The Role of Kangaroo Mother Care (KMC) in Promoting Breastfeeding in Preterm Infants

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This Session

Objective: Be able to define Kangaroo Mother Care, its benefits, and describe how it can increase breastfeeding for preterm infants

Outline:

- Definition of KMC
- Latest Evidence for KMC
- WHO KMC guidelines and International Support for KMC
- KMC and breastfeeding
- KMC Programs

Kangaroo Mother Care for Preterm Infants

What is it?

- Early, continuous, and prolonged skin-to-skin contact between mother and baby*
- Exclusive breastfeeding or feeding with breast milk*
- Early discharge with close outpt follow-up and support for the family

*as listed in WHO Recommendations on Interventions to Improve Preterm Birth Outcomes, 2015. Accessed on 5/8/2017: http://apps.who.int/iris/bitstream/10665/183037/1/9789241508988_eng.pdf

Kangaroo Mother Care for Preterm Infants

What are the benefits?

- Decreased mortality (~36%)
- Decreased sepsis
- Increased BF (ALL settings)

- Decreased hypothermia, hypoglycemia
- Improved pain measures
- Decreased hospital re-admissions
- RR and O2 sat stability
- Also: bonding, neurodevelopment

Source: Boundy et al. *Peditrics*, 2015

Summary: 2016 KMC meta-analysis

Boundy et. al. meta-analysis in *Pediatrics* (2016)

- 124 studies (7 LIC, 65 MIC, 48 HIC)
- Mortality sub-analysis (n=16): 36% lower risk of mortality for LBW infants receiving KMC as compared to conventional care
- Significant reductions in:
  - Neonatal sepsis
  - Hypothermia
  - Hypoglycemia
  - Hospital re-admission
- Significant gains in:
  - Exclusive breastfeeding*
  - Oxygen saturation
  - Temperature
  - HC

What the 2016 meta-analysis adds

All study types, not just RCTs

Larger coverage of neonatal outcomes: procedural pain, colic, heart rate, O2 sats

Reinforces findings from Cochrane review

Captures important outcomes that can be modified by KMC

Larger number of HIC included. Why this is important:

- Begins to make the case for universal importance of KMC across all income ranges (HIC, MIC, LIC)

Important gaps/limitations

- Sub-analyses had small sample size
- Many important outcomes of interest not able to be included: bonding, parental confidence, neurodevelopment

Conclusions on KMC

KMC is advantageous compared to incubator care in any setting. The margin of benefit for morbidity and mortality gains, however, varies by setting.

KMC is an effective and complementary aspect of developing more comprehensive neonatal care, including skilled nursing, higher staff:patient ratios, early detection and management of SBI, respiratory and feeding disorders.

Comprehensive neonatal care must be developed in parallel to KMC services—KMC is not a substitute for comprehensive neonatal care.

WHO Preterm Guidelines-KMC component

Recommendation	Strength of Recommendation and Quality of Evidence
7.0. Kangaroo mother care is recommended for the routine care of newborns weighing 2000 g or less at birth, and should be initiated in health-care facilities as soon as the newborns are clinically stable	Strong recommendation based on moderate-quality evidence
7.1. Newborns weighing 2000 g or less at birth should be provided as close to continuous Kangaroo mother care as possible.	Strong recommendation based on moderate-quality evidence
7.2. Intermittent Kangaroo mother care, rather than conventional care, is recommended for newborns weighing 2000 g or less at birth, if continuous Kangaroo mother care is not possible.	Strong recommendation based on moderate-quality evidence
7.3. Unstable newborns weighing 2000 g or less at birth, or stable newborns weighing less than 2000 g who cannot be given Kangaroo mother care, should be cared for in a thermoneutral environment either under radiant warmers or in incubators.	Strong recommendation based on very low-quality evidence

KMC International Joint Statement

Purpose: To address health care professional perceptions of KMC as sub-standard care or “poor man’s medicine” for preterm and LBW babies.

Endorsements from: AAP, IPA, ACOG, ACNM, FIGO, ICN, COINN. Provides summary of evidence available in LIC, MIC, and HIC

Endorses KMC as beneficial to preterm and LBW babies in ALL settings (LIC, MIC, HIC), but the margin of benefit for morbidity and mortality gains will vary by setting.

JOINT STATEMENT

International Policy Statement for Universal Use of Kangaroo Mother Care for Preterm and Low Birthweight Infants

Commitment to Action from Professional Health Associations

This International Joint Statement is endorsed by the American Academy of Pediatrics (AAP), Council of International Neonatal Nurses (COINN), the International Council of Nurses (ICN), American College of Obstetricians and Gynecologists (ACOG), the International Federation of Gynecology and Obstetrics (FIGO), American College of Nurse-Midwives (ACNM), and the International Confederation of Midwives (ICM).

Background

Complications of prematurity and low birthweight are now the leading cause of neonatal deaths worldwide.[1] In November 2015, The World Health Organization (WHO) issued recommendations for the care of preterm infants, including kangaroo mother care (KMC), defined as care of preterm infants carried skin-to-skin with the mother and exclusive breastfeeding or feeding with breastmilk. Although the WHO preterm guidelines apply to all settings, much of the evidence base for the recommendations comes from studies in health care facilities in low- and middle-income countries (LMIC).[2]

It should be noted, however, that some evidence also exists for the benefits of KMC in preterm and low birthweight infants in high-income countries (HIC). ***Upon review of the evidence, we agree that KMC provides benefits to preterm and low birthweight infants in high, middle, and low income settings.***

The Evidence

Mortality analyses from a 2014 Cochrane review (11 randomized controlled trials, or RCTs) and a 2016 meta-analysis by Boundy (16 studies) found a 33 percent and 23 percent reduction in mortality at latest follow-up when comparing KMC to conventional neonatal care. In both mortality analyses, all but two of the studies included were in LMIC.[3,4]

WHO Recommendations on Kangaroo Mother Care, 2015

- Kangaroo mother care is recommended for the routine care of newborns weighing 2000 grams or less at birth, and should be initiated in health-care facilities as soon as the newborns are clinically stable.
- Newborns weighing 2000 grams or less at birth should be provided as close to continuous kangaroo mother care as possible.
- Intermittent kangaroo mother care, rather than conventional care, is recommended for newborns weighing 2000 grams or less at birth, if continuous kangaroo mother care is not possible.

For outcomes other than mortality, the Cochrane review found overall significant reductions in hypothermia, nosocomial infection, sepsis, and length of hospital stay, as well as increases in breastfeeding, attachment, and measures of infant growth, including gain in weight, length, and head circumference. Analyses for non-mortality outcomes largely consisted of RCTs from LMIC.

KMC and Breastfeeding

KMC:

- Facilitates/helps initiate breast crawl
- Gives baby more familiarity with breast: visual, tactile, olfactory
- Provides baby easier access to breast
- Enhances mother's awareness to hunger cues
- Stimulates breast milk production via STS contact
- Clinically stable and calm infants able to feed better
- Facilitates bonding and attachment
- Maintains contact between mother and preterm baby that may not yet be able to feed at breast
- "Transfer" of care from medical professional to mother
- Increases mother's practice and confidence with breastfeeding

KMC Acceleration

Goals:

- Accelerate uptake of facility-initiated KMC among preterm and LBW babies
- 50% coverage of KMC among eligible newborns by 2020

Comment
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Consensus on kangaroo mother care acceleration

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On Oct 21–22, 2013, stakeholders in newborn health convened in Istanbul, Turkey, to discuss how to accelerate the implementation of kangaroo mother care (KMC) globally. Focused attention on newborn deaths, which now account for 44% of under-5 mortality,[1] is required to accelerate progress toward Millennium Development Goal 4 (to reduce child mortality by two-thirds) and beyond. KMC has been proven to reduce newborn mortality, but only a very small proportion of newborns who could benefit from KMC receive it. The Istanbul convening was assembled to accelerate the uptake of this life-saving intervention.

We affirm accelerating adoption of KMC, recognising that:

- Prematurity is a major cause of newborn death and disability globally. Each year, preterm complications account for over 1 million deaths, or 35% of all neonatal mortality.[1]
- We have an evidence-based solution for reducing preterm mortality and morbidity: KMC, which can avert up to 450 000 preterm deaths each year by 2015 if near-universal coverage is achieved.
- Investment in KMC has beneficial effects beyond survival, including healthy growth and development. KMC comprises a set of care practices for low birthweight newborns—including continuous skin-to-skin contact, establishing breastfeeding, supportive care for the mother and baby, and close follow-up after discharge from a health facility—and has been proven to reduce mortality significantly in preterm newborns. Additionally, skin-to-skin contact and exclusive breastfeeding are beneficial for all newborns and mothers, and can further accelerate reduction of newborn deaths.

Global implementation of quality KMC for preterm newborns has not kept pace with the robust, long-standing evidence for the following reasons:

- KMC is incorrectly perceived as a practice for preterm newborns in low-income countries only, as a "next-best" alternative to incubator care.
- Many health-care providers (at all levels) do not know or do not believe in the benefits of KMC, and lack the skills for effective implementation.
- Cultural and social norms related to mother and newborn practices make uptake of KMC challenging.
- Human resources for health required for KMC have been lacking, and the role of mothers and communities has been overlooked.
- KMC has not been included in many country-level government newborn agendas and policies.

We reached consensus, based on the available evidence, that KMC should be adopted and accelerated as standard of care as an essential intervention for preterm newborns. We defined success as augmented and sustained global and national level action to achieve 50% coverage of KMC among preterm newborns by the year 2020 as part of an integrated RMNCH package, and propose the following call for action to achieve this goal:

I. Revise WHO KMC guidelines and country-level government health agendas and policies to define KMC as standard of care for all preterm newborns.
II. Incorporate high-quality KMC in national RMNCH and nutrition policies, plans, and programmes.
III. Engage health professional associations in high-income countries to adopt KMC as standard of care, to mitigate beliefs that KMC is only for low-income countries.
IV. Address local and context-specific cultural barriers in the design of KMC guidelines, protocols, and education.
V. Rally communities and families to support mothers in the practice of KMC and address misconceptions and stigma associated with preterm birth, early bonding, skin-to-skin practices, and breastfeeding.
VI. Improve practitioner uptake of KMC by working with professional associations, ministries of health, and traditional leaders, who can work with local providers to overcome barriers related to workforce, skills, and cultural norms.
VII. Develop a unified advocacy narrative that culturally and medically normalises KMC, with messages that can be adapted in different contexts.
VIII. Measure our progress against our definition of success, using robust metrics and indicators.
IX. Conduct research, to better understand optimal timing, duration, and conditions for KMC, its impact

Save the Children: KMC in Bangladesh

Save the Children: KMC in Malawi

Quality improvement in the facility, community campaign, and improving measurement

KMC monthly summary report
Month:________________ Year:___________
Health Facility name:_____________________

No.	KMC eligibility data (tallied from Maternity register and already in DHIS2)*	Data Source	Number
A	Number of LBW babies	Maternity register (newborn column)	
B	Number of pre-term babies	Maternity register (newborn complications)	
C	Total number of LBW and pre-term babies (A + B)	A plus B	
No.	**KMC service data (tallied from KMC register)**	**Data Source**	**Number**
1. FACILITIES WITH INPATIENT KMC			
1	Number of babies initiated on facility-based KMC	KMC register Column 2	
2	Number of babies initiated on facility-based KMC who were referred in	KMC register Column 4	
3	Number of babies discharged alive from facility-based KMC	KMC register Column 19	
4	Number of babies who died before discharge from facility-based KMC	KMC register Column 20	
5	Number of babies who left against medical advice (absconded) from facility-based KMC	KMC register Column 22	
6	Number of LBW babies initiated on ambulatory KMC	KMC register Column 3	
2. FACILITIES WITHOUT INPATIENT KMC			
7	Number of babies initiated on KMC and referred	KMC register Column 7	
8	Number of babies initiated on ambulatory KMC	KMC register Column 8	

Proposed indicators (based on this report)

#	Indicator	Calculation	Value
1	**KMC initiation rate**: # of babies initiated on KMC (inpatient or ambulatory) per i) 100 live births at health facility and ii) 100 LBW/premature babies identified at health facility	(#1+#5+#7)/ i) # live births from HMIS-15 & ii) C	
2	**KMC referral completion**: proportion of babies who were initiated on KMC and referred who completed referral and initiated on facility-based KMC	#2/#6	
3	**Survival to discharge**: Proportion of babies initiated on facility-based KMC who are discharged alive	#2/#1	
4	**Death before discharge**: Proportion of babies initiated on facility-based KMC who die before discharge	#3/#1	
5	**Left against medical advice**: Proportion of babies initiated on facility-based KMC who left against medical advice (absconded)	#4/ #1	