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Ministry of Health



Family Health Directorate

Division of Reproductive, Maternal, Newborn, Child,
and Adolescent Health

Technical Report for Quantification of Priority
Maternal and Newborn Health Products and
Technologies

FY 2025/26 - 2027/28

Foreword

The Kenya Health Policy 2014–2030, seeks to attain the highest possible health standards in a manner responsive to population needs while the Health Sector has prioritized investment in Health Products and Technologies (HPT). This investment area ensures that effective, safe, and affordable health products and technologies are available and rationally used. Policy direction for HPT is further elaborated in the HPT Supply Chain Strategy 2020–2025.

In alignment, the National Reproductive Health Policy 2022–2032 reflects the Government of Kenya’s unwavering commitment to ensuring that all persons in need of reproductive health services receive the highest standard of care. The policy guarantees the achievement of universal reproductive health coverage, guided by the Ministry of Health’s five strategic thrusts: equitable access, improved quality of care, efficiency, effectiveness and responsiveness of health services.

The Ministry of Health, through the Division of Reproductive and Maternal Health, has developed this National Maternal and Newborn Health Commodities Forecasting and Supply planning Report FY 2025/26 - 2027/28. This report is not only a technical tool but also a strategic instrument for advancing Kenya’s commitments under the Every Woman Every Newborn Everywhere (EWENE) Acceleration Plan, 2025–2027. By quantifying priority maternal and newborn health products and technologies, the report directly supports EWENE’s targets of reducing maternal mortality, neonatal deaths, and stillbirths, while strengthening facility readiness and supply chain resilience.

The report will be instrumental in advocating for increased funding for reproductive and maternal health, ensuring that essential commodities required to safeguard mothers and newborns are consistently available. It will guide planning and budgeting by counties, KEMSA, and other stakeholders, listing the quantities and costs of life-saving MNH Health Products and Technologies. Furthermore, it will inform supply planning to guarantee timely procurement, storage, and distribution, while enabling systematic tracking of availability and accessibility.

By embedding EWENE's vision into this quantification exercise, Kenya reaffirms its resolve to end preventable maternal and newborn deaths, ensuring that every woman and every newborn has the right to survive and thrive.

Acknowledgements

This report is a product of extensive consultation and collaboration with multiple stakeholders working together over several days to look at relevant data to give the country the most accurate quantification of its needs for supplies and commodities to improve maternal and newborn health. This exercise brought together County Governments' representatives, donors, implementing partners, and technical experts from different organizations.

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We look forward to continuing the enabling partnerships with the singular goal of having a sustainable Maternal and Neonatal Health Plan towards the attainment of zero preventable maternal and neonatal deaths by 2030.

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Acronyms

AI	Artificial intelligence
ANC	Antenatal Care
DFH	Directorate of Family Health
DHPT	Division of Health Products and Technologies (Inferred from context)
EWENE	Every Woman Every Newborn Everywhere
FY	Financial Year
HCl	Hydrochloride (Chemical abbreviation)
HIV	Human Immunodeficiency Virus
HPT	Health Products and Technologies
HSC	Heat-Stable Carbetocin
IU	International Units (Unit of measurement)
ICPD	International Conference for Population and Development
KDHS	Kenya Demographic Health Survey
KEMSA	Kenya Medical Supplies Authority
KHIS	Kenya Health Information System
KNBS	Kenya National Bureau of Statistics
Mcg	microgram (Unit of measurement)
MEDS	Mission for Essential Drugs and Supplies (Inferred from context)
Mg	milligram (Unit of measurement)
MgSO ₄	Magnesium sulfate
mL	milliliter (Unit of measurement)
MNH	Maternal and Newborn Health
MOH	Ministry of Health
NASG(s)	Non-Pneumatic Anti-Shock Garment(s)
PFI	Powder for Injection (Inferred from context)

PPH	Postpartum Haemorrhage
Rh	Rhesus
RMNCAH	Reproductive, Maternal, Newborn, Child, Adolescent Health
SDG	Sustainable Development Goals
SSA	Sub-Saharan Africa
UHC	Universal Health Coverage
USD	United States Dollar (Currency code)
VKDB	Vitamin K Deficiency Bleeding

Executive Summary

Access to Maternal and Newborn Health (MNH) Products and Technologies (HPT) is critical in reducing maternal and newborn mortality rates and improving health outcomes. According to the 2023 WHO maternal mortality report, more than 800 women die each day due to complications related to pregnancy and childbirth, while an estimated 5.3 million children do not reach the age of five annually. Half of these deaths occur in sub-Saharan Africa (SSA).

Kenya has made substantial progress in maternal and newborn health outcomes, with maternal mortality declining to 355 per 100,000 live births (Population Census Report, 2019) and neonatal mortality to 21 per 1,000 live births (KDHS 2022, Key Indicator Report). This improvement has been driven by deliberate investments, including increased skilled birth attendance from 66% (KDHS, 2014) to 89% (KDHS, 2022), and the training of more than 18,000 healthcare providers in managing obstetric and neonatal emergencies.

Despite these gains, access to MNH Health Products and Technologies remains uneven due to stockouts, high costs, regulatory barriers, and supply chain challenges. Availability varies across counties and sectors, with public facilities often experiencing shortages that force patients to seek care in private facilities where affordability is a challenge. Sustained health system strengthening is therefore essential to ensure equitable and reliable access.

The Ministry of Health (MOH), through the Directorate of Family Health (DFH) and the Division of Reproductive, Maternal, Newborn, Child and Adolescent Health (DRMNCAH), has the mandate to ensure provision and access to quality maternal and newborn HPT. This mandate is directly aligned with Kenya's commitments under the Every Woman Every Newborn Everywhere (EWENE) Acceleration Plan, 2025–2027, which sets ambitious targets to reduce maternal and neonatal morbidity and mortality. Strengthening the MNH supply chain is a cornerstone of achieving these targets, ensuring that essential commodities are available throughout the continuum of care from prenatal care through childbirth and the postnatal period.

In partnership with key stakeholders, DRMNCAH conducted this national quantification exercise for priority MNH Health Products and Technologies to assess requirements and mitigate frequent stockouts. The process identified 24 priority MNH Health Products and Technologies, with forecasts and costs detailed in this report. Four methodological approaches were applied;

morbidity/demographic, consumption, proxy consumption, and service methodologies depending on data availability, accuracy, and suitability.

The cost of the MNH products quantified in this document for FY 2025/26, 2026/27, and 2027/28 is USD 1,349,093, USD 1,378,773, and USD 1,409,106, respectively.

Urgent mobilization of additional resources is therefore required to close these significant gaps. Without timely financial commitments, the projected shortfalls will compromise the availability of essential MNH Health Products and Technologies, jeopardizing continuity of services. More critically, these gaps directly threaten Kenya's ability to achieve the ambitious targets set under the EWENE Acceleration Plan, 2025–2027. Bridging them is not only a matter of operational necessity but a strategic imperative to ensure that every woman and every newborn has access to life-saving products and technologies, and that Kenya remains firmly on track to end preventable maternal and newborn deaths.

1. Introduction

Maternal and Newborn Health (MNH) products and technologies (HPT) are critical components of resilient healthcare systems and play a vital role in reducing maternal and neonatal morbidity and mortality. These include essential medicines, medical devices, and supplies required for safe childbirth, effective newborn care, and the management of complications during pregnancy, labour, and the postnatal period. Ensuring their availability enables mothers and newborns to receive timely, quality, and life-saving care, significantly contributing to improved health outcomes.

A sustainable and efficient supply of MNH HPT is essential for maintaining consistent, high-quality healthcare services. Strong supply chains ensure that health facilities are adequately stocked, minimizing both stockouts and overstocking. Reliable availability not only supports improved maternal and newborn health outcomes but also strengthens confidence in the health system, encouraging more women to seek facility-based care.

Kenya has adopted the Every Woman Every Newborn Everywhere (EWENE) Acceleration Plan, 2025–2027, as a central framework for eliminating preventable maternal and newborn deaths.

EWENE serves as a multi-stakeholder advocacy and accountability platform, strengthening health system building blocks, elevating MNH priorities at national and county levels, and accelerating progress toward Sustainable Development Goal (SDG) 3, Universal Health Coverage (UHC), and Kenya's RMNCAH-N+ Strategy. Its nine priority pillars leadership and governance, financing, quality of care, data and accountability, workforce development, emergency response, commodities and technologies, advocacy and community engagement provide the strategic lens through which this quantification report is developed.

The quantification of MNH Health Products and Technologies is therefore not only a technical exercise but a delivery mechanism for EWENE. Accurate estimation of commodity needs supports monitoring of stock levels, prevention of stockouts, optimization of resource allocation, and improved procurement and supply planning. Collaborative engagement between national and county governments, supported by robust data systems and forecasting methodologies, is essential to achieving sustainable and reliable availability of MNH Health Products and Technologies.

Despite notable progress in facility deliveries and skilled birth attendance, maternal mortality (355 per 100,000), neonatal mortality (21 per 1,000), and stillbirth rates (15 per 1,000) remain persistently above national and global targets. These deaths are largely driven by preventable conditions such as postpartum haemorrhage, hypertensive disorders, prematurity, intrapartum asphyxia, and sepsis.

This quantification report provides a predictive and evidence-based supply plan to ensure that every facility is ready to respond to the health needs of every woman and every newborn, every day. By securing ring-fenced financing, strengthening supply chain systems, and maintaining sustained equipment readiness, Kenya can accelerate progress toward its SDG and Kenya Health Policy targets.

Ultimately, this report positions quantification as both a technical blueprint and a strategic contract: a commitment to disciplined execution, social accountability, and political will. By embedding EWENE into the heart of MNH commodity planning, Kenya reaffirms its resolve to save thousands of mothers and newborns each year, securing a healthier future for the next generation.

Role of National and County Governments

Both national and county governments play pivotal roles in the management and supply of MNH HPT. The National Government is primarily responsible for policy development, standards setting, and providing overall strategic direction. It coordinates with international organizations and donors to secure funding and technical support for MNH programs. Additionally, the national government oversees the procurement processes to ensure that HPTs meet quality standards and are distributed equitably across the country.

County governments, on the other hand, are tasked with the implementation of national policies at the local level. They manage the distribution of MNH HPT to health facilities, monitor stock levels, and ensure that healthcare providers are trained in the use of these products. County governments also play a crucial role in collecting and reporting data on MNH commodity usage and needs, which informs national quantification efforts.

Procedure of Quantification

To effectively manage the supply of MNH HPT, a systematic approach is necessary, beginning with data collection. This involves gathering historical data on MNH commodity consumption from health facilities and collecting demographic and health indicators such as birth rates and the prevalence of maternal and neonatal health conditions. If data is not routinely reported, perusal of data collection tools is necessary. It is also necessary to hold conversations with health managers and healthcare providers to understand their concerns and identify the gaps. Once collected, the data must be cleaned and validated to ensure its accuracy and completeness. Any inconsistencies or missing data need to be addressed to improve the reliability of the information. Forecasting is the next crucial step, where historical data and health indicators are used to predict future demand for MNH HPT.

This involves applying appropriate forecasting models and tools to generate accurate estimates. Following this, resource allocation and budgeting are essential. A detailed budget based on the forecasted needs must be developed, ensuring the efficient allocation of financial and human resources to support the procurement and distribution of HPT.

Effective supply chain management involves implementing robust inventory management systems to monitor stock levels and optimizing logistics and distribution networks to ensure the timely delivery of HPT to health facilities. Monitoring and evaluation play a critical role in this

process. Establishing a monitoring and evaluation framework helps track the performance of the supply chain. Regular data audits and reviews are necessary to assess the accuracy of forecasts and the efficiency of the supply chain.

Collaboration among key stakeholders, including government agencies, health facilities, donors, and non-governmental organizations, is crucial. Sharing data and insights fosters coordinated efforts and continuous improvement in MNH commodity management. Capacity building and training are also vital. Developing and implementing training programs for health personnel and managers in quantification and supply chain management, along with continuous professional development opportunities, enhances skills and knowledge. Staying updated with global trends and innovations in MNH commodity management is essential. Successful innovations should be piloted and scaled, with best practices documented and disseminated to improve processes continuously.

Finally, data-driven decision-making must be a priority. Utilizing advanced data analytics tools supports evidence-based decisions, fostering a culture of data-driven decision-making within health systems. Regularly reviewing and updating quantification methodologies based on new evidence and insights ensures the ongoing relevance and accuracy of the management process.

2. Background

Kenya is committed to improving maternal health and child survival through provision of adequate and quality health products which is one of the health systems' building blocks. The Constitution of Kenya 2010, through the bill of rights, mandates the health sector to ensure the realization of the right to health. Article 43(1) (a) of the Constitution provides that every person has the right to the highest attainable standard of health, which includes the right to health care services, including reproductive health care and quality of care throughout the continuum of maternal and newborn health care, including preconception, pregnancy and childbirth. The antenatal care, delivery and postnatal period are important for the health of both the mother and the baby. Key to this is the availability of quality and affordable health products and technologies (HPT). The Kenya Health Policy 2014-2030 envisages that investments in health systems will be scaled up for improved health outcomes including reproductive, maternal and newborn

health. The HPT investment seeks to ensure that effective, safe, and affordable HPTs are available and are rationally used at all levels of health care.

Kenya has a maternal mortality ratio of 355 per 100,000 live births (Population census report 2019) and a neonatal mortality rate of 21 deaths per 1,000 live births (Kenya Demographic Health Survey 2022). To address the key objective of zero preventable maternal and perinatal deaths and further improve skilled birth attendance and child survival, there is a need for a sustained supply of MNH Health Products and Technologies at every service delivery point. Availability of MNH Health Products and Technologies, enabling environment, supportive health care systems and community engagement lead to improved MNH outcomes.

Although efforts have been made across the country to address poor outcomes, maternal and neonatal mortality remain high. This is partly attributed to the frequent stockouts of essential and emergency HPTs at healthcare facilities. This is mainly attributed to most counties reporting inadequate funding, which affects prioritization for health services, particularly procurement of HPTs which takes a huge proportion of the health budget. Even in cases where there are funds, the procurement of some lifesaving HPT is not prioritized. Additionally, there is inconsistent forecasting and supply planning, thus hindering the accurate determination of health products requirements by health facilities.

Kenya has made significant investments to ensure adequate supply of HPTs; therefore accurate quantification ensures a steady supply of MNH Health Products and Technologies at the service delivery point thus addressing the Nairobi summit on the International Conference for Population and Development (ICPD-25) commitment to achieving zero preventable maternal deaths across all cohorts including teenage/adolescent mothers and women living with HIV and other medical conditions that may affect pregnancy and childbirth outcomes.

a. Purpose of Quantification

The purpose of MNH Health Products and Technologies quantification is to determine accurate national and county-level forecasts, supply requirements, and funding needs for essential Maternal and Newborn Health (MNH) commodities. This process supports evidence-based planning and decision-making to ensure continuous availability, accessibility, and efficient management of MNH products within the health supply chain. Ultimately, quantification aims to

prevent stockouts, optimize resource allocation, strengthen procurement and supply planning, and improve maternal and neonatal health outcomes.

b. Objectives.

The objectives of the quantification exercise is to;

- To develop a National and County quantification for financial years 2025/2026 to 2027/2028 for prioritized essential and emergency MNH Health Products and Technologies.
- To support advocacy for both domestic and donor financing to procure essential MNH health products
- To improve the availability, accessibility, and affordability of the MNH Health Products and Technologies
- To provide accurate data to guide the budgeting and financial planning for essential and emergency MNH Health Products and Technologies.

c. Scope of quantification (Priority Product List)

The scope of quantification is based on the prevailing maternal and newborn health morbidities and causes of mortality in the country; the Ministry of Health has prioritized twenty-four products and technologies for the quantification period. The table below shows the list of priority MNH products.

Table 1: List of Prioritized MNH Health Products and Technologies

1	Anti-D immunoglobulin PFI + diluent 750 IU/mL, 2 mL vial
2	Caffeine citrate 20 mg/mL, 3 mL injection
3	Calcium gluconate injection 100 mg/mL in 10 mL ampoule
4	Calibrated obstetric V drapes
5	Carbetocin (heat-stable) injection, 100 mcg/mL
6	Chlorhexidine gel 7.1% (as digluconate) – 20 g tube
7	Dexamethasone injection 4 mg/1 mL ampoule

8	Ferrous sulphate / folic acid 200 mg / 400 mcg tablet
9	Free-flow uterine balloon tamponade
10	Hydralazine injection 20 mg/5 mL
11	Labetalol injection 100 mg (5 mg/mL), 20 mL
12	Levetiracetam injection 100mg/mL
13	Magnesium sulphate injection 500 mg/mL (50%), 10 mL ampoule/vial
14	Mebendazole tablet 500mg
15	Mifepristone 200mg (1Tablet) and Misoprostol 200 micrograms (4 vaginal tablets) in Combi-pack
16	Misoprostol tablet 200 micrograms
17	Nifedipine sustained-release tablets 20 mg
18	Non-pneumatic anti-shock garment (NASG)
19	Oxytocin 10 IU/1 mL ampoule
20	Phenobarbital (phenobarbitone) sodium 30 mg/1 mL ampoule
21	Phytomenadione (Vitamin K1) injection 10 mg/mL (0.2 mL ampoule)
22	Tetracycline eye ointment 1% (as HCl)
23	Tranexamic acid injection 100 mg/mL (5 mL ampoule)
24	Assisted Vaginal Delivery Vacuum extractor (Reusable, Hand operated)

3. Methodology

Forecasting refers to the systematic approach used to predict future trends based on historical data and analytical techniques. In this report, four approaches were explored, namely: Demographic methodology, Service data methodology, Consumption data methodology, & Use of recent county forecasts (Proxy consumption)

a. Consumption Method

The consumption method is considered the gold standard when data is available, accurate and complete. The quantification team mapped the data sources for all products and settled on using consumption based methodology for 5 products since their consumption data is available on the Kenya Health Information System (KHIS). These were:

1. Chlorhexidine 7.1% gel
2. Magnesium sulphate 50% injection
3. Ferrous sulphate/folic acid 200mg/400mcg tablets
4. Oxytocin 10 IU/mL injection
5. Tetracycline 1% eye ointment.

Data was drawn from the KHIS through extraction from the MOH 647 Facility Tracer Health Products and Technologies dataset for the year 2025 (January to December). It was then processed using two approaches: manual and through the MOH Forecasting Tool for Tracer MNH products. The tool was able to extract data automatically for the specified period and with an inbuilt trend analysis functionality, the team was able to compare the consumption trends over time and generate forecasts for the five products.

In the manual approach, average monthly consumption was calculated and adjustments were made through consensus to account for reporting rates, stock-outs and outliers. Where data was missing for less than six months, the average of three consecutive months before or after the gap was used to fill in the missing values. Data for counties with missing data for six months or more was substituted using consumption data from a county with a similar number of deliveries within the same time period.

The team agreed to adopt the outputs of the MOH forecasting tool with a general consensus that manual data extraction and cleaning are subjective and prone to errors. Ultimately, during consensus building on the methodology to adopt for each product, the forecasting team agreed to adopt the results for magnesium sulphate and oxytocin injection generated by this methodology through the use of the MOH MNH forecasting tool. Of the two, magnesium sulphate had the highest proportion of missing data requiring substitution from comparable counties as summarised in the table below.

Table 2: Data Substitution Mapping

County with missing data	County used for substitution
Mandera	Kisii
Marsabit	Taita Taveta
Wajir	Laikipia
West Pokot	Busia
Meru, Bomet	Uasin Gishu
Elgeyo Marakwet, Nyamira	Kirinyaga

Other methodologies were adopted for the other products due to challenges of stock availability and the introduction of new products, which rendered consumption data unreliable.

b. Demographic Method

This methodology involves predicting future demand for maternal and neonatal health products, based on an analysis of population trends and fertility rates. By leveraging historical data, population projections, and healthcare utilization statistics, this approach helps healthcare providers and policymakers determine the needs of women and children.

The forecasting and supply planning assumptions using the demographic method in maternal and newborn health primarily revolve around key demographic and health care variables. These include projected fertility rates, which determine the expected number of pregnancies, births, and live births; maternal and neonatal mortality rates, which affect the overall population and demand for health products; and healthcare access, which estimates how many women and neonates will engage with health services such as antenatal care, births, and postnatal care. Additional assumptions may include the impact of policy changes, economic conditions, and public health initiatives that could influence fertility behavior, healthcare access, and service utilization. The accuracy of these forecasts depends on the reliability of the data used and the appropriateness of the assumptions, requiring periodic updates and scenario analysis to account for uncertainties and potential shifts in trends.

This method was used to determine the requirements for eleven out of the twenty-five products. These were:

1. Anti-D immunoglobulin PFI + diluent 750 IU/mL
2. Calcium Gluconate 10% Injection
3. Calibrated Obstetric V Drapes
4. Carbetocin (Heat Stable) 100 mcg/mL injection
5. Labetalol injection 100 mg (5 mg/mL), 20 mL
6. Levetiracetam injection 100mg/mL
7. Misoprostol Tablet 200 micrograms
8. Nifedipine injection 500 mg/mL (50%), 10mL
9. Non-pneumatic Anti-shock Garment (NASG)
10. Phytomenadione (Vitamin K1) injection 10 mg/mL (0.2 mL ampoule)
11. Assisted Vaginal Delivery Vacuum extractor (Reusable, Hand operated)

Anti-D Immunoglobulin PFI + diluent 750 IU/mL

Anti-D immunoglobulin (also called Rho(D) immune globulin) is a blood-derived product used to prevent Rh-D alloimmunization in Rh-negative women who are carrying (or may be carrying) an Rh-positive fetus. Its primary purpose is to prevent a Rh-negative mother from developing antibodies against Rh-positive fetal red blood cells.

If sensitisation occurs, those antibodies can cross the placenta in subsequent pregnancies and cause haemolytic disease of the fetus and newborn (HDFN), fetal anaemia, hydrops fetalis, stillbirth or neonatal death, or severe neonatal jaundice/kernicterus.

Anti-D prophylaxis dramatically reduces this risk when given correctly.

Assumptions used:

- The total number of pregnancies is based on the Kenya National Bureau of Statistics (KNBS) **2025** estimates.
- It is assumed that 64% (1,146,487) of pregnant women seek antenatal and delivery services in public sector and faith-based health facilities (KDHS 2022 Summary Report and routine health facility data), which form the basis for commodity forecasting.
- 3.9% (44,713) of all pregnant women are assumed to be Rhesus (Rh) negative [Rh isoimmunization in Sub-Saharan Africa indicates need for universal access to anti-RhD immunoglobulin and effective management of D-negative pregnancies](#).
- Among infants born to Rh-negative mothers:

- 60% are assumed to be Rh-positive and therefore require two doses of Anti-D immunoglobulin (antenatal prophylaxis and postpartum administration) [What is the probability of an Rh- \(Rhesus negative\) pregnant woman having an Rh+ \(Rhesus positive\) baby?](#).
- 40% are assumed to be Rh-negative and therefore require only one dose of Anti-D immunoglobulin. ([What is the probability of an Rh- \(Rhesus negative\) pregnant woman having an Rh+ \(Rhesus positive\) baby?](#))
- These assumptions apply to uncomplicated singleton pregnancies and do not explicitly adjust for multiple gestations, pregnancy loss, or sensitization status, which may be addressed separately where data are available.

Calcium Gluconate 10% injection

Calcium gluconate is a calcium salt used intravenously or orally to rapidly correct low serum calcium levels and to stabilize cardiac and neuromuscular function. It is an essential medicine in emergency and maternal–newborn care settings. In maternal management, calcium gluconate is critical for reversing magnesium sulfate toxicity in mothers with eclampsia.

Assumptions Used:

- Magnesium sulfate ($MgSO_4$) is commonly used for the management of preeclampsia with severe features, a primary indication being the prevention of eclampsia.
- It has been shown to decrease the incidence of seizures by approximately 50% of women and is the drug of choice for seizure prophylaxis. Despite common use, case reports of acute magnesium toxicity in obstetric patients are rare, although fatal cases have been described. Smith and colleagues further highlight a 3% prevalence of toxicity of $MgSO_4$ in pregnant women managed for eclampsia/pre-eclampsia and calcium gluconate as the antidote (Smith *et al.*, 2013).
- The proportion of women of childbearing age and the number of expected pregnancies were obtained from KNBS (KNBS Census Report 2025). As per the [Born Too Soon Study](#) by WHO and UNICEF, 2.5% of women visiting public facilities are likely to suffer severe preeclampsia/eclampsia. This is the population likely to be managed with $MgSO_4$.
- The prevalence of toxicity of $MgSO_4$ in pregnant women managed for eclampsia/preeclampsia was then established to be at 3% according to Smith *et al.*, 2013. The quantities needed for Calcium Gluconate were then calculated based on these demographics

Calibrated Obstetric V Drapes

Calibrated obstetric drapes are a critical component of maternal health care, as they enable accurate measurement of blood loss during and after delivery, supporting the timely identification and management of postpartum hemorrhage and contributing to improved maternal outcomes

Quantification of calibrated obstetric drapes was based on the estimated number of deliveries, using national population and delivery data from the Kenya National Bureau of Statistics (KNBS). To align the estimates with public-sector requirements, total deliveries were adjusted by 64%, reflecting the proportion of births that occur in public health facilities.

It is assumed that every woman who will deliver will use at least 1 calibrated obstetric drape and therefore the ratio is 1:1.

Heat-Stable Carbetocin (HSC)

Heat-stable carbetocin (HSC) is a long-acting oxytocin analogue uterotonic used for the prevention of postpartum haemorrhage (PPH) following childbirth. It is specifically designed to remain effective without refrigeration, making it suitable for use in low-resource and peripheral maternity settings where cold-chain storage is unreliable.

- The total number of deliveries is derived from national pregnancy and birth estimates (KNBS projections for the year 2025).
- It is assumed that 64% of pregnant women deliver in public sector and faith-based health facilities, which form the basis for forecasting heat-stable carbetocin requirements (KDHS 2022 Summary Report and routine health facility data).
- All facility-based deliveries are initially considered eligible for uterotonic prophylaxis for prevention of postpartum haemorrhage (PPH) using heat-stable carbetocin.
- However, in recognition of the phased transition from oxytocin to heat-stable carbetocin, it is assumed that heat-stable carbetocin will be used in 70% of eligible deliveries, with the remaining 30% continuing to receive oxytocin during the scale-up period for the prevention of PPH.
- Consequently, the final forecasted quantity of heat-stable carbetocin is adjusted to 70% of the total eligible deliveries in public and faith-based facilities.

- This assumption reflects anticipated programmatic uptake and procurement plans and may be revised as national policy implementation and supply dynamics evolve.

Labetalol 100mg

Labetalol is indicated for the management of hypertension in pregnancy, including severe and non-severe pre-eclampsia and eclampsia. It is commonly used in acute care settings due to its rapid blood pressure–lowering effect and safety profile in pregnancy, helping to prevent complications such as stroke and maternal organ damage.

- The estimated number of pregnancies and deliveries was derived from national pregnancy and birth projections based on the KNBS 2025 Census data. It is assumed that 64% of pregnant women access delivery services in public and faith-based health facilities (KDHS 2022 Summary report and routine health facility data), which formed the basis for forecasting maternal health commodity requirements.
- Clinical assumptions indicate that 2.5% of women presenting at health facilities develop severe pre-eclampsia or eclampsia, of whom 70% progress to severe hypertension requiring antihypertensive therapy, including labetalol.
- The average dose required per mother ranges between 100 mg and 150 mg. Given that labetalol is supplied as a 5 mg/mL solution in 20 mL vials (equivalent to 100 mg per vial), each patient requires an average of two vials per treatment course.
- Quantification was therefore based on these demographic and clinical parameters, and the resulting assumptions will guide procurement and supply planning at county and facility levels.

Nifedipine sustained-release tablets 20 mg

Nifedipine is indicated for the management of non-severe hypertension in pregnancy and as an oral option for the acute management of severe hypertension where parenteral therapy is unavailable. Its use aims to achieve timely blood pressure control and reduce progression to severe maternal complications.

- The estimated number of pregnancies and deliveries was derived from national pregnancy and birth projections based on the KNBS 2025 Census data. It is assumed that 64% of pregnant women access delivery services in public and faith-based health

facilities (KDHS 2022 Summary Report and routine health facility data), forming the basis for forecasting maternal health commodity requirements.

- Clinical assumptions indicate that 2.5% of women presenting at health facilities develop severe pre-eclampsia or eclampsia, of whom 70% progress to severe hypertension requiring antihypertensive therapy, including Nifedipine.
- For treatment, an average acute dose of 40 mg is administered, followed by a maintenance dose of 60 mg daily for up to two days. This results in a total requirement of approximately 160 mg per mother. Given that each tablet contains 20 mg, each patient requires an estimated eight tablets per treatment course.
- Quantification was therefore based on these demographic and clinical parameters, and the resulting assumptions will guide procurement and supply planning at county and facility levels.

Misoprostol tablet 200 micrograms

Misoprostol is a prostaglandin E₁ analogue widely used in maternal and newborn health (MNH) for the prevention and treatment of postpartum haemorrhage (PPH) and for several other obstetric indications. Because it is heat-stable, orally active, inexpensive, and easy to administer, it is especially valuable in peripheral and low-resource settings.

- The total number of deliveries is derived from national and county-level birth estimates for the reference year.
- It is assumed that 64% of pregnant women deliver in public sector and faith-based health facilities (KDHS 2022 Summary Report and routine health facility data), which form the basis for forecasting oxytocin and misoprostol requirements.
- All facility-based deliveries are assumed to receive 10 IU (one ampoule) of oxytocin for routine prophylaxis of postpartum haemorrhage (PPH).
- An estimated 12.5% of facility-based deliveries are assumed to develop PPH requiring treatment, with an average therapeutic dose of 30 IU of oxytocin (three ampoules) per case.
- Total oxytocin quantities are therefore calculated to cover both prophylactic and therapeutic use.
- In addition, 12.5% of facility-based deliveries are assumed to require 800 micrograms of misoprostol (four 200-microgram tablets) as adjunct or alternative therapy for management of PPH.

- These assumptions reflect current clinical practice patterns and may be revised as national guidelines, uterotonic scale-up strategies, and service delivery models evolve.

Non-Pneumatic Antishock Garment

The Non-Pneumatic Anti-Shock Garment (NASG) is a first-aid, life-saving medical device used to stabilize women experiencing severe postpartum hemorrhage. It applies circumferential pressure to the lower body, reducing blood loss and improving blood flow to vital organs while definitive treatment is arranged. NASG is a critical emergency intervention that buys time, prevents shock, and significantly reduces maternal morbidity and mortality in PPH cases, particularly in low-resource settings.

- The number of health facilities is projected to grow annually, with 65% comprising dispensaries, 25% health centres, 5% Level 4 hospitals, and 5% FBOs.
- All health facilities providing delivery services will be supplied with Non-Pneumatic Anti-Shock Garments (NASGs) to support the management of obstetric haemorrhage.
- Allocation per facility level is as follows:
 - Level 2 and 3 facilities: 2 and 3 NASGs, respectively
 - Level 4 and 5 facilities: 5 NASGs each
 - Level 6 facilities: 10 NASGs each
- It is assumed that all women who require NASGs will access care and deliver within health facilities.
- Being a multiple-use item, annual replacement is budgeted for wear and tear of existing units at a rate of 10%, but this rate needs to be reviewed annually.
- Pricing assumptions are based on the 2023 MNH Quantification Report, with unit costs remaining unchanged.

Vitamin K 10mg/mL injection

Phytomenadione (Vitamin K1) is routinely administered to newborns at birth to prevent Vitamin K Deficiency Bleeding (VKDB), a potentially life-threatening condition caused by low clotting factor levels in neonates. It is a standard essential intervention in newborn care, ensuring safe blood coagulation and reducing the risk of hemorrhage in the early days of life.

Assumptions used are:

- The total number of live births is derived from national and county-level birth estimates for the reference year.
- It is assumed that 64% of pregnant women deliver in public-sector and faith-based health facilities (KDHS 2022 and routine health facility data), which form the basis for Vitamin K forecasting.
- Every newborn delivered at the facility should be administered Vitamin K, which is one newborn, 1 ampule of Phytomenadione hence the quantification was based on this assumption. (1 newborn = 1 dose of Vitamin K injection)

c. Service Methodology

Service data can be used for the quantification of essential health products. The method links information on services to commodities consumed. The use of standard treatment guidelines/protocols is essential in the use of the method.

In this quantification, KHIS clients/services data were used as the primary data source. Reporting rates and services data for each commodity were extracted by month for the two years from January 2024 to December 2025 from the MOH 711 - integrated summary report: reproductive and child health, medical and rehabilitation services. Where necessary, survey data and other available reports were used to determine other parameters required for quantifying, such as incidences, prevalence and proportions. Adjustments were made for reporting rates.

The following commodities were quantified using services data:

1. Caffeine citrate 20 mg/mL, 3 mL injection
2. Chlorhexidine gel 7.1% (as digluconate), 20 g tube
3. Levetiracetam injection 100mg/mL
4. Mebendazole tablet 500mg
5. Mifepristone 200mg (1 Tablet) and Misoprostol 200 micrograms (4 vaginal tablets) in Combi-pack
6. Tetracycline eye ointment 1% (as HCl)
7. Assisted Vaginal Delivery vacuum extractor (Reusable, Hand operated)

Caffeine citrate 20mg/mL, 3mL injection

Caffeine citrate is indicated for the treatment of apnoea of prematurity in preterm neonates. It is used to stimulate the central nervous system and reduce the frequency of apnoeic episodes, thereby supporting neonatal respiratory stability.

The following assumptions were used for quantification:

- The services data for pre-terms was extracted from MOH 711 for year 2024 and 2025, and adjusted month-on-month for the reporting rate
- An average of forty (40) vials was assumed per patient for the treatment duration factoring in wastage (once opened, the remaining product must be discarded) (REF: BASIC PAEDIATRIC PROTOCOLS for ages up to 5 years November 2022 5th Edition).
- The average quantities for the two years (2024 and 2025) was adopted as the quantified amount for the product

Chlorhexidine gel 7.1% (as digluconate), 20 g tube

Chlorhexidine gel 7.1% is applied to every baby's cord (one tube per baby) to prevent cord infections. Use of Chlorhexidine for cord care is reported routinely in KHIS. Consequently, data was obtained for the two years under consideration. It was adjusted for reported rates and the quantities of commodities determined. An average of the two years was used as the quantification for the product.

Levetiracetam injection 100mg/mL

Levetiracetam is indicated for the management of neonatal and paediatric seizures, including seizures refractory to first-line anticonvulsants. It is used as a second-line agent due to its favourable safety profile and minimal drug interactions.

Based on a study conducted in Kilifi (Reference -

https://www.researchgate.net/publication/42254586_Neonatal_seizures_in_a_rural_Kenyan_District_Hospital_Aetiology_Incidence_and_outcome_of_hospitalization), the incidence of neonatal

convulsions was 39.5 per 1,000 live births. The following assumptions were used:

- That the incidences of neonatal convulsions is 39.5 per 1000 live births
- The data on live births for 2024 and 2025 were obtained from KHIS and adjusted for reporting rates
- It was assumed that 20% of patients would need Levetiracetam (refractory to phenobarbitone)

- Each client needs eleven (11) ampoules/vials of the product for a treatment duration of five days (REF: BASIC PAEDIATRIC PROTOCOLS for ages up to 5 years November 2022 5th Edition).
- The average quantities for year 2024 and 2025 were obtained, and assumed as the quantified amount for the product using services

NB: The final quantification quantities for Levetiracetam injection 100mg/mL were derived from the average quantities obtained from the services method and the demographic method

Mebendazole 500mg tablet

Hookworm and other intestinal parasites contribute significantly to iron-deficiency anemia in pregnancy. Deworming with mebendazole lowers worm burden and supports hemoglobin improvement when combined with iron–folate supplementation.

The following assumptions were used for quantification:

- County-level pregnancy estimates are derived from national and sub-national population projections (KNBS data, 2025).
- It is assumed that 64% of pregnant women seek antenatal care services in public sector and faith-based health facilities (KDHS 2022 and routine health facility data), which form the basis for forecasting mebendazole requirements.
- All pregnant women attending ANC in these facilities receive one tablet of mebendazole for routine deworming, in accordance with national maternal health guidelines.
- The quantification does not include repeat dosing for women who may attend multiple ANC visits, as only one treatment course per pregnancy is assumed for forecasting purposes unless otherwise specified by policy.

Mifepristone 200mg (1 Tablet) and Misoprostol 200micrograms (4 vaginal tablets) in Combi-pack

The mifepristone–misoprostol combi-pack is indicated for medical abortion and post-abortion care in accordance with national guidelines. It is used for the termination of early pregnancy and for the management of incomplete abortion, reducing the need for surgical intervention.

The Ministry of Health published a report: Incidence of Induced Abortions and the Severity of Abortion-related Complications in Kenya - A National Study (2025) -

<https://aphrc.org/wp-content/uploads/2025/05/KAS-Report-Online-Version.pdf>

The data from the report was used to determine the quantities of the commodity required. The following assumptions were used:

- Based on 2023 data, the total induced abortions were 792,694
- 50.6% are managed in public facilities
- Of the 50.6% above, target 30.7% managed in hospitals
- Of the 30.7%, target 11.7% who did not have an evacuation procedure done
- One client uses one pack of Combi-pack

Tetracycline eye ointment 1% (as HCl)

Tetracycline eye ointment is indicated for ocular prophylaxis in newborns to prevent ophthalmia neonatorum. It is administered soon after birth to reduce the risk of neonatal eye infections caused by bacterial pathogens.

The data for administration of Tetracycline 1% ointment was obtained from the KHIS for the years 2024 and 2025. It was adjusted for reporting rates and used to determine the commodity requirements. The average for the two years was considered as the quantified amount. One newborn uses one tube of Tetracycline eye ointment.

Assisted Vaginal Delivery Vacuum extractor (Reusable, hand operated)

The Assisted Vaginal Delivery Assisted Vaginal Delivery Vacuum extractor is indicated for assisted vaginal delivery in cases of prolonged second stage of labour or fetal distress where vaginal delivery is appropriate. Its use supports timely delivery, reducing the risk of maternal and neonatal complications associated with prolonged labour.

Data on the number of deliveries for 2024 and 2025 was obtained from MOH 711 and adjusted for reporting rates. The proportion of obstructed or prolonged labour is estimated at 8.5% based on a study conducted in Kilifi (<https://www.scielosp.org/article/bwho/2003.v81n8/561-566/>).

The proportion of obstructed or prolonged labour reported in the study was utilized as a proxy indicator for the potential need for vacuum extraction, owing to the absence of disaggregated data on prolonged second stage of labour.

Assuming the use of one disposable device for each client, the commodity requirements were determined for each year. It was assumed that the Assisted Vaginal Delivery Assisted Vaginal Delivery Vacuum extractor (Reusable, hand operated), shall be used three times before replacement, however the exact number of uses varies depending on the manufacturer's specifications and the material of the device.

The average of the quantities for year 2024 and 2025 was obtained and assumed as the quantified amount for the product using the services data.

NB: The final quantification figures for the Assisted Vaginal Delivery Assisted Vaginal Delivery Vacuum extractor (Reusable, Hand operated) was calculated by getting the average quantities obtained from the services method and demographic method

d. Proxy Consumption Method

In 2025, KEMSA undertook quantification in 17 counties using KEMSA i-LMIS, which involved data collection from all public health facilities (Census method). This activity generated forecasts for all HPT requirements, including those for MNH. Out of these, 11 counties (Bungoma, Garissa, Kakamega, Kilifi, Kisii, Kisumu, Makueni, Migori, Muranga, Nairobi, Trans Nzoia) had validated their data at the time of undertaking this exercise. At the same time, DHPT led a similar quantification exercise in 3 counties (Baringo, Kwale and Turkana).

The MNH quantification team reviewed the validated forecast data and extracted MNH forecasts for 23 products, and used this to extrapolate estimates for the rest of the counties. To achieve this, the team used service data from KHIS that includes ANC visits, number of deliveries and number of live births in line with MNH indicators. These proportions were used to generate annual proxy consumption for all counties.

The proxy consumption method was guided by the following assumptions:

- The primary data source was the Kenya Health Information System (KHIS), Ministry of Health (MOH 711 and 647 reports).
- Data from 14 counties was utilized to extrapolate estimates for all 47 counties.

- All commodity purchases were assumed to be conducted through the Kenya Medical Supplies Authority (KEMSA); therefore, costing was based on the prevailing KEMSA unit prices for each product.
- Data on new antenatal care (ANC) visits, deliveries, and live births were used to project annual commodity requirements at the county level.

After consensus by the quantification team, annual forecast data for four products adopted this methodology. They include

1. Free-flow uterine balloon tamponade
2. Hydralazine injection 20 mg/5 mL
3. Phenobarbital (phenobarbitone) sodium 30 mg/1 mL ampoule
4. Tranexamic acid injection 100 mg/mL (5 mL ampoule)

Table 3: Adopted Method per Product

Forecasted Annual Quantities per methodology and the Methodology Adopted						
Product	Proxy Consumption	Consumption	Demographic	Service	2025/26 Projections	Adopted Methodology
Anti-D immunoglobulin PFI + diluent 750 IU/mL, 2 mL vial	17,197		71,541		37,477	Demographic
Caffeine citrate 20 mg/mL, 3 mL injection	71,359		4,727,087	1,708,936	1,648,499	Service
Calcium gluconate injection 100 mg/mL in 10 mL ampoule	31,090		7,739	7739	4,022	Demographic
Calibrated obstetric drapes	137,782		1,113,094		1,145,987	Demographic
Carbetocin (heat-stable) injection, 100 mcg/mL	310,220		1,113,094	177,129	572,993	Demographic

Chlorhexidine gel 7.1% (as digluconate) – 20 g tube	752,777	352,176	1,113,094	810,529	1,145,989	Service
Dexamethasone injection 4 mg/1 mL ampoule	370,184		5,609,993		848,891	2025/26 Projections
Ferrous sulphate / folic acid 200 mg / 400 mcg tablet	51,023,664	20,815,728	522,368,158	1,199,630,694	132,266,058	2025/26 Projections
Free-flow uterine balloon tamponade	28,012		16,696		21,505	Proxy consumption
Hydralazine injection 20 mg/5 mL	12,352				48,806	Proxy consumption
Labetalol injection 100 mg (5 mg/mL), 20 mL	58,218		40,127		28,887	Demographic
Levetiracetam injection 100mg/mL	0		151,137	103,893		Demographic
Magnesium sulphate injection 500 mg/mL (50%), 10 mL ampoule/vial	77,132	140,268	257,960		180,686	consumption
Mebendazole tablet 500mg	2,592,722		1,146,487	1,497,447		Service
Mifepristone 200mg (1Tablet) and Misoprostol 200 micrograms (4 vaginal tablets) in Combi-pack	9,590		259,773	14,407		service

Misoprostol tablet 200 micrograms	517,234		556,547		86,108	Demographic
Nifedipine sustained-release tablets 20 mg	14,315,685		160,508		43,785,035	Demographic
Non-pneumatic anti-shock garment (NASG)	550		15,793	19,692	1,975	24/25 Projections
Oxytocin 10 IU/1 mL ampoule	609,121	1,263,060	1,530,504	1,282,006	1,019,667	Consumption
Phenobarbital (phenobarbitone) sodium 30 mg/1 mL ampoule	191,405		198,365		178,118	Proxy consumption
Phytomenadione (Vitamin K1) injection 10 mg/mL (0.2 mL ampoule)	256,144		1,113,094	537,532	1,145,989	Demographic
Tetracycline eye ointment 1% (as HCl)	1,439,757	690,192	1,113,094	1,009,241	1,145,989	Service
Tranexamic acid injection 100 mg/mL (5 mL ampoule)	198,940		333,928		136,563	Proxy consumption
Assisted Vaginal Delivery Assisted Vaginal Delivery Vacuum extractor (Single use, Hand operated)			36,732	102,513		Average of Demographic & Service
Assisted Vaginal Delivery vacuum extractor (Reusable, Hand operated)			12,244	34,171		Average of Demographic & Service

Table 4:Reasons for the Adopted Methods

Product	Adopted Methodology	Reason
Anti-D immunoglobulin PFI + diluent 750 IU/mL, 2 mL vial	Demographic	Most facilities are affected by stock-outs, hence Proxy method may have underestimated the quantities required.
		The demographic method took into consideration the proportions expected to use Anti-D.
Caffeine citrate 20 mg/mL, 3 mL injection	Service	The service methodology relied on MOH 711 service statistics (pre-term babies) and the reporting rate was satisfactory.
Calcium gluconate injection 100 mg/mL in 10 mL ampoule	Demographic	Taking into consideration 3% magnesium sulphate toxicity as this is the antidote
		The product is slow-moving, hence reduce the risk of overestimation
Calibrated obstetric drapes	Demographic	There is no consumption data
Carbetocin (heat-stable) injection, 100 mcg/mL	Demographic	Demographic method will cater for the projected increase in uptake
Chlorhexidine gel 7.1% (as digluconate) – 20 g tube	Service	MOH 711 data is reliable,consumption data is affected by sharing of Chlorhexidine in labour ward as well as clients shying from use
		Proposal to monitor uptake and review within one year
Dexamethasone injection 4 mg/1 mL ampoule	2025/26 Projections	Use the previous projection considering the projected 841,220 KEMSA consumption annually.
		The product is also used for other conditions besides MNH
Ferrous sulphate / folic acid 200 mg / 400 mcg tablet	2025/26 Projections	Use the previous projection considering the projected 161,211,865 KEMSA consumption annually

Free-flow uterine balloon tamponade	Proxy consumption	Proxy indicates an increase in uptake compared to the last projection
Hydralazine injection 20 mg/5 mL	Proxy consumption	There is restriction of use in KEML, hence adopt the conservative value to avert expiries
Labetalol injection 100 mg (5 mg/mL), 20 mL	Demographic	The figure is specific to the population of interest
		Proxy consumption considers all populations
Levetiracetam injection 100mg/mL		Team demographic to align the figures with services for adoption. Average of both is 127,515
Magnesium sulphate injection 500 mg/mL (50%), 10 mL ampoule/vial	consumption	There is reliable consumption data
		The figure is comparable to KEMSA's annual consumption of 125,000
Mebendazole tablet 500mg	Service	Service data is the actual visits given to all pregnant women during the second trimester
Mifepristone 200mg (1Tablet) and Misoprostol 200 micrograms (4 vaginal tablets) in Combi-pack	Service	The proxy consumption method relies on the actual data collected.
Misoprostol tablet 200 micrograms	Demographic	To avert possible underestimation, demographic data was recommended
Nifedipine sustained-release tablets 20 mg	Demographic	Demographic data captures the population of interest while consumption data does not differentiate clients
Non-pneumatic anti-shock garment (NASG)	Demographic	There is no consumption data, and the product is new
Oxytocin 10 IU/1 mL ampoule	Consumption	There is reliable consumption data, and there were no stockouts of the product
Phenobarbital (phenobarbitone) sodium 30 mg/1 mL ampoule	Proxy consumption	The proxy consumption method relies on the actual data collected.

Phytomenadione (Vitamin K1) injection 10 mg/mL (0.2 mL ampoule)	Demographic	All newborns are expected to receive the product, and service data may have been affected by stock-outs
Tetracycline eye ointment 1% (as HCl)	Service	To avoid overstocking, use service data
		Consumption data is affected by stock-outs
Tranexamic acid injection 100 mg/mL (5 mL ampoule)	Proxy consumption	The method is more robust as the facility census was considered
Assisted Vaginal Delivery Vacuum extractor (Reusable, Hand operated)		An average of the Service and Demographic projections was used to come up with the forecast. The average is 23,208.

4. Quantification Results/Outputs

Table 5: National Results of Quantity Quantified and Cost per Product

Forecast Quantities & Cost								
Products	Unit Pack	Cost (Ksh)	FY 2025/26	Cost (\$) (FY25/26)	FY 2026/27	Cost (\$) (FY26/27)	FY 2027/28	Cost (\$) (FY27/28)
Anti-D immunoglobulin PFI + diluent 750 IU/mL, 2 mL vial	Vial	7,800	71,541	\$4,325,064	73,115	\$4,420,216	74,723	\$4,517,460
Caffeine citrate 20 mg/mL, 3 mL injection	Ampoule	520	1,708,936	\$6,887,666	1,746,533	\$7,039,195	1,784,956	\$7,194,057
Calcium gluconate injection 100 mg/mL in 10 mL ampoule	Ampoule	80	7,739	\$4,799	7,909	\$4,904	8,083	\$5,012
Calibrated obstetric drapes	Piece	250	1,113,094	\$2,156,825	1,137,582	\$2,204,275	1,162,609	\$2,252,769
Carbetocin (heat-stable) injection, 100 mcg/mL	Ampoule	95	1,113,094	\$819,593	1,215,499	\$894,996	1,242,240	\$914,686
Chlorhexidine gel 7.1% (as digluconate) – 20 g tube	Tube	45	810,529	\$282,699	828,361	\$288,918	846,585	\$295,274
Dexamethasone injection 4 mg/1 mL ampoule	Ampoule	10	848,891	\$65,795	867,567	\$67,243	886,653	\$68,722
Ferrous sulphate / folic acid 200 mg / 400 mcg tablet	Tablet	10	132,266,058	\$10,251,593	135,175,911	\$10,477,128	138,149,781	\$10,707,625
Free-flow uterine balloon	Piece	2,500	28,012	\$542,783	28,628	\$554,724	29,258	\$566,928

tamponade								
Hydralazine injection 20 mg/5 mL	Ampoule	532	12,352	\$50,930	12,623	\$52,051	12,901	\$53,196
Labetalol injection 100 mg (5 mg/mL), 20 mL	Vial	1,645	40,127	\$511,618	41,010	\$522,873	41,912	\$534,376
Levetiracetam injection	Ampoule	1,000	0	\$0	0	\$0	0	\$0
Magnesium sulphate injection 500 mg/mL (50%), 10 mL ampoule/vial	Ampoule	70	140,268	\$76,103	143,354	\$77,777	146,508	\$79,488
Mebendazole tablet 500mg	Tablet	3	1,497,447	\$34,819	1,530,391	\$35,585	1,564,059	\$36,368
Mifepristone 200mg (1Tablet) and Misoprostol 200 micrograms (4 vaginal tablets) in Combi-pack	Pack	1,500	14,407	\$167,497	14,724	\$171,182	15,048	\$174,948
Misoprostol tablet 200 micrograms	Tablet	28	556,547	\$120,782	568,791	\$123,439	581,304	\$126,155
Nifedipine sustained-release tablets 20 mg	Tablet	5	160,508	\$6,220	164,039	\$6,357	167,648	\$6,497
Non-pneumatic anti-shock garment (NASG)	Piece	17,000	19,692	\$2,594,667	1,969	\$259,467	1,969	\$259,467
Oxytocin 10 IU/1 mL ampoule	Ampoule	62	1,263,060	\$606,958	1,202,433	\$577,824	1,228,887	\$590,536
Phenobarbital (phenobarbitone) sodium 30 mg/1 mL ampoule	Ampoule	565	191,405	\$838,193	195,616	\$856,634	199,919	\$875,480
Phytomenadione (Vitamin K1) injection 10 mg/mL (0.2 mL ampoule)	Ampoule	68	1,113,094	\$586,656	1,137,582	\$599,563	1,162,609	\$612,753
Tetracycline eye ointment 1% (as HCl)	Tube	26	1,009,241	\$203,381	1,031,444	\$207,856	1,054,136	\$212,429
Tranexamic acid injection 100 mg/mL (5 mL ampoule)	Ampoule	38	198,940	\$58,593	203,316	\$59,882	207,789	\$61,200
Assisted Vaginal Delivery Vacuum extractor	Piece	7,500	23,208	\$1,349,093	23,719	\$1,378,773	24,240	\$1,409,106

Conversion rate of 1 USD = Kes129.02 (CBK) as at 6th February 2026

The following growth rates and assumptions were used for these products:

- Heat Stable Carbetocin was increased by a factor of 9.2% in year 2 (this is the noted growth in consumption in 2025 of approximately 7% plus the normal 2.2% population growth rate). However, for year 3, the requirements were increased by 2.2%

- NAS-G the requirements of year 2 and Year 3 were reduced to 10% of the year 1 requirements to factor for replacements due to wear ,tear and loss. The 2024/2025 projections were used because the commodity was not procured.
- Oxytocin, the requirements for Year 2 were decreased by 4.8% to factor in the increase in consumption of Carbetocin (growth rate of 2.2% but a decline of 7% with an increase in consumption of carbetocin)

5.Challenges

The quantification exercise was successful; however, the team encountered several challenges. The key challenges identified are outlined below:

- The process relied exclusively on data extracted from KHIS for consumption, the most recent forecast (2025), distribution data (sales from KEMSA and MEDS), and demographic data. However, there were no specific tools available to extract RMNCAH HPT consumption data from KHIS, as most of the commodities are not captured in the tracer list (MOH 647).
- Missing data resulting from poor-quality data for certain products affected both forecasting and subsequent adjustments.
- Some of the health commodities that were introduced for use in the programme (Mifepristone/Misoprostol Combi pack, Levetiracetam injection, caffeine citrate injection, Assisted Vaginal Delivery Assisted Vaginal Delivery Vacuum extractor, and Non-pneumatic Anti-Shock Garment, had not yet been procured by counties, resulting in the absence of consumption data, necessitating the use of demographic data.
- Outlier values, indicative of data entry errors, complicated the harmonization of forecasting and quantification figures.
- Demographic analysis was constrained by insufficient supporting data, such as the scarcity of local survey data.
- The absence of standardized pack sizes for some MNH Health Products and Technologies created inconsistencies in quantification. For instance, Ferrous sulphate / folic acid 200 mg / 400 mcg tablets had been quantified as packs of 100s as well as tablets.
- Stock-out rates for certain products necessitated adjustments to consumption data.

- Multiple indications for some MNH Health Products and Technologies (e.g TEO 1%, IFAS, Dexamethasone Injection and Phenobarbitone Injection) posed challenges in quantifying MNH-specific HPT requirements.
- Distribution data from KEMSA did not fully represent the National supply, as these entities are among several suppliers distributing commodities to counties.
- Limited data availability for recently introduced commodities, such as caffeine citrate and carbetocin injections, restricted the use of distribution data for national quantification.

6. Recommendations

The following recommendations were proposed to address the challenges identified during the quantification exercise:

- Expand the tracer list (MOH 647) to cover essential MNH Health Products and Technologies.
- Improve MNH Data Quality
- Conduct regular training and capacity-building sessions for health service providers on data management and use.
- Establish routine data quality management and feedback mechanisms to promptly identify and correct errors.
- Commission operational research to generate early consumption trends for products such as Combi pack, Levetiracetam, caffeine citrate, Assisted Vaginal Delivery Assisted Vaginal Delivery Vacuum extractor and NASG.
- Standardize the units of issue in both KEMSA and MoH forecasting tools to ensure uniformity of data during quantification
- Strengthen supply chain monitoring systems to reduce stock-out incidences.
- Minimise wastage by reviewing the specifications of products (Caffeine citrate)
- Commission targeted studies and pilot programs to collect consumption and distribution data for newly introduced commodities such as caffeine citrate and carbetocin injections
- Adopt the use of KEMSA i-LMIS, the MOH Forecasting tool for priority Tracer commodities reported on MOH 647 in future exercises as opposed to manual data extraction and cleaning to generate forecasts.

7. References

- [KNBS REPORT 2025](#)
- [Born too soon WHO & UNICEF](#)
- [The state of emergency obstetric care services in Nairobi informal settlements and environs: results from a maternity health facility survey](#)
- [National Guidelines on Quality Obstetrics and Perinatal Care](#)
- <https://aphrc.org/wp-content/uploads/2025/05/KAS-Report-Online-Version.pdf>
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8. Annexes

County Requirements

Unit Price in USD	60.46	4.03	0.62	1.94	0.74	0.35	0.08	0.01	19.38	4.12	12.75	7.75	0.54
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County	Anti-D immunoglobulin PFI + diluent 750 IU/mL, 2 mL vial	Caffeine citrate 20 mg/mL, 3 mL injection	Calcium gluconate injection 100 mg/mL in 10 mL ampoule	Calibrated obstetric drapes	Carbetocin (heat-stable) injection, 100 mcg/mL	Chlorhexidine gel 7.1% (as digluconate) – 20 g tube	Dexamethasone injection 4 mg/1 mL ampoule	Ferrous sulphate / folic acid 200 mg / 400 mcg tablet	Free-flow uterine balloon tamponade	Hydralazine injection 20 mg/5 mL	Labetalol injection 100 mg (5 mL), 20 mL	Levetiracetam injection	Magnesium sulphate injection 500 mg/mL (50%), 10 mL ampoule/vial
	Vial	Ampoule	Ampoule	Piece	Ampoule	Tube	Ampoule	Tablet	Piece	Ampoule	Vial	Ampoule	Ampoule
Baringo	1,065	14,593	116	16,575	16,575	11,243	10,780	1,086,313	40	120	598	1,822	2,004
Bomet	1,285	29,727	139	19,986	19,986	15,056	11,065	1,592,985	188	150	720	2,240	2,464
Bungoma	2,815	55,812	304	43,793	43,793	35,916	18,515	4,469,020	331	668	1,579	5,401	5,941
Busia	1,328	27,718	144	20,664	20,664	11,417	12,950	2,667,131	183	169	745	1,993	2,192

Elgeyo Marakwet	782	23,54 4	85	12,16 0	12,16 0	6,077	8,469	929,9 10	30	76	438	1,311	1,442
Embu	700	13,00 7	76	10,89 3	10,89 3	9,241	14,87 8	1,139 ,106	32	83	393	1,233	1,356
Garissa	1,011	27,64 7	109	15,72 7	15,72 7	22,02 6	10,27 3	3,413 ,915	46	96	567	3,045	3,350
Homa Bay	1,875	32,44 0	203	29,16 7	29,16 7	24,07 4	14,40 1	2,831 ,437	49	195	1,051	3,280	3,608
Isiolo	352	7,120	38	5,480	5,480	3,710	6,289	599,1 37	14	40	198	648	713
Kajiado	1,795	38,67 6	194	27,92 6	27,92 6	26,78 3	15,96 9	4,333 ,068	194	220	1,007	3,652	4,017
Kakamega	2,943	84,76 0	318	45,78 9	45,78 9	31,28 6	26,02 9	4,016 ,581	2,003	3,568	1,651	4,685	5,154
Kericho	1,278	22,01 2	138	19,89 1	19,89 1	9,226	17,47 3	2,022 ,179	37	160	717	2,557	2,813
Kiambu	2,938	88,92 2	318	45,71 8	45,71 8	30,95 0	52,78 0	6,252 ,758	322	338	1,648	6,007	6,608
Kilifi	2,521	68,33 2	273	39,22 8	39,22 8	31,16 2	36,17 3	4,709 ,732	240	156	1,414	4,510	4,961

Kirinyaga	605	18,14 9	65	9,410	9,410	11,10 2	15,21 9	1,168 ,559	31	76	339	1,322	1,454
Kisii	1,806	34,83 5	195	28,09 4	28,09 4	21,10 6	16,12 3	2,354 ,267	226	0	1,013	3,042	3,346
Kisumu	1,804	61,14 0	195	28,06 3	28,06 3	22,91 9	17,51 3	3,092 ,011	12	240	1,012	3,264	3,590
Kitui	1,543	37,32 1	167	24,01 0	24,01 0	17,60 2	16,01 3	1,258 ,171	37	0	866	2,489	2,738
Kwale	1,672	32,72 4	181	26,01 2	26,01 2	19,79 1	16,77 3	2,908 ,107	1,172	0	938	2,536	2,790
Laikipia	787	25,72 1	85	12,24 3	12,24 3	9,254	33,80 9	1,394 ,680	143	102	441	1,807	1,988
Lamu	226	3,524	24	3,517	3,517	2,917	5,902	573,1 80	11	31	127	432	475
Machakos	1,525	28,58 6	165	23,73 2	23,73 2	15,74 7	19,34 2	2,706 ,281	39	0	856	2,440	2,684
Makueni	1,075	27,67 7	116	16,72 3	16,72 3	16,61 2	16,80 1	2,003 ,730	180	140	603	2,166	2,383
Mandera	1,448	7,145	157	22,52 3	22,52 3	8,836	10,04 9	3,562 ,649	47	0	812	3,059	3,365

Marsabit	736	5,315	80	11,45 9	11,45 9	4,674	8,005	1,592 ,279	23	84	413	977	1,075
Meru	1,922	37,86 4	208	29,90 3	29,90 3	20,64 4	16,46 0	3,580 ,056	170	0	1,078	3,187	3,506
Migori	2,286	37,01 3	247	35,57 4	35,57 4	24,61 3	18,47 7	2,598 ,635	18,50 8	240	1,282	4,439	4,883
Mombasa	1,803	62,88 5	195	28,05 8	28,05 8	15,19 7	17,94 1	3,139 ,169	169	0	1,011	3,022	3,324
Muranga	1,181	23,25 6	128	18,37 2	18,37 2	17,24 4	15,05 2	1,592 ,158	312	240	662	1,929	2,122
Nairobi	7,239	287,8 40	783	112,6 37	112,6 37	118,2 74	117,3 73	17,35 4,316	2,002	3,568	4,061	13,98 2	15,380
Nakuru	3,280	134,2 48	355	51,03 2	51,03 2	38,58 7	52,84 6	5,518 ,327	308	328	1,840	6,053	6,658
Nandi	1,160	23,23 5	125	18,04 4	18,04 4	12,20 4	11,81 3	5,983 ,776	159	139	650	1,869	2,056
Narok	2,164	14,32 7	234	33,66 9	33,66 9	19,06 6	9,820	3,948 ,432	46	226	1,214	3,017	3,319
Nyamira	949	10,29 2	103	14,77 1	14,77 1	4,653	8,752	775,0 41	34	96	532	1,506	1,657

Nyandarua	748	13,024	81	11,635	11,635	4,101	9,761	1,039,573	25	75	419	1,027	1,130
Nyeri	786	18,175	85	12,237	12,237	11,072	13,445	1,171,383	36	83	441	1,476	1,624
Samburu	601	5,483	65	9,353	9,353	2,857	8,029	990,000	16	67	337	723	795
Siaya	1,454	33,451	157	22,621	22,621	19,839	15,671	1,782,812	44	0	815	2,926	3,219
Taita Taveta	430	14,685	47	6,698	6,698	6,050	7,735	794,718	20	52	241	797	877
Tana River	604	3,972	65	9,399	9,399	4,773	7,298	1,259,730	20	77	339	820	902
Tharaka Nithi	532	9,378	58	8,278	8,278	4,114	10,712	777,016	20	58	298	879	967
Trans Nzoia	1,463	31,412	158	22,767	22,767	13,614	11,593	2,026,341	20	46	821	2,199	2,419
Turkana	1,968	47,711	213	30,627	30,627	18,857	19,982	3,115,511	197	110	1,104	2,996	3,296
Uasin Gishu	1,759	40,975	190	27,365	27,365	7,926	19,634	4,074,651	172	0	987	3,251	3,576

Vihiga	876	14,017	95	13,628	13,628	11,545	8,680	1,108,533	33	89	491	1,363	1,499
Wajir	971	6,472	105	15,107	15,107	8,001	7,332	3,285,198	40	145	545	1,924	2,116
West Pokot	1,448	22,773	157	22,536	22,536	8,575	8,892	3,673,496	34	0	812	2,209	2,433
Total	71,539.00	1,708,935.00	7,739.00	1,113,094.00	1,113,094.00	810,533.00	848,891.00	132,266,0528.00	28,015.00	12,351.00	40,126.00	127,512.00	140,267.77

Unit Price in USD	0.02	11.63	0.22	0.04	131.76	0.18	4.38	0.53	0.20	0.29	58.13		
County	Mebendazole tablet 500mg	Mifepristone 200mg (1Tablet) and Misoprostol 200 micrograms (4	Misoprostol tablet 200 micrograms	Nifedipine sustained-release tablet 20 mg	Non-pneumatic anti-shock garment (NAS G)	Oxytocin 10 IU/1 mL ampoule	Phenobarbital (phenobarbitone) sodium 30 mg/1	Phytomenadione (Vitamin K1) injection 10 mg/mL (0.2	Tetracycline eye ointment 1% (as HCl)	Tranexamic acid injection 100 mg/mL (5 mL	Assisted Vaginal Delivery Vacuum extractor (Single use, Hand	Cost of Requirements	

		vaginal tablets) in Combi- pack					mL ampo ule	mL ampo ule)		ampo ule)	operated)	
	Tablet	Pack	Tablet	Tablet	Piece	Ampo ule	Ampo ule	Ampo ule	Tube	Ampo ule	Piece	
Baringo	22,562	137	8,288	2,390	571	13,092	705	16,575	13,294	8,821	346	\$324,153
Bomet	24,324	84	9,993	2,882	402	27,456	1,811	19,986	17,455	3,832	1,251	\$459,879
Bungoma	52,848	405	21,897	6,315	458	52,920	9,038	43,793	36,765	3,114	2,739	\$948,403
Busia	25,258	288	10,332	2,980	279	20,376	1,807	20,664	15,848	3,733	1,293	\$449,568
Elgeyo Marakwet	14,728	123	6,080	1,753	333	7,824	524	12,160	10,032	6,652	760	\$307,870
Embu	13,900	169	5,446	1,571	293	13,104	572	10,893	11,366	7,049	680	\$250,532
Garissa	40,427	96	7,864	2,268	254	8,268	120	15,727	26,323	1,104	984	\$395,568
Homa Bay	38,942	215	14,583	4,206	775	25,266	3,808	29,167	28,935	1,169	1,825	\$655,192

Isiolo	8,592	66	2,740	790	140	2,868	231	5,480	4,001	3,076	343	\$125,829
Kajiado	45,677	536	13,963	4,027	392	43,704	4,184	27,926	29,669	1,568	1,748	\$644,377
Kakamega	54,532	458	22,895	6,603	597	65,160	5,324	45,789	39,065	7,668	2,864	\$1,127,945
Kericho	25,996	263	9,945	2,868	473	30,024	97	19,891	18,105	893	1,243	\$432,986
Kiambu	64,985	953	22,859	6,593	571	72,072	7,292	45,718	50,350	2,607	2,860	\$1,142,589
Kilifi	49,795	512	19,614	5,657	427	48,024	144	39,228	36,210	1,944	2,455	\$894,510
Kirinyaga	13,028	197	4,705	1,357	308	23,088	563	9,410	11,214	6,890	589	\$260,169
Kisii	33,685	348	14,047	4,051	499	21,012	75,000	28,094	23,450	1,200	1,757	\$923,456
Kisumu	35,072	254	14,031	4,047	498	30,420	3,900	28,063	27,294	312	1,755	\$724,259
Kitui	28,706	279	12,005	3,462	935	25,896	102	24,010	20,407	888	1,501	\$597,454
Kwale	30,510	291	13,006	3,751	385	26,904	529	26,012	22,216	10,336	1,626	\$571,227
Laikipia	18,538	236	6,121	1,765	260	30,180	1,423	12,243	10,490	2,912	766	\$329,633
Lamu	5,118	43	1,758	507	128	7,080	189	3,517	3,541	2,478	220	\$85,097

Machakos	32,567	509	11,866	3,422	586	30,528	104	23,732	18,699	931	1,484	\$527,542
Makueni	21,903	224	8,361	2,411	668	36,036	600	16,723	18,393	3,674	1,046	\$451,218
Mandera	32,734	95	11,261	3,248	267	6,000	125	22,523	21,335	1,138	1,408	\$386,176
Marsabit	15,175	87	5,730	1,652	301	2,724	386	11,459	7,495	5,043	716	\$221,319
Meru	34,579	320	14,952	4,312	675	18,300	125	29,903	25,343	1,374	1,871	\$661,143
Migori	48,468	337	17,787	5,130	467	40,536	1,000	35,574	28,041	5,894	2,225	\$1,064,758
Mombasa	34,208	318	14,029	4,046	225	48,420	3,761	28,058	20,718	1,365	1,755	\$695,300
Muranga	21,879	136	9,186	2,649	490	21,276	1,644	18,372	17,568	9,588	1,149	\$428,756
Nairobi	164,874	1,372	56,319	16,242	742	120,276	16,478	112,637	127,632	7,668	7,045	\$3,035,227
Nakuru	67,091	1,323	25,516	7,359	726	93,816	7,041	51,032	55,293	2,492	3,192	\$1,410,553
Nandi	21,783	141	9,022	2,602	425	23,040	1,608	18,044	13,227	3,253	1,128	\$444,036
Narok	44,830	208	16,835	4,855	410	33,300	125	33,669	23,272	1,110	2,106	\$574,076

Nyamira	16,873	100	7,386	2,130	342	9,924	604	14,771	7,047	7,551	923	\$285,294
Nyandarua	12,998	106	5,817	1,678	279	9,060	429	11,635	7,460	5,468	728	\$248,994
Nyeri	14,189	367	6,118	1,765	432	13,560	600	12,237	12,747	7,861	766	\$310,877
Samburu	13,189	129	4,676	1,349	258	10,500	271	9,353	4,102	3,605	586	\$184,963
Siaya	30,512	644	11,310	3,262	484	40,002	115	22,621	24,715	1,047	1,414	\$523,352
Taita Taveta	8,738	86	3,349	966	210	9,696	336	6,698	6,680	4,345	419	\$186,038
Tana River	13,965	165	4,700	1,355	152	4,524	344	9,399	6,565	4,349	588	\$169,544
Tharaka Nithi	10,543	111	4,139	1,194	362	1,872	347	8,278	7,171	4,422	517	\$201,739
Trans Nzoia	28,094	205	11,384	3,283	262	19,956	420	22,767	19,069	4,200	1,423	\$473,074
Turkana	45,884	188	15,314	4,416	543	20,100	28,733	30,627	25,313	16,112	1,916	\$815,448
Uasin Gishu	35,823	431	13,683	3,946	425	19,764	5,868	27,365	16,601	1,392	1,712	\$637,479
Vihiga	15,884	225	6,814	1,965	229	18,168	594	13,628	12,040	7,244	853	\$280,286

Wajir	28,166	82	7,553	2,178	372	4,944	604	15,107	12,386	8,754	946	\$303,882
West Pokot	35,277	545	11,268	3,250	382	12,000	1,778	22,536	14,303	813	1,410	\$469,946
Total	1,497,449.00	14,407.00	556,547.00	160,508.00	19,692.00	1,263,060.00	191,403.00	1,113,094.00	1,009,245.00	198,939.00	68,930.67	\$26,641,717

Unit Price in USD	
County	
	Cost of Requirements
Baringo	\$324,153
Bomet	\$459,879
Bungoma	\$948,403
Busia	\$449,568
Elgeyo Marakwet	\$307,870
Embu	\$250,532
Garissa	\$395,568
Homa Bay	\$655,192
Isiolo	\$125,829
Kajiado	\$644,377
Kakamega	\$1,127,945
Kericho	\$432,986
Kiambu	\$1,142,589

Kilifi	\$894,510
Kirinyaga	\$260,169
Kisii	\$923,456
Kisumu	\$724,259
Kitui	\$597,454
Kwale	\$571,227
Laikipia	\$329,633
Lamu	\$85,097
Machakos	\$527,542
Makueni	\$451,218
Mandera	\$386,176
Marsabit	\$221,319
Meru	\$661,143
Migori	\$1,064,758
Mombasa	\$695,300
Muranga	\$428,756
Nairobi	\$3,035,227
Nakuru	\$1,410,553
Nandi	\$444,036
Narok	\$574,076
Nyamira	\$285,294
Nyandarua	\$248,994
Nyeri	\$310,877
Samburu	\$184,963
Siaya	\$523,352
Taita Taveta	\$186,038
Tana River	\$169,544
Tharaka Nithi	\$201,739
Trans Nzoia	\$473,074
Turkana	\$815,448
Uasin Gishu	\$637,479
Vihiga	\$280,286
Wajir	\$303,882
West Pokot	\$469,946
Total	\$26,641,717

a. List of tables

Table 1: List of 24 MNH Health Products and Technologies

Table 2: Data Substitution Mapping

Table 3: Adopted Method per Product

Table 4: Reasons for the Adopted Methods

Table 5: National Results of Quantity Quantified and Cost per Product

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c. Pictorial











