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Evidence Brief

Breaking the cycle: Ending preventable neonatal deaths

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Key messages

- Neonatal mortality remains a significant challenge in Kenya, with 95% of neonatal deaths being preventable.
- Kenya's free maternity care policy increased facility deliveries by over 60%, but infrastructure and staffing gaps limit its full impact.
- Early and quality antenatal care reduces neonatal mortality risk by up to four times, highlighting ANC as a critical entry point.
- Proven newborn interventions, Kangaroo Mother Care, early initiation of breastfeeding, and chlorhexidine cord care, can cut neonatal deaths by nearly half.
- Community health workers (CHW) and digital health tools enhance timely care-seeking, early detection, and continuity of newborn care.
- Persistent inequities, such as maternal education, poverty, and geographical barriers, worsen neonatal outcomes and require targeted investments in underserved counties.
- Ending preventable neonatal deaths in Kenya is achievable by scaling up proven interventions, strengthening newborn care units, expanding CHW outreach, and mobilising sustainable resources.

Executive summary

Neonatal mortality remains a pressing public health challenge in Kenya, contributing disproportionately to under-five deaths despite being largely preventable. Current evidence shows that about 95% of neonatal deaths could be prevented through timely, equitable, and quality interventions. Kenya has introduced progressive policies such as free maternity care and community health strategies, leading to gains in facility deliveries and maternal service utilisation. However, persistent gaps in quality of care, infrastructure, human resources, and equity continue to limit impact.

Findings from recent studies highlight that early and quality antenatal care, Kangaroo Mother Care, timely initiation of breastfeeding, and community-based newborn care can significantly reduce neonatal deaths. Geospatial analyses reveal that newborns in remote counties face markedly higher risks due to limited access to functional neonatal units. Meanwhile, digital innovations such as SMS reminders and quality improvement approaches show promise but require stronger health system readiness to be effective.

This evidence brief synthesises data from 12 key studies in Kenya and comparable low- and middle-income countries (LMICs) to outline actionable strategies for breaking the cycle of preventable neonatal deaths. It calls for strengthening health system capacity, scaling up proven community and facility-based interventions and addressing inequities.

Background

Neonatal mortality, defined as death within the first 28 days of life per 1,000 live births, remains one of the most pressing child health challenges globally [1]. Despite accounting for nearly half of all under-five deaths worldwide, reductions in neonatal mortality have lagged behind those for infant and under-five mortality (UN IGME, 2023) [2]. Each year, approximately 2.4 million newborns die, most from preventable causes such as preterm complications, birth asphyxia, and neonatal infections [3].

Kenya has made progress in child survival, but neonatal mortality remains persistently high. The 2022 Kenya Demographic and Health Survey (KDHS) reported a neonatal mortality rate of 21 deaths per 1,000 live births, compared with infant mortality at 32 and under-five mortality at 41 per 1,000 live births (4). Although neonatal mortality in Kenya has declined since the late 1980s (approximately 27.9 deaths per 1,000 live births in 1989) (5), the rate remains high, at 21 per 1,000 in 2022, well above the SDG 3.2 target of under 12 per 1,000 live births by 2030 [4,6].

Evidence points to several persistent gaps. First, socioeconomic and demographic inequalities, including poverty, low maternal education, and teenage or advanced maternal age, continue to put mothers and newborns at higher risk [7,8]. Second, while over 90% of women attend at least one antenatal care (ANC) visit, less than 60% complete four or more visits, and the quality of ANC and delivery services is inconsistent, with gaps in screening, counselling, and complication management [9,10]. Third, geographical disparities persist, with newborns in remote counties facing up to 40% higher risk of mortality due to poor access to skilled care and neonatal facilities[1,11]. Finally, weaknesses in postnatal care coverage, limited neonatal intensive care capacity, and inadequate data systems hinder timely interventions [12–14].

These gaps underline why neonatal mortality has declined more slowly than other child mortality indicators in Kenya. Despite major policy shifts, such as the introduction of free maternity care, expanded immunisation, and a community health strategy, implementation challenges, inequities in access, and variable quality of care continue to hinder progress [15–17].

This evidence brief is therefore important because it synthesises the latest evidence for effective strategies to reduce neonatal mortality in Sub-Saharan Africa, including Kenya, highlights policy and programmatic gaps, and provides actionable priorities for decision-makers. By aligning evidence with Kenya's SDG commitments, it seeks to inform more targeted, equitable, and impactful interventions to end preventable neonatal deaths in Kenya.

2.4 million

newborns die each year globally most from preventable causes such as preterm complications, birth asphyxia, and neonatal infections

21 deaths per 1,000 live births in Kenya

compared with infant mortality at 32 and under-five mortality at 41 per 1,000 live births according to the 2022 KDHS report

Methodology

This evidence brief is based on a rapid review of peer-reviewed literature focusing on determinants, interventions, and health system approaches to ending preventable neonatal deaths, with emphasis on Kenya and Sub-Saharan Africa. A systematic search was conducted across PubMed, Scopus, and Google Scholar. The search identified 12 relevant studies that examined policy reforms, maternal and newborn health service utilisation, quality improvement interventions, community-based strategies, and digital health innovations.

Data extraction was conducted using a standardised template to capture study characteristics, intervention components, key findings, and policy relevance. A thematic analysis was applied to synthesise evidence across domains such as antenatal and delivery care, newborn care practices, health system readiness, community health worker interventions, and equity in access. Narrative synthesis was then used to integrate the evidence into actionable insights, with particular emphasis on aligning recommendations with Kenya's health sector priorities and broader African regional commitments to reduce neonatal mortality.

Key findings

Evidence from Kenya and other LMICs shows that most neonatal deaths are preventable through proven, cost-effective interventions. Maternal and newborn health services, if equitably accessed and delivered with quality, have the potential to substantially reduce mortality[18].

Antenatal care (ANC) is a critical entry point[19]. Analysis of national survey data indicates that neonates whose mothers did not attend ANC visits had almost four times higher odds of death compared to those with four or more visits (OR: 3.9, 95% CI: 2.0–7.6)(4) (Muriithi et al., 2017). Quality ANC, including tetanus toxoid vaccination and skilled monitoring, significantly reduces the risk of poor neonatal outcomes [4,19,20].

Early initiation of breastfeeding within the first hour of life reduces neonatal death risk by 44%.

Simple, low-cost newborn interventions can prevent nearly half of neonatal deaths. Kangaroo mother care (KMC) has been shown to reduce neonatal mortality among stable preterm and low-birthweight infants by 36–51% [21,22]. Early initiation of breastfeeding within the first hour of life reduces neonatal death risk by 44%, while chlorhexidine cord care lowers infection-related deaths by up to 23%(23). Despite their effectiveness, uptake of these practices remains suboptimal in many facilities and communities.

Community-level interventions have shown promising results. In rural Kenya, a community health worker (CHW)-led home visitation programme achieved remarkable reductions in neonatal deaths, with only five deaths reported among 702 infants followed, none occurring after the first week of life. Studies in other LMICs also show that CHWs improved timely care-seeking and early detection of neonatal illness, demonstrating the value of extending newborn care beyond health facilities(24,25). Additionally, mobile health interventions, such as SMS messaging, are likely to enhance maternal awareness of risks and promote timely care-seeking(26).

Persistent inequities exacerbate neonatal mortality. Neonates born to mothers with no education face double the risk of death compared to those whose mothers attained secondary education [4,27]. Low birth weight increases neonatal death risk by four times. Geospatial analyses further reveal that newborns in remote counties face up to a 40% higher risk of mortality due to poor access to hospitals with functional newborn units[28].

Policy reforms have improved service utilisation but revealed system bottlenecks. Kenya's free

maternity care policy markedly increased health facility deliveries and utilisation of maternal services. However, improvements in maternal and neonatal mortality were mixed, constrained by service quality, staffing, and infrastructure gaps[18]. This brings out the need to pair financial protection policies with deliberate investments in health system capacity.

Quality improvement interventions hold potential but require system readiness. The PTBi East Africa trial in Kenya and Uganda introduced team-based mentoring and simulation training for preterm care[29]. While survival gains were significant in Uganda, effects in Kenya were modest, largely due to infrastructure and staffing gaps[29]. This highlights that training must be coupled with investments in facility readiness to achieve impact.

Collectively, these findings confirm that ending preventable neonatal deaths is achievable. Scaling up proven interventions, strengthening hospital newborn care, expanding CHW outreach, closing equity gaps and coupling improved provider care practices with system readiness could save hundreds of thousands of newborns' lives each year in sub-Saharan Africa, including Kenya.

Table of included studies

Citation (short)	Key findings	Policy / program recommendations
Gitobu et al (2018)	Kenya's free maternity care policy markedly increased health facility deliveries and utilization of maternal services, but improvements in maternal and neonatal mortality were mixed and constrained by service quality, staffing and infrastructure gaps.	Sustain and protect financing for free maternity services and invest in supply-side capacity (staff, equipment, referral systems, commodity supply, quality improvement) to translate increased utilisation into mortality reductions.
Arunda et al. (2017).	Analysis of national survey data shows a strong protective effect of ANC; neonates of mothers with no ANC had substantially higher odds of neonatal death (adjusted OR ≈3.9 for no ANC vs ≥4 visits). Tetanus immunisation and skilled monitoring were protective.	Expand coverage and quality of ANC (promote ≥4/8 contacts, tetanus vaccination, screening, danger-sign counselling); target outreach to women with poor ANC uptake.
Tesema et al. (2021).	Prevalence of stillbirth in East Africa remains high; risk factors include antepartum complications, poor ANC utilisation, hypertensive disorders, and socioeconomic disadvantage.	Strengthen antenatal detection & management of high-risk pregnancies, improve intrapartum monitoring, and target high-risk populations with timely referral and emergency obstetric care.
Conde-Agudelo et al. (2016).	Kangaroo mother care (KMC) (skin-to-skin, exclusive breastfeeding support, early discharge with follow-up) reduces neonatal mortality and morbidity among low-birthweight/preterm infants	Scale up KMC as standard of care for stable LBW/preterm infants, facility and community implementation, training, supervision, and follow-up systems.
Mwendwa et al. (2012)	Partial KMC at Kenyatta National Hospital improved growth rates and shortened hospital stay for low birthweight infants.	Institutionalise KMC in tertiary and referral newborn units and integrate into postnatal counselling and follow-up pathways.
Debes AK et al. (2013).	Early initiation of breastfeeding (within 1 hour) is associated with substantially lower neonatal mortality (large protective effect across settings).	Strengthen facility and community initiatives to support immediate skin-to-skin contact and breastfeeding in the first hour after birth (training, protocols, monitoring).
Baqui et al. (2008)	A community-based package (home visits, behaviour change, referral) delivered through CHWs significantly reduced neonatal mortality and improved care-seeking.	Scale and adapt CHW-led home-visitation packages for early newborn visits (first 48–72 hrs), danger-sign recognition, and referral networks in remote/underserved Kenyan counties.
Lassi et al. (2016)	Community strategies (CHWs, home visits, community mobilisation) improve maternal/newborn care practices and reduce neonatal deaths when well implemented and linked to referral services.	Invest in functional community health systems (training, supervision, predictable funding, referral links) and integrate newborn care into CHW roles.

Ronen et al. (2021).	SMS interventions improve ANC attendance and health knowledge in LMICs; evidence suggests potential to influence timely care-seeking.	Integrate SMS strategies into maternal-newborn programs to boost ANC attendance, appointment reminders, and postnatal follow-up; ensure content is two-way and context-adapted.
Ouma et al. (2018).	Spatial analysis shows large geographical inequities in timely access to emergency inpatient care (including neonatal services); remote areas have substantially lower access, correlated with worse outcomes.	Strengthen regional newborn capacities (county newborn units), emergency transport/referral systems, and targeted investments in counties with poor geographic access.
Ghosh et al 2025	Quality improvement package for preterm/intrapartum care (mentoring, simulation, team training) showed improved outcomes where facility readiness existed; impact was limited in settings with inadequate infrastructure/staffing.	Combine provider training and QI approaches with investments in facility readiness (equipment, staffing, commodities) and ongoing mentorship to realize mortality reductions.

Recommendations

- The Ministry of Health (MoH) should strengthen the free maternity care programme by ensuring adequate financing, staffing, infrastructure, and integration of high-impact interventions such as Kangaroo mother care, early breastfeeding, and digital health solutions.
- The MoH should expand and equip newborn care units, strengthen referral systems, and target outreach to underserved and vulnerable populations, especially in remote areas.
- The MoH should institutionalise quality newborn practices in all health facilities, including early breastfeeding, hygienic cord care, and continuous staff training through mentoring and simulation.
- The MoH should strengthen and support the community health workforce to conduct timely postnatal home visits, promote safe newborn care practices, and ensure effective referral linkages to health facilities.
- The MoH should mobilise resources for scaling up proven interventions, digital innovations, and system strengthening, and work with development partners.

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