

Improving the implementation of kangaroo mother care

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In recent years, studies have found evidence that kangaroo mother care is a cost-effective, high-impact intervention that reduces mortality and morbidity in preterm infants.¹ A cornerstone of kangaroo mother care is skin-to-skin care of the infant in an upright position on a caregiver's chest. Other components of this care are support for exclusive and early breastfeeding and timely discharge from the hospital with appropriate follow-up.² The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) recommend facility-based kangaroo mother care as a routine method of care for clinically stable newborns weighing 2000 g or less at birth.^{1,3} UNICEF supports countries that have a high burden of neonatal deaths through a health-systems strengthening approach that focuses on quality, scalability and sustainability of kangaroo mother care.

During the past decade, UNICEF has been partnering with WHO, Save the Children, Every Premie-SCALE, the Bill & Melinda Gates Foundation, Johnson & Johnson, the University of Pretoria, the Colombian Kangaroo Foundation and others to achieve its priority of strengthening newborn care through policy, advocacy and technical assistance through the 2014 Every Newborn Action Plan. This action plan focuses on specific kangaroo mother care coverage targets, that is, at least 50% of these small newborns should receive such care by 2020 and 75% by 2025.¹ However, health systems are still experiencing multiple-level challenges to implementation of kangaroo mother care at scale and to commitment and health-facility readiness.^{4,5}

In 2017, a rapid assessment of kangaroo mother care implementation was

conducted to assess progress in the 25 low- and middle-income countries in Africa, Asia and the Middle East that had received support from UNICEF (Box 1). We followed up this assessment by consulting the 2018 and 2019 Every Newborn progress reports^{2,6} and information available in the Every Newborn database to track further developments in the implementation and scale-up of such care.

Progress reports

Twenty-two of the 25 countries surveyed had adopted their own Every Newborn action plans during the period 2014–2018. By 2017, 18 countries had started kangaroo mother care implementation and in-country uptake has continued to increase. Commonly observed advocacy activities include active engagement in World Prematurity Day, the use of champions, and study visits for programme managers and health-care professionals to successful sites. Health professionals in the field have been expressing appreciation through anecdotal reports of how this practice helped to lessen the burden in sick newborn units with limited incubator capacity.

At the national level, a kangaroo mother care policy or guideline is one of the indicators for the Every Newborn quality-of-care milestone. In 2018, 56% of the countries (14/25) reported having such a policy or guideline in place. For all 90 Every Newborn-reporting countries, this proportion was 31%.⁶

The 25 countries reported receiving two types of support from UNICEF: first, generic newborn care training protocols and guidelines featuring kangaroo mother care; second, kangaroo

mother care-specific support in the form of guideline development, training and support for establishing services for such care (especially for infrastructure upgrades to make the kangaroo mother care space functional), and supplies and equipment provision.

By the end of 2017, UNICEF had supported the training on kangaroo mother care of over 14 000 health workers in the 25 countries. In some countries, such orientation or training formed part of other programmes such as essential newborn care, facility-based or home-based newborn care or emergency obstetric care. In others, stand-alone training was reported. Training and orientation are still ongoing as more health facilities start implementing kangaroo mother care, and more countries or regions in countries come on board. Since 2017, UNICEF has also conducted seven regional workshops where these countries were represented. In 2018, UNICEF and Save the Children disseminated a training guide for global use.⁷

Coverage of kangaroo mother care services varies between countries, but most countries introduced such care at tertiary and teaching hospitals, with poorer coverage in lower-level health facilities. This observation has been confirmed elsewhere.⁸ Current information does not provide clear details on how kangaroo mother care is practised in individual institutions in these 25 countries. For example, does implementation refer to inpatient and/or ambulatory kangaroo mother care provided by health centres? Does a health facility practise inpatient intermittent (a few hours per day) and/or continuous kangaroo mother care (≥ 18 hours per day)? These questions illustrate the

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Box 1. Countries receiving UNICEF support for implementation of kangaroo mother care

Afghanistan; Armenia; Bangladesh; Bhutan; Eritrea; Ethiopia; Ghana; India; Iran (Islamic Republic of); Iraq; Kenya; Lesotho; Malawi; Maldives; Namibia; Nepal; Niger; Pakistan; Rwanda; Sri Lanka; Sudan; Syrian Arab Republic; Uganda; United Republic of Tanzania and Zimbabwe.

UNICEF: United Nations Children's Fund.

challenge of obtaining accurate country-level information related to the coverage and quality of these services.

One indicator is emerging as a proxy for in-facility coverage: the number of eligible babies (< 2000 g) initiated on facility-based kangaroo mother care for at least 18 hours per day.^{9–11} The Every Newborn tracking tool contains an item asking whether the national health management and information system includes an indicator for newborns who have benefited from such care. From 8% (2/25) of countries reporting this inclusion in 2015, the percentage grew to 25% (6/25) in 2017.² In 2018, the figure increased to 32% (8/25), compared to the 20% (18/90) for all Every Newborn-reporting countries.⁶

We categorized the challenges to implementation and scale-up listed by the 25 countries according to the health-systems building blocks; these are similar to previous reviews of challenges.^{4,5,8} The most often reported challenges⁸ relate to (i) health service delivery: physical and logistical constraints, service availability, including follow-up after discharge, and quality of care; (ii) health workforce: number, competence and distribution of health workers, awareness, knowledge and training, attitudes, mentorship and supervision; and (iii) community ownership and partnership: promotion of kangaroo mother care, knowledge, awareness and sociocultural acceptance by community members, support for mothers and families, and access to follow-up. Other reported challenges were (i) health information: availability and quality of information, indicators, integration in the national system; (ii) health financing: funding, out-of-pocket expenses, health insurance policy; (iii) leadership and governance: policy and guidelines, advocacy; and (iv) essential medical products and technologies: resources.

Lessons learnt

Overall, the 25 countries included in the 2017 assessment have shown greater uptake of kangaroo mother care with

regard to the development of a policy or guideline and inclusion in the health management and information system of countries compared to all Every Newborn-reporting countries. The Every Newborn Action Plan metrics group only finalized the guidance for the kangaroo mother care coverage indicator by early 2018, which may explain the current low inclusion numbers in these systems. Consistency is needed with data collection across health-system levels, geographical areas and countries. We hope that the outcomes of current and future studies will provide more insight into strengthening implementation efforts and effective measures for coverage and quality of care in high-burden countries.

Despite all the efforts and investment in the training of trainers to address knowledge and skills gaps in kangaroo mother care, the number of small newborns benefiting from this care remains low. The extent of missed opportunities is illustrated by our rapid assessment, which found that 9% (3724/41 333) of eligible babies born in health facilities with kangaroo mother care had received such care. Implementation goes beyond training, and capacity-building must be paired with effective supervision, mentoring and coaching, coordination with service providers and managers, and regular collection of quality data. Ensuring scale-up of quality kangaroo mother care requires a multipronged approach that includes advocacy, budget allocation at all levels of the health system, monitoring and evaluation, as well as community mobilization.

The way forward

Investing in the scale-up of inpatient interventions for small and sick newborn care is a high priority if we are to achieve the sustainable development goal targets for reducing newborn mortality by 2025 and 2030.¹ One way to achieve coverage targets is to prioritize kangaroo mother care in a special sector plan with appropriate budget allocation,

advocacy messaging and the development of kangaroo mother care process, outcome and impact indicators. This prioritization should be accompanied by in-country discussion and collaboration among national, public and private partners to develop implementable and trackable data collection methods and to determine how the care of small and sick newborns should be reported for different health-system levels. Doing so could go a long way towards improving facility-level documentation, tracking coverage and quality of kangaroo mother care, and using data for decision-making and prioritizing such care and for funding purposes.

Kangaroo mother care is a public health issue that should be regarded as a clinical treatment and as a tool to eliminate barriers to widespread and large-scale implementation of interventions for small and sick newborns. Since the last information received on kangaroo mother care implementation, a new challenge has emerged, namely the coronavirus disease 2019. Whether and how countries will revisit or adapt their kangaroo mother care guidelines is not clear. However, the gains in the provision and scale-up of facility-based kangaroo mother care services and improved survival rates and progress of small newborns will be impacted by the unintended consequences of the pandemic just as other essential services have been.¹² In the future, the focus for expanding kangaroo mother care should be on health-facility or service readiness and on transforming health systems to become more resilient and family centred. Such focus is essential if we are to cope with sudden disasters, continue with kangaroo mother care as an essential service and sustain gains in the health and well-being of small newborns. ■

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References

1. Every Newborn: an action plan to end preventable deaths. Geneva: World Health Organization; 2014. Available from: http://www.healthynetwork.org/hnn-content/uploads/Every_Newborn_Action_Plan-ENGLISH_updated_July2014.pdf [cited 2019 Jul 24].
2. 2018 progress report: reaching the Every Newborn national 2020 milestones. Geneva: World Health Organization; 2018. Available from: <https://www.healthynetwork.org/hnn-content/uploads/Final-Country-Progress-Report-v9-low-res.pdf> [cited 2019 May 19].
3. Survive and thrive: transforming care for every small and sick newborn. Geneva: World Health Organization; 2019. Available from: https://www.who.int/maternal_child_adolescent/documents/care-small-sick-newborns-survive-thrive/en/ [cited 2020 May 28].
4. Chan G, Bergelson I, Smith ER, Skotnes T, Wall S. Barriers and enablers of kangaroo mother care implementation from a health systems perspective: a systematic review. *Health Policy Plan.* 2017 Dec 1;32(10):1466–75. doi: <http://dx.doi.org/10.1093/heapol/czx098> PMID: 28973515
5. Seidman G, Unnikrishnan S, Kenny E, Myslinski S, Cairns-Smith S, Mulligan B, et al. Barriers and enablers of kangaroo mother care practice: a systematic review. *PLoS One.* 2015 05 20;10(5):e0125643. doi: <http://dx.doi.org/10.1371/journal.pone.0125643> PMID: 25993306
6. Every Newborn progress report 2019. Geneva: World Health Organization; 2020. Available from: <https://resourcecentre.savethechildren.net/node/18014/pdf/final-every-newborn-report-2019-web-05-11-20.pdf> [cited 2020 Aug 24].
7. Facilitators guide for training on kangaroo mother care. New York: United Nations Children's Fund; 2018. Available from: <https://www.healthynetwork.org/resource/facilitators-guide-for-training-on-kangaroo-mother-care/> [cited 2020 May 31].
8. Vesel L, Bergh A-M, Kerber KJ, Valsangkar B, Mazia G, Moxon SG, et al.; KMC Research Acceleration Group. Kangaroo mother care: a multi-country analysis of health system bottlenecks and potential solutions. *BMC Pregnancy Childbirth.* 2015;15(S2) Suppl 2:S5. doi: <http://dx.doi.org/10.1186/1471-2393-15-S2-S5> PMID: 26391115
9. Moxon SG, Ruysen H, Kerber KJ, Amouzou A, Fournier S, Grove J, et al. Count every newborn; a measurement improvement roadmap for coverage data. *BMC Pregnancy Childbirth.* 2015;15(S2) Suppl 2:S8. doi: <http://dx.doi.org/10.1186/1471-2393-15-S2-S8> PMID: 26391444
10. Day LT, Ruysen H, Gordeev VS, Gore-Langton GR, Boggs D, Cousens S, et al. "Every Newborn-BIRTH" protocol: observational study validating indicators for coverage and quality of maternal and newborn health care in Bangladesh, Nepal and Tanzania. *J Glob Health.* 2019 Jun;9(1):010902. doi: <http://dx.doi.org/10.7189/jogh.09.010902> PMID: 30863542
11. Guenther T, Moxon S, Valsangkar B, Wetzel G, Ruiz J, Kerber K, et al. Consensus-based approach to develop a measurement framework and identify a core set of indicators to track implementation and progress towards effective coverage of facility-based kangaroo mother care. *J Glob Health.* 2017 Dec;7(2):020801. doi: <http://dx.doi.org/10.7189/jogh.07.020801> PMID: 29057074
12. Robertson T, Carter ED, Chou VB, Stegmuller AR, Jackson BD, Tam Y, et al. Early estimates of the indirect effects of the COVID-19 pandemic on maternal and child mortality in low-income and middle-income countries: a modelling study. *Lancet Glob Health.* 2020 07;8(7):e901–8. doi: [http://dx.doi.org/10.1016/S2214-109X\(20\)30229-1](http://dx.doi.org/10.1016/S2214-109X(20)30229-1) PMID: 32405459