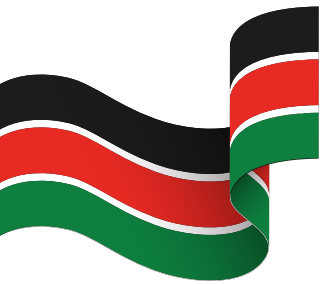

REPUBLIC OF KENYA

Ministry of Health

INVESTMENT CASE FOR NEWBORN HEALTH IN KENYA

2025

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Abbreviations

ABC	Activity Based Costing
CPAP	Continuous Positive Airway Pressure
DALYs	Disability-Adjusted Life Years
FHEM	Futures Health Economics & Metric
IFCDC	Infant and Family Centred Developmental Care
KMC	Kangaroo Mother Care
LiST	Lives Saved Tool
LMIC	Low- and Middle-Income Countries
MoH	Ministry of Health
NMR	Neonatal Mortality Rate
NGOs	Non-Governmental Organizations
PCN	Primary Care Networks
PMTCT	Prevention of Mother to Child Transmission
ROI	Return-On-Investment
SDG	Sustainable Development Goal
UHC	Universal Health Coverage
VSLY	Value of a Statistical Life Year
WHO	World Health Organization

Foreword

Neonatal mortality remains disproportionately high, with the Kenya Demographic and Health Survey (2022) reporting 21 deaths per 1,000 live births-almost double the Sustainable Development Goal (SDG) target of 12 per 1,000 by 2030. While survival rates for infants and children under five have improved, neonatal deaths still account for more than half of all under-five deaths. Many of these deaths are from complications of prematurity that are entirely preventable when the right interventions are provided with quality. We must therefore redouble our efforts to ensure that every baby born too soon or too small has access to quality care that gives them a fighting chance to live.

The Ministry of Health, working closely with counties and development partners, has developed the Kenya Newborn Investment Case an evidence-based plan that outlines the cost, impact, and return on investing in newborn health, especially for small and sick newborns. The analysis shows that if we scale up and improve care in at least 80% of sub-county facilities and all county hospitals, we can save more than 47,000 newborn lives by 2030, reducing our neonatal mortality rate from 21 to 12 per 1,000 live births and meeting our SDG target.

Achieving this will require deliberate investment in newborn units improving infrastructure, building new units where needed, hiring more specialized nurses, and equipping facilities with the right devices, consumables and medicine.

The Investment case prioritizes the establishment of special newborn care services at Sub-County facilities or Primary Care Network hubs, which will guarantee that each county has at least one fully functional Level 2B unit. Simultaneously, it emphasizes the critical role of facilities offering Level 1 newborn care services in delivering Kangaroo Mother Care (KMC), stabilization, and prompt referral services.

By addressing neonatal mortality with targeted investments, Kenya will not only safeguard the most vulnerable but also lay the groundwork for long-term economic productivity. This document serves as a call to action for policymakers, development partners, and stakeholders across sectors. It provides a clear roadmap for mobilizing resources, implementing evidence-based interventions, and fostering cross-sectoral collaboration to ensure that every Newborn in Kenya has a chance to survive and thrive.

Dr. Ouma Oluga, OGW
Principal Secretary,
State Department for Medical Services
Ministry of Health

Acknowledgement

The Ministry of Health, Republic of Kenya, is pleased to present the Newborn Investment Case at this pivotal moment for our health sector growth. This document is both timely and essential to accelerate progress toward the 2030 Sustainable Development Goals particularly the target to end preventable neonatal deaths under SDG 3.2. It sets out a clear and practical pathway for counties and national programs to scale high-quality newborn care, strengthen systems, and deliver equitable outcomes for every child and family.

The Ministry extends sincere gratitude to NEST360 for its steadfast technical and logistical support throughout the development of this Investment Case. Your partnership spanning evidence generation, service delivery insights, and implementation guidance as well as economic analyses has been instrumental in translating global best practice into a Kenya-appropriate plan for scale.

We also respectfully thank Jhpiego through MCGL for kick-starting this process and for providing targeted technical inputs through the Futures Health Economics and Metrics team. Your contributions helped shape the strategic choices, cost framing, and impact focus that underpin these recommendations and implementation roadmap.

Our appreciation also extends to Lwala Community Alliance for valuable support during the development process. Your field experience and community-based insights strengthened the document's emphasis on equity, quality, and people-centred care across Primary Care Networks and county health systems.

The Ministry acknowledges with deep gratitude the Technical Working Group, comprising representatives from county health departments, national programs, professional associations, academia, development partners, and other government agencies. Your rigorous reviews, data inputs, and practical feedback ensured that this Investment Case is both technically sound and operationally feasible. We particularly recognize the county teams whose frontline experience, especially on human resources for health and the critical role of neonatal nursing, shaped the prioritization reflected here.

Finally, we thank all other government and partner organizations colleagues involved in this exercise for their shared commitment to safeguarding the health and well-being of Kenya's newborns. With continued collaboration, systematic implementation, and sustained domestic financing, this Investment Case will significantly contribute to delivery on national commitment to end preventable newborn deaths and realize the SDG 2030 agenda.

Dr. Patrick Amoth, EBS
Director General for Health
Ministry of Health

Executive Summary

Kenya's newborn mortality remains unacceptably high, with 33,600 neonatal deaths per year with a neonatal mortality rate at 21 per 1000 live births accounting for nearly half of under-five mortality. Despite progress in child survival, very few counties have functional hospitals dedicated to small and sick newborns, and those that exist often face severe constraints including limited physical space, inadequate equipment, insufficient staffing, and gaps in specialized expertise. This has compromised quality of care and led to poor outcomes in the few facilities that provide newborn care services. Many newborns in need are unable to access care at all, resulting in preventable deaths, while others receive suboptimal care that contributes to lifelong disabilities, further straining the health system and eroding future national productivity. To reduce these newborn deaths, the country must focus on prioritizing quality care for small and sick newborns at facility level.

This Investment Case presents a costed, phased plan to break this vicious cycle by scaling up high-quality small and sick newborn care (SSNC) countrywide. It sets out the substantial investments required to ensure reliable, respectful, and lifesaving care for every newborn who needs it. The approach complements government and partner efforts and is aligned to Kenya's Universal Health Coverage (UHC) agenda and the global SDG 3.2 target of reducing the neonatal mortality rate to 12 per 1,000 live births by 2030.

The investment case development followed a 5-step process: 1) Reviewing of existing newborn policy standards and guidelines; 2) Estimating the potential impact using the Lives Saved Tool (LIST); 3) Estimating the cost of scaling up newborn care following an ingredient-based costing approach where two costing scenarios were simulated: i) best case scenario where the government newborn norms and standards would be fully implemented assuming every input is new; and ii) moderate case scenario where the implementation is done halfway to the standards while considering renovating existing newborn units and supplementing with existing inputs including staffing, equipment, devices; 4) Estimating the return on investment; and 5) exploring potential ways for financing and implementation.

Using the Lives Saved Tool, having scaled up highly prioritized newborn interventions to at least 80% of the Sub- County facilities and all county facilities, the country could potentially save 47,360 newborn lives by 2030 if government reaches high coverage with high quality of care meaning government newborn standards are implemented. This would reduce the neonatal mortality rate (NMR) from 21 to 12, potentially reaching the SDG 3.2 goal.

Given the devolved health service delivery the costing included costs at facility level and above site costs. At county level the following facility levels of care were included; health centres (level 3), Sub- County facility (level 4) and county referral facility (level 5). Given the two costing scenarios; the best-case scenario that fully meets the newborn norms and standards with newly built infrastructure, fully equipped and with all recommended running costs was estimated at **USD 770,000 (Kes 100 million) per county referral facility.** While a moderate scenario which is halfway to meeting the standards assuming 50% of newly built, fully equipped facilities and renovation of existing facilities was estimated cost at **USD 447,000 (Kes 59 million).** As for the sub-county facilities, the best-case scenario was estimated at **US$ 345,000 (Kes 44 million**) while the moderate scenario, was estimated at **US$ 187,000 (Kes. 24 million).** Human resources were the dominant cost driver at 65% across both scenarios. Nurses accounted for most of the cost at both the county and sub-county facilities. This emphasizes the importance of nursing care in improving quality of care for the small and sick newborns.

If the scale up is implemented with fidelity, the return on investment is estimated between **US$8-13 for every US$1 dollar invested by 2030** for the best-case scenario which meets the government standards. For the moderate case, the ROI was estimated between $1-3 for every dollar invested, which is very minimal. The aim is to implement the best-case scenario as per the norms and standards for newborn care with the highest quality of care. Beyond the lives saved, this investment, demonstrates potential for yielding substantial economic and social returns through reduced downstream treatment costs, improved human development, and productivity gains, with a strong equity focus by expanding access in underserved Primary Care Networks (PCN) catchments.

This investment case prioritizes making providing special newborn care services available at Sub- County facilities or Primary Care Network hubs ensuring at least one functional Level 2B unit in each county, while strengthening Level 1 facilities for KMC, stabilization and timely referral. Counties will require support to upgrade physical space, ensure essential devices such as CPAP and phototherapy are available and maintained, embed newborn-specific standards, and implement effective referral, data and quality-improvement systems. The plan is sequenced to allow counties to build capacity quickly and sustain gains over time.

Sustainability is anchored in domestic financing. Newborn care will be progressively integrated into national and county budgets with clear lines for human resources, commodities, device maintenance and operations, complemented by inclusion of essential neonatal services in social health insurance benefits. Development partners and private sector actors will play catalytic roles that are aligned with government priorities, avoiding duplication and supporting transition to domestic funding by 2030 and beyond.

Implementation will be expected to begin with county-led facility assessments to establish their baselines and precise upgrade needs, followed by rapid upgrades at PCN hubs and sub-county facilities where gaps are greatest. Counties will need to prioritize provision of adequate nurse staffing for newborn units and their retention as a non-negotiable driver of mortality reduction given current adverse situation. This will then enable meaningful trainings, continuous mentorship, and supportive supervision to take place. Strong coordination between national programs, counties, and partners will help align resources, harmonize standards, and ensure value for money.

The phased investment foresees infrastructure and capacity gains in 2025–2026, service delivery scale-up in 2026–2027, and consolidation and transition to fully domestically financed, high-quality services to sustain the gains beyond 2030. Progress will be tracked through a concise set of coverage, quality, outcome and financing indicators to drive accountability. With timely front-loaded investment and disciplined execution, Kenya would meet the SDG target, safeguard newborn lives, and deliver a durable step-change in the quality and equity of care for every family.

Dr. Issak M. Bashir.
Head Directorate of Family Health
Ministry of Health


STORE
MLKH

Introduction

Globally, about 2.3 million newborns die during the first 28 days of birth[1], and approximately 1 million small and sick newborns survive with long term disability which are potentially preventable. Five African countries, including Kenya, are responsible for about 45% neonatal deaths in Africa. Current trends indicate 43 out of 48 sub-Saharan African countries are unlikely to meet the SDG 3.2 target of reducing the Neonatal Mortality Rate (NMR) to 12 or less per 1000 live births by 2030.[2] Many health systems in low- and middle-income countries are challenged with inadequate infrastructure, low levels of skilled health workers, and low intervention coverage and limited domestic financing towards neonatal health [3, 4]. The SDG 3.2 target can only be achieved if sufficient resources are directed to improve care for small and sick newborns. There has been a push globally for LMICs to implement the Every Woman Every Newborn Everywhere (EWENE) targets and develop country specific newborn national implementation plans which include Small and Sick Newborn Care interventions as a mechanism to accelerate attainment of SDG 3.2. Part of the EWENE coverage targets is to increase coverage of care for small and sick newborns, ensuring that at least 80% of districts facilities have one Level-2 inpatient neonatal unit that provides continuous positive airway pressure (CPAP) services. [5].

WHO defines level 2 newborn care as inpatient (special care unit) interventions for small and sick newborns such as thermal care including Kangaroo Mother Care, assisted feeding, use of CPAP in the management of respiratory distress syndrome, detection as well as management of sepsis, jaundice, neonatal encephalopathy and congenital anomalies. There is evidence of these high impact interventions saving approximately 747,400 lives globally by 2030 If implemented successfully[4]. This global implementation was estimated to cost an additional US $ 0.20 per capita and US$ 1,700 per death averted[6]. However, coverage of these interventions is still extremely low in most Low- and Middle-Income Countries (LMICs) with a few investing in and acknowledging the importance of newborn health.

Investing in neonatal health is not just a moral imperative; it can also represent value for money through possible return on investment. Investment in newborns is key to ending preventable deaths and disabilities among survivors, thereby improving survival and reducing pressure on under resourced health care system. There is a need for high-level commitment and prioritization, more so in resource constraint settings such as Kenya where newborn deaths contribute about 40% of under 5 deaths. This requires the development of investment cases to provide empirical evidence on the benefit of investing in small and sick newborns, mobilise and attract global resources to ensure access to services for small and sick newborns.

Situational Analysis

Kenya is committed to achieving Universal Health Coverage (UHC) by 2030 to ensure that all Kenyans can access quality and affordable healthcare services without experiencing financial hardship[7]. This aligns with Sustainable Development Goal (SDG) 3 and is enshrined in Article 43(1)(a) of the Constitution of Kenya (2010), which guarantees every Kenyan the right to the highest attainable standard of health. The Medium-Term Plan IV (MTP 2023-2027), UHC Policy (2020-2030), Kenya Primary Healthcare Policy, and Kenya Health Financing Strategy (2020-2030) underscore the importance of ensuring that all Kenyans have access to essential quality health services across the spectrum, including promotive, preventive, curative, rehabilitative, and palliative care.

Although Kenya has made some progress in reducing child mortality, there has been no significant decline in neonatal mortality which still currently stands at 21 deaths per 1000 live births (about 33,660 deaths per year) and accounts for 45% of all child mortality in the country[8]. Neonatal deaths in the country are largely driven by prematurity, intrapartum-related complications, and neonatal infections [6].

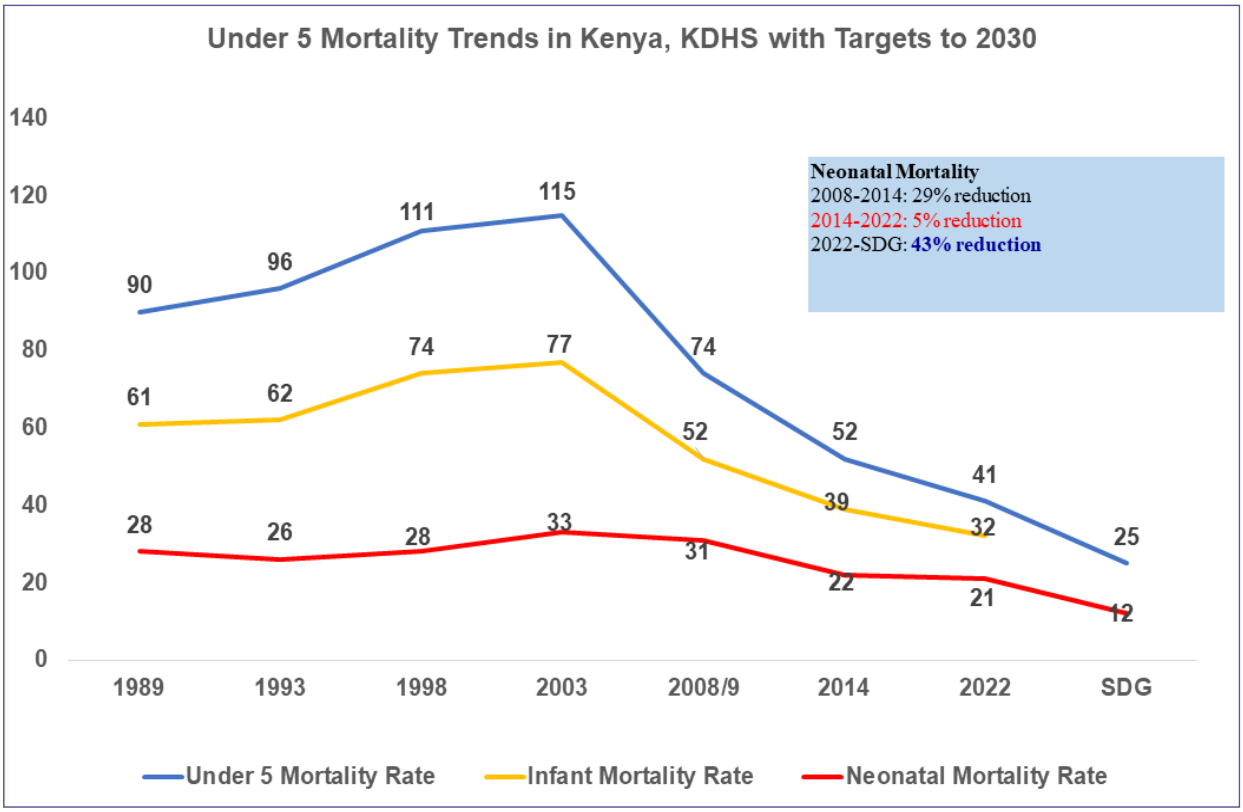


Figure 1: Mortality Trends for Children Under 5, Infant and Newborns in Kenya 1990-2022 with projections to 2030

System constraints and persistent operational gaps such as insufficient space and functional newborn units, critical workforce shortages and skills gaps, outdated or unavailable equipment, and weak clinical information systems have continued to undermine the quality of care for small and sick newborns in the country [9-11]. This disproportionate burden underscores the urgent need to prioritize targeted interventions for small and sick newborns to close the survival gap and sustain progress towards national and global child survival goals[12, 13].

Neonatal care presently forms a critical component of UHC agenda in Kenya; therefore the government is working towards enhancing different facility levels to provide the WHO defined newborn levels of care (Level 1 to 3) which will improve the quality of care and address a significant portion of neonatal mortality, especially in rural and underserved areas. In addition it is important to note that with the drive to increase coverage in providing primary health care, the government is using

a hub and spoke model. Sub-county facilities (Level 4) act as the hub supporting multiple community health units, health centers, and clinics (spokes) within its geographical area.

To address this an investment case for newborn care to drive progress towards the national and global targets for health equity and child survival has been developed. The government recognizes that achieving the transformative results by 2030 will require significant investments as the country deals with challenging decisions related to competing health priorities. The development of the Kenya Newborn investment case on the path to achieve the transformative results therefore presents an opportunity to allow the country to define the investments needed within the country's development framework(s), and including proven, prioritized, high-impact and cost-effective interventions, towards achievement of the SDGs and accelerate progress towards achieving the transformative result.

In addition, the investment case is also meant to inform country policies, identify investment opportunities, guide resource allocation and financing and mobilize investments required as well as the returns that can be accrued from investments in ending preventable neonatal deaths.

The investment case will serve as a critical tool for change, detailing the methodology used to identify high priority interventions, their associated costs, and the rationale for investing in these areas. It will outline the need for both domestic and external financing, as there are existing gaps, in demonstrating how these investments contribute to transformative results aligned with Kenya's health goals and relevant SDGs.

Given that Kenya's budgeting process requires each sector to develop a budget proposal based on sector-specific needs for submission to the National Treasury, there are challenges in prioritizing health interventions without clear financial modelling. This investment case will strengthen advocacy for adequate funding by highlighting the return on investment in priority newborn health interventions and the transformative potential for the population.

The development of the investment case involved conducting rigorous technical analysis while adopting a consultative approach that engaged key national stakeholders including the Ministry of Health, county government representatives, development partners and medical practitioners. In addition, capacity strengthening initiatives were implemented to enhance the expertise of government officials from the Ministry of Health in effectively developing and implementing the investment cases. The Investment case allowed for data to be collected, processed, and transformed into strategic information, to allow for informed decision-making at all levels.

This report outlines the framework of development of an investment case for newborn care in Kenya, aiming to assess both the unit costs and scale up costs of upgrading newborn care across the country. It also addresses the projected impact of investing in newborn health, highlighting the number of lives saved and/or deaths averted. Additionally, a return-on-investment (ROI) analysis was performed to guide decision-makers in evaluating the potential benefits. ROI is a ratio that compares the gain or loss from an investment relative to its cost. It is useful in evaluating the current or potential return on an investment. ROI analysis is designed to identify existing initiatives that have lower ROI than potential new options.

LEVELS OF NEWBORN CARE

The Ministry of Health in Kenya developed a Norms and Standards for Newborn Care document to guide the establishment, standardization, and expansion of newborn care services across health facilities. This policy document (in final stages of review) defines the different levels of newborn care, drawing extensively from the WHO guidelines, and outlines the essential services to be provided at each level. It also details the minimum standards required for effective service delivery, including infrastructure and layout specifications, equipment and supplies, human resource requirements, clinical guidelines, referral protocols, data tools, and job aids. By providing a comprehensive framework, the Norms and Standards document ensure consistency in quality-of-care provision and support the scale-up of small and sick newborn care across the country. Ultimately, it contributes to operationalizing of the newborn levels of care model and reducing preventable neonatal mortality.

To enhance the quality and delivery of newborn care including care for small and sick newborns, Kenya has adopted a tiered system aligned with international classifications. This system organizes newborn care into three distinct levels:

- **Level I:** Basic Essential Newborn Care for all newborns regardless of location of birth. This level of care is largely adequate at KEPH levels I-III except for babies requiring stabilization and escalation of care.
- **Level II** (subdivided into 2A and 2B):
  - **Level 2A:** Inpatient care for small and sick newborns, including interventions such as CPAP provided at sub-county facilities for management of newborns without serious medical complications and stabilization of those requiring referral to better resourced facilities.
  - **Level 2B:** These are transitional advanced care units with services that may include short-term mechanical ventilation (less than 7 days) and pre-referral stabilization awaiting transfer for tertiary care by specialists.
- **Level III:** Intensive Newborn Care, including prolonged mechanical ventilation and advanced feeding support like parenteral nutrition.

Table 1 below outlines the KEPH facility types or levels and the highest corresponding level of newborn care services to be provided at each level. The investment case is focused on estimating scale up input costs required to increase coverage of high impact interventions in these facilities as well as provide high quality care. Intensive care (level 3) at the referral facilities will not be included in this investment case.

Table 1: Facility Type and Level of Newborn care

TYPE OF FACILITY	LEVEL OF NEWBORN CARE	DEFINITION OF THE NEWBORN CARE AS PER NORMS AND STANDARDS	NUMBER OF FACILITES
Health Centre	Essential Newborn care (Level 1)	Provision of immediate and routine care to all babies. Assessment, management and referral of sick neonate.	All health centers that do deliveries.
Subcounty Facilities/ Primary care Networks	Special Newborn Care (Level 2A)	This is a unit that provides care for ill term and preterm neonates ≥ 34 0/7 weeks and a birth weight ≥1500 g as well as continuous care for convalescent neonates ≥ 32 0/7 weeks. Provision of nCPAP.	80% of the 315 the subcounty facilities (252). 215
County Referral Facilities	Advanced Special Newborn Care/ transitional care (Level 2B)	Provision of care for neonates born at ≥ 32 who weeks' gestation and a birth weight ≥ 1300 g are likely to require short term ventilation for less than 7 days. Provision of nCPAP, Provision of parenteral nutrition for less than 7 days. Provision of care for neonates who are convalescent and stable after intensive care with a postmenstrual age (i.e. gestational age at birth + postnatal age) ≥ 30 weeks. Exchange transfusion, Provide an appropriate transport system.	47

Regional Referral facilities	Intensive Care (Level 3)	All critically ill newborn neonates are being transferred into and referred to, preferably before birth if the problem can be anticipated.	4

Level 1 newborn care is a foundational service that should be available in all facilities offering maternity delivery services, as outlined in the Kenya Essential Package for Health (KEPH). However, this investment case specifically emphasizes strengthening Level 1 care at health centres, which are pivotal to Kenya's maternal and newborn health landscape particularly in rural and underserved regions due to their accessibility and wide coverage. Despite their strategic importance, most health centres currently lack dedicated spaces and adequate capacity to provide even the most basic newborn care, especially for newborns with complications. This gap hinders the ability of health centres to offer essential Level 1 services such as thermal protection, breastfeeding support, infection prevention, and initial stabilization of sick newborns prior to referral. Strengthening these facilities to consistently provide Level 1 care would close critical service delivery gaps, reduce avoidable newborn morbidity and mortality, and ease the burden on higher-level referral facilities. Importantly, it also aligns with Kenya's universal health coverage (UHC) agenda by bringing lifesaving newborn services closer to communities and supporting a more resilient, equitable health system.

Development of the Investment Case Approach

A Standardized 5 Step Process Was Applied, Tailored To Kenya's Context. The Tanzania Newborn Investment case[14] provides a guidance that should be followed when developing investment cases for countries which was also adapted from GFF [15] in the following steps as shown in Figure 1:

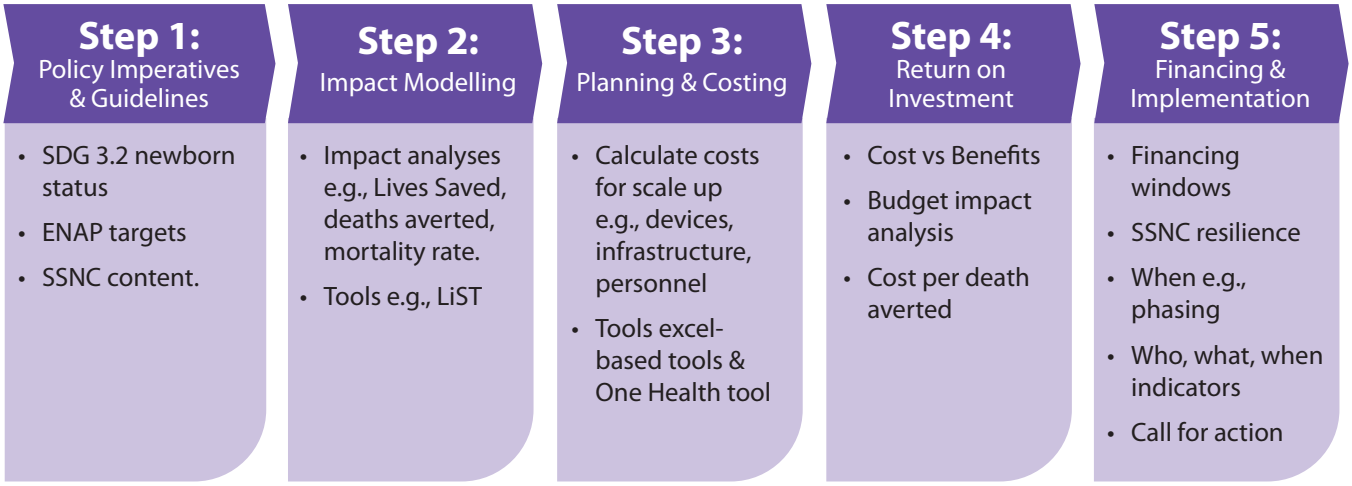
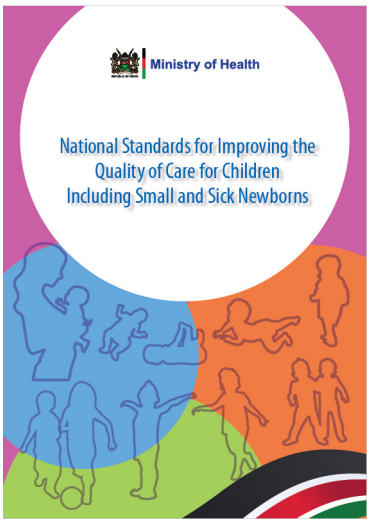


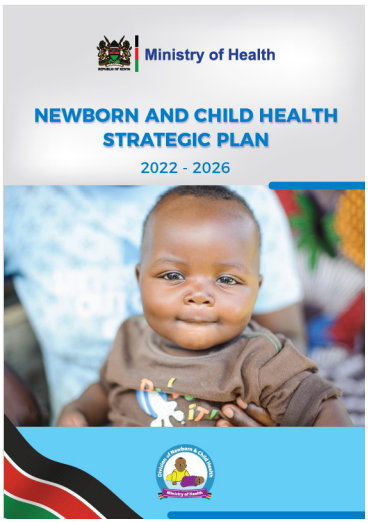
Figure 2: Standardized five step process of developing an investment case adapted to neonatal care.

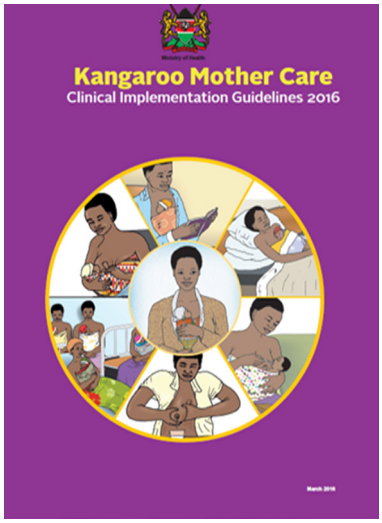
Source: *https://bmcpediatr.biomedcentral.com/articles/10.1186/s12887-023-04414-2 [14] and adapted from GFF*

Step 1: Policy imperatives and guidelines

A review of relevant policy documents in Kenya including Norms and Standards for newborn health, Kangaroo Mother care policy and Newborn and Child health strategic plan was done as it provided guidance on inputs of the investment case. These inputs included the newborn levels of care, guidelines for floor plans, human resources for health and essential medicines.







Step 2: Impact modelling:

The Lives Saved Tool [16, 17], (LiST) is a widely used modelling software developed to estimate the impact of scaling up proven reproductive maternal, newborn, and child health (RMNCH) interventions on mortality and morbidity outcomes. It has been employed in over 100 countries to guide health planning, policy formulation, and investment decision-making. [17]

LiST uses country-specific data on population, health status, and intervention coverage to model potential reductions in deaths and disease burden. By comparing different scenarios such as maintaining current levels of intervention coverage versus scaling up to higher targets it helps identify the most impactful and cost-effective strategies for saving lives. It is important to note that while LiST provides robust, evidence-based projections, its results are based on modelled assumptions and should be interpreted as estimates rather than precise predictions. Nonetheless, these outputs offer critical insight into the potential health impact of scaling up interventions and underscore the urgency of targeted investments in newborn care.

For this newborn investment case, LiST was applied to estimate the number of neonatal lives that could be saved through increased coverage of key interventions, particularly those targeting the management of small and sick newborns. The analysis was grounded in Kenya's demographic and epidemiological context, drawing on national population estimates, baseline mortality rates, and current levels of intervention coverage as shown in table 3.

Table 3 presents the high-impact neonatal interventions prioritized for scale-up to 2030, as modelled in LiST. These interventions were selected based on their proven effectiveness in reducing neonatal mortality and are aligned with Kenya's current health system priorities and global evidence. Increased coverage of these interventions is expected to yield substantial reductions in neonatal deaths and contribute significantly to achieving national and global targets for newborn survival.

Table 2: High-impact neonatal interventions.

Interventions	Current Coverage 2025 (%)	Target Coverage by 2030 (%)	Cause of Death
Antenatal Corticosteroids	45	80	Preterm birth complications
Clean Delivery Practices	50	90	Neonatal sepsis, tetanus, intrapartum-related events
Immediate Breastfeeding	60	80	Sepsis, preterm, asphyxia
Neonatal Resuscitation	30	100	Intrapartum-related complications
Thermal Care	40	100	Preterm complications, sepsis
Chlorhexidine Cord Care	60	95	Sepsis

Vitamin K Administration	30	85	Haemorrhagic
Prevention of Mother-to-Child Transmission (PMTCT)	75	95	HIV/AIDS
Impact for Small and Sick Newborns interventions (Specific for SSNC)			
Full supportive care for prematurity (with CPAP) including KMC	16	80	Preterm birth direct complications
Full supportive care for Neonatal Sepsis	26	80	Neonatal infections

Step 3: Planning and Costing

Costing employed a normative costing approach from a health provider perspective (at this level community interventions were not included). An excel based model was used for ingredient-based estimation as well as Activity Based Costing (ABC) for the above site costs such as training. Two costing scale up scenarios were simulated:

- **Scenario A:** This is a best-case scenario that assumes no prior investment in newborn care (zero-baseline). Costs include establishing new Small & Sick Newborn Care (SSNC) units per government floor plans, full fit-out (furniture, fixtures), complete neonatal equipment packages, and recurrent/running costs to operate all units at government quality standards (HRH, commodities, utilities, maintenance, supervision). In this scenario norms are implemented at full scale, the most ideal but expensive option.
- **Scenario B:** This represents a moderate case scenario where implementation is set halfway to the established norms, assuming the presence of already existing Level 2 newborn care units and services. It is less expensive but considered the most pragmatic option in contexts of resource constraints. This scenario considers the incremental cost of establishing additional new SSNC units equipped with new ward furniture, fixtures, and neonatal devices in 50% of the facilities, while renovating the remaining 50% and supplementing them with existing resources. Running costs were calculated based on operationalising the 50% of new units while utilising available resources in the other 50%.

Costing Inputs

To enable comprehensive and equitable planning, the costing involves both facility-level (site) costs reflecting county investments and above-site costs, which cover cross-cutting functions such as training, data systems, supervision, and technical assistance often coordinated by the national government. The exchange rate used for the costing was 1US$=Kes 129. The following inputs were included in the costing estimation.

a) Infrastructure costs were provided by the government, drawing on standardized architectural floor plans for constructing newborn units at both sub-county and county-level facilities: For the moderate case scenario, infrastructure costs were estimated at 50% of the full cost of new construction, with an additional 20% added to account for renovation needs.
b) Equipment and medical devices (incubators, ventilators, CPAP): The list of essential equipment was derived from the norms and standards for newborn.
c) Furniture and fixtures: The list of essential furniture and fixtures were derived from the norms and standards for newborn care.
d) Human resources (medical staff, nurses, and support staff): The list of essential equipment was derived from the norms and standards for newborn care. The salaries were derived from the government salary scales.
e) Medicines, supplies and consumables (antibiotics, IV fluids, etc.): The list of essential medicines was derived from the norms and standards for newborn care. The costs of these medicines were derived from Kenya Medical Supplies Agency (KEMSA) who supply the facilities with medicine.
f) Above site costs including training, data systems, quality improvement were provided by the Ministry through Activity Based Costing (ABC) and costs from previous similar activities.

Input Estimation

To project the resources required for scaling up neonatal care, it was essential to estimate key inputs such as length of stay at different levels of care, bed capacity, human resources, and infrastructure requirements. These inputs formed the foundation for determining both the capital and recurrent costs associated with service delivery.

For other inputs not detailed in this section, please refer to the annexes for comprehensive tables and assumptions. The following subsections provide a detailed explanation of how each input was derived and applied in the analysis.

Length of stay at the different levels of newborn care

According to the Ministry of Health, Kenya's postnatal care guidelines, the average length of stay for a well newborn at a Level 1 facility is 24 hours, primarily to allow for observation, counselling, and initiation of essential postnatal care. For newborns presenting with danger signs, stabilization should be done immediately, followed by referral to higher-level facilities that provide Level 2 newborn care. Kangaroo Mother Care (KMC) is expected to be offered at health centres for stable newborns weighing more than 1500g, including downward referrals from Sub- County facilities.

Data from the Newborn Essential Solutions and Technologies (NEST360) and Clinical Information Network (CIN) between January and December 2024 indicate that the median length of stay in county referral and sub-county hospital newborn units is 5 days. This, however, varies considerably across weight bands. For purposes of this investment case, the estimated average length of stay is:

- Level 1 facility: up to 48 hours
- Level 2A (Sub- County hospital) and Level 2B (County referral hospital): median of 5 days

Limitation: The estimated length of stay at sub-county and county facilities is likely underestimated for newborns requiring KMC. Smaller and more vulnerable babies often need prolonged care across all levels where KMC is provided. However, due to data limitations, the NEST/CIN median of 5 days was used as the most reliable available estimate.

Estimation of Bed Capacity at the different levels of Newborn Care

The proposed bed capacity at the health centres is 7 beds, with five beds designated for Kangaroo Mother Care (KMC) in line with the National Kangaroo Mother Care Guidelines and an additional two beds for stabilizing small and sick newborns prior to referral. These beds will complement resuscitaires or radiant warmers, ideally one per delivery room bed that are used to support immediate postnatal stabilization.

To determine the bed capacity of the newborn care units at the Sub-county facilities/PCN hubs (offering level 2A newborn care services as the highest tier) and county referral facilities (offering level 2B newborn care services as the highest tier), this investment case adopted the approach outlined in the UNICEF India Toolkit [18]. This is because the UNICEF India formula was considered the most appropriate given the scope and nature of the available national data in Kenya. The formula recommends a provision of 3 beds per 1,000 facility-based deliveries, with an additional 30% adjustment to account for extramural (outborn) newborn admissions.

This yields the following formula:

Bed capacity = (Annual deliveries ÷ 1,000) × 3 × 1.3

Where:

- 3 beds per 1,000 births is the baseline assumption for intramural (inborn) newborns.
- 1.3 multiplier accounts for an estimated 30% of admissions coming from external referrals (extramural newborns).

The average number of annual deliveries in subcounty facilities (KEPH level 4) was 2,400, while the average number of deliveries for county facilities (KEPH level 5) was 5,000. Based on this formula and the bed capacity for the KMC units for the

various KEPH levels as per the Kangaroo Mother Care (KMC) implementation guidelines 2023, the proposed bed capacity for KEPH level 4 (Sub-county) facilities newborn unit is 25 beds while the bed capacity for a KEPH Level 5 (county Referral) hospital newborn unit is 40 beds. Calculation of the bed capacity for KEPH level 4 (Sub-county) facilities and Level5 (county Referral facilities is summarized in the table below:

Table 3: Bed capacity for KEPH Level 4&5.

Level of care	Calculation of the bed capacity
KEPH level 5 or County Referral facilities Facilities (level 2B newborn care services)	Average number of annual deliveries= 5000 No of beds as per formula = 3× (5000/1000) ×1.3= 20 KMC beds as per the guidelines = 10 iKMC beds and 20 KMC beds Recommended total bed capacity =20+20 KMC beds (10iKMC+ 10 KMC) = 40 For these county referral facilities, the consensus for the investment case was that 20 KMC beds were too many as many only have 2 and upgrading to 10 would be most ideal while ensuring stable babies are referred downwards to continue KMC.
KEPH level 4 or Sub-County facilities (KEPH level 5)	Average number of deliveries- 2400 No of beds based on formula = 3(2400/1000) × 1.3= 10 KMC beds as per guidelines =5 iKMC and 10 KMC beds Recommended total bed capacity = 10+15KMC (5iKMC and 10 KMC) = 25

Human resource

Staffing requirements across the various levels of care in this investment case were determined based on Kenya's Norms and Standards for Establishing Newborn Care. Bed capacity as well as service capacity and complexity across the different levels of care formed the basis for the recommendations of the numbers of the different cadres of the health care providers for the various levels of care in this investment case.

This investment case presents two implementation HR scenarios:

- The best-case scenario (A) fully aligns with Kenya's Norms and Standards for establishing newborn care, assigning all recommended clinical and support staff exclusively to the newborn unit.
- The moderate-case scenario (B) prioritizes core staff who are essential in delivering quality newborn care services (e.g. neonatologists, paediatricians, clinical officers paediatrics, neonatal nurses, nurses, health record information officers, nutritionists) for full-time deployment to the newborn unit, while other supportive health care providers (e.g. social workers, pharmacists, occupational therapists, physiotherapists etc) are shared across hospital departments to optimize resource use.

Recognizing nurses' critical role in delivering newborn interventions and that maintaining proper nurse to patient ratio per shift is essential to avoid care gaps, it was ensured that nurse-to-patient ratios reflect international best practice while considering local resource constraints. Unit staffing requirements were calculated based on three 8-hour shifts per day, with an additional 30% factored in to account for staff on leave or night off in line with recommendations from the UNICEF [18]. The table below summarizes the Key cadres required in the newborn units and the nurse to patient (beds) ratio.

Table 4: Key cadres in Newborn units and nurse to patient ratio.

Cadre	County referral hospital (Level 2B)		Sub- County Hospital (Level 2A)	
	Best case scenario	Moderate case scenario	Best case scenario	Moderate case scenario
Neonatologist	1 per unit	1 per unit	Not providing care at this level	Not providing care at this level
Paediatrician	2 per unit	1 per unit	2 per unit	1 per unit
Medical officer	4 per unit	2 shared	2 per unit	2 shared
Clinical officer Paediatrics	1 per unit	2 per unit	2 per unit	1per unit
Nurses	30 (ratio 1:4)	20 (ratio 1:6)	13 (ratio 1:6)	10 (ratio 1:8)
Nutritionist	2 per unit	1per unit	1 per unit	1 shared
Health information records officer	1 per unit	1 shared	1 per unit	1 shared

Infrastructure

This investment case places a strong emphasis on infrastructure improvements that are fully aligned with the Norms and Standards for Establishing Newborn Care. These standards define the expected physical space, facility layout, and core utilities (such as water, power, ventilation, and lighting) required at each level of newborn care from Level 1 at health centres to higher-level regional referral facilities. To ensure consistency with national expectations and to support sustainable planning, infrastructure cost estimates included in this investment case were developed based on standardized floor plans, which reflect the recommended bed capacity, patient flow, and service delivery needs for each respective level of care. This cost estimates also account for the practical requirements needed to deliver high-quality small and sick newborn care (SSNC), including space for essential functions such as resuscitation, kangaroo mother care, and infection prevention.

The floor plans and corresponding cost breakdowns for Health centres, Sub- County and county referral newborn care units are presented in Annexes 1, 2, and 3, respectively. These annexes serve as detailed references for counties and health planners, providing clear guidance on the physical and financial requirements necessary to establish or upgrade newborn units in accordance with Kenya's national norms. It is important to note that at health centre level it is advocated to have a KMC room as an extension of the Maternity ward as they will not have newborn units at this level but will be getting downward referral for mother and stable babies only needing to continue with KMC.

Step 4: Return-on-Investment (ROI) Analysis

Return on Investment is a performance measure used to evaluate the efficiency or profitability of an investment relative to its cost. An ROI analysis demonstrates the amount of money saved for every $1 or shilling invested in these programs. It is typically expressed as a cost benefit ratio (CBR) calculated by dividing the net benefit by the total cost of the investment. A higher ROI indicates that the investment gains compare favourably to its cost. CBR is a direct comparison of health benefits and intervention costs, both calculated in dollars at present value. For this investment case the ROI was estimated for the period 2025 to 2030.

The benefits of the interventions were expressed in economic terms, including healthcare savings, increased productivity, and reduced neonatal care costs overall. The potential lives saved were monetized using a constant value per statistical life year (VSLY) derived from a VSL estimate[19]. The VSL does not represent the intrinsic value of life. Rather, it summarizes actual and stated trade-offs people make in choosing between money and minor changes in mortal risk. VSLY was used to monetize the benefits estimated from the LiST model. The cost of investing in newborn high impact and effective interventions and the resulting benefits will yield a benefit-cost, which will be indicative of the level of return for every shilling invested in reducing NMR.

Health benefits were estimated by monetising years of life saved (for newborns it is assumed years of life saved to equate to country life expectancy). Life expectancy in Kenya is estimated at 67 years and discounted at 3%. Two approaches were compared to calculate the value of life years gained: (1) multiplied years of life saved by 2.3 times constant Gross Domestic Product (GDP) per capita for Kenya from the Word Bank (US$2206 in 2024); and (2) multiplied years of life saved by constant value of a statistical Kenya life year (US$3348). However, since there was very slight variation between the two, the GDP method was selected. For the set up total incremental costs, infrastructure costs were annualised with a useful life of 20 years while devices and furniture would be replaced every 5 years.

Given there were two costing scenarios, ROI was estimated for each scenario. For the best-case scenario, the health benefits were utilized as per LiST outputs without alteration as per change coverage. For Moderate case scenario, effectiveness was altered for each of the priority high-impact interventions on LiST by 50% as quality of care would be lower compared to the best-case scenario thus lowering effectiveness. However, the coverage remained the same. In addition, effectiveness for supportive care for congenital conditions and intrapartum care remained unchanged as they are low-impact interventions.

- Health Benefits: Monetised years of life saved, assuming each newborn survival translates into years lived up to the Kenyan life expectancy (67 years, discounted at 3%). Two approaches were applied:
  1. Multiplying years of life saved by 2.3 × GDP per capita (US$2,206 in 2024).
  2. Multiplying years of life saved by the constant value of a statistical life year (VSLY) for Kenya (US$3,348). Since results showed only slight variation, the GDP-based method was adopted for final ROI estimates.
- Incremental Costs: Infrastructure costs were annualised assuming a 20-year useful life; devices and furniture were assumed to be replaced every 5 years.

Step 5: Financing and Implementation:

In Kenya as in many SSA countries, there remains a significant mismatch between the level of donor aid mentioning newborns. Despite newborn deaths contributing to nearly half of all under-five mortality, aid explicitly mentioning these outcomes constitutes only around 10% of overall RMNCH funding. This misalignment is further reflected in the inequitable distribution of aid across countries, with substantial variation in the amount of funding received per newborn death[20]. The investment case is a crucial resource mobilization strategic document for mobilizing domestic financing for newborns at the country level. It is therefore key to identify potential financing windows both locally and internationally that are strategic to lobby for resources for newborn health.

By aligning costed interventions with potential high-impact results such as lives saved and returns on investment, it helps position newborn health as a strategic priority within national planning and budgeting cycles. Moving forward, deliberate efforts are needed to align this investment case with ongoing county planning processes, public financial management reforms, and donor coordination platforms to ensure resource mobilization is sustained and results oriented. In addition, a proposed implementation plan and recommendations are ideal in determining how the investment case would be implemented.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INVESTMENT CASE RESULTS AND OUTPUTS

Step 1: Policy imperative and guidelines

The policy framework guiding the Kenya Newborn Investment Case aligns with both national priorities and international commitments to improve neonatal survival. Kenya has set a target of reducing neonatal mortality to 12 deaths per 1,000 live births by 2030, in line with the Sustainable Development Goals (SDGs). However, with the current neonatal mortality rate estimated at 21 deaths per 1,000 live births, the country is off track to achieve this goal.

To accelerate progress, policy direction emphasizes that 80% of sub-county facilities (PCN hubs) and all county referral facilities should be equipped to provide Level 2+ newborn care, including Continuous Positive Airway Pressure (CPAP) support. The Newborn Norms and Standards document further outlines the essential inputs required for quality newborn care including human resources, medicines, devices, medical furniture, fixtures, and consumables. It also includes a costed architectural floor plan for a standardized neonatal unit, providing a benchmark for infrastructure development.

These strategic policies and investments form the cornerstone of efforts to strengthen neonatal health services and place Kenya back on the trajectory toward achieving its newborn survival goals. Sub-county and county facilities will rely on the Norms and Standards as a reference point when establishing or upgrading their newborn units. Accordingly, this Investment Case draws heavily from these norms and standards in defining its inputs, cost assumptions, and implementation framework.

Step 2: Impact Modelling

Using the LiST tool, potential newborn lives saved were estimated as a result of scale up of the prioritized newborn interventions with high quality care. The baseline year used for estimation was 2025 and 2030 as the endline to evaluate if the country would meet the SDG 3.2.

Health Projections by 2030.

Scaling up the selected high-impact interventions (Table 3) for small and sick newborns in Kenya could avert an estimated 47,360 neonatal deaths between 2026 and 2030, according to Lives Saved Tool (LiST) projections. Majority of these lives nearly 30,000 (63%) would be saved through interventions targeting prematurity, such as antenatal corticosteroids, Kangaroo Mother Care (KMC), and respiratory support. An additional 11,310 lives could be saved by addressing neonatal sepsis through improved infection prevention and treatment, while 6,020 deaths could be averted by enhancing management of birth asphyxia, including timely neonatal resuscitation. Although interventions for congenital anomalies account for a smaller share of impact, their inclusion reflects a comprehensive approach to newborn survival. These gains would reduce the national neonatal mortality rate (NMR) from 21 deaths per 1,000 live births in 2022 (KDHS) to 12 by 2030 (Figure 2), enabling Kenya to meet the SDG target. However, this ambitious reduction can only be achieved if interventions are implemented at high coverage and with consistently high quality of care across all levels of the health system. Notably, over 60% of the lives saved occur by 2028, underscoring the urgency of frontloading investments and implementation efforts in the next three years. The estimated benefits could be underestimated as LiST does not measure morbidity averted nor account for disability.

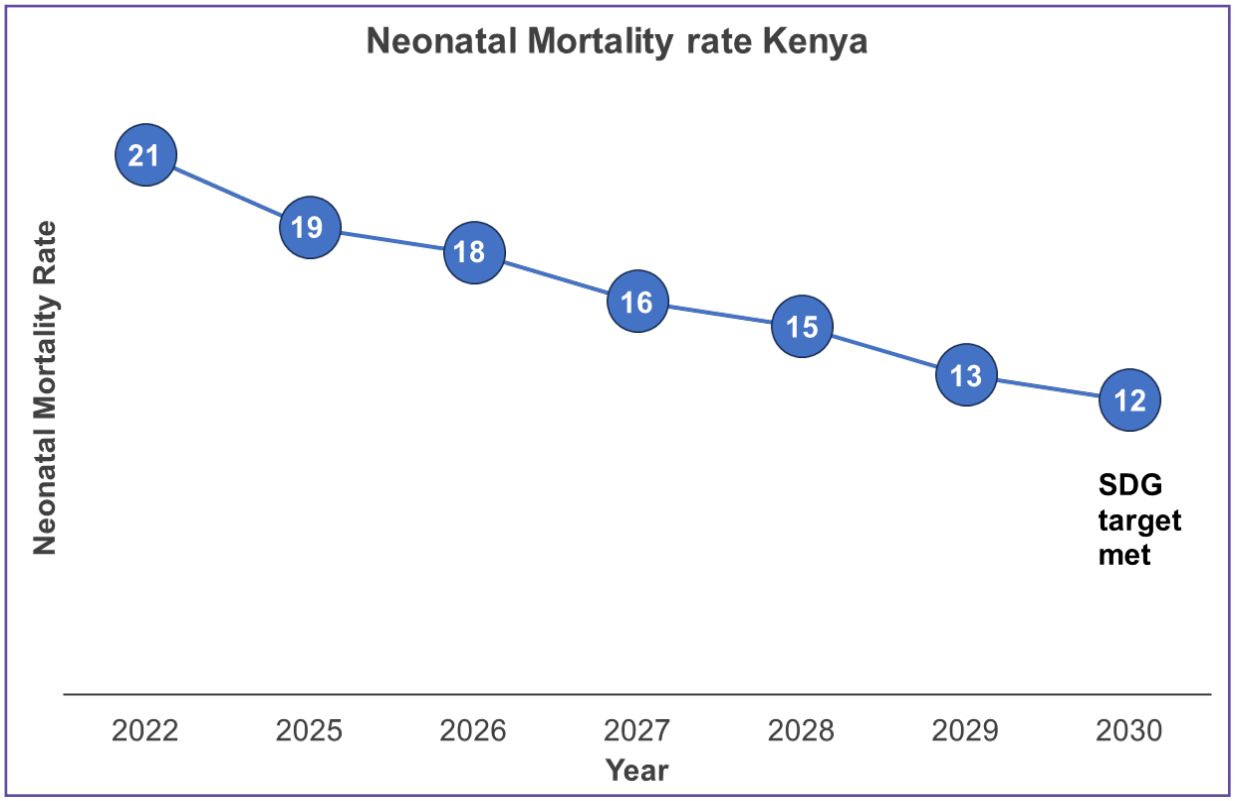

Figure 3: Project change in Neonatal Mortality Rate by 2030, estimated using LiST and assuming 80% of Sub county facilities having Level 2 Care with CPAP

Table 5: Projected Lives Saved by Cause Mortality from LIST.

Cause of Mortality	2026	2027	2028	2029	2030	Total Lives Saved
Neonatal - Prematurity	2,240	4,300	6,170	7,870	9,390	29,970
Neonatal - Sepsis	750	1,530	2,280	3,020	3,740	11,310
Neonatal - Asphyxia	390	790	1,200	1,610	2,030	6020
Neonatal - Congenital anomalies	3	7	10	13	17	50

However, it is important to note if the country selects the more pragmatic approach which is the moderate case scenario they may not reach the SDG 2030 however they would still reduce the NMR. However, from LIST, the best case scenario was modelled noting high quality of care and high coverage of the interventions.

Step 3: Planning and Costing

In Kenya, health is a devolved function, with counties serving as the primary custodians of health facilities and services delivery. Consequently, the costing framework in this investment case is structured around the scope of newborn services provided at each level of care, ensuring that resource estimates are relevant to county-level decision-making while incorporating national-level support.

For each level of care, two costing scenarios are presented:

- **Best-case scenario:** As per norms and standards, assumes all inputs are new.
- **Moderate scenario:** Halfway to the government standards.

This dual-scenario approach enables tailored planning, allowing counties to select an investment path that best suits their existing status. These would be largely, infrastructure gaps, staffing and care quality needs. By combining both county-specific and national-level perspectives, the costing ensures strategic targeting of resources to achieve equitable access to quality newborn care across all 47 counties. The detailed results that follow present estimated costs for each facility level and service package, with input breakdowns provided in the annexes.

Estimated Cost at County Facility (Level 2B Newborn Care)

Currently, only 23 of Kenya's 47 counties have county referral facilities offering Level 2B newborn care. The national scale-up target is for every county to have at least one referral facility providing these services. Such units would offer specialized care, including CPAP and short-term ventilation (not exceeding seven days, in line with referral protocols for neonates).

The best-case scenario, which reflects the establishment of newly built and fully equipped newborn units with all recommended running costs, was estimated'at US$ 770,000 (KES 100 million) per county referral facility. In a moderate scenario building 50% and renovating 50% of the facilities to meet about halfway to the standards, was estimated at US$ 447,000 (KES 59 million). These costs were annualized according to asset life: 20 years for infrastructure, and 5 years for devices, furniture, and equipment.

At this level of care, human resources are the largest cost driver, accounting for 65% of total costs. Medicines were the second highest cost driver with surfactant as a huge cost driver which is currently unavailable in these county referral facilities but is critical for premature babies. Within medical equipment, the CPAP machines are the main driver, reflecting the government's goal of scaling up CPAP coverage nationwide. The table below provides a summary of the costs per each inputs estimated at the county referal facility level.

Table 6. Summarized Estimated Input Costs at County Referral Facilities

Cost Category	Annualized Cost per facility-Best case (per norms) US$	Annualized Cost per facility-Moderate case (halfway to norms) US$	Percentage of the total cost
Human Resource	515,700	300,900	64.6%
Medicine	129,800	66,700	16.3%
Infrastructure	48,900	26,400	6.1%
Medical furniture, Equipment and devices	46,300	28,400	5.9%
Device Consumables	32,000	16,600	4.1%
Supplies	17,400	11,800	2.2%
Furniture's Fixtures, fittings and other equipment	7,700	6,700	1%
Total US$	**777,700**	**447,300**	

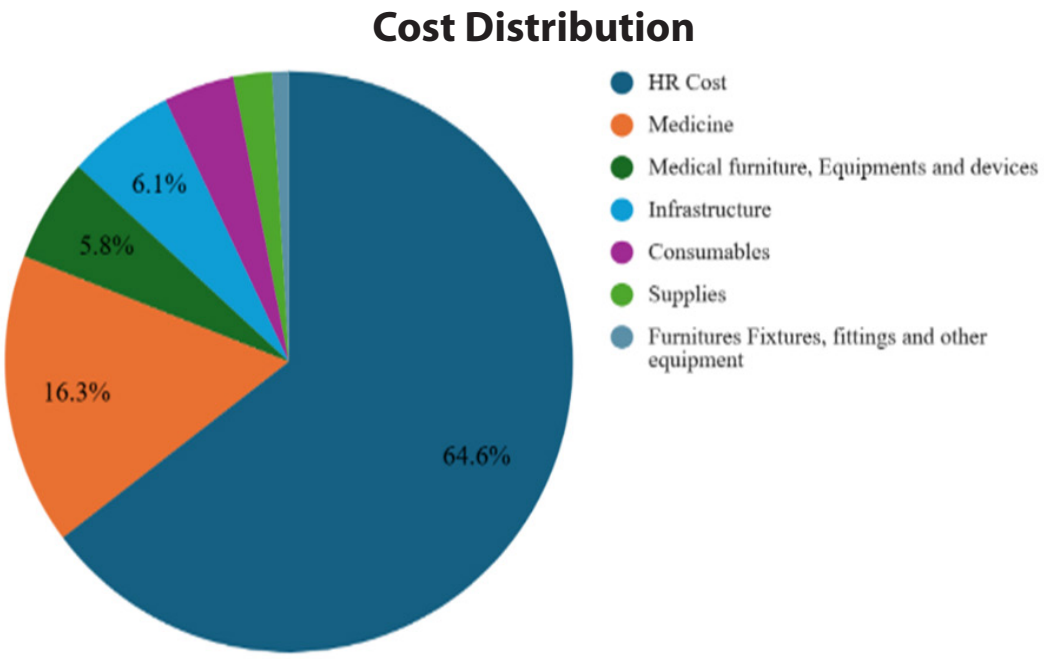

Figure 4: Cost Distribution at County Referral Facility

Estimated Cost at Subcounty Facility (Level 2A Newborn Care)

At the sub-county level, the government aims to scale up special small and sick newborn care in at least 80% of sub-county facilities, ensuring they meet the WHO Level 2+ standard with continuous positive airway pressure (CPAP) capability. The scale-up will prioritize **Primary Care Network (PCN) hubs,** many of which either lack dedicated newborn units or require substantial upgrades to existing units to deliver quality care. In estimating the costs for this level, the analysis assumed a **5-day median length of stay,** based on the national newborn care norms, and a **bed capacity of 30,** with **15 beds allocated for Kangaroo Mother Care (KMC).**

The best-case scenario, which reflects the establishment of newly built and fully equipped newborn units with all recommended running costs, was estimated at **US$ 345,000 (KES 44 million).** The **moderate scenario,** representing facilities upgraded halfway towards meeting the recommended standards, was estimated at **US$ 187,000 (KES 24 million).**

Across both scenarios, **human resources emerged as the dominant cost driver at 69%** highlighting the importance of skilled staffing for effective service delivery. In the medicines category, **caffeine citrate** stood out as the largest cost driver, underscoring its critical role in improving survival rates for preterm and low-birth-weight infants. The table below provides a summary of the costs per each input estimated at the sub-county facility level.

Table 7. Summarized Estimated Input Costs at County Referral Facilities

Cost Category	Annualized Cost per facility-Best case (per norms) US$	Annualized Cost per facility-Moderate case (halfway to norms) US$	Percentage of the total cost
Human Resource	240,000	126,200	69.5%
Infrastructure	31,000	16,800	9%
Medical furniture, Equipment and devices	26,800	16,700	7.8%
Medicine	20,600	11,800	6%
Supplies	11,200	8,000	3.2%
Device Consumables	10,400	3,400	3%
Furniture's Fixtures, fittings and other equipment	5,000	4,100	1.5%
Total US$	**345,000**	**187,000**	**100%**

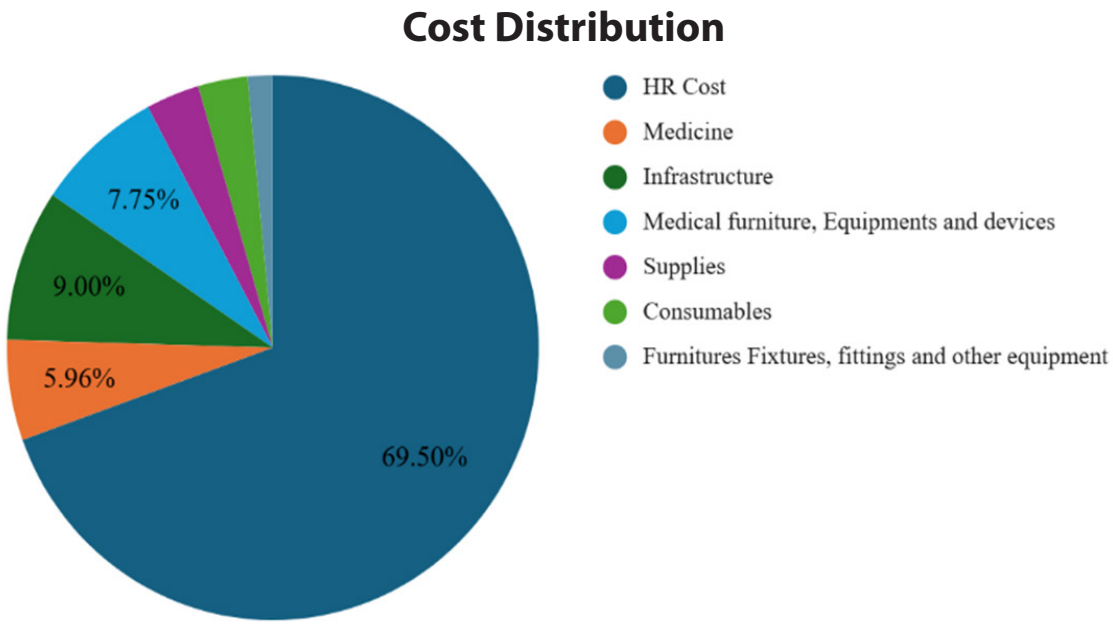

Figure 5: Cost Distribution at Sub-County Facility

Estimated Cost at Health Centre (Level 1 Newborn Care)

At the health centre level, the priority is to ensure safe delivery and immediate care, including adequate supplies and effective referral systems for small and sick newborns. The focus is on providing essential/immediate newborn care and stabilizing babies before referral to higher-level facilities for specialized treatment.

The best-case scenario, which assumes all new equipment, furniture, and running costs in line with the recommended standard, was estimated at **US$ 61,800 (KES 8 million).** The moderate scenario, representing partial capacity improvements, was estimated at **US$ 23,800 (KES 3 million)**. Human resources accounted for the largest cost share at 87%, underscoring the labour-intensive nature of newborn care at this level.

It is noteworthy that the Ministry of Health advocates for KMC rooms in all health centres conducting deliveries, but the cost of constructing these rooms should be integrated within the broader maternity ward floor plan to optimize infrastructure investments. . The table below provides a summary of the costs per each input estimated at the health centre level.

Table 8. Summarized Estimated Input Costs at County Referral Facilities

Health Centre			
Cost Category	**Annualized Cost per facility-Best case (per norms) US$**	**Annualized Cost per facility-Moderate case (halfway to norms) US$**	**Percentage of the total cost**
Human Resource	53,800	19,200	87.2%
Medical furniture, Equipment and devices	2,800	1,200	4.6%
Supplies	2,500	2,000	4.0%
Device Consumables	1,900	900	3.0%
Medicine	400	300	0.6%
Furniture's Fixtures, fittings and other equipment	400	200	0.6%
Total in US$	**61,800**	**23,800**	**100.00%**

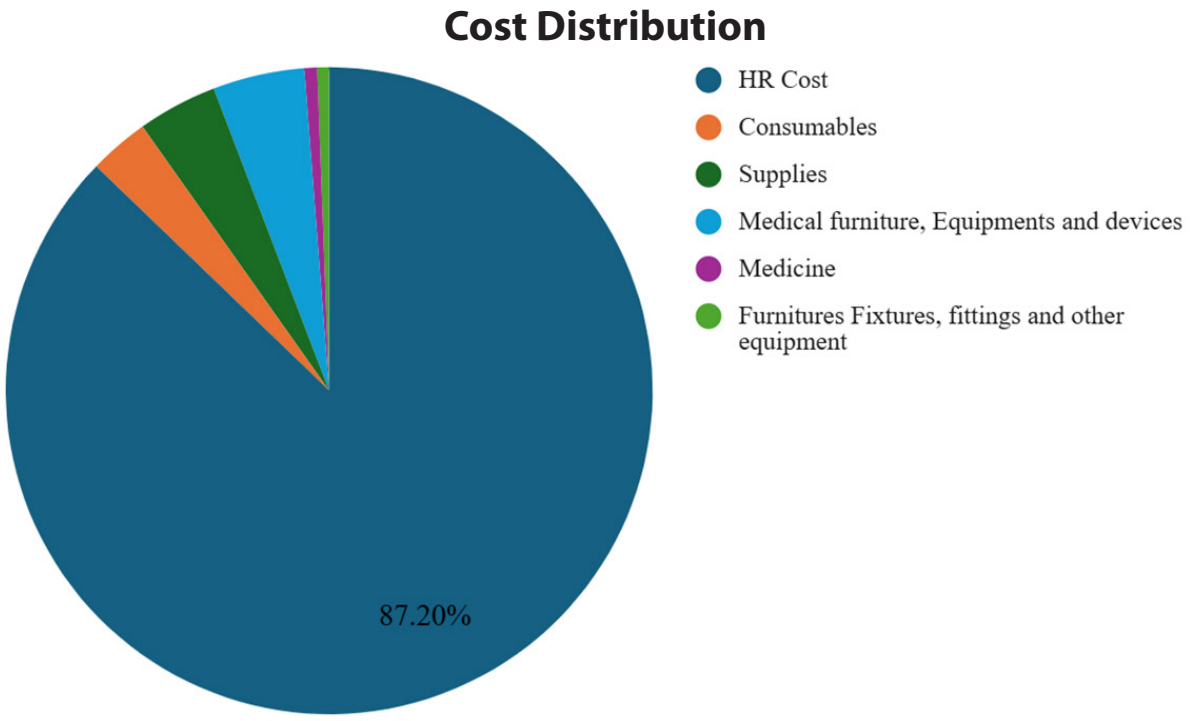

Figure 6: Cost Distribution at Health Centre

Above Site Costs

While counties are primarily responsible for service delivery, the national level through the Ministry of Health (MOH) also plays a critical role in enabling facilities to provide high-quality newborn care. This includes training, strengthening data systems, and promoting quality improvement. Although not all training courses are directly funded by the MOH, most are coordinated through its leadership, with significant technical and financial support from development partners. The counties do also support data systems and MOH provides technical and policy support. For this investment case, the MOH has prioritized comprehensive newborn training, scaling up essential newborn care training, and structured mentorship for key healthcare cadres. In parallel, it aims to ensure facilities are equipped with robust data systems and that the national quality-of-care standards are effectively implemented.

Currently, many of these above-facility activities especially large-scale trainings and data system rollouts are partner-supported, either through the national or county governments. However, the MOH is actively seeking to transition towards greater government financing to enhance sustainability.

The cost of training and mentorship over the five-year investment period is estimated at US$ 2.6 million, making it the largest cost driver at this level. The set-up and operational costs for data systems are projected at US$ 800,000, also representing a significant share. Quality improvement activities, though essential, are largely implemented at the facility level and therefore incur minimal above-facility costs. For sustainability, large trainings will increasingly be hosted at the county level, while mentorship will be integrated into facility-based support structures. The table below summarizes the overall distribution of costs across the three main inputs for the above site costs. The subsequent figure illustrates how these costs are distributed annually over the implementation period, while Figure 6 highlights the primary cost drivers.

Table 9: Above Site Costs

Key Area	Activity	TOTAL 2025/26 (US$)	TOTAL 2026/27 (US$)	TOTAL 2027/28 (US$)	TOTAL 2028/29 (US$)	TOTAL 2029/30 (US$)	SUM OF TOTAL (US$)
1. Human Resource capacity strengthening	1.1 Training of Health care workers: Provider Course: Comprehensive Newborn Care Training	161,600	188,800	10,500	11,200	11,800	383,900
	1.2 Provider Course: Essential Newborn Care Training	240,000	256,700	38,600	58,800	43,300	637,400
	1.3 Mentorship and quality improvement coaching	531,300	40,700	162,400	46,000	48,700	829,100
	1.4 Training of Biomedical Engineers	376,200		428,900			805,100
2. Quality Improvements	2.1 Implement Quality of care standards	34,700	37,000	569,000	42,000	44,300	727,000
3. Data systems	3.1 Implement Data systems	157,200	168,200	117,600	124,800	132,000	699,800
	3.2 Data management sensitization for HRIOs/ Data Clerk	102,600					102,600
Total US$		**1,603,600**	**691,400**	**1,327,000**	**282,800**	**280,100**	**4,184,900**

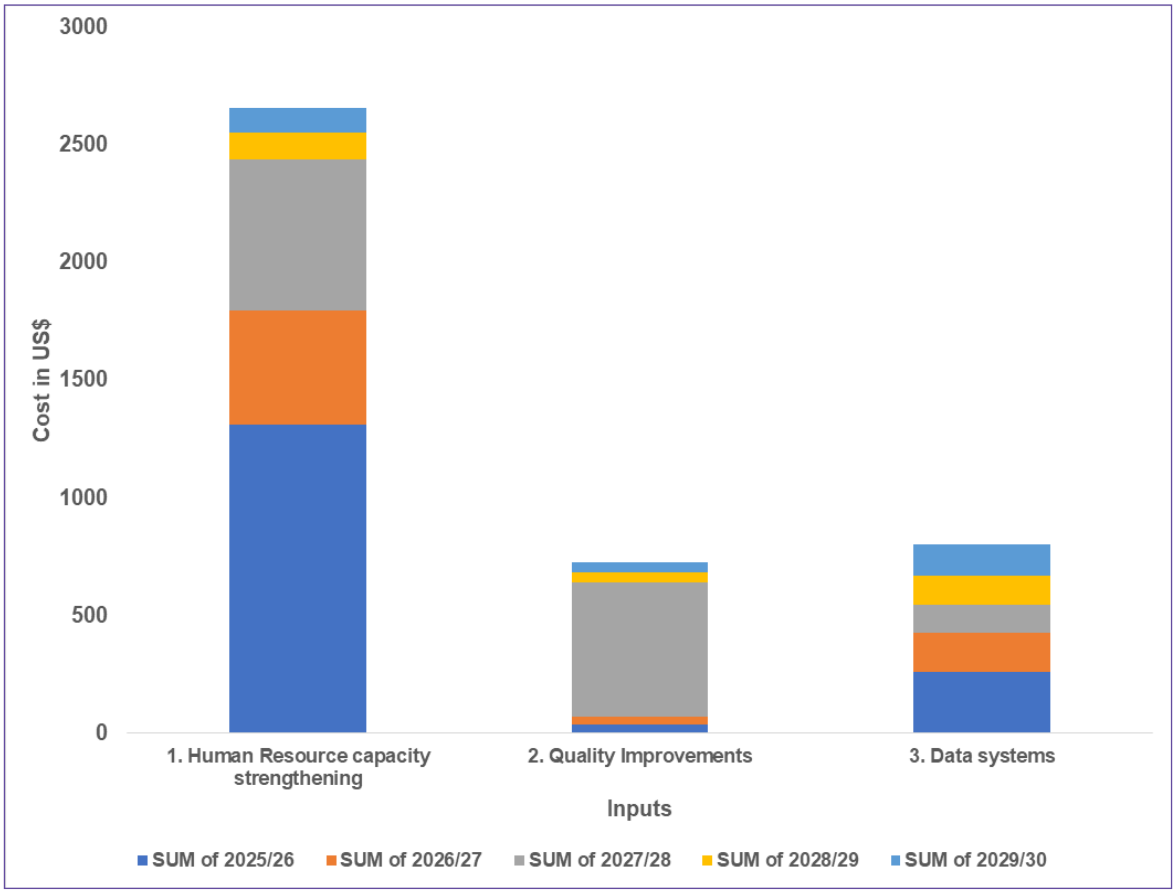

Figure 7: Cost Distribution per Year for Above Site costs

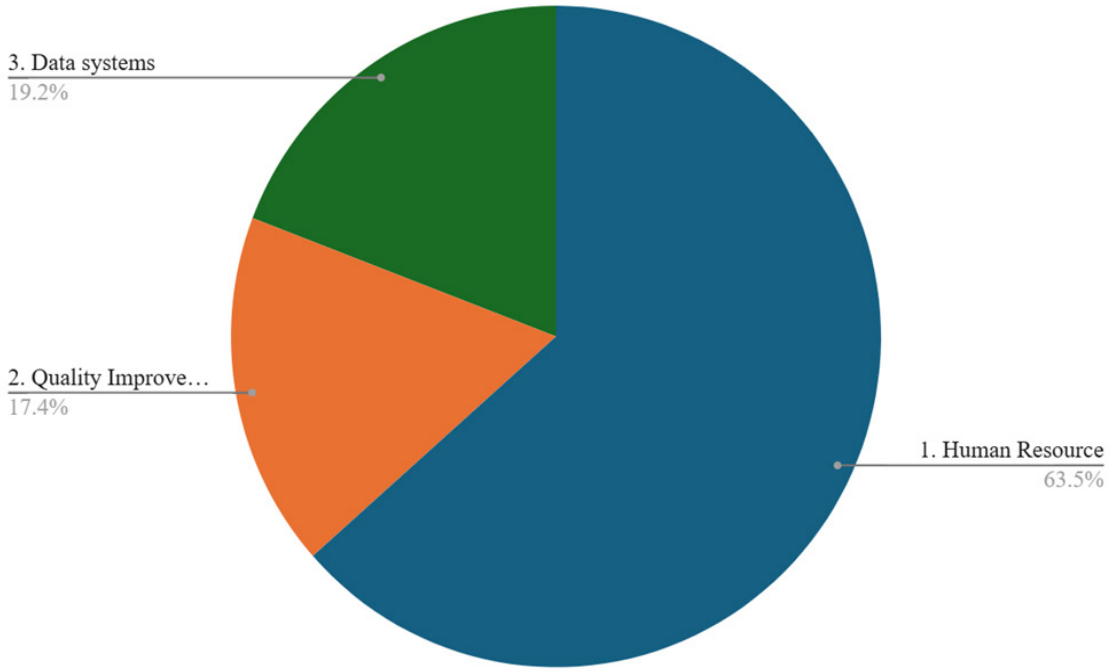

Figure 8: Cost Drivers for Above Site costs

To scale up neonatal care for the country as per the government standards would costs the government US$ 138 million at all level of care as illustrated in the table below;

Table 10: Total Scale up cost for the Country

Type of Facility	Cost Per Facility (US$)	Number of Facilities	Total in US$	Note
County Facilities	777,700	23 (currently)goal is to have 47	18,000,000	High impact for SSNC
Sub-county Facilities	345,300	252	87,000,000	High impact for SSNC
Health Centres	61,800	478 (all health centres)	29,000,000	No major impact for SSNC
Above site costs	4,184900	All facilities	4,184,900	Key drivers for SSNC
Total Investment for SSNC			**138,184,900**	

STEP 4: RETURN ON INVESTMENT

For the Best-case scenario, the ROI (i.e., CBR) was estimated between US$8 and $13 for every US$1 dollar invested by 2030 assuming a constant VSL and constant GDP per capita. The monetised benefits from lives saved, assuming each newborn would reach the estimated life expectancy in Kenya, would be between US$7.1 billion (GDP method) and 10billion (VSL method) in 67 years, which is a future value. This is called a future value because those benefits will only be fully realized many decades into the future as the children grow, work, and contribute to society. This means that the total benefit of the newborns who are saved go on to live a full life, the value of their contributions to society and the economy is estimated at between US $7.1 billion and US $10 billion over their lifetimes.

For moderate case scenario, (which represents reducing the effectiveness of all interventions by half) NMR by 2030 would reduce to 14 per 1000 live births. The country would miss the national and SDG targets if effectiveness of the interventions was lowered because of poorer quality of care (i.e., by not reaching stipulated government standards/best case scenario. The estimated ROI for this scenario was between 1 and 3 for every dollar invested. While the moderate case scenario reduces the NMR, it has a very minimal ROI and therefore government should aim to implement the norms and standards for newborn care with the highest quality of care. Nonetheless, in the event of strained resources the moderate case would be ideal as it would still reduce the NMR from 21 to 14. It is important to note that the health gains under LIST do not estimate the morbidity or disability rather it only focuses on mortality. There the health gains are underestimated.

Budget Impact Analysis

For the government to scale up newborn care given its current total health expenditure as per the last National Health Accounts report 2021[21], a 2.8% increase (while implementing the best-case scenario) of the budget would be required for this investment for the best case scenario. This is a rather affordable investment given the returns are also high. While both scenarios reduce NMR, only the best-case scenario ensures high returns and attainment of national/SDG targets. The moderate scenario may be acceptable under fiscal constraints, but it significantly reduces efficiency and impact. It is also important to note that LiST only estimates mortality outcomes and does not capture morbidity or disability reduction hence total benefits are underestimated.

STEP 5: FINANCING AND IMPLEMENTATION

The successful implementation of the Kenya Newborn Investment Case depends on a well-structured financing framework that mobilizes and coordinates both domestic and international resources. The primary sources of funding will include national and county government budget allocations, development partner contributions, and innovative financing mechanisms. While development partners will play a catalytic role in supporting the initial scale-up and implementation of interventions, sustainability in the long run requires that both the national and county governments progressively increase and ring-fence budget allocations for newborn health. Establishing clear financing commitments at both levels of government will ensure continuity, reduce dependency on external support, and safeguard gains in neonatal survival.

Key Financing Players for Newborn Health

1. National Government Budget Allocation

In line with Kenya's commitment to achieving Universal Health Coverage (UHC), increased national budgetary allocation for newborn health is essential. The Ministry of Health (MoH) should prioritize lobbying for enhanced funding for neonatal care within the annual national budget. Beyond direct allocations, the MoH should strengthen engagement with development partners to mobilize additional resources aimed at reducing neonatal mortality. Furthermore, national-level advocacy should emphasize the importance of counties leveraging Facility Improvement Funds (FIF) to upgrade and sustain newborn units.

Potential areas to Fund: Training, policy development, data systems, quality improvement, dissemination of research and policy.

2. County Government Allocation

County governments, as the primary custodians of service delivery, bear the responsibility of addressing existing gaps in infrastructure, human resources, and essential supplies for newborn care. Counties must allocate adequate resources within their annual budgets to ensure that newborn units are functional, well-equipped, and staffed. Such investments are critical to scaling up neonatal services, improving quality of care, and accelerating progress towards reducing preventable newborn deaths.

Potential areas to Fund: Human resources for both clinical and data system support; Quality improvement, Infrastructure, supplies, devices, consumables, and medicines.

3. Development Partner Support

Kenya continues to benefit from external financing, notably through the World Bank's Global Financing Facility (GFF), which prioritizes investments in maternal, newborn, and child health. However, past allocations have directed minimal resources specifically toward newborn health. The Ministry of Health should therefore actively lobby to ensure a greater share of these funds supports the scale-up of newborn interventions. Beyond the GFF, strategic collaboration with other key partners including NEST360, Jacaranda Health, Lwala Community Alliance, the Clinton Health Access Initiative (CHAI), and emerging funders such as the Beginnings Fund will be critical in mobilizing technical expertise, innovations, and catalytic resources aimed at reducing neonatal mortality.

Potential areas to Fund: Infrastructure, Human resources, Training, Devices and consumables, Referral system, Mentorship, tool development, medicines.

4. Public-Private Partnerships (PPPs):

Engaging private sector stakeholders, including pharmaceutical companies and medical equipment manufacturers, can help secure funding for infrastructure development, procurement and maintenance of neonatal care equipment, and training programs.

Potential areas to Fund: Infrastructure, devices, maintenance

5. Health Insurance and Social Protection Schemes:

Expanding the Social Health Insurance Fund (SHIF) coverage to include all neonatal services which will then reduce out-of-pocket expenses and ensure that newborns receive quality care without financial hardship.

Potential areas to Fund: Human Resources.

A blended financing approach, integrating multiple sources, will be critical to sustaining newborn healthcare investments and ensuring long-term impact.

Implementation and Phasing Out

The implementation of the Kenya Newborn Investment Case will follow a phased approach to ensure efficiency, sustainability, and measurable outcomes. The following key steps will guide the process:

1. **Phase 1:** Infrastructure and Capacity Building (2025–2026)
    - Establishment/ Upgrading of Level 2+ neonatal units in all county and sub-county facilities.
    - Procurement and distribution of essential newborn care equipment, including CPAP machines and phototherapy units.
    - Recruitment and training of healthcare personnel specifically adequate nurses to meet the newborn care standards.

1. **Phase 2:** Service Delivery Scale-Up (2026–2027)
    - Expansion of neonatal care services to lower-level facilities (Level 1 and 2A) to improve access.
    - Strengthening referral systems for seamless patient transfers between healthcare levels.
    - Implementation of health data monitoring systems to track progress and improve service quality.

1. **Phase 3:** Sustainability and Transition to Routine Funding (2030 and beyond)
    - Integration of newborn health financing into national and county budgets.
    - Strengthening local ownership through community involvement and government leadership.
    - Establishing continuous quality improvement mechanisms to maintain high standards of neonatal care.

Recommendations for Implementation.

1. **Prioritizing PCN Hubs and Sub-County Facilities:**

Counties should focus on scaling up services at Primary Care Network (PCN) hubs and sub-county facilities. While CPAP machines are increasingly available, infrastructure and staffing remain limited, constraining these facilities from providing Level 2A newborn care.

2. **Facility Assessments and targeted inputs especially for infrastructure and devices:**

For each county, there must be a comprehensive facility assessment to determine the current baseline status and the required scale-up at each facility. This will help identify key gaps in infrastructure, equipment, human resources, and service delivery capacity.

3. **Adequate Nurse Staffing as a Priority with Capacity Building and Retention Strategies:**

Counties must prioritize the recruitment, deployment, and retention of sufficiently trained neonatal nurses, as this is critical to reducing newborn mortality. Without adequate numbers of skilled nurses, the investments in infrastructure and equipment will not translate into improved outcomes. Beyond initial training, counties should invest in continuous mentorship, supportive supervision, and retention strategies (such as incentives, career progression, and recognition) to ensure a stable, skilled workforce dedicated to newborn care.

4. **Integrate individual-level data into national systems and use data for action:**

Shifting from household surveys and DHIS2 aggregate data to smarter individual level data and using these data on wards and all levels is crucial for impact.

5. **Strengthened Multi-Sectoral Coordination and Partnerships:**

Enhance collaboration between the Ministry of Health, county governments, development partners, and professional associations to pool resources, harmonize support, and reduce duplication. Clear coordination mechanisms should be established to align partner investments with the phased rollout plan.

6. Strengthening Domestic Financing Mechanisms:

Newborn health should be progressively integrated into county health budgets and national financing frameworks, reducing reliance on donor support. Innovative financing mechanisms such as conditional grants, performance-based financing, and ring-fenced allocations for newborn health should be explored to ensure sustainability.

Ultimately, it is important to recognize that scale up at facility level will be different depending on the current service delivery ability. Most of the facilities have some level of infrastructure, equipment, and human resources in place to support newborn care. This investment case is therefore intended to serve as a flexible reference tool, acknowledging the diverse starting points of facilities across the country. Rather than prescribing a one-size-fits-all approach, it offers guidance for scaling up existing capacity toward meeting the national Norms and Standards, or at a minimum, achieving a moderate-case scenario that allows for significant improvements in both coverage and quality of care. By building on existing strengths and prioritizing incremental upgrades where feasible, counties can make cost-effective progress toward establishing fully functional newborn units ultimately contributing to improved neonatal outcomes, efficient resource use, and greater equity in service delivery across Kenya.

Conclusion

Investing in newborn health is a critical step toward achieving Kenya's Universal Health Coverage (UHC) goals and reducing neonatal mortality to 12 per 1,000 live births by 2030. The Kenya Newborn Investment Case presents a comprehensive framework for strengthening neonatal healthcare services through targeted financial investments, infrastructure improvements, and human resource development. By leveraging diverse financing mechanisms, implementing a phased rollout, and ensuring sustainable funding models, Kenya can significantly enhance newborn survival rates and long-term health outcomes. Commitment from the government, development partners, and the private sector will be essential in translating this investment case into tangible improvements in neonatal care, ultimately contributing to the country's broader health and economic development goals.

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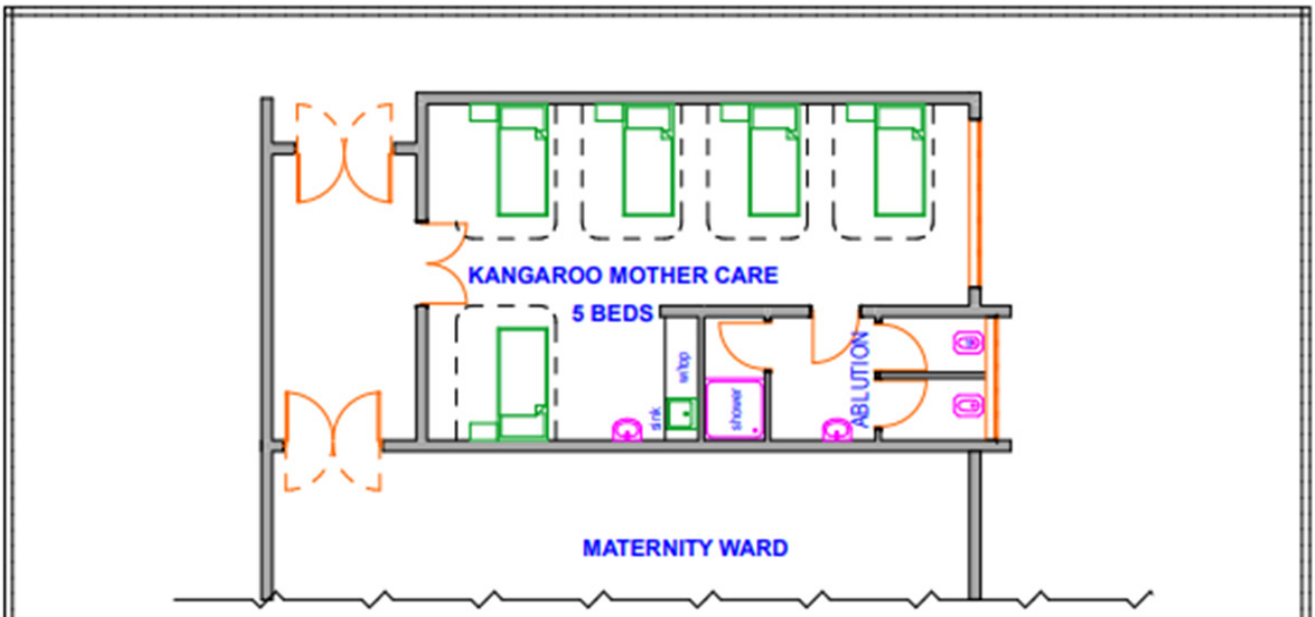
ANNEXES

Annex 1: NEWBORN CARE AREA FLOOR PLAN AT A HEALTH CENTER (LEVEL 1 NEWBORN CARE)

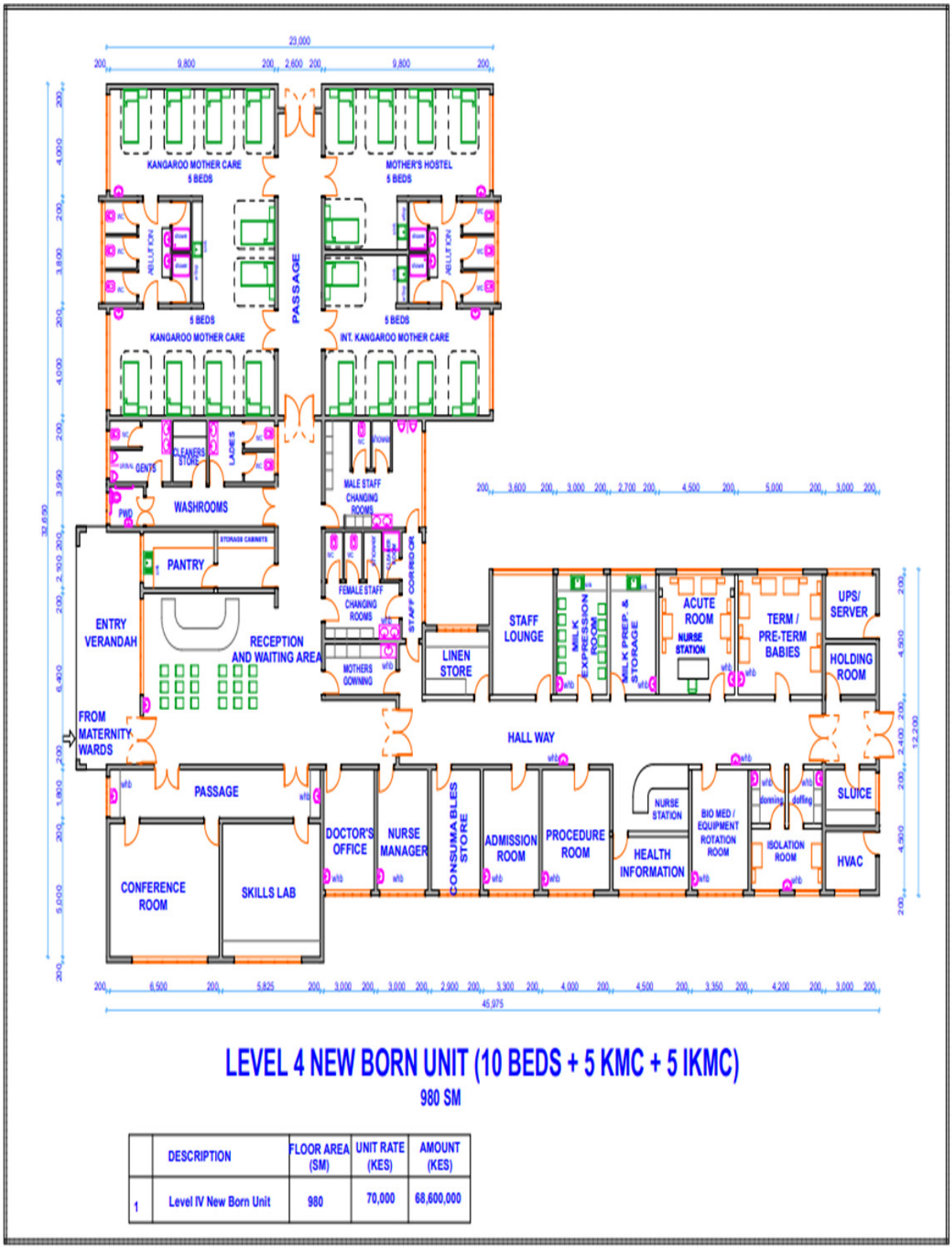


LEVEL 1: 5 BED KMC ROOM (EXTENSION TO MATERNITY)

80 SM

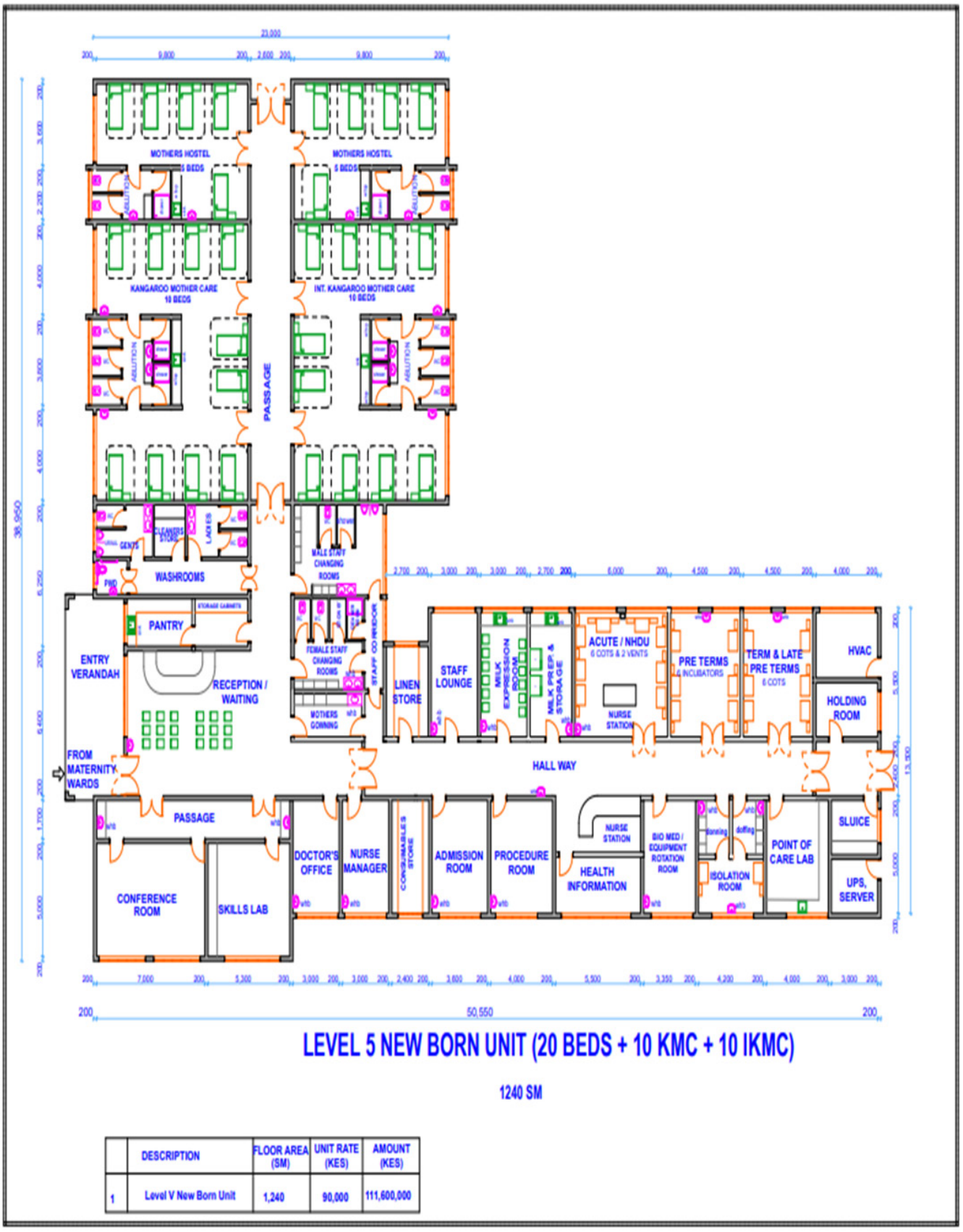
	DESCRIPTION	FLOOR AREA (SM)	UNIT RATE (KES)	AMOUNT (KES)
1	Level 1 mOTH	80	45,000	3,600,000

ANNEX 2: Floor Plan for KEPH Level 4/Sub-County Hospital Newborn Unit (2A)



	DESCRIPTION	FLOOR AREA (SM)	UNIT RATE (KES)	AMOUNT (KES)
1	Level IV New Born Unit	980	70,000	68,600,000

ANNEX 3: Floor Plan For KEPH Level 5/ County Referral Hospital Newborn Unit (2B)



LEVEL 5 NEW BORN UNIT (20 BEDS + 10 KMC + 10 IKMC)

1240 SM

	DESCRIPTION	FLOOR AREA (SM)	UNIT RATE (KES)	AMOUNT (KES)
1	Level V New Born Unit	1,240	90,000	111,600,000

Annex 4: Cost input details

Type of cost	List and incremental quantities estimate	Assumptions/ Notes
Infrastructure	Government newborn floor plans: -Level 2A: -Level 2B 40-bed capacity.	New units were annualized at a useful life of 20 years while renovated units at 5 years.
Ward furniture & fixtures	The list was derived from the norms and standards for newborn care.	Unit cost from Kenya Global Fund Unit cost Price List used in 2024 approved by Treasury. Annualized with a useful life of 5 years.
Devices	The list of essential equipment was derived from the norms and standards for newborn care.	Government procurement/ HATCH/ NEST price list (2022) –MSD Annualized with a useful life of 5 years.
Human Resource	The list and numbers per cadre were derived from the norms and standards for newborn care.	Kenya health worker service scheme and national salary pay scale (2024).
Medical supplies & device consumables	List of items from the norms and standards.	Market price (2024) obtained from KEMSA.
Neonatal medicines	List of items in from the norms and standards.	Market price (2024) obtained from KEMSA
Above facility site costs	Quantity estimates provided by Stakeholders for training, data systems, mentoring.	Unit cost for activities from Kenya Global Fund Unit cost Price List used in 2024 approved by Treasury

Annex 5: Key human resource cadres for scale up of newborn health at each level of care

a) Health Centre (Level 3)

Level	Human resource cadres	Best-case scenario ratios	Level of effort (%)	Moderate case scenario	Level of effort (%)
Health Centre MCH	Registered Nurses (8-hour shift)	6	100%	4	50%
	Cleaner (shared with maternity) per day	2	75%	1	50%
KMC room	Clinician shared	1	50%	1	25%
	Nutritionist shared	1	50%	1	25%

b) Sub-County Facility (Level 4)

Prioritization	HUMAN RESOURCE CADRES	Best-case scenario ratios	Level of Effort (%)	Moderate case scenario	Level of Effort (%)
High Priority	Paediatricians	2	100%	1	50%
High Priority	Medical officer	4	50%	2	50%
High Priority	Clinical Officers- Paediatrics	2	100%	1	100%
High Priority	Nurse in Charge	1	100%	1	100%
High Priority	Neonatal nurses	5	100%	1	100%
High Priority	Nurses	8	100%	8	100%
Low Priority	Pharmacist	2	50%	1	25%
Low Priority	Pharmaceutical technologists	2	100%	1	50%
Low Priority	Biomedical engineering technologist	1	50%	1	25%
High Priority	Nutrition technologist	1	100%	1	50%
Low Priority	Medical Laboratory technologist	1	50%	1	25%
High Priority	Health Records Information Officer	1	100%	1	50%
Low Priority	Occupational therapist	1	100%	1	50%
Low Priority	Physiotherapist	1	50%	1	25%
High Priority	Cleaners	5	100%	3	100%
Medium Priority	Support staff (Patient Attendants/ Porter/Assistants)	3	50%	2	50%

c) County Referral Facility

Prioritization	HUMAN RESOURCE CADRES	Best-case scenario ratios	Level of Effort (%)	Moderate case scenario	Level of Effort (%)
High Priority	Neonatologist	1	100%	1	100%
High Priority	Paediatricians	2	100%	1	50%
High Priority	Medical officer	4	50%	2	50%
High Priority	Clinical Officers- Paediatrics	4	100%	1	100%
Medium Priority	Orthopedic Technologist	1	25%	1	25%
High Priority	Nurse in Charge/ head Nurse (A neonatal nurse)	1	100%	1	100%
Medium Priority	Clinical Nurse Educator	1	100%	1	50%
High Priority	Neonatal nurses	15	100%	10	100%
High Priority	Nurses	15	100%	10	100%
Medium priority	Nutrition officer	2	100%	1	100%
Low Priority	Biomedical engineering technologist	2	50%	1	50%
Low Priority	Clinical Pharmacist	2	50%	1	25%
Medium priority	Pharmacist	2	50%	1	50%
Medium priority	Pharmaceutical technologist	2	100%	1	505
Low Priority	Medical Laboratory technologist	2	100%	1	50%
Medium priority	Social Worker per working day	1	100%	1	50%
High Priority	Health Records Information Officer	2	100%	1	50%
Low Priority	Occupational therapist	1	100%	1	50%
Low Priority	Physiotherapist	1	50%	1	25%
High Priority	Cleaners	5	100%	3	100%
Medium Priority	Support staff (Patient Attendants/ Porter/Assistants)	3	50%	2	50%

Annex 6: Key devices for newborn health scale up for the different levels of care

Health centre		
Functionality	**Equipment and supplies**	**Assumptions**
Warmth	Radiant warmer	1 in the newborn corner
	Functional ambient room/environmental thermometer and hygrometer	Per facility
	Bassinets dimensions: transparent acrylic or equivalent material. Mattress: high-density polyurethane foam, density 20-30 kg/m3. Removable for cleaning frame: (75-80) x 45 x (90-99) cm (l*w*h) bassinet: (75-80) x 45 x 25 cm (l*w*h) frame: 2.5-3 cm (outside, across), 1.35-1.65 mm (thickness)	2 for stabilization before referral
	Space heater (oil based- eac, ce standard)	1 in delivery room and 1 in kmc room
	Kmc beds-double crank manual with abs headboard and footboard	Per facility
Airway	Suction device (penguin sucker).	Pack of 6 each
	Portable electrical suction machine	1 in delivery room, 1 in kmc room and 1 standby
Breathing	Pulse oximeter with a detachable neonatal probe and rechargeable battery	Per facility
	Oxygen source concentrator (10 litres)	Per facility
	Oxygen cylinders (8.5m3)	Per facility
	Oxygen cylinder (1.36m3)	Per facility for transport
	Oxygen regulator, flowmeter, and humidifier bottle	Per facility
	Oxygen splitter (4 ways)	Per facility
	Bag, valve mask kit (bag size-200-300ml), mask 00,0,1) oxygen reservoir bag	1 delivery room, 1 referral and 1 standby
Circulation	Neonatal /paediatric stethoscope	Per facility
Disability	Glucometer	Per facility
General equipment and supplies	Wall clock	Per facility
	Digital baby weighing scale	Per facility
	Length meter (infantometer)	Per facility
	Clinical, digital thermometer (32-43o c)	1 baby 1 thermometer
Sub- county facility		
Functionality	Equipment and supplies	Assumptions
Thermoregulation	Double walled incubator	30% of bed capacity
	Radiant warmer	1 admission, 1 procedure and 1 ikmc
	Space heaters	1 per room
	Transport incubator with oxygen cylinder	1 per facility
	Functional ambient room/environmental thermometer with hygrometer	Per facility per room
	Thermometer, clinical, digital, (32 -43 degrees centigrade)	Per bed

General neonatal equipment	Bassinets dimensions: transparent acrylic or equivalent material. Mattress: high-density polyurethane foam, density 20-30 kg/m3. Removable for cleaning frame: (75-80) x 45 x (90-99) cm (l*w*h) bassinet: (75-80) x 45 x 25 cm (l*w*h) frame: 2.5-3 cm (outside, across), 1.35-1.65 mm (thickness)	Bed capacity
	Kmc beds- hospital bed	Bed capacity
	Hospital beds	5 hostels
	Phototherapy unit, led with a high intensity mode (minimum 15)	20% of bed capacity
	Irradiance meter for phototherapy unit	1 per facility
	Digital weighing scale	1 per room
Anthropometry equipment	Tape measure, vinyl-coated 1.5m	1 per room
	Infantometer	Per facility
	Stainless steel basin/kidney dish 825mls	1 per 5 beds
	Dressing pack	1 per 5 beds
	Procedure trolley with castors	1 acute room and 1 for the rest
	Medicine trolley	1 acute room and 1 for the rest
	Tabletop 45l autoclave	1 per facility at level 2b and level 2a , shared at moderate case
	Laundry washer, dryer, combo 15kg	1 per facility at level 2b and level 2a , shared at moderate case
	Linen trolley	Per facility
	Wall clock	1 per room
	Nasal cpap	30% of admissions
	Penguin sucker	Per facility
	Bag, valve mask kit (bag size-200-300ml), mask 00,0,1) oxygen reservoir bag	2 acute room, other 4 rooms 1 each
	Oxygen wall flow meter	5ikmc, 2 acute room and 1 admission
	Oxygen blender	
	Oxygen analyser	1 per facility
	Handheld pulse oximeter with a detachable neonatal probe and rechargeable battery	Acute room 2, other rooms 1 each
	Main oxygen source manifold (includes pipping)	Actual cost is dependent on the plinth area in the architectural design
	Oxygen source concentrator (10 litres)	Per facility
	Oxygen cylinders (8.5m3)	4x2 manifold system with 2 extra standby
	Oxygen cylinder (1.36m3)	Per facility for transport
	Oxygen regulator, flowmeter, and humidifier bottle	For cylinder use
	Oxygen splitter (4 ways)	1 per room
	Trans-illumination light (to check for pneumothorax)	1 per facility
	Portable electrical suction machine	1 per room with acute room 2
	Nebulizer kit(electric)	Per facility

	Syringe pumps	40% of 15 beds
	Infusion pump	40% of 15 beds
	Blood warmer	Per facility
	Stethoscope, neonatal	Per facility
	Drip stand	Per bed capacity
	Bp machine with neonatal cuff	Per room
	Glucometer	1 ikmc, 1 acute and 1 other rom
	Patient monitor	Acute room will require continuous monitoring
	50l fridge	Per facility
	Maintenance cost at 5% of equipment cost	
County referral facilities		
Functionality	Equipment and supplies	Assumptions
Thermoregulation	Double walled incubator	40% of 20 beds
	Radiant warmer	1 per room, and procedure room
	Transport incubator with oxygen cylinder	1 per facility
	Ambient room wall thermometer with hygrometer	1 per room
	Thermometer, clinical, digital, (32 -43 degrees centigrade)	40-per bed
General neonatal equipment	Bassinets dimensions: transparent acrylic or equivalent material. Mattress: high-density polyurethane foam, density 20-30 kg/m3. Removable for cleaning frame: (75-80) x 45 x (90-99) cm (l*w*h) bassinet: (75-80) x 45 x 25 cm (l*w*h) frame: 2.5-3 cm (outside, across), 1.35-1.65 mm (thickness)	Facility bed capacity
	Kmc beds-hospital bed	20 bed capacity
	Hospital beds	10 hostels
	Phototherapy unit, led with a high intensity mode (minimum 15)	20% of 30 beds
	Glucometer	1 per room
	Bp machine with neonatal cuff	One per room
	Point of care bilirubin meter	1 per facility
Anthropometry equipment	Digital weighing scale	1 per room
	Infantometer /stadiometer 105cm	1 per room
	Tape measure, vinyl-coated 1.5m	Per bed
Dressing / procedures / laundry Equipment for respiratory support and oxygen therapy	Stainless steel basin/kidney dish 825mls	1 per 5 beds including KMC
	Dressing pack	1 per 5 beds excluding KMC
	Suture set	1 per 5 bed excluding KMC
	Procedure trolley with castors	1 per room
	Medicine trolley	1 per room
	Tabletop 100l autoclave	1 per facility at level 2b and level 2a, shared at moderate case
	Laundry washer, dryer, combo 15kg	1 per facility at level 2b and level 2a, shared at moderate case
	Linen trolley	2 per facility
	Wall clock	1 per room

	Portable electrical suction machine	1 per room
	Penguin sucker	Pack of 6 pcs
	Nasal cpap	30% of 30 beds
	Bag, valve mask kit (bag size-200-300ml), mask 00,0,1) oxygen reservoir bag	8nacute room, 2 ikmc, 1 preterm, 1 term babies, 2 isolation room.
	Infant t-piece resuscitator	1 per room
	Oxygen wall flow meter	Acute 8, ikmc 10, preterm 2,
	Oxygen blender	Per facility
	Oxygen analyser	1 per facility
	Handheld pulse oximeter with a detachable neonatal probe and rechargeable battery	1 ikmc, 1 term babies, 1 pre terms, 1 isolation
	Back up oxygen manifold	1 per facility
	Trans-illumination light (to check for pneumothorax)	1 per facility
	Laryngoscope, straight miller blade size 00, 0, spare batteries and bulb	2 for acute room, 2 back up
	Nebulizer kit(electric)	Per facility
	Blood gas analyzer machine	1 per facility
	Ventilator	2 per facility
Fluid controllers and cardiac monitors	Infusion pumps	40% of 30 beds
	Syringe pumps	40% of 30 beds
	Blood warmer	Per facility
	Vital sign monitor	1 ikmc, 1 preterm, 1 general
	Stethoscope, neonatal	Per room
	Ecg unit, 3 channel, portable /set	
	Drip stand	Per bed excluding kmc
	Patient monitor	5 in acute room
	Cool box	Per facility
	Fridge 100l	1 per facility

Annex 7: Key consumables for newborn health scale up at different levels of care

Health centre	
Device consumables	**Description**
Medical oxygen	SUPPLY AND DELIVERY OF MEDICAL OXYGEN IN 8500 LTR CYLINDERS
	Oxygen (1360 litres cylinder)- for referrals
Radiant warmer temperature sensors	Probes
Sp02 probes	DMS Rubber Nellcor Oximax Compatible SpO2 Probe Sensor Cable for Neonatal
Neonatal nasal prongs	
Neonatal non-rebreather mask	
IV cannula - gauges	Gauge 26 (Purple)
	Gauge 24 (Yellow)
Nasogastric tube - Sizes	Size 4
	Size 6
	Size 8
Suction catheters - Sizes	Size 6
	Size 8
Syringes	2 cc
	10 cc
Needles	G21
	23- or 25-gauge,16 mm in length
Sub-county facility	
Device consumables	Description
Airway management	(sizes 4,6,8,10,12)
Suction catheters - Sizes	Size 4
	Size 6
	Size 8
Uncuffed Endotracheal tubes - sizes	Size 2.5
	Size 3
	Size 3.5
Nasal prongs (neonatal)	nasal oxygen cannula, 2 prongs + tube, neonate
Nonrebreather Oxygen mask with reservoir bag	
Nasogastric tube - Sizes	Size 4
	Size 6
	Size 8
Three way stop cocks	
Radiant warmer temperature sensors	Probes
Incubator temperature sensors	Probes
CPAP prongs (Soft Silicone Bubble CPAP Nasal Prongs for CPAP Machine) - Sizes	Size 00'
	Size 0
	Size 1
	Size 2
	Size 3
ECG electrodes	
IV cannulas	G26
	G24
Blood giving sets	

Glucometer strips	
Phototherapy Eye shield	
Sp0₂ probes	DMS Rubber Nellcor Oximax Compatible SpO2 Probe Sensor Cable for Neonatal
Syringes	2 cc
	10 cc
	20 cc
	60 cc
	G21
	23- or 25-gauge,16 mm in length
	Yankeur tubes
Insulin syringe	Insulin Syringes (100) 1ml with Needle G31 X 6mm
County Referral Facilities	
Device consumables	Consumables and Supplies
Airway management	(sizes 4,6,8,10,12)
Suction catheters - Sizes	4
	6
	8
Uncuffed Endotracheal tubes - sizes	2.5
	3
	3.5
Radiant warmer temperature sensors	Probes
Incubator temperature sensors	Probes
Nasal prongs (neonatal)	
Nonrebreather Oxygen mask with reservoir bag	
Three way stop cocks	
CPAP prongs - Sizes	00'
	0
	1
	2
	3
ECG electrodes	
Umbilical catheters (Double and single lumen) - Sizes	3Fr
	3.5Fr
	4Fr
Iv cannulas	G26
Iv cannulas	G24
Solusets	
Blood giving sets	
Breathing patient circuit	single limb
	double limb
Indicator, TST control spot/PAC-300	Autoclaving tape
Phototherapy Eye shield	
Sp0₂ probes	DMS Rubber Nellcor Oximax Compatible SpO2 Probe Sensor Cable for Neonatal
Glucometer strips	

Syringes	2 cc
	10 cc
	20 cc
	60 cc
Insulin syringe	Insulin Syringes (100) 1ml with Needle G31 X 6mm
Needles	G21
	23- or 25-gauge,16 mm in length
	Yankeur tubes
Nasogastric tube - Sizes	Size 4
	Size 6
	Size 8

Annex 8: Essential medicines for newborn health scale up at different levels of care

LEVEL OF CARE	Neonatal medicines
Health Centres	
Essential Medicines	10% Dextrose
	Water for injection
	First-line antibiotics (crystalline penicillin neonate formulation)
	First-line antibiotics (gentamicin neonate formulation)
	IM Phenobarbital neonate formulation (30mg/ml)
(Disability & Emergency Drugs)	IV Adrenaline (1:1000)
	elemental iron
	elemental calcium 50mg/ml
	Folic acid 5mg tab
	vitamin D
	Multivitamin (Drop for infants that contains Vitamin A, Vitamin B1, Vitamin B2, Vitamin B3, Vitamin B5, Vitamin B6, Vitamin C, Vitamin D and Vitamin E.)
Sub-County Facility	
Analgesics/Local Anaesthetics	Paracetamol IV
	50 % Dextrose
Anticonvulsants	Phenobarbitone neonatal
	Levetiracetam neonatal
Emergency Drugs	Adrenaline 1mg
	Calcium Gluconate 10%
	3% hypertonic saline
Lubricant	Water Based Lubricant (Sterile) 42-50gm
Drugs relating to Coagulation	Therapeutic Vitamin K for haemorrhagic disease of the newborn
Diuretics	Furosemide
IV Fluids	Normal saline 0.9%
	Dextrose 10% 500ml
	Potassium Chloride 15%
Therapeutic Feeds	Baby formular 0-6 months
Other Drugs	Caffeine Citrate 10mg/ml Solution for Injection 10x1ml
	Insulin Soluble - 100Iu/Ml
	Penicillin Benzyl Injection - 5MU
	Gentamicin Injection - 20Mg-
	Ceftazidime Injection, 1g
	Flucloxacillin Injection 500mg (PFI)
	elemental iron
	elemental calcium 50mg/ml
	Folic acid 5mg tab
	vitamin D drops
	Multivitamin (Drop for infants that contains Vitamin A, Vitamin B1, Vitamin B2, Vitamin B3, Vitamin B5, Vitamin B6, Vitamin C, Vitamin D and Vitamin E.)
	Chlorhexidine Gluconate - 5%
	Povidone-Iodine Solution - 10%

County Referral Facility	
Analgesics/Local Anaesthetics	Paracetamol IV
	50 % Dextrose
Anticonvulsants	Phenobarbitone neonatal
	Levetiracetam neonatal
Emergency Drugs	Adrenaline 1mg
	Calcium Gluconate 10%
	3% hypertonic saline
Lubricant	Water Based Lubricant (Sterile) 42-50gm
Drugs relating to Coagulation	Vitamin K (used for therapeutic indication)
Diuretics	Furusemide,
	Spironolactone
IV Fluids	Normal Saline 0.9%
	Potassium Chloride 15%
	Dextrose 10% 500ml
	Dextrose 50% 50ml,
Therapeutic Feeds	Baby formular 0-6 months
	parenteral nutrition (amino acids)
	parenteral nutrition (lipids)
	Chlorhexidine Gluconate - 5%
	Povidone-Iodine Solution - 10%
Other Drugs	Caffeine Citrate 10mg/ml Solution for Injection 10x1ml
	Insulin Soluble - 100Iu/Ml
	Penicillin Benzyl Injection - 5MU
	Gentamicin Injection - 20Mg-
	Ceftazidime Injection, 1g
	Flucloxacillin Injection 500mg (PFI)
	elemental iron
	elemental calcium 50mg/ml
	Folic acid 5mg tab
	vitamin D
	Multivitamin (Drop for infants that contains Vitamin A, Vitamin B1, Vitamin B2, Vitamin B3, Vitamin B5, Vitamin B6, Vitamin C, Vitamin D and Vitamin E.)
	Povidone-Iodine Solution - 10%
	Surfactant

Annex 9: Essential supplies for newborn health scale up at different levels of care

Health Centre	
Gloves	Clean gloves
	Hand sanitizer (alcohol based minimum 70%) at the entrance, nursing station, entrance to all the rooms and within the rooms
	Liquid soap (at hand washing areas)
	Disposable hand towels (at hand washing areas)
	Decontamination buckets
Appropriate disinfectants	70% Alcohol (Surgical spirit)
	Sodium hypochlorite
	Pedal-operated colour-coded waste bins (plastic)
	Appropriate Waste Bin Liners
	Sharps container (Puncture resistant and leak proof)
	Alcohol swabs.
	Plastic wraps for preterm -Cling films (30x500 meters) for preterm
	Cot linen
	KMC Bed linen-Bedsheet
	KMC Bed linen-Blanket
	KMC wrap
	Calibrated Feeding cups (Silicon)
Sub-county facility	
Zinc Oxide-Adhesive trappings	4inch – 250
Hypoallergenic adhesive tape 1" (Transpore)	Transpore
	Perfuser lines
Blood pressure cuffs - Sizes	Size 1
	Size 2
	Size 3
	Size 4
	Size 5
	Decontamination buckets (20L)
Sanitation consumables	Bed linen branded NBU
	Patients (mothers) uniform branded NBU
	KMC Bed linen-Bedsheet
	KMC Bed linen-Blanket
	KMC wrap
	Calibrated Feeding cups (Silicon)
	Diapers
	Cotton wool Absorb White (Roll)
	Liquid handwashing soap
	Disposable hand towels (at hand washing areas)
	Waste segregation bin
	Waste bin liner/sets - Red, Yellow, Black
	Sharps container (Puncture resistant and leak proof)
	Disposable gowns
	Gloves, examination (Small, Medium, Large)
	Gloves Surgical (sizes 6.5, 7.0, 7.5, 8.0)
	Urine bags, graduated, with inlet and outlet, 2000mls

	Neonatal Urinary Catheter-Size 4Fr
	Identification bands (patient)
County Referral Facility	
Zinc Oxide-Adhesive trappings	4inch – 250
Hypoallergenic adhesive tape 1" (Transpore)	Transpore
	Perfuser lines
Blood pressure cuffs - Sizes	Size 1
	Size 2
	Size 3
	Size 4
	Size 5
	Decontamination buckets (20L)
Sanitation consumables	Bed linen branded NBU
	Patients uniform branded NBU
	KMC Bed Linen-Bedsheet
	KMC Bed linen-Blanket
	KMC wrap
	Calibrated Feeding cups (Silicon)
	Diapers
	Cotton wool Absorb White (Roll)
	Liquid handwashing soap
	Disposable hand towels (at hand washing areas)
	Waste segregation bin
	Waste bin liner/sets - Red, Yellow, Black
	Sharps container (Puncture resistant and leak proof)
	Disposable gowns
	Gloves, examination (Small, Medium, Large)
	Gloves Surgical (sizes 6.5, 7.0, 7.5, 8.0)
	Urine bags, graduated, with inlet and outlet, 2000mls
	Neonatal Urinary Catheter-Size 4Fr
	Identification bands (patient)
	Milk Expression bowls

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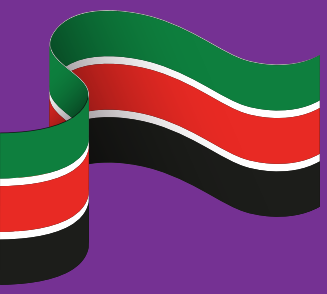

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