Summary

Kangaroo Mother Care (KMC) offers a low-cost, easy to adopt solution to improving the health and survival rates of pre-term and low birth-weight babies. In Kenya, the Ministry of Health and partners in maternal and neonatal health are rolling out the innovation to the counties, following a demonstration project implemented in Bungoma County. This brief highlights the scale up process in the demonstration project, the challenges experienced, the results and lessons learnt.

In Kenya, 22 new-born babies in every 1,000 live births lose their lives within the first month (28 days) of life. This means that every year, approximately 56,400 children will die during their first month, 15,000 will die within 24 hours of their birth, while thousands more will not survive to see their first birthday. Deaths within this period constitute 56% of all deaths of infants aged less than one year in the country (KNBS, 2014), and the trend has not changed much since 2000. The current rate is nearly twice that anticipated in the targets of the Sustainable Development Goals (SDGs) of 12 deaths per 1,000 live births by 2030, and above the current global rate of 19 deaths per 1,000 live births (UNICEF, 2017). This means that Kenya still has a long way to go to bring down neonatal mortality rate.

The causes of infant deaths in the neonatal period include complications due to prematurity (birth under 37 weeks’ pregnancy), problems associated with the birth process, and infections. In Kenya, 12 out of every 100 live births in 2010 was a premature birth (WHO and UNICEF, 2010), and in 2015, complications associated with prematurity contributed to 24.6% of the neonatal deaths recorded in Kenya, and to 15% of deaths in children aged under five (UNICEF, 2017). Low-birth weight (less than 2.5kgs at birth) is also a risk factor to the survival of the newborn and an indirect contributor to neonatal mortality. In Kenya, the 2014 KDHS (KNBS, 2014) estimated that on average, 3.3% of children born over the five years preceding the survey were very small at birth, and another 11.6% were smaller than average. WHO estimates that approximately 193,000 babies in Kenya are born prematurely every year.

Premature and low-birth weight infants require extra care to avoid illness and death from secondary, preventable complications such as hypothermia and infection. This is a particular problem in Kenya and other developing countries, where incubators and similar technologies are often scarce, over-crowded or unreliable, as well as costly.
Kangaroo Mother Care (KMC) is a low-cost innovation recommended for the care of stable preterm neonates and low-birth weight babies. It refers to the prolonged and continuous skin-to-skin contact between a mother (or other caregiver) and the preterm or low-birth weight baby for up to 24 hours a day. Besides prolonged, continuous skin-to-skin contact, KMC also promotes exclusive breastfeeding of the infant. KMC allows for early discharge of the mother from a facility, and can therefore be practiced both in hospital and within the community.

Available evidence indicates that, among low-birth weight newborn and preterm babies, KMC decreases mortality by 36% (Boundy, 2016). The innovation has other benefits—it boosts the infant’s mental development, and helps the baby to adapt as the temperature is maintained and does not require to be regulated. It also promotes healthy weight gain, makes breastfeeding easier, promotes bonding between caretaker and infant, and reduces incidences of postpartum depression. Bhutta, Das et al (2014) estimated that KMC can lead to an increase in breastfeeding rates at 1–4 months after birth by 27% and increase the overall breastfeeding duration.

Kangaroo Mother Care: Proven Low-cost solution

Scaling up KMC in Kenya: The process

In 2014, Save the Children International in Kenya (SCI), in collaboration with the Ministry of Health (MOH) and the Bungoma County government, began a demonstration project to provide lessons and best practices that would be used to inform national scale up in many more counties. The project started with nine facilities and later expanded to 27 in 2016-2017, through funding from UKAID through the County Innovation Challenge Fund. The initiative used a two-prong approach: a county-level process in Bungoma County to roll out the demonstration project and provide lessons for national scale-up, and a national-level process under the leadership of the national MOH to guide the scaling up activities.

County-level activities:

- **Health facility assessment**: To determine the facilities where the demonstration projects could be implemented, SCI and the MOH conducted an assessment of facilities to analyse the burden of preterm/low-birth weight (LBW) babies delivered per facility and capacity to provide KMC services. The results showed that most of the health facilities referred such babies to the Bungoma County Referral Hospital, the only facility with a new-born unit with functional incubators at the time. The facilities were also constrained on space, with a majority only able to provide a space for two beds for KMC services. They also lacked basic equipment for the care of preterm babies. The results also showed knowledge gaps on the KMC concept among health care workers.

- **Equipping facilities to provide KMC services**: SCI carried out minor renovations of the rooms set aside for KMC services, and provided basic equipment for care of the infants, including digital weighing scales, room heaters, thermometers, pulse oximeters, basic furniture and baby carriers/wraps. SCI also provided video players and TVs in the rooms to disseminate educational content to the KMC mothers on its benefits and other topics relevant to maternal and neonatal health.

- **Training healthcare workers on implementing KMC**: SCI collaborated with the MOH to train and mentor staff and supervisors in the health facilities in the demonstration project, to increase their understanding of KMC and their capacity to implement it. A cohort of 10 master trainers was trained, who in turn trained 140 frontline health care workers in the demonstration sites in Bungoma County. In addition, a mentorship team was formed comprising the master trainers and other trainers at national and county level, to provide mentorship to the staff in the facilities implementing KMC.
Sensitizing local community and creating mothers’ post-discharge support: To create social support in the community for KMC, SCI conducted community advocacy and sensitization in the KMC demonstration project areas, through a community and media-based campaign. The campaign ran by BBC Media Action aimed at dispelling local myths and misconceptions about pre-term babies, which could have limited families’ ability to accept and continue with KMC at home. It included a 14-episode radio programme series that community members could listen to in a group. The sessions combined interactive discussions and radio drama and targeted changes in behaviour and attitudes towards preterm and low-birth weight babies.

The discussions were led by community health volunteers and KMC champions. Champions were mothers who had cared for their own preterm or LBW babies successfully with KMC and who were willing to encourage and support KMC mothers, as well as share their experiences in community events. To enhance support for the KMC mothers, SCI and partners created forums where new mothers who have been discharged to continue KMC at home and those whose babies had graduated from KMC could come together to learn and share ideas and experiences as KMC providers. Meetings were held at the nearest health facility on an agreed schedule, and facilitated by local KMC champions. These forums also provided continuing education for the mothers on breastfeeding, hygiene, nutrition and family planning.

All babies weighing less than 2500gms born in the selected facilities in Bungoma County were assessed to determine eligibility for KMC – that is to ensure that they were not on oxygen, phototherapy or any life support care. Mothers of the eligible babies were counselled on KMC benefits, how to feed the baby and maintain proper hygiene, and given a demonstration of how to position the baby in the kangaroo position. Family members including husbands and partners were also provided with information on KMC to encourage family support. The babies were weighed daily using digital weighing scales and given iron and vitamin supplements to prevent rickets and anaemia that can arise from prematurity.

Mothers were eligible for early discharge on KMC if the infant gained between 15-30gm/kg per day for three consecutive days; if the infant had established sucking reflex and was able to breast feed; and if the mother showed confidence in caring for the baby, positioning and administering the supplements. After discharge, the mothers were advised to return to the facility on schedule for baby follow-up, and those who failed to return for follow up were tracked down by the community health volunteers through phone or home visits, to assess the reasons for defaulting and provide support.

At the national level, the Ministry of Health in collaboration with SCI and other partners implemented the following activities to guide the roll out of KMC services and to create a supportive environment for scaling up.

How does it work?

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Results Achieved in the Demonstration Project

The demonstration project recorded important achievements and lessons that can be applied in scaling up KMC in other counties.

**Reduced hospital stay:** During the 2016-2017 period, a total of 990 babies were born weighing less than 2.5kgs or at less than 37 weeks in the facilities sampled during the pilot project’s endline evaluation. Out of these, 842 (85%) were enrolled on KMC during the project period, compared to only 20% at baseline (2016). By March 2018, SCI and partners had initiated 2817 babies on KMC in twenty-seven health facilities. In addition, the average length of stay in the health facility for mother and baby reduced from 28 days to only 10 days at the endline evaluation.

“[…] The kangaroo mother care was a godsend to me as it allowed me to balance between home chores and taking care of the baby well” KMC mother in interview

**Improved outcomes for infants:** The infants on KMC recorded healthy/optimal weight gain and had few infections. The assessment study found that 54% of the neonates attained above average weight gain of between 15-30gms/kg per day at endline compared to 30% when the baseline study was conducted. Survival had also improved and the neonatal death rate in the participating facilities had dropped to 3% from 9% at the beginning of the project.

“[…] The KMC saved my twins from dying and restored hope for me and other mothers in same situation as I was […] the intervention is economical compared to using an incubator” KMC mother in interview

**Increased community support for preterm and LBW babies:** In Bungoma County, local communities often associated preterm and LBW babies with curses, and referred to them as embeba (a rat), without much prospects of survival. The KMC demonstration project led to improved community attitudes towards premature and LBW babies, and created support for their mothers. By March 2018, each facility in the demonstration project had one support group for KMC mothers, supported by two KMC champions. Involvement of male partners in KMC was also reported to have changed their thinking of pre-term babies as outcasts.

“The KMC champions have been very helpful in mentoring young mothers who have pre-term babies and are unwilling to accept KMC. When the champions share their real life KMC experiences, these mothers listen to them as they can relate to their situations and they end up accepting and practicing KMC,” Nurse, Kimilili Hospital

**Reported less workload at health facility:** At the health facility level, KMC led to fewer babies in the neonatal unit, and shorter stays for the mothers. This reduction has the potential to reduce the healthcare workers’ workload. In addition, the assessment established that about half (53%) of personnel trained on KMC had been retained in the new-born unit and not moved to other duties, suggesting continuity of quality of service.

**National scaling up:** At the national level, the knowledge gained from the implementation of the Bungoma demonstration project contributed to the development of the national guidelines, KMC reporting tools and training manuals. Most importantly, the project led to a national momentum towards scaling up KMC nationally. By July 2018, anecdotal reports showed that 24 counties in Kenya have adopted KMC as a best practice in the care of preterm and low-birth weight babies.

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Challenges Experienced

The implementation of the scaling up demonstration project experienced some challenges, mostly related to service delivery.

- **Inadequate staff numbers to support KMC service:** Although the endline assessment found that reduced hospital stay had the potential to reduce workload in the maternal and neonatal unit, healthcare workers and facility in-charges said that the expansion of the MCH ward to create the KMC room had left the ward with inadequate staff numbers. While the facility was expanded to include the KMC room, the number of staff responsible for the unit remained the same, but with an extra service to supervise.

- **Inadequate space for mothers to perform KMC and lack of privacy:** Previous research has shown that lack of privacy for mothers to perform KMC, or a general lack of space for mothers to remain in the hospital with the newborn, can present challenges in adopting KMC (Smith et al, 2017). In addition, lack of requisite resources—chairs, beds, bed linen, etc.—presents more challenges in the implementation of the innovation. When the Bungoma project was evaluated, lack of accommodation was mentioned as a key challenge. Respondents also mentioned limited resources to support feeding of the mothers while at the ward as another challenge.

- **Inadequate community sensitization:** Another frequently mentioned challenge was community resistance, arising from lingering negative perceptions towards preterm babies, and inadequate sensitization.

Lessons Learnt and Implications on Policy and Practice

The demonstration project offered valuable lessons on scaling up KMC nationwide. Scaling up efforts should give attention to the following areas:

- **Improvement in the quality of maternal and neonatal health services will promote the scaling up of KMC services:** For KMC to work well, basics of good quality of maternal and neonatal health care should be put in place, including adequate infrastructure (room, beds and related supplies) and medical supplies. KMC services require basic supplies and infrastructure that should already be available in the facility as part of a comprehensive maternal and neonatal health programme. The MOH and county governments should take action to equip health facilities so that they can provide high quality routine care, so that requirements for KMC do not lead to an extra investment burden. In addition, efforts should be made to improve uptake of antenatal care services, where mothers can be screened and prepared for birth, and sensitized on emergency neonatal health practices including KMC, to prepare them in advance should it be required.

- **Health facilities should have adequate numbers of well-trained staff to provide high quality maternal and neonatal health services:** Strengthening MNH services also means having adequate staff with the right skills to deliver maternal and neonatal care services. To roll out KMC services nationwide, a systematic approach to staff capacity development is required to ensure MNCH staff have the skills required to offer the entire range of services, including KMC follow up care. Capacity building should not only aim to equip staff with the right clinical skills, but to also change their attitudes so that they are more supportive of KMC mothers who might also be dealing with negative culture. The Ministry of Health needs to have KMC included in all pre- and in-service training for clinical and nursing staff. In addition, the demonstration project showed that working with community health staff is useful in increasing acceptance of KMC and improving family support and involvement even at community level. Community Health Workers should therefore be trained to play this role and provide community-level support to the mothers.

- **Allocate adequate resources to support roll-out of KMC:** Although KMC is a fairly low cost innovation, it requires some investments to cover staff orientation, put up basic infrastructure (room, KMC beds, digital weighing scales) and to implement awareness creation and education in the communities. To roll out the services, county governments need to allocate financial resources for this, and include the allocation in the budget.

- **Strengthen monitoring and supervision:** To enhance quality improvement, a system to monitor facility and staff performance should be put in place to complement regular supervision. This means including KMC in the newborn register and other reporting tools. As of 2017, Kenya did not have an indicator on KMC included in the national Health Management Information System (WHO, 2018). Once it is included, healthcare facility managers will be obliged to report on it, helping to make it routine.

- **Address community and social cultural practices that put the survival of pre-term babies in jeopardy:** It is also important to address social-cultural practices that negatively impact the well-being of preterm babies, and promote support for KMC as an effective solution. Working with community health workers and volunteer mentor mothers was shown in the demonstration project to be effective in enhancing acceptance of care of the babies through KMC and mobilizing support for the mothers.
This project is funded by the UK government under the County Innovation Challenge Fund (CICF). The CICF invests in innovative interventions, products, processes, services, technologies and ideas that will reduce maternal and newborn mortality in Kenya.

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As a country we are pleased with the progress that we are making in scaling up KMC, we anticipate that county governments will embrace this intervention and this will significantly contribute to reduction of deaths, thereby achieving SDG targets. We thank partners like Save the Children, UNICEF, and Nutrition International, who have been in the lead in supporting the government scale up KMC”

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