB instituted the “KMC bag bucket system” to facilitate access to clean KMC bags for admitted patients. There are two buckets in every ward in the hospital: a blue bucket of clean KMC bags next to a red bucket for soiled KMC bags. Mothers and their attendants are free to exchange soiled KMC bags for clean ones as often as needed, and the hospital’s cleaning department is responsible for washing the KMC bags. This system prevents arguments arising over KMC bags that might occur if patients washed and dried their own bags on the hospital premises.



Rearranging ward layout

As in most hospitals in Bangladesh, LAMB Hospital was originally designed with an enclosed nursing station located adjacent to the maternity and neonatal wards. Hospital leadership recognized that after nurses completed job related tasks on the wards they had a tendency to retire to the nursing station room—from which patients could not easily be observed. In order to increase efficiency, LAMB relocated the nursing station to the center of the ward so nurses can easily observe and quickly help patients.



TASK SHIFTING AND REDUCING WORKLOAD

Overburdened nurses is a key constraint in institutionalizing a culture supportive of KMC in health facilities. In the early days of KMC implementation at LAMB, nurses were so overworked that they did not have the time, patience, and emotional energy necessary to provide proper counseling and support to women practicing KMC. In recognition of the importance of frequent interactions between nurses and mothers and continual encouragement to sustain KMC practice, LAMB shifted the tasks of counting patients, births, and number of operations to the Management Information Systems-Research (MIS-R) Department and also decreased the frequency of vital signs monitoring for stabilized patients, thus reducing nurses' workloads. LAMB began to see less burnout and "compassion fatigue" of nurses and the increased hands-on interactions between care providers and mothers resulted in expanded KMC provision.

*"KMC is a nursing skill. If you don't have good nurses, you can't do good KMC. They are critical."
Consultant
Pediatrician*

MIS-R Assistant entering patient data in the MIS-R Department





JOB AIDS

Improving recordkeeping through structured clinical sheets and KMC-friendly forms

To further reduce unnecessary workload of care providers, hospital leadership introduced structured clinical patient obstetric and neonatal sheets (“circle sheets”) in 2005, which reduced duplication and improved efficiency. These structured formats are used for admission history and examination sheets, delivery narratives, neonatal daily progress ward round sheets, and discharge diagnosis sheets, among other records. Rather than writing narratives in prose, providers circle a response from among pre-printed options on the structured sheet. A dark vertical line divides the sheet in two. When a provider circles an answer to the left of the line, the finding is normal or near normal, while circles to the right of the line indicate clinical abnormalities. Answers circled at the far right of the page indicate the most serious findings clinically.

As these sheets were updated, spaces for KMC-related reporting were specifically incorporated to serve as regular prompts for care providers to recommend KMC, provide KMC education and counseling to mothers during rounds, and regularly monitor KMC provision. Information and illustrations about KMC are also included on patient-held antenatal and postnatal cards, so all women receiving this care are exposed to the practice before giving birth and during follow-up visits after delivery.

BENEFITS OF STRUCTURED CLINICAL SHEETS

- » Improved quality of recordkeeping:
 - Clinical documentation is more detailed and complete
- » Increased efficiency:
 - Circling is quicker than writing prose
 - Risk factors and serious findings easily identified to the right of the line
 - Senior doctors can quickly identify abnormal history or exam by looking for circles to the right of the line and confidently assume other information is normal, which improves team communication
 - Saved time can be spent communicating with patients
- » Useful teaching aid:
 - Sheet prompts new doctors for relevant history at admission and during ward rounds, specific examination findings to search for, and key diagnoses at discharge
- » Streamlined data entry:
 - Circled responses entered directly by MIS-R Department
 - No need for separate data entry sheets filled in by nurses or clinicians, thus time is saved
 - Increases the amount of detailed data available for entry



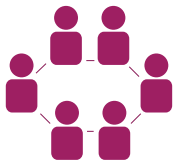
LAMB Hospital nurse demonstrates the “transitional hold” to a patient to facilitate breastfeeding

Improving breastfeeding

Babies are exclusively breastfed at LAMB; infant formula is not made available. For years, care providers at LAMB struggled to help mothers and their babies establish breastfeeding quickly in such a busy and resource-limited setting. LAMB found that introducing mothers to the “transitional hold” (also known as the cross cradle hold) revolutionized breastfeeding at the hospital, as the position significantly improved attachment. Improved breastfeeding increased mothers’ confidence overall, and KMC uptake by mothers accelerated. LAMB now routinely uses an illustrated breastfeeding flipchart and neonatal sized dolls to model the transitional hold while counseling mothers and their attendants on breastfeeding techniques. The flipchart helps mothers prevent breastfeeding problems and find solutions if they arise.

Sharing of a KMC success story

Care providers also share photos of a KMC success story with all mothers of low birth weight babies and with the women’s attendants. The photographs illustrate the story of a very low birth weight baby who survived because of her mother’s provision of continuous KMC with good family support. This baby’s survival marked another turning point for KMC implementation at LAMB, as individual doctors and nurses became fully convinced of the practice’s benefit and renewed their commitment to ensuring all small babies receive quality KMC. New mothers of low birth weight babies and their attendants can relate to the story and photographs, and the care providers have found it a useful tool for counseling.



ORGANIZATIONAL CULTURE

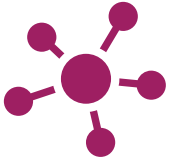
Under strong hospital leadership who champion KMC, LAMB has overcome numerous challenges to succeed in creating a team culture that enables broad KMC provision. Nursing staff are highly valued at LAMB, which hospital leadership says is critical for the practice's success. In order to foster a sense of trust and mutual respect, and to give staff of all levels a voice, maternity staff come together once a week at 8:00 am and share tea together. These weekly meetings serve to improve accountability horizontally (as Medical and Nursing Directors do not attend), and provide an open forum in which nurse ward managers, senior doctors in obstetrics and pediatrics, medical assistants, health teachers, and chaplaincy can brainstorm solutions to current challenges and share encouragements such as updates on sick babies who have begun thriving in KMC. A Consultant Pediatrician also credits the fact that LAMB operates according to stated, board-approved organizational and staff values that encourage accountability as contributing to a positive facility culture that values staff of every level and cadre.

LAMB'S STAFF VALUES

- Compassionate and caring
- Honesty and integrity
- Teamwork
- Equal respect for all people
- Committed to quality



LAMB staff engage in weekly coordination meeting



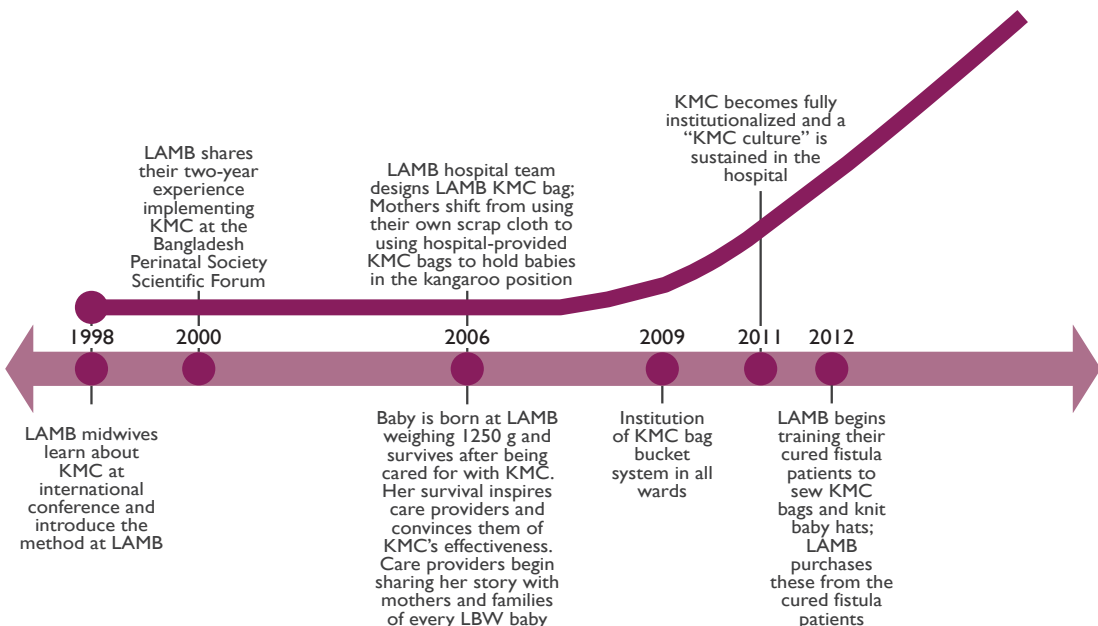
INTEGRATING KMC ACROSS THE FACILITY

LAMB has seen success in KMC implementation because of their integrated approach to encourage universal practice. Having no separate KMC ward allows the practice to catch on naturally throughout the wards as new mothers observe other women providing KMC in their beds. Furthermore, all care providers in the hospital receive orientation and training on KMC and encourage women to practice the care, including doctors, medical assistants, and nurses, so the responsibility of implementation does not fall solely on one cadre of care provider. LAMB Hospital did not receive project funding to implement KMC, rather the work has succeeded due to the motivation and creativity of visionaries on staff who have tirelessly encouraged strong communication among care providers, innovation, and perseverance amidst challenges in order to ensure the highest quality care for babies born at LAMB.

“We always respect the mothers’ privacy during the practice of KMC. Being a male doctor, I never take the baby away from the mother’s chest or touch the baby while it is being kept on the mother’s chest in order to conduct an examination. I always prefer to take help from the nurses or other female staff before initiating the examination.”

Male Pediatrician

PROGRESS TOWARDS KMC INSTITUTIONALIZATION AT LAMB



A GUIDE TO KANGAROO MOTHER CARE PRACTICE AT LAMB

Inclusion and exclusion criteria	All babies under 2500 grams or any hypothermic baby of any size is prescribed KMC at LAMB Hospital. (Until 2012, it was 2000 grams.) As KMC is the only method of thermal care for babies at LAMB, they have no exclusion criteria. All babies, whether stable or unstable, are cared for in the kangaroo position from birth. If required, babies are given oxygen through nasal cannula, IV dextrose, and occasionally continuous positive airways pressure (CPAP) while in the kangaroo position. KMC is also done during palliative care for dying babies.
KMC initiation and counseling	<ul style="list-style-type: none"> • ANC cards contain information and illustrations of KMC, so any woman receiving ANC from LAMB Community Health and Development or Hospital before delivery has been exposed to the practice • Inborn babies are weighed at birth and if determined to be LBW, the labor room midwife and nurses start KMC immediately and share KMC survivor photo story • When a LBW baby is born outside LAMB at home or another facility and brought to LAMB, the emergency room nurse educates the mother about KMC and helps her to initiate the care; this is reinforced by the medical assistant and doctors when they assess the baby • During the doctor's daily ward rounds, (s)he asks the mother if she has seen the KMC survivor photo story and knows the importance of providing KMC • During ward rounds, if mothers are not providing appropriate KMC, the doctors support the nurses in encouraging the mothers • A woman's attendant (family member) receives KMC education and counseling along with her • Babies born by cesarean section or babies of very sick mothers (e.g. eclampsia) needing KMC are transferred to the maternity ward where the family attendant gives skin-to-skin care until the mother can begin providing KMC herself
Duration of KMC provision	<ul style="list-style-type: none"> • Patients usually provide skin-to-skin care to their babies for 16-20 hours per day • KMC provision decreases during visitation hours (3:00-5:00 pm) because other family members want to see and hold their baby • Mothers are encouraged to provide KMC until their babies are no longer comfortable in the kangaroo position
KMC clothing	<p>Mothers: Women are provided hospital gowns after cesarean sections, otherwise mothers wear their own garments in the wards. Maxi gowns with front zippers are conducive to KMC provision, as are saris with front closure blouses. Fans are employed during hot seasons to keep mothers more comfortable, and strict visitation hours means women can be sure of privacy during most of the day and thus feel freer to leave their clothing looser during the summer.</p> <p>Babies: LAMB ensures continuous supply of knitted hats and KMC bags while neonates and/or mothers are admitted. During the winter, babies often wear an open-front jacket and mothers drape blankets over themselves and the backs of their babies.</p>
Feeding	All babies are breastfed or provided expressed breastmilk every two hours by their mothers with nursing support. Nasogastric tubes are used as required.
Sleeping	Beds are adjusted to allow mothers to semi-recline for sleeping while providing KMC. Attendants give skin-to-skin care to babies to allow mothers to fully recline and rest more comfortably when necessary.

Hygiene	In addition to the KMC buckets in the wards, there are two buckets under every patient bed: one for rubbish and one for dirty cloths. Mothers bring scraps of cloth (<i>nekra</i>) from home, which they place around their babies' bottoms inside the KMC bags. When a baby urinates or defecates, the soiled scrap of cloth is tossed into the bucket underneath the hospital bed and is later cleaned by the mother's attendant. The soiled KMC bag then goes into the red bucket labeled for soiled KMC bags in the ward, and the mother retrieves a clean KMC bag from the appropriate blue bucket. The scrap cloth together with the KMC bag acts as a nappy, keeping the excrement contained and limits soiling of the mother's own clothing.
Monitoring and recordkeeping	Ward nurses assess stable mothers and babies every 8 hours, including vital signs. KMC provision is recorded on neonatal daily ward round forms by doctors and medical assistants and on several postnatal assessment sheets by nurses. The forms include space to record every time health workers provide KMC counselling to mothers and their families.
Discharge criteria	<ul style="list-style-type: none"> • Mother is confident and proficient in providing KMC • Baby is breastfeeding or cup feeding well • Baby is growing • Small babies are sent home in the kangaroo position and 4 KMC bags are included in the hospital bill for home use (BDT 50 each)
Post discharge follow-up	Upon discharge, mothers are encouraged to return for scheduled PNC. KMC is illustrated on PNC cards and monitored during follow-up visits. However, PNC is not highly valued culturally, and mothers often do not want to return to the hospital. If the family is from a LAMB Community Health & Development area, PNC is provided in the home by Community Health Care Workers.
KMC in Community Health and Development Division	LAMB Integrated Rural Health and Development started as community work in the 1970s with satellite clinics that later became permanent health care clinics and Safe Delivery Units. For example, Ramnathpur mobile clinic started in 1997, in 2001 became a Safe Delivery Unit, and in 2010 was registered with the government as a community based organization (CBO) known as "Ramnathpur Samaj Unniyon Foundation." The unit is staffed by 3 skilled birth attendant-community paramedics (SBA-CP) with 6 community health workers (CHWs), one <i>ayah</i> , and one night guard. In 2013, LAMB began training their SBA-CPs and CHWs to implement KMC at the community level for families that declined to go to a facility for care of their LBW babies. In Ramnathpur alone, 34 LBW babies received KMC in the first year; KMC was initiated in the safe delivery unit for 15 of these babies, and the rest were born at home and received skin-to-skin care due to CHW outreach. Thirty-one of these babies survived.
KMC training for providers	<ul style="list-style-type: none"> • All joining staff are orientated on KMC from the beginning of their employment • LAMB Training Center (LTC) runs a 3-day KMC course using a bilingual manual (English-Bengali) that is offered to interested groups • LTC has provided KMC orientation and training to staff of other organizations, including icddr, Matlab Hospital, Dhaka Shishu Hospital, and Save the Children • KMC training is integrated into all LTC courses for obstetric and neonatal care



KEYS TO SUCCESS

Effective communication among staff: The leadership at LAMB values effective communication among all cadres of care providers within the hospital, and thus provides a weekly forum for discussion in the absence of senior management. This provides opportunities for more horizontal accountability mechanisms, while also encouraging teamwork and improving trust among staff. While this forum is useful for discussing challenges and problem shooting, it also provides a forum for sharing encouragements over a cup of tea together.

Proactive leadership: Visionary leaders within LAMB staff persevered through numerous challenges that arose over the many years it took to institutionalize the practice of KMC within the facility. These KMC champions were proactive in innovating low-cost solutions and tools to facilitate KMC practice by leveraging existing resources without necessitating any designated KMC program funding. Most importantly, they continually promoted a shared vision among all staff of a facility where KMC would become the standard method of caring for all small and hypothermic babies because of its significant benefits for mothers and neonates.

Value and respect given to nursing staff: Nurses play a critical role in counseling and supporting mothers to provide KMC, thus good nursing is necessary for successful KMC implementation within facilities. Positive, respectful, and supportive working relationships among doctors and nurses are key to ensuring high quality health care and that mothers receive consistent messaging on how to care for their small babies. LAMB exhibits an organizational culture that highly values the nursing profession. Nurses are not treated as healthcare providers who only carry out doctors' orders, rather doctors and nurses communicate regularly to share challenges and brainstorm solutions arising in the wards and collaborate to jointly facilitate universal KMC provision for small babies within the hospital.

RECOMMENDATIONS

1. The important role of nurses as lead professionals can be promoted in Bangladesh; Implementation of KMC will be greatly facilitated in instances where nurses are highly valued and respected and where doctors and nurses work collaboratively
2. Ensure that healthcare providers and families of new babies understand that KMC has been scientifically proven to be more beneficial than care in incubators and radiant warmers and is not a “second best” alternative for poor hospitals
3. Provision of lightweight simple KMC bags can facilitate KMC uptake within facilities, along with other simple and low-cost innovations such as the KMC bag bucket system and the modification of existing hospital beds
4. A health facility should work to create a multidisciplinary team culture supportive of KMC, including doctors, nurses, medical assistants, FWVs, etc; KMC “champions” from all sides are critical, and effective communication amongst all cadres is key
5. Encouraging KMC provision throughout a health facility rather than only in a separate KMC ward may increase the opportunities for observational learning to occur among all new mothers and their families

FURTHER EXPLORATION

As the Government of Bangladesh has called for the acceleration of KMC implementation across the country, other hospitals are now learning from LAMB's vast experience and are working to encourage the practice in their own facilities. Further documentation of lessons learned from Dhaka Shishu Hospital as they begin KMC implementation, and from icddr, Matlab Hospital as they transition out of project-funded implementation of KMC into integration of the practice across wards could yield additional recommendations useful for the scale-up of the practice. Furthermore, valuable lessons can be taken from a previous unsuccessful attempt to implement community-based KMC in Bangladesh.^{12,13}

Contact Information

Dr. Steve Withington
Executive Director
LAMB Integrated Rural Health and Development
Rajaboshor, Parbatipur, Dinajpur, 5250 Bangladesh
Telephone: +8801712083675
E-mail: lamb@lambproject.org

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