

EVALUATION OF KANGAROO MOTHER CARE SERVICES IN UGANDA



April 2012

Report compiled by
Anne-Marie Bergh¹, Karen Davy¹, Christine Dorothy Otai²,
Agnes Kirikumwino Nalongo³, Namaala Hanifah Sengendo⁴,
Patrick Aliganyira⁴

¹ MRC Unit for Maternal and Infant Health Care Strategies, University of Pretoria, South Africa

² Kiwoko Hospital, Naseke District, Uganda

³ Mulago Hospital, Kampala, Uganda

⁴ Save the Children in Uganda



Save the Children is the leading independent organization for children in need, with programs in 120 countries. We aim to inspire breakthroughs in the way the world treats children, and to achieve immediate and lasting change in their lives by improving their health, education and economic opportunities. In times of acute crisis, we mobilize rapid assistance to help children recover from the effects of war, conflict and natural disasters. Save the Children's Saving Newborn Lives program, supported by the Bill & Melinda Gates Foundation, works in partnership with countries in Africa, Asia and Latin America to reduce newborn mortality and improve newborn health. For more information visit www.savethechildren.org.

The Maternal and Child Health Integrated Program (MCHIP) is the USAID Bureau for Global Health's flagship maternal and child health program (MCHIP). MCHIP supports programming in maternal, newborn and child health, immunization, family planning, malaria, nutrition and HIV/AIDS, and strongly encourages opportunities for integration. Cross-cutting technical areas include water, sanitation, hygiene, urban health and health systems strengthening. Visit www.mchip.net to learn more.

Pictures in this report were taken by Anne-Marie Bergh and Karen Davy

TABLE OF CONTENTS

Assessors	v
Reviewers	vi
Acknowledgements	vi
Acronyms	vii
1. GENERAL BACKGROUND	1
2. BACKGROUND TO UGANDA AND ITS HEALTH SERVICES	1
3. KANGAROO MOTHER CARE IN UGANDA	2
4. METHODOLOGY	6
4.1 Scope and objectives of current evaluation	6
4.2 Evaluation approach	6
4.3 Conceptualisation of kangaroo mother care	7
4.4 A stages-of-change model	8
4.5 Sampling	9
4.6 Preparation for evaluation	10
4.7 Format of an evaluation visit	11
4.8 Limitations of the study	11
5. MAIN FINDINGS	11
5.1 Scaling up of KMC services by facility numbers	12
5.2 Progress with KMC implementation	14
5.3 Resources for implementation	15
5.4 KMC services, facilities and practices	17
5.4.1 Newborn services provided by facilities	17
5.4.2 History of KMC implementation	18
5.4.3 KMC facilities	18
5.4.4 KMC practice	19
5.4.5 KMC position (skin-to-skin care)	20
5.4.6 KMC nutrition and weight monitoring	21
5.4.7 KMC documentation and recordkeeping	22
5.4.8 KMC staff	23
5.4.9 Discharge and follow-up	24
5.4.10 Client satisfaction	25
5.4.11 Community sensitisation and involvement	26
6. MAIN CONCLUSIONS	29
6.1 KMC implementation	29
6.2 KMC practice	31
6.3 Documentation, record keeping, data management and reporting mechanisms	31
7. KEY RECOMMENDATIONS	32
7.1 From central to district level	32
7.2 Newborn programs	32
7.3 Facility level	32
7.4 KMC practice	33
7.5 Further points for investigation	33
References	33

List of tables

Table 1. Kangaroo mother care included in the Standards for Newborn Health Care Services	3
Table 2. Scoring of facilities	10
Table 3. Refinement of the breakdown of progress scores	10
Table 4. Coverage of newborn care projects in Uganda	14
Table 5. Facility scores and interpretation of the scores	15
Table 6. Overview of support with equipment and materials	17
Table 7. Staff training in hospitals visited	24
Table 8. Summary of implementation progress per progress marker	28

List of figures

Figure 1. The components of kangaroo mother care	8
Figure 2. Stages of progress in implementation	9
Figure 3. Map with distribution of facilities visited	11
Figure 4. Plotting of hospitals according to score	16

Appendices

The following appendices are available on request:

- Appendix A Permission letter of Uganda Ministry of Health
- Appendix B Johns Hopkins IRB letter
- Appendix C Written consent signed by the head of facility
- Appendix D Verbal consent from key informant(s)
- Appendix E Consent from mothers for taking photographs of them and their babies
- Appendix F Feedback report form
- Appendix G District guidelines for preparation for facility visits
- Appendix H Presentation prepared for feedback to stakeholders at the end of the monitoring process
- Appendix I Progress-monitoring tool

EXECUTIVE SUMMARY

Introduction

Uganda has experience with the implementation of kangaroo mother care (KMC) since 1999 in the central/teaching hospital. After a slow start up to 2006, advocacy for KMC in keeping babies warm and promoting infant survival increased and newborn health (including KMC) became more prominent in the policy environment with the formation of the Newborn Steering Committee (NSC). This was followed by increased visibility for KMC in policy documents such as the Standards for Newborn Health Care Services (2010) and the Health Sector Strategic and Investment Plan (2010/11 – 2014/15). In 2012 Uganda was one of four countries selected for an in-depth evaluation, using standard measurement tools, to systematically measure the scope and institutionalisation of KMC services and describe the barriers and facilitators to sustainable implementation.

Methodology

A convenience sample of 11 health care facilities was selected, including one central, one regional, 4 district and 3 private, not-for-profit hospitals, plus 2 health centres IV. The facilities were visited by two teams of locally trained assessors under the guidance of a consultant. The teams interviewed key informants and KMC focal persons and observed the KMC services.

Results were interpreted by means of a model with six stages of change. Facilities received a score out of 30. Facilities scoring above 10 out of 30 demonstrate implementation of KMC or evidence of KMC practice; those scoring above 17 out of 30 demonstrate the integration of KMC into routine practice; and those with more than 24 out of 30 show sustainable KMC practice.

Results

The 11 health care facilities achieved implementation scores ranging between 8.28 and 21.72 out of the possible 30 points, with an average score of 14.45. Two facilities were still on the level of preparing for KMC implementation. Eight facilities were at the level of implementing KMC, whereas one facility demonstrated some evidence of integrating KMC into routine practice. No facilities have yet demonstrated sustainable practice.

KMC facilities. One hospital had been designated as “Baby-Friendly” around 2005, with 2 more assessed but not having received the results yet. In all facilities, except the central and regional hospitals, KMC was part of the maternity unit and linked to care in the postnatal ward. Four facilities had a separate room for KMC, one had a special corner in the postnatal ward and one used curtains to create a KMC space in a corridor. The number of dedicated beds ranged between 1 and 6 and the environment ranged from pleasant to cramped or looking unattractive. Public hospitals did not provide food for mothers. Almost all facilities had educational materials available in the form of posters provided by donors or posters staff at the facilities created themselves. Only 3 facilities indicated that KMC education was included in antenatal care.

Types of KMC practised. There still appears to be many missed opportunities where both intermittent and continuous KMC are not practised optimally. According to self-reports by facility staff, 6 hospitals practised intermittent KMC, but only 2 could provide any records to

verify it. Although 8 facilities claimed to practise continuous KMC, only 3 facilities followed the principle of having the baby in the skin-to-skin position for at least 20 hours per day. Decisions regarding babies' readiness for KMC were made by the doctor in one facility and by nurses in 3 facilities. Seven facilities indicated that it was a joint decision between nurses and doctors. Babies were observed in the KMC position in 6 facilities. Local cloth was mostly used for tying the baby. Three facilities allowed a guardian or companion (mostly only one guardian at a time) to be with the mother any time of the day and 2 facilities did not allow them at all. Where companions were allowed they played an important role in the psychological support of the mother and assisting with daily chores, such as washing clothes, and preparing and supplying meals.

Record keeping and documentation. Six hospitals had a written feeding policy, whereas 3 hospitals had a job aid for calculating volumes of feeds displayed on the wall. Only 3 facilities recorded each feed a baby received. Seven facilities weighed babies regularly. Weights were reported to be recorded on a variety of documents, including nursing and doctors' notes, the baby's file (e.g. observation charts), the mother's chart, the KMC register and the discharge form. Nine facilities had some form of keeping records for KMC babies – 7 with a special register or collective record and 4 with doctors' daily notes. According to the assessors, one hospital had good quality data in their records, whereas it was poor in 4 facilities. Two facilities had guidelines for the practice of KMC. The gaps with regard to documentation and record keeping made it impossible to assess the extent and quality of KMC practice in most of the facilities. Because none of the facilities could provide evidence of the survival rates before and after the introduction of KMC, the effect of the introduction of KMC on neonatal mortality could not be assessed.

Discharge and follow-up. In 8 hospitals doctors decided when a baby was ready for discharge (in 7 with input from nurses) and in 3 facilities nurses were the primary decision makers. Only one facility that was part of a newborn study had a follow-up register with dates of follow-up reviews and weights at each visit. Staff of this facility also did home visits during the time of the project. Follow-up records at most of the other facilities did not make provision for noting low birth weight of KMC. Special follow-up ended mostly when the baby reached a weight of 2,500 g or 3,000 g. In only 3 hospitals evidence of a good follow-up system after discharge was found, with 5 facilities providing no follow-up review.

Staffing issues. Exact numbers of staff trained in KMC were hard to obtain, as orientation in KMC is mostly included in training packages which cover other areas of newborn care. Three facilities indicated they had a long-term plan for KMC training, but only one could provide written evidence of the plan. In all hospitals some nursing staff rotated between different departments.

Client satisfaction. Although this was not included as a specific aspect of the evaluation, one hospital made provision for patients to provide comments on the service they received while practising KMC. Some of those comments were captured.

Community involvement. As the assessment visits focused on facilities providing KMC the team did not have the opportunity to evaluate community sensitisation and involvement in depth.

Recommendations

The seeds for KMC have been sown in Uganda and the scale up has started, albeit only the first few steps. To further scale up services while improving quality of care, the evaluation team

developed specific recommendations arising from the data collected.

From central to district level

- Improve equity and access to KMC services across the country
- Improve the transfers of care between facilities (up and down referrals)
- Advocate for the improvement of existing facilities and infrastructure
- Include KMC information or statistics in reports to all levels of the health system to promote accountability
- Target administrators and managers on the importance of providing good quality KMC services in all health facilities
- Plan projects to promote more sustainable end-of-project KMC practice
- Include KMC prominently in all obstetric care programs and the Baby-Friendly Hospital Initiative

Newborn programs

- Include KMC in all pre-service curricula, targeting all cadres of health care providers
- Include tailored KMC training to lower level cadres where skills improvement is needed
- Involve professional associations in actively promoting KMC

Facility level

- Encourage more involvement of managers
- Make the provision of quality KMC services a priority in performance appraisals and budgets
- Design more flexible models for staff rotations
- Attend to physical facilities and arrangement of space

KMC practice

- Enable longer periods of skin-to-skin contact per day
- Develop and/or implement KMC guidelines, protocols and job aids
- Support the use of companions for mothers in KMC
- Strengthen follow-up systems
- Promote the skin-to-skin position as a method of keeping term babies warm

Further points for investigation

- Why have some facilities that had received training not been able to implement KMC?
- What are further options for mass media sensitisation on KMC?
- How could mobile health be used to support health workers with KMC?

ASSESSORS

Christine Dorothy Otai	Kiwoko Hospital, Naseke District, Uganda
Agnes Kirikumwino Nalongo	Mulago Hospital, Kampala, Uganda
Anne-Marie Bergh	MRC Unit for Maternal and Infant Health Care Strategies, University of Pretoria, South Africa
Karen Davy	

With the assistance of:

Namaala Hanifah Sengendo	Save the Children, Uganda
Patrick Aliganyira	

REVIEWERS

Elise van Rooyen	Department of Paediatrics, University of Pretoria, South Africa
Kate Kerber	Newborn Health Specialist, Africa Region, Saving Newborn Lives – Save the Children
Nathalie Gamache	Associate Director, Africa Country Support & Coordination, Saving Newborn Lives – Save the Children USA

ACKNOWLEDGEMENTS

A special thanks to Barbara Rawlins of MCHIP/Jhpiego who facilitated the submission of the research proposal to the Institutional Review Board of the Johns Hopkins School of Public Health. The cooperation from the Ministry of Health and the staff and management of participating districts and health facilities is highly appreciated, as well as the contribution of all the stakeholders who attended the special meeting with the evaluators.

This evaluation was supported by the United States Agency for International Development's flagship Maternal and Child Health Integrated Program (MCHIP) in collaboration with Save the Children's Saving Newborn Lives program and was made possible by the generous support of the American people through the United States Agency for International Development (USAID), under the terms of the Leader with Associates Cooperative Agreement GHS-A-00-08-00002-000 and through funding by the Bill & Melinda Gates Foundation. The contents are the responsibility of the Maternal and Child Health Integrated Program (MCHIP) and Saving Newborn Lives and do not necessarily reflect the views of Save the Children, USAID or the United States Government.

ACRONYMS

ACCESS	Access to Clinical and Community Maternal, Neonatal and Women’s Health Services
AOGU	Association of Obstetricians and Gynaecologists of Uganda
BFHI	Baby-friendly Hospital Initiative
CPAP	Continuous Positive Airway Pressure
EBM	Expressed breastmilk
ENC	Essential newborn care
HAPI	Health Access Project for Young Infants
HCI	Health Care Improvement project
HCU	Healthy Child Uganda
HMIS	Health Management Information System
ICCN	International Conference of Neonatal Nurses
IMR	Infant mortality rate
KMC	Kangaroo mother care
LBW	Low birth weight
MCHIP	Maternal and Child Health Integrated Program
MDG	Millennium Development Goal
MNCH	Maternal, newborn and child health
MoH	Ministry of Health
MSH	Management Sciences for Health
NSC	Newborn Steering Committee
SCiU	Save the Children in Uganda
SNL	Saving Newborn Lives
SPH	School of Public Health
STC	Save the Children
U5MR	Under-five mortality rate
URC	University Research Co, LLL
UNEST	Uganda Newborn Study
UNICEF	United Nations Children’s Fund
UPMA	Uganda Professional Midwives Association
USAID	United States Agency for International Development
VHT	Village health team
WHO	World Health Organization



1. GENERAL BACKGROUND

Preterm birth is estimated to be a risk factor in at least 50% of all neonatal deaths in the world (Lawn et al, 2010) and preterm birth complications is the leading direct cause of 35% of the world's 3.1 million neonatal deaths each year (March of Dimes et al, 2012). Neonatal infection is the dominant risk factor for babies born preterm (Lawn et al, 2005), whereas preterm birth complications (10%) is also the third most common cause of under-5 deaths in Africa after malaria (15%) and pneumonia (14%) (Liu et al, 2012).

Many of these deaths are preventable – some studies have found that kangaroo mother care (KMC) can prevent up to half of all deaths in babies weighing less than 2000g (Lawn et al, 2010; see also Conde-Agudelo et al, 2011). KMC has also been promoted as one of the methods for improving infant survival necessary for achieving Millennium Development Goal (MDG) 4 (Kinney et al, 2009). Compared with incubator care, KMC has furthermore been found to reduce severe infection/sepsis, nosocomial infections, hypothermia, lower respiratory tract disease, and length of hospital stay. Babies cared for in KMC also show improved weight and length, head circumference, breastfeeding, and mother-infant bonding compared to babies in incubator care (Conde-Agudelo et al, 2011; Ludington-Hoe et al, 2008; Ruiz, et al, 2007). KMC is currently viewed as the highest impact intervention in preterm care together with antenatal corticosteroids and is considered to be highly feasible to scale up in low-resources settings (March of Dimes et al, 2012).

A key component of program activities within the global Saving Newborn Lives (SNL) program (Save the Children) and the Maternal and Child Health Integrated Program (MCHIP) was the collaboration with governments, development partners and health professionals to systematically introduce and promote scale up of facility-based kangaroo mother care. SNL and MCHIP have engaged government and development partners to initiate KMC services in at least 134 facilities with over 1300 health workers trained across 20 countries (Save the Children, 2011). KMC appears to be a successful example of catalytic program inputs from SNL and MCHIP resulting in wide-scale behaviour change and implementation.

This report forms part of an evaluation of the implementation of KMC as method of newborn care and the provision of KMC services in four countries in Africa, namely Malawi, Mali, Rwanda and Uganda. It is envisaged that the results of this evaluation will help with advocacy for improved service delivery and management, the improvement of monitoring and evaluation of KMC activities, influencing policy change, increased scale-up efforts, and adding to the global evidence and knowledge base for KMC.

2. BACKGROUND TO UGANDA AND ITS HEALTH SERVICES

Uganda is a land-locked country of about 240,000 square kilometres in Central-East Africa. It is bordered by the Republic of South Sudan (to the north), the Democratic Republic of the Congo (to the west), Rwanda (to the southwest), Tanzania (to the south) and Kenya (to the east). Its population was estimated at more than 32.3 million inhabitants in 2009, with a population density

of 137.1 inhabitants per square kilometre. Eighty eight per cent of Ugandans live in rural areas (MoH, 2010c Wikipedia, 2012).

The country is divided into 10 administrative regions – Central 1, Central 2, East-Central, Eastern, Southwest, Western, North, Nile, Karamoja, and the City of Kampala (the capital). The regions are further subdivided into 111 districts, which are further divided into sub-districts, counties, sub-counties, parishes and villages (Wikipedia, 2012). The decentralised health system is also modelled along these divisions, with districts as the basic operational unit responsible for coordinating public service delivery, which includes the delivery of health services in the district hospitals and health centres. Alongside the government-run health facilities there are also not-for-profit and private institutions. At the community level the health system is organised around village health teams (VHTs) for each village. The size of the team depends on the number of households in a given village. On average it should be one team member per 25-30 households. The more sparsely populated area is, the less the number of households per member. The team selected per village must be gender balanced with at least a third of the members women. Each Village should have an average of five VHT members. One to two of these VHT members are specifically designated to address maternal, newborn and child health (MoH, 2010d). At the central level the Ministry of Health (MoH) takes charge of policymaking, standard setting and quality assurance (MoH, 2008).

3. KANGAROO MOTHER CARE IN UGANDA

Compared to other countries, KMC as a high-impact newborn intervention was highlighted in Uganda at a fairly late stage. KMC was introduced in Mulago Hospital in 2001 (Kaggwa, 2005), but there was very little further spread of the practice beyond this teaching hospital with its high-care facilities. This lack of further roll-out was a problematic phenomenon in many countries (Victora et al, 2010; Lawn et al, 2010).

Whereas KMC was used as an entry point to health care facilities in Malawi to effect newborn care more broadly, it remained ‘under the radar’ for a longer period in Uganda, where a more comprehensive approach to policy change focusing on both health care facility and community interventions was adopted (Mbonye et al, 2012). In fact, the initial mother-baby package launched in 1997 and the first two Health Sector Strategic Plans (1999 and 2005) ignored high-impact interventions such as KMC (Mbonye et al, 2012). The same applies to the Road Map for the Accelerated Reduction of Maternal and Neonatal Mortality and Morbidity, 2007-2015 (MoH, 2007).

One of the events in Uganda that brought KMC more into the public domain was national and international media reports early in August 2007 on the Director-General of Health Services’ suggestion of using of the *sigiri*, a charcoal stove, to keep premature babies in poor rural Uganda warm (Kasasira, 2007; Reuters, 2007). The captions were striking: “Government tells mothers to use charcoal stoves as incubators” (Kasasira, 2007) and “Stoves can be makeshift incubators, Uganda says” (Reuters, 2007). This episode was followed by a period of advocacy for more appropriate methods of keeping babies warm. On August 29, 2007 an article on KMC was published in *The New Vision* under the heading of “Using Kangaroo method to save under-weight



newborns” (Save the Children, 2007) in which the method and advantages of KMC for low birth-weight (LBW) and premature babies were explained.

The absence of sufficient attention to newborn health in the policy environment was addressed by the creation of a national Newborn Steering Committee (NSC) in 2006. The NSC is a multi-disciplinary and inter-agency network of stakeholders that provides input into policy and programmes impacting newborn health (Mbonye et al, 2012). One of their first tasks was to conduct a situation analysis of newborn health that identified a number of major challenges, including the limited availability of special services such as KMC for the care of preterm and LBW babies at health centre level, “inadequate knowledge of newborn care among health providers, a lack of institutional support for evidence-based low-cost interventions, such as KMC, and a critical lack of trained staff.” (MoH, 2008: 57). These babies were almost always referred to hospitals and if referral was not possible, lanterns and coal stoves were used to provide extra heat in the rooms. In the hospitals locally made incubators were used but they were prone to breakdown and suboptimal functioning due to irregular power supply (MoH, 2008: 53, 57). The report recommended immediate action at health facility level to “[i]ncrease the speed of roll-out of Kangaroo Mother Care (KMC) for low birth weight babies in facilities with strong links to communities” (MoH, 2008: 10) and “[i]ntegrate and scale up KMC, starting at the HC IV level and above” (MoH, 2008: 62). This report also mentioned that KMC had been introduced in the districts of Kayunga, Luweero, Nakaseke and Nakasongola.

Since 2010 the visibility of KMC in policy documents increased. It was included in the Standards for Newborn Health Care Services published by the Ugandan Ministry of Health in April 2010. These standards form part of the Newborn Health Implementation Framework. Table 1 gives an overview of how the components of KMC are explicitly and implicitly included in the operational definitions.

Table 1. Kangaroo mother care included in the Standards for Newborn Health Care Services, 2010

		Standard	Operational definition
INFRA-STRUCTURE AND EQUIPMENT	1.1	Health facility has infrastructure to cater for both high risk and normal babies	Beds assigned for Kangaroo Mother Care (KMC) beds on postnatal ward

		Standard	Operational definition
MANAGEMENT SYSTEMS	2.4	Health workers using guidelines and protocols for managing a newborn	Protocols for: i. Essential Newborn Care (Clean chain, cord care, warm chain and breastfeeding) ii. Extra newborn care (Includes resuscitation and post resuscitation care, sick newborn, feeding and fluids, blood transfusion, KMC , skin care) iii. Postnatal cards b. Counselling materials on maternal and newborn care c. Policy on hospital/health facility stay d. 80% of health workers managing newborns are trained in essential and extra newborn care . e. Quarterly CME program includes essential newborn care
	2.5	Health facility carrying out KMC services on the post natal ward	a. 100% Health workers managing babies are skilled in KMC b. KMC beds in postnatal ward c. Designated space for KMC d. KMC wrappers for demonstrations
INFORMATION, EDUCATION AND COMMUNICATION / IPC	4.1	Health education talks given to clients at OPD, antenatal clinics, postnatal ward and family planning clinics	Health facility conducts group health education sessions including: (1) HIV, (2) Danger signs, (3) Infant and young child feeding, (4) KMC , (5) Cord care, (6) Extra care for small babies , (7) Personal hygiene

(MoH, 2010a: 11-14; our emphasis)

KMC also features in the Health Sector Strategic and Investment Plan of the period 2010/11 – 2014/15 as one of the extra newborn skills that should be included to improve capacity and quality of health services and one of the high-impact, evidence-based interventions to improve newborn health and survival in order to accelerate the attainment of MDG 4 (MoH, 2010b: 93-94). According to a preliminary report of the 2011 Uganda Demographic and Health Survey, the latest figure for neonatal deaths is 27 deaths per 1,000 live births in the period 2006 to 2010, with the infant mortality rate (IMR) at 54 per 1,000 live births and the under five mortality rate (U5MR) at 90 per 1,000 live births (Uganda Bureau of Statistics & ICF International, 2012: 12). In 2010 the U5MR was estimated at 99 per 1,000 live births, which was considered insufficient progress towards the achievement of MDG 4. Neonatal deaths contributed 28% and preterm births 10% of all under-5 deaths (WHO & UNICEF, 2012: 15). In Uganda, the estimated proportion of all babies born with low birth weight (that is, less than 2,500g) is 14%. The estimated proportion of babies born preterm is similar at 14%. Prematurity is the leading cause of newborn death in Uganda, accounting for 38% of all deaths (UNICEF, 2012; Blencowe et al, 2012). Although neonatal mortality decreased by 20% between 2000 and 2010, this reduction was less than the reduction of under-five deaths after the neonatal period (Mbonye et al, 2012). These figures illustrate the urgency of accelerating the scale-up of KMC as a high-impact intervention in the newborn period.

Getting policies and recommendations implemented is however not always that easy. A number of activities have been conducted since 2006 to make a difference in newborn care, including the following:

- In 2006 through 2009, Save the Children directly implemented a project funded by American Idols Give Back called the Health Access Project for Young Infants (HAPI) promoting access to care for newborn babies in three post-conflict districts of Nakaseke, Nakasongola and Luwero. The project was responsible for the initial introduction of KMC knowledge and practice in one supported private-not-for-profit health facility.
- In December 2007 a four-year randomised control trial was launched, the Uganda Newborn Study (UNEST) in the East-Central Uganda districts of Iganga and Mayuge. The main aim of the project was to find “ways of improving newborn health and survival in Uganda through a community-based intervention linked to health facilities” (UNEST, 2011: 3).
- In 2008 to 2009, the Association of Obstetricians and Gynaecologists of Uganda (AOUG) implemented the “Save Mothers and Newborns Project” in two rural districts of Kibaale and Kiboga. KMC was part of the essential newborn care training package delivered.
- Since 2009, Management Sciences for Health (MSH) is implementing the STRIDES For Family Health Project in 15 districts across the country, delivering integrated maternal and child survival packages. The packages include IMCI, ENC and EmNOC. The ENC component includes KMC.
- In 2011, Baylor College of Medicine Uganda started implementing a maternal and newborn health project in 14 districts with an orientation of PMTCT, with technical support from SNL and affiliate agencies, essential newborn care has been integrated including KMC.
- A USAID-funded maternal and newborn Health Care Improvement (HCI) project is currently run by the University Research Co, LLL (URC) in the districts of Luweero and Masaka and is designed to combine training, quality improvement and peer-to-peer learning. The focus is on newborns in general and not on LBW babies per se (USAID, 2012). It is not clear if KMC is included in the training.

In all the above projects, the extent and focus on KMC is limited to knowledge delivery rather than an emphasis on KMC practice and the establishment of good practice in the health facilities supported with setting up KMC services, which included the preparation of KMC units/corners. Mbonye et al (2012) furthermore state that although newborn survival interventions such as resuscitation, safe and clean delivery, thermal care and care-seeking for sick babies were included in the Minimum Health Care Package of the second five-year Health Sector Strategic Plan (MoH 2005), the plan “lacked an implementation framework or mechanism to train health workers in newborn care and deliver these services.” In order to fill this gap, an implementation framework and national norms and standards were developed for newborn care by the Ministry of Health in 2010 (MoH, 2010a&e). In 2012, Uganda was named as a champion country for improving care for preterm babies in the lead up to World Prematurity Day on November 17th. This places Uganda in a unique position to spotlight what can be done to improve access to and quality of health services for small babies across the country.

4. METHODOLOGY

4.1 Scope and objectives of current evaluation

The overall objective of the 2012 evaluation in Uganda was to evaluate and document the process towards the introduction and expansion of KMC services in the country. Some of the specific objectives included:

1. A systematic measurement of the scope and institutionalisation of KMC services
2. A description of barriers and facilitators to sustainable scale-up
3. Description of outstanding implementation research questions and gaps
4. Review of KMC materials
5. Description of the process of initiating KMC services and the ‘models’ used for KMC training and scale-up

In order to realise the above objectives, approval for doing the evaluation was obtained from the Uganda Ministry of Health (Appendix A). A study proposal was submitted to the Institutional Review Board of the Johns Hopkins School of Public Health for approval (Appendix B). Three consent documents were developed: written consent signed by the head of facility or a service (Appendix C); verbal consent by the key informant(s) (Appendix D); and consent from mothers for taking pictures of their babies (Appendix E). One of the limitations of this study is that the views of mothers doing KMC were not solicited on their acceptance of KMC practice and the treatment they received from the services. This omission was for pragmatic reasons, as the time line did not allow for the development and translation of informed consent documents in all the local languages.

4.2 Evaluation approach

The evaluation approach included two distinct groups of role-players:

- Stakeholders and partners were invited to a meeting to solicit their views and perceptions of KMC and their expectations of the evaluation. The introductory presentation by a representative of Save the Children is attached as Appendix H. The short timeframe did not allow for a feedback meeting with stakeholders at the end of the visit, but the PowerPoint presentation that the monitors had prepared was left with the manager of the SNL program for use as needed (Appendix I).
- Health care providers working in district hospitals targeted for a personal visit during the evaluation provided the necessary ‘grass roots’ information needed for measuring progress in KMC implementation.

A team of local assessors or monitors were identified to be trained by the external consultants in the use of the evaluation tools. They were required to be able to demonstrate the following after the initial training:

- Familiarity with the evaluation approach (progress monitoring) to be used during the evaluation exercise
- A clear understanding of the content of the progress-monitoring tool

- The ability to conduct all the activities that formed part of a facility visit
- A clear understanding of their roles and responsibilities with regard to the facility visits and the subsequent feedback activities

The notion built into the facility visits was that any evaluation exercise should rather be seen as an opportunity to monitor KMC implementation progress of a hospital rather than doing an end-of-project summative evaluation and to use the contact visit as a capacity building and a learning experience for providers. For this purpose a written feedback report form (Appendix F), including the main aspects of KMC implementation as well as qualitative feedback on impressions and recommendations for consideration, was completed and left with the hospital at the end of the visit, after giving verbal feedback to the key informants and other important role-players.

4.3 Conceptualisation of kangaroo mother care

Kangaroo mother care is conceptualised as a “total health-care strategy” (Nyqvist et al, 2010b), which is applied within a supportive environment where the mother of the low birthweight or premature infant is supported by health care workers in the health care facility and by members of the family and in the community at home. KMC is often built conceptualised around three components, which is graphically depicted in Figure 1:

- *Skin-to-skin position*: The baby is secured upright in a skin-to-skin position against the mother’s chest.
- *Nutrition*: Exclusive breastfeeding (which includes the feeding of expressed breast milk) is the preferred choice of feeding whenever possible.
- *Discharge and follow-up*: The baby is discharged home in the skin-to-skin position as soon as breastfeeding has been established, the infant gains weight and the mother is competent in the handling of her baby and receives ambulatory care with regular follow-up/review visits to a health care facility (Charpak & Ruiz, 2006; Charpak et al, 2005; Nyqvist et al, 2010a&b; Ruiz et al, 2007).

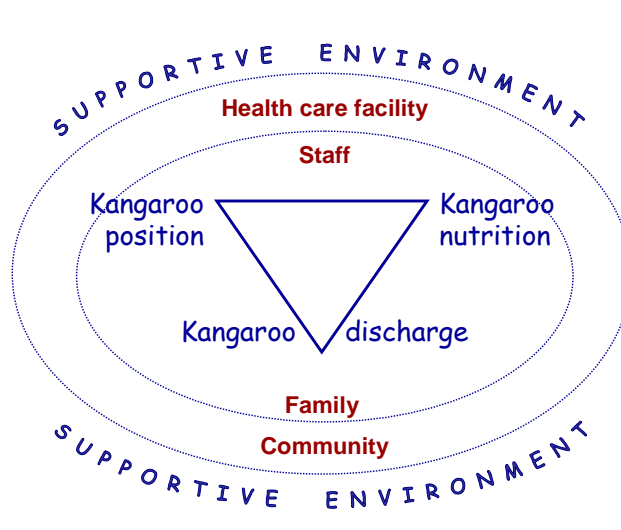


Figure 1. The components of kangaroo mother care (Bergh, 2002)

There are two main modalities of KMC practice – intermittent and continuous. The practice of skin-to-skin care for 24 hours per day is known as continuous KMC and is recommended as the preferred method where possible. When skin-to-skin care is practised for a few hours per day it is called intermittent KMC (Nygqvist et al, 20120a; Charpak & Ruiz, 2006; Charpak et al, 2005). Systems of KMC provision are sometimes divided between facility-based KMC, ambulatory KMC as an extension of facility-based KMC after discharge and community KMC, where KMC is initiated and continued at home and newborn services are provided by community health workers with limited access to referral care.

4.4 A stages-of-change model

The model used for measuring change or measuring progress in the implementation of KMC had been developed, tested and used before in other countries (Bergh et al, 2005; Pattinson et al, 2005; Bergh et al, 2007; Bergh et al, 2008; Bergh et al, 2012). Figure 2 depicts the latest version of this model (Bélizan et al, 2011). The model provides for three phases: pre-implementation, implementation and institutionalisation. Each phase has two stages or ‘steps’, starting with creation of awareness and commitment to implementation (pre-implementation phase), followed by preparation to implementation and initial implementation (implementation phase) and ending with integration into routine practice and sustaining practice (institutionalisation phase).

The existing evaluation or progress-monitoring tool that accompanies the model described above was used for the evaluation, except for the section pertaining to mother’ experiences of KMC (Appendix I). The tool is divided into 17 different topics covering the following aspect of KMC implementation:

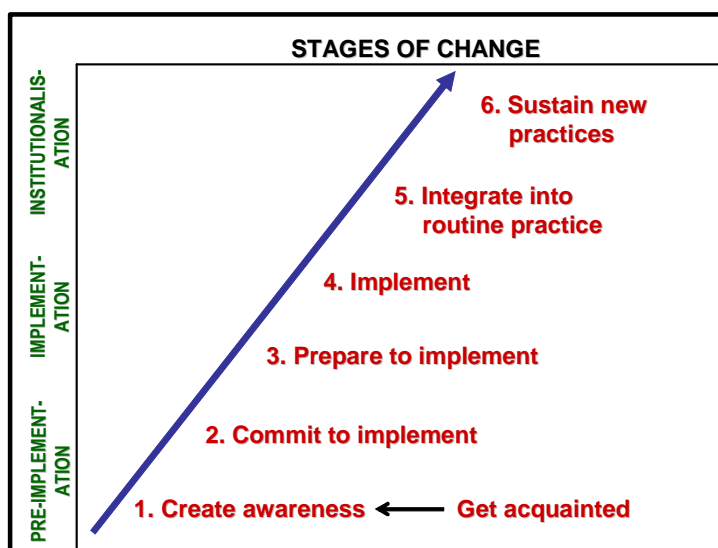


Figure 2. Stages of progress in implementation (Bélizan et al, 2011)

- | | |
|--|---|
| 1 Health care facility | 10 Records in use for KMC information |
| 2 Neonatal and kangaroo mother care | 11 KMC education |
| 3 Skin-to-skin practices | 12 Documents |
| 4 History of KMC implementation | 13 Referrals, discharge and follow-up |
| 5 Involvement of role-players | 14 Staff orientation and training |
| 6 Resources | 15 Staff rotations |
| 7 Kangaroo mother care space: continuous KMC | 16 Strengths and challenges |
| 8 Neonatal unit or nursery: intermittent KMC | 17 General observations and impressions |
| 9 Feeding and weight monitoring | |

Both quantitative and qualitative information is collected with the progress-monitoring tool. Some of the quantitative items contribute to the implementation score of a facility; the rest is used for generating descriptive statistics. The qualitative feedback assists with the understanding of the performance of a particular health facility and also provides an overview of the trends in KMC implementation and strengths and challenges that are widespread.

The scoring of health care facilities is done out of 30 points, with a cumulative score for each of the six stages depicted in the progress-monitoring model (Table 2).

Table 2. Scoring of facilities

Stages and phases	Points per stage	Cumulative points
Pre-implementation phase		
Stage 1 Create awareness	2	2
Stage 2 Commit to implement	2	4
Implementation phase		
Stage 3 Prepare to implement	6	10
Stage 4 Implement	7	17
Institutionalisation phase		
Stage 5 Integrate into routine practice	7	24
Stage 6 Sustain practice	6	30
TOTAL	30 points	

(Adapted from Bergh et al, 2005)

The above scoring can also be divided into a more refined breakdown that reflects more accurately the point at which a health care facility finds itself (Bergh et al, 2005). This is depicted in Table 3.

4.5 Sampling

At the time of this study 19 health care facilities across the country were reported to be practising some form of KMC. Eleven (11) of these were visited. The sample enabled the monitors to get some kind of cross-sectional ‘snapshot’ of KMC activities on the ground.

Facilities with KMC services are not spread across the country and only four regions (Central 1, Central 2, East-Central and Southwest) plus the City of Kampala have facilities providing KMC services. The 11 facilities visited included one national/referral teaching hospital, one regional hospital, 4 district hospitals, 2 health centres IV, and 3 not-for-profit hospitals. The map in Figure 3 gives an indication of the distribution of the health facilities visited.

Table 3. Refinement of the breakdown of progress scores

Score	Interpretation
0	No implementation of KMC
1-2	Awareness of KMC
3-4	‘Political will’ to implement KMC
5-9	In the process of taking ownership of the concept of KMC
10	Some ownership of the concept of KMC
11-14	On the road to KMC practice
15-17	Evidence of KMC practice
18-19	On the road to institutionalised KMC practice
20-23	Evidence of institutionalised practice
24	Institutionalised KMC practice
25-27	On the road to sustainable KMC practice
28-30	Sustainable KMC practice

(Adapted from Bergh et al, 2005)

4.6 Preparation for evaluation

A specific process was followed for the preparation of the facility visits. Health facilities identified for a visit were contacted about the date of the visit and were provided with guidelines (Appendix G). All the necessary documents were duplicated for training and use in the field work.

The monitors were trained in the application of the evaluation tool. This entailed a theoretical training in the approach to the evaluation or progress monitoring and the items contained in the progress-monitoring tool. This training was followed by practical training in one local hospital.

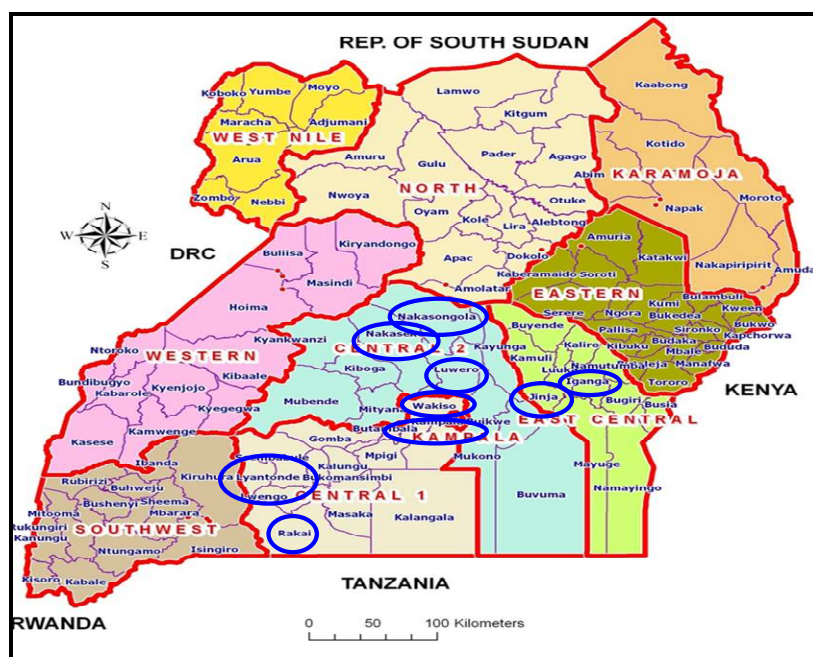


Figure 3. Map with distribution of facilities visited

(Adapted from Uganda Bureau of Statistics & ICF International, 2012)

4.7 Format of an evaluation visit

Most of the evaluation visits followed a particular format and sequence. After the monitors had introduced themselves and obtained consent from the hospital director or in-charge of a service, key informants (doctors and/or nurses/midwives) in the maternity or neonatal services were interviewed. The maternity or neonatology unit (with its KMC unit) was visited and observations were made and pictures were taken of documents and other relevant artefacts. Consent was also sought from mothers with their babies in the KMC position for taking pictures. After these activities the monitoring team requested a private space for compiling their report for the facility. The visit ended with verbal feedback to the facility representative(s) and the written report was left behind.

4.8 Limitations of the study

As only 11 of 17 hospitals known to practice KMC were visited, no claims are made with regard to the generalisability of the findings. This study merely aimed at providing some information on what was happening in terms of KMC at these hospitals on the day of the visit. The visits furthermore focused only on the provision of KMC at the health care facility level and the take-up of KMC in communities, clinics and among community health care workers were not assessed.

Some of the information collected was based on the self-report by the informants interviewed at each hospital and the feedback they provided could have to some extent depended on who was available to interview at the particular day of the visit. Some of the views expressed may not necessarily reflect that of other health care staff or how management/facility view the situation.

The views of mothers on KMC and their acceptance of the practice were also not a primary assessment outcome of the research proposal. Views of mothers were largely as they were reported by the health care workers interviewed, by some informal observations in KMC wards/rooms/units that did have KMC mothers and babies at the time of the visit and client feedback documentation.

5. MAIN FINDINGS

The main findings are divided into two main parts. The first three sections (5.1 to 5.3) give a more general overview of the progress with KMC implementation, whereas the fourth section (5.4 and sub-sections) provides a detailed description on KMC services, facilities and practices in the 11 hospitals that were visited.

5.1 Scaling up of KMC services by facility numbers

As the introduction of KMC is an evolving initiative and more than one partner is involved in newborn care initiatives in the country, it is not clear how many facilities in Uganda were actually practising KMC at the time of the progress-monitoring visit. In a health facility assessment of 167 sites across nine districts by the Newborn Steering Committee (NSC) to measure progress against the standards for newborn health care series, less than 1 in 10 health care facilities had designated KMC beds (Mbonye et al, 2012). At the time of the 2012 evaluation it was known that at least 17 health care facilities claimed to be providing KMC services. These were all located in Kampala, the two Central regions, Southwest and the East-Central region. The unacceptability of the inequitable distribution of access to KMC services and their distribution predominantly in the central and east regions was highlighted during the stakeholders' meeting.

According to Mbonye et al (2012), initiatives to improve coverage and quality of care such as KMC have been piloted but not scaled up nationally. Most of the facilities initiated KMC as a result of essential newborn care training, which included KMC. One of the private, not-for-profit hospitals started with KMC in 2010 after one of the staff members was funded by the SNL program to attend the 2010 International Conference of Neonatal Nurses (ICNN) in South Africa, where a workshop on KMC was also conducted. This followed investment by the program to strengthen KMC practice in the hospital following the end of one the HAPI project. Following the buy-in of the hospital management and continued technical support, the hospital solicited further support from its funders (like the ISIS Foundation) for KMC.

As KMC was incorporated into newborn care training it was also important to get a sense of the coverage of newborn care support in the country. According to a personal communication (Patrick Aliganyira, 2012) over 100 health facilities had received essential newborn care training and each health facility received at least one support visit, with those where KMC and death reviews were initiated getting more and regular visits. Table 4 gives an overview of supported districts (29 out of 111) for which information could be found. The disproportionate distribution of support between districts is similar to that found for the health care facilities supported with KMC implementation.

Table 4. Coverage of newborn care projects in Uganda

Region	District	Partner(s)	Nature of involvement		
			Training	Equip-ment	Other
KAMPALA	(Kampala)	STC/SNL	Yes	Yes	Support Supervision
CENTRAL 1 Total number of districts: 12	1 Kalangala	MSH	Unsure		Unsure
	2 Lyantonde	STC/SNL	Yes	Yes	Support Supervision
	3 Masaka	URC/HCI project	Yes	Unsure	
	4 Mpigi	MSH	Unsure		Unsure
	5 Rakai	STC/SNL	Yes	Yes	Support Supervision
	6 Sembabule	MSH	Unsure		Unsure
	7 Wakiso	STC/SNL	Yes	Yes	Support Supervision

Region	District	Partner(s)	Nature of involvement		
			Training	Equip-ment	Other
CENTRAL 2 Total number of districts: 11	1 Buvuma	STC/SNL	Yes	Yes	Support Supervision
	2 Kayunga	STC/SNL; MSH	Yes	Yes	Support Supervision
	3 Kiboga	STC/SNL; AOGU	Yes	Yes	Support Supervision
	4 Luweero	STC/SNL; MSH; URC/HCI project	Yes	Yes	Support Supervision
	5 Nakaseke	STC/SNL	Yes	Yes	Support Supervision
	6 Nakasongola	STC/SNL; MSH	Yes	Yes	Support Supervision
EAST CENTRAL Total number of districts: 11	1 Bugiri	MSH	Unsure		Unsure
	2 Iganga	STC/SNL/ UNEST/Makerere Univ SPH	Yes	Yes	Support Supervision
	3 Jinja	STC/SNL; MoH	Yes	Yes	Support Supervision
	4 Kaliro	MSH	Unsure		Unsure
	5 Kamuli	MSH	Unsure		Unsure
	6 Mayuge	STC/SNL/ UNEST/Makerere Univ SPH; MSH	Yes	Yes	Support Supervision
EASTERN Total number of districts: 21	1 Kumi	MSH	Unsure		Unsure
	2 Pallisa	STC/SNL	Yes	No	Support Supervision
WESTERN Total number of districts: 12	1 Kamwenge	STC/SNL; MSH	Yes	Yes	Support Supervision
	2 Kasese	STC/SNL; MSH	Yes	Yes	Support Supervision
	3 Kibaale	STC/SNL; AOGU	Yes	Yes	Support Supervision
	4 Kyegegwa	MSH	Unsure		Unsure
	5 Kyenjojo	MSH	Unsure		Unsure
SOUTH WEST Total number of districts: 14	1 Bushenyi	STC; HCU	Yes	Yes	Support Supervision
	2 Mbarara	STC; HCU	Yes	Yes	Support Supervision
	3 Rubirizi	STC; HCU	Yes	Yes	Support Supervision
WEST NILE Total number of districts: 8	None				
NORTH Total number of districts: 15	None				
KARAMOJA Total number of districts: 7	None				

(Personal communication, Patrick Aliganyira, 2012)

5.2 Progress with KMC implementation

The facilities visited scored between 8.28 and 21.72 out of the possible 30 points of the scoring system that was applied. The mean score of all the facilities together was 14.45 and the median score 14.71. If the interpretation of Table 3 is applied to the Uganda hospital scores, 2 facilities were in the process of taking ownership of the concept of KMC (scores of 8.28 and 9.25), 3 were on the road to KMC practice (scores of 12.16, 12.53 and 14.03), 5 facilities showed evidence of KMC practice (scores of 14.71, 15.78, 16.15, 17.07 and 17.33). One facility demonstrated evidence of institutionalised practice (score of 21.72). (See Table 5.) The hospital with the lowest score was a facility with a history of starting KMC in 2006, then it stopped and KMC was re-introduced in 2010. Two of the 3 highest scoring hospitals were private, not-for-profit hospitals with a Christian mission background, whereas the second highest scoring hospital was a central teaching hospital. It could be argued that better access to resources available at private hospitals and their long tradition of training health workers and management support may have contributed to their ability to make faster progress with the routinisation of KMC.

Table 5. Facility scores and interpretation of the scores

Score	Interpretation	Number & type of facility
8.28	In the process of taking ownership of the concept of KMC	1 regional hospital
9.25		1 district hospital*
12.16	On the road to KMC practice	1 private hospital**
12.53		2 district hospitals*
14.03		
14.71	Evidence of KMC practice	2 health centres IV
15.78		1 district hospital
16.15		1 private hospital**
17.07		1 central hospital
17.33		
21.72	Evidence of institutionalised practice	1 private hospital**

* Health centres IV recently upgraded to district hospitals

** Not-for-profit hospitals

Figure 4 gives a graphic depiction of the position of each facility on the progress-monitoring scale.

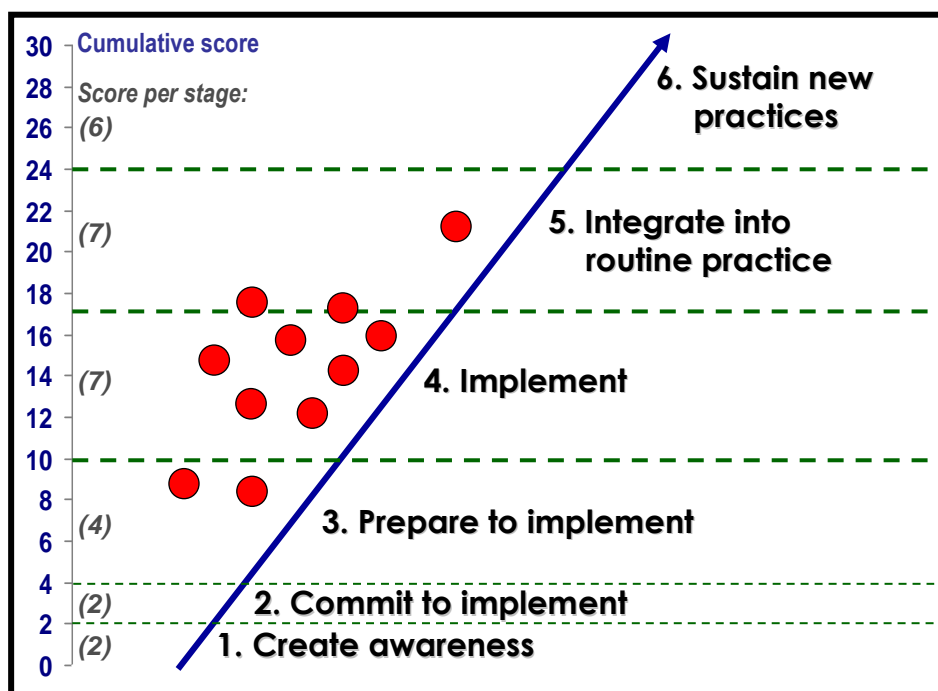


Figure 4. Plotting of hospitals according to score

5.3 Resources for implementation

As part of the scale-up process, resources were provided to most of the hospitals. These resources were in the form of training, formative supervision after training and equipment and materials. Six facilities (6) visited reported having received training from Save the Children or receiving support for conducting the training and one had received training from the Uganda Professional Midwives Association (UPMA) with funding from SNL. Table 6 gives an overview of partners and the hospitals they supported in terms of equipment and materials, according to the self-report of the informants. One hospital reported that they experienced a problem in safekeeping of donated materials like sheets and blankets. After the first few KMC patients had been discharged from the hospital none of the donated materials remained behind. At some of the visits the donation of inappropriate equipment by well-meaning benefactors was also demonstrated with unused equipment and materials being stacked up in store rooms and offices. In one hospital, for example, a digital scale was donated but without batteries or a charger and was therefore never used. In another a radiant warmer donated by a Canadian benefactor did not come with a power converter and the hospital could not afford its procurement. The warmer was taking up space in a room needed for other purposes.



Table 6. Overview of support with equipment and materials

Partner	No. of facilities	Types of equipment and materials*
Save the Children	8	<ul style="list-style-type: none"> • Stationary (books and register) • Equipment (digital baby scales, chairs) • Educational materials (posters, flipcharts) • Building materials and curtains • Supportive resources (KMC wraps, booties, cap, blanket for mother)
Rotary (different groups)	3	<ul style="list-style-type: none"> • Linen • General neonatal care equipment (ambubags, incubators)
Uganda Professional Midwives Association (UPMA)	1	<ul style="list-style-type: none"> • Resuscitation equipment • Bed sheets and blankets • Drug dispenser and some drugs
ISIS Foundation**	1	<ul style="list-style-type: none"> • Equipment (feeding cups and spoons, digital baby scale, comfortable KMC chairs) • Supportive resources (KMC wraps) • Building of neonatal unit • Food for mothers • General neonatal care equipment (cots, incubators)
UNICEF	1	<ul style="list-style-type: none"> • Newborn protocols
Volunteer doctor	1	<ul style="list-style-type: none"> • Material for wraps • Plastic chairs
Uganda Newborn Survival Study (UNEST) (with funding from STC/SNL)	1	<p>Provided everything needed for the study. This included:</p> <ul style="list-style-type: none"> • General labour ward equipment (labour ward beds and sheets, BP machines, bulb syringes, cannulas) • Materials for infection control (cleaning equipment, Jik (bleach), gloves) • Drugs
Group organising an annual marathon race and a local bank	1	<ul style="list-style-type: none"> • Money for general newborn care equipment (oxygen concentrators and incubators)

* Not all facilities received all the items and some items pertain more to the provision of newborn services and are not directly required for KMC

** A not-for-profit organisation established in 1998 with Uganda and Nepal as initial target countries. Its mission is to make a positive difference to the lives of children in the developing world. (<http://www.isisgroup.org/indexfound.html>)

Six (6) facilities visited were able to identify a special space for KMC mothers and babies. In 4 it was a separate room with between 1 and 6 beds. In the fifth facility it was a special corner in the postnatal ward separated by curtains (3 beds). In the sixth facility a broad corridor joining the neonatal unit and the postnatal ward was converted, with 2 beds on either side, separated with

curtains to form a passage in the middle. Other facilities used any available bed in the postnatal ward.

There were some variations in the self-reports of the facilities regarding the support they had received for the implementation of KMC. Two (2) facilities reported to have received an allocation from the hospital or district budget, whereas the informants from another 2 hospitals were unsure. One facility referred to innovations facilitated by hospital management and one of the private, not-for-profit hospitals reported to have received allocations in the form of equipment for essential newborn care, including materials for KMC.



Different forms of encouragement and material support in the implementation of KMC were also received from different role-players in the hospital. According to the impressions of the assessors, there was a lot of involvement of senior management in the implementation of KMC in the case of 4 facilities, with some involvement in 5 facilities and no involvement or a neutral position in 2 facilities. Hospital directors, in collaboration with medical directors and head nurses were reported to be supportive by allowing a variety of staff members to receive training in essential newborn care and KMC, by giving tangible encouragement (e.g. providing linen, supervising alterations) and personal interest – *"He [director] was there for us – support and was in all meetings"*. One hospital reported that linen had been provided for KMC mothers, but no laundry services were available! Nursing managers were also reported to have been actively involved in the initiation of KMC and in the sensitisation of hospital staff. The informant from one hospital described the absence of internal support as follows: *"So far I've only seen Save [the Children]"*.

5.4 KMC services, facilities and practices

In this section a summary of the overall results for the health care facilities visited is given. Table 8 at the end of this section contains a detailed breakdown of KMC services, facilities and practices.

5.4.1 Newborn services provided by facilities

In the section on sampling it has been mentioned that the facilities visited included a central teaching hospital, a regional hospital, district hospitals, level IV health centres and private, not-for-profit hospitals. A whole spectrum of newborn services was therefore observed. Two of the facilities had previously been health centres IV recently upgraded to hospital status. Two (2) hospitals, the central hospital and a private, not-for-profit hospital provided CPAP, but none had ventilation facilities. Six (6) facilities had incubators – of the total of 65 incubators in these facilities, 24 were in use (37%). Those not in use were either broken or malfunctioning (e.g. over- or under-heating). In one district hospital with one non-functioning incubator, the informant pointed out that an incubator had not been necessary since the advent of KMC.

In the public hospitals food are not provided for mothers and delays in relatives bringing food may have a negative effect on the mothers' health and her lactation. The extent of this potential problem was however not probed in depth during the evaluation.

5.4.2 History of KMC implementation

The assessors were of the view that informants in 10 facilities could provide a good history of the implementation of KMC. Apart from the national/referral hospital that started KMC in 2001, all the other health care facilities with KMC services only started the current initiative in 2009 (4), 2010 (3) and 2011 (1). One hospital started in 2006 and restarted again in 2010. In 5 of the facilities the informants could recall that the decision to introduce KMC was taken at a specific meeting and claimed that there had been written minutes of the meeting. None could however provide any written evidence of such meeting. Two (2) facilities reported that a baseline survey had been done before KMC started, but no evidence of the results of such a survey was available.

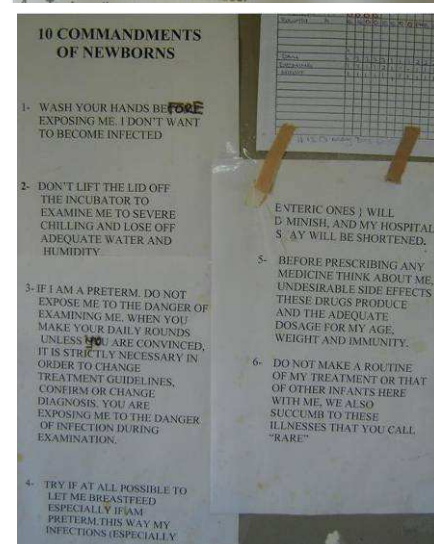
Only two (2) of the facilities indicated that they reported on KMC regularly through official channels, although in one case it appeared to be reporting on LBW infants and referrals and not on KMC as such. The other facility was part of the UNEST research study and the field workers of the study collected the information on a regular basis.

5.4.3 KMC facilities

Five (5) hospitals visited had a general vision, mission and values statement prominently displayed, with three neonatal units displaying the “Ten Commandments of Neonatal Care”, but none having a special vision and mission statement in which KMC was mentioned.

The nature of the special space provided for KMC services in the different facilities has already been discussed in section 5.3. The space provided for KMC was sometimes unattractive and not pleasant for a mother to stay 24 hours per day with her baby. One of the private, not-for-profit hospitals that could only provide intermittent KMC services had an attractive neonatal unit with comfortable chairs that enabled mothers to practise prolonged KMC during daytime. The general lodging facilities of the mothers in this hospital were also attractive and comfortable.

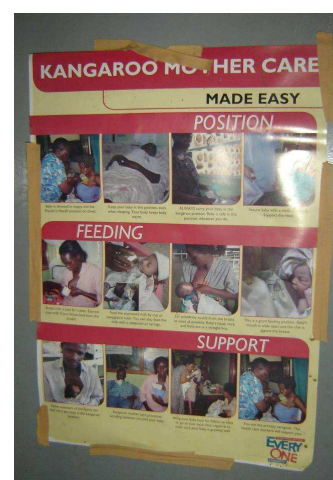
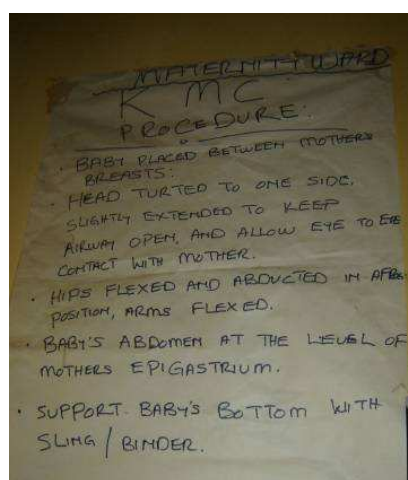
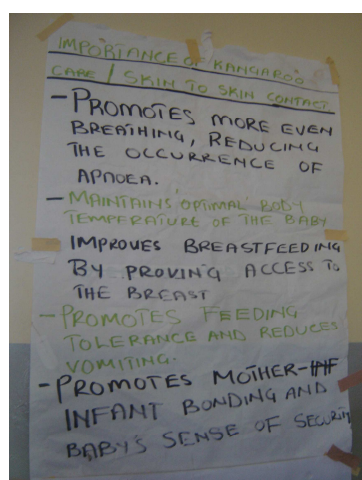
Generally the environment was not very friendly for mothers. The beds were standard high hospital beds of which not all could be adjusted to be lower and more comfortable for KMC. Not all facilities provided linen either. Head rests or pillows were only observed in 3 facilities. Five (5) facilities had fairly



comfortable chairs, mostly plastic chairs with arm rests. Very few facilities had any storage space for mothers' belongings (e.g. locker, tables, shelves), none had TV or DVD facilities, and very few had mosquito nets. On a positive note, none of the KMC spaces had cribs – this assists in preventing women to believe that KMC babies should be in cribs for some of the time.



Seven (7) facilities had the Ugandan version of the “Kangaroo mother care made easy” poster on display, with a further 3 only having the general essential newborn care poster. Two (2) hospitals had developed their own posters with basic messages. Three (3) facilities also displayed pictures of previously admitted mothers and their KMC babies. Eight facilities (8) indicated that verbal education on KMC was given to mothers. Only 1 facility had a regular educational or recreational program for mothers. The Maternal/child health education cards produced by the Ministry of Health (including Card 11 on KMC) were not observed in any of the facilities visited.



5.4.4 KMC practice

Eight (8) facilities reported that it was the doctor who decided on when a baby was ready for KMC, with 7 of these facilities referring to it as a joint decision with the nurses. In three (3) facilities nurses decided on the initiation of KMC. In one hospital the informant mentioned that mothers sometimes also requested to initiate KMC. The informants of 10 facilities indicated that they provided verbal education to mothers about KMC during transfer to KMC, although this

was not possible to verify. Three (3) facilities also mentioned preparation for KMC during antenatal care.

The facilities visited had a diverse approach to the practice of KMC and it was clear that not all informants were *au fait* with the distinction between intermittent and continuous KMC. In only 3 facilities with a special KMC space was KMC practised for more than 20 hours per day. Others, who claimed to be doing continuous KMC because mothers could room in with their babies, were in actual fact practising intermittent KMC and in some cases sporadic KMC, not even once per day. One health centre had a view of “*spontaneous KMC*” – whenever the mother decided she wanted to have the baby in the KMC position (not even every day). The range of hours for babies in the KMC position per day in the rest of the facilities was between 4 and 7 hours in 6 facilities, whereas in the remaining 2 KMC was practised for between 10 and 12 hours (with 1 facility only providing intermittent KMC). At the time of the progress-monitoring visits 30 babies were being cared for in KMC in all the facilities combined. Only 14 of them were observed in the KMC position during the visits in 6 facilities.

On the question at what times babies were not in the KMC position the most common response was when the mother breastfeeds, goes to the toilet or baths/showers, does her washing, goes out to find a meal (no meals are provided in hospitals) or cleans the baby. In 1 hospital babies were just cared for in the KMC position at night. In 2 facilities it was entirely up to the mother to decide if and when she wanted to do KMC. One informant each provided other reasons for mothers not doing KMC, for example the mother being tired or experiencing discomfort from carrying the baby on her chest.

Some facilities had not been practising KMC long enough to be able to give accurate information on whether babies were transported in the skin-to-skin position to and from the facility. With regard to transport to their hospital in the skin-so-skin position informants responded as follows: always (n=0), sometimes (n=2), seldom (n=1) and never (n=8). With regard to transport from their hospital in the skin-so-skin position the response was as follows: always (n=3), sometimes (n=3), seldom (n=1) and never (n=4).

5.4.5 KMC position (skin-to-skin care)

The lack of understanding the importance of practising continuous KMC when space is available for mothers to stay with their babies has been referred to above. In 2 facilities records could be provided for babies receiving intermittent KMC including the length of each session. Although these 2 facilities claimed to have schedules for practising KMC, none had any form of schedule for practising intermittent KMC nor any written guidelines for new staff or for mothers on what an intermittent KMC program looked like or how it should be practised.



According to the assessors' impressions, mothers in 3 facilities were diligent in practising KMC and that there was evidence of some KMC practice in 4 more facilities. In 1 facility there was little evidence of any KMC being practised and in 3 instances mothers' compliance with KMC could not be probed. Mothers mostly provided their own materials to tie the baby in the KMC position. These included the local cloth (n=9) and sheets (n=3). Two (2) private not-for-profit hospitals provided the Kalafong *thari* for tying the baby while in hospital. One hospital also provided special blouses to cover the mother and baby. Most babies observed in the KMC position either had a hat on or their heads were covered with the blanket used to cover the mother and baby.

On the question of where the mother may move around with her baby in the KMC position, most informants indicated that mothers were allowed to walk around within the KMC unit. In 2 facilities mothers were not allowed to leave the KMC space – one informant gave infection prevention as the reason for this measure. The informant of one hospital indicated that mothers had to bring their babies back to the (heated) nursery when going out. As only one of the nurseries was heated, the question remains whether all babies are kept warm enough when not in the skin-to-skin position.



Eight (8) facilities allowed mothers to have a guardian or companion, mostly only one person, as one “*can't allow so many people to come*”. Their tasks were to provide moral support and to assist the mother with daily chores, such as washing clothes for the mother and prepare and supply food. Assisting with the carrying of the baby in the case of twins, after a caesarean section or when the mother had passed away was also mentioned. The role of the father as the support person was mentioned by 4 informants. One felt that the father should learn how KMC was done and should support the mother – although fathers prefer the mother to do the KMC. Three (3) facilities allowed the guardian to be with the mother any time of the day, with no restriction. Two (2) did not allow guardians inside the KMC unit or nursery. Another 2 facilities had specific times for the guardians to come in – mostly around meal times.

5.4.6 KMC nutrition and weight monitoring

Only one of the hospitals visited had officially been designated as baby-friendly around 2005. Two (2) hospitals had been assessed towards the end of 2011 but had not yet heard the outcome of the assessment. Three (3) hospitals could produce a written feeding policy, whereas 6 hospitals had a feeding job aid for calculating the volumes of feeds that was displayed on the wall.

In the 6 hospitals practising intermittent KMC mothers were enabled to breastfeed their babies day and night before starting with continuous KMC. Four (4) hospitals accommodated the mother in the KMC room or postnatal ward. Three (3) hospitals had some form of special lodging facility – one hospital had a special house and 2 others had mothers' clubrooms adjacent to the neonatal unit. In one of the clubrooms mothers had to sleep on the floor.

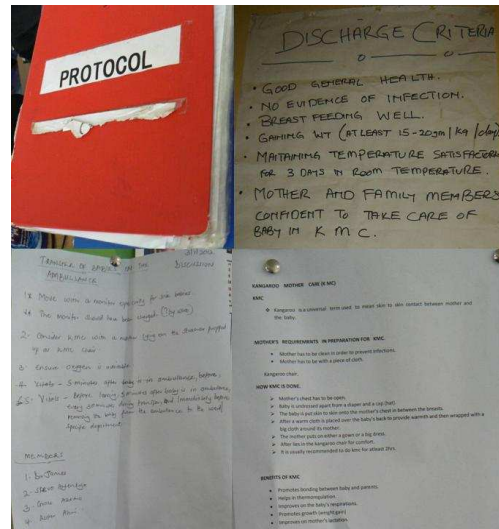
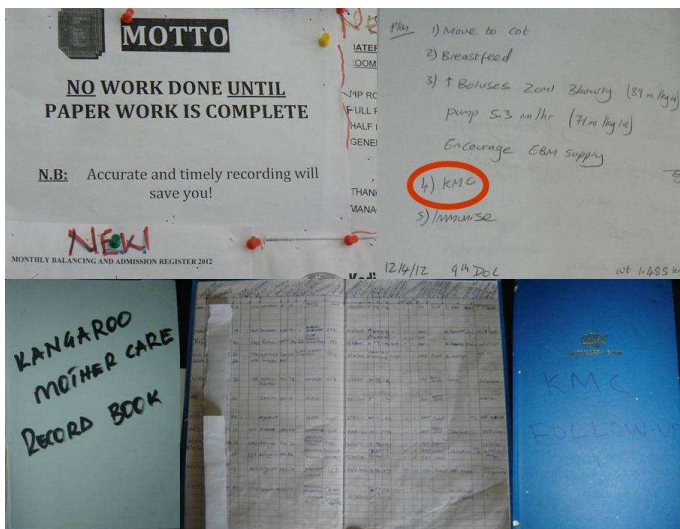
Only 3 facilities recorded the feeds of their LBW babies. Seven (7) facilities indicated that they weighed the babies regularly – 4 weighed once per day, 2 on alternate days and 1 weekly. One hospital did not have a baby scale, whereas the remaining 10 all had mechanical (n=3) or electronic (n=7) scales. In 7 facilities the scales had increments of 10 gram or less. The scales in 2 facilities measured in 50 grams and in 1 facility in 100 grams. The latter was used in a facility that did not weigh babies regularly. Regular weights and/or admission or discharge weights were reported to be recorded on a variety of documents, some of which could not be verified. These included nursing and doctors’ notes, the baby’s file (e.g. observation charts), the mother’s chart, the KMC register and the discharge form.

5.4.7 KMC documentation and recordkeeping

The absence of records for intermittent KMC and non-recording of feeds in most instances has already been mentioned. Record keeping for follow-up will be discussed in section 5.4.9. According to the assessors’ impression one facility had good quality data in their records, whereas it was average for 6 facilities and poor in 4. According to Mbonye et al (2012), [i]mproving the frequency and quality of local data, including births, mortality rates and outcomes as well as service coverage, is critical in order to continue measuring progress towards the MDGs and beyond.”

Nine (9) of the 11 facilities visited had some form of keeping records for babies. Seven (7) had a special register or collective record for babies receiving KMC. In 4 hospitals evidence was found of doctors’ daily notes, which could include a prescription for the commencement of KMC. Two (2) facilities recorded KMC on the discharge letter/form and 1 in the baby’s file health booklet.

Only 2 facilities collected information in such a way that figures could be calculated for the number of babies receiving intermittent KMC. For continuous KMC 4 facilities could provide the necessary information. Audits were not regularly done on KMC statistics. In the facility that was part of UNEST monthly statistics were written onto a big sheet attached to a wall in the KMC unit.



Some of the documentation that could contribute to the potential of sustainable KMC practice was absent in most facilities, possibly because it was not part of the interventions and trainings in Uganda. Only 2 facilities used a checklist on orientation procedures to go through when a mother and baby were admitted to the KMC unit, whereas none used a special discharge scoring sheet as part of the discharge decision making. Two (2) facilities could provide the assessors with some policies, guidelines or protocols for the practice of KMC. In a survey by the NSC less than 15% of facilities had job aids for managing small babies (Mbonye et al, 2012).



5.4.8 KMC staff

In all the hospitals visited there were staff that had been trained in KMC, either as a stand-alone or as part of essential newborn care (ENC). Table 7 gives an overview of the distribution of external and internal training, plus the number of staff working in KMC at the time of the evaluation. The evaluation did not include an assessment of the impact of training, but one informant referred to the fact that the introduction to KMC was very brief. The following comment by an informant illustrates the novelty and the importance of the intervention: “Before, I had no idea KMC could save a baby”. Three (3) hospitals indicated that they had a long-term plan to get all health workers trained in KMC but only one could provide any written evidence.

Case 6 of the UNEST report also refers to the effect of training on improving newborn care practices – “Also before going for that training, I didn’t know anything about Kangaroo Mother Care (KMC) but since the training, we have helped very many babies survive” (UNEST, 2011: 9).

Table 7. Staff training in hospitals visited

Hospital	A	B	C	D	E	F	G	H	I	J	K	Total
External training	2	9	^	1	4	2	0	16	4	1	0	39
Training inside hospital*	21	14	^	30	^	12	20	16	50	^	60	223
TOTAL TRAINED	23	23	^	31	4	14	20	32	54	1	60	262
Number currently working in KMC/ maternity/neonatal unit	4	6	^	14	3	13	4	^	3	^	14	57

^ Information not available

* Mostly as part of ENC training

Staff rotations took place in all 11 facilities. In 6 facilities certain levels of staff were not rotated, namely unit managers (n=3), midwives (n=2), and those involved in training others (n=1). Five (5) facilities indicated that they had a special orientation program for new staff coming to work in the section where KMC was located, although the orientation seemed to be very general and not specifically aimed at KMC.

Hospitals were also probed about their role in the practical training of health workers and the involvement of the students in KMC. The 2 health centres did not receive students, but all 9 hospitals accommodated nursing (n = 8) and/or medical (n=5) students from a variety of schools and colleges, including Makerere, Kyambogo and Mohondo universities and Mulago, Jinja, Kalunji, Kiwoko, Nsambya, St Theresa and Rakai Schools of Nursing. The general impression of the informants at hospitals was that most students did not have any theoretical background and that they normally received the information at the hospital as part of on-the-job training. Some of the students were “*directs*” still in their junior years.

5.4.9 Discharge and follow-up

Eight (8) hospitals reported that it was the doctors who decided on when a baby was ready for discharge from the facility, with 7 of these indicating that it was a joint decision also involving the nurses. In 3 facilities nurses were the primary decision makers with regard to the discharge of the baby (1 health centre and 2 district hospitals). Five (5) facilities also discharged babies at the mother’s request. The informant of one private, not-for-profit hospitals mentioned that mothers were discharged early for fear of high hospital bills, which poses challenges for practising continuous KMC.

Most babies were reported to be initially followed up at the hospital where they had been born or had received KMC. Four (4) hospitals had evidence of a good follow-up system for LBW and preterm babies and could provide records of visits. Two (2) hospitals could provide some evidence of follow-up, whereas in the 2 health centres and 3 district hospitals no evidence could be provided. Only the district hospital that was part of the UNEST project entered follow-up information in the KMC register. Informants from the other facilities mentioned special follow-up books (n=3), files (n=1) and doctors’ notes (n=2), but very few of these records made provision for identifying LBW babies and none made provision for identifying KMC babies.

In 4 facilities babies were followed up in the neonatal unit or KMC space, in 3 in the maternity ward and in 3 at the paediatric outpatients clinic, of which one had a special premature clinic on Fridays. Mothers were also referred to their nearest health centre in cases where it was difficult to come back for follow-up at the hospital. Follow-up at the facility where the baby had been born or had received KMC was reported to continue until the baby reached a specific weight or a specific age. Weights mentioned were 2 kg (n=1), 2.5 kg (n=5) and 3 kg (n=2). One hospital required three follow-up visits in the first 3 months after discharge and in one hospital follow-ups lasted until the baby was 2 years old. One facility with no evidence of follow-up could not provide any information.

Estimates by informants on the percentage of babies returning for follow-up varied between “*few*” in one health centres, 30 to 50% in 3 other facilities, 80 to 90% in 2 hospitals and 95% or more in 2 of the private, not-for-profit hospitals. The main reason for poor follow-up rates was distance from the facility. In the case of the hospitals with a reported 95% or more return for follow-up there appeared to be a special attachment with the health workers. Mothers also had to call to report on their baby’s well-being after discharge and the health workers phoned mothers,

also to remind them of their follow-up date. One informant mentioned that women “*fear very small babies ... we tell the mother not to be alone*”. Mothers also knew they were going to see a doctor at their follow-up visits – “*They feel good too when baby is checked*”. Three (3) facilities reported that they had no measure in place to encourage follow-up.

Four (4) facilities indicated that they sometimes did home visits. In only one case it was done systematically by community health workers as part of the UNEST initiative. Criteria for home visits provided by the other facilities were difficult clients, when a mother had died, special cases of concern or if the baby had been critically ill while in hospital. These mothers were reported to be visited by staff from the maternity or neonatal unit.

Five (5) facilities reported that they had no communication links with other health centres and clinics regarding the follow-up of babies. Two (2) facilities reported making phone calls sometimes and another 4 mentioned the use of referral letters or discharge forms. The informant at one hospital said, “*We don’t like clinics. The people are not trained*”.

5.4.10 Client satisfaction

Although client satisfaction was not one of the objectives of this survey, incidental information was obtained that illustrates some aspects of the acceptability of KMC to clients. One of the private hospitals had a system of probing client satisfaction with the treatment they received while using the KMC services. In the KMC register a column was provided for clients to write comments on their treatment and experience of KMC. The following are a few typical examples, mostly indicating positive experiences of providing KMC to the baby, with little reference to their level of satisfaction with the KMC services provided:

“Great innovation and makes us comfortable”.

“It’s good and can help my baby. So let me pray so that I go with the cloth [wrap] for kangaroo.”

“Kangaroo exercise is good because it makes the child comfortable and feel the mother’s love.”

“The day I started kangalu a was so excited en proud. Kangalu has taught me how to wome da baby in ma chast.” [The day I started kangaroo I was so excited and proud. Kangaroo has taught me how to warm the baby in my chest]

“I think I will try it as home couz it keeps the baby warm and it connect mother and me baby.”

“KMC is good because it gives the baby enough warmth and I for one am more attached to my baby while doing it.”

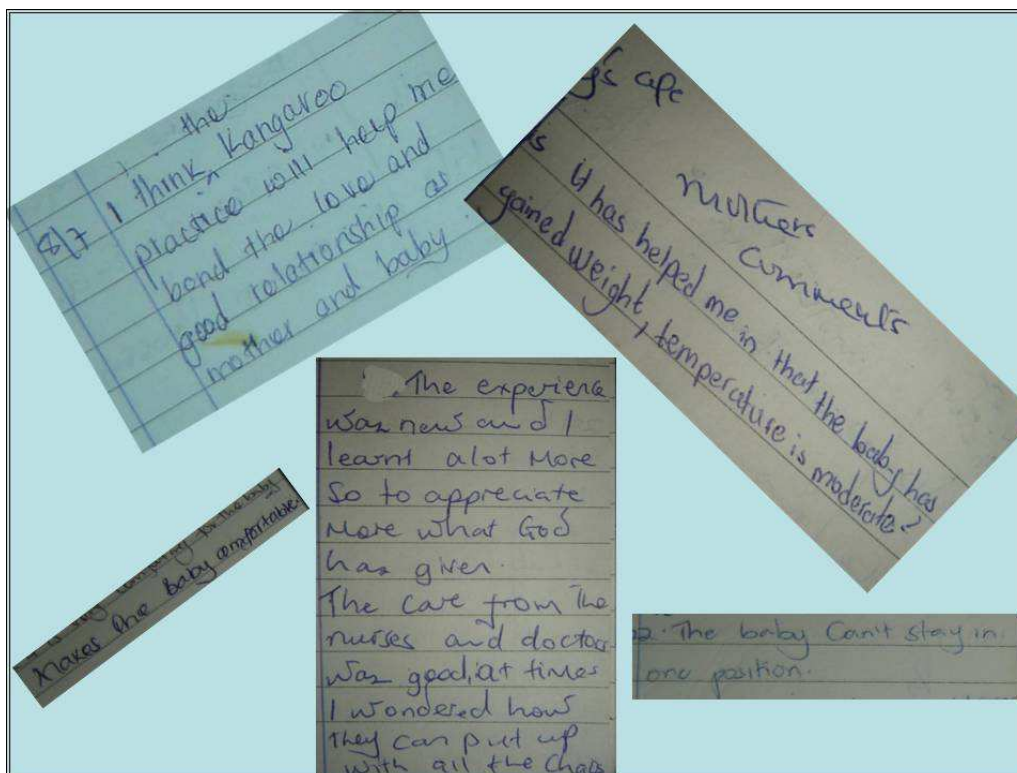
“Kangalu has taught me how to keep the baby warm. It has also taught me that when the baby’s temperature is low, you can make it normalise by doing Kangalu. Thanks goes to the doctors, sisters and nurses.”

“It’s good to the baby bcoz the baby feels more warmth and sleeps comfortably.”

“It has helped me in that the baby has gained weight, temperature is moderate.”

“It will help my kid to grow well and gain very quickly.”

“I have learnt about KMC and have practiced it at while still in the Unit. I hope to use it more at home after discharge and hope it will help my baby and bond the two of us. The nurses have been so helpful to me and the training was free and fair.”



Some of the results coming from the UNEST study also included mothers' experiences of KMC. In a dissemination document entitled "The Uganda Newborn Study – stories of change", four of the six case studies include references to KMC. Case 1 refers to community health workers that conducted visits to mothers with LBW babies to promote KMC (UNEST, 2011: 4). Case 3 tells the story of preterm twins who survived as a result of receiving KMC. "Introduced at Iganga Hospital under the auspices of UNEST, KMC has further demystified the belief that preterm and low birth weight babies can only be saved in big hospitals like Mulago, the national referral hospital" (UNEST, 2011: 6). Case 5 is about a birth where the preterm baby needed resuscitation and was placed in KMC after regaining his normal breath. Case 6 has been referred to in section 5.4.8.

5.4.11 Community sensitisation and involvement

As the assessment visits focused on facilities providing KMC the team did not have the opportunity to evaluate community sensitisation and involvement in depth. Each facility received questions in this regard beforehand with a request to reply on them during the visit, but, except the UNEST study site, none was able to provide any information. The information emanating from the results of the UNEST study will be useful in further probing of this aspect.

Table 8. Summary of implementation progress per progress marker

PROGRESS MARKER	Number	Total no. of facilities ¹
#Baby-friendly status	1 with status	11
	2 assessed	
Planning to become baby-friendly	0	8
Neonatal care available:		
(a) Intensive care (NICU) (CEPAP, no ventilation)	2	11
(b) Incubators (used and unused)	6	11
Incubators available in use:		
(i) Number of incubators available	Total: 65	
(ii) Number of incubators in use	Total: 24	
(c) Radiant warmer	2	11
(d) Warm cribs	2	11
(e) Ordinary cribs in a heated room	1	11
(f) Ordinary cribs in a non-heated room	2	11
#Decision to implement KMC taken at a specific meeting	5	11
#Written record (minutes or reports) of this meeting	0	5
#Sponsors:		
(a) Allocations or implementing KMC from hospital/district budget	2	11
(b) Other sponsors for implementing KMC	10	11
#Impressions on management involvement in the implementation of KMC:		
(a) Strong involvement	5	11
(b) Some involvement	4	11
(c) Neutral	2	11
KMC practised:		
#(a) Intermittent KMC (district hospital and higher levels)	6	9
(b) Continuous KMC	8	11
#Special space or ward allocated for KMC:	6	8
Babies admitted to KMC at time of visit:		
(a) Intermittent KMC (Total: 14 babies)	4	6
(b) Continuous KMC (Total: 16 babies)	5	8
#Babies observed in KMC position at time of visit:		
(a) Intermittent KMC (Total: 10 babies)	3	6
(b) Continuous KMC (Total: 11 babies)	5	8
#Records for babies in KMC could be provided:		
(a) Intermittent KMC	2	6
(b) Continuous KMC	6	8
#Records with evidence of KMC practice:		
(a) Intermittent KMC	2	11
(b) Continuous KMC	5	11

PROGRESS MARKER	Number	Total no. of facilities ¹
#Impression of mothers' compliance in doing KMC:		
(a) Diligent	3	11
(b) Some KMC	4	11
(c) Very little KMC	1	11
(d) Could not probe	3	11
Methods of tying babies in the KMC position:		
(a) Local cloth	9	11
(b) Special piece of material with bands (<i>Kalafong tharz</i>)	2	11
(c) Sheets	3	11
(c) Blouse to cover mother and baby	1	11
#Equipment available in KMC space:		
(a) Low beds	5	8
(b) Head rests or pillows for mothers to lean against	3	8
(c) Comfortable chairs	5	8
#Mothers able to provide breastfeeding 24 hours per day	11	11
Feeding and weight monitoring:		
#(a) Written feeding policy/protocol	3	11
#(b) Job aids for feeding (feeding chart for EBM)	3	11
#(c) Feeding records for each feed for each baby	3	11
(d) All babies weighed regularly	7	11
#Records in use for KMC information:		
(a) Official register of MoH	0	11
(a) Special KMC register or collective record	7	11
(c) Daily doctor's notes	3	11
(d) Discharge letter <i>with information on KMC</i>	1	11
(e) Road to health chart / booklet <i>with information on KMC</i>	1	11
#Figures for a period of time can be provided for babies who received KMC:		
(a) Intermittent KMC	2	6
(b) Continuous KMC	4	8
#Impressions on quality of data:		
(a) Excellent	1	11
(b) Average	6	11
(c) Poor	4	
#Official channels used to report on KMC	2	11
#Written checklist for procedures on admission to KMC space	2	11
#Written and audiovisual information on KMC available for mother (posters, brochures, leaflets, counselling cards, DVDs on KMC)	11	11
Verbal education to mothers	8	11
Regular educational or recreational programs	1	11
#KMC vision and/or mission statements	0	11
#Written policies, guidelines or protocols for KMC	2	11

PROGRESS MARKER	Number	Total no. of facilities ¹
Follow-up of majority of KMC babies:		
#(a) At facility where baby has been born or at facility where baby received KMC initially	11	11
(b) At hospital nearest to mother's home	1	11
(c) At nearest community centre / clinic	2	11
#Records are kept for follow-up visits	5	11
#Impressions on follow-up system:		
(a) Well developed	4	11
(b) Partially developed	2	11
(c) Non-existing	5	11
Babies transported to facility in KMC position:		
(a) Always	0	11
(b) Sometimes	2	11
(c) Seldom, never, no experience	9	11
#Babies transported to facility in KMC position:		
(a) Always	3	11
(b) Sometimes	3	11
(c) Seldom, never, no experience	5	11
#Long-term plan in facility or district to get all health workers trained	3	11
(a) Written plan	1	3
#Staff members (nurses) involved in KMC regularly rotated to other wards and units		
(a) All	7	11
(b) Some	4	11

Items contributing to the progress score

¹ Total number of facilities: 11

6. MAIN CONCLUSIONS

The outcome of the evaluation in Uganda was that sensitisation with regard to the importance of KMC is fairly widespread and there is evidence of KMC practice in more than one health care facility. Integrating KMC with training in ENC and decentralising training to be onsite over a period of time have the potential of contributing to wider awareness, as more staff can be exposed to the theoretical training in KMC. With appropriate support and supervision, the further KMC services could be spread across wider areas and centres of KMC excellence could be established. Given Uganda's recent status as a champion country for improving preterm care, there are many opportunities to grow the KMC programme.

6.1 KMC implementation

All facilities visited have started KMC, although some have progressed further than others and there is still much room for improvement. At present it appears as if 13 facilities are attempting to provide KMC services, although 2 of the 11 visited were still struggling to get to the point of

evidence of real KMC practice. Considering that most facilities scored between 12 and 17 out of 30 points for their progress with KMC implementation, there is still much room for improved quality of services and care. There is also still a long way to go in the scaling up of KMC to all health care facilities with maternity services to cover all types of health care facilities and all districts in the country and to distribute KMC services equitably across the country. In most facilities there are dedicated personnel willing to act as champions and team leaders, despite the many challenges. Having senior management on board also made a difference in some facilities.

The concept of KMC has been adopted at the sites visited and most had staff trained in KMC as part of ENC or as a stand-alone. Some sites also received support visits from trainers or other facilitators, which was perceived as beneficial by facility informants. Save the Children was one of the key partners in the initiation of KMC, advocating for it at forums between partners and the Ministry of Health and driving the process of integrating it with ENC in some districts. Health care workers' involvement and willingness to promote KMC varied between sites and also at the same facility. Where doctors and nurses work as a team, KMC seems to have more potential of success. It was not possible to extensively probe the acceptance of KMC by mothers and families, as no babies were observed in KMC at 5 facilities (45% of facilities visited). Although the use of guardians is an accepted practice in providing health care in institutions, innovative ways of training them and involving them in the care of KMC mothers and babies may assist in advocacy for KMC, providing a better link with the community and the improvement in access to follow-up services.

The short time of the visit to each hospital (2-3 hours) did not allow for probing sufficiently the total extent and quality of KMC practice. Unfortunately, none of the facilities could provide evidence of the survival rates before and after the introduction of KMC and the effect of the introduction of KMC on neonatal mortality could therefore not be assessed. There were some anecdotal reports on the positive results of practising KMC:

- Reduced perinatal and neonatal mortality rates
- Reduced infection
- Improved breastfeeding – better growth and development of baby
- Reduced hospital stay – earlier discharge
- Reduced referrals
- KMC provides better care than conventional preterm care
- Reduced workload for nurses
- Positive outcomes of babies
 - lead to motivation, inspiration, commitment that provides confidence to nurses
 - provide a good reputation to the health facility (increasing the number of deliveries and of LBW babies cared for)
- Client satisfaction
 - Generally good acceptance of KMC – improved bonding and more confidence in handling small babies
 - Special relationship with nurses
 - Reduced demand for incubator care
 - Reduced expenses

6.2 KMC practice

There still appears to be missed opportunities where KMC is not practised optimally, continuously and intermittently. Where intermittent KMC is practised it is often not done systematically with babies eligible for this type of care, e.g. while the baby is still in the incubator or where there is no bed for mother and baby in a KMC unit due to overcrowding. In the 10 facilities where it was possible to practice continuous KMC, informants from only 3 facilities (30%) estimated that babies were cared for in the KMC position for more than 20 hours per day. In 3 facilities with a special KMC room or space it was reported that mothers practised KMC only for between 6, 7 and 12 hours respectively.

Exclusive breastfeeding is promoted. As regular feeding records were only kept in 3 facilities, it was not possible to adequately probe whether mothers fed their babies regularly right through the night. Although just over half of facilities visited had a feeding aid for calculating the volume of EBM, but it could not really be probed whether these were used effectively or not.

Monitoring the continuum of care of KMC babies once discharged from hospital remains one of the main challenges. Not all mothers have adequate access to follow-up review at the district hospital (or even a health centre) because of the far distances they have to travel, whereas others may not see the need for follow-up visits if the baby appears to be well. Furthermore, the linkages in the follow-up system between district hospitals, health centres and the VHTs at community level are not clear and there does not seem to be a 'seamless' transition of care.

According to Mbonye et al (2012), 21% of neonatal deaths would be prevented if missed opportunities in high quality care could be addressed, particularly through KMC and case management of infections.

6.3 Documentation, record keeping, data management and reporting mechanisms

Two of the areas for much improvement in KMC services are the development and use of protocols for KMC and the improvement of record keeping in general. Some hospitals did not distinguish in their records between LBW babies and those receiving KMC. Little intermittent KMC was recorded. The quality of data that could be collected from formal records was deemed to be excellent in only 1 facility (9%) and poor in 4 facilities (36%). Only the hospital participating in a formal research study could provide more reliable figures on KMC and had a regular mechanism of reporting to the records office. At present, KMC figures are not reported in a standardised way as part of the data management system of health care facilities or within the national or district health management information systems. Records from which data are not collected for reporting purposes are not always maintained when no interest is paid to them. If data are collected during the supervision phase of a research project, it may not be sustained after the project has ended.

7. KEY RECOMMENDATIONS

The seeds for KMC have been sown in Uganda and the scale up has started, albeit only the first few steps. While many achievements and strengths are evident, many challenges are also acknowledged. The following recommendations that are made should be considered within the context and constraints of the country.

7.1 From central to district level

- Improve equity and access to KMC services across the country
- Improve the transfers of care between facilities (up and down referrals) to spread the workload more evenly
- Advocate for the improvement of existing facilities and infrastructure
- Encourage accountability by including KMC information or statistics in reports to all levels of the health system and including it in job descriptions
- Emphasise to hospital administrators and medical superintendents (hospital management) the importance of providing good quality KMC services in all health facilities
- Plan projects in such a way that KMC would be sustainable after a project ends (e.g. mentorship and supportive supervision that include KMC as part of job descriptions and the normal health system activities)
- Include KMC prominently in all activities related to programs on the management of basic, emergency and comprehensive obstetric care and the Baby-Friendly Hospital Initiative

7.2 Newborn programs

- Include KMC in all pre-service curricula, targeting all cadres of health care workers and other health care providers – this could be done by drafting a concept document to advocate for the inclusion of KMC in the neonatology curricula at training institutions
- Include KMC in the training of lower level cadres where skills improvement is needed (tailored training)
- Involve professional associations in actively promoting KMC
- Continue the monitoring of the progress of KMC implementation in Uganda

7.3 Facility level

- Encourage more involvement of management in some facilities
- Make the provision of quality KMC services a priority in the performance of the medical director and in hospital budgets (inter alia because it is cost-effective)
- Design more flexible models for staff rotations to minimise the rotation of newly trained staff in KMC
- Attend to physical facilities and arrangement of space:
 - In some facilities: more negotiation with management needed for acquiring more adequate space for continuous KMC

- Where KMC is practiced in a postnatal ward, a partition or curtains can provide more privacy

7.4 KMC practice

- Enable longer periods of skin-to-skin contact per day:
 - Allow a trusted attendant to assist and support the mother in practising continuous KMC
 - Provide comfortable chairs
 - Encourage intermittent KMC while baby is on oxygen or phototherapy
 - Re-organise space in the neonatal unit in some facilities
- Develop guidelines and protocols, including the criteria for discharge and follow-up and the development of job aids
- Include guardians in supporting and assisting mothers with the practice of KMC in hospital as well as at home
- Strengthen follow-up systems, and where possible, the support provided for families of preterm babies in continuing KMC at home
- Promote the skin-to-skin position as a method of keeping term babies warm

7.5 Further points for investigation

- Why some facilities that had received training have not been able to implement KMC
- Options for mass media sensitisation on KMC (e.g. radio and TV documentaries in local languages with ‘testimonials’ from mothers, father, families and communities)
- Use of mobile health to support health workers with KMC
- Pilot study in training lower level health workers, including rotation through facilities for hands-on skills development and handling of preterm and LBW babies

References

- Belizán M, Bergh A-M, Cilliers C, Pattinson RC, Voce A, for the Synergy Group. (2011). Stages of change: A qualitative study on the implementation of a perinatal audit programme in South Africa. *BMC Health Services Research* 11: 243 (Published: 30 September 2011). (doi:10.1186/1472-6963-11-243)
- Bergh A-M. (2002). *Kangaroo mother care implementation workbook*. Pretoria: MRC Unit for Maternal and Infant Health Care Strategies.
- Bergh A-M, Arsalo I, Malan AF, Pattinson RC, Patrick M, Philips N. (2005). Measuring implementation progress in kangaroo mother care. *Acta Paediatrica* 94: 1102-1108.
- Bergh A-M, Van Rooyen E, Lawn J, Zimba E, Ligowe R, Chiundu G. (2007). Retrospective evaluation of kangaroo mother care practices in Malawian hospitals, July-August 2007 (report). Lilongwe: Malawi Ministry of Health.
- Bergh A-M, 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 (23 Jul 2008).

- Bergh A-M, Rogers-Bloch Q, Pratomo H, Uhudiyah U, Poernomo Sigit Sidi I, Rustina Y, Suradi R, Gipson R. (2012). Progress in the implementation of kangaroo mother care in ten hospitals in Indonesia. *Journal of Tropical Pediatrics* (Advance Access published January 19, 2012).
- Blencowe H, Cousens S, Oestergaard MZ, Chou D, Moller AB, Narwal R, Adler A, Vera Garcia C, Rohde S, Say L, Lawn JE. (2012). National, regional, and worldwide estimates of preterm birth rates in the year 2010 with time trends since 1990 for selected countries: a systematic analysis and implications. *Lancet* 379 (9832): 2162-72.
- Charpak N, Ruiz JG, Zupan J, Cattaneo A, Figueroa Z, Tessier R, Christo M, Anderson G, Ludington S, Mendoza S, Mokhachane M, Worku B. (2005). Kangaroo Mother Care: 25 years later. *Acta Paediatrica* 94(5): 514-522.
- Charpak N, Ruiz-Pela JG. (2006). Resistance to implementing kangaroo mother care in developing countries, and proposed solutions. *Acta Paediatrica* 95: 529-534.
- 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* Issue 3: Art. No.: CD002771. (DOI: 10.1002/14651858.CD002771.pub2)
- Kasasira R. (2007). Government tells mothers to use charcoal stoves as incubators. *Daily Monitor*, 7 August 2007.
- Kinney MV, Lawn JL, Kerber K (eds). (2009). Science in action: Saving the lives of Africa's mothers, newborns and children. Report for the African Academy Science Development Initiative. Cape Town, South Africa.
- Kaggwa, D. (2005). Initiation and immediate outcome of kangaroo care for premature infants in Mulago Hospital. Unpublished Master of Medicine (Paediatrics and Child Health) dissertation, Makerere University, Uganda.
- Liu L, Johnson HL, Cousens S, Perin J, Scott S, Lawn JE, Rudan I, Campbell H, Cibulskis R, Li M, Mathers C, Black RE, for the Child Health Epidemiology Reference Group of WHO and UNICEF. (2012). Global, regional, and national causes of child mortality: an updated systematic analysis for 2010 with time trends since 2000. *Lancet* 379: 2151–61. (DOI:10.1016/S0140-6736(12)60560-1)
- Lawn J, 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* 39: i144–i154. (doi:10.1093/ije/dyq031)
- Ludington-Hoe SM, Morgan K, Abouelfettoh A. (2008). A clinical guideline for implementation of kangaroo care with premature infants of 30 or more weeks' postmenstrual age. *Advances in Neonatal Care* 8(3 Suppl): S3-S23.
- March of Dimes, PMNCH, Save the Children, WHO. (2012). Born Too Soon: The Global Action Report on Preterm Birth. Eds CP Howson, MV Kinney, JE Lawn. Geneva: World Health Organization.
- Mbonye AK, Sentongo M, Mukasa GK, Byaruhanga R, Sentumbwe-Mugisa O, Waiswa P, Sengendo HN, Aliganyira P, Nakakeeto M, Lawn JE, Kerber K, for the Uganda Decade of Change and Future Implications Analysis Group. (2012). Newborn survival in Uganda: a decade of change and future implications. *Health Policy and Planning* 27:iii104–iii117. (doi:10.1093/heapol/czs045)
- MoH (Ministry of Health), Uganda. (2007). Road Map for the Accelerated Reduction of Maternal and Neonatal Mortality and Morbidity, 2007-2015.

- MoH (Ministry of Health), Uganda. (2008). Situation analysis of newborn health in Uganda – Current status and opportunities to improve care and survival. Kampala, Uganda: Government of Uganda, Save the Children, UNICEF, WHO.
- MoH (Ministry of Health), Uganda. (2010a). Newborn Health Implementation Framework – Standards for Newborn Health Care Services, April 2010. Kampala, Uganda: Ministry of Health and Save the Children.
- MoH (Ministry of Health), Uganda. (2010b). Health Sector Strategic and Investment Plan of the period 2010/11 – 2014/15, July 2010.
- MoH (Ministry of Health), Uganda. (2010c). The Second National Health Policy – Promoting people’s health to promote socio-economic development, July 2010.
- MoH (Ministry of Health), Uganda (2010d). Village Health Team – Strategy and Operational Guidelines. Kampala, Uganda: Ministry of Health, Health Education and Promotion Division. (URL: <http://www.malariaconsortium.org/inscale/downloads/uganda/VHT-strategy-and-operational-guidelines.pdf>, accessed 31 October 2012)
- MoH (Ministry of Health), Uganda (2010e). Newborn Component of the Child Survival Strategy in Uganda: Implementation framework. Kampala, Uganda: Ministry of Health and Save the Children.
- Nyqvist KH, Anderson CG, Bergman N, Cattaneo A, Charpak N, Davanzo R, Ewald U, Ibe O, Ludington-Hoe S, Mendoza S, Pallás-Allonso C, Ruiz Peláez JG, Sizun J, Widström A-M. (2010a). Towards universal Kangaroo Mother Care: recommendations and report from the First European conference and Seventh International Workshop on Kangaroo Mother Care. *Acta Paediatrica* 99: 820-826.
- Nyqvist KH, Anderson CG, Bergman N, Cattaneo A, Charpak N, Davanzo R, Ewald U, Ibe O, Ludington-Hoe S, Mendoza S, Pallás-Allonso C, Ruiz Peláez JG, Sizun J, Widström A-M. (2012b). State of the art and recommendations: Kangaroo mother care: application in a high-tech environment. *Acta Paediatrica* 99: 812-819.
- Pattinson RC, Arsalo I, Bergh A-M, Malan AF, Patrick M, Philips N. (2005). Implementation of kangaroo mother care: A randomised trial of two outreach strategies. *Acta Paediatrica* 94(7): 924-927.
- Reuters. (2007). Stoves can be makeshift incubators, Uganda says. 07 August 2007. (URL: <http://in.reuters.com/article/2007/08/07/idINIndia-28864220070807>, accessed 3 July 2012)
- Ruiz JG, Charpak N *et al.* (2007). *Evidence-based clinical practice guidelines for an optimal use of the kangaroo mother method in preterm and/ or low birthweight infants at birth*. Bogotá: Fundación Canguro and Department of Clinical Epidemiology and Biostatistics, School of Medicine, Pontificia Universidad Javeriana.
- Save the Children. (2007). Using Kangaroo method to save under-weight newborns. *The New Vision*, August 29 (Supplement): 31.
- Save the Children, Saving Newborn Lives Program. (2011). Scaling up kangaroo mother care – Report of country survey findings.
- Uganda Bureau of Statistics, ICF International. (2012). Uganda Demographic and Health Survey 2011. Preliminary Report, March 2010. Kampala: Uganda Bureau of Statistics.
- UNEST (Uganda Newborn Study). (2011). The Uganda Newborn Study – Stories of change, September 2011.
- UNICEF. (2012). *The state of the world’s children 2012*. New York: UNICEF.

- USAID (2012). Improving maternal and newborn health in Uganda by combining training, quality improvement, and peer-to-peer learning, February 2012. (URL: http://www.hciproject.org/sites/default/files/Uganda_Maternal&newborn_QI_Feb2012.pdf, accessed 14 March 2012)
- Victora CG, Rubens CE and the GAPPS Review Group. (2010). Global report on preterm birth and stillbirth (4 of 7): delivery of interventions. *BMC Pregnancy Childbirth* 10 (Suppl 1): S4. (URL: <http://www.biomedcentral.com/1471-2393/10/S1/S4>, accessed 1 May 2010).
- WHO (World Health Organization), UNICEF. (2012). Countdown to 2015. Building a Future for Women and Children. The 2012 Report. Geneva: WHO.
- Wikipedia. (2012). Uganda. <http://en.wikipedia.org/wiki/Uganda> (retrieved 26 June 2012).