20 years later: global progress of KMC

KMC 20 years later, and beyond

Trieste, 16 November 2016

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Organize

Talk

Work

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Acta Pædiatr 87: 440–5. 1998

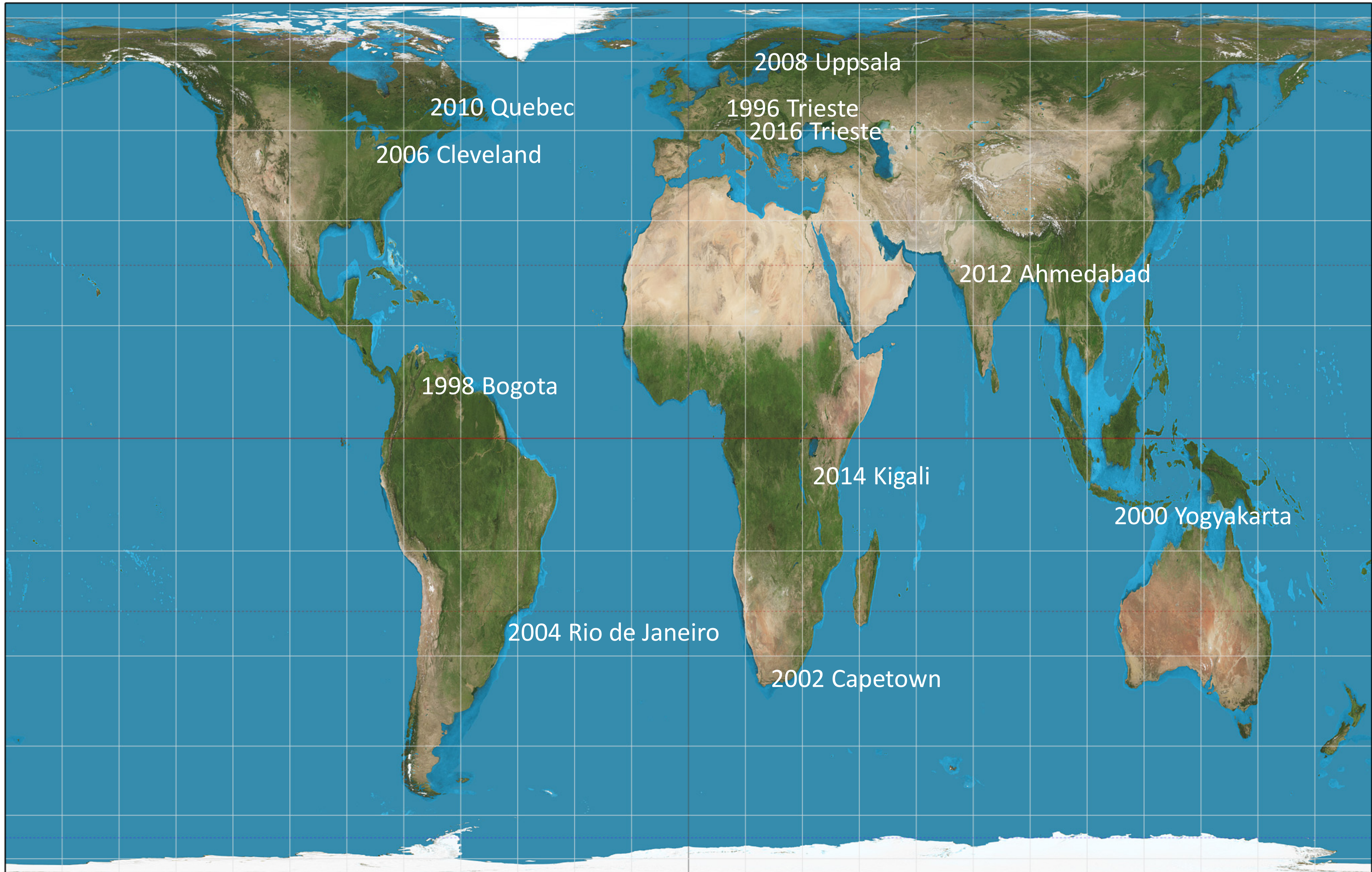
Recommendations for the implementation of Kangaroo Mother Care for low birthweight infants

A Cattaneo, R Davanzo, F Uxa and G Tamburlini for the International Network on Kangaroo Mother Care

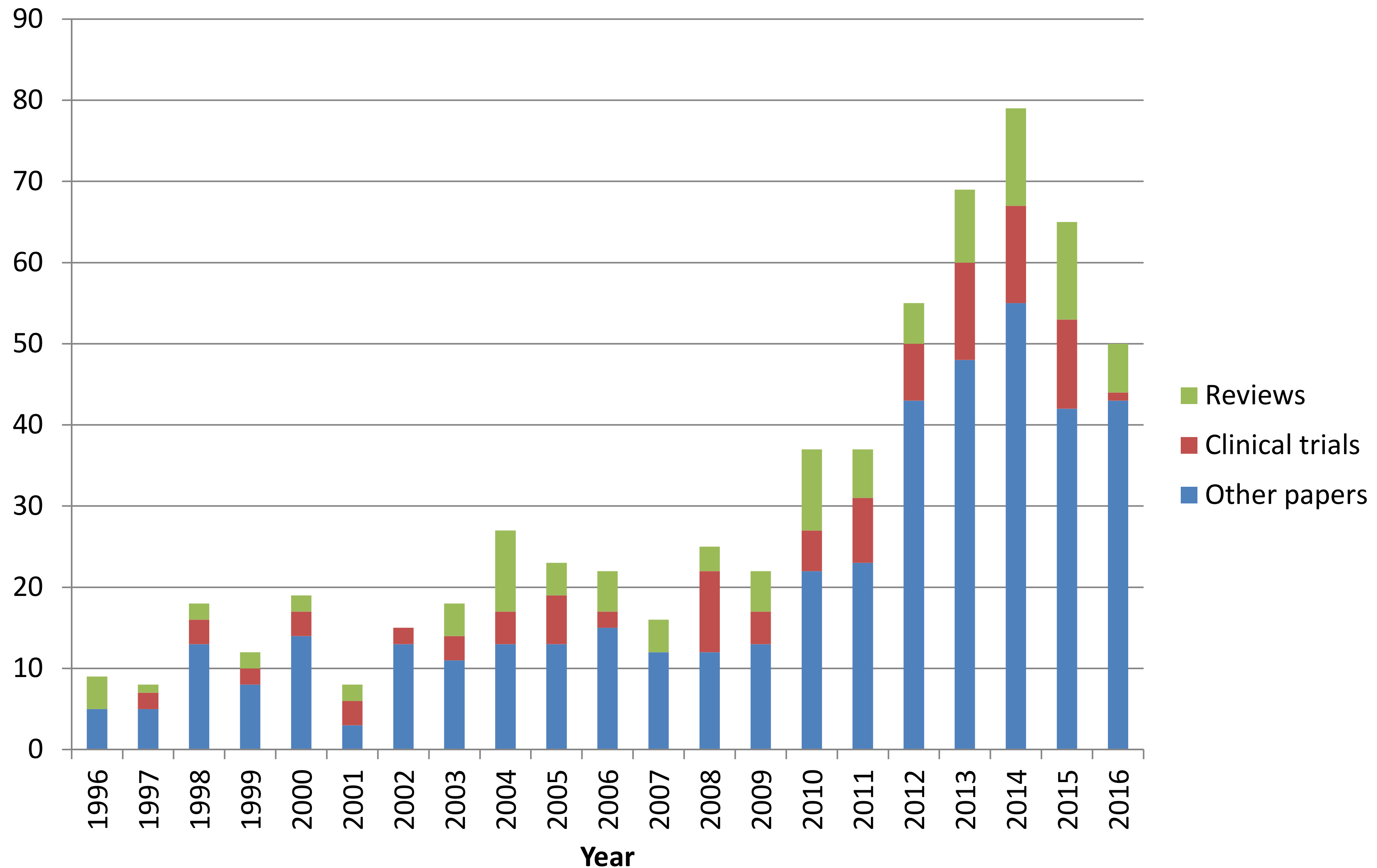
List of participants at Workshop on Kangaroo Mother Care for Low Birthweight Infants, Trieste, Italy, 24–26 October 1996

GC Anderson (Cleveland, OH, USA), N Bergman (Cape Town, South Africa), H M Bosse (Heidelberg, Germany), A Cattaneo (Trieste, Italy), N Charpak (Bogotà, Colombia), K Christensson (Stockholm, Sweden), B Dalla Barba (Padova, Italy), R Davanzo (Trieste, Italy), Z Figueroa de Calume (Bogotà, Colombia), M Echeverria Eguiluz (Merida, Mexico), C Fischer (Heidelberg, Germany), O Girard (Meaux, France), A Gomez Papi (Tarragona, Spain), LW Leon Camacho (Quito, Ecuador), G Lima (Recife, Brazil), O Lincetto (Venezia, Italy), S M Ludington (Baltimore, MD, USA), F Montilla Perez (Barcelona, Spain), A Nieto Jurado (Tarragona, Spain), B Persson (Helsingborg, Sweden), S Quintero Romero (Trieste, Italy), M Ferreira Rea (Sao Paulo, Brazil), C Richelli (Verona, Italy), JG Ruiz (Bogotà, Colombia), DK Setyowireni (Yogyakarta, Indonesia), MV Sola (Pordenone, Italy), D Sontheimer (Heidelberg, Germany), M Sperandio (Heidelberg, Germany), A Surjono (Yogyakarta, Indonesia), J Swinth (Richland, WA, USA), B Syfrett (Toledo, OH, USA), G Tamburlini (Trieste, Italy), F Uxa (Trieste, Italy), SN Vani (Ahmedabad, India), B Worku (Addis Ababa, Ethiopia) and J Zupan (WHO, Geneva, Switzerland).

The workshop participants agreed that the attention of national and international health authorities should be drawn to these potential benefits of KMC. For this purpose, they decided to establish a network—the International Network on KMC (INK)—with the purpose of promoting the use of KMC in developed and developing countries, and in the wider context of an evidence-based and humanistic approach to childbirth and newborn care. The objectives of the INK include the dissemination of knowledge, the advocacy for and support to implementation programmes, and the exchange of information among researchers. The INK will also provide technical expertise and training materials to institutions, professional associations, non-government organizations, national and international agencies, and lay associations. The institutions and individuals attending the workshop will form the initial core of the network, but new partners will be welcome.


2008 Uppsala
2010 Quebec
1996 Trieste
2016 Trieste
2006 Cleveland
2012 Ahmedabad
1998 Bogota
2014 Kigali
2000 Yogyakarta
2004 Rio de Janeiro
2002 Capetown

Number of papers on kangaroo care, Medline, 1996 to present



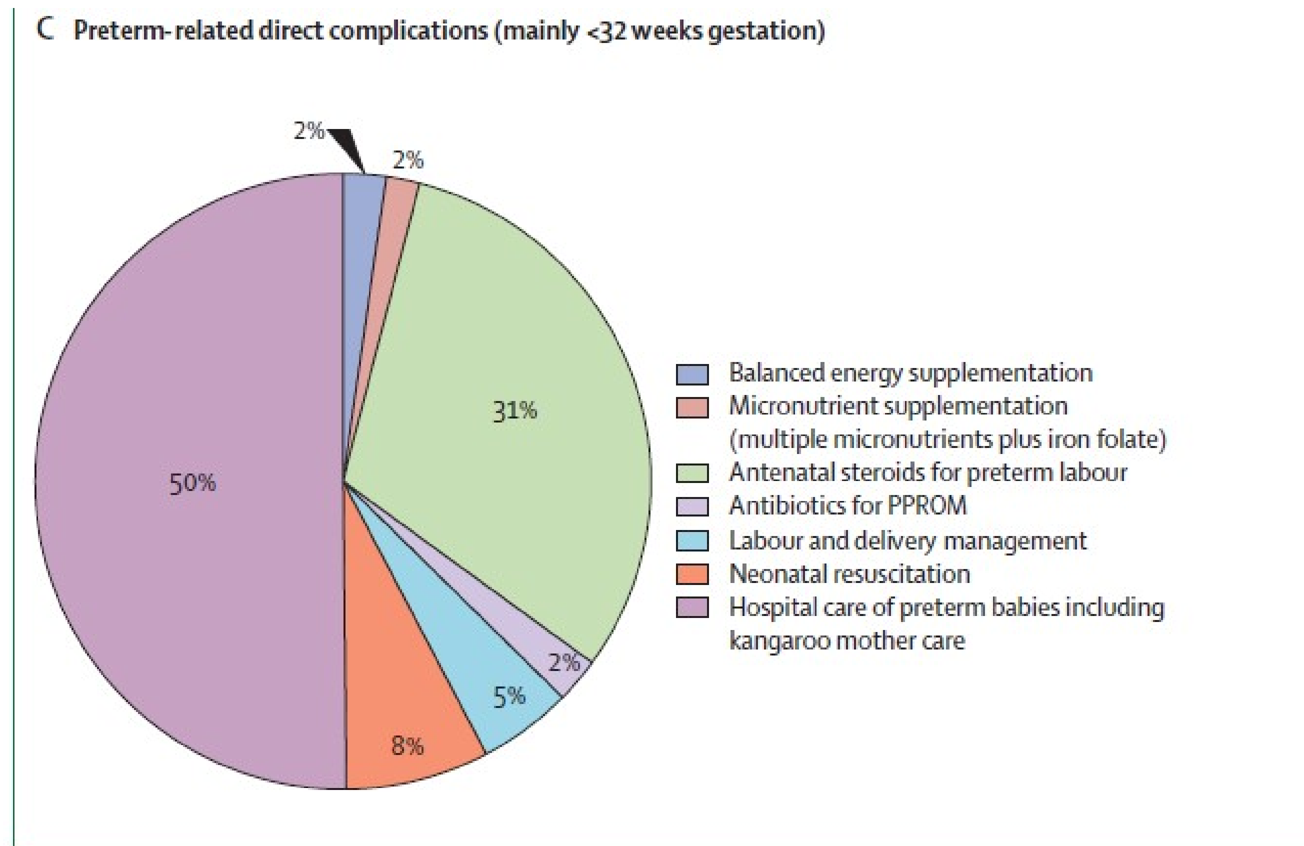
Conde-Agudelo A, Diaz-Rossello J, Belizán JM. Kangaroo mother care to reduce morbidity and mortality in low birthweight infants. *Cochrane Database of Systematic Reviews* **2003**, Issue 2

- 3 RCTs, 1362 infants
- Although KMC appears to reduce severe infant morbidity without any serious deleterious effect reported, there is still insufficient evidence to recommend its routine use in LBW infants.
- Well designed randomized controlled trials of this intervention are needed.

Conde-Agudelo A, Belizán JM, Diaz-Rossello J. Kangaroo mother care to reduce morbidity and mortality in low birthweight infants. *Cochrane Database of Systematic Reviews* **2011**, Issue 3

- 16 RCTs, 2518 infants
- At discharge or 40 - 41 weeks' postmenstrual age:
  - 40% lower mortality (95% CI: 7-61%)
  - 58% less nosocomial infection/sepsis (95%CI: 27-76%)
  - 77& less hypothermia (95% CI: 45-90%)
  - 2.4-day shorter length of hospital stay (95% CI: 0.7 to 4.1)
- At latest follow up:
  - 32% lower mortality (95% CI: 4-52%)
  - 43% less infection/sepsis (95% CI: 20-60%)
- Moreover, KMC was found to increase some measures of infant growth, breastfeeding, and mother-infant attachment

Bhutta ZA et al. Every newborn 3: Can available interventions end preventable deaths in mothers, newborn babies, and stillbirths, and at what cost? Lancet 2014;384:347-70



- Benefits of KMC (see Cochrane review)
- High-income countries are taking up KMC because of its long-term developmental benefits.

Lassi ZS, Middleton PF, Crowther V, Bhutta ZA. Interventions to Improve Neonatal Health and Later Survival: An Overview of Systematic Reviews. EBioMedicine 2015;2:985-1000

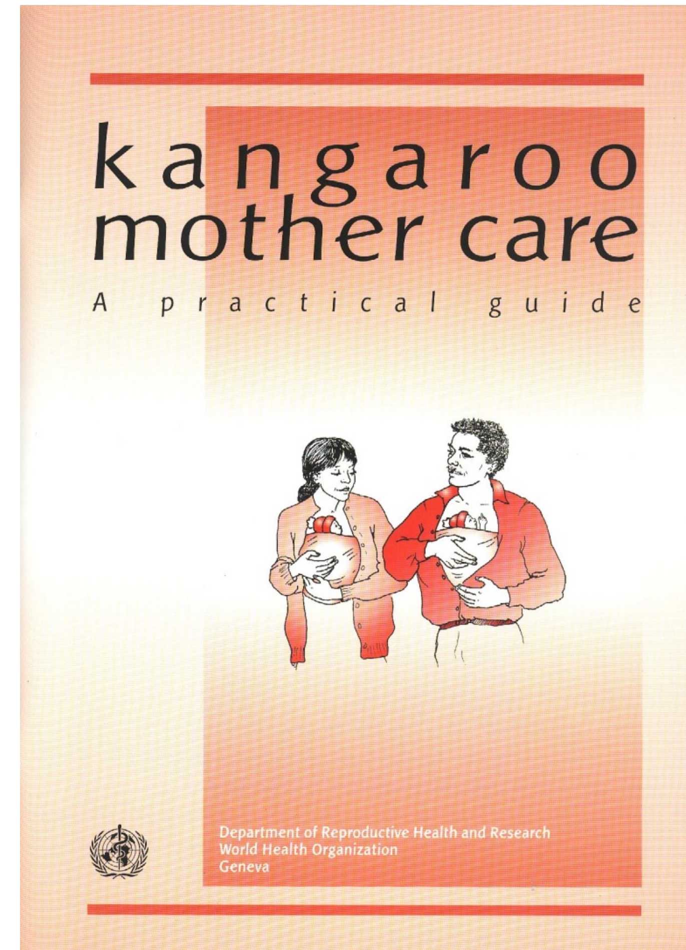
- Using the GRADE approach, we identified six interventions to be clearly effective in reducing neonatal, infant or child mortality:
  - corticosteroids for preventing neonatal respiratory distress syndrome in preterm infants;
  - early initiation of breastfeeding;
  - hygienic cord care;
  - **kangaroo care for preterm infants;**
  - provision and promotion of use of insecticide treated bed nets (ITNs) for children;
  - vitamin A supplementation for infants from six months of age

Boundy EO et al. Kangaroo Mother Care and Neonatal Outcomes: A Meta-analysis. Pediatrics 2016;137: e2 0152238

- 124 studies (63 RCTs)
- KMC compared to conventional care was associated with:
  - 36% lower mortality (95% CI: 11-54%)
  - 47% decreased risk of neonatal sepsis (95% CI: 17-66%)
  - 78% less hypothermia (95% CI: 59-88%)
  - 88% less hypoglycemia (95% CI: 68-95%)
  - 58% less hospital readmission (95% CI: 24-77%)
  - 50% more exclusive breastfeeding (95% CI: 26-78%)
- Newborns receiving KMC had lower mean respiratory rate and pain measures, and higher oxygen saturation, temperature, and head circumference growth.

World Health Organization

- KMC: a practical guide (2003)
  - One of the most translated KMC guides
  - Never updated, despite INK's periodic urge
- WHO recommendations on interventions to improve preterm birth outcomes: evidence base. 2015
  - Based on the 2011 Cochrane review
- WHO recommendations on interventions to improve preterm birth outcomes. 2015



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

RECOMMENDATION 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)*

RECOMMENDATION 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)*

4.2 Newborn research priorities

Kangaroo mother care (KMC)

- What is the optimal frequency of follow-up for mothers providing KMC after discharge from the health-care facility?
- What is the minimum threshold of KMC exposure needed to achieve an impact on neonatal mortality and other important outcomes?
- Can KMC be effectively initiated in the community setting in LMICs?

WHO, UNFPA, UNICEF, World Bank. Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice. Revised 2015

IF PRETERM, BIRTH WEIGHT <2500-G OR TWIN

ASK, CHECK RECORD	LOOK, LISTEN, FEEL
■ Baby just born. ■ Birth weight → <1500 g → 1500 g to <2500 g. ■ Preterm → <32 weeks → 33-36 weeks. ■ Twin.	■ If this is repeated visit, assess weight gain

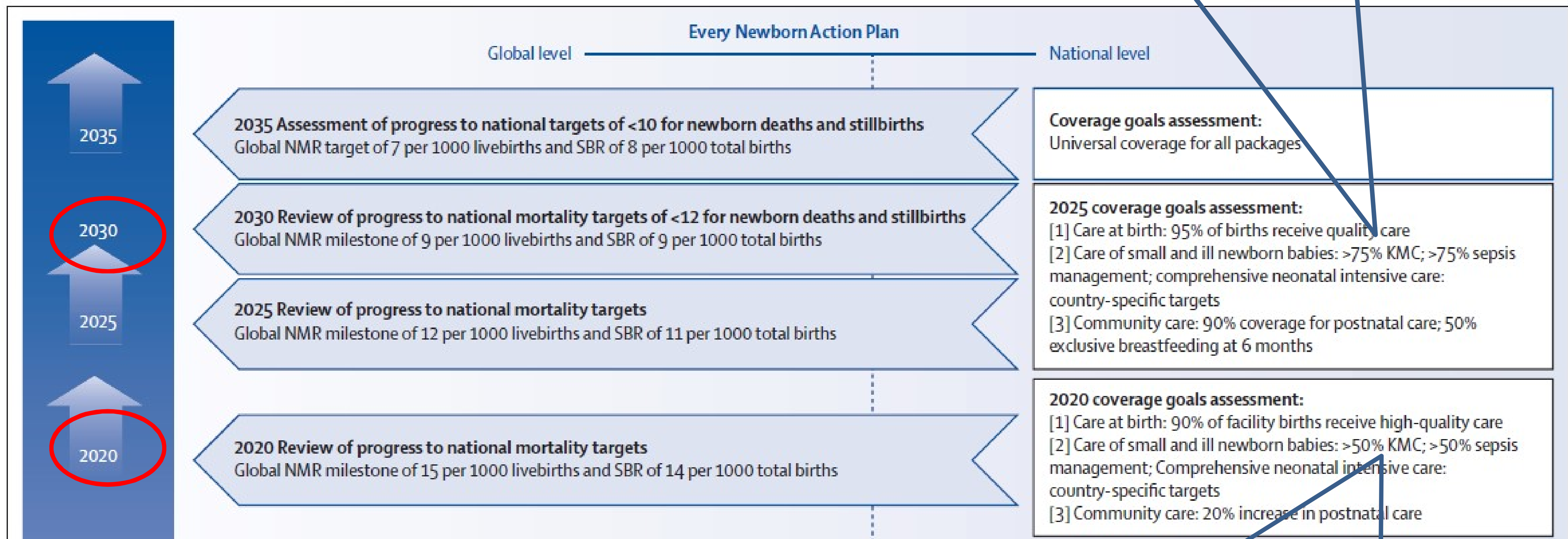
SIGNS	CLASSIFY	TREAT AND ADVISE
■ Birth weight <1500 g. ■ Very preterm <32 weeks or >2 months early).	VERY SMALL BABY	■ **Refer baby urgently to hospital** K14. ■ Ensure extra warmth during referral.
■ Birth weight 1500 g-<2500 g. ■ Preterm baby (32-36 weeks or 1-2 months early). ■ Several days old and weight gain inadequate. ■ Feeding difficulty.	SMALL BABY	■ Provide as close to continuous Kangaroo mother care as possible. ■ Give special support to breastfeed the small baby K4. ■ Ensure additional care for a small baby J11. ■ Reassess daily J11. ■ Do not discharge before feeding well, gaining weight and body temperature stable. ■ If feeding difficulties persist for 3 days and otherwise well, refer for breastfeeding counselling.
■ Twin	TWIN	■ Give special support to the mother to breastfeed twins K4. ■ Do not discharge until both twins can go home.

Provide as close to continuous kangaroo mother care as possible

Next: Assess breastfeeding

Mason E et al. Every newborn 5: From evidence to action to deliver a healthy start for the next generation. Lancet 2014;384:455-67

More than 75% KMC coverage by 2030



More than 50% KMC coverage by 2020

The KMC Acceleration Partnership (KAP)

- Established in 2013
- Coalition of:
  - International organizations, professional associations, medical schools, ministries of health, development agencies
- Products:
  - Policy/clinical guidelines/standards, core set of indicators, technical assistance, sharing of experience, operational research
- Focus on 7 countries: Bangladesh, Ethiopia, India, Indonesia, Malawi, Nigeria and Rwanda

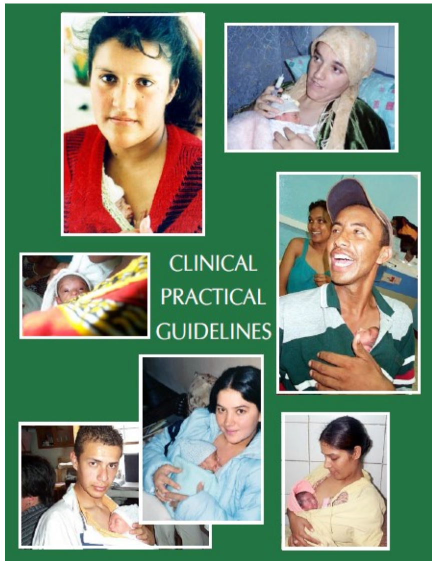
USAID/MCHIP. Kangaroo Mother Care Implementation Guide. Save the Children, The White Ribbon Alliance, 2012

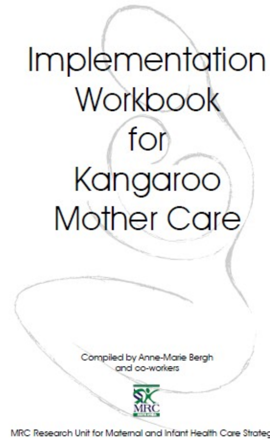
- To improve survival, limited KMC should be scaled up and made accessible to the majority of LBWIs.
- Scale-up means expanding KMC from a handful of facilities to most, if not all, hospitals and health centers where deliveries take place.
- The Guide provides pertinent guidelines for policymakers and managers of national maternal and newborn health programs.
- Chapters detail key steps in the development, implementation and expansion of sustainable, facility-based KMC.

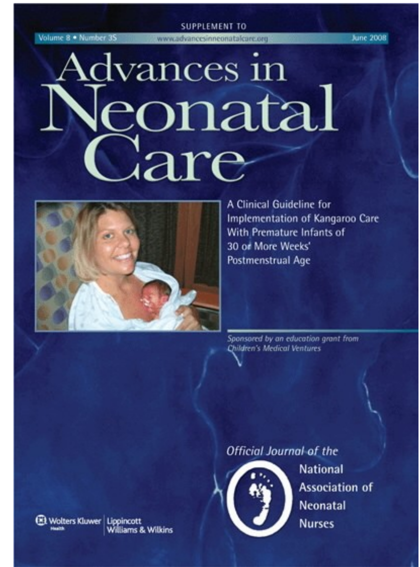
Kangaroo Mother Care
Implementation Guide

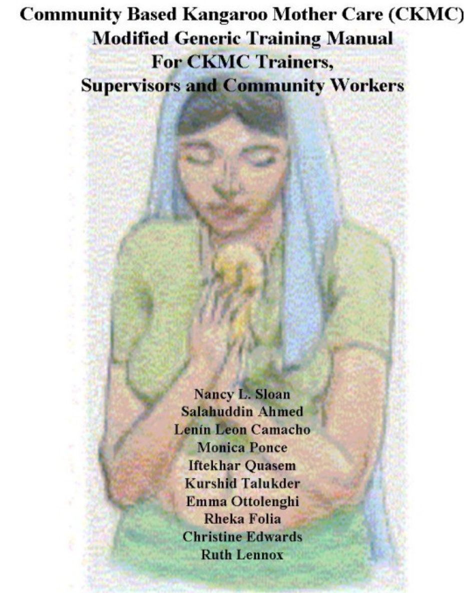
Bill and Melinda Gates Foundation

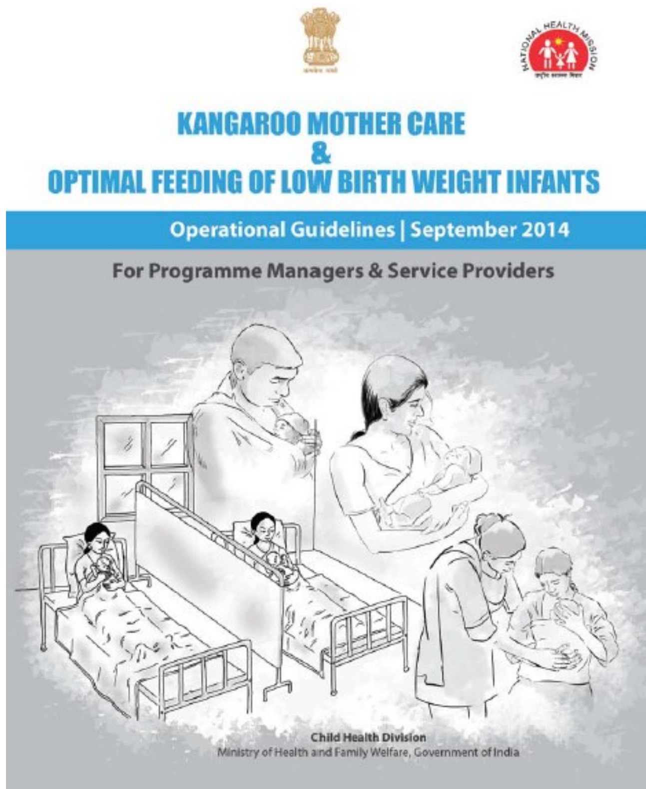
- Most maternal and newborn deaths can be prevented using existing, proven, cost-effective interventions: … and kangaroo mother care
- The BMGF's MNCH program works to expand coverage of high-impact interventions to ensure that women and newborns survive and stay healthy during childbirth and **beyond**


CLINICAL
PRACTICAL
GUIDELINES


Implementation
Workbook
for
Kangaroo
Mother Care
Compiled by Anne-Marie Bergh
and co-workers
MRC Research Unit for Maternal and Infant Health Care Strategies


SUPPLEMENT TO
Advances in
Neonatal
Care
A Clinical Guideline for
Implementation of Kangaroo Care
With Premature Infants of
30 or More Weeks'
Postmenstrual Age
Official Journal of the
National
Association of
Neonatal
Nurses


Community Based Kangaroo Mother Care (CKMC)
Modified Generic Training Manual
For CKMC Trainers,
Supervisors and Community Workers
Nancy L. Sloan
Salahuddin Ahmed
Lenin Leon Camacho
Monica Ponce
Iftekhar Quasem
Kurshid Talukder
Emma Ottolenghi
Rheka Folia
Christine Edwards
Ruth Lennox


KANGAROO MOTHER CARE
&
OPTIMAL FEEDING OF LOW BIRTH WEIGHT INFANTS
Operational Guidelines | September 2014
For Programme Managers & Service Providers
Child Health Division
Ministry of Health and Family Welfare, Government of India

Manual para padres
Contacto Canguro
FUNDACIÓN
VALLE DEL LILI
Contacto
Canguro

Atenção humanizada ao
recém-nascido de baixo peso
MÉTODO MÃE CANGURU

Darmstadt GL et al. Every newborn 1: who has been caring for the baby? Lancet 2014;384:174-88

16 interventions included in *The Lancet* Neonatal Survival Series (2005) (unshaded rows)	Changes in the approach	Is the indicator agreed and tracked?	Coverage for 75 Countdown countries, median (IQR; number of surveys)	
			2000	Most recent since 2010
Kangaroo mother care (low birthweight babies in health facilities)	More convincing mortality RCT evidence for facility KMC and wide-scale experience of scale-up	Yes; possible to track in surveys, HMIS but not yet done	No coverage data	No coverage data

More convincing mortality RCT evidence for facility KMC and wide-scale experience of scale up

No coverage data

Dikson KE et al. Every newborn 4: Health-systems bottlenecks and strategies to accelerate scale-up in countries. Lancet 2014;384:438-54

- Analysis of KMC in 8 countries: Afghanistan, Bangladesh, Democratic Republic Congo, India, Kenya, Nigeria, Pakistan, Uganda
  - no investment plan for scale-up (AFG, BGD, COD, KEN, PAK, NGA, UGA)
  - no funds allocated for implementation, high dependency on external funding (AFG, BGD, COD, NGA, PAK)
  - no details regarding KMC in health provider job descriptions
  - shortage of health-care workers able to provide KMC (AFG, BGD, COD, KEN, NGA, PAK, UGA)
  - inadequate training on KMC and feeding of LBWIs including nasogastric tube feeding, and support milk banking (AFG, BGD, KEN, NGA, PAK, UGA)
  - not institutional, project-based in some areas (BGD, KEN, NGA, PAK, UGA)
  - health facilities do not have space for KMC and milk banks
  - lack of community postnatal follow-up (BGD, KEN, NGA, PAK, UGA)
  - limited number of private hospitals provide services (AFG, BGD, COD, NGA, PAK, UGA)

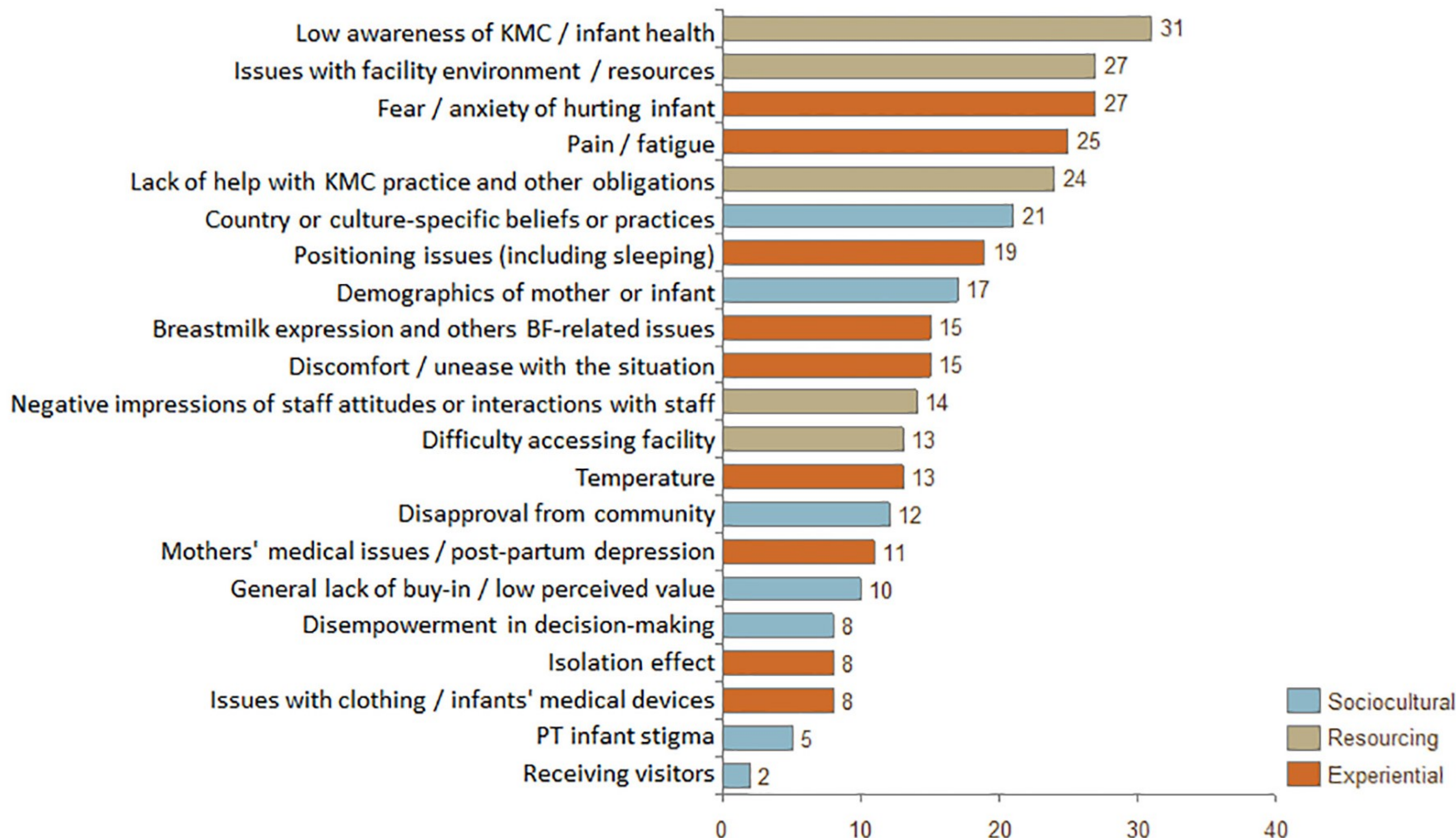
Vesel L et al. Kangaroo mother care: a multi-country analysis of health system bottlenecks and potential solutions. BMC Pregnancy and Childbirth 2015, 15(Suppl 2):S5

- Major bottlenecks (10/12 countries in Asia and sub-Saharan Africa):
  - Financing
  - Community ownership
  - Service delivery
- Pathways to scale:
  1. Champion-led
  2. Project-initiated
  3. Health systems designed
- The combination of all three pathways may lead to more rapid scale-up

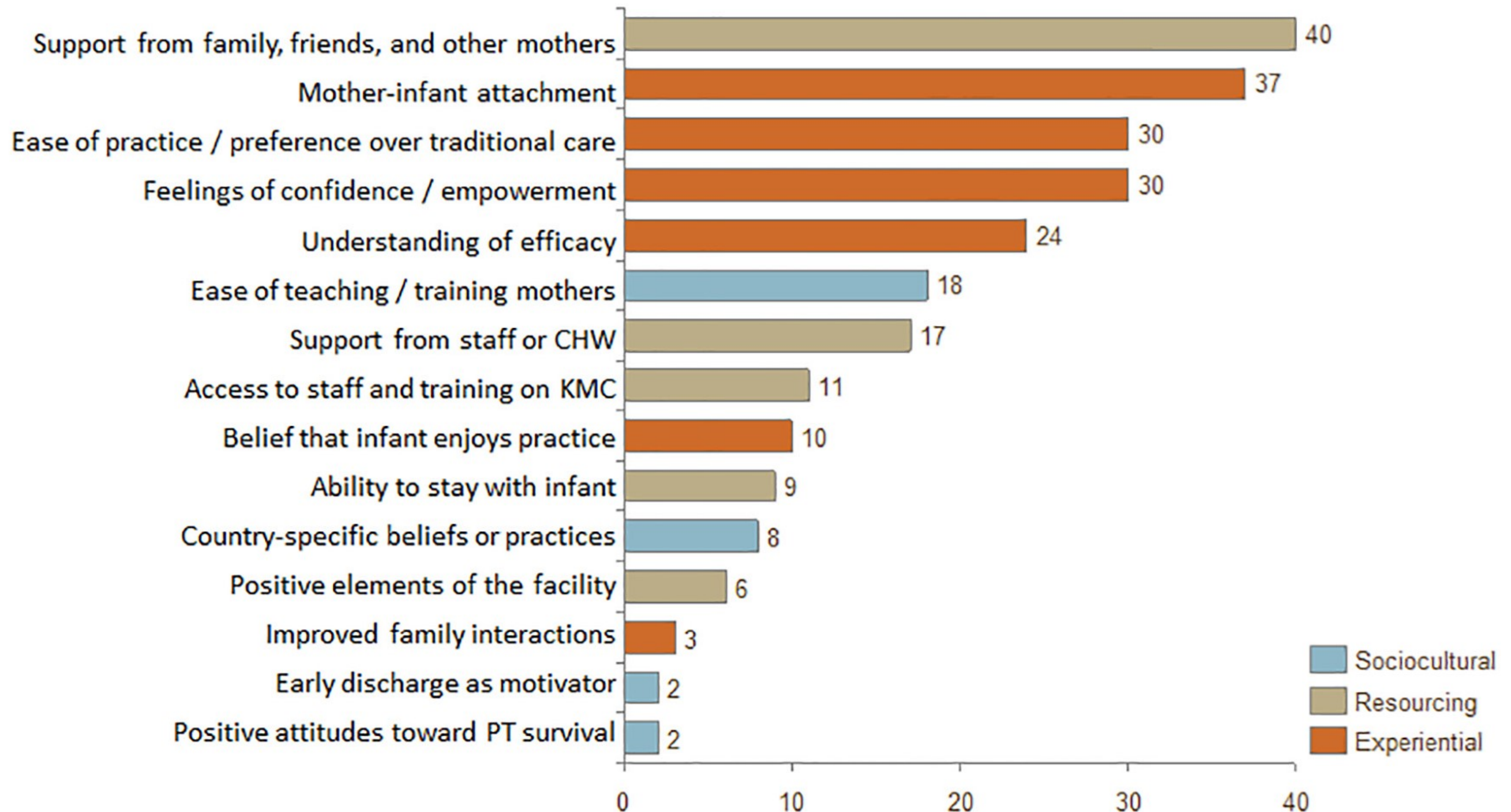
Seidman G et al. Barriers and Enablers of Kangaroo Mother Care Practice: A Systematic Review. PLoS ONE 2015;10(5):e0125643

- 103 studies (L/M/H income countries)
- Sociocultural, resourcing and experiential barriers for:
  - Mothers
  - Fathers
  - Nurses
  - Physicians
  - Programme managers
- Sociocultural, resourcing and experiential enablers for:
  - Mothers

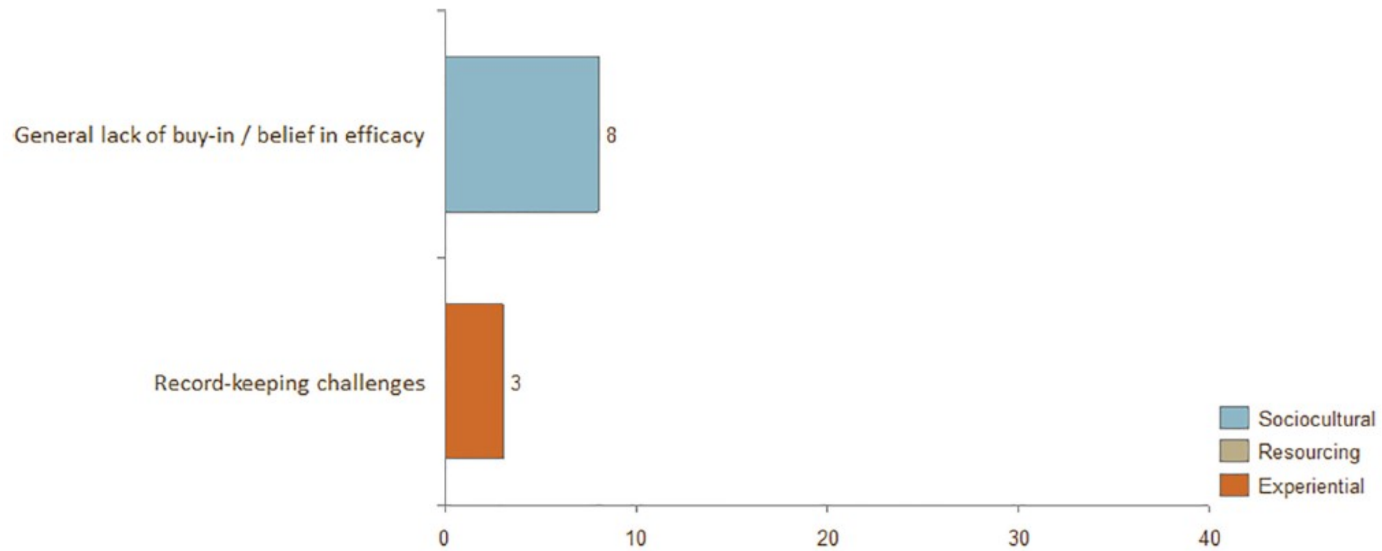
Barriers to adoption for mothers (LMIC only)



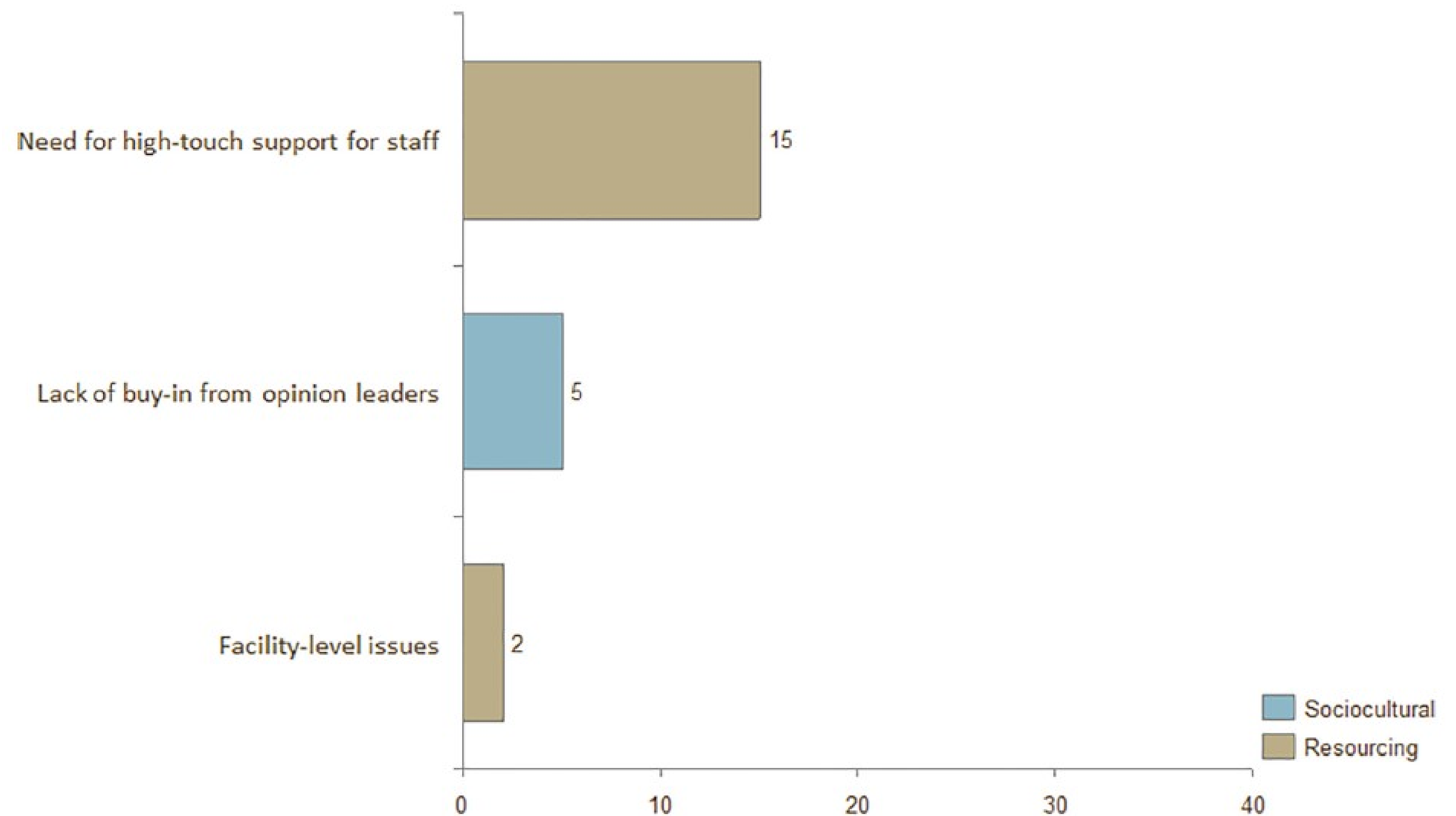
Enablers to adoption for mothers (LMIC only)



Barriers to adoption for physicians



Barriers to adoption for programme managers



Chan GJ et al. Kangaroo mother care: a systematic review of Barriers and Enablers. Bull WHO 2016;94:130–141

112 studies (L/M/H income countries), 6 themes:

1. Buy-in and bonding, eg:
   - B: forced KMC, poor knowledge, no leadership
   - E: natural, senior nurse supporting, champions
2. Social support, eg:
   - B: privacy, staff resistance
   - E: fathers, social promotion, good communication

4. Time, eg:
    - B: lonely mother, extra workload, staff shortages
    - E: parents perform other duties, unlimited visits
5. Medical concerns, eg:
    - B: maternal pain, medical disagreements
    - E: stable temperature, private space
6. Access, eg:
    - B: costs, distance, transport, lack of trained staff
    - E: cheaper than incubator, quiet atmosphere
7. Context, eg:
    - B: some traditions, lack of monitoring and feedback
    - E: gender equality, quality improvement measures

Thank you

With the hope that this congress (and workshop) will contribute to improving care for preterm babies in an equitable world