CURRENT SITUATION ANALYSIS IN MNCAH+N AND IN MAKUENI COUNTY

TOWARDS ACCELERATION PLANNING FOR EWENE, 2025-2030

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FORWARD

Makueni County has made notable gains in maternal, newborn, child, adolescent health, nutrition, and family planning (MNCAH+N+FP) over the past decade; however, the county remains off track in achieving the SDG 3 targets by 2030. Despite reductions in maternal and neonatal mortality and improved uptake of selected services, progress is uneven, slow, and insufficiently catalytic to close existing gaps within the remaining five years. The county's performance against the EWENE targets—90% ANC4+, 90% skilled birth attendance, 80% postnatal care within 48 hours, 80% newborn care, and 80% actions addressing social determinants still below desired thresholds.

The situation analysis identifies persistent bottlenecks across the continuum of care. ANC attendance shows improvement, yet late initiation and incomplete contacts remain common, driven by distance, transport costs, limited male involvement, and variable quality of care. Skilled birth attendance has expanded through upgraded facilities and community health strategies, but inequities persist in remote wards and among adolescent mothers. Postnatal care within 48 hours is significantly under-achieved due to socio-cultural norms, weak referral loops, and inadequate follow-up mechanisms. Social determinants—food insecurity, poverty, gender norms, adolescent vulnerability, and climate-related shocks—continue to undermine MNCAH+N+FP outcomes.

A barrier analysis highlighting the root causes in the health ecosystem such as workforce shortages, procurement and supply chain interruptions, limited real-time data for decision-making, low community awareness, and fragmented multi-sectoral collaboration. These constraints reflect systemic issues that impede the county's ability to accelerate progress toward SDG 3.

To advance toward 2030 targets, this document ends with a proposed framework for sustaining and scaling EWENE to address: (1)Policy and governance (2) innovative domestic financing (3) strengthening primary health care and community systems; (4)expanding access, equity and quality ANC, SBA, and PNC coverage; (5) integration of nutrition and family planning across the life course; (4) enhancing real-time data and digital innovations; (6) addressing social determinants through multi-sectoral action; and (7) collaborative partnership.

It is anticipated through EWENE more mothers and newborn can be saved, to thrive and transformative to have healthy human capital, gainfully productive for sustainable development in Makueni County and beyond.

H.E Mutula Kilonzo Jnr. CBS

Governor Makueni County, 2025

ACKNOWLEDGEMENT

With under five years to achieve SDG 3. Makueni County remains off track on key MNCAH+N targets. Mortality rates and adolescent pregnancies persist despite policy gains. Climate, digital, and geopolitical shifts, dwindling Official Development Assistance adding unmatched pressure. This situation analysis outlines gaps and lessons to guide a plan to strengthen EWENE impact. The methodology used was a desk review assessing the global, regional, Kenya, and Makueni MNCAH+N contexts, covering policy environments, mortality trends, financing models, health systems, nutrition, HMIS, partnerships, and accountability. National and county datasets - the Makueni profile—supplemented the evidence synthesized to inform a sustainability and scale-up framework for EWENE.

We wish to acknowledge the support of the County Executive Health Management Team, the Reproductive Health Unit, the collaborative partnership of “Okoa Mama na Mtoto” Initiative, led by Prof. Kihara Anne – Beatrice of Women Engaged in Development in this process and the grant support provided by Gates Foundation and International Centre of Reproductive Health-Kenya (ICRHK).

We hope with the understanding of the County context and the need to achieve the national and global strategy of ending preventable maternal mortality and every newborn action plan (EWENE) targets and milestones prioritization of the framework pillars can offer for an accelerated strategy.

Ms Joyce Mutua

CECM, Makueni County, 2025

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ABBREVIATIONS/ ACRONYMS

Abbreviation	Full Meaning
AA-HA!	Accelerated Action for the Health of Adolescents
AAAAQT	Availability, Accessibility, Acceptability, Affordability, Quality, Timeliness
ANC	Antenatal Care
AWP	Annual Work Plan
AYFS	Adolescent and Youth Friendly Services
CBOs	Community-Based Organizations
CCCAP	County Climate Change Action Plan
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
CIDP	County Integrated Development Plan
CIP	Costed Implementation Plan
CHMT	County Health Management Team
CNAP	County Nutrition Action Plan
CRC	Convention on the Rights of the Child
CSA	Climate Smart Agriculture
CSE	Comprehensive Sexuality Education
CTG	Cardiotocography
DEEP	Data-Enabled Evidence-based Planning
DHIS2	District Health Information System version 2
ENAP	Every Newborn Action Plan
EPMM	Ending Preventable Maternal Mortality
EWENE	Every Woman Every Newborn Everywhere
FIF	Facility Improvement Financing
HRH	Human Resources for Health

ICESCR	International Covenant on Economic, Social and Cultural Rights
ICRHK	International Centre for Reproductive Health Kenya
IGME	Inter-agency Group for Child Mortality Estimation
IYCF	Infant and Young Child Feeding
KDHS	Kenya Demographic Health Survey
KNAP	Kenya Nutrition Action Plan
KQMH	Kenya Quality Model for Health
MIYCN	Maternal, Infant and Young Child Nutrition
MOH	Ministry of Health
MNH	Maternal and Newborn Health
MNCAH+N	Maternal, Newborn, Child, Adolescent Health and Nutrition
MNCH	Maternal, Newborn and Child Health
MPDSR	Maternal and Perinatal Death Surveillance and Response
MSNAP	Multisectoral Nutrition Action Plan
NHIF	National Hospital Insurance Fund
NMR	Neonatal Mortality Rate
OMMI	Okoa Mama na Mtoto Initiative
PCNs	Primary Care Networks
PHC	Primary Health Care
POCUS	Point of Care Ultrasound
PPH	Postpartum Haemorrhage
PPPs	Public-Private Partnerships
QIT	Quality Improvement Teams
QoC	Quality of Care
RMNCAH	Reproductive, Maternal, Newborn, Child, and Adolescent Health
SDGs	Sustainable Development Goals

SHA	Social Health Authority
SHI	Social Health Insurance
SMART	Specific, Measurable, Achievable, Realistic, Time-bound
SSA	Sub-Saharan Africa
UHC	Universal Health Coverage
UN	United Nations
UNICEF	United Nations Children's Fund
WHO	World Health Organization
WASH	Water, Sanitation and Hygiene

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ABSTRACT

Introduction

With less than five years to achieve Sustainable Development Goal 3, Kenya—and many counties remain off track in meeting key MNCAH+N targets. To reduce preventable deaths of Every Woman, Every Newborn, Everywhere (EWENE), urgent action is needed. While Makueni County has a favourable policy environment, KDHS 2022 data shows maternal, neonatal, and child mortality remain high. Adolescent pregnancies contribute to complications. Despite progress in nutrition, most indicators still fall short of global 2030 targets. Climate change, digital shifts, and geopolitical dynamics present both risks and opportunities. This analysis highlights gaps and lessons to inform an acceleration plan, emphasizing advocacy's role in ensuring long-term impact for generations, saving of more lives and cost effective to the health system.

Methodology

A desk review was undertaken addressing global , regional, Kenya and in Makueni County MNCAH+N in the following areas: the normative environment; maternal and perinatal mortality, ; child and adolescent mortality; global financing of the health sector; budgetary cycle in Kenya and Makueni County; financing models in maternal and newborn healthcare; health system strengthening to provide maternal newborn care in Kenya and Makueni County; nutrition; health management information system in Kenya and Makueni County; need for collaborative partnerships; accountability of duty bearers and service providers; and proposed framework for sustainability and scale up of EWENE. Additional data was obtained from national and county data sets, and related communicated data in the Makueni County profile

Results

Evidence synthesis from the literature review facilitated the development of the attached situational analysis for Makueni County and this has been shared with the relevant leadership of Makueni County, OMMI partnership and grantors.

Conclusion

Accelerating the Every Woman, Every Newborn, Everywhere agenda requires leadership, clinical governance, and a multifaceted strategy focused on equity, quality of care, evidence synthesis, innovation, resilience, and self-reliance. Key to this is amplifying the MNCAH+N narrative, ensuring no woman, newborn, child, or adolescent dies from preventable causes. This approach emphasizes inter-generational investments, reducing premature deaths, and advancing national development, especially in emergencies and humanitarian crises. Data and advocacy are essential in ensuring no one is left behind.

EXECUTIVE SUMMARY

Sustainable Development Goal 3 is less than five years away and we are off track as a Country and in Counties towards attaining the related targets and milestones. Concerted acceleration efforts need to be undertaken to address preventable deaths of every woman, every newborn everywhere (EWENE). Recognizing the global health landscape is being reshaped by climate change, digital transformation, and geopolitical shifts, presenting both challenges and opportunities. To address these issues beyond 2030, it will be essential to invest in resilient health systems, improve the quality of care, integrate climate adaptation into healthcare policies, and protect reproductive rights, gender equality and health equity including in humanitarian crisis. Engaging adolescents and youth as leaders in health governance will ensure that future policies are inclusive, sustainable, and meet community needs. Collaborative partnerships, evidence based amplified voices and agency, strengthened accountability, and long-term commitments will be vital to ensuring that no woman, child, or adolescent is left behind in the coming decades.

Marginalized and vulnerable communities face heightened health disparities due to discrimination, human rights violations, and limited healthcare access, exacerbated by political, social, and economic factors. Conflict zones particularly impact maternal and child health, leaving individuals vulnerable to preventable deaths, malnutrition, and mental health issues. However, innovations and community-driven solutions, such as tele-medicine, mobile health apps, and AI-driven diagnostics, disease prediction, streamlining health records, and supporting personalized treatments offer hope by improving healthcare access, particularly in under-served areas. Digital health platforms and inclusive leadership are essential to building more efficient and equitable global health systems, ultimately improving outcomes for vulnerable populations.

Accelerating the Every Woman, Every Newborn, Everywhere agenda demands a multifaceted strategy rooted in equity, innovation, resilience and move towards self - reliance. Central to this is changing the narrative of MNCAH+N to position the valuing of human capital and development commencing with no women or newborn should die during pregnancy and childbirth from preventable causes; recognizing the inter-generational investments, reduction of premature deaths as core to national development and global stability. This calls for transformative leadership and strengthened policy and governance frameworks that uphold health as a human right and prioritize cost-effective, high-impact interventions. Ensuring equitable access and effective service coverage through AAAAQT (Availability, Accessibility, Acceptability, Affordability, Quality, and Timeliness) and building health system resilience are essential to close existing gaps. Investments in human resources for health through continuous capacity building and innovative care models, combined with domestic resource mobilization, budgetary alignment, and expenditure tracking, are key to sustainable progress. The integration of ICT and digital technologies, enhanced data use for context-specific decision- making,

SMART advocacy and accountability mechanisms will reinforce evidence-based actions. A sector-wide approach that addresses geopolitical dynamics, climate impacts, malnutrition, and health literacy through education will strengthen systemic responses. Moreover, embedding health promotion and prevention across the life course—from early childhood to adolescence—while leveraging strategic partnerships, including PPP's and social enterprises, will catalyze scalable solutions. Positioning family planning as a development priority, one health policy and fostering community engagement and mobilization, and reinforcing emergency preparedness and response will further align national efforts with global aspirations for maternal, newborn, child, and adolescent health and nutrition and with no one left behind.
An acceleration plan towards addressing reducing maternal and neonatal mortality is being undertaken through the "Okoa Mama na Mtoto Initiative" (OMMI) and ICRHK - Gates Foundation project to run in the next three years. There are comprised of 13 different organizations as a collaborative partnership to accelerate reduction of maternal, neonatal, child, adolescent mortality and nutrition.

These various organization will undertake SMART advocacy that relates to the following strategic goals:

Strategic Goal 1**:** Increased Quantity and Quality of Domestic Funding for MNCH at National and Sub-National Levels in Priority Geographies (2024–2027)

Strategic Goal 2: Increased Adoption of Policies That Enable Scaling for Women's and Child Health Best Buys in Priority Geographies (2024–2027)

Strategic Goal 3**:** Improved Execution of Policies Prioritizing Women's and Child Health in Priority Geographies (2024–2027)

CHAPTER ONE THE NORMATIVE ENVIRONMENT FOR MATERNAL, NEWBORN, CHILD, ADOLESCENT HEALTH AND NUTRITION (MNCAH+N)

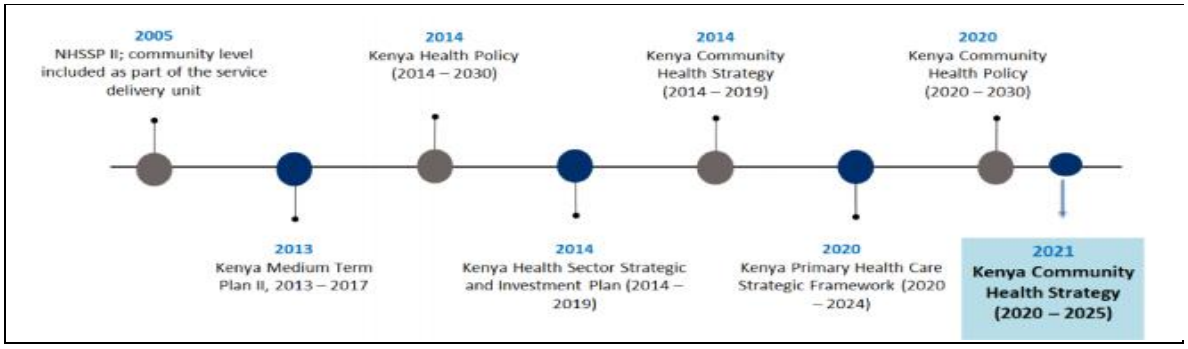
Kenya's commitment to health as a human right is grounded in a robust framework of international, continental, and national instruments. Internationally, Kenya is a signatory to key treaties including the International Covenant in Economic, Social and cultural Rights (ICESCR)**)**, which recognizes the right to the highest attainable standard of health, and the Convention on the Elimination of all forms of Discrimination Against Women (CEDAW) and the Convention on the Rights of the child (CRC), both of which reinforce health rights for women and children. On the African continent, Kenya is bound by the African Charter on Human and Peoples' Rights, the Maputo Protocol, and the African Charter on the Rights and Welfare of the Child, all of which affirm state obligations to ensure access to health services, including sexual, reproductive, maternal, newborn, child, and adolescent health (RMNCAH) and nutrition. Domestically, Kenya's Constitution **(**2010) explicitly guarantees the right to the highest attainable standard of health for every person, including reproductive health care. This is operationalized through various national policies and strategies such as the Kenya Health Policy (2014–2030)**,** RMNCAH Investment Framework (2020–2030)**,** National Adolescent Sexual and Reproductive Health Policy**, the** Kenya Nutrition Action Plan (KNAP 2018–2022)**,** and the Universal Health Coverage Policy (2020–2030). These documents prioritize health equity, target the needs of vulnerable and marginalized populations, and include mechanisms for emergency response in humanitarian contexts. Additionally, Kenya's Health Sector Human Resources Strategy and county-level costed implementation plans reinforce commitments to inclusivity and resilience in health systems across varied populations and crisis settings.

Kenya has taken significant legislative steps to accelerate progress toward Universal Health Coverage (UHC) through the enactment of four transformative health laws in 2023: the Primary Health Care Act**,** Digital Health Act**,** Social Health Insurance Act**,** and Facility Improvement Financing (FIF) Act**.** The Primary Health Care Act anchors PHC as the foundation of the health system by establishing Primary Care Networks (PCNs), promoting community-based services, and enhancing referral systems to improve equity and access at the grassroots level. The Digital Health Act supports the integration of digital technologies into healthcare delivery, including the development of a national electronic health records system and telemedicine services, improving data-driven decision-making and patient care continuity. The Social Health Insurance Act replaces the National Hospital Insurance Fund (NHIF) with the Social Health Authority, introducing three tailored funds—Primary Care, Social Health Insurance, and Emergency, Chronic, and Critical Illness Funds—to expand financial protection, equity, and coverage for all, including the poor and informal sector. Finally, the Facility Improvement Financing Act empowers public health facilities to directly receive, retain, and utilize funds generated from services and government disbursements, enhancing financial autonomy,

operational efficiency, and responsiveness to local health priorities. Collectively, these laws form a cohesive framework aimed at strengthening health systems, improving service delivery, and ensuring equitable access to quality health care for all Kenyans.

Kenya's policy environment for Primary Health Care (PHC) and Universal Health Coverage (UHC) has recently undergone major reforms aimed at strengthening service delivery, financing, and accountability. The enactment of the Facility Improvement Financing (FIF) law in 2023 restored financial autonomy to public health facilities by allowing them to directly receive and use funds, reversing previous county-level controls. Simultaneously, the Social Health Insurance (SHI) law replaced the NHIF with the Social Health Authority (SHA), introducing three distinct funds to finance PHC, secondary care, and emergency or chronic conditions. The SHA has introduced mandatory referral rules and a global budgeting system based on Primary Care Networks (PCNs), which aim to improve gate-keeping and rationalize patient flow across health system levels. These reforms are accompanied by an expanded benefits package at PHC levels, broader service mandates for Level 2 and 3 facilities, and more nuanced rules for patient access and provider payments. While these changes signal a shift toward more structured and accountable PHC-led UHC, challenges remain in implementation capacity, equitable access, and sustainability, particularly in managing PCN budgets and ensuring service readiness at the lower levels of care[i].In Figure 1 below find the timeline for PHC in Kenya.

Figure 1: Timeline for PHC in Kenya



Source: Think well Strategic purchasing for primary health care (SP4PHC) Leveraging financial mechanisms to enhance gate-keeping in Kenya: A case study[i]

Kenya has implemented a comprehensive suite of policies, guidelines, and strategies to accelerate the reduction of maternal, neonatal, child, and adolescent mortality and to ensure healthy beginnings and healthy futures. Central to this effort are **the** Kenyan Guidelines on Quality Obstetrics and Newborn Care and the Maternal and Newborn Health Standards**,** which define evidence-based protocols for skilled care during pregnancy, childbirth, and the postnatal period. These are complemented by the Kenya Quality Model for Health (KQMH), which

provides a framework for continuous quality improvement in service delivery across all levels of care. The Maternal and Perinatal Death Surveillance and Response (MPDSR) system ensures timely reporting, audit, and actionable response to preventable deaths. To strengthen commodity security, the Kenya Essential Medical Supplies List and Kenya Essential Medicines List guide the procurement and supply of critical drugs and equipment for maternal and newborn care, including oxytocin and misoprostol for postpartum hemorrhage (PPH) prevention and treatment. The Technical Report for Quantification of Health Products Required for the Prevention and Management of PPH offers data-driven estimates to ensure sufficient stock of life-saving commodities. Additional frameworks such as the RMNCAH Investment Framework (2020–2030)**,** Adolescent Sexual and Reproductive Health Policy**,** Kenya Health Sector Strategic and Investment Plan**,** and Community Health Strategy further support integrated, equitable, and community-based approaches to reducing preventable deaths. Together, these tools and policies advance Kenya's commitment to achieving the Every Woman Every Newborn Everywhere agenda and securing a healthier future for women, children, and adolescents.

Kenya's legislative, policy, and strategic environment for nutrition is robust and closely aligned with efforts to improve maternal, newborn, child, and adolescent health (MNCAH). The Food and Nutrition Security Policy (2011) and its Implementation Framework provide the overarching vision for addressing malnutrition across the life course, emphasizing the first 1,000 days as a critical window for intervention. The Kenya Nutrition Action Plan (KNAP) 2018–2022**,** which is being updated for the next period, outlines priority Multisectoral actions to reduce stunting, wasting, underweight, and micronutrient deficiencies, while promoting optimal infant and young child feeding (IYCF) practices. The Breast Milk Substitutes (Regulation and Control) Act (2012) protects breastfeeding by regulating marketing practices, and **the** Maternal, Infant, and Young Child Nutrition (MIYCN) Policy Guidelines support the integration of nutrition into reproductive and child health services. Additionally, the National

Adolescent Sexual and Reproductive Health Policy and School Health Policy incorporate nutrition as a key component of adolescent well-being. Nutrition services are further guided by the Kenya Essential Package for Health (KEPH)**,** which includes nutrition as a core service at all levels of care, and the Kenya Essential Medicines List and Medical Supplies List, which ensure the availability of key nutrition commodities such as iron-folic acid, therapeutic foods, and vitamin A. These frameworks collectively enhance the delivery of integrated nutrition interventions within MNCAH programs, contributing to improved survival, growth, and long-term health outcomes across the life course.

The Maternal, Newborn and Child Health Bill, 2023, currently undergoing public participation in Kenya, represents a significant legislative effort to reduce maternal, newborn, child, and adolescent mortality. Sponsored by Senator Beatrice Ogolla, the Bill seeks to guarantee quality care for mothers, newborn, and children up to 12 years of age. It emphasizes equitable access to services, ensuring that all women and children, including vulnerable groups, receive adequate care. The Bill outlines key principles like accessibility and equity and mandates that hospitals maintain registers for maternal, newborn, and childcare cases, adhering to ethical standards and guidelines. It also delineates distinct roles for national and county governments, with the national government overseeing policy and counties handling local implementation. Additionally, the Bill introduces monitoring mechanisms to identify vulnerable groups and evaluate healthcare service quality. By providing a comprehensive framework for accessible and quality healthcare, the Bill aims to address the rising deaths of mothers and newborn in Kenya and accelerate progress towards achieving Sustainable Development Goals related to maternal and child health.

Despite a comprehensive legislative, policy, strategic, and guideline environment for MNCAH+N in Kenya, significant gaps continue to hinder accelerated reductions in maternal, newborn, child, and adolescent mortality. These include fragmented implementation across sectors, weak accountability mechanisms, underfunded county health systems, supply chain inefficiencies, inadequate human resources, and disparities in access—especially for marginalized and hard-to-reach populations. Data systems remain siloed and poorly integrated, limiting real-time decision-making. To shift from linear progress to exponential gains towards the **90-90-80-80-80 targets** under the EWENE framework and the Healthier Beginnings and Healthy Futures agenda, Kenya must embrace disruptive approaches: deploying datasets, AI-enabled predictive analytics for targeted interventions, scaling interoperable digital health platforms, institutionalizing community-led scorecards for accountability, and integrating PHC with mobile and outreach services tailored to geo-spatial and demographic realities. Strengthening public-private partnerships, investing in front-line health worker networks (especially midwives), and adopting pooled procurement and drone-enabled last-mile delivery for essential health and nutrition commodities can dramatically improve access, equity, and

outcomes. These exponential interventions—driven by innovation, data, and community ownership—are vital to closing the survival and well-being gaps across the MNCAH+N continuum.

Makueni County has established a comprehensive legislative, policy, strategic, and costed implementation framework to address Maternal, Newborn, Child, and Adolescent Health and Nutrition (MNCAH+N). Central to this is the Makueni County Nutrition Action Plan (CNAP) 2018/19–2022/23, which outlines a multi-sectoral road map for tackling malnutrition. The CNAP integrates nutrition-specific and nutrition-sensitive interventions alongside strategies to strengthen the enabling environment. It aligns with national priorities and Sustainable Development Goals (SDGs), offering clear targets and a costed plan for implementation.

In support of these efforts, the Makueni County Food and Nutrition Security Policy, developed in partnership with Nutrition International, establishes a framework for coordinated action to improve nutrition and food security. This policy is complemented by the Makueni County Health Policy, which provides an evidence-based framework for improving access, equity, and quality of health services across the life course, especially for women, children, and adolescents.

Additionally, the county has rolled out MakueniCare, a flagship Universal Health Coverage (UHC) program. Anchored in the principles of equity, solidarity, and human rights, MakueniCare offers subsidized healthcare services to all residents, thereby promoting financial risk protection and improving access to essential health services, including MNCAH+N services. The policy environment also includes the Makueni County Social Protection Policy, which aims to support vulnerable populations through inclusive, gender-sensitive, and life cycle-responsive interventions. This is reinforced by the Makueni County Gender Policy, which advocates for equal participation, access to resources, and decision-making power for all genders in health and development.

Recognizing the impact of environmental and social determinants on health, the Makueni County Climate Change Action Plan (CCCAP) 2023–2027 mainstreams health resilience into climate adaptation strategies. This document guides integration of climate considerations into health service delivery, especially in vulnerable communities where the impacts of climate change intersect with MNCAH+N vulnerabilities.

Together, these legislative and strategic documents represent a cohesive and forward-looking framework aimed at achieving improved health and nutrition outcomes for mothers, newborns, children, and adolescents in Makueni County. The county's approach is grounded in a Multisectoral, rights-based perspective that seeks to address both direct and underlying determinants of poor health and nutrition through integrated planning, implementation, and monitoring frameworks.

Assessment of Makueni County's Readiness and Alignment with EWENE

Makueni County demonstrates strong alignment with EWENE priorities across strategic planning, service delivery, governance, and accountability. Areas requiring further strengthening include consistent ring-fenced financing and expanded coverage of AYFS. The county provides a promising model for integrating EWENE into the decentralized health systems in Kenya.

County Integrated Development Plan (CIDP) Makueni County has a comprehensive CIDP (2023–2027), which includes clearly defined health objectives, particularly within the MNCAH+N space. The CIDP aligns with EWENE principles through a focus on equity,

The **CIDP III** serves as Makueni strategic road map for sustainable development over five years[ii] [iii]. Key aspects include:

Total Budget**:** Ksh 92.3 billion, sourced from:

- National Governments equitable share (77%)
- Own Source Revenue (OSR) (13%)
- Development partners, conditional allocations, loans, and grants (10%)

Priority Sectors**:**

Transport, Infrastructure, Public Works, and Energy**:** Allocated 27% of the budget.

Agriculture and Rural Development**:** Allocated 22%

Water, Sanitation, Environment, and Natural Resources**:** Allocated 16%.

The plan aligns with national and international frameworks, including Kenya Vision 2030, the Sustainable Development Goals (SDGs), and Agenda 2063. Additionally, improved maternal and child outcomes, and investment in health system strengthening.

Annual Work Plan (AWP) The County prepares Annual Work Plans that operationalize the CIDP. These plans provide yearly targets, budgets, and timelines and include MNCAH+N as a priority area. The AWP is a key mechanism for translating EWENE priorities into actionable, measurable interventions.

MNCAH Costed Implementation Plan (CIP) Makueni has developed a MNCAH Costed Implementation Plan, outlining priority interventions, timelines, and associated costs. The plan

supports resource mobilization and strategic investment aligned with EWENE's emphasis on efficient, equitable service delivery.

Nutrition Costed Implementation Plan the County has adopted a Multisectoral nutrition action plan (MSNAP), which is costed and implemented in partnership with health and agriculture sectors. This directly contributes to EWENE's call for integrated nutrition services as part of MNCAH+N.

Essential Drug List & MNCAH Equipment Makueni adheres to the national Kenya Essential Medicines List (KEML) and maintains essential MNCAH equipment at facility level in accordance with MOH standards. This ensures availability of lifesaving commodities, supporting EWENE's goals on quality care.

Adolescent and Youth Friendly Services (AYFS) are operational in select facilities within Makueni. These include youth-friendly corners and targeted outreach programs. This contributes to the EWENE goal of responsive, inclusive adolescent care.

Ring-fenced Financing for MNCAH+N While Makueni has demonstrated prioritization of MNCAH+N in its budgeting, the extent of ring-fenced financing is partial. Dedicated budget lines exist in some years, but consistency is an area for strengthening to meet EWENE standards for sustainable financing.

Technical Working Groups (TWGs) and Implementation Teams Makueni has several functional technical platforms including:

- MNCAH Technical Working Group
- Quality Improvement Teams (QIT)
- Maternal and Perinatal Death Surveillance and Response (MPDSR)
- Implementation Research Team These groups support continuous learning, innovation, and accountability—core to the EWENE framework

Data Tools, Indicators, Targets and Milestones the county uses DHIS2, maternal health dashboards, and MPDSR data for monitoring performance. Performance indicators are tracked against national and county targets. This aligns with EWENE's emphasis on data use for accountability and decision-making.

Evidence Synthesis and Use Operational research is occasionally conducted in Makueni, including pilots on digital health and maternal health innovations. Evidence is used to guide planning and policy, in line with EWENE's principles of adaptive programming.

Social Accountability Forums Makueni is a leader in participatory governance, hosting public barazas and Governor's forums that include health as a central theme. Civil society and CBOs are engaged in planning and monitoring MNCAH+N programs. This meets EWENE's call for community engagement and citizen voice in health governance.

Makueni County has demonstrated a strong commitment to strengthening its health system through multifaceted strategies. The county has invested significantly in infrastructure development to support the Emergency, Obstetric, and Neonatal (EWENE) care framework, ensuring that health facilities are equipped to handle maternal and newborn emergencies effectively. Capacity building of Human Resources for Health (HRH) has been prioritized, particularly in essential and emergency obstetric and newborn care, as well as in Maternal and Perinatal Death Surveillance and Response (MPDSR) to enhance clinical competencies and accountability. Makueni is also actively involved in the Quality of Care (QoC) Networks, promoting evidence-based practices and continuous improvement. Furthermore, the county has embraced digitalization by tracking performance indicators to support data-driven decision-making. Patient experience and community accountability are also key pillars, with the county conducting regular public forums to gather feedback, foster transparency, and ensure the health system remains responsive to citizens' needs.

The CSA 2023 offers a detailed statistical overview of Makueni County for the period 2018–2022[iv]. It encompasses five primary domains:

Demographic and Social Statistics**:** Information on population dynamics, education levels, and health indicators.

Economic Statistics**:** Data on agriculture, employment, and income levels.

Environment Statistics: Insights into natural resources, climate patterns, and environmental conservation efforts.

Governance Statistics**:** Details on administrative structures, public service delivery, and civic participation.

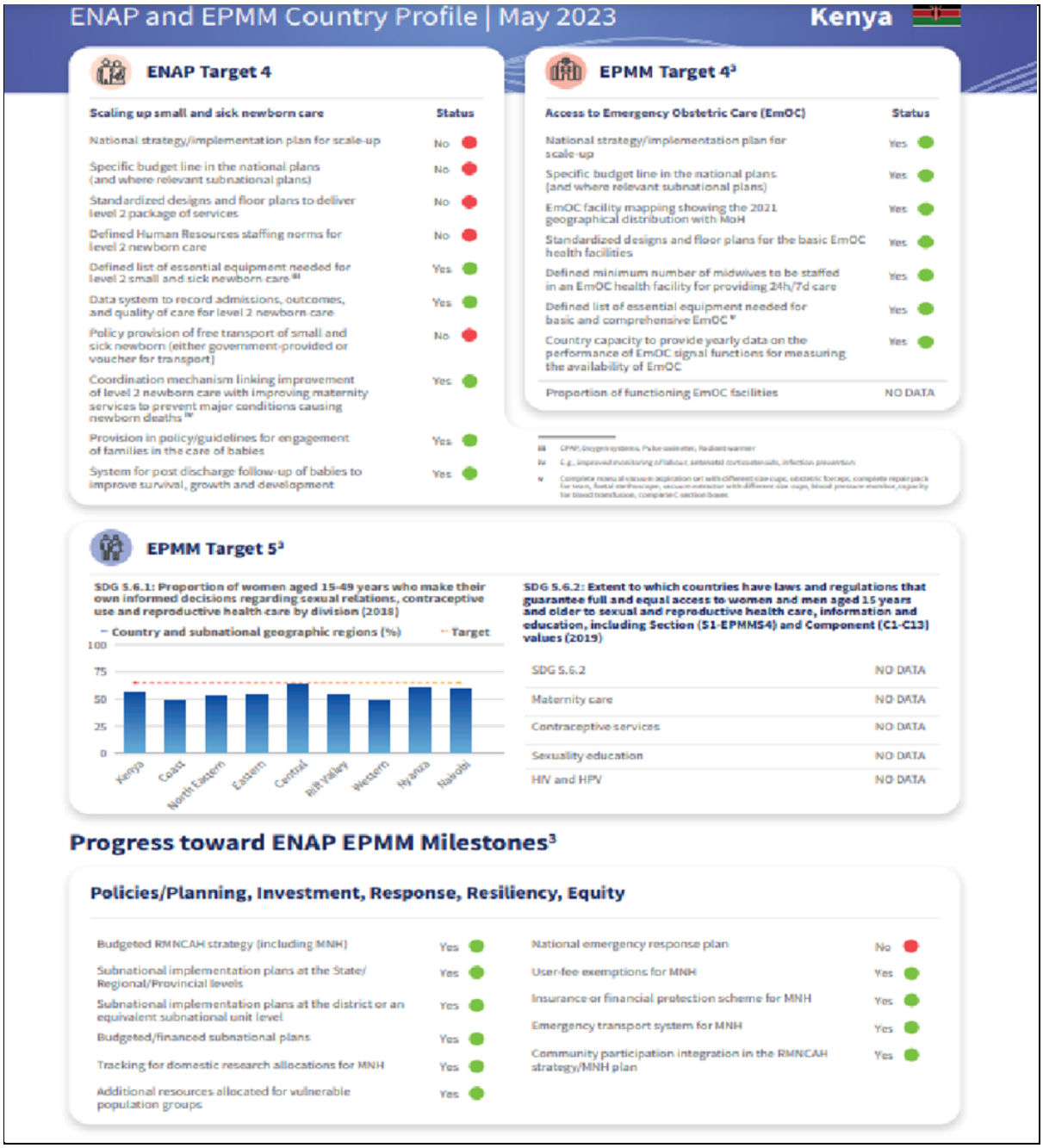
Cross-cutting Statistics**:** Data intersecting multiple sectors, such as gender and youth statistics.

Data Tracking EWENE normative Progress

Tracking of the normative environment for UNICEF Every newborn action plan and ending preventable maternal mortality (EWENE) shown in Table 1 below depicts dashboard of the Kenya Country profile reflects scaling up small and sick newborn care ; access to emergency

Obstetric care ; policies / planning , investment , response , resilience and equity.. Similar dashboards should be tracked at sub- national level.

Table 1: Showing UNICEF Country profile dashboard for ENAP AND EPMM (EWENE)



Source: UNICEF ENAP AND EPMM Country profile Kenya, 2023 f[v]

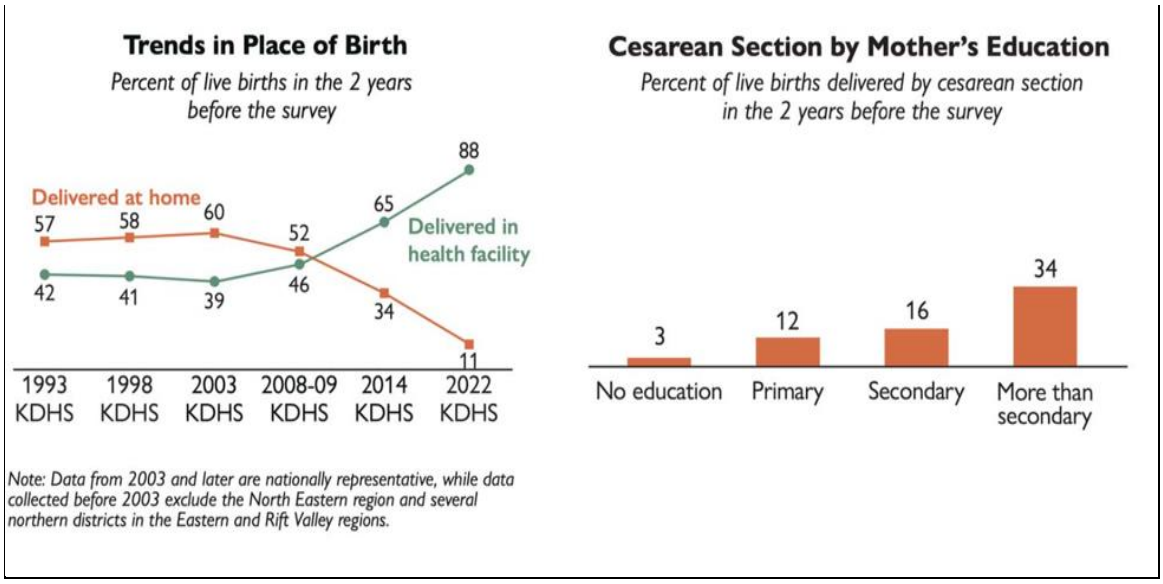
CHAPTER TWO MATERNAL AND PERINATAL MORTALITY

Maternal mortality

Mothers and newborns should not only survive but thrive to transform nations but this remains a global challenge. Progress has been made in reducing maternal mortality but many newborns and mothers – including adolescent mothers – still die from preventable causes, such as: hemorrhage, hypertensive disease, infections during pregnancy or childbirth; prematurity , birth asphyxia and neonatal infections . Globally, every two minutes, a woman dies during pregnancy or childbirth. In 2020, there were an estimated 287,000 deaths worldwide. In 80% these deaths are preventable with timely access to affordable, high-quality healthcare in the continuum of care before, during and after pregnancy. Skilled birth attendants, robust health system, financing of RMNCAH, access to cost effective high impact lifesaving commodities and technologies; if this trend isn't reversed, the lives of over 1 million more women will be at risk by 2030. Maternal mortality rate in Kenya was reported as 362/100,000 live births (KDHS, 2014)[vi]. However, there are variances depending on the dataset being utilized. According to World Bank report, the n countdown 2030 reported maternal mortality as 530/100, 000 live births yet the Kenyan data reflects it a 355/100,000 live births.

Nearly all women (98%) age 15-49 with a live birth or stillbirth in the two years before the survey received antenatal care (ANC) from a skilled birth provider. Two-thirds of the women had at least four ANC visits during their most recent pregnancy, including 4% of women who had eight or more visits. However, Only 29% of women had their first ANC visit during the first trimester. In 88% deliveries occurred in the health facility and caesarian section rates increased with higher education level (See Figure 2 below).

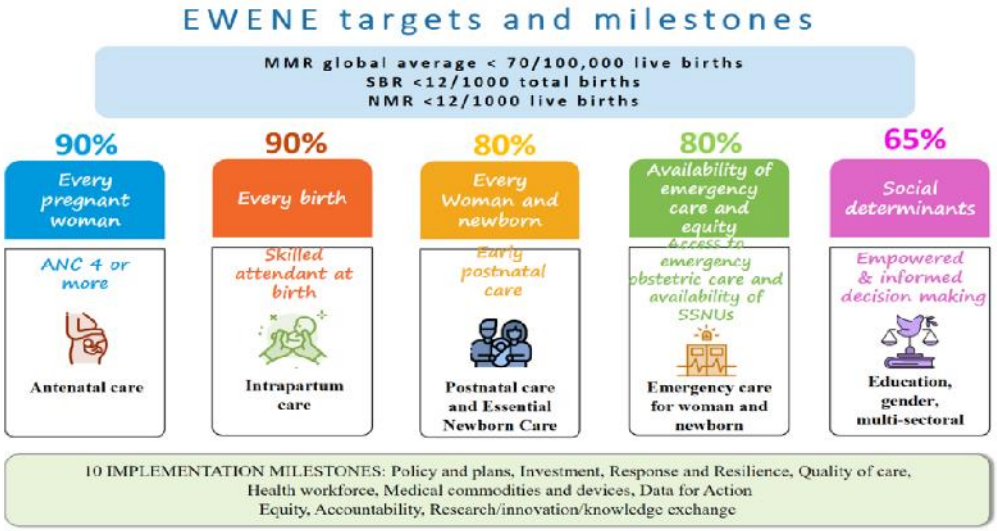
Figure 2: Trends in place of birth and caesarean section by mother's education



Source: KDHS 2022

Maternal mortality is affected by three delays namely: deciding to seek appropriate medical help for an obstetric emergency; reaching an appropriate obstetric facility; and receiving adequate and timely care when a facility is reached[vii]. Access to skilled personnel, a robust health system providing quality prenatal care, safe childbirth and postnatal services, readily accessible emergency obstetric and neonatal services, functional referral mechanisms, addresses to the sick and vulnerable newborn and provision of contraception services are efforts that improve maternal ad newborn outcomes. Maternal co- morbidities with communicable and / or non- communicable diseases given quality treatment and control. Globally accelerated reduction of maternal and neonatal mortality through every woman, every newborn everywhere (EWENE) has set targets and milestones driving towards attainment of SDG 3 (Figure 3 below).

Figure 3: The Global EWENE targets and milestones



Source PMNCH EWENE global targets and milestones

Implementation of these milestones requires address to the normative environment; county integrated development plans; investment case in MNH; acceleration plans, their implementation and response and resilience; quality of care, a robust health system; data for action equity, research / innovation and knowledge exchange and translation; advocacy and accountability.

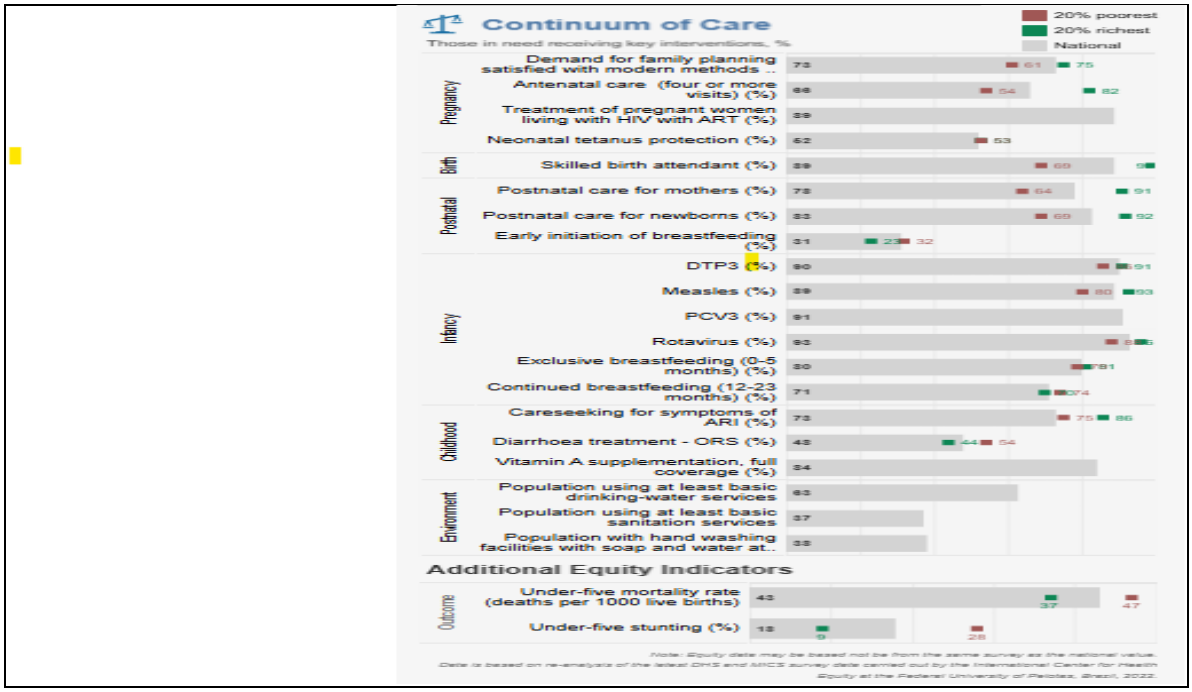
The six global acceleration plans are to:

1. Match SDG commitments with investments. Strong leadership that is backed by adequate resources and strong partnerships that drive progress for women and children.

2. Invest in all stages of the life course.
3. Make strategic choices and sustained investment in effective health care packages delivered with quality and equity
4. Facilitate sub-national planning, budgeting and implementation monitoring. This includes involving women, families and communities in defining priorities and monitoring MNH services and responding to their rights and needs.
5. Prioritize, standardize and improve data flow
6. Galvanize collaborative and multi-sectoral partnerships that work across all stakeholders

In Kenya between the MDG and SDG there has been some progress but we are still off track have plateaued and in some cases declined. Efforts that facilitated the reduction of maternal mortality included a favorable policy environment with free maternity care (Linda mama program); dissemination of the guidelines- national quality Obstetrics and perinatal care, standard and norms and Kenya quality model of health; increasing the number of health care facilities providing MNH; skilled attendance; roll-out of capacity in emergency obstetric and newborn care; strengthening MPDSR; collaborative partnerships, accountability and learning. Nationally, 98% mothers receive one antenatal contact while 66% receive four ANC contacts. And less than 4% receive 8 contact visits. In 89% they are delivered by skilled providers and 78% receive postnatal care of mothers within 48 hours (KDHS, 2022). The caesarian section rate is at 9%, early childbearing before 18 years 15%. Post-natal care of newborn within 48 hours occurred in 83% (ENAP/ EPMM, 2023)[viii]. However, we note that there are variations between and in counties and with some ASAL regions reporting less than 60% deliveries under skilled care (Table 2 below).

Table 2: The variation in equity in the continuum of care in Kenya

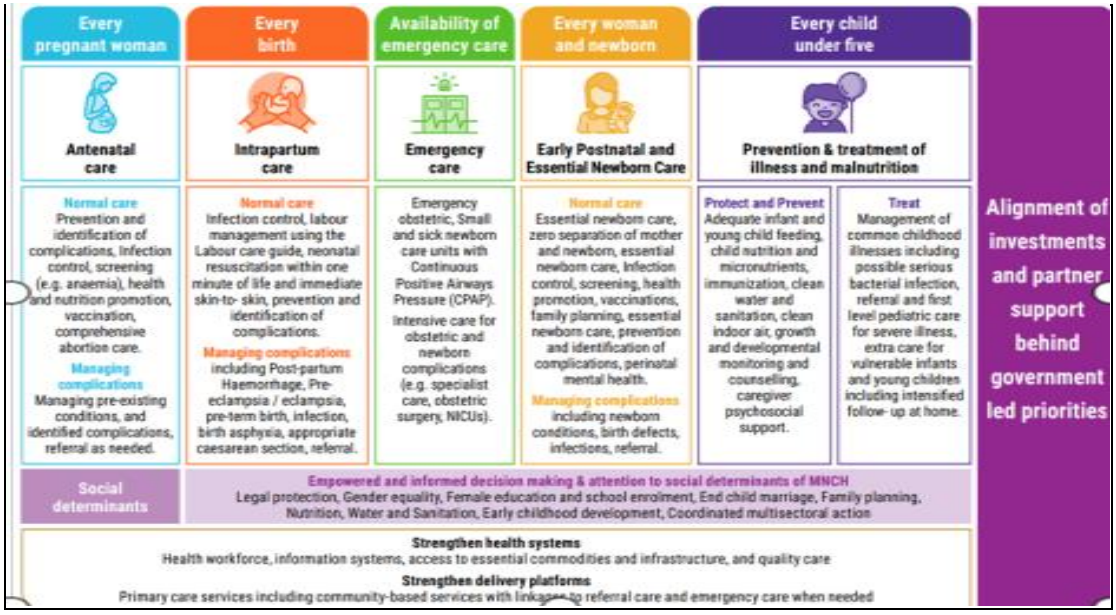


Source: Countdown 2030 country profile – Kenya [ix]

Furtherance of these efforts have been made through improved leadership and governance; institutionalizing MPDSR, skilled providers innovative education and simulated training and hands on apprenticeship, mentorship and facilitative supervision; access to life saving commodities such as heat stable Carbetocin[x], equipment and technologies (POCUS , CTG, uterine balloon Tamponade, Non pneumatic anti-shock garment, CPAP, kangaroo mother care beds, oxygen concentrators, and phototherapy machines); model of service delivery has expanded to include community health providers, clinical officers and midwifery care models; streamlining of procurement and supplies logistics; increase in data flow and its utilization for decision-making , public dialogues. Increase in SMART advocacy and accountability with RMNCAH scorecards, community of practices; bench-marking at national regional and global forums; advancing towards establishment of centers of excellence with conducting of research, knowledge sharing and its translation and community engagement and mobilization of political , administrative , religious / traditional healers for socio- behavioral change and uptake of MNH interventions. Lack of concerted efforts to curb maternal and newborn deaths by 2030 there would result in 42,000 maternal deaths and noting that with each death there are 5-10 near misses; 225,000 stillbirths and 250,000 newborns dead within the first month of life. This is a catastrophic loss and with far reaching consequences to the affected families, economy[xi] and nations. .

Globally in EWENE the essential and emergency health service packages are shown in figure 4 below. As we advance both primary health coverage, universal health coverage and social health insurance crucial to have these related services accessible and effectively covered.

Figure 4: Effective packages of care along the life course to be implemented with quality and equity



Source PMNCH EWENE global targets and milestones

Focusing on maternal, newborn, child, and adolescent health and nutrition is critical to achieving "Healthy Beginnings and Healthy Futures". This becomes even more relevant with the ambitious goal of a 50% reduction in premature deaths from preventable diseases by 2050. These early stages of life form the foundation for lifelong health, productivity, and resilience, and neglecting them undermines both individual well-being, rights and broader societal progress. The inter-connectedness of maternal and child health with global health security becomes increasingly clear in the face of geopolitical instability, climate change, and emerging infectious diseases. These challenges are compounded by malnutrition, weak health systems, structural and systemic issues that put the most vulnerable—especially women and children—at heightened risk for mortality.

The maternal mortality in Kenya is at 355 /100,000 live births (Kenya Population and Housing Census,2019), still -births 19/1000 live births , neonatal mortality 21 /1000 live births, infant mortality 31 /1000 live births and under 5 mortality is at 41 /1000 live births. There is need to put in place strategies that catalyze towards attainment of the targets: 90% attendance of 4 antenatal visits; 90% skilled birth attendance, 80% of mothers and newborn attendance of postnatal care and 80% improvement of social determinants.

MPDSR is a quality improvement process that responds to the Global Strategy for Women's Children's and Adolescent's Health (2016-2030) which seeks to end preventable maternal, new-born, child and adolescent death and stillbirths. T.he recent updates to key national reproductive and maternal health policy documents, informed development of the the National Guidelines for Quality Obstetric and Perinatal Care (MOH, 2020), the Maternal and Newborn Health Standards (MOH, 2022), and the adoption of the ICD-11 classification system.The National Guidelines for Maternal and Perinatal Death Surveillance and Response 2024 provides guidance on how to constitute the different MPDSR Committees and conduct reviews of maternal and newborn death and stillbirths as well as near misses both at facility and community levels. The guidelines outline the reporting pathways and documentation process of avoidable factors with a clear response mechanism to avoid future deaths. The guidelines also serve as a point of reference for the implementation of the MPDSR system at different levels of the health system. It is expected that successful implementation of this guideline will increase accountability for the causes of maternal and perinatal deaths and the associated factors as well as help County Health Management Teams, policy makers, stakeholders and communities prevent and respond to preventable and avoidable maternal and perinatal deaths.

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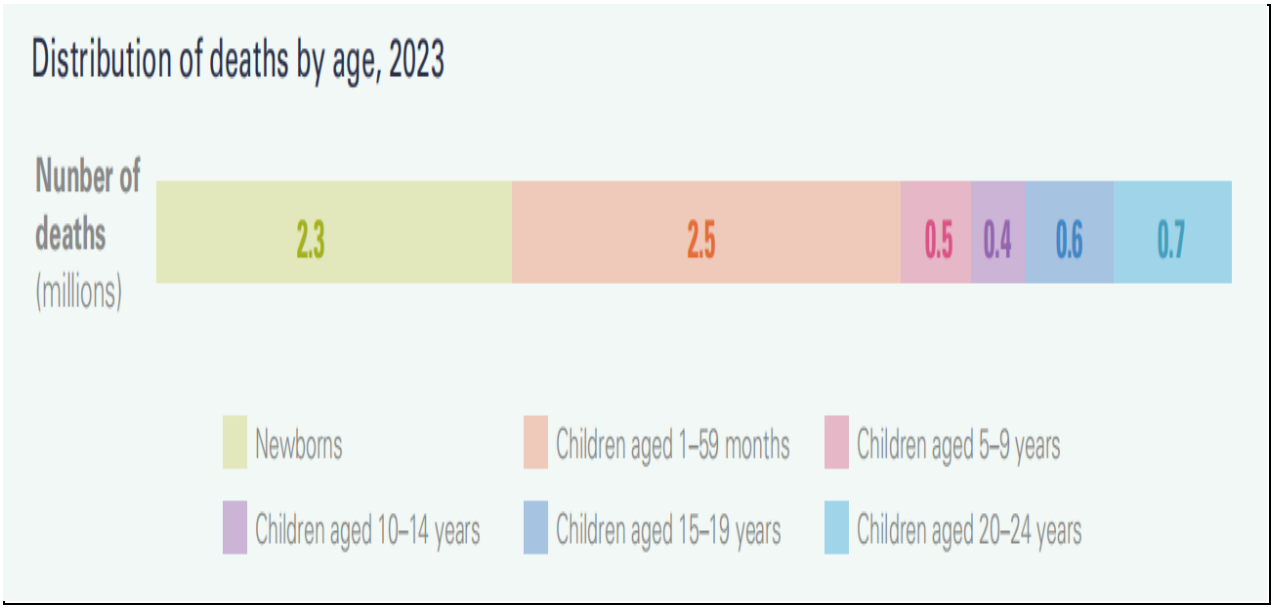
The 2022 (January-December) KHIS data shows that the majority (over 80 percent) of maternal deaths are reviewed/audited at health facilities. On the contrary, only 15 percent of perinatal deaths are reviewed and uploaded to the KHIS tracker system (National Annual MPDSR report 2020). However, reporting and notification of maternal and perinatal death is not optimal. During the financial year 2019-2020, only 56.8 percent of all maternal deaths were notified within 24 hours of occurrence of death. Notification of Perinatal deaths remains very low[xii].

The annual rate of reduction in under-five mortality is 42 per cent lower in the Sustainable Development Goal era (2015-2023) than the Millennium Development Goal era (2000-2015), while stillbirth reduction has slowed by 53 per cent between the two periods. The risks remain highest in Sub-Saharan Africa and Southern Asia, and among the poorest and most marginalized populations.

Global under-five mortality is down by more than 50 per cent since 2000 according to new estimates by the United Nations Inter-agency Group for Child Mortality Estimation (UN IGME) [I]. Global stillbirth rate has declined by more than a third over the same period. Challenges that need to be surmounted include: conflicts, climate change, cost of living, economic instability, institutional fragility and worsening humanitarian crises. The funding cuts to essential child survival and maternal health programme are already disrupting services in the places that need them most with shortages of healthcare workers and life-saving supplies, to interruptions in routine vaccinations and the closure of health facilities. These setbacks are particularly acute in fragile and conflict-affected settings. Additional to programme delivery countries' abilities to accurately monitor health trends and respond effectively to emerging challenges has been hampered by reduced financing for essential data collection efforts, including household surveys, compounding the limitation of critical insights needed for informed decision-making. See the table 3 showing the distribution of deaths from new-born to children aged 20-24 years

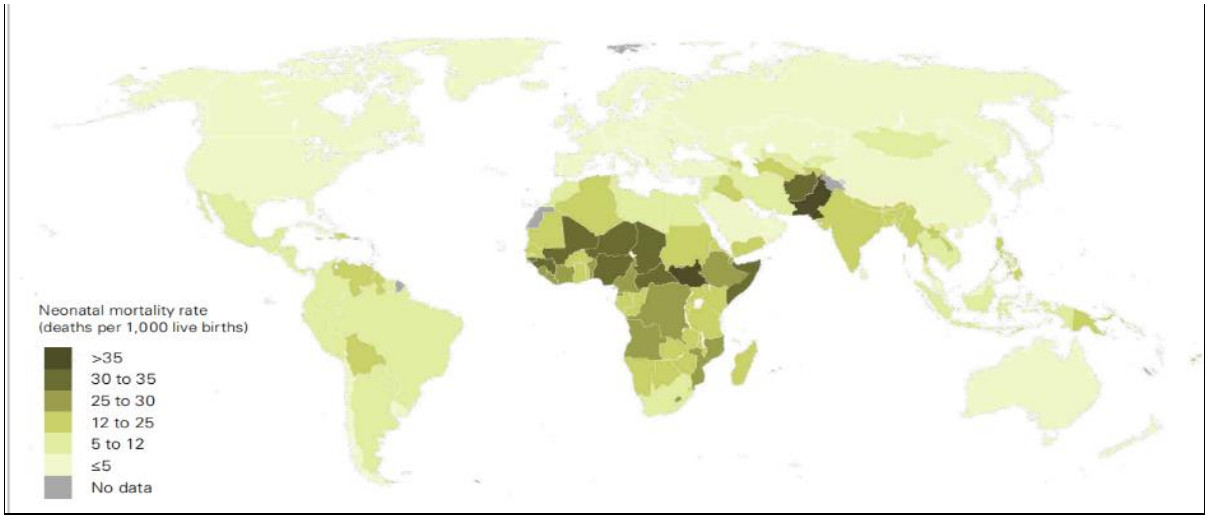
Table 3: Global distribution of deaths from New-born to children aged 20-24 years



Source: Level ad trends on child mortality, UN 1GME report, 2024[xiii]

If current trends continue, 65 nations are at risk of missing the SDG neonatal mortality rate (NMR) target (Figure 5 below). In 60 countries will miss the SDG U5MR target by 2030 (Figure 5 below). If current trends continue, 30 million children under age 5 are projected to die before 2030, but if all countries were to meet or exceed the SDG targets, 8 million more children would live to see their fifth birthday

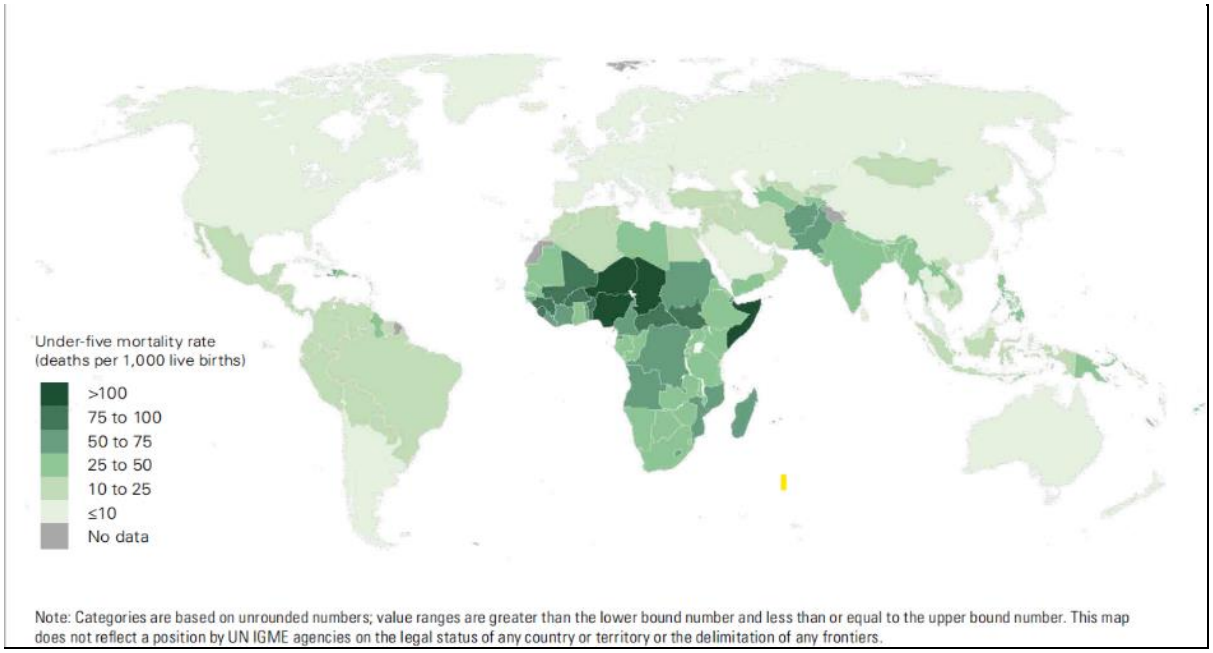
Figure 5: Global Heat-map of neonatal mortality, 2023



Source: Level ad trends on child mortality, UN 1GME report, 2024[i]

In Figure 6 below on the global heat map of under 5 mortality as of 2023 shows the variances seen in Africa with ranges from a high as > 100 / 1000 live births to 10-25/ 1000 live births. As per the SDG we are far from reaching the target of <12/1000 live births

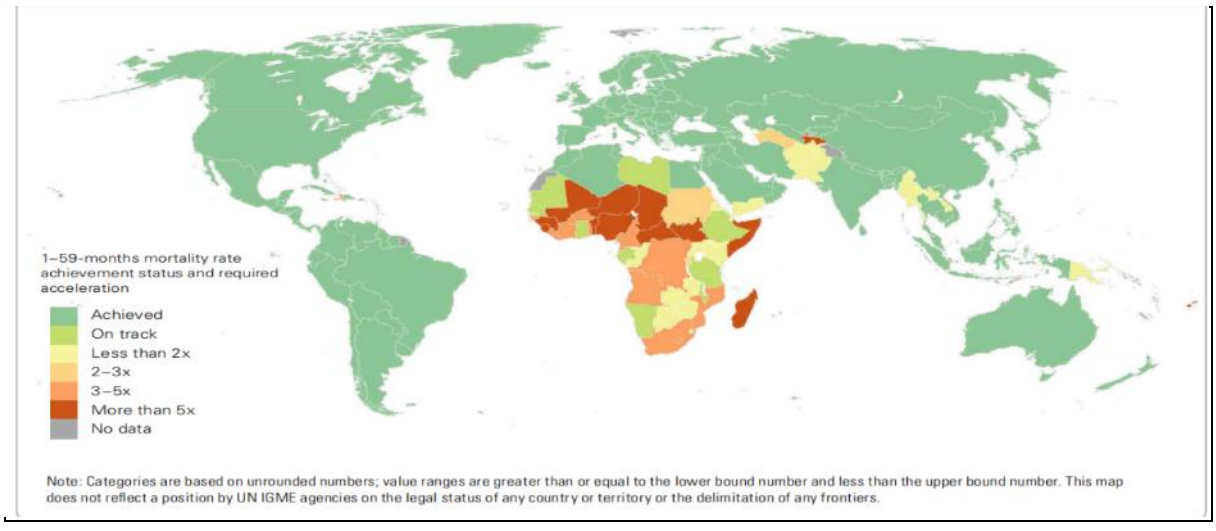
Figure 6: Global heat-map of under 5 mortality, 2023



Source: Level and trends on child mortality, UN 1GME report, 2024[i]

In Figure 7 below depicts the countries on track towards reduction of mortality in children 1-59 months and the necessary acceleration required towards meeting SDG 3 by 2030. In Kenya we need to double our efforts.

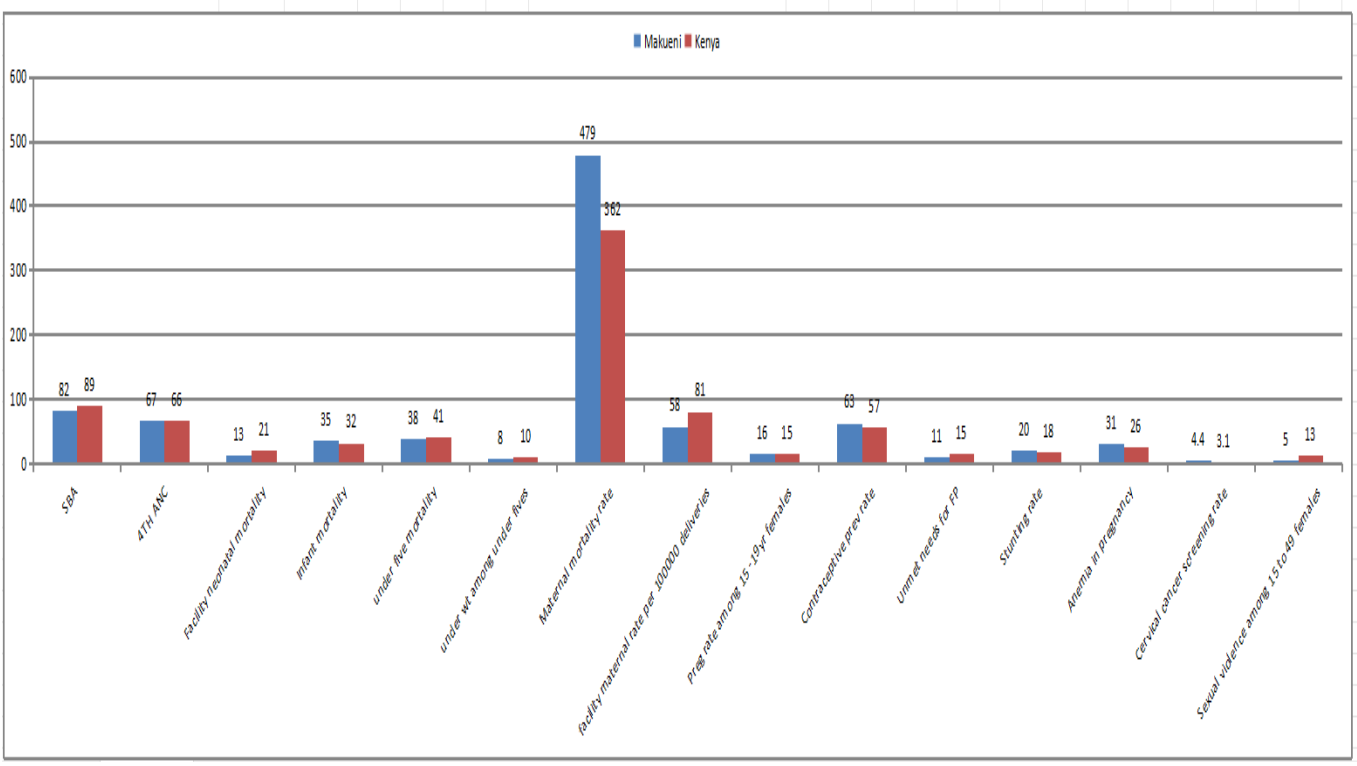
Figure 7: Global heat map on the 1-59 months mortality rate achievement status and required acceleration



Source: Level and trends on child mortality, UN 1GME report, 2024[i]

In Makueni County ANC attendance at least 4 contacts at 76%; skilled provider delivery at 92%; neonatal mortality at 26/1000 live births; infant mortality at 35/1000 live births; under - 5 mortality at 38/1000 live births; maternal mortality at 479/100,000 live births and in the past two year no maternal mortality has been experienced. Teenage pregnancy is at 11%; use of modern family planning methods for married WRA is at 64% and their unmet need at 11%. The demand satisfied for WRA is at 76% (KDHS, 2022)[xiv]. Performance in Makueni County is better in ANC attendance, skilled delivery, under 5 child mortality, teenage pregnancy rate, and contraception services. However, the maternal, neonatal and infant mortality, prevalence of anaemia in pregnancy and childhood stunting are higher than the national data. Unfortunately, both the Makueni and national data fall short of the SDG targets and related milestones. See the comparison Table 4 below of Makueni County and the national RMNCAH performance indicators.

Table 4: Comparison of Makueni County and Kenya RMNCAH performance indicators



Source: KDHS, 2022

Some of the innovative steps being undertaken in Makueni County to reduce maternal and neonatal mortality include:

a. Maternity open days are held within the community with male champions being active

b. Outreach programs are operational.
c. Seven pediatricians have been deployed across the county and with two others undergoing training.
d. Blood drives are being run, courtesy of His Excellency Governor Mutula Kilonzo Jr.
e. Ongoing training on safe surgery is happening in the County
f. Social media platforms facilitate feedback from new mothers and active ANC discussion groups.
g. Regular clinical audits are conducted through a care network are in Makindu, Kibwezi, Sultan, Konza, and Makueni Hospitals and shared with the CHMT of Makueni County
h. Identification of the sick mother and sick newborn
i. Adoption of tele-medicine and tele-consultation, influencing other counties such as Homabay, Garissa, Nakuru, Nairobi, and Murang'a.

As of 2024, maternal and neonatal mortality remain significant public health challenges in Kenya. The maternal mortality ratio stands at approximately 355 deaths per 100,000 live births, while the neonatal mortality rate is about 21 deaths per 1,000 live births both are off track the SDG targets

Causes of maternal mortality

Direct Causes of maternal mortality in Kenya:

Postpartum Hemorrhage (PPH): PPH is the leading cause of maternal deaths, accounting for approximately 34% of fatalities during childbirth.

Sepsis: Infections during or after childbirth contribute significantly to maternal mortality.

Hypertensive Disorders: Conditions such as pre-eclampsia and eclampsia are notable contributors to maternal deaths

Indirect Causes of maternal mortality:

HIV/AIDS: AIDS-related indirect maternal deaths have become increasingly important, contributing to overall maternal mortality.

Anemia and Malaria: These conditions, often exacerbated by pregnancy, are significant indirect causes of maternal mortality.

Inadequate Healthcare Infrastructure: Many health facilities lack essential equipment and are understaffed, compromising the quality of maternal care.

Causes of Neonatal Mortality

Direct Causes of neonatal mortality:

Prematurity and Low Birth Weight: Prematurity accounts for approximately 37% of neonatal deaths, with complications such as hypothermia and underdeveloped organs increasing mortality risk.

Birth Asphyxia: Inadequate oxygen supply during birth is a significant contributor to neonatal mortality.

Neonatal Sepsis: Infections acquired during or after birth are a leading cause of neonatal deaths.

Indirect Causes of neonatal mortality:

Overcrowded and Understaffed Facilities: Many neonatal units are overcrowded, with instances of multiple infants sharing incubators, increasing the risk of infections. Staffing shortages exacerbate the situation.

Inadequate Antenatal Care (ANC): Mothers who do not attend ANC visits are significantly more likely to experience neonatal deaths. Those attending fewer than four ANC visits also face increased risks.

Maternal Education: Infants born to mothers without formal education have higher neonatal mortality rates compared to those whose mothers have higher education levels.

The leading direct cause of maternal deaths in the county was postpartum haemorrhage (PPH), a condition exacerbated by factors such as limited access to quality obstetric care and delays in receiving appropriate treatment. Other contributing factors included obstructed labour,

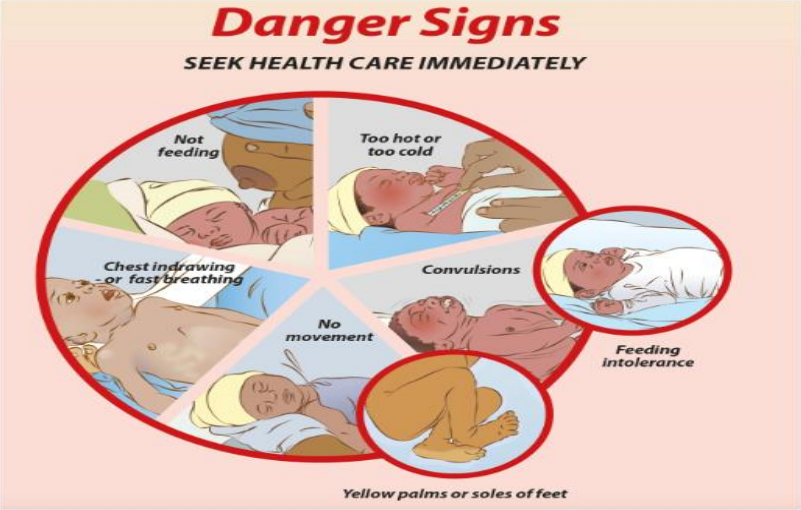
eclampsia, and sepsis. Neonatal mortality in Makueni stood at 26 deaths per 1,000 live births, with primary causes being birth asphyxia, infections, and complications related to prematurity. These outcomes were often linked to inadequate prenatal care, limited skilled birth attendance, and insufficient neonatal resuscitation services. Addressing these challenges requires continued investment in healthcare infrastructure, training of healthcare personnel, and community education to improve maternal and neonatal health outcomes in the county[xv].

Makueni County in partnership with JHPIEGO training on Heat Stable Carbetocin

Identification of danger signs in pregnancy, the postpartum period and the newborn show in the diagrams below show need to make early diagnosis provide appropriate and timely care as saving more lives.

Danger Signs in Women in the Postpartum Period

Vaginal bleeding (more then 2–3 sanitary pads in 30 minutes)
Elevated temperature
Breathing difficulty
Abdominal pain
Breast and nipple pain
Urinary incontinence
Perineal pain or pus discharge
Foul smell of vaginal discharge



The global data reflects in SSA under 5 more deaths occur as a result of infective diseases and more neonatal deaths are seen in Southern Asia from labor related complications

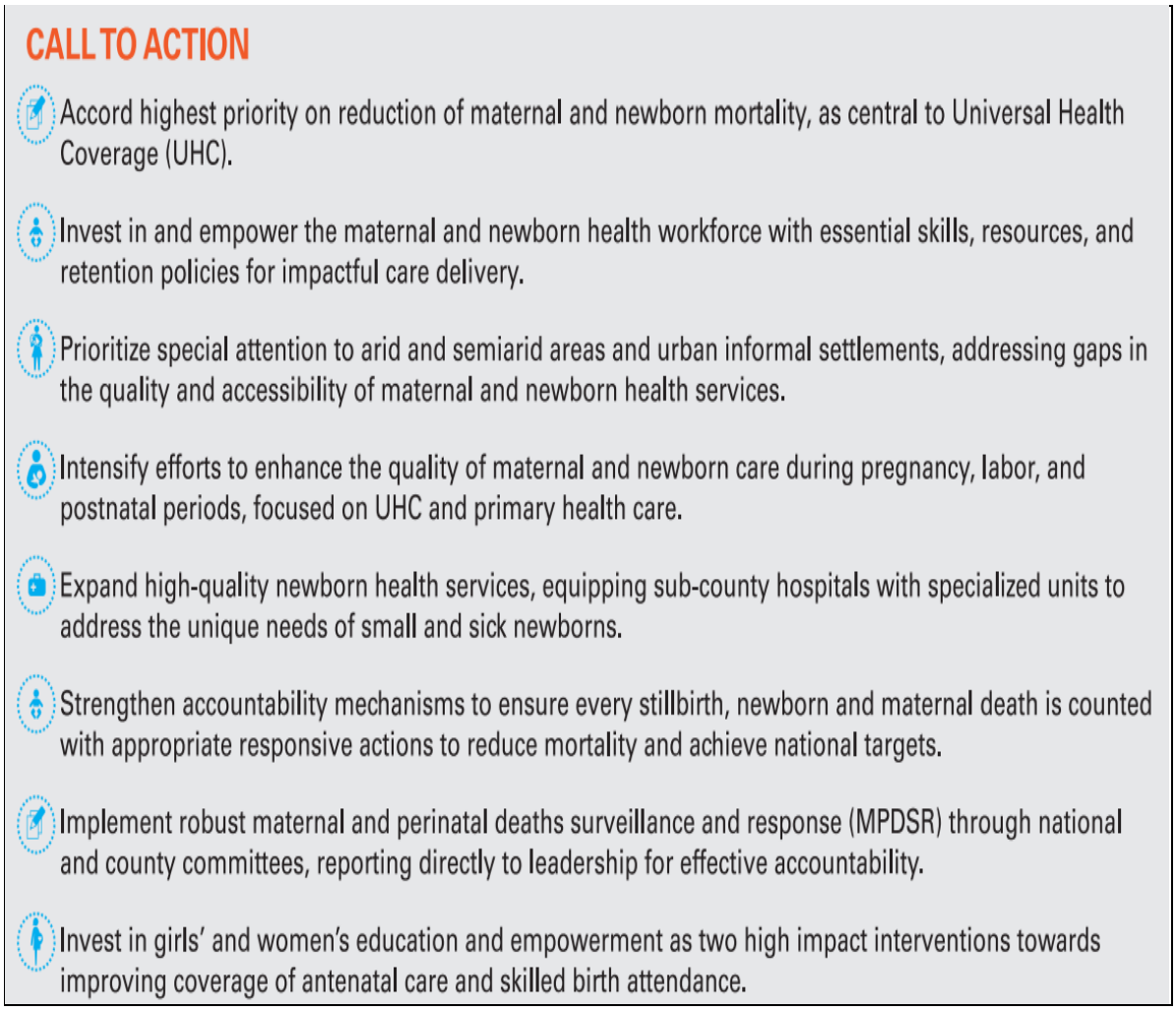
In Tanzania they have had the **safer births bundle of care** program which showed a 40%* reduction in early newborn deaths, and a 75% reduction in maternal deaths after implementation. This program provided a combination of interventions developed to improve the quality of care for mother and baby with the goal of reducing birth-related mortality. A 3-year stepped-wedge cluster-randomized study of the Safer Births program at 30 high-burden facilities in five regions in Tanzania. The bundle of interventions in the program was aimed at continuous quality improvement through regular onsite simulation-based training (SimBegin course), the collection and use of local clinical data, the assistance of trained local facilitators and facility champions , and the use of innovative clinical devices for fetal and neonatal heart-rate monitoring (Moyo fetal heart rate monitor and NeoBeat Newborn Heart Rate Meter for immediate assessment at birth); the Upright PEEP Newborn Bag Mask for easier bag-mask ventilation of new-borns who were not breathing[xvi] and Neonatalie Live Newborn Resuscitation Trainer. Processes to support sustainability and scalability supported through close collaboration with national, regional, and local health authorities and through alignment with national guidelines for obstetrical and newborn care. A “training corner” was created in each labour ward. A mentorship program was established to support the national facilitators, who conducted regular visits to each facility for supportive supervision and mentored the local champions and facilitators. The Helping Babies Breathe[10] (American Academy of Paediatrics) and Helping Mothers Survive Bleeding After Birth Complete, version 2.0, [11] scenarios were integrated into the training component and with in situ team simulations and reflective debriefing. Innovative simulators (Laerdal Global Health), which were delivered to every site, included NeoNatalie Live for newborn resuscitation training and MamaNatalie for

training on identification, prevention, and management of postpartum bleeding. Quality of improvement used the continuous circle learning model[xvii].

Perinatal mortality

Every Newborn Action Plan, Every Woman Every Child Monitoring Framework, Every Child Alive Campaign, and the Quality of Care Network initiatives focus on the reduction of perinatal mortality in low- and middle-income countries and the successful achievement of Sustainable Development Goal 3. However, SSA bears the greatest burden of perinatal mortality in the world, accounting for 40% of total under-five deaths. A child born in SSA has a 1 in 36 likelihood of experiencing perinatal death, compared to 1 in 333 in high-income countries. Spatial variation is important to improve the targeting of interventions, to identify the most affected community, and for designing evidence-based health policies and interventions. The pooled prevalence of perinatal mortality in SSA was 46.63 per 1000 total births (95% CI: 42.48, 51.17), and its spatial distribution was found to be clustered (Global Moran's $I = 0.18$, $p < 0.01$). Significant hotspot areas were located in Nigeria, Madagascar, Rwanda, Malawi, Burundi, Gambia, Uganda, Côte d'Ivoire, Angola, Ethiopia, Burkina Faso, and Senegal, while significant cold spots were located in Kenya, Gabon, South Africa, Ghana, Mali, and Mauritania. The findings indicated absence of antenatal care visit, birth interval less than 15 months, women undergoing caesarean section delivery, unemployed women, and households without children were significant spatial predictors of perinatal mortality in SSA. There will be need to address maternal health seeking behavior in the continuum of care, access and coverage, improve social determinants and provide policies, mobilization of resources, and tailored interventions to areas of Geo-spatial vulnerability[xviii] to promote health equity

Table 5: UNICEF Call to action on maternal and neonatal mortality

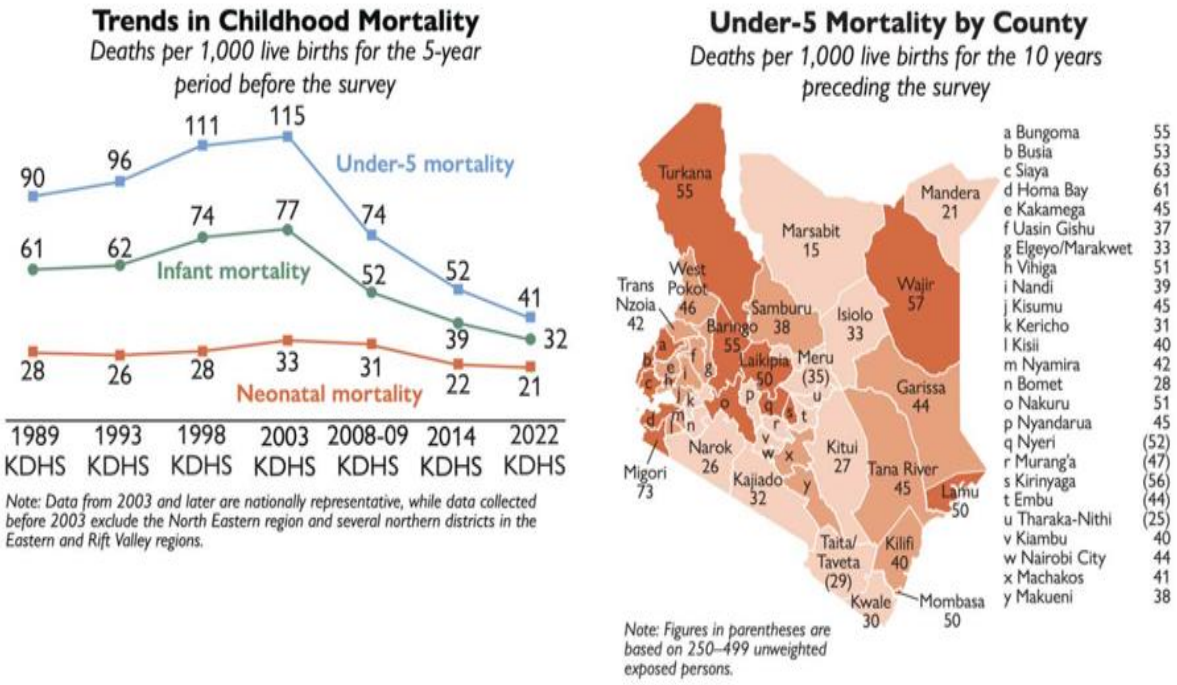


Source: UNICEF Call to action: Ensuring affordable and quality healthcare for mothers and babies[iv]

CHAPTER THREE CHILD AND ADOLESCENT MORTALITY

In Kenya the trends in infant and under- 5 mortalities have progressively declined since 2003 to 32 and 41/1000 live births but are yet to attain an annual reduction rate to attain SDG3 of 12 and 25/1000 live births respectively. The neonatal mortality has plateaued since 1989 to 2022 and currently at 21/1000 live births (92/day) with the expectation by 2030 to be at 12/1000 live births. Kenya has a still birth rate of 19/1000 live births (83/day) and needs to be at <12/1000 live births if Sustainable Development Goal 3 is to be achieved. Note in 50% of the still births they are related to an intrapartum event succumbing to labour related complications. Prematurity, delivery complications and infections accounting for the majority of the still births. In all these performance indicators there are glaring disparities within the country and within the counties (see Figure 8 below).

Figure 8: Trends in childhood mortality 1989-2022 and under 5 mortality by County in Kenya



Source: KDHS, 2022

In SSA child mortality is high with the risk of under-five mortality in the WHO Africa region being 76 deaths per 1000 live births, which is eight-times higher than the WHO European region[xix] and attributed to maternal education, low socioeconomic status and climate change. In Kenya child mortality rate has been on the decline and currently at41/1000 live births short of the SDG 3 of 25/1000 live births.

Spatial Survival Models with Frailty Terms is applied to assess under-five child mortality, these models incorporate spatial frailty terms to account for unobserved heterogeneity across regions. In the context of maternal and newborn health, such models help in understanding spatial variations in mortality risks, some of the factors being variations caused by the risk factors above are known to vary from region to region in a country. This suggests a presence of community level characteristics that influence health outcomes. Such community level variables include income, place of residence, infrastructure, and region among others. These variables influence behaviours and patterns regarding child and maternal health care, and are significant in explaining child mortality [xx] [xxi] thereby guiding resource allocation and intervention planning[xxii].

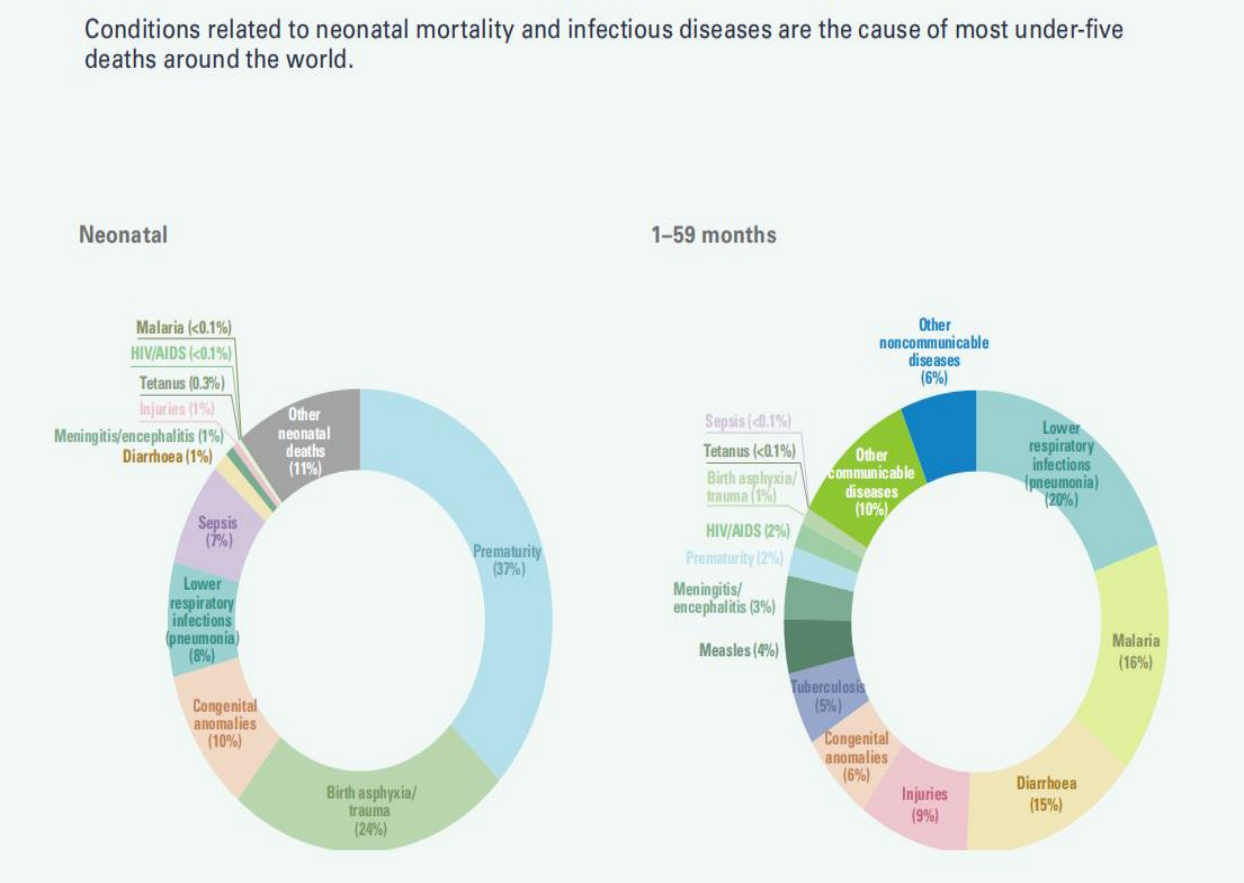
Child health matters because the number of children who die before reaching their fifth birthday is closely monitored as a marker of social well-being and national development. Underfunded health systems struggle to provide quality and equitable services to save the lives of mothers and children. Fragile, conflict and violent settings particularly pose a threat to health systems, with estimates showing that almost half of all under 5 deaths occur in these settings. Child health indicators summarizes the social, economic, environmental and health care systems that children are born into and used as the basis of planning health strategies, programmes and interventions. It's also an important tool for evaluating the success of a country's child health policies. Furthermore, identifies counties where mortality remains higher than the national average is valuable for: the governments properly directing suitable interventions that are most likely to bring down child mortality rates and ensure effective and equitable resource allocation to reduce inequalities.
This is becoming more relevant in Kenya where healthcare is under devolved governance system [xxiii].

All children must have access to immunization; strengthen primary health care with stronger health systems; combat food insecurity, making sure every child has access to good nutrition and address early childhood development and education with play, learn and thrive integrated into innovations that in-cooperate science / technology, social and financing for health and healthier futures.

Causes of children under 5 years mortality

The causes of neonatal at 1-59 months deaths (Figure 9 below) highlight the urgent need for sustained investment in EWENE -maternal, newborn, and child health care — including access to, antenatal, skilled care at birth and postnatal services, vaccination, nutrition, and identification and management of common childhood illnesses.

Figure 9: Causes of neonatal and 1-59 months children

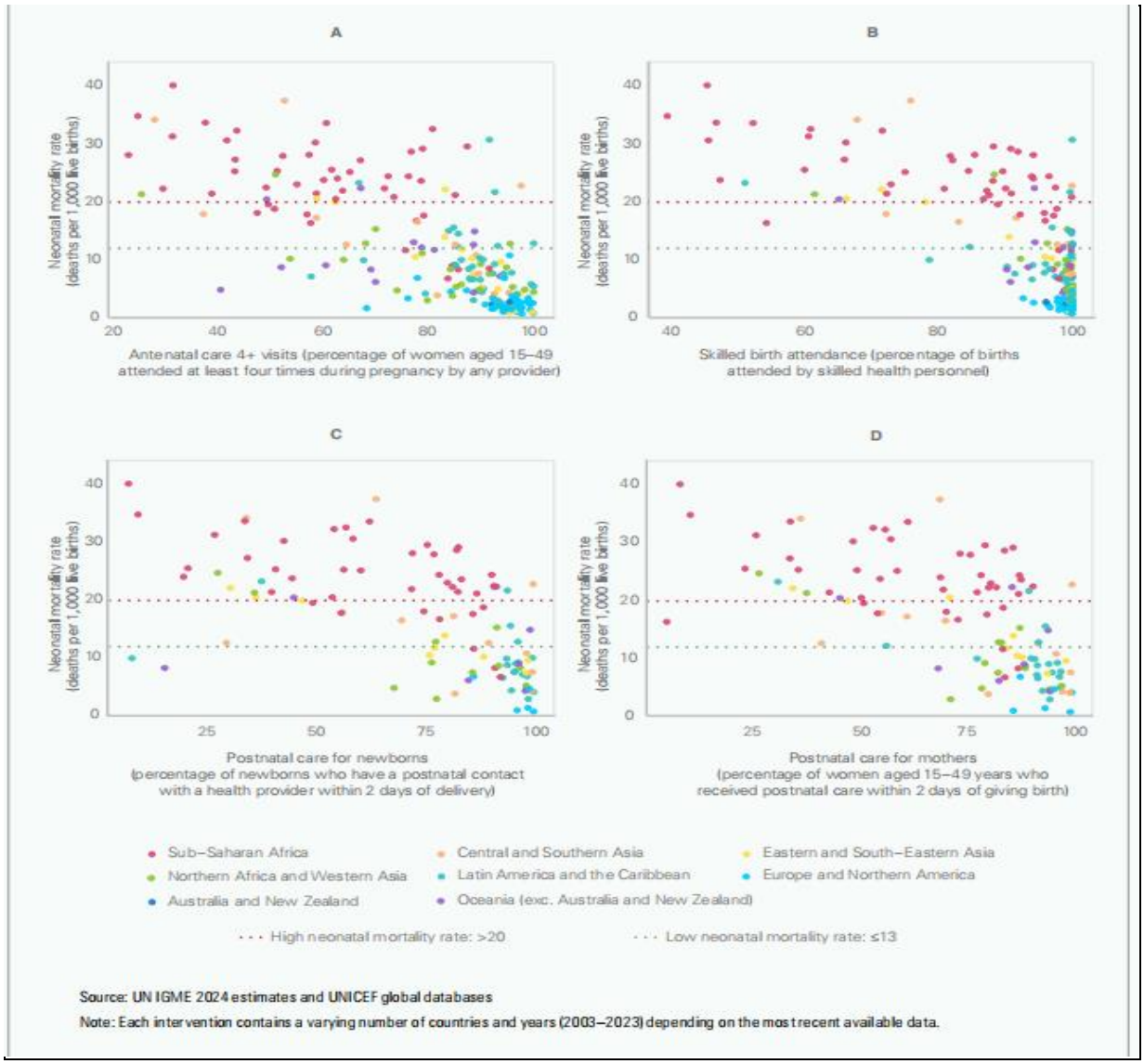


Source: Level ad trends on child mortality, UN 1GME report, 2024[i]

The need to accelerate every woman, every newborn everywhere (EWENE)

The interventions to avert these deaths are well known and depicted in Figure 10 below. Access to these interventions must be expanded to uphold every child's right to survive, and as enshrined in the Convention on the Rights of the Child. Additionally, stronger health systems and resilient data systems will be critical to reaching the most vulnerable children and monitoring progress. This can be achieved through accelerated efforts that commences with registration of births, stillbirths and neonatal deaths; providing an enabling normative environment; financing and quality of service delivery of MNCAH, and having robust datasets with SMART advocacy and accountability.

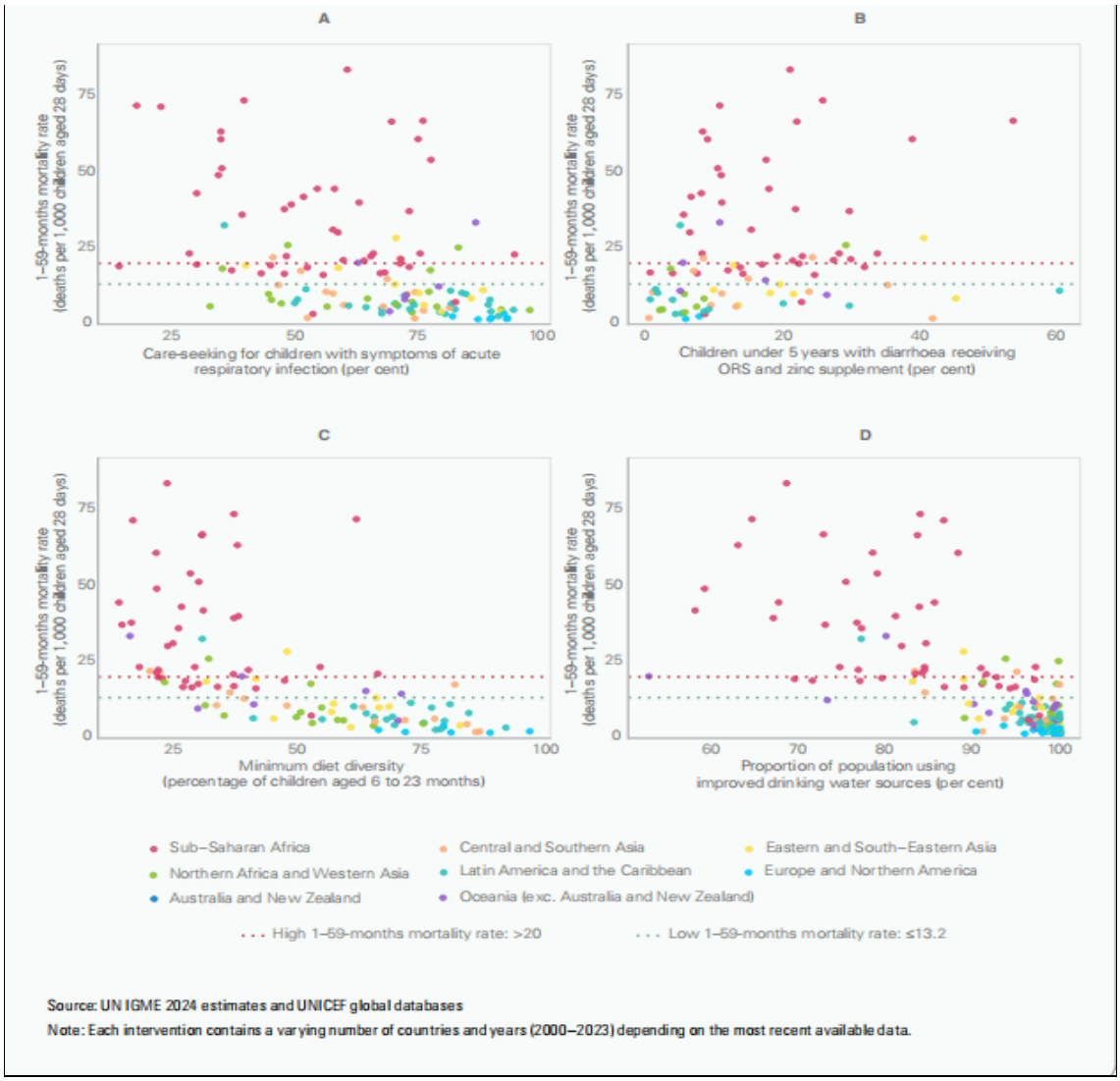
Figure 10: Interventions reflected against neonatal mortality estimates, 2024



Source: Level ad trends on child mortality, UN 1GME report, 2024[i]

Intervention in childhood with providing care seeking for children with symptoms of acute respiratory infection, diarrhea receiving ORS, increasing dietary diversity and improved WASH showed reduction in related mortality and compared by regions is show in Figure 11 below.

Figure 11: Intervention in children 1-59 month's mortality and related to regions



Source: Level ad trends on child mortality, UN 1GME report, 2024[i]

Some Exemplar countries making strides in reducing maternal and neonatal mortality include Nepal, Senegal, and India.

In Nepal, financial incentives for antenatal care and institutional deliveries, alongside the elimination of user fees for essential maternal and child health services, have driven progress. The National Immunization Programme, reaching over 90% vaccine coverage, and a network of 50,000 Female Community Health Volunteers have improved access to care, even in remote areas.

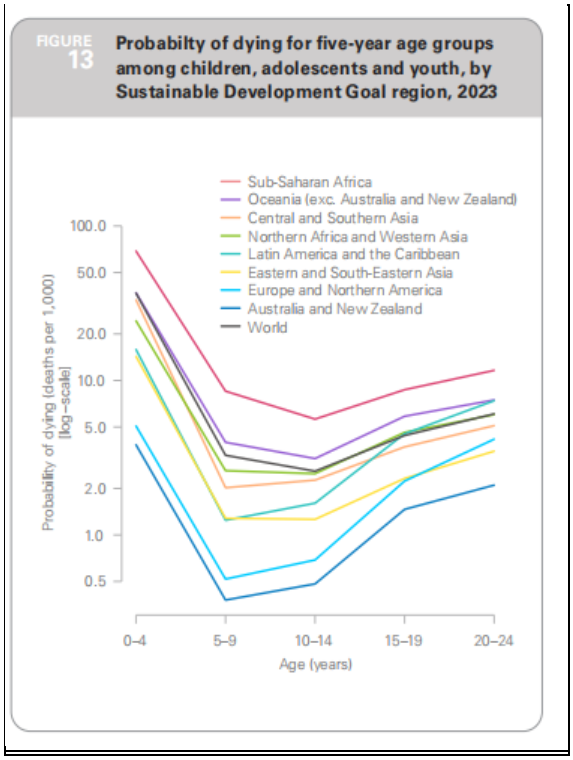
Senegal has expanded health coverage and community health, prioritizing child health. Key interventions like free caesarean sections, strengthened universal health coverage, and maternal mortality surveillance have enhanced healthcare access. Investments in human resources, particularly in midwives and specialists, along with the 'winning pair' model (nurse and

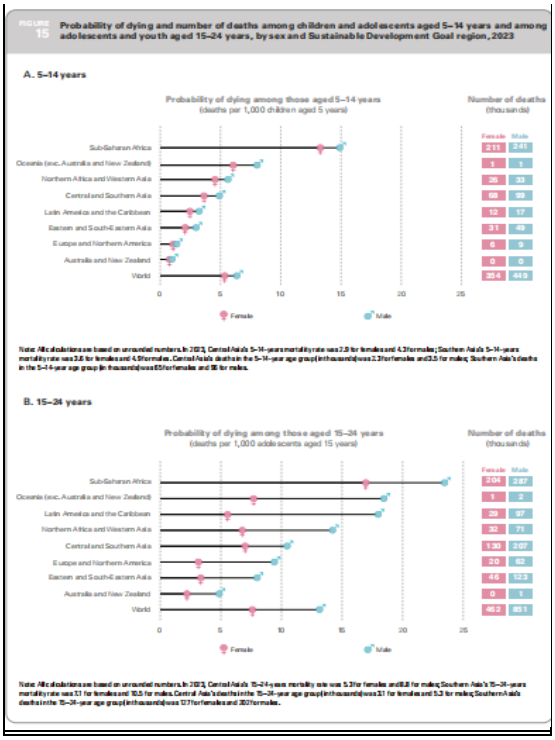
midwife at health centers), have improved maternal and newborn care. Community engagement and programs addressing pneumonia, diarrhea, and malnutrition have also contributed to reducing mortality.

India's healthcare system has seen transformative investments, including Ayushman Bharat, the world's largest health insurance scheme. Free healthcare for pregnant women and infants, along with improved infrastructure like maternity waiting homes and newborn care units, accreditation of health facilities through the Manyatta Initiative supports millions of healthy pregnancies and births. Skilled birth attendants and robust data systems ensure equitable access and evidence-based decision-making, further advancing maternal and child health outcomes.

In 2023, mortality of children, adolescents and youth in sub-Saharan Africa had the highest probability of death. In all regions there is a notable decline in death between the ages 5-10 years and then notable progressive rise in mortality from ages 10-14 years to 20-24 (Figure 12 below). Additionally, both regional and gender related disparities are noted.

Figure 12: Probability of dying among children, adolescents and youth by SDG, regions and gender, 2023



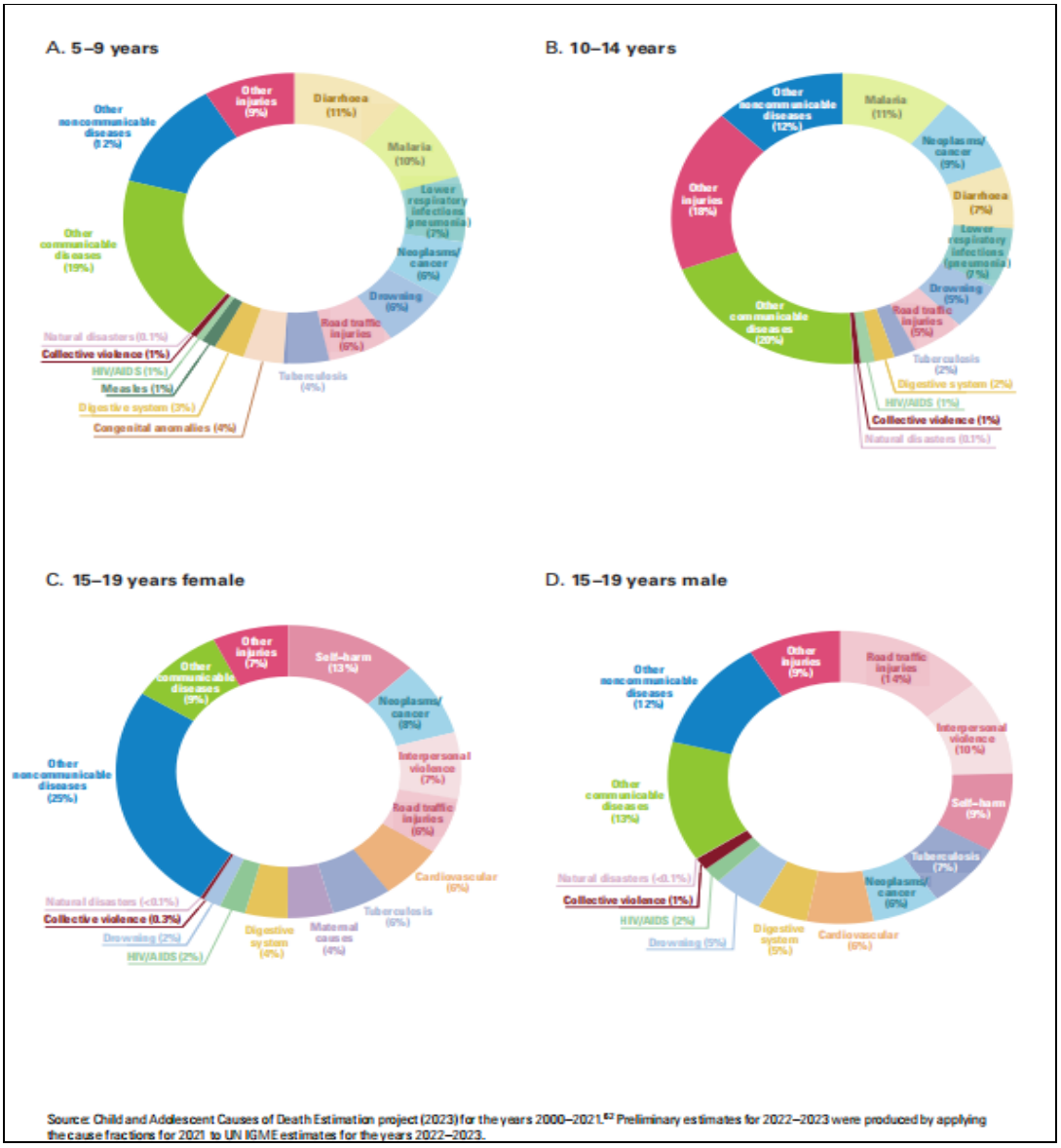


Source: UN ICGME Estimates 2022-2023

Causes of mortality by age cohorts and the differences between the females and boys at age 15-19 years (Figure 13 below) with Injury, violence and non-communicable diseases are among the leading causes of death for adolescents and youth. 5–9 year, the leading causes of death remain childhood illnesses, diarrhoea, malaria and lower respiratory infections followed by

injuries. For young adolescents (ages 10–14years) and older adolescents (ages 15–19 years), noncommunicable diseases, injuries (both intentional and unintentional) as the leading causes of death, with childbirth becoming an important cause of death for young women. Business as usual means millions of children, adolescents and youth will lose their lives before this decade ends. If current trends continue, more than 14 million children, adolescents and youth aged 5–24 years are projected to die between 2024 and 2030. Adolescents will account for approximately 42 per cent (6 million) of these deaths. Nearly half (48 per cent) of the deaths in the 5–24 age group will occur in sub-Saharan Africa (6.8 million), while another 22 per cent are expected in Southern Asia (3.1 million). If mortality remains at 2023 levels, 15 million children, adolescents and youth aged 5–24 years are projected to die between 2024 and 2030. Intervention such as provision of CSE, keeping from harm's way through healthy lifestyles-diets, physical activity, avoidance of drugs and substance abuse, retention in formal education, psycho-social support and avoidance of teenage pregnancies. In addition improvement of data driven decision making in the various contexts crucial to give appropriate and timely interventions.

Figure 13: Causes of mortality by age cohorts and the differences between the females and boys at age 15-19 years



Source: Child and Adolescent Causes of Death Estimation project (2023) for the years 2000–2021.[62] Preliminary estimates for 2022–2023 were produced by applying the cause fractions for 2021 to UN IGME estimates for the years 2022–2023.

Adolescent health

Investment and advocacy for adolescent health are critically important, particularly as countries strive to uphold health promotion and primary prevention strategies within the broader frameworks of Primary Health Care (PHC) and Universal Health Coverage (UHC). Adolescence represents a pivotal window for shaping long-term health trajectories and breaking intergenerational cycles of poor health. The **AA-HA! 2.0 (Accelerated Action for the Health of Adolescents)** framework provides a strategic guide for governments and partners to design and implement evidence-based, multi-sectoral interventions that prioritize adolescent well-being. It emphasizes the importance of meaningful youth engagement, data-driven decision-making, and integrated service delivery that addresses the diverse needs of adolescents across sexual and reproductive health, mental health, nutrition, injury prevention, and substance use. Prioritizing such preventive approaches—anchored in AA-HA! 2.0—supports the shift from a disease-cantered model to a wellness paradigm, fostering resilience

and healthy behaviours that extend into adulthood. Strengthening adolescent health through PHC platforms not only reduces future health system burdens but also supports the attainment of demographic dividends by ensuring that young populations are healthy, educated, and empowered to contribute productively to society. Strategic advocacy is therefore essential to secure sustained investments, Multisectoral collaboration, and youth participation in policy design and implementation—ensuring that adolescents are central to achieving health equity and sustainable development.

The framework underscores the influence of broader social determinants, including poverty, gender inequality, discrimination, and access to education and employment opportunities, which significantly affect adolescent health outcomes. Furthermore, it advocates for adolescent-responsive health systems that ensure confidential, accessible, and age-appropriate care, especially in areas like sexual and reproductive health and mental well-being (WHO, 2021). A key principle of AA-HA! Is the meaningful participation of adolescents in the design, implementation, and evaluation of health programs and policies that affect them? The framework also calls for intersectoral collaboration, engaging health, education, justice, and social protection sectors to create a supportive environment for adolescent development. Finally, AA-HA! Promotes strong monitoring and accountability mechanisms, including the use of dis-aggregated data and standardized indicators, to inform evidence-based policy-making and track progress over time[xxiv xxv].

In **Kenya**, adolescent and youth sexual and reproductive health and rights (SRHR) remain a critical area of concern due to persistent gaps in service delivery, education, and social support. Despite progress in policy development and increased political will, significant challenges affect health outcomes among adolescents and youth. According to the **Kenya Demographic and Health Survey (KDHS) 2022** and other national sources: **Adolescent birth rate** (ages 15–19): **14.9%** of adolescents have begun childbearing (KDHS 2022). The **Contraceptive prevalence** (modern methods among sexually active adolescents aged 15–19): **~22%**. With **Unmet need for family planning** (15–19 years) at 23**%**, higher than the national average of 14%. .**HIV prevalence** (ages 15–24): **1.5%** nationally, with higher risk among adolescent girls and young women. In **Comprehensive knowledge of HIV prevention** (ages 15–24): Only **42%** of young women and **51%** of young men have correct knowledge. **Female genital mutilation (FGM)**: affects **15%** of girls aged 15–19, with significant regional variation. **Early marriage**: **23%** of girls are married before the age of 18.

In Kenya, adolescents and youth face numerous challenges in accessing quality sexual and reproductive health and rights (SRHR) services. Many health facilities lack youth-friendly infrastructure and trained personnel, while services are often judgmental and fail to guarantee privacy and confidentiality—factors that discourage young people from seeking care. Cultural and religious barriers further complicate the situation, as prevailing social norms inhibit open

discussions about sexuality, and there is ongoing resistance to implementing comprehensive sexuality education (CSE) in schools. Gender inequality and harmful practices such as early marriage, female genital mutilation (FGM), and gender-based violence (GBV) significantly undermine girls' autonomy and negatively impact their health outcomes. Although CSE has been integrated into the school curriculum, its implementation remains inconsistent and limited. The country also faces high rates of teenage pregnancy, which lead to stigma, school dropout, and restricted economic opportunities, while pregnant adolescents often encounter difficulties in accessing antenatal and postnatal care. Additionally, adolescent girls and young women are particularly vulnerable to HIV and other sexually transmitted infections (STIs) due to inter-generational sex, low negotiation power, and entrenched gender norms. Despite the existence of progressive youth policies such as the Adolescent Sexual and Reproductive Health Policy of 2015, their effectiveness is hindered by weak coordination, inadequate funding, and insufficient monitoring mechanisms.

General Mortality and Health Trends in Makueni County

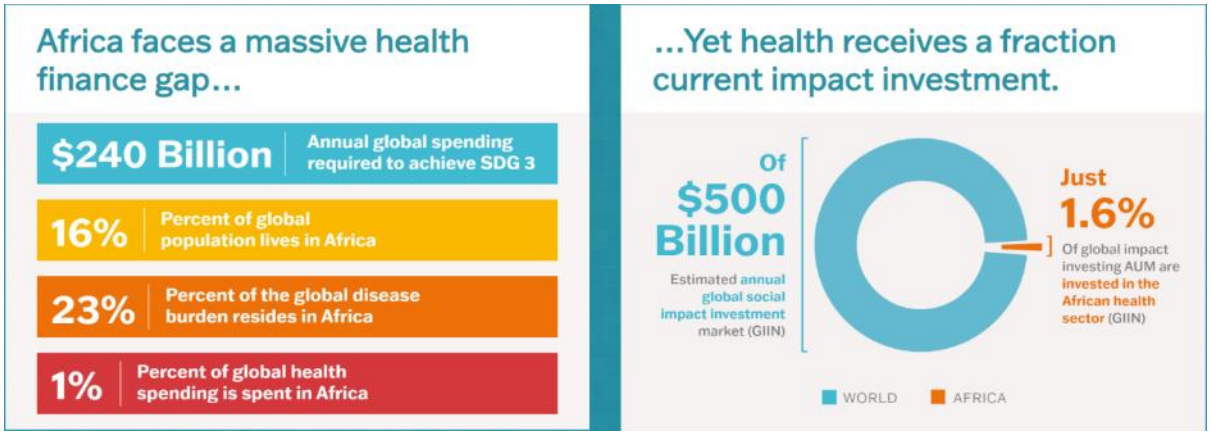
Under-5 Mortality**:** Nationally, malaria remains a leading cause of death among children under five, contributing to anaemia and school absenteeism, additionally diarrheal disease and malnutrition. In the 15–19 years cohort reports a birth rate of 73 per 1,000 women aged 15–19, indicating significant teenage pregnancy rates and mortality related to pregnancy and childbirth complications. Among youth 20-24 years specific mortality data is limited, this age group may be affected by factors such as HIV/AIDS, road traffic accidents, and other non-communicable diseases, reflective of national trends (KDHS 2022)

CHAPTER FOUR GLOBAL FINANCING OF THE HEALTH SECTOR AND IN KENYA

The dwindling development assistance in health care, coupled with rising donor sanctions from donors and escalating debt burdens—particularly in low- and middle-income countries (LMICs)—is severely undermining the delivery of essential maternal, newborn, child, and adolescent health (MNCAH) services. As external funding streams dry up and political tensions restrict aid flows, many LMICs find themselves grappling with constrained public health budgets, limiting their ability to maintain or expand critical MNCAH programs. At the same time, increasing debt repayments siphon off national resources that could otherwise be invested in health infrastructure, workforce development, and service delivery. This confluence of financial stressors not only stalls progress made in MNCAH over the past decades but also increases disparities in access to life-saving interventions, leaving the most vulnerable populations at even greater risk.

There is evidence of a huge financial deficit. Annually we require 240Billion needed to attain SDG3 and only one percent spending made in Africa despite having 23 % of the global disease burden. The estimated annual global need is 500 Billion with Africa receiving only 1.6%. Africa's disease burden and financing need is depicted in the Figure 14 below.

Figure 14: Africa disease burden and financing needs



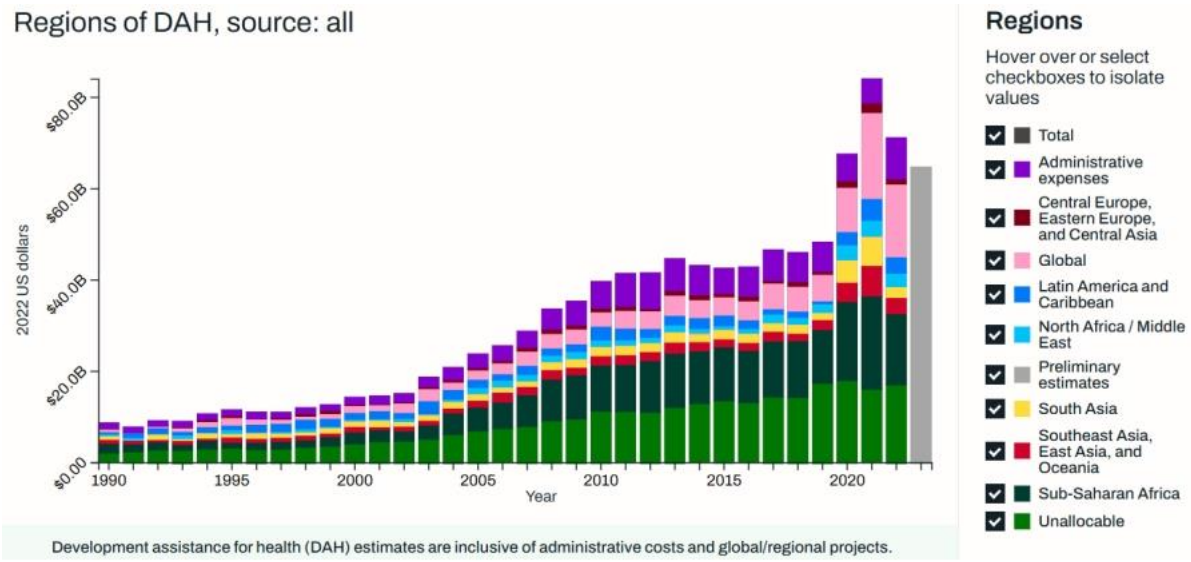
Resilience of the health system calls for mobilization of financial resources both external and domestic, the establishment of robust public-private partnerships, and the adoption of innovative financing mechanisms that promote self-reliance and resilience. Harmonizing efforts at all levels—from national policymakers to local health authorities—to secure a stable future where health services remain accessible and effective, regardless of external funding fluctuations. United States Government's stop-work order, implemented under Executive Order No. 14169 on January 20, 2025[xxvi]. The freeze in donor funding, which underpinned numerous health projects, programs, and services, has had immediate and far-reaching

consequences. Funding freeze has directly led to the halting of critical HIV/AIDS treatment, prevention, and counseling services. Essential health interventions such as immunization, nutrition, and family planning have also been disrupted, increasing the risk of disease transmission and reversing hard-won public health gains. This has a critical bearing on maternal, newborn, child and adolescent health. We need to recognize there are several forms of global sanctions besides financing health but affecting other sectors namely: trade, military, arms, tourism[xxvii].

Global trends in development assistance for health between 1990-2023

Global trends have been on the rise from 1990 to - date from a total of 0.5 Billion to 80Billion and present in all regions of development assistance in health. A marked increase in the 2020 and related plausibly to the COVID 19 pandemic and increase in global stressors. More funding has been made in SSA and South East Asia over time and shown in Figure 15 below.

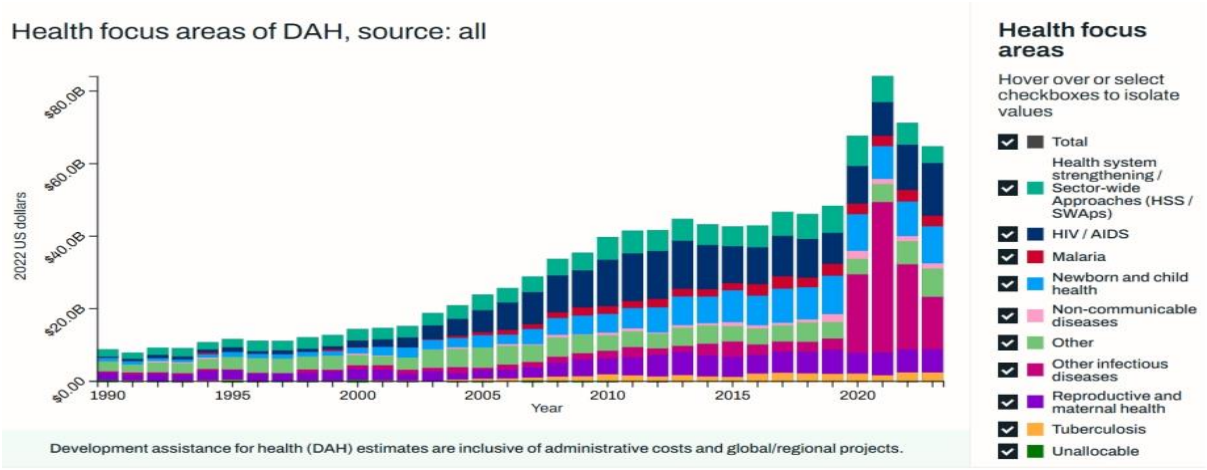
Figure 15: Display of all regions of Development assistance in Health



Source: Institute for Health Metrics and Evaluation (IHME). **Financing Global Health**. Seattle, WA: IHME, University of Washington, 2024[xxviii]. Available from http://vizhub.healthdata.org/fgh/)

Regional development assistance in health care has been on the rise from 1990 to- date and particularly peaked from 2020. Ares that are principally funded include communicable diseases especially HIV/AIDS. The health system and sector wide approach funding has been marginally increased from 2020 -2022. Reproductive and maternal health and newborn and child health have largely remained unchanged from 2015 see figure 16 below.

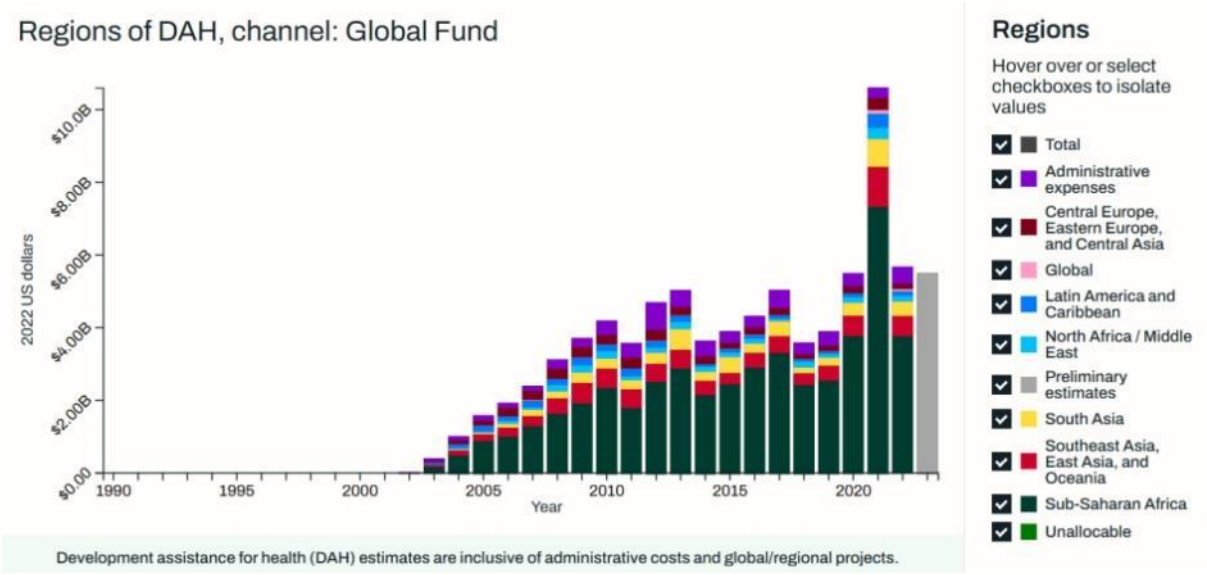
Figure 16: Regional development assistance for health by regions



Source: Institute for Health Metrics and Evaluation (IHME). **Financing Global Health**. Seattle, WA: IHME, University of Washington, 2024[ii]

The regions development assistance in health care global fund initiated in 2003 has been rising with funding mainly to SSA and as shown in Figure 17 below.

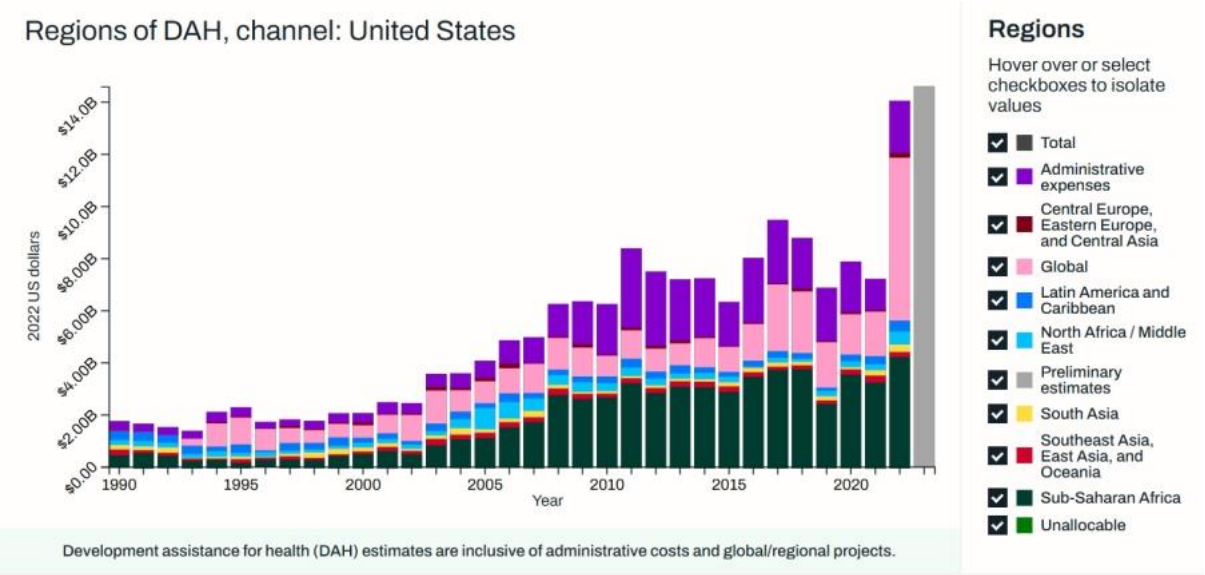
Figure 17: Regions of Development assistance in health: Global Fund



Source: Institute for health metric and evaluation (IHME) development assistance for health, 1990-2023[iii]

The funding from USA and United Kingdom amounting to 14 B and 1.4 B respectively has been in existence from 1990 to -date and notably with increasing global disbursements. The USA shows higher level of administrative expenditure progressively and mainly to SSA and global funding (Figure 18 below)

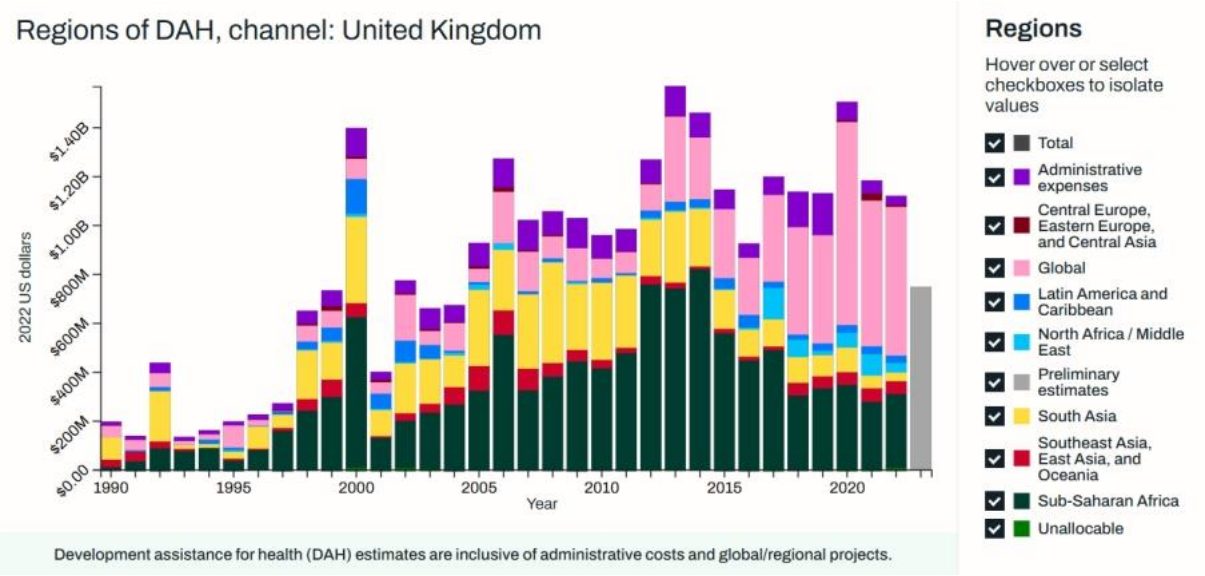
Figure 18: Regions development assistance in Health from United States



Source: Institute for health metric and evaluation (IHME) development assistance for health, 1990-2023[iii]

In the time period between 2002 and 2015 the UK funds were principally increased to South Asia and with much higher funding in SSA during the period of the Millennium Development Goals compared to - date (Figure 19 below).

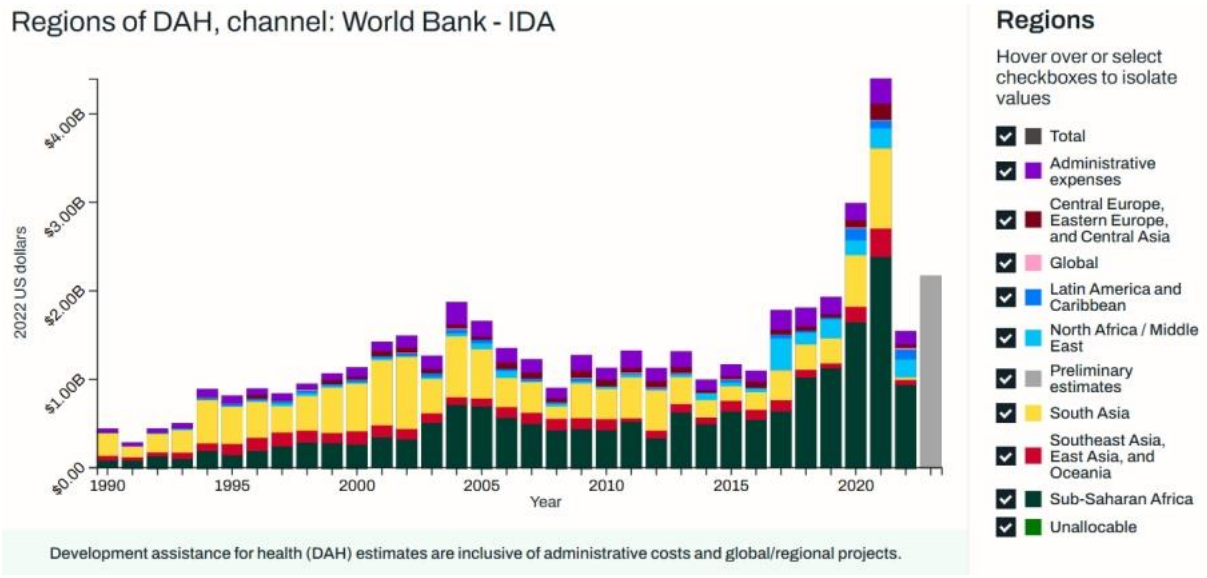
Figure 19: Regions development assistance in Health from United Kingdom



Source: Institute for health metric and evaluation (IHME) development assistance for health, 1990-2023[iii]

The World Bank- IDA provided funding from 0.5 to 4B since 1990 to- date in all regions but has not participated in the global fund. Their main region of funding has been in the earlier period to South Asia and has progressively increased funding to SSA (Figure 20 below).

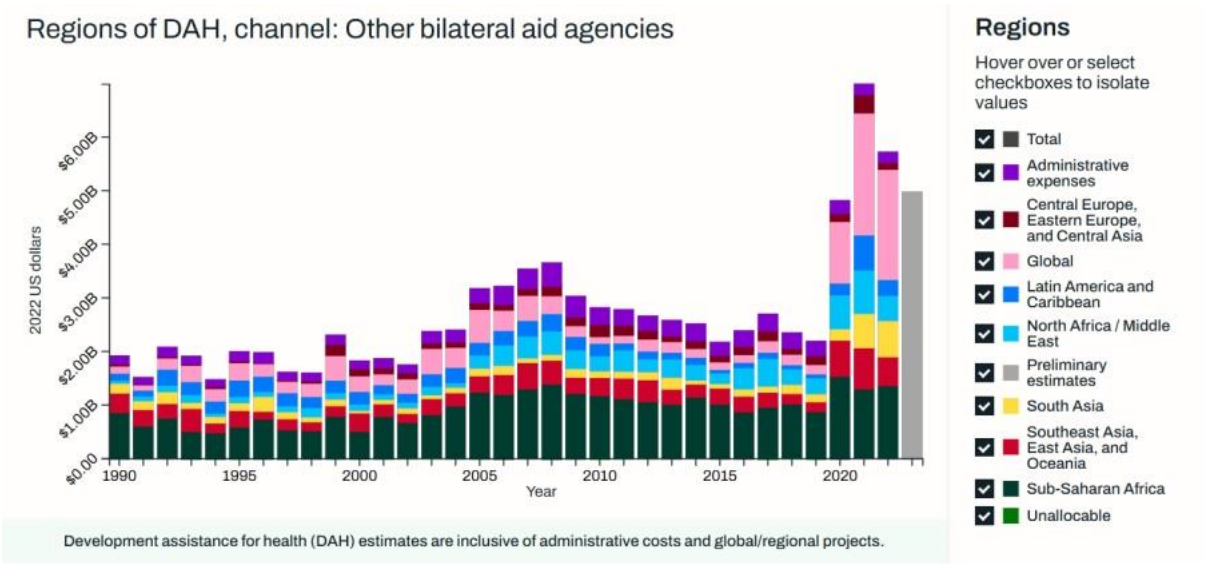
Figure 20: Regions of development assistance World Bank - IDA



Source: Institute for health metric and evaluation (IHME) development assistance for health, 1990-2023[iii]

Other bilateral aid agencies have been funding health care since the 1990's to - date and with most of their donation going to SSA as shown in Figure 21 below.

Figure 21: Regions development assistance in Health: Other bilateral aid agencies

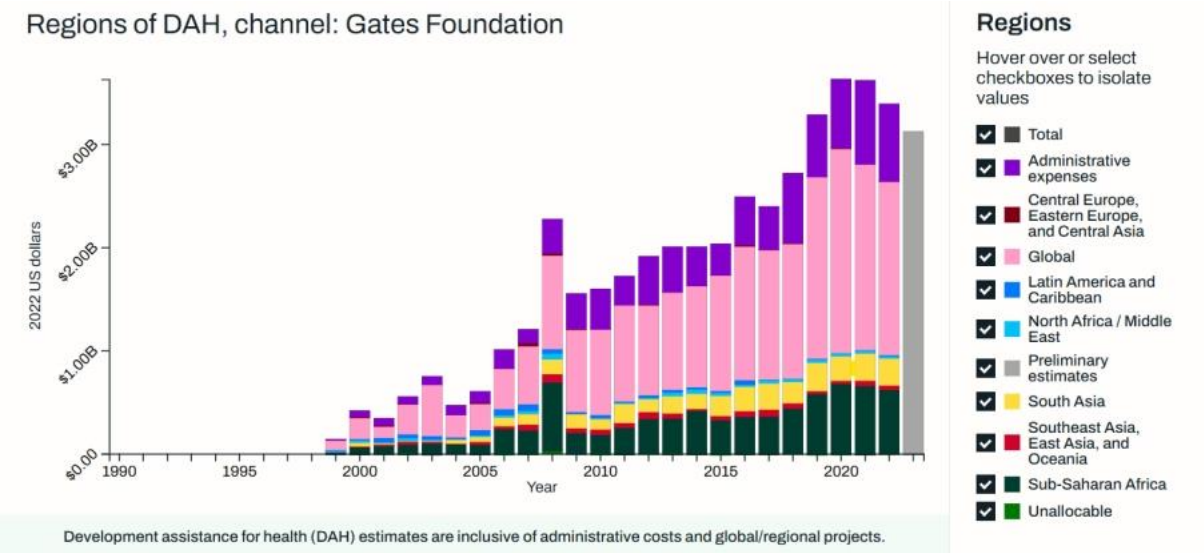


Source: Institute for health metric and evaluation (IHME) development assistance for health, 1990-2023[iii]

Regional development Assistance from Gates Foundation commenced in 1999 from USD 0.2B to USD 3.0B. They have contributed to global funding and this has increased markedly and

sustained since 2008. Increased funding into South Asia and SSA. Notable increases in administrative costs see Figure 22 below.

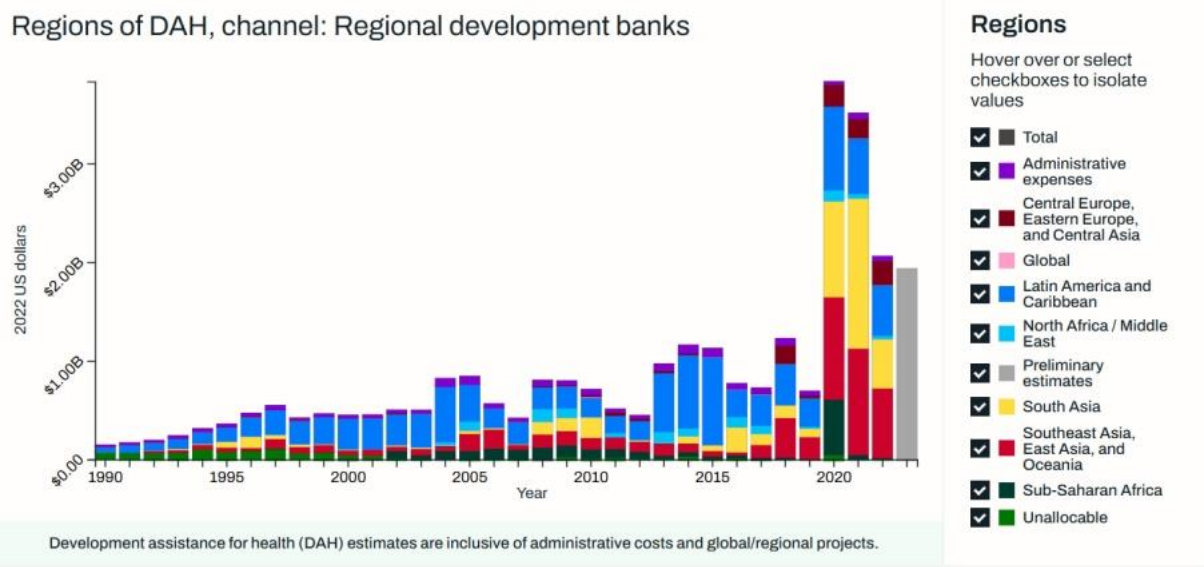
Figure 22: Regions of development assistance in Health: Gates Foundation



Source: Institute for health metric and evaluation (IHME) development assistance for health, 1990-2023[iii]

Development assistance from regional banks commenced in 1990 and with a peak rise in the year 2020. More has been given to Latin America, South Asia and South East Asia and Oceania. A peak amount was given to SSA in 2020a steady funding provided to North Africa and Middle East see Figure 23 below.

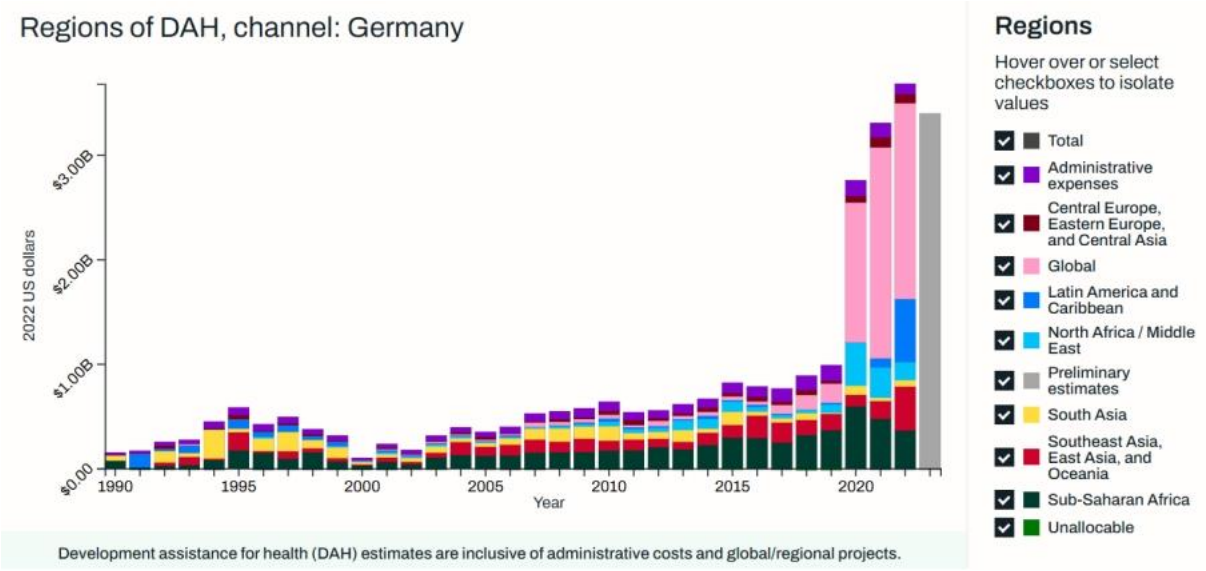
Figure 23: Regions of Development assistance from regional development Banks



Source: Institute for health metric and evaluation (IHME) development assistance for health, 1990-2023[iii]

Regional development assistance in Health care from Germany has been on the rise from USD 0.2B to USD 3.5B. Notably is the increased funding into the global fund from 2020 to 2023. A similar rise is also noted in that time period to SSA and South East Asia, East Asia and Oceania (Figure 24 below).

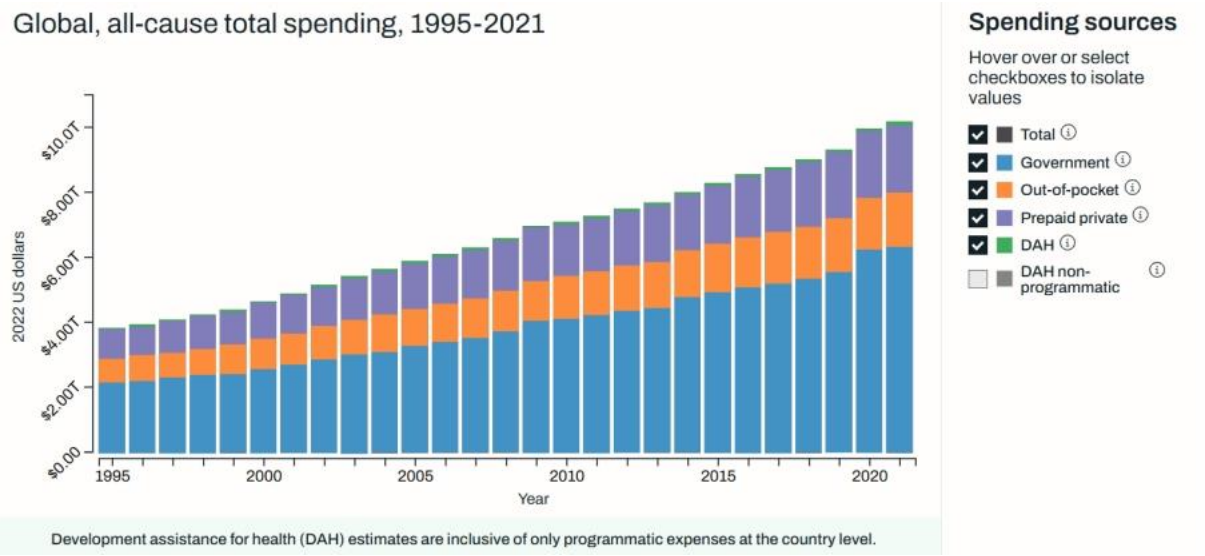
Figure 24: Regions of Development assistance in Health from Germany



Source: Institute for health metric and evaluation (IHME) development assistance for health, 1990-2023[iii]

In the global all cause total spending, there has been increased government spending between 1995 to 2023. Gradual increase in pre- paid private spending and in out of pocket spending. The development assistance in health remaining unchanged. This is critical to assess especially as we aim to have primary health coverage and universal health coverage with reduced catastrophic out of pocket expenditure in the various programmatic areas of health and increase reliance on government domestic spending in health (Figure 25 below).

Figure 25: Global, all cause total spending 1995-2021



Source: Institute for health metric and evaluation (IHME) development assistance for health, 1990-2023[iii]

Kenya programmatic disease annual requirement

In Kenya, the Programmatic disease annual requirement sources of funding contribution and the funding gap are elaborated in Table 6 below. The USA has funded approx. USD 25B compared to the government total funding of USD 12B and the global fund to fight communicable diseases at USD 17B. There is a funding deficit of USD 28B. Of note is the engagement of the US government in all areas of the Kenya program and notably their participation in blood, nutrition and other HPT and including our national data systems namely:KHIS2, KMFL, Afya KE, Kenya EMR, Chanjo KE, Damu KE, and KEMSA -LMIS which are now grappling with maintenance gaps and technology shortages[xxix]. These drawbacks are bound to impact our public health and programs extensively nothing their interrelationships, integrated influences, and beyond through other sectors such as agriculture, education , population demographics and dynamics and with a rebound negative effect with risk of premature deaths[xxx] and unmet PHC/UHC.

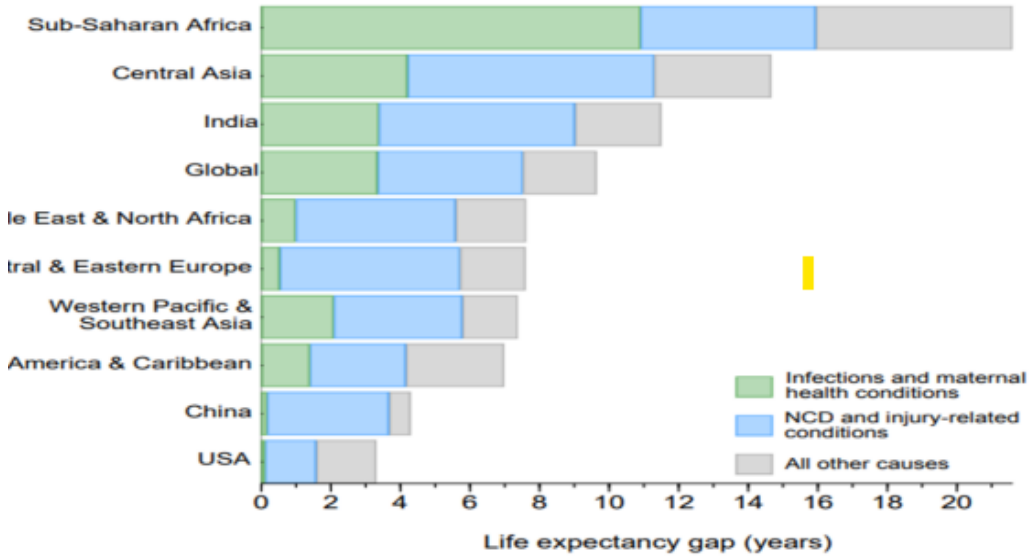
Table 6: Kenya Programmatic disease, annual requirement, sources of funding contribution and the funding gap

Diseases	Annual Requirement	Sources of Funding			Funding Gap
		Government of Kenya	Global Fund to Fight AIDS, Tuberculosis and Malaria	U.S. Government Support	
HIV	28,000,000,000.00	3,096,744,043.99	6,553,298,790.17	8,930,421,429.80	9,396,755,420.00
Tuberculosis	17,748,514,940.00	2,917,490,810.00	1,393,215,070.00	63,835,905.90	12,189,809,190.00
Malaria	3,807,068,720.00	260,000,000.00	955,490,569.26	3,252,016,040.00	-
Blood	4,000,000,000.00	-	-	2,700,000,000.00	-
Immunization	11,585,000,000.00	2,000,000,000.00	6,500,000,000.00 **[j1]**	585,000,000.00	2,500,000,000.00
Family Planning	2,473,129,620.00	503,875,968.70	222,244,451.00 **[j2]**	598,000,000.00	1,747,009,200.30
Nutrition	4,962,412,348.00	2,081,523,427.00	-	2,880,888,921.00	-
Other HPTs (Oxygen Lab, Cancer, COVID19)	-	-	-	3,668,472,492.10	-
Estimated Incountry Logistical costs	7,257,612,562.80	1,085,963,424.97	1,562,424,888.04	2,267,863,478.88	2,583,357,381.03
Total	**79,833,738,190.80**	**11,945,597,674.66**	**17,186,673,768.48**	**24,946,498,267.68**	**28,416,931,191.33**

Tackling premature deaths through programs

The 50% reduced probability of premature deaths by 2050 (50-50 goal) can be reached through tackling 15 priority conditions, eight related to infectious diseases and maternal health and seven related to non-communicable diseases (NCDs) and injuries. These 15 conditions account for a very large fraction of the life expectancy gaps between the highest-performing regions and other regions[xxxi]. We need to be catalytic in SSA in addressing our financing mechanisms and address both communicable diseases and maternal, newborn, child and adolescent health to avert premature mortality see the Figure 26 below.

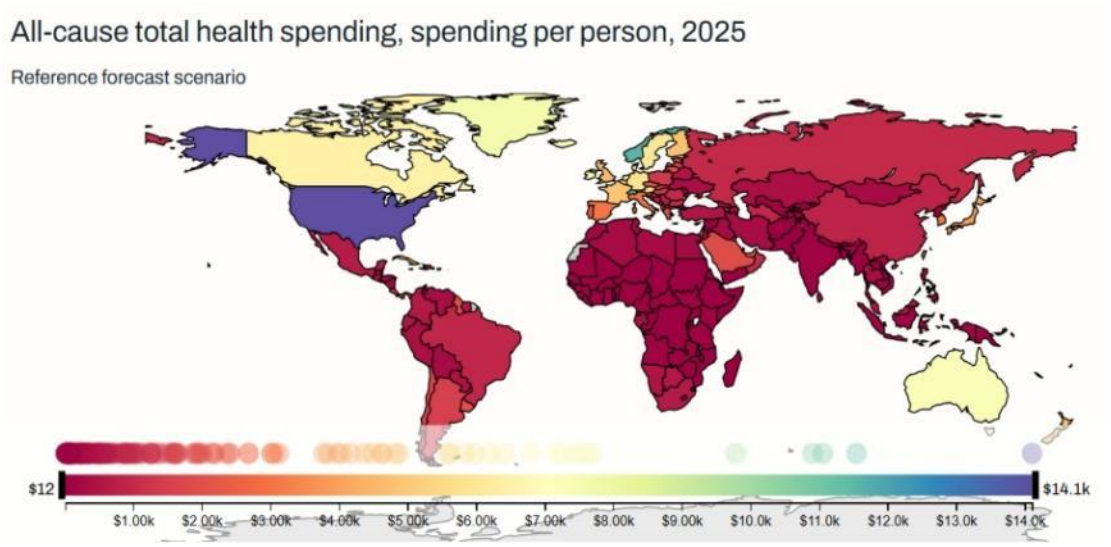
Figure 26: Gaps in Life expectancy compared with the North Atlantic attributable to 15 priority conditions, 2019



Source: The Lancet Global Health 2050: the path to halving premature death by mid- century [viii]

The forecasting on all cause total health spending, spending per person, in 2025 is provided in the heat-map in the Figure 27 below. It reflects that in most of Africa, Asia, Central and South America this will be minimal. This emphasizes the need to increase domestic resource mobilization, innovative financing strategies and innovate programmatic rationalization, operations, with increased efficacy. Prudent to enhance integration of program data informed decision- making and employment of technology, moving to sector wide approach in health care, broaden collaborative partnerships such as PPP, south- south; and realize the social enterprise opportunities in the industry[i].

Figure 27: Heat- map of all cause total health spending, 2025



Exemplar example of alternative funding sources in South - South collaboration

UAE provides healthcare assistance in SSA:

Direct Medical Aid & Infrastructure

Hospital construction and renovation: The UAE has funded the building of hospitals and clinics in several SSA countries.

Medical equipment donations: The UAE has supplied hospitals with essential equipment, especially during health crises like COVID-19 or Ebola outbreaks.

Mobile Clinics & Medical Missions

Organizations like the Zayed Giving Initiative have operated mobile clinics and surgical missions across SSA, offering free healthcare services in remote areas.

Training and Capacity Building

The UAE supports the training of local healthcare workers, sometimes bringing professionals to the UAE or sending Emirati experts to African countries.

Partnerships with International Organizations

The UAE collaborates with entities like the World Health Organization (WHO) and UNICEF, supporting vaccination campaigns, maternal health programs, and disease control initiatives.

COVID-19 and Emergency Response

During the pandemic, the UAE sent medical supplies, PPE, and vaccines to numerous African countries including Ethiopia, Sudan, Nigeria, and others

In Table 7 below it shows the UAE assistance in Sub- Saharan Africa

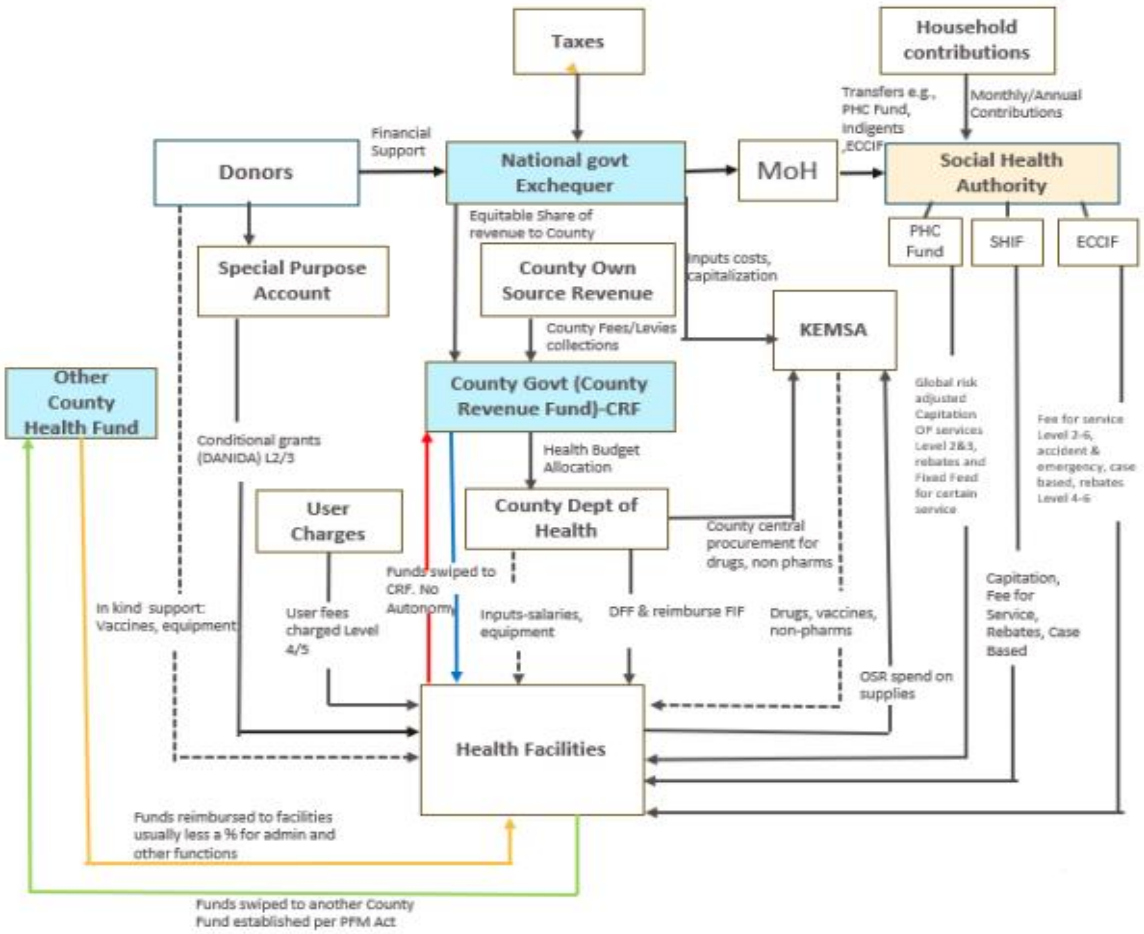
Table 7: Examples of UAE assistance in SSA

Country	Type of Support	Key Interventions	Partners / Initiatives
Sudan SD	Emergency Aid, Equipment	COVID-19 medical supplies, PPE, ventilators	Khalifa Foundation, Emirates Red Crescent
Ethiopia ET	Regional logistics, Supplies	Addis Ababa humanitarian hub, 20+ tons of medical aid	WHO, WFP, UAE Ministry of Foreign Affairs
Nigeria NG	Innovation Funding, Medical Missions	Health-tech funding, free surgeries	Zayed Sustainability Prize, Zayed Giving Initiative
Kenya KE	Equipment, Mobile Clinics	Hospital supplies in Garissa, Mandera; mobile outreach	Zayed Giving Initiative
Zambia ZM	Vaccines, Medical Aid	Sinopharm vaccine donation, rural outreach	Emirates Red Crescent
Uganda UG	Immunization, COVID-19 Aid	Maternal health campaigns, emergency medical supplies	Emirates Red Crescent
Mali ML	Humanitarian Health Aid	Medicines, hygiene kits in conflict zones	UAE Red Crescent

Funding of health care within Kenya

Health care in Kenya is paid across various payers, none of whom have traditionally supported gate-keeping practices. Pooled funding, including from central government, counties, and the National Health Insurance Fund (NHIF) (which is now reformed to the Social Health Authority (SHA), comprises over 50% of health spending. The remaining spending comes from out-of-pocket (OOP) payments from households (20.9%), private insurance, and donor programs (18%), according to the latest data available in 2018–2019 (World Bank 2022). County and sub-county facilities can have up to ten different funding sources, each with their own arrangements and administrative processes. This is shown in Figure 28 below.

Figure 28: Fund flow mapping in Kenya

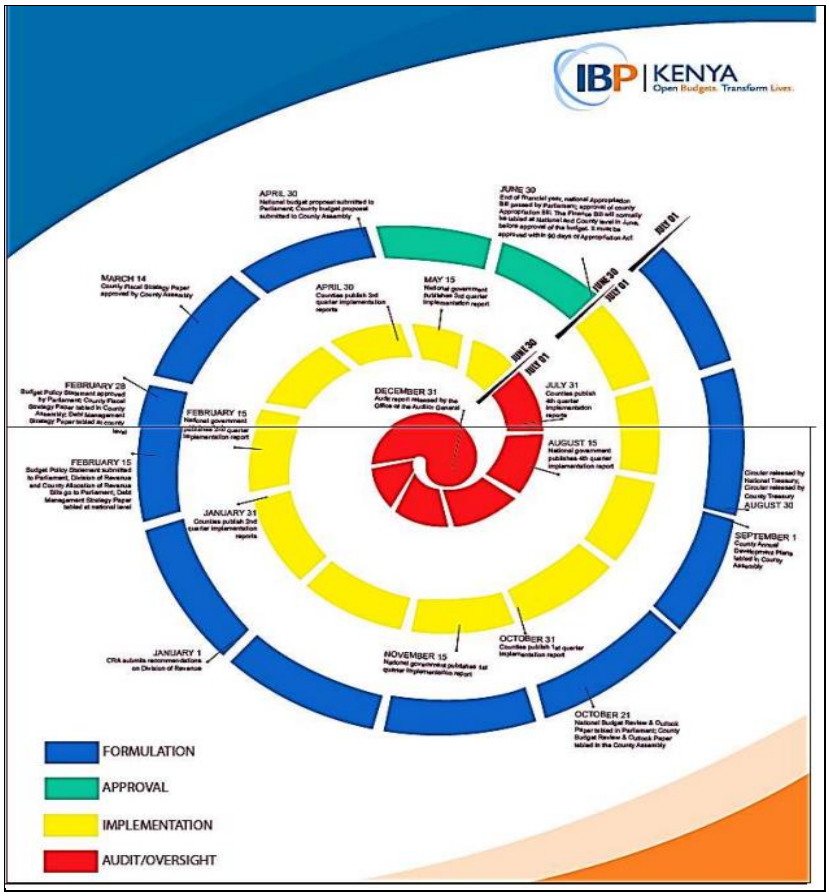


Source: ThinkWell

CHAPTER FIVE BUDGETING CYCLE IN KENYA AND MAKUENI COUNTY

Kenya has the national and county budget cycle. The Kenya Budgetary cycle process is depicted in Figure 29 below[xxxii]. At the County level the process is divided into four financial quarters that commence on 1st July.

Figure 29: Kenya County Budget cycle



Source: IBP Kenya County Budget

Financing Cycle in Makueni County

Makueni County, like other counties in Kenya, follows the Public Finance Management (PFM) cycle, which is structured as follows:

Planning and Budget Formulation

- Begins with the **County Integrated Development Plan (CIDP)** and the **Annual Development Plan (ADP)**.
- Sector Working Groups (SWGs) help develop the **County Fiscal Strategy Paper (CFSP)**.
- County Treasury sets ceilings for departments based on past performance, revenue projections, and national policies.

- Departments, including health, develop **Program-Based Budgets (PBBs)** aligned with policy priorities.

Budget Approval

- The County Executive submits the budget estimates to the **County Assembly**.
- Public participation is a legal requirement—citizens, health workers, and stakeholders give inputs.
- The Assembly debates, amends (if needed), and approves the budget before the start of the financial year.

Budget Execution

- Funds are disbursed by the County Treasury.
- The Department of Health procures goods/services and implements activities.
- Expenditures are monitored against approved programs and targets.

Reporting, Monitoring, and Evaluation

- County prepares quarterly and annual financial reports.
- The **Controller of Budget** and **Auditor General** oversee fund utilization.
- Health indicators and budget performance are tracked to inform future planning.

Budgetary Innovations in Makueni County (Healthcare Sector)

Makueni has gained national and international recognition for **innovative public finance management** and **community-driven health financing**. Notable innovations include:

a. **Makueni Care** – A universal health coverage scheme providing free healthcare services for residents, particularly vulnerable populations including mothers and children.
b. **Digital health budgeting platforms** – Use of ICT to improve planning, transparency, and citizen participation.
c. **Participatory budgeting** – Communities, including women's and youth groups, are directly involved in setting priorities, especially in primary healthcare.
d. **Program-Based Budgeting (PBB)** – Each health budget is linked to outcomes and targets, including maternal and child health.

MNCAH+N Allocation and Ring-Fencing

MNCAH+N Specific Allocations

Makueni County generally prioritizes MNCAH+N within its health budget, supported by both:

County own-source revenue and equitable share

Conditional grants from the national government or donors (e.g., DANIDA, World Bank, UNICEF, Gates Foundation)

Activities funded may include:

- Community health services
- Immunization programs
- Antenatal care and related comprehensive services related and maternal delivery
- Adolescent reproductive health education
- Nutritional supplements and outreach for under-5s

*Is MNCAH+N Ring-Fenced**?***

Yes this is partially done through

- **Conditional grants** (e.g., from DANIDA) are **ring-fenced**, meaning funds must be used for specified health services, often targeting MNCAH.
- **County-generated funds** are not always ring-fenced but are often earmarked in practice based on PBB and community priorities.
- **Makueni Care** indirectly ring-fences funding for MNCAH+N by ensuring mothers and children are covered and services are free.

Challenges

1. Delays in disbursement of funds can affect execution.
2. Sometimes MNCAH is lumped under broader reproductive health or primary care budgets, making tracking difficult.
3. Nutrition may receive less focus unless donor-supported.

CHAPTER SIX FINANCING MODELS IN MATERNAL AND NEWBORN HEALTHCARE

Government-Funded Programs[xxxiii] [xxxiv]

- **General Taxation**: Funded through general tax revenues, this model involves the government allocating funds directly to maternal and new-born health services. Examples: include the National Health Service (NHS) in the UK and public health services in Scandinavian countries.In many nations there is an imposed taxation on certain products such as tobacco, motor vehicle fuel and sweetened beverages. In Kenya recently increased taxation in formal employees adds to the kitty
- **Conditional Cash Transfers**: These programs provide financial incentives to pregnant women to use maternal health services, such as antenatal care and facility-based deliveries. Examples include Brazil's Bolsa Família and Mexico's Oportunidades.
- **Sector-Wide Approaches (Swaps):** Pool funds from government and donors into a single health sector budget to improve coordination.
- **Decentralized Funding:** Funds allocated directly to local health authorities to implement MNCAH programs based on local needs.
- **Health emergency funds** as passed by the Council of Governors to plug the US stop gap imposed from January 2025 what was done during the COVID 19 Pandemic. Additionally, done in conflict-affected areas, MNCAH programs are supported by emergency funds from UN agencies, NGOs, and pooled humanitarian response funds.

Social Health Insurance[xxxv]

- **Mandatory Contributions**: Employees and employers contribute to a national health insurance fund that covers maternal and newborn care. This model is used in countries like Kenya, Germany and Japan.
- **Community-Based Health Insurance**: Rural or informal sector workers contribute to a community health fund, which provides coverage for maternal and newborn health services. An example is Rwanda's Mutuelle de Santé.

Private Health Insurance

- **Voluntary Insurance Plans**: Individuals or employers purchase private health insurance that covers maternal and newborn health services. This model is common in the United States and other countries with mixed health systems.

- **Supplemental Insurance**: In countries with strong public health systems, private insurance can provide additional coverage for services not fully covered by the public system.

Out-of-Pocket Payments

- **User Fees**: Direct payments by patients at the point of service. While this model is common in many low- and middle-income countries, it can be a barrier to access and is often supplemented by other financing mechanisms to reduce financial burden.

Performance-Based Financing (PBF)

- **Incentive Payments**: Health facilities or providers receive financial incentives based on their performance in delivering quality maternal and newborn health services. This model aims to improve service delivery and outcomes. It has been implemented in countries like Rwanda and Burundi.

International Donor Funding

Bilateral Aid**:** From countries like USA (USAID)[xxxvi], UK (FCDO), Norway (NORAD), etc., targeting specific MNCAH initiatives.

Multilateral Funding**:** Through organizations like:

- **GAVI, the Vaccine Alliance** (for immunization)[xxxvii]
- **Global Fund** (for maternal HIV prevention)
- **UNICEF and WHO** (technical and financial support)
- **Trust Funds:** Like the **Global Financing Facility (GFF)**, which blends donor and domestic resources for MNCAH investment.

Elements that Kenya has benefited funding organizations Bilateral and Multilateral Aid: Funding from international donors, such as the World Bank, UNICEF, and UNFPA, support maternal and newborn health programs in low- and middle-income countries. These funds can be used for infrastructure, capacity building, procurement of commodities and service delivery.Kenya has been a beneficiary of these funding mechanisms.

Global Health Initiatives: Programs like the Global Fund and the Global Financing Facility[xxxviii] (GFF) provide targeted funding for maternal and newborn health projects that address HIV inclusive of PMTCT, malaria , Tuberculosis , immunization, nutrition, blood donation services, laboratory services, and data management systems[iii].

Public-Private Partnerships (PPPs)

- **Collaborative Initiatives**: Partnerships between governments, private sector entities, and non-governmental organizations to fund and deliver maternal and newborn health services. These partnerships leverage resources and expertise from various sectors.
- **Philanthropic and private entities**[xxxix]: Gates Foundation and CHAI[xl] [xli]

Innovative Financing Mechanisms

- **Health Impact Bonds**: Also known as development impact bonds, these are outcome-based contracts where private investors provide upfront capital for health programs and are repaid by donors or governments if specific health outcomes are achieved. Provided below in Table 8 below are Development impact bonds in Kenya with related partners.

Table 8: Examples of Development Impact Bonds in Kenya and partners

DIB Name	Sector	Status	Key Impact	Key Partners
Eye Health DIB (Kenya & Rwanda)	Trachoma Surgery	Implemented (2018–2022)	Over 18,000 surgeries funded via outcomes-based model	- Sightsavers (Service Provider) - UBS Optimus Foundation (Investor) - Fred Hollows Foundation (Outcome Funder)
Educate Girls DIB (India – influence)	Girls' Education	Influence in Kenya	Inspired Kenyan interest in girl education DIBs	- Instiglio - Educate Girls - UBS Optimus Foundation (Investor) - Children's Investment Fund Foundation (CIFF)
Utkrisht DIB (India – influence)	Maternal & Newborn Health	Influence in Kenya	Model for improving maternal health outcomes	- USAID, Merck for Mothers (Outcome Funders) - Palladium, Population Services Int'l (Service Providers)
Kenya NTD DIB (Design Phase)	Neglected Tropical Diseases	In Design	Exploring performance-based disease elimination	- The END Fund - DFID (FCDO) - Kenya Ministry of Health (MoH) - Instiglio
Health Outcomes Fund (HOF) – Kenya	Maternal & Primary Health	Planning Phase	Scalable outcomes-based health financing	- PharmAccess - Health Finance Coalition - USAID - Kenya MoH - HOF Consortium

- **Crowdfunding and Social Enterprises**: Innovative approaches to raise funds for maternal and newborn health projects through community contributions and business models that reinvest profits into health services.

National Health Insurance

- **Universal Health Coverage (UHC)**: Many countries are moving towards UHC, where a national health insurance scheme provides comprehensive coverage for all citizens, including maternal and newborn care. Examples include Kenya, Thailand and Ghana.Importantly is to address within the national insurance the health package coverage related to maternal, newborn, child and adolescent health. Currently we have an expanded Linda Mama health package, emergency services and management of chronic illnesses
- **Community-Based Health Insurance (CBHI):** Households pool funds at the community level to finance health needs, including maternal care

- **Voucher Systems:** Women receive vouchers for free or subsidized MNCAH services at accredited facilities.

Innovative financing mechanisms

- **Matched funding with the government inputs**
- **Debt Swaps for Health:** Countries convert debt into health funding (e.g., through global debt-relief programs).
- **Results-Based Financing (RBF):** Funding is disbursed after achieving agreed-upon results.
- **Digital Payments and Mobile Health Wallets:** Used in some regions to streamline MNCAH service payments (e.g., through M-Pesa in Kenya).

Impact and Challenges:

- The effectiveness of these financing models varies based on context, implementation, and integration with broader health system reforms.
- **Sustainability**: Ensuring continuous and adequate funding remains a challenge, particularly in low-resource settings.
- **Equity**: Financing models must address disparities in access to ensure that all women, regardless of socioeconomic status, can access quality maternal and newborn care.
- **Quality of Care**: Beyond financing, ensuring high-quality care is essential for improving health outcomes.

Combining multiple financing models often provides the most comprehensive and resilient approach to funding maternal and newborn health services.

Improve Health Financing & Reduce Donor Dependency
Government Financing and Public Sector Investment
Advocate for increased budget allocation for MNH and the National Health Insurance Fund (NHIF).
Implement Results-Based Financing (RBF) to incentivize performance improvements in MNH service delivery.
Strengthen decentralization of MNH funding through county health budgets.

Scale-Up Universal Health Coverage (UHC) & Community-Based Health Insurance (CBHI)
Integrate MNH into NHIF (National Health Insurance Fund) & make maternal services free for the first year postpartum.
Develop Micro-insurance Schemes**:** Engage local cooperatives, SACCOs, & fin-tech platforms to fund MNH services.

Strengthen Public-Private Partnerships (PPPs)

Partner with private hospitals & tele-medicine providers to extend maternal services to remote areas.

Engage pharmaceutical companies to ensure affordable maternal & neonatal drugs.

Collaborate with fin tech and mobile payment platforms to facilitate micro-insurance schemes for maternal health

Donor and Development Partner Contributions

Align MNH funding with international partners such as WHO, UNICEF, bilateral organizations, World Bank, development banks, foundations and seek out new partnerships for development assistance for health (DAH)

Develop multi-year funding agreements to ensure long-term program sustainability.

Leverage matching grants to encourage co-funding from multiple stakeholders.

Community-Based and Social Health Insurance Schemes

Scale up community-based health insurance (CBHI) models to increase financial protection for maternal care.

Mobilize community health savings groups and cooperatives to support maternal care financing.

Introduce social impact bonds (SIBs) to attract private investors, with government repayment based on health outcomes.

Innovative MNH Financing Models

Establish a maternal health endowment fund to provide sustainable long-term financing.

Implement crowdfunding and philanthropic initiatives through local and international networks.

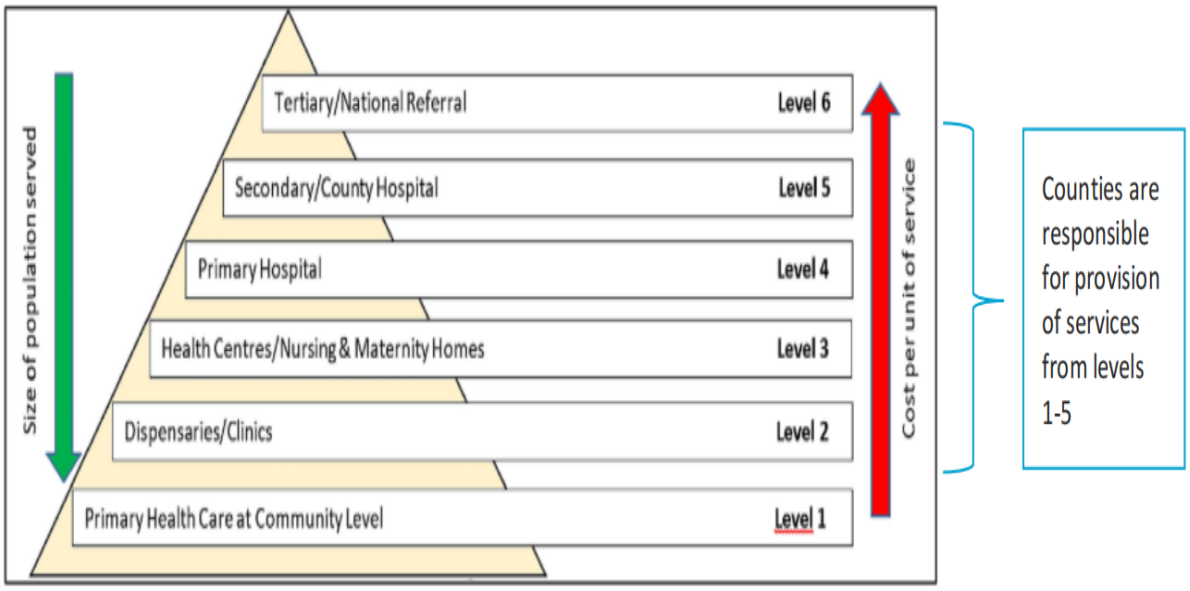
CHAPTER SEVEN HEALTH SYSTEM STRENGTHENING TO PROVIDE MATERNAL AND NEWBORN CARE

Organization of health services in Kenya

Kenya operates a devolved health care system. The national government addresses health policy, national referral hospitals, capacity building and technical assistance to the Counties. The County Departments of Health are responsible for managing county health facilities and pharmacies, managing ambulance services, promoting primary health care, licensing and control of undertakings that sell food to the public, veterinary services (excluding regulation of the profession), cemeteries, funeral homes and crematoria, refuse removal, refuse dumps and solid waste disposal, and health workforce recruitment and deployment
In the Figure 30 below find the organization of health services in Kenya.

Figure 30: Organization of Health Services in Kenya

Figure 1. Organization of health services in Kenya



Source: Marangu, Mansouri, Sands, et al. 2021

Level of care, facility type, population served and related services

Each level is supposed to have a specific set of health workers and services that are based on an estimated catchment population. The lower-level providers of care (Levels 1 to 3) are

closer to the community and thus help promote better interaction between the health system and community.

Table 9: Level of care, facility type, population served and related services

Level	Facility Type	Population Served	Services Provided
Level 1	Community Health Units (CHUs)	~5,000	Health promotion, minor illness management, identification and referral to higher levels
Level 2 & 3	Dispensaries, Clinics, Health Centers, Nursing & Maternity Homes	10,000–30,000	Primary Health Care (PHC): outpatient care, curative services, basic labs, normal deliveries
Level 4	Sub-County/Secondary Hospitals	100,000–250,000	Intermediate inpatient and outpatient care, diagnostic services
Level 5	County Referral Hospitals	Up to 500,000	Specialist services, more intensive inpatient care
Level 6	National (Tertiary Referral) Hospitals	Up to 1,000,000	Advanced specialist care, national referral services

Source: Kenya health facility assessment, 2023[vi]

Health facility census report

In 2023 the health facility census showed 40% were accredited by NHIF; 50% had functional ambulances; 69% did not use any electronic healthcare information system; and among those who used in 62% EHIS using integrated/end-to-end systems; 47% had disability friendly services. Management of communicable diseases (84%); maternal child health services (83%); management of non-communicable diseases (81%);Minor surgical services (73%); immunization services (69%); basic laboratory services (68%); Outreach services (64%); general emergency services (60%); emergency obstetric services (60%); maternity services(47%); emergency obstetric care (33%); Obstetric and gynecological services (31%); Mental health services(17%); Dental services – extraction (12%); Physiotherapy (10%); and Rehabilitative services (6%). Majority of health facilities that provided specialized outpatient services offered obstetrics/gynaecology (69%), paediatrics (61%), general surgery (57%) and

internal medicine (57%). A minority of these facilities offered renal services (21%), cardiology (18%), neurology (15%), endocrinology (11%) rheumatology (11%) and cardio thoracic/vascular surgery (7%). Less than half of the facilities in the country were offering maternity services with only a third of the

Facilities offering emergency obstetric care. Despite a majority of the facilities having adequate delivery beds and delivery packs, critical gaps were noted such as; only 40% of the facilities offered blood transfusion services while only 54% of the facilities had a source of oxygen.

Access to newborn health services in the country was low at 12%. Overall availability of equipment within facilities offering newborn services was good however only about half of the facilities offering newborn care had CPAP machines.

Invest**ments are critically needed in equipment, supplies and human resource to deliver both basic and comprehensive maternity services and for newborn care** (vacuum extractors, resustiares, Oxygen source, CPAP among others). This impacts negatively on maternal and newborn health outcomes and is a barrier to improving quality of care during and after delivery. A total of 381 facilities offered critical care services; 217 (1.8%) facilities provided High Dependency services (HDU) and 164 facilities provided Intensive Care services (ICU). Nationally, there are a total of 899 ICU adult beds, 196 ICU pediatric beds and 258 ICU neonatal beds. A total of 951 HDU adult beds and 275 HDU cots were reported. CPAP machines were the least unavailable critical care item while most services are provided by private facilities.

Investments in Critical care services should be scaled up especially in public facilities in consideration of the proposed chronic diseases fund, so that once established, patients can access quality critical care services within acceptable cost (Public Facilities). Slightly over half of facilities were providing pharmacy services (57%) and of these, only a small proportion had the full basket of tracer medicines (6%) and tracer non-pharmaceutical supplies (15%). Average availability for tracer drugs and non-pharmaceuticals was 62% and 73% respectively. In terms of non-pharmaceuticals, Solu- sets for fluids, suction catheters and nasal prongs for oxygen delivery were not widely available in health facilities; only 40% of all facilities and 25% of the level 2 facilities had these items.

Laboratory services were assessed in 50% of the health facilities; in terms of scope, 87% of facilities with a laboratory, offered basic lab services while 54% offered comprehensive laboratory services. Most basic laboratory tests (Stool for ova and cyst, HIV/AID's, Blood glucose, Dipstick for urinalysis, Malaria, Urine test for pregnancy (PDT) were readily available while Sputum test for TB and full haemogram tests were available in less than half of the facilities. Notably, primary level facilities with a laboratory had most basic lab tests. The least

available laboratory services were culture and sensitivity (14%), Lipid profile (28%), and Biochemistry (32%). Most facilities with laboratory services had the personnel needed while a third lacked the necessary infrastructure. Capacities to provide TB diagnosis services and full haemogram should be strengthened at PHC facilities. The scope of Xpert machines should be expanded to offer TB diagnostic services within regions/Counties. In secondary and tertiary facilities, necessary capacities to provide lipid profiles, Culture and sensitivity as well as molecular testing should be put in place.

Radiology services; Overall, availability of radiology services was 11%; Ultrasound and x-ray services were the most available with radiology services at 95% and 62% respectively. Specialized radiology services like PET and radionuclide scans were available in less than 5% of the facilities. Readiness to provide the basic, comprehensive and specialized radiology services was low at 21%, 1% and 5% respectively. To ensure quality PHC services, overall access to radiology services should be enhanced; particularly to increase availability of basic radiology services and enhance the readiness to provide the services. Further, there is need to reconsider policy direction in use of mammograms for screening of breast cancer; MRI services should be availed within geographical regions to ease access to the service, ensuring the MRI facilities are accredited with NHIF.

In regards to health workforce, it was noted that access to health workers such as nurses and clinical officers was greater than other cadres such as pharmacists and dentists. In addition, health workforce was inadequate and below the WHO recommended norms per population[xlii].

Currently all level of health facilities need to provide essential and emergency maternal and newborn care. This commences at level me in the communities with community health care promoters who identify pregnant women and link or refer to health facilities for skilled care. In Kenya, the government implemented a policy to prohibit traditional birth attendants (TBAs) from conducting deliveries, aiming to reduce maternal and neonatal mortality rates. This decision was based on concerns that TBA's often lacked the necessary skills and resources to manage complications during childbirth, leading to adverse outcomes for mothers and infants. The policy recognized retired community midwives as the preferred providers for uncomplicated deliveries outside health facilities, integrating them into the formal healthcare system to ensure better oversight and support. Despite the ban, TBA's continued to play roles in maternal care, especially in rural areas where access to formal healthcare services remained limited. Some TBA's were engaged in referral programs, educating pregnant women about the importance of delivering in healthcare facilities and receiving stipends for facilitating such referrals. These initiatives aimed to bridge the gap between traditional practices and formal healthcare, ensuring safer delivery outcomes while respecting cultural contexts[xliii]. Level 1 and 2 at health facilities should be equipped to provide signal functions for basic obstetric and neonatal care. All level 3 facilities should be able to provide comprehensive obstetric and neonatal care and account for emergency services. Essential health service packages and

emergency health service packages need to be accessible at the point of action for the maternal – neonatal dyad to survive. The emergency Obstetric care services were defined in 2009 and undergoing review under the emergency Obstetric and newborn care revisioning project led by the averting maternal death and disability program shown in tables 9 and 10 below. Addressing the findings from the Kenya and county health facility assessment preparedness to respond to essential care and emergency care during pregnancy and birth dictate the level of care patients are attended to and the provision of referral mechanisms when the care needs to be escalated when addressing the mother needing emergency care and the small and sick vulnerable newborn.

Level of health facilities providing essential and emergency maternal and new-born care-EmONC revision project

Under the Essential and emergency maternal and new- born care there is an undergoing revision project based on level of facility and comprehensiveness of services offered being undertaken. This is depicted in Table 10 below.

Table 10: Levels of health facilities providing essential and emergency maternal and newborn care defined by the EmONC revision project

Levels of health facilities providing essential and emergency obstetric and newborn care		**Revised EmoNC signal functions (tracer interventions for managing the major obstetric and newborn complications)**
Basic EmONC (Level 1)	**Essential MNH care + Basic EmONC**	**Essential maternal and newborn care** [1xliv]**+ 7 signal functions for maternal** (administer medications to treat PPH (Post-Partum Haemorrhage), administer parenteral antibiotics, administer magnesium sulphate, remove retained products of conception, perform manual removal of placenta, perform assisted vaginal birth, provide IV fluid replacement therapy) **+ 5 signal functions for newborn** (perform newborn resuscitation with bag and mask, initiate and support early and exclusive breastfeeding, administer parenteral antibiotics, practice immediate kangaroo mother care for preterm

[1] Essential newborn care includes: Immediate care at birth (delayed cord clamping, thorough drying, assessment of breathing, skin-to-skin contact, early initiation of breastfeeding); Thermal care; Resuscitation when needed; Support for breast milk feeding; Nurturing care; Infection prevention; Assessment of health problems; Recognition and response to danger signs; Timely and safe referral when needed

		and LBW infants, administer oxygen therapy with pulse oximeter monitoring for stabilization and transportation)
Comprehensive EmONC (Level 2)	**Essential MNH care + Comprehensive EmONC facility**	**Additional to Level 1: 3 signal functions for maternal** (administer antenatal corticosteroids, perform caesarean section, perform blood transfusion) **+ 7 signal functions for new-borns** (provide thermal care with radiant warmer or incubator as needed, administer oxygen therapy with pulse oximeter monitoring, provide CPAP, provide photo-therapy, perform blood transfusion, enable assisted feeding with expressed breast milk (with cup and spoon and tube feeding), provide IV fluids)
Intensive EmONC (Level 3)	**Essential MNH care + Intensive EmONC**	**Additional to Levels 1 and 2: 1 signal function for maternal** (provide intensive level organ support) **+ 2 signal functions for new-borns** (perform mechanical ventilation, perform screening and treatment for retinopathy of prematurity)

Source: WHO- UNFPA- UNICEF Maternal health norms project

Table 11: Levels of newborn care defined by the global Every Newborn Action Plan (ENAP) initiative

Levels newborn care units		**Package of interventions**
Primary (Level 1)	**Essential newborn care**	Immediate newborn care (thorough drying, skin to skin contact of the newborn with the mother, delayed cord clamping, hygienic cord care); neonatal resuscitation for those who need it) , early initiation and support for early breast feeding, routine care (vitamin K, eye care and vaccinations, weighing and clinical examinations); prevention of mother to child transmission of HIV, assessment management and referral of bacterial infections , jaundice and diarrhoea , feeding problems, birth defects and other problems, pre discharge advice on mother and baby care and follow up

Secondary (Level 2)	**Special newborn care**	**Additional to Level 1:** Comfort and pain management, KMC, assisted feeding for optimal nutrition (cup feeding and nasogastric feeding) , safe administration of oxygen, prevention of apnoea, detection and management of neonatal infection, detection and management of hypoglycaemia, jaundice, anaemia, and neonatal encephalopathy, seizure management, safe administration of intravenous fluids, detection and referral management of birth defects. Transition to intensive care: CPAP, exchange transfusion, detection and management of necrotizing enterocolitis, specialized follow up of infants at high risk (including preterm)
Tertiary (Level 3)	**Intensive newborn care**	**Additional to Level1&2:** Advanced feeding support (e.g. parenteral nutrition), mechanical / assisted ventilation including intubation, screening and treatment for retinopathy of prematurity (ROP), surfactant treatment, investigation and management of birth defects, pediatric surgery, genetic services.

Source: WHO- UNFPA- UNICEF Maternal health norms project

Preparedness and resilience in the health system

In Kenya, building preparedness and resilience in MNCAH+N involves strengthening community-based systems and primary health care to withstand health emergencies such as droughts, floods, and disease outbreaks. Makueni County has demonstrated leadership in integrating resilience strategies by decentralizing services to community health units and investing in mobile clinics and maternal shelters. During the COVID-19 pandemic, Makueni leveraged its digital health infrastructure to continue offering essential services, including antenatal care and immunizations, through mHealth platforms and home-based care by CHW's. This model illustrates a resilient health system grounded in community engagement and early warning systems[xlv].

The MNCAH+N Investment Plan

Kenya's Investment Framework for RMNCAH (2016-2030) prioritizes cost-effective, high-impact interventions, aiming to reduce maternal and neonatal mortality through targeted investments in service delivery, health workforce, infrastructure, and commodities. Makueni County has aligned its County Health Investment Plan (CHIP) with the national strategy by prioritizing maternal shelters, skilled birth attendance, and integrated nutrition programs.

According to Makueni Department of Health Annual Report (2023), increased budgetary allocations toward MNCAH+N have enabled scale-up of community nutrition programs and adolescent health services, signaling the positive impact of sustained investments at the county level.

Equity in MNCAH+N Service Delivery

Addressing equity in MNCAH+N means ensuring that all populations, especially the most vulnerable—adolescents, people with disabilities, poor households, and rural residents—can access quality health services. In Makueni, efforts to promote equity include the "Makueni Care" program, which offers free maternity services and health insurance for indigent households. Furthermore, the county has utilized geospatial mapping to identify under-served areas and deploy outreach services accordingly (Kenya Health Equity Report, 2022; Makueni CHU Reports, 2023). These initiatives have improved access to skilled birth attendance in remote regions and increased ANC coverage among adolescents.

Quality of Care

Kenya has implemented the Quality of Care Network (QoC) for maternal, newborn and child health, with a strong focus on respectful maternity care, clinical governance, and continuous quality improvement. Makueni County participates actively in the QoC Network and has instituted regular clinical audits, mentorship programs, and perinatal death reviews to enhance care standards. Facilities are assessed using the Kenya Quality Model for Health (KQMH), and quality improvement teams are functional in most health facilities. Improvements in neonatal outcomes and reductions in maternal complications have been reported in quarterly scorecards[xlvi] .

Human Resources for Health – Competences, Motivation and Deployment

The HRH situation in Kenya remains constrained by distribution and inadequate numbers, especially in rural counties. Makueni has responded by investing in continuous professional development (CPD), supportive supervision, and incentive schemes for rural deployments. Notably, the county trains CHW's on MNCAH+N modules, integrates them into the referral system, and supports them with stipends and mobile tools for data capture. The County HRH Strategy (2020-2025) emphasizes skill-mix optimization and task shifting, which has improved service coverage and job satisfaction among health workers[xlvii].

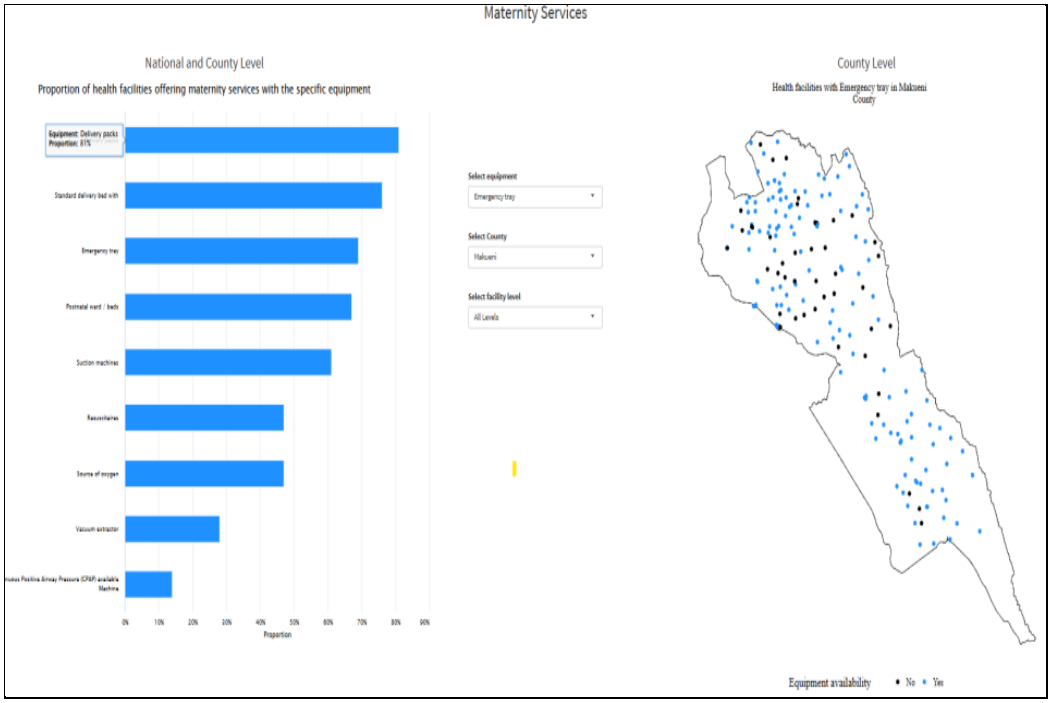
The Role of Data in MNCAH+N

Data is critical for planning, monitoring, and improving MNCAH+N services. Kenya's Health Information System (KHIS) provides real-time data on maternal and child health indicators. Makueni County has leveraged data dashboards to monitor facility performance, track high-risk pregnancies, and identify service delivery gaps. Use of community-level data through the Community Health Information System (CHIS) has strengthened decision-making at the local level. Regular Data Review Meetings (DRMs) and performance dashboards ensure accountability and prompt corrective action [xlviii] .

Makueni County Profile to provide Obstetrics and newborn care

Makueni County has a total number of 12,375 health facilities of which 47% are public, 46 private, 6% are faith based and 1% run as NGO. Distribution by level of care Makueni has principally level 2 facilities at 9,062, level 3 facilities at 2,394, level 4 facilities are 885, level 5 facilities are 29 and level 6 facilities are 5. The number of level 3 facilities that are public are 59 and by ownership are 41 (see Figure 31 below).

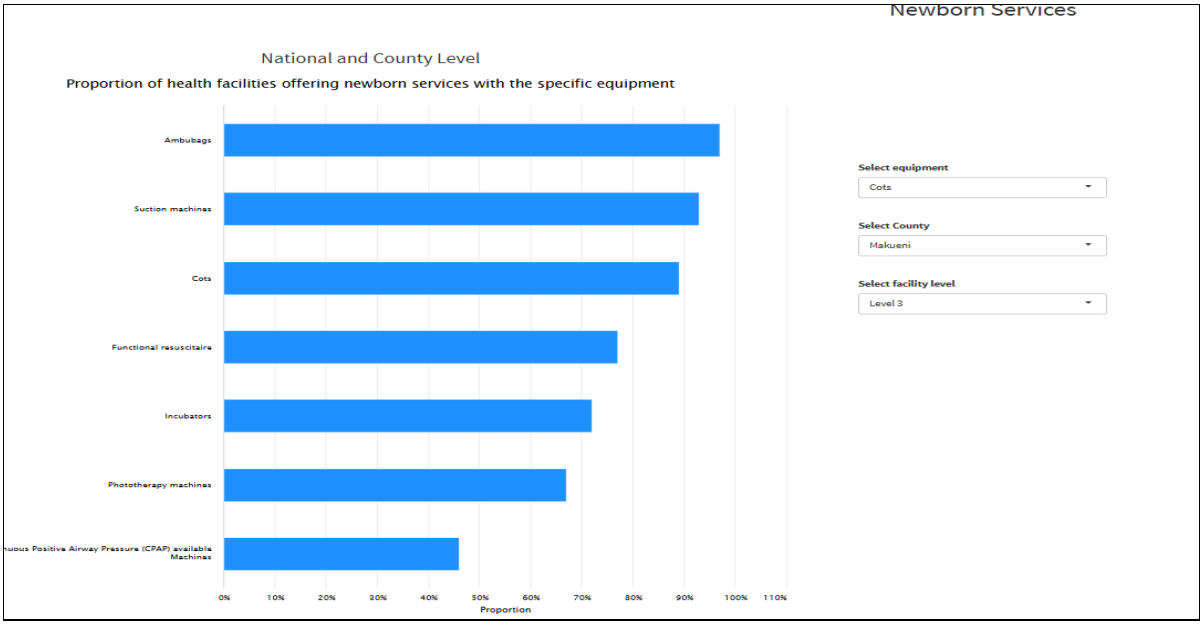
Figure 31: Distribution of maternity services in Makueni County



Source: Kenya health facility assessment, 2023[vi]

Prematurity and birth asphyxia are the major complications associated with neonatal mortality yet CPAP machines are available in 47% of the level 3 facilities with the other neonatal services being accessible in over 50% of the facilities[vi] (Figure 32 below).

Figure 32: Newborn services in level 3 in Makueni County



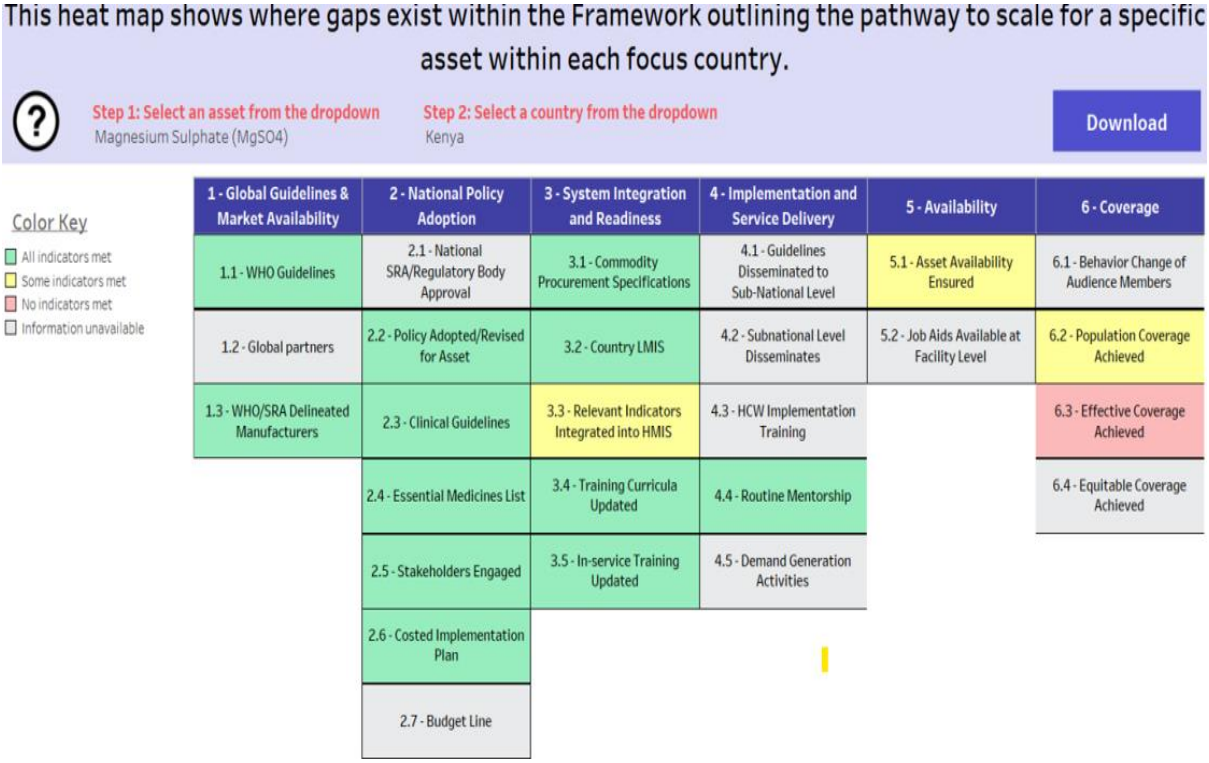
Source: Kenya health facility assessment, 2023[vi]

Geo-spatial Accessibility Analysis: This method evaluates the spatial distribution of healthcare facilities in relation to populations, assessing accessibility to services like emergency obstetric care. Techniques such as buffer analysis and network analysis are utilized to identify under-served areas and inform decisions on facility upgrades or the establishment of new services with attention to adherence to the WHO recommendation of 100,000 people per health facility In Homa Bay County they have used spatial analysis to recommend upgrading specific health facilities to improve emergency obstetric care services a critical aspect for maternal survival[xlix]. This should be embraced within all counties of Kenya.

Access to life saving commodities

High-quality MNCH+N health services are not possible without access to essential medicines, devices, and interventions termed as "assets." Despite marked improvements in access to these MNCH+N assets globally, progress has been slow and uneven, and significant gaps remain in their coverage, particularly in low- and middle-income country settings. In order to address these challenges, decision-makers and advocates need data to better understand what barriers are preventing these assets from scaling up. The asset tracker tool facilitates identification within the framework outlining the pathway to scale for a specific asset. Each Asset Tracker dashboard is organized around 26 steps (or "milestones") for an asset to achieve its journey to scale. See the asset tracker for MgSo4 in Kenya in Table 12 below.

Table 12: PATH asset tracker for MgSo4 in Kenya



Source PATH Asset tracker for life saving commodities[ix]

Lifesaving commodities are crucial to achieving global health targets for reproductive, maternal, newborn, child, and adolescent health, yet supplies like amoxicillin, chlorohexidine, and contraceptives are often excluded from health systems strengthening. Ensuring access to high-quality, affordable health commodities is essential for reducing disease, preventing deaths, and achieving global health goals. The UN Commission on Life-Saving Commodities states that expanding access to 13 essential products could save 6 million women and children over 5 years. Around 225 million women globally want to delay or avoid pregnancy but lack access to effective contraception. Meeting their needs can reduce unintended pregnancies, unsafe abortions, and maternal mortality. Contraceptives must be available, affordable, and quality-assured to achieve these outcomes. Supportive policies for lifesaving commodities in national health strategies, guidelines, and budgets are critical. Commodity security policies will strengthen health service quality and improve outcomes. Postpartum hemorrhage, pre-eclampsia, and eclampsia cause almost half of maternal deaths. Access to Oxytocin, Misoprostol, and Magnesium Sulfate could save 1.4 million women's lives over 10 years. Oxygen therapy with pulse oximetry can reduce pneumonia mortality in children by 35% in high-burden areas as summarized in Table 13. All sectors must prioritize lifesaving commodities through public and private investments and community actions to hold leaders accountable[l].

Table 13: UN Lifesaving commodities, barriers, recommendations and lives saved

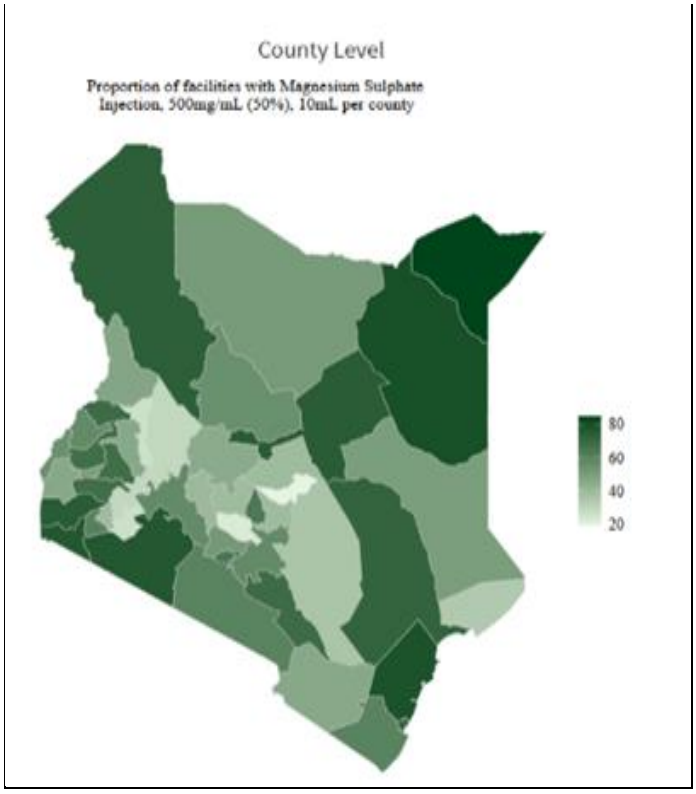
Commodity by life stage	Examples of key barriers	Recommendations	Potential 5-year impact
Maternal health commodities			
1. **Oxytocin** – post-partum haemorrhage (PPH)	Often poor quality	1, 4, 5	15,000 maternal lives saved
2. **Misoprostol** – post-partum haemorrhage	Not included in national essential medicine lists	5	
3. **Magnesium sulfate** – eclampsia and severe pre-eclampsia	Lack of demand by health workers	1, 9, 10	55,000 maternal lives saved
Newborn health commodities			
4. **Injectable antibiotics** – newborn sepsis	Poor compliance by health workers	1, 9, 10	1.22 million neonatal lives saved
5. **Antenatal corticosteroids (ANCs)** – preterm respiratory distress syndrome	Low awareness of product and impact	9	466,000 neonatal lives saved
6. **Chlorhexidine** – newborn cord care	Limited awareness and demand	2, 5	422,000 neonatal lives saved
7. **Resuscitation devices** – newborn asphyxia	Requires trained health workers	1, 9, 10	336,000 neonatal lives saved
Child health commodities			
8. **Amoxicillin** – pneumonia	Limited availability of child-friendly product	2, 7, 9, 10	1.56 million lives saved
9. **Oral rehydration salts (ORS)** – diarrhoea	Poor understanding of products by mothers/ caregivers	2, 5, 7, 9, 10	1.89 million lives saved
10. **Zinc** – diarrhoea			
Reproductive health commodities			
11. **Female condoms**	Low awareness among women and health workers	1, 7	Almost 230,000 maternal deaths averted
12. **Contraceptive implants** – family planning/ contraception	High cost	1, 7	
13. **Emergency contraception** – family planning/ contraception	Low awareness among women	2, 7	

DISCLAIMER: the numbers presented here are draft estimates meant to give a general overview of the barriers certain commodities face and the potential impact if these barriers were surmounted. These draft estimates are based on a systematic analysis approach explained in the Annex.

Source: UN Commission on life-saving commodities for women and children Commissioners‟ Report September 2012[li]

Access to tracer MgSo4 in Makueni County is at 69% (Figure 33 below).

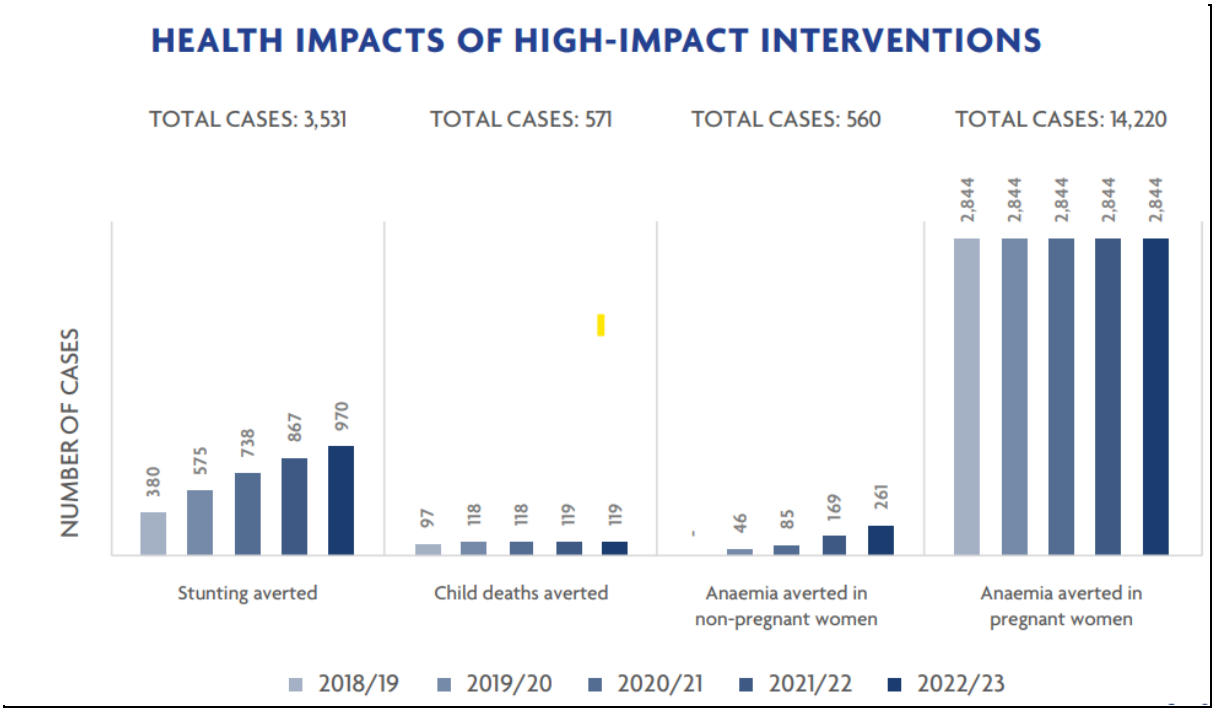
Figure 33: National heat map of proportions with facilities with Mg SO4 Injection 500mg/ml, 10mls per county



Source: Maternal, newborn, child health and nutrition asset tracker[lii]

Makueni County has made significant strides in tracking and deploying life-saving commodities and technologies to improve maternal, newborn, child, and adolescent health (MNCAH), and nutrition outcomes. Through its Maternal, Neonatal, Child, Adolescent Health, and Nutrition (MNCAHN) program, implemented in partnership with Nutrition International since 2020, the county has scaled up high-impact nutrition interventions[liii]. These include vitamin A supplementation, iron and folic acid supplementation during pregnancy, and promotion of infant and young child feeding practices. The program also introduced Kangaroo Mother Care Centers in six hospitals to enhance the management of preterm and underweight infants. Additionally, Makueni County has developed a Multi-Sectoral Food and Nutrition Security Policy to address food security and malnutrition, outlining key strategies and implementation frameworks. These initiatives are part of the county's commitment to strengthening the foundation for sustainable nutrition programming and improving health outcomes across the continuum of care

Figure 34: Nutrition outcome indicators averted with high impact interventions in Makueni County



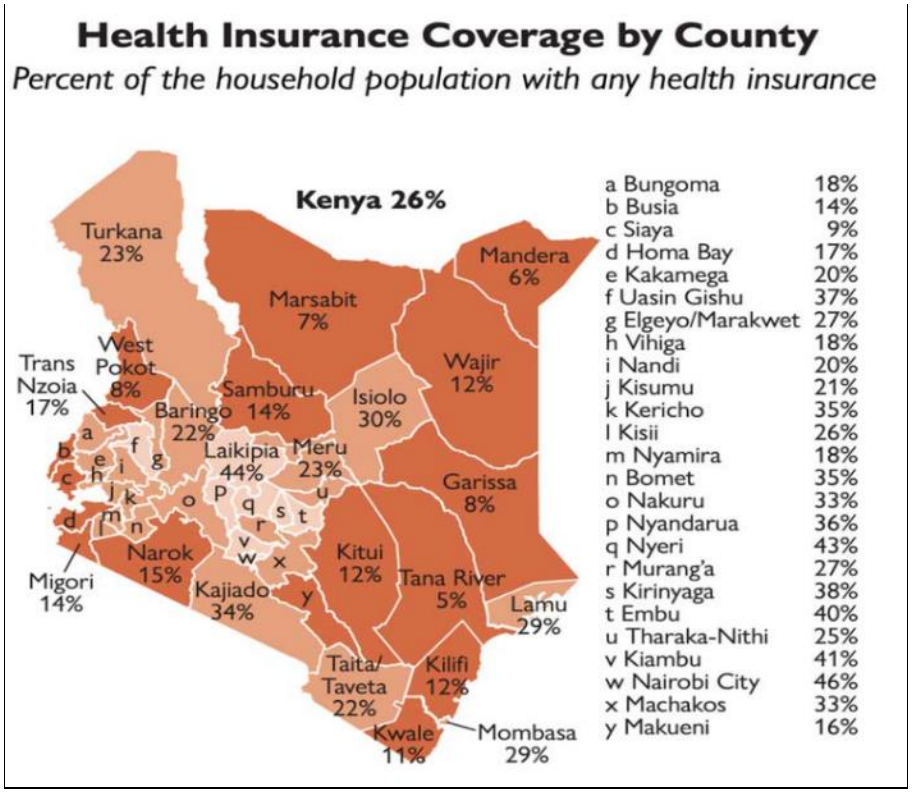
Source: Nutrition International Makueni Nutrition investment case[liv]

Health Insurance

The National Hospital Insurance Fund (NHIF), established in 1966, has undergone significant reforms over the years, culminating in its recent transition to the Social Health Authority (SHA). Initially designed to provide inpatient coverage exclusively for formal sector employees, the NHIF gradually expanded its scope to include outpatient services and extend coverage to informal sector workers and their dependents. Funding was primarily through mandatory payroll contributions from formal sector workers, alongside voluntary payments from those in the informal sector. In pursuit of universal health coverage, Kenya has made strides to include vulnerable populations and broaden the range of health benefits. A notable reform came in 2015 with the introduction of a capitation system for outpatient care, promoting primary healthcare by encouraging patients to register with specific providers. These providers receive a fixed payment per registered patient, fostering a gatekeeping model and reinforcing the role of primary care in the health system. This evolution has laid the foundation for the establishment of the SHA, aimed at further strengthening and streamlining healthcare delivery in Kenya.

The National Health insurance coverage in Kenya accounts for 20% on average with urban at 40% and rural at 18% and higher with wealthier quintile. Recently there has been the role out a compulsory Social health insurance scheme SHA which has both formal and informal sector contributing. This aims at providing universal health coverage of all Kenyan citizenry. In Makueni County the health insurance coverage was at 16 % noted very low compared to other counties that had up to 46% as shown in Figure 35 heat map below. There is need for health education on the value addition to have an insurance cover and avert catastrophic expenditure and health inequities which has a ripple effect from the household to national level and with detrimental health outcomes.

Figure 35: Kenya Health insurance coverage by counties



Source: KDHS, 2022[xiv]

Kenya's health financing system remains fragmented, and the recent shift to the Social Health Authority (SHA) presents new opportunities to strengthen gate-keeping. However, there is still uncertainty about how this policy will be implemented, as the role of financial incentives under the SHA has not yet been clearly defined. Additional challenges include negative public perceptions of primary health care (PHC) quality and limited autonomy among providers. To enhance gate-keeping, Kenya must align its health financing reforms—particularly through the SHA—with gate-keeping goals, invest in upgrading primary care infrastructure, and establish clear, enforceable gate-keeping mechanisms within its developing network model.

Gate-keeping is a cornerstone in many health systems, especially in high-income countries (HICs), where it has been shown to enhance efficiency and care coordination. Experiences from countries such as the United Kingdom, the Netherlands, and Denmark illustrate how strong gate-keeping systems can reduce unnecessary specialist consultations, cut healthcare costs, and improve continuity of care. While evidence from low- and middle-income countries (LMIC's) is more varied, there is increasing recognition of the potential for gate-keeping to address common systemic issues such as hospital overcrowding, the bypassing of primary care, and inefficient use of resources. Nonetheless, implementing effective gate-keeping in LMIC's presents distinct challenges, including inconsistent quality at the primary care level and weak enforcement of gate-keeping policies.

CHAPTER EIGHT NUTRITION

The adage "You are what you eat" underscores the profound impact of diet on overall health. Efforts to enhance food and nutritional security are influenced by multiple factors, including health literacy, access to diverse foods, demographic trends, climate change [lv], and environmental degradation. **The climate crisis** is a grave threat to women's, children's, and adolescents' health and disproportionately. Extreme weather events, climate induced food insecurity and infectious diseases see women and children 14 times more likely to lose their lives than men, while four out of five people displaced by climate change are women and girls. Rising temperatures and shifting precipitation patterns, which drive vector-borne diseases such as malaria and dengue, have serious implications for pregnant women and young children. Droughts and floods hinder access to clean water and mean higher rates of diarrheal diseases and childhood stunting. Air pollution long associated with pregnancy complications, premature births, and respiratory diseases in children, intensifies the strain on already fragile health systems.

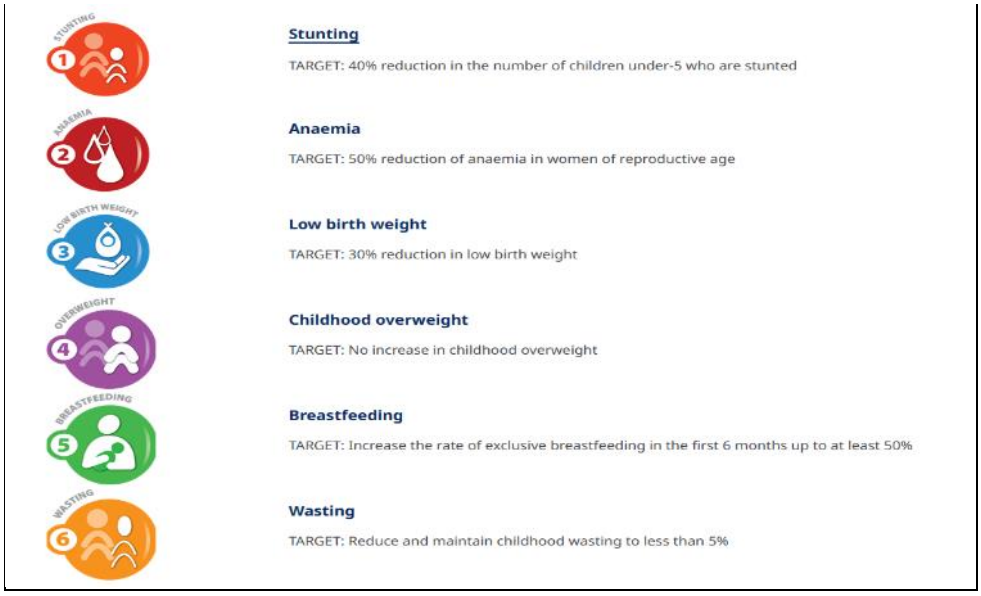
These elements collectively shape a life-course approach to nutrition, highlighting the increased vulnerability of the maternal-fetal-neonatal group. Furthermore, issues such as intersectionality, health inequities, gender disparities, disease demographics, and the prevailing normative environment play critical roles. Understanding the broad spectrum of malnutrition—which encompasses both underweight and overweight (obesity)—is essential in addressing these complex challenges.

The World Health Organization (WHO) classifies malnutrition as the biggest threat to public health worldwide, and this condition is observed in 20-60% of hospitalized patients. Malnutrition is a state of the body in which due to insufficient supply or incorrect absorption of essential nutrients, the body composition changes and the body's functions are impaired. Malnutrition is associated not only with reduced body mass index but also with obesity. Micronutrient deficiency may include not only incorrect dietary choices and insufficient access to nutrient-rich foods but also changes in the absorption, distribution or excretion of nutrients, and altered micronutrient metabolism resulting from systemic inflammation caused by obesity.

In the African regional, national nutrition strategy emphasis is on the critical importance of the first 1,000 days concept, focusing on the nutrition of children and women through a more comprehensive and integrated approach and as a development issue. More attention to have 7000 days for coverage of challenges of nutrition in adolescence and youth. Furthermore, the need for revised policy, advocacy, resource mobilization and capacity with a multi-sector approach.

The WHO Global outcome and proposed nutrition targets are shown below (Table 14)

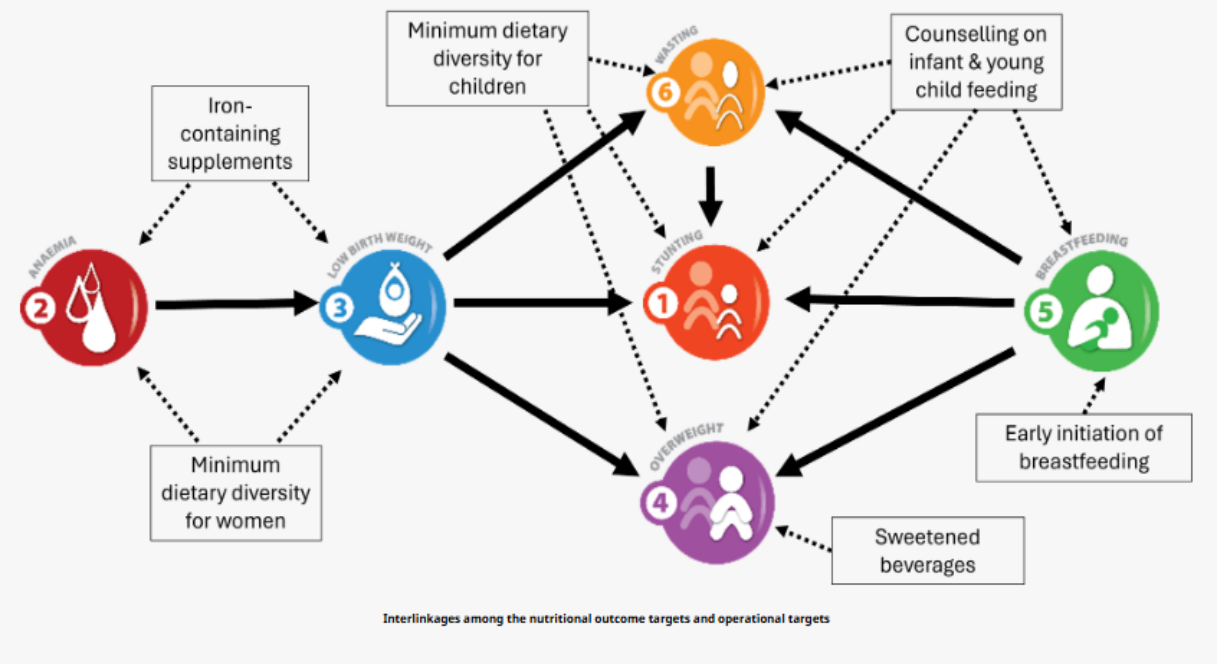
Table 14: The WHO Global outcome and proposed nutrition targets



Source: Global Targets 2025: To improve maternal, infant and young child nutrition[lvi]

The proposed operational targets is to increase the children aged 6-23 months with minimum dietary diversity by 20%; Increase the percentage of women with minimum dietary diversity by 30% ; increase the percentage of pregnant women consuming at least 90 doses of iron containing supplements by 50%; decrease the percentage of children aged 6-23 moths consuming sweet beverages on the previous day by 25% ; increase the percentage of newborns being put to the breast in the first hour after birth by 25% and increase the percentage of caregivers counseled on infant and young child feeding by 65%.

Inter-linkage of the outcome and operational global targets displayed diagrammatically show below



Interlinkages among the nutritional outcome targets and operational targets

In Kenya, early breastfeeding and exclusive breast feeding for the first 5 months occurs in 60% of mothers. Data on continued breastfeed not available. Stunting (Height for age) is found in 18% , Low birth weight is 10%, wasting in children under 5 years is at 4.5% , overweight in children under 5 years is at 18%, school age children and adolescent Obesity 2.5% , adult Obesity > 18 years is at 12.4%; Vitamin A supplementation done in 84% and iodized salt as an indicator of food fortification done in 95%[lvii lviii]. Anaemia in women of reproductive age is at 29%.

Table 15: Nutrition outcome indicators in Kenya, 2022

Outcome Indicators, Kenya

Status of Nutrition Outcome Indicators (latest available)

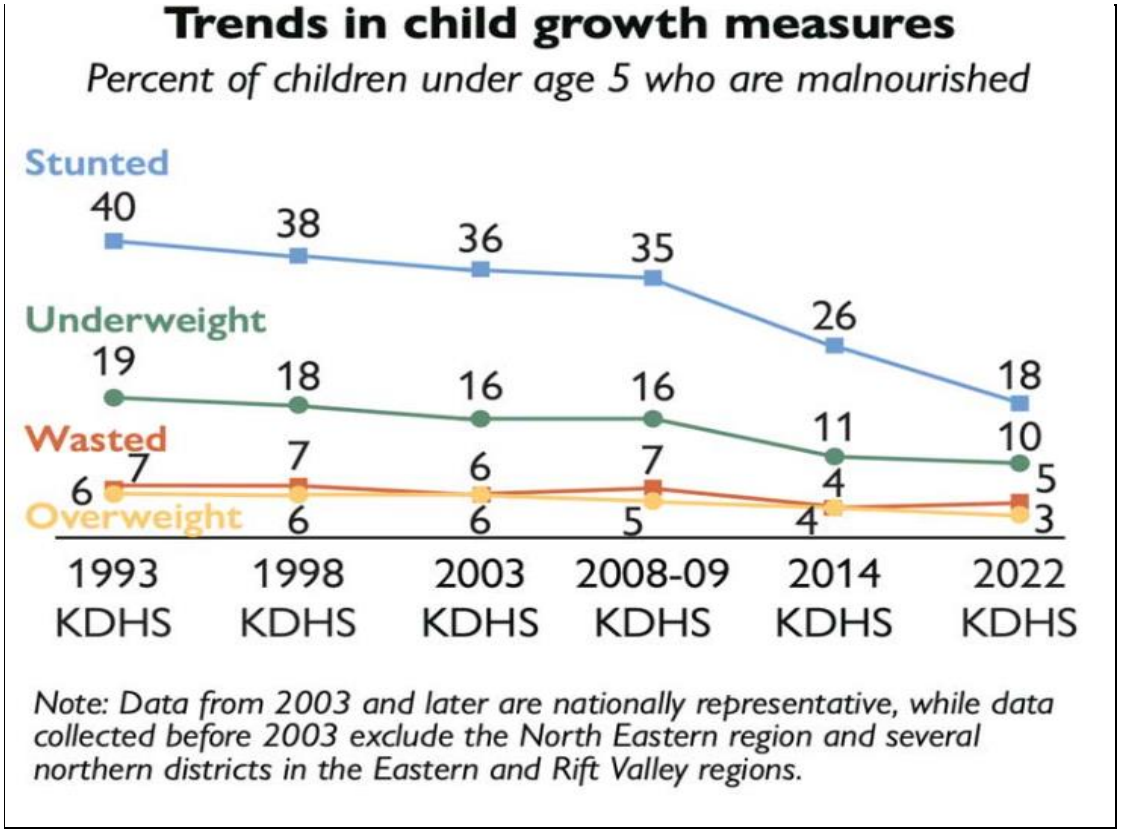
Disaggregating dimension	Value
Stunting in children under five years (%)	18.4
Anaemia in women (15-49) years (%)	28.7
Low birthweight (%)	10
Overweight in children under five years (%)	3.8
Exclusive breastfeeding in first 6 months of life (%)	59.7
Wasting in children under five years (%)	4.5
School-age children and adolescent obesity (%)	2.5
Adult obesity (18+ years) (%)	12.4

Source WHO Global nutrition targets 2030 to improve maternal, infant, and young children nutrition, Kenya data, 2022

The Kenya trends in nutrition outcome indicators reflected in the Figure 36 below. Current prevalence of malnutrition in Kenya is at 8% with the data showing notable marked decline in stunting, underweight, anaemia in women of reproductive age, low birth weight and overweight in children under 5 years of age. Wasting has largely remained unchanged.

Trend analysis between 1993 to 2022, KDHS shows wasting among children has moved from 7% to 5% and this has achieved the global target. Overweight children has moved from 6% to 3% but this should aim to be zero rated by 2030 and as indicated in Figure xx below. Kenya has made notable strides in improving nutrition outcomes among children and women; however, challenges persist in meeting the global targets.

Figure 36: Trends in child growth measures



KDHS, 2022[xiv]

Anaemia in Pregnancy

The prevalence of Anaemia among pregnant women in Kenya increased from 15% in 2016 to 26.2% in 2019, with moderate and severe cases rising significantly. The World Health Organization global target aims for a 50% reduction in anaemia among women of reproductive

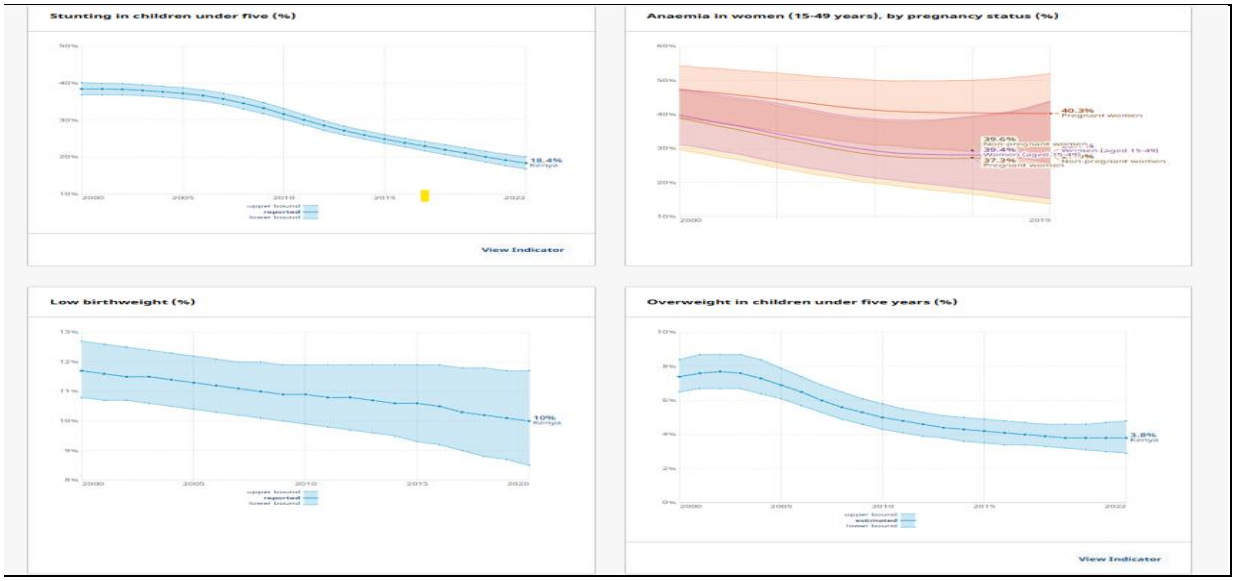
age by 2025. However, Kenya's progress has been slow, and the country is not on track to meet this target.

Pregnant women have greater folate requirements; inadequate folate intake (evidenced by RBC folate concentrations of less than 400 nanograms per millilitre (ng/mL), or 906 nmol/L) prior to and during the first month of pregnancy increases the risk of neural tube defects, preterm delivery, low birthweight, and fetal growth restriction (Bourassa 2019). The WHO recommends that all women who are trying to conceive consume 400 micrograms (µg) of folic acid daily from the time they begin trying to conceive through to 12 weeks of gestation (WHO 2017). In 2015, the WHO added the dosage of 0.4 mg of folic acid to the essential drug list (WHO 2015c). Alongside daily oral iron (30 mg to 60 mg elemental iron), folic acid supplementation is recommended for pregnant women to prevent neural tube defects, maternal anaemia, puerperal sepsis, low birthweight, and preterm birth in settings where anaemia in pregnant women is a severe public health problem (i.e. where at least 40% of pregnant women have a blood haemoglobin (Hb) concentration of less than 110 g/L).Furthermore, in regions where malaria is prevalent the malaria parasite requires folate for survival and growth; and sulphadoxine - pyremithamine (Fansidar) has anti-folate properties with the folate status influencing malaria risk and severity[lix].

Breastfeeding practice**:** The rate of exclusive breastfeeding for infants under six months increased from 32% in 2008 to 61% in 2014. However, recent data indicates a slight decline to 60% in 2022. **Early Initiation of breastfeeding occurs** in 60% of neonates are breastfed within the first hour of birth, falling short of the WHO's recommendation of 70%. Factors such as inadequate awareness, cultural practices, limited healthcare access, and workplace constraints contribute to suboptimal breastfeeding practices. **Interventions:** The Kenyan government has initiated programs like the Baby-Friendly Hospital Initiative and plans to establish 100 lactation stations nationwide to support breastfeeding mothers. However, the rate of decline for all the outcome indicators of the global targets yet to be achieved.

Looking at the WHO nutrition trends in Kenya shown in Figure 37 below exclusive breastfeeding is increasing and between 2014 and 2022 ha surpassed the 50% threshold. Wasting in children under 5 years an indicator of acute malnutrition has fluctuated plausibly with a strong correlation to maternal malnutrition, climate change and infections. Worrisome is the increased rate of school age, adolescent and adult obesity. Diet and particularly use of sweetened beverages, lifestyle and physical inactivity need to be addressed to zero rate obesity[xxvi] .

Figure 37: WHO Nutrition trends in outcome indicators in Kenya



Source WHO Global nutrition targets 2030 to improve maternal, infant, and young children nutrition, Kenya[xxvi]

Source: WHO Global nutrition targets 2030 to improve maternal, infant, and young children nutrition[xxvi]

Among adolescent women age 15-19, 18% are thin according to body mass index for age (BMI-for-age), while 13% are obese or overweight. Among women age 20–49, 7% are thin according to BMI, while 45% are obese or overweight.

In Makueni County children under 5 who are underweight account for 9%; below the national level Stunting in the under 5 years is at 20% noted above the national level of 18%. Anaemia in pregnancy is at 41% way above the national rate. Other important Kenyan indicators include Household population with access to at least basic drinking water services in Kenya is at 68(%) with more in urban (91%) than rural (56%); Household population with at least basic sanitation service at 41% with urban (47%) and rural (38%). In Makueni County households with basic

drinking water and sanitation. This has a bearing on infestation with helminthiasis and dysentry responsible for anaemia and increased vulnerability for other infections.

Early childhood development

Nutrition and **Early Childhood Development (ECD)** are tightly interlinked, especially in the **first 1,000 days** of life (from conception to age two), a period critical for brain development, physical growth, and long-term cognitive potential. In Table 16 below the interconnectedness is reflected and with both short and long term impacts

Table 16: Interconnectedness of malnutrition and early childhood development

Nutrition Indicator	Key ECD Domain Affected	Biological Mechanism	Short-Term Impact	Long-Term Developmental Consequence
Child Stunting (18% in Kenya)	- Physical development - Cognitive development	- Chronic under-nutrition reduces cell growth in the brain and body	- Delayed motor milestones - Reduced curiosity and exploration	- Lower IQ - Poor school performance - Reduced adult productivity
Anaemia in Pregnancy (26.2%)	- Fetal brain development - Language acquisition	- Iron deficiency limits oxygen delivery to fetal tissues, especially the brain	- Low birth weight - Slower neural development	- Delayed language and motor development - Learning difficulties
Sub-optimal Breastfeeding (60% EBF)	- Cognitive foundation - Socio-emotional bonding	- Lack of essential fatty acids and antibodies - Weak bonding due to disrupted feeding	- Increased infections - Poor attention and arousal regulation	- Poor cognitive outcomes - Weaker emotional self-regulation and attachment

CHAPTER NINE HEALTH MANAGEMENT INFORMATION SYSTEM IN KENYA AND MAKUENI COUNTY

The HMIS operates under policies and regulations established by the Ministry of Health, aiming to ensure data quality, security, and ethical use. These policies provide guidelines for the development, implementation, and management of health information systems across the country.

The Kenya Health Management Information System (HMIS) plays a crucial role in strengthening the country's healthcare delivery through several core functions. It involves the systematic collection and management of health data from various facilities and programs, ensuring comprehensive and accurate information capture. This data is then analysed and reported to transform raw figures into actionable insights that guide both policy formulation, operational decision-making and advocacy. Additionally, the HMIS supports resource allocation by identifying healthcare needs and trends, enabling efficient and equitable distribution of resources. It also facilitates ongoing monitoring and evaluation to track health indicators and assess the effectiveness of interventions and programs, ensuring continuous improvement in health outcomes. Efforts have been made to ensure that different health information systems within Kenya can communicate and share data effectively. The Ministry of Health has developed interoperability frameworks to standardize data formats and facilitate seamless data exchange across platforms

The Health Management Information System (HMIS) in Kenya comprises various components and tools designed to support the systematic collection, analysis, and dissemination of health-related data. A central element is the Kenya Health Information System (KHIS), an open-source, web-based platform built on DHIS2 and used nationwide to collect and analyse health service and commodity data. Complementing KHIS is KenyaEMR, an electronic medical records system deployed in over 300 health facilities to facilitate case-based surveillance and management of diseases such as HIV/AIDS. Additionally, data warehouses and mobile applications like AfyaStat and mUzima have been integrated to improve data access, real-time reporting, and decision-making capabilities for healthcare providers across the country.

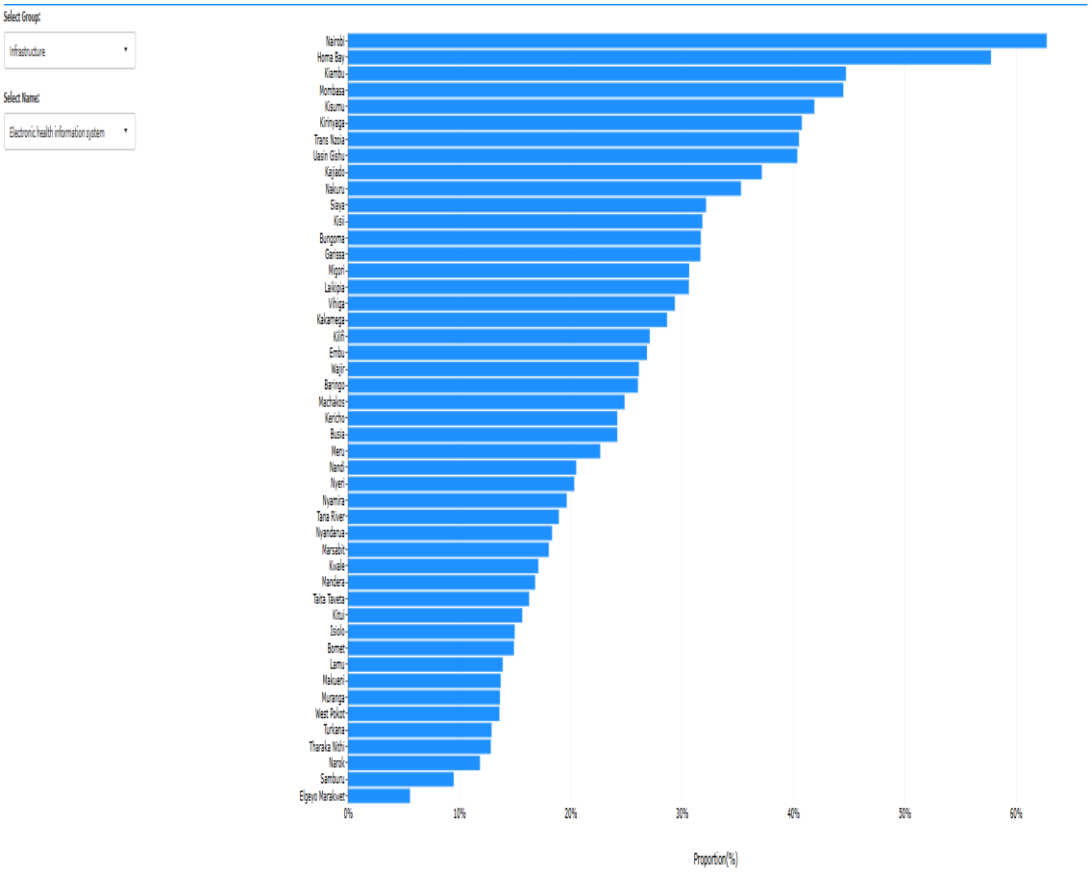
The transformation of data analytics in health systems has moved beyond traditional study designs—such as cross-sectional surveys and retrospective reviews—towards more advanced, innovative approaches that leverage cutting-edge technologies. Today, the integration of artificial intelligence (AI), machine learning (ML), deep learning, and neural networks enables the modelling of complex, real-time health data with unprecedented precision and scalability. These technologies allow for the detection of hidden patterns and prediction of health trends across populations, linking Multisectoral data—from education, housing, and environment to income and nutrition—with core health indicators. This evolution has enhanced the ability to analyse social determinants of health and their interplay with access, coverage, and quality of

care. By disaggregating data by gender, age cohorts, geography, and socioeconomic status, these tools provide granular insights into health equity and disparities. Ultimately, this shift supports more targeted and inclusive interventions, enabling policymakers and health practitioners to design programs that are responsive to diverse population needs and that drive improved health outcomes for all.

Makueni Electronic health system

In Makueni County the electronic health information system is at 14%. Data driven decision making critical towards improvement of MNH performance indicators, generate dashboards in real time and for geo- spatial mapping where the need is highest. In the majority of counties the electronic health information system is below 50% and this needs to be accelerated shown in Figure 38 below.

Figure 38: Electronic health information system by Counties in Kenya



Source: Kenya health facility assessment, 2023 [vi]

Digital Health & Innovations

Implement Mobile Health (mHealth) Initiatives

mMaternal Alerts: Use SMS reminders & AI chatbots for antenatal care (ANC), danger signs,

and postnatal care (PNC).

Digital Referral Systems: Link ambulance services with geo-location tracking for timely interventions.

Leverage AI & Predictive Analytics

PPH Risk Prediction Model: Use AI to identify high-risk pregnancies & preempt emergencies.

Heat- Maps for MNH Bottlenecks: Map areas with high maternal mortality & weak service delivery for targeted interventions.

Electronic Health Records (EHRs) & Decision Support Tools

Digitize ANC, intrapartum and PNC records for continuity of care across different facilities.

Equip midwives & CHWs with digital decision-support tools for standardized protocols.

Health equity and various data modelling techniques

In Makueni County, geo-spatial analytical methods have been instrumental in assessing and improving maternal and newborn health services. These methods facilitate the identification of spatial disparities, optimize resource allocation, and enhance healthcare delivery. Key methodologies include:

Small Area Estimation (SAE) Techniques: SAE is employed to estimate health indicators at granular levels, such as sub-counties, by leveraging spatial relatedness to yield precise and reliable estimates. For instance, a study utilizing the 2014 Kenya Demographic and Health Survey (KDHS) data applied SAE to compute sub-county estimates of antenatal care (ANC) coverage, revealing significant heterogeneity across regions. Sub-optimal coverage of ANC4 and its heterogeneity at sub-county level ranging from 17%in Mandera to -77%in Nakuru calls for urgent, focused and localized approaches to improve access to antenatal care services. Policy formulation and resources allocation should rely on data-driven strategies to guide national and county governments achieve equity in access and utilization of health interventions[lx].

Hierarchical Mixed-Effect Logistic Regression Models: These models are used to identify factors influencing ANC utilization by accounting for both individual-level and area-level variations. By incorporating spatial components, researchers can discern patterns and determinants of healthcare service usage, facilitating the development of localized strategies to improve maternal health outcomes.

Geo-spatial accessibility analysis is a methodological approach used to assess the ease or difficulty with which populations can reach essential services—such as health facilities—based on their geographic location. It combines geographic information system (GIS) tools with spatial data, including road networks, terrain, population distribution, and facility locations, to estimate travel times or distances under different conditions (e.g., walking, motorized transport, seasonal changes). This analysis helps identify physical barriers to access, such as poor road

infrastructure or natural obstacles, and highlights under-served or hard-to-reach areas. In the health sector, geospatial accessibility analysis is critical for informing the placement of new facilities, optimizing referral networks, planning emergency response, and improving equitable service delivery. When integrated with health and demographic data, it supports evidence-based decision-making aimed at reducing access disparities and enhancing universal health coverage.as described in the chapter on maternal and newborn care access

Application of data analytics for acceleration of EWENE

Maternal, newborn, child, and adolescent health (MNCAH) programs can draw valuable lessons from the robust data systems used in HIV/AIDS, malaria, and TIBU (for TB) programs, which have pioneered the use of real-time, case-based digital platforms for surveillance, performance monitoring, and epidemiological tracking. These programs have successfully employed unique patient identifiers, longitudinal tracking, and granular disaggregation to monitor care cascades and treatment outcomes. Adopting similar approaches in MNCAH can enhance the precision of performance indicator monitoring and support integration of social determinants of health (SDOH), such as socioeconomic status, gender, and education, into analytics frameworks. Furthermore, these datasets demonstrate strong potential for multisector integration, allowing health data to be linked with education, nutrition, water and sanitation, and social protection systems to generate a more holistic understanding of health and well-being. Leveraging geospatial mapping and surveillance methods from these programs can also improve the identification of service delivery gaps and disease hot-spots. The concept of "twinning" or sharing infrastructure and analytical capabilities across programs—such as data dashboards, reporting systems, and mobile tools—can increase efficiency and coherence across the continuum of care. Ultimately, this cross-program and cross-sector learning offers a pathway toward more integrated, data-driven, and equitable health systems for women, children, and adolescents.

The strategic employment of data significantly accelerates the reduction of maternal, newborn, child, and adolescent health (MNCAH) mortality—particularly under the **Every Woman Every Newborn Everywhere (EWENE)** agenda—by enabling timely, targeted, and evidence-based decision-making. High-quality, disaggregated data allows for early identification of at-risk populations, tracking of mortality and morbidity trends, and real-time monitoring of service delivery and outcomes. Through digital health tools, geo-spatial analysis, and integrated dashboards, data helps pinpoint where essential services are lacking, reveals inequities in access and coverage, and informs resource allocation to the most under-served areas. By embedding social determinants of health (SDOH) into data systems, programs can also address root causes—such as poverty, education, gender inequality, and inadequate nutrition—that contribute to poor MNCAH outcomes.

Moreover, data supports accountability by making it possible to track progress toward national and global targets, while also fostering innovation in service delivery through predictive analytics, early warning systems, and performance scorecards. When used across the continuum of care—from antenatal services to adolescent health—data strengthens linkages between interventions and ensures continuity, thereby facilitating healthy beginnings and healthy futures. In essence, data transforms how we understand and respond to the needs of women, newborns, children, and adolescents, making it a powerful driver for accelerating mortality reduction and achieving long-term health and well-being.

CHAPTER TEN COLLABORATIVE PARTNERSHIPS

“Partnerships the new innovation”. There is a growing shift from traditional North-South partnerships in MNCAH toward more collaborative, co-created models of partnership, which emphasize mutual respect, equity, and shared ownership. Unlike the often top-down approach of North-South engagements, co-created partnerships prioritize joint problem-solving, local leadership, and the co-design of interventions that are grounded in the realities of LMIC contexts. This shift allows for the integration of indigenous knowledge, culturally relevant practices, and locally driven innovations, enhancing the relevance, sustainability, and effectiveness of MNCAH programs. Moreover, it fosters stronger trust and accountability between partners, builds local capacity, and reduces dependency on external actors. By aligning goals, resources, and decision-making processes, these partnerships empower communities and governments in LMICs to lead their own health agendas while benefiting from genuine global collaboration.

Countries across the Global South are taking a more assertive role in shaping global health, advancing solutions that are locally driven and more contextually appropriate. Regional governance mechanisms, such as those of the AU and the BRICS, alongside leadership in global forums by countries such as India, Brazil, Indonesia, and South Africa – all signal a major shift in global decision-making is underway, bringing new potential to drive marked improvements in health for women, children and adolescents.

Innovative South-South collaboration offers a range of advantages for improving maternal, newborn, child, and adolescent health (MNCAH), particularly in low- and middle-income countries (LMICs). First, it enables the sharing of contextually relevant innovations, strategies, and best practices that have been tested in similar socio-economic and health system environments, increasing the likelihood of successful adaptation and implementation. Second, it fosters peer-to-peer learning and capacity-building among health professionals, policymakers, and institutions, reducing reliance on external consultants and building long-term local expertise. Third, South-South partnerships often promote cost-effective solutions through joint procurement of medical supplies, pooled resources, and shared research, helping LMICs stretch limited budgets. Additionally, these collaborations strengthen regional solidarity and advocacy power, enabling countries to collectively negotiate for better terms in international forums. Ultimately, South-South cooperation builds resilience, strengthens health systems, and accelerates progress toward achieving sustainable MNCAH outcomes tailored to LMIC contexts.

O leverage progress and resist regression in the face of setbacks, sector partnerships must be strengthened and multi-sector coalitions built up. With more opportunities to work together effectively, to combine resources and voices - thereby emboldening public advocacy and

delivery – we can help accelerate transformative investment, innovation, and inclusion for the health and well-being of women, children, and adolescents.

Multisector partnerships can be practically embedded into a framework for MNCAH+N by aligning health sector efforts with complementary sectors such as education, nutrition, water and sanitation, social protection, and finance. This integrated approach ensures a holistic response to the complex determinants of maternal, newborn, child, and adolescent health and nutrition. Practically, this can be achieved through joint planning, shared accountability frameworks, pooled financing mechanisms, and inter-ministerial coordination platforms that bring together stakeholders at national and sub-national levels. For example, school-based nutrition and health programs, community-based water and hygiene initiatives, and social safety nets for pregnant women and young mothers can be aligned with health system interventions to ensure continuity of care across the life course. Such coordinated efforts directly support the EWENE targets by promoting Healthy Beginnings—through quality antenatal, birth, and postnatal care—and ensuring Healthy Futures by strengthening systems that sustain child and adolescent health, nutrition, and development outcomes. Importantly, this approach also addresses the underlying social determinants of health—such as poverty, education, gender inequality, and access to clean environments—by leveraging Multisectoral action to reduce vulnerabilities and create enabling environments, a critical target of the EWENE agenda.

Application to SDG 17

SDG 17: Partnerships for the Goals provides a critical foundation for enabling **multisector partnerships** in advancing maternal, newborn, child, and adolescent health (MNCAH). The various targets under SDG 17 offer practical entry points and indicators to assess and strengthen cross-sector collaboration and systems-level support for MNCAH.

Target 17.1 (Mobilize resources for developing countries) and **Target 17.3 (Mobilize additional financial resources)** underscore the importance of coordinated financing mechanisms—such as pooled funds or blended finance—from health, education, nutrition, and social protection sectors, ensuring sustained investment in integrated MNCAH services.

Target 17.6 (Knowledge sharing and cooperation for access to science, technology, and innovation) encourages the development and use of shared digital health platforms, data systems, and innovations across sectors (e.g., linking health information with social welfare and education data) to improve planning and service delivery for MNCAH.

Target 17.9 (Enhance capacity-building) supports joint training and workforce development across sectors—for example, training teachers on adolescent health promotion or community

workers on nutrition and WASH interventions—thereby strengthening community-based, multisector MNCAH platforms.

Target 17.14 (Policy coherence) is especially relevant for multisector partnerships, as it calls for alignment of national and sub-national policies across ministries to address the broader social and structural determinants of MNCAH outcomes, such as gender equality, poverty, and education

Target 17.17 (Encourage effective partnerships) directly promotes structured engagement among governments, civil society, academia, and the private sector in designing and delivering MNCAH+N interventions that are context-sensitive and locally owned.

Target 17.18 (Increase availability of disaggregated data) enables Multisectoral actors to monitor progress, identify inequities, and adapt programs based on evidence—such as tracking adolescent girls' health and education outcomes simultaneously.

CHAPTER ELEVEN ACCOUNTABILITY BY DUTY BEARERS

Accountability in maternal and new-born health involves ensuring that elected representatives and government officials are held responsible for the ratified legislative commitments in RMNCAH, implementation of policies, allocation of financial resources, and the overall performance of health programs aimed at improving maternal and new-born health outcomes. Here are some ways in which accountability can be, and is, addressed in parliaments:

MNH Legislative Bills:

- In Kenya the Maternal and New- born health Bill was drawn in 2023 and currently undergoing public participation review. The professional body KOGS and Women Engaged in Development one of the collaborative partners of OMMI submitted their report on 11th April 2025.

Legislative Oversight:

- **Parliamentary Committees**: Health committees or subcommittees in parliament can play a crucial role in overseeing maternal and new-born health programs. They can hold hearings, review reports, and question health officials on the implementation and impact of policies.
- **Regular Reporting**: Ministries of Health are often required to report regularly to parliament on progress towards maternal and newborn health targets. These reports can be scrutinized to ensure that commitments are being met.

Budget Approvals and Audits:

- **Budget Scrutiny**: Parliament has the authority to approve national budgets, including allocations for maternal and new-born health. This process includes scrutinizing proposed expenditures and ensuring they align with national health priorities.
- **Audits and Evaluations**: Independent audit institutions, such as national audit offices, can evaluate the use of funds allocated to maternal and newborn health programs. Audit findings are typically reported to parliament, which can take action based on the results.

Policy Formulation and Legislation:

- **Legislative Initiatives**: Parliamentarians can propose and advocate for laws and policies that improve maternal and new-born health. They can also amend existing laws to strengthen accountability mechanisms.

- **Policy Debates**: Debates in parliament provide a platform for discussing the effectiveness of maternal and newborn health policies, highlighting issues, and proposing solutions.

Public Engagement and Advocacy:

- **Constituency Engagement**: Parliamentarians can engage with their constituents to understand local maternal and new-born health issues and advocate for their resolution at the national level.
- **Civil Society Involvement**: Collaboration with civil society organizations can enhance accountability. These organizations can provide independent assessments of maternal and new-born health services and advocate for improvements.

Transparency and Data Accessibility:

- **Public Access to Information**: Ensuring that data on maternal and newborn health outcomes, funding, and program performance are publicly accessible allows for greater transparency and accountability.
- **Health Information Systems**: Robust health information systems can provide accurate data for monitoring and evaluating maternal and new-born health programs, which can be used by parliamentarians to hold the government accountable.

Monitoring and Evaluation Frameworks:

- **Performance Indicators**: Establishing clear performance indicators and targets for maternal and new-born health programs allows parliament to monitor progress and hold relevant authorities accountable for achieving these targets.
- **Impact Assessments**: Regular impact assessments of maternal and new-born health interventions can inform parliament about the effectiveness of these programs and guide policy adjustments.

Challenges to Accountability in Maternal and Newborn Health:

- **Capacity Issues**: Limited capacity and resources within parliamentary health committees can hinder effective oversight and accountability.
- **Political Will**: The effectiveness of parliamentary oversight depends on the political will of parliamentarians and the government to prioritize maternal and newborn health.

- **Coordination**: Ensuring coordination between different levels of government and various stakeholders is essential for comprehensive accountability.
- **Data Quality**: Accurate and timely data are crucial for monitoring progress and holding authorities accountable. Challenges in data collection and reporting can impede this process.

Examples of Good Practices:

- **Uganda**: The Parliament of Uganda has a dedicated committee on Health that reviews health policies, budgets, and reports on maternal and newborn health. The committee holds hearings and engages with civil society to enhance accountability.
- **Kenya**: The Kenyan Parliament has actively engaged in debates and passed legislation aimed at improving maternal and newborn health, including the introduction of free maternity services. Parliamentary committees conduct oversight visits to health facilities and review program performance. Currently the MNH Bill undergoing public participation
- **Rwanda**: Rwanda's parliament has played a key role in advocating for health reforms and ensuring accountability through regular reporting and monitoring of health sector performance, including maternal and newborn health.

CHAPTER TWELVE PROPOSED FRAMEWORK FOR SUSTAINABILITY AND SCALABILITY FOR EWENE

Framework for Sustaining and Scaling Interventions in Maternal, Newborn, Child, and Adolescent Health and nutrition (MNCAH+N)

Sustaining and scaling interventions in MNCAH requires a systematic, multi-sectoral, and equity-focused approach. The following framework outlines key pillars to ensure long-term impact and expansion of effective MNCAH interventions:

Leadership and clinical governance

To sustainably and scalably accelerate progress in maternal, newborn, child, and adolescent health and nutrition (MNCAH+N) within the remaining window to SDG 2030, leadership and clinical governance must be at the forefront—anchored in strong oversight, multisector coordination, and inclusive engagement of adolescents and youth. A supportive policy environment that upholds human rights and builds a robust investment case for the Every Woman, Every Newborn, Everywhere (EWENE) agenda is essential. Embedding accountability mechanisms and respectful, rights-based care into preparedness and response strategies—especially in emergency and humanitarian contexts—ensures no one is left behind. Quality of care (QoC) must be consistently prioritized, while building system resilience and self-reliance through local capacity strengthening, domestic resource mobilization, and innovative service delivery models. SMART advocacy serves as the binding force—galvanizing political will, mobilizing resources, and amplifying community voices—to deliver equitable, high-impact interventions. Together, these intertwined elements can drive lasting change and significantly reduce preventable mortality across the MNCAH+N continuum.

Policy and Governance Strengthening

MNH Bill a critical milestone in addressing all aspects of maternal and newborn health. A strong policy environment is essential for the long-term success of maternal, newborn, child, and adolescent health (MNCAH) programs. Government commitment is crucial to ensuring that national policies prioritize MNCAH and align with global frameworks such as EWENE and the Every Newborn Action Plan. Guidelines in Quality Obstetric and newborn care, standards and norms and MPDSR. Multi-sectoral collaboration is necessary to integrate MNCAH interventions by fostering partnerships across ministries of health, education, gender, and finance. Strengthening regulatory frameworks on maternal and child rights, adolescent sexual and reproductive health, and health workforce retention further supports sustainable improvements. Additionally, establishing accountability and monitoring mechanisms through performance tracking systems helps evaluate intervention outcomes and address existing gaps, ensuring continuous progress.

Strengthening Health Systems

Strengthening health systems is essential for sustaining and scaling maternal, newborn, child, and adolescent health (MNCAH) interventions. A resilient, well-funded system must be capable of delivering high-quality services. Investing in health infrastructure by improving facilities, ensuring the availability of essential medicines, and advancing digital health systems is necessary. Expanding and training the health workforce, including skilled birth attendants, midwives, and community health workers (CHWs), is crucial, with an emphasis on mentorship and facilitated supervision. Mapping of HRH critical step to addressing the numbers, distribution, competency to provide access, coverage, quality services and equity for service delivery. Sustainable health financing must also be secured through government budgets, public-private partnerships (PPPs), and innovative financing mechanisms such as health insurance schemes. In service delivery be enhanced through strengthened referral networks, improved emergency obstetric and newborn care (EmONC), integrated service and innovative care delivery models.

Innovative care models include:

Midwifery care models

Community based care models: mobile/ outreach; community health promoters

HCP care networks in County and Inter- county; regional and globally

EWENE Champions: amongst HCP, mothers with lived experiences, male engagement

Hub and spoke care modes with centers of excellence

Decentralized care model with follow up on lessons and challenges learnt

Ambulance referrals in EWENE program

Ambulance services redeployed too hard to reach geo-locations

Ambulance services networks , patterns of referral, cases referred and related outcomes

Sustainable Financing and Resource Mobilization

Long-term funding stability is critical for sustaining maternal, newborn, child, and adolescent health (MNCAH) interventions. Advocating for increased and specific national budget allocations for MNCAH through domestic resource mobilization is essential to securing sustainable financial support. This has become all the more evident with the US sanctions on funding that cross cute MNH and other programs - immunization, nutrition, HIV/AIDS Family planning and the data system in Kenya. Health economics at the macro- level in health sector and micro-level (individual level of the affected) Exploring innovative financing models, such as impact bonds, micro-insurance schemes, and pooled funding mechanisms, can provide additional resources for these programs. Strengthening partnerships with donor agencies, corporate social responsibility (CSR) initiatives, and philanthropic foundations further enhances funding opportunities. Additionally, promoting community-based financing through

savings groups and cooperatives can help offset maternal and child healthcare costs, ensuring access to essential services for under-served populations.

Leveraging Digital Health and Innovation

Leveraging technology can effectively bridge health literacy and service delivery gaps, thereby enhancing health outcomes, especially in remote and under-served areas. Expanding digital platforms for tele-medicine and mobile health facilitates maternal and newborn care consultations, health education, and early disease detection. Utilizing electronic datasets, artificial intelligence (AI) and data analytics enables AI-driven diagnostics and predictive analytics, aiding in early risk identification and precision care. Implementing digital tracking systems, such as block-chain, optimizes the supply chain by reducing stock-outs of essential maternal, newborn, child, and adolescent health (MNCAH) supplies. Strengthening health information systems through real-time data collection and reporting enhances response times and informs policy decisions, utilizing tools like dashboards, scorecards, and early warning systems to achieve health milestones

Community Engagement and Social Mobilization

Sustained community participation is essential for ensuring culturally appropriate and impactful maternal, newborn, child, and adolescent health (MNCAH) interventions. Strengthening networks of community health workers (CHWs) and peer educators enhances service delivery at the grassroots level, making healthcare more accessible. Behavior change communication (BCC) initiatives, such as awareness campaigns on maternal nutrition, antenatal care (ANC), newborn care, and adolescent health, play a critical role in improving health outcomes. Empowering women and young people to co-design and lead interventions fosters ownership and sustainability. Additionally, engaging gatekeepers- politicians, teachers, traditional and religious leaders as influential community figures helps drive positive health-seeking behaviors, reinforcing the adoption of MNCAH best practices**.** We need to embrace the influence of other line ministries in health and have a pooled effort, integrated financing pathway geared for successful health outcomes.

Climate Resilience and Emergency Preparedness

Climate change and humanitarian crises pose significant threats to maternal, newborn, child, and adolescent health (MNCAH) services, necessitating proactive mitigation and adaptation of strategies. Preparedness is key, with early warning systems, effective response protocols, surveillance, and monitoring, evaluation, accountability, and learning (MEAL) frameworks ensures timely interventions. Investing in climate-resilient health facilities, such as solar-powered clinics, climate-friendly medical supply chains, and eco-friendly waste disposal systems, helps maintain services in the face of environmental challenges. Disaster preparedness plans must focus on coordination, collaboration, developing emergency response protocols tailored to maternal and newborn care during crises. Additionally, addressing food security and

malnutrition through community-driven nutrition programs, supported by science, technology, and social and financial enterprise innovations, as being essential for maintaining health, nutrition and psycho- social wellness during times of crisis.

Evidence-Based Decision Making and Research

Data-driven approaches are essential for ensuring continuous improvement and scalability in maternal, newborn, child, adolescent health and nutrition (MNCAH+N) programs. Implementation research plays a critical role in evaluating interventions to identify best practices and scale successful models. Strengthening health information systems through routine data collection and analysis enables real-time monitoring, ensuring timely adjustments to interventions. Additionally, facilitating South-South learning and knowledge sharing allows for cross-country exchanges of successful MNCAH+N interventions, fostering collaboration and accelerating the adoption of effective strategies.

Research agenda as a transformation strategy: Data and modeling strategies in women's health needs more investment in digitizing medical and clinical records in the health sector and having data repositories that can be utilized to provide context specificity , priorities, address multi-sector , social determinants of health and actuarial studies.

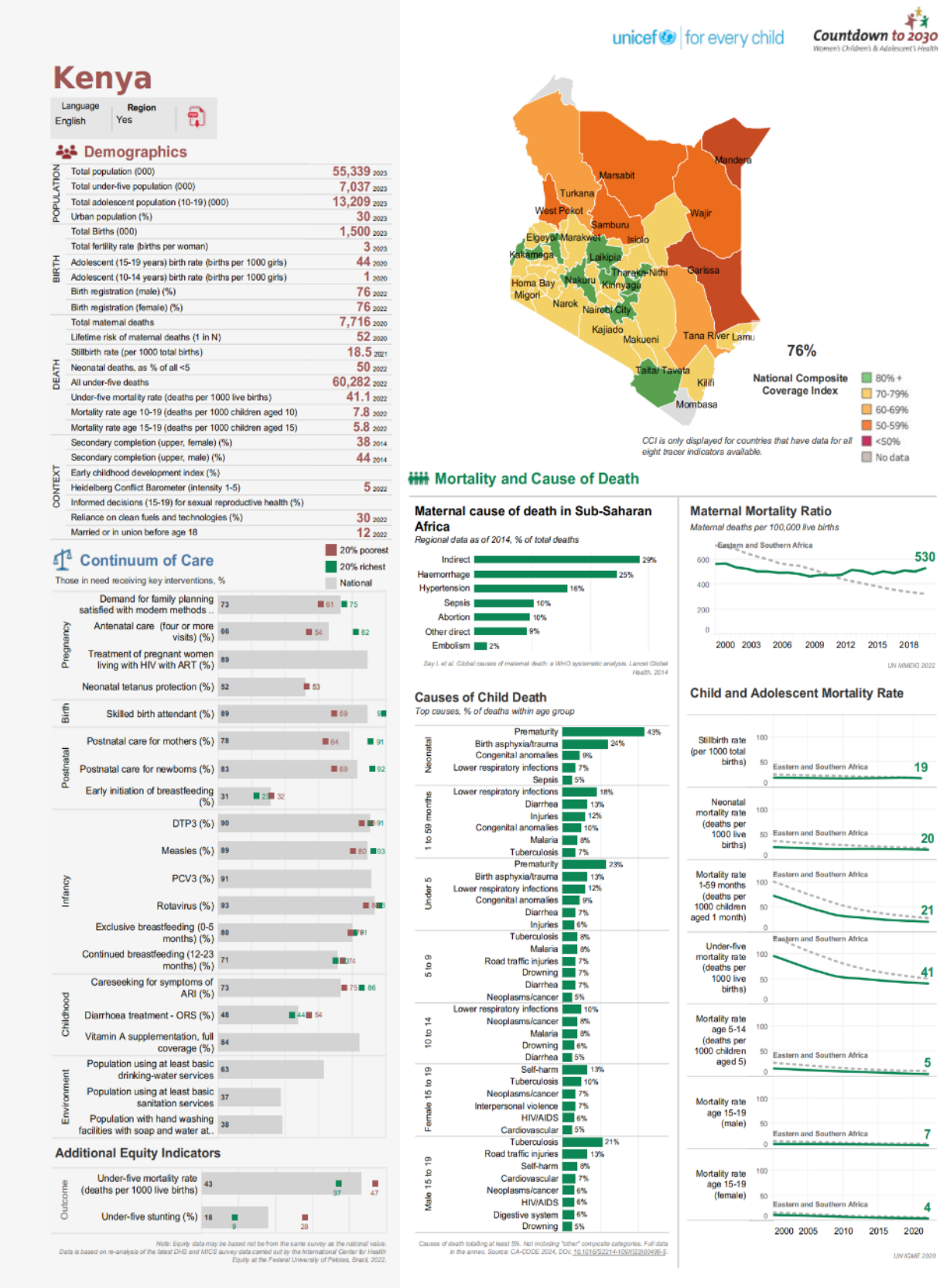
Aligned results framework for EWENE

Milestones	**Deliverables for MNCAH+N**
Policies and plans for MNCAH+N	SET TARGETS: This is crucial for acceleration against the global and national targets
	Costed implementation plans
	Dissemination and adopted at sub- national and district level
Leadership and clinical governance	Oversight , coordination , multi-sector engagement , advocacy and accountability
Response and resilience plans	Coordination mechanism for preparedness, response and resilience
	Preparedness and response plan in place
	Monitoring of survival and health outcomes during humanitarian and poly-crisis
	Health system strengthening for HRH, commodities , medical technologies and HMIS
Investment	Investment case for MNCAH+ N

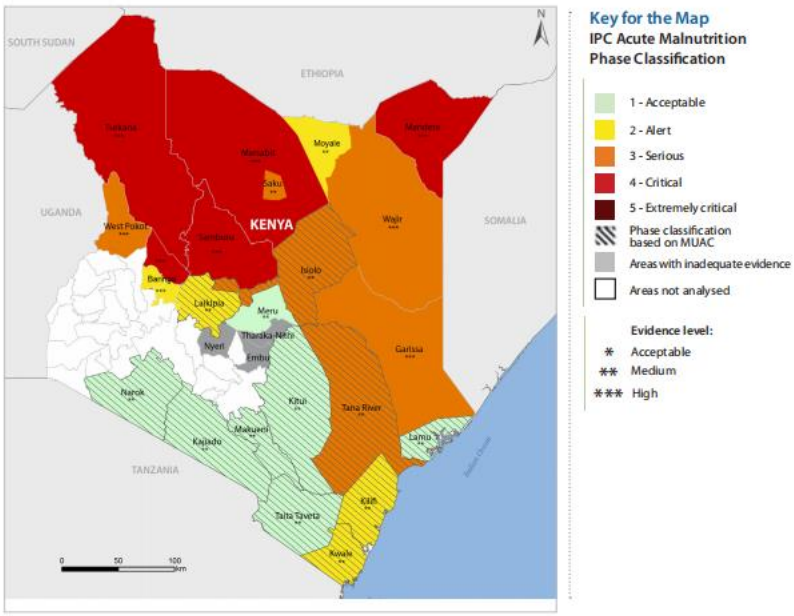
	Innovative financing mechanisms
	Global investment, domestic resources with evident expenditure tracking, analysis and published for accountability
Equity	Strive for equitable access to MNCAH+N and engage private sector
	Track equity gaps
	Innovative strategies to close the equity gaps then address, evaluate and publish
Datasets put on electronic health system	National and civil registries registration of MNCAH+ N health outcomes
	Routine capture of HMIS inclusive of public and private health sector
	Performance indicators tracked against targets and include dis-aggregated dated by age cohorts, geo-location to address gaps and disparities
	Monitoring and evaluation of health outcomes during emergencies and humanitarian crisis
Quality of care in public and private health sector	Adherence to standard and norms, respectful care
	Determine a set of core indicators to track
	MPDSR that engages the community
	Promote Socio-behavioral change in communities through health literacy and engagement with media
	Lived experience of consumers of services
	Quality improvement networks / linkages
Human resource for health competencies and motivated	Adherence to Global Strategy for Human Resources for Health; including the accreditation of institutions
	Pre-service and in- service Curricula with evidence based updates and advancements , mentorship, apprenticeship, facilitative supervision

	Equitable posting and distribution of workforce
	Social welfare of the HRH addressed to improve motivation, retention and remuneration
Medical products/ commodities	Essential core list of medical products and commodities updated and accessible for MNCAH+N
	Regulation, budgetary allocation, procurement and supply logistics , maintenance of equipment and quality of products ensured
	Market barriers addressed
	Level of health facility clearly outlined essential, emergency and intensive treatment accessible and to commensurate with medical products/ commodities. Attention in emergencies and humanitarian crisis
	Evidence generated and shared on solutions to increase availability, cost-effectiveness, access and use of maternal and newborn commodities medical products in low resource settings
	Robust, appropriate and timely referral mechanisms in place in absence of the medical products and commodities
Research , innovation and knowledge management	Research agenda developed with focus on barrier assessments
	Research may commence with sentinel sites with potential for sustainability and scale up outlined
	National / County governments and local research institutes co-create implementation research to fulfil the research agenda and must engage the community
	List of priorities for implementation research and innovations developed at county level
	Map funding provided to research and innovation priorities

APPENDIX


unicef | for every child
Countdown to 2030
Women's, Children's & Adolescent's Health
Kenya
Language
English
Region
Yes
Demographics
POPULATION
Total population (000) 55,339 2023
Total under-five population (000) 7,037 2023
Total adolescent population (10-19) (000) 13,209 2023
Urban population (%) 30 2023
Total Births (000) 1,500 2023
BIRTH
Total fertility rate (births per woman) 3 2023
Adolescent (15-19 years) birth rate (births per 1000 girls) 44 2020
Adolescent (10-14 years) birth rate (births per 1000 girls) 1 2020
Birth registration (male) (%) 76 2022
Birth registration (female) (%) 76 2022
DEATH
Total maternal deaths 7,716 2020
Lifetime risk of maternal deaths (1 in N) 52 2020
Stillbirth rate (per 1000 total births) 18.5 2021
Neonatal deaths, as % of all <5 50 2022
All under-five deaths 60,282 2022
Under-five mortality rate (deaths per 1000 live births) 41.1 2022
Mortality rate age 10-19 (deaths per 1000 children aged 10) 7.8 2022
Mortality rate age 15-19 (deaths per 1000 children aged 15) 5.8 2022
CONTEXT
Secondary completion (upper, female) (%) 38 2014
Secondary completion (upper, male) (%) 44 2014
Early childhood development index (%)
Heidelberg Conflict Barometer (intensity 1-5) 5 2022
Informed decisions (15-19) for sexual reproductive health (%)
Reliance on clean fuels and technologies (%) 30 2022
Married or in union before age 18 12 2022
Continuum of Care
Those in need receiving key interventions, %
20% poorest
20% richest
National
Pregnancy
Demand for family planning satisfied with modern methods .. 73 61 75
Antenatal care (four or more visits) (%) 66 54 82
Treatment of pregnant women living with HIV with ART (%) 89
Neonatal tetanus protection (%) 52 53
Birth
Skilled birth attendant (%) 89 69 9
Postnatal
Postnatal care for mothers (%) 78 64 91
Postnatal care for newborns (%) 83 69 92
Early initiation of breastfeeding (%) 31 23 32
Infancy
DTP3 (%) 90 91
Measles (%) 89 83 93
PCV3 (%) 91
Rotavirus (%) 93
Exclusive breastfeeding (0-5 months) (%) 80 81
Continued breastfeeding (12-23 months) (%) 71 74
Childhood
Careseeking for symptoms of ARI (%) 73 75 86
Diarrhoea treatment - ORS (%) 48 44 54
Vitamin A supplementation, full coverage (%) 84
Environment
Population using at least basic drinking-water services 63
Population using at least basic sanitation services 37
Population with hand washing facilities with soap and water at.. 38
Additional Equity Indicators
Outcome
Under-five mortality rate (deaths per 1000 live births) 43 37 47
Under-five stunting (%) 18 9 28
Note: Equity data may be based not be from the same survey as the national value. Data is based on re-analysis of the latest DHS and MICS survey data carried out by the International Center for Health Equity at the Federal University of Pelotas, Brazil, 2022.
Marsabit
Mandera
Turkana
West Pokot
Wajir
Samburu
Elgeyo Marakwet
Isiolo
Kakamega
Laikipia
Garissa
Tharaka-Nithi
Homa Bay
Nakuru
Kirinyaga
Migori
Narok
Nairobi City
Kajiado
Makueni
Tana River
Lamu
Taita Taveta
Kilifi
Mombasa
76%
National Composite Coverage Index
80% +
70-79%
60-69%
50-59%
<50%
No data
CCI is only displayed for countries that have data for all eight tracer indicators available.
Mortality and Cause of Death
Maternal cause of death in Sub-Saharan Africa
Regional data as of 2014, % of total deaths
Indirect 29%
Haemorrhage 25%
Hypertension 16%
Sepsis 10%
Abortion 10%
Other direct 9%
Embolism 2%
Say L et al. Global causes of maternal death: a WHO systematic analysis. Lancet Global Health. 2014
Maternal Mortality Ratio
Maternal deaths per 100,000 live births
Eastern and Southern Africa
600
400
200
0
530
2000 2003 2006 2009 2012 2015 2018
UN MMEIG 2022
Causes of Child Death
Top causes, % of deaths within age group
Neonatal
Prematurity 43%
Birth asphyxia/trauma 24%
Congenital anomalies 9%
Lower respiratory infections 7%
Sepsis 5%
1 to 59 months
Lower respiratory infections 18%
Diarrhea 13%
Injuries 12%
Congenital anomalies 10%
Malaria 8%
Tuberculosis 7%
Under 5
Prematurity 23%
Birth asphyxia/trauma 13%
Lower respiratory infections 12%
Congenital anomalies 9%
Diarrhea 7%
Injuries 6%
5 to 9
Tuberculosis 8%
Malaria 8%
Road traffic injuries 7%
Drowning 7%
Diarrhea 7%
Neoplasms/cancer 5%
10 to 14
Lower respiratory infections 10%
Neoplasms/cancer 8%
Malaria 8%
Drowning 6%
Diarrhea 5%
Female 15 to 19
Self-harm 13%
Tuberculosis 10%
Neoplasms/cancer 7%
Interpersonal violence 7%
HIV/AIDS 6%
Cardiovascular 5%
Male 15 to 19
Tuberculosis 21%
Road traffic injuries 13%
Self-harm 8%
Cardiovascular 7%
Neoplasms/cancer 6%
HIV/AIDS 6%
Digestive system 6%
Drowning 5%
Causes of death totalling at least 5%. Not including "other" composite categories. Full data in the annex. Source: CA-CODE 2024, DOI: 10.1016/S2214-109X(23)00496-5.
Child and Adolescent Mortality Rate
Stillbirth rate (per 1000 total births)
Eastern and Southern Africa
19
Neonatal mortality rate (deaths per 1000 live births)
20
Mortality rate 1-59 months (deaths per 1000 children aged 1 month)
21
Under-five mortality rate (deaths per 1000 live births)
41
Mortality rate age 5-14 (deaths per 1000 children aged 5)
5
Mortality rate age 15-19 (male)
7
Mortality rate age 15-19 (female)
4
2000 2005 2010 2015 2020
UN IGME 2020

CURRENT ACUTE MALNUTRITION SITUATION OVERVIEW (APRIL - JULY 2024)



Makueni County KDHS Data

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