

**CONSOLIDATED SPECIAL AUDIT REPORT  
OF THE AUDITOR-GENERAL  
ON  
COVID 19 VACCINE ROLL OUT  
IN KENYA  
AS AT 31 MARCH 2022**

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## MOTTO

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## LIST OF ABBREVIATIONS

The following abbreviations are used in this Report

Abbreviation	Full Description
eLMIS	Electronic Logistics Management Information System
CHAI	Clinton Health Access Initiative
GAVI	Global Alliance for Vaccine Immunization
GOK	Government of Kenya
KEPSA	Kenya Private Sector Alliance
MOH	Ministry of Health
NVS	National Vaccine Store
RVS	Regional Vaccine Stores
SCVS	Sub County Vaccine Store
UNICEF	United Nations Children Fund
ULT	Ultra-Low Temperatures
WHO	World Health Organization

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## **1.0 EXECUTIVE SUMMARY**

### **1.1 Background and Introduction**

The Auditor-General conducted a Special Audit on the Efficiency and Effectiveness of the Covid-19 vaccines roll-out in Kenya. The Audit covered the period from inception of the vaccination exercise in March 2021 to 31 March, 2022. The primary objective of the audit was to determine the efficiency and effectiveness of the Covid-19 vaccines roll-out in Kenya at the National and County level. The Audit at the National Level involved review of Covid-19 Vaccines budgets, Vaccine sourcing (donations and purchases), coordination and training for of human resources. At the County level, the audit involved review of County budgets for Vaccines roll out, sources, storage, distribution, administration and disposal of the vaccines. It also covered human resource, coordination of players, monitoring and supervision.

The Government of Kenya commissioned use of the Chanjo System for the Covid-19 vaccines roll-out while utilizing the existing immunization structures for other routine vaccines.

This Special audit would not have been successful without collaboration, partnerships and support of our several stakeholders drawn from both the National and County Governments. This was by way of provision of logistical and technical support during the planning and execution of the Special Audit. At the National Government level, we received support from the Ministry of Health (MOH) and its Agencies including the Referral Hospitals who accorded us personnel to work with our auditors during the audit and motor vehicles when needed. The Ministry of Defense (MOD) accorded access to the facilities and the Ministry of Interior and Coordination of National Government accorded the audit teams security escorts where needed. At the County level, the Audit Teams were accorded the requisite cooperation and logistical support by way of transport in instances where teams had to split for greater efficiency and enhanced physical visits to the facilities. We appreciate the County Leadership led by Their Excellencies, the Governors and the County Executive Committee Members (CECM) for Health in the 47 Counties.

## **1.2 Audit Scope, Limitations and Mitigation**

The audit reviewed all processes relating to Covid-19 vaccines immunization which included budgeting, administration, disposal of the expired stocks, governance and monitoring structures.

Challenges experienced during the audit included lack of definition of some of the Vaccinating Facilities in the Chanjo System and inadequacy of or incomplete vaccine inventory records. The Audit Team put in place several measures to mitigate the challenges including expanding the scope to ensure comprehensive coverage of the Vaccinating Facilities in the Counties.

## **1.3 Audit Approach and Methodology**

The Audit exercise entailed planning phase which included obtaining relevant information from the Ministry of Health (MOH) and piloting of the vaccine roll-out audit in one of the Counties before rolling out to the rest of the 47 Counties. Meetings were held with the auditees and evidence was collected through interviews, document reviews, Data Analytics, analysis of audit evidence among others. The audit was performed in accordance with the INTOSAI Framework of Profession Pronouncements (IFPP) for Supreme Audit Institutions

## **1.4 Report Summary**

### **1.4.1 National Level**

#### **i) Covid-19 Vaccination Budget**

The Ministry of Health (MOH) had an approved budget for Covid-19 vaccination of Kshs.9,175,855,286 for the financial year 2021/2022. This amount included World Bank funding of Kshs.8,075,855,286 and Kshs.1,100,00000 from Kenya Private Sector Alliance (KEPSA). The budget excluded USD.4,306,517 (Kshs.465,103,836) from Global Alliance for Vaccine Immunization (GAVI) for advocacy, social mobilization, vaccine distribution and training among others in line with GAVI reporting requirements.

To finance the budget, the Ministry secured a loan facility from the World Bank on 13 July, 2021 of EUR.106,700,000 (Kshs.13,649,874,920) to procure Covid-19 vaccines and related supplies from United Nations Children’s Fund (UNICEF) amounting to USD.116,253,234.41 (Kshs.12,733,495,773). However, as at 31 March, 2022 eight (8) months after the agreement date, the funding was yet to be received at the MOH Project Implementation account. Further, on 7 September, 2021 USD.2,000,000 was received in the Special Deposit Account (SDA) from KEPSA to procure and issue the First Phase of 200,000 doses of Vaccines. However, the vaccines were issued from the existing stock while the donated amount of USD.2,000,000 remained unutilized at the SDA held at the Central Bank of Kenya Project account as at 31 March, 2022.

#### **ii) Training and Capacity Building**

Review of training expenditure vouchers indicated MOH paid out Kshs.36,366,850 in respect to Covid-19 vaccination training expenses. However, this expenditure was not reported separately as Covid-19 project expenditure but was treated as part of the normal operations of the Ministry. This is contrary to National Treasury Circular No. 9/2020 dated 23 July, 2020 which requires Ministries, Departments and Agencies to report disaster related expenditures separately.

#### **iii) Vaccine Receipts and Distribution**

The Country received 27,818,320 vaccine doses from donors and own purchase. However, an unexplained and unreconciled deficit/variance of 1,566,973 vaccine doses was noted between the Vaccine doses received at the National level (27,818,320), vaccine doses in stock (6,713,349) and vaccine doses dispatched to the Counties (19,597,477) as at 31 March, 2022 .

## **1.4.2 County Level**

### **i) Doses Received and Administered**

The forty-Seven (47) Counties had received 19,603,441 Vaccine doses (inclusive of 5,964 Sputnik-V doses) as at 31 March, 2022. Of the doses received at the Counties, 16,933,213 had been administered, 749,362 were in stock at the various County Stores and 697,624 were either expired, damaged or wasted. The balance of 1,223,242 Vaccine doses was an unexplained/ unreconciled deficit variance as at 31 March, 2022.

### **ii) Budget**

Review of the County health services budgets for the 2021/2022 financial year revealed that the Counties did not budget specifically for the Covid-19 vaccination activities but instead used the budget for routine immunization to cater for the roll-out exercise.

### **iii) Sources and Distribution of Vaccines**

The source of vaccines to the Counties was the National Government through the Regional Vaccine Stores. The distribution flow was from Regional Vaccine Store, to the Sub County Stores and to the Facilities which administered the vaccines.

### **iv) Storage of Vaccines**

The Regional and Sub County Stores complied to some extent with the storage conditions set out by MOH for Covid-19 Vaccines. However, weaknesses were noted in the storage at the Facilities, including inadequate storage equipment and temperature monitoring tools.

### **v) Disposal of Vaccines**

The Special Audit noted that a total of 697,624 vaccine doses had expired, damaged or had gone to waste as at 31 March, 2022. Out of 697,624 vaccine doses, some had been disposed with other hospital waste while the balances were either being held at the County Stores or returned to the Regional Vaccine Stores. The total disposals and the expired doses returned to the Regional Vaccine Stores are reflected in the individual County reports.

#### **vi) Human Resource Matters**

The financing for health care personnel was to be funded by the Government of Kenya, Donors and Development Partners. The Counties Management explained that their trainings were undertaken through the assistance of the Development Partners. However, there were no proper records nor documentation maintained for the trainings undertaken in most of the Counties.

#### **vii) Coordination of Players**

The coordination of the exercise was done by the County Covid-19 Vaccine Deployment and Vaccination Task Force. However, the appointment letters and the minutes of the Task Force were not provided for audit review.

#### **viii) Monitoring and Supervision**

The Audit established that Covid-19 Vaccines roll out was monitored and supervised by a Committee to ensure smooth implementation of policies and guidelines issued from time to time by the National Government. However, the Committee did not maintain minutes and attendance schedules to evidence their activities.

### **1.5 Conclusions and Recommendation**

The audit concluded that the roll-out of the Covid-19 Vaccines was effective. However, weaknesses were noted in some of the processes, including failure to budget for the roll-out activities, practical adherence to waste disposal regulations, inadequate staff and training at the Facilities and inadequate access to the Chanjo System due to lack of data bundles to the staff updating information in the system. This impacted on real time recording of information in the Chanjo System and an unexplained/unreconciled deficit variance of 1,223,242 vaccine doses valued at Kshs.774,953,932 at the County level. At the National level, the an unexplained/unreconciled deficit variance totaled to 1,566,973 vaccine doses valued at Kshs.920,711,963. The Vaccine value is based on the average Vaccine costs during the period under review.

In aggregate, the National and County level an unexplained/unreconciled deficit variance totaled to 2,790,215 vaccine doses valued at Kshs.1,695,665,895 as at 31 March 2022.

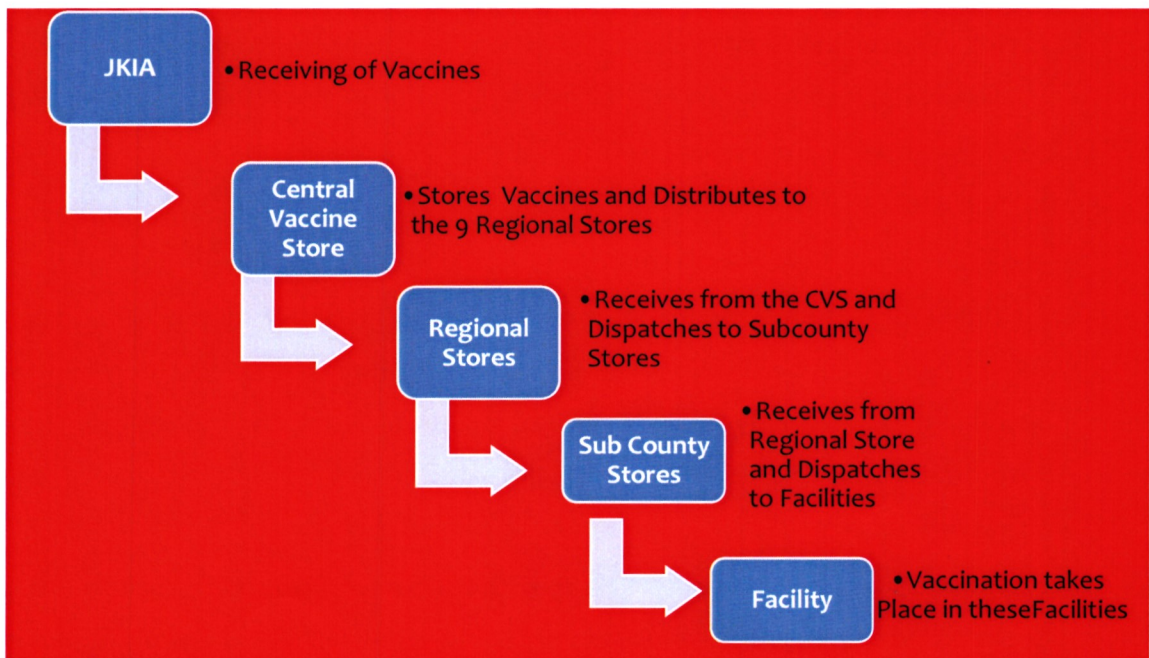
The existing distribution and immunization structures for routine vaccines were functional but require scale up to handle unforeseen pandemics. Owing to the weaknesses noted, it is recommended that the 47 County Governments should work closely with the National Government to strengthen the existing immunization structures and staffing to meet International Standards.

## 2.0 BACKGROUND AND INTRODUCTION

Kenya received a total of 27,818,320 vaccine doses between March, 2021 and 31 March, 2022 from Various Partners, Donors and Government of Kenya (GOK) own procurement. These Vaccines were received at the Port of entry before being moved to the National Vaccine Store (NVS). The Vaccines are Moderna, Johnson & Johnson (Janssen), Pfizer, AstraZeneca and Sinopharm. Records available indicated that these vaccines were distributed to the nine (9) Regional Vaccine Stores (RVS) in the Country while a few were dispatched direct to specific facilities. The RVS carried out the distribution to the Counties through the County or Sub County Stores which in turn distributed to the vaccinating facilities. The MOH launched a vaccination campaign and kicked off the deployment plan in March 2021.

### 2.1 Process Flow for Vaccines

The Chart below depicts how Vaccines are distributed from receipt at Port of entry to the facilities.



Ideally, the process flow of vaccine entails five levels as detailed out below:

**i) Arrival at the Port of Entry -JKIA**

At the port of entry, the vaccines are inspected to confirm the consignment as well as tallying with the manifests as detailed in the transportation documents before being moved to the National Vaccine Store for onward dispatch to the 9 Regional Vaccine Stores.

**ii) National Vaccine Store (NVS)**

On receipts of vaccines at the NVS they are inspected to confirm the accuracy of vaccines received at the Port of Entry (PoE) before being recorded in the vaccine stock ledger in Chanjo System indicating the type of vaccine, batch no, quantity received, date received and the date of expiry. The Vaccine is then stored in the cold room, as per the manufacturer's specifications, awaiting distribution to the 9 Regional Vaccine Stores (RVS) in Nairobi, Nyeri, Mombasa, Kisumu, Nakuru, Kakamega, Eldoret, Garissa and Meru. On dispatch, the vaccines were also recorded in both the manual ledger and the Chanjo System.

**iii) Regional Vaccine Store**

On receipt of vaccines, inspection is done to confirm the accuracy of the quantity received before updating the Chanjo System, and manual stock ledger indicating the type, quantity, date of receipt, batch number and the expiry date. The vaccine is subsequently dispatched to the Sub County Store served by the respective RVS.

**iv) Sub County Store**

The respective Sub Counties order from the RVS in their region through the Chanjo System, indicating the quantity required. On receipt of the order, the RVS dispatches and updates the Chanjo System before physical dispatch or collection at the RVS. On receipt of the vaccine at the Sub County Store, the manual stock ledgers and Chanjo System are updated before vaccines are issued to the vaccinating facilities.

**v) Facilities**

At the facilities, orders are made to the Sub County Store indicating the quantities required. Upon receipt of the facility's order, the Sub County Store issues or dispatches the vaccines and updates the Chanjo System on the day and before the delivery. On

delivery, the quantity is updated in the Chanjo System. Vaccines are also updated in the Chanjo System as and when administered.

## 2.2 Vaccines Received

Kenya received its first consignment of Astra Zeneca-Oxford Covid-19 vaccines in March 2021 as part of the COVAX facility. This was followed by receipt of more vaccines of Moderna, Johnson & Johnson (Janssen), Pfizer and Sinopharm from other Donors and Development Partners. The MOH launched a vaccination campaign and kicked off the deployment plan for the Covid-19 vaccines roll out on 5 March, 2021 with priority being given to front line health workers and essential staff including security personnel. According to the National Covid-19 vaccine deployment plan, the first vaccine plan was developed in March 2021 and was subsequently revised by the MOH in August 2021 in an effort to cover the entire adult population in the country.

As at 31 March, 2022 the Special Audit Team established that the Country and Counties had received 27,818,320 and 19,603,441 Covid-19 vaccine doses respectively as indicated in **Table 1** below.

**Table 1: Vaccines Doses Received in the Country and Counties**

Type of Vaccine	Received in the Country	Received in the Counties
Janssen (Ad26. COV2-S)	7,273,350	3,311,807
Moderna	2,325,260	2,384,739
Oxford/AstraZeneca	10,366,740	8,821,752
Pfizer	7,652,970	5,070,474
Sinopharm	200,000	8,705
Sputnik-V		5,964
<b>Total</b>	<b>27,818,320*</b>	<b>19,603,441</b>

\*Excludes Sputnik-V Vaccine doses receipts.

## 2.3 Objective of the Audit

The primary objective of the audit was to determine the efficiency and effectiveness of the Covid-19 vaccine roll-out in Country. This was achieved through; review of budgets, sources of the vaccines, storage, distribution, utilization and disposal of the vaccines, human resource, coordination of players, monitoring and supervision.

## 2.4 Terms of Reference

The following Terms of Reference (TOR) guided the Special Audit;

**Table 2: Terms of Reference**

TOR	Detailed Procedures
1. Budget	<ul style="list-style-type: none"> <li>• How much was set aside for vaccines and related activities and how the figures were arrived at</li> <li>• Budget approval process</li> <li>• Allocation of the funds i.e. specific budget items</li> <li>• Source of funds i.e. GOK and Donors</li> </ul>
2. Sources of Vaccines	<ul style="list-style-type: none"> <li>• GOK Procured vaccines, Development Partners donations and COVAX</li> <li>• Procurement process for GOK procured vaccines</li> <li>• Local and international approval of vaccines and syringes</li> <li>• Types and quantities of the vaccines from the different sources; and the vaccine shelf life and prices where applicable</li> <li>• Consider whether vaccines came with syringes or not and the effect</li> <li>• Vaccine Batch Numbers</li> <li>• Storage of defective vaccines/expired</li> <li>• Recording of vaccines</li> <li>• Government clearance process for vaccines sourced from outside the country</li> <li>• WHO rating of effectiveness of various vaccines.</li> <li>• Cost vs budget</li> </ul>
3. Storage of Vaccines	<ul style="list-style-type: none"> <li>• Manufacturer's requirements for storage of vaccines</li> <li>• Local storage capacity</li> <li>• Local storage conditions</li> <li>• Handling requirements</li> <li>• Transportation requirements</li> <li>• Recording including batch numbers</li> <li>• Stocking levels, process of issuing of vaccines as well as duration</li> <li>• Recording and accountability</li> <li>• Duration in store</li> <li>• Storage of defective vaccine and Syringes</li> <li>• Cost Vs Budget</li> </ul>
4. Distribution	<ul style="list-style-type: none"> <li>• How vaccines were distributed; logistics</li> <li>• Quantities of vaccines distributed</li> <li>• Proportion of vaccines distributed per region</li> <li>• Basis of quantities and proportions distributed e.g. population</li> <li>• Storage issues</li> <li>• Recording and accountability</li> </ul>

TOR	Detailed Procedures
	<ul style="list-style-type: none"> <li>• Cost vs budget</li> </ul>
<b>5. Utilization</b>	<ul style="list-style-type: none"> <li>• Awareness creation</li> <li>• Intended/ target population</li> <li>• Uptake per vaccine type</li> <li>• Rate of transition from first to second dose</li> <li>• Possibility of delayed administration of second dose</li> <li>• Matters relating to booster doses</li> <li>• Expired vaccines</li> <li>• Recording and accountability for vaccines received, utilized in stock and expired</li> <li>• Cost vs budget</li> </ul>
<b>6. Disposal</b>	<ul style="list-style-type: none"> <li>• Number of vaccines disposed</li> <li>• Criteria for disposal</li> <li>• Recording and accountability for the disposal</li> <li>• Reports and feedback</li> <li>• Reconciliation of what was procured, utilized, unused and disposals</li> <li>• Costs vs budgets</li> </ul>
<b>7. Human Resource Matters (National and County Staff)</b>	<ul style="list-style-type: none"> <li>• Number of persons involved</li> <li>• Roles and responsibilities</li> <li>• Expertise (capacity/skills)</li> <li>• Duplication of roles if any</li> <li>• Selection and appointment criteria</li> <li>• Training Plans and Roll Out</li> <li>• Costs vs budgets</li> </ul>
<b>8. Coordination of players</b>	<ul style="list-style-type: none"> <li>• Who are the key players?</li> <li>• Are the roles and responsibilities of the players clear?</li> <li>• Is there a framework for coordination and communication by the players?</li> <li>• Approval and appointment of task force and committees</li> <li>• Costs vs budgets</li> </ul>
<b>9. Monitoring and supervision</b>	<ul style="list-style-type: none"> <li>• Is there a framework for monitoring and supervision of players?</li> <li>• Approval and appointment of task force and committees</li> <li>• Costs vs budgets</li> </ul>

## **2.5 Scope of the Audit and Limitations**

### **2.5.1 Scope**

The audit reviewed all processes from the inception of Covid-19 vaccines roll out, budgeting, administration and disposal, including the governance and monitoring structures. The period covered was from inception in March 2021 to 31 March, 2022.

### **2.5.2 Limitations**

The Special Audit experienced challenges and limitations which were mitigated in several ways in order not to negatively affect the quality and results of the audit findings. Some of the challenges and measures taken included:

- a) Vaccinating Facilities in the Counties were not defined in the Chanjo System. This called for comprehensive coverage of physical verification of records, stocks and visits to all Facilities;
- b) Some Sub County Stores were also not defined in the Chanjo system while the vaccines moved direct from the Regional Vaccine Stores to one main facility per Sub County that distributes off the system. This also called for comprehensive coverage of physical verification of records, stocks and visits to all facilities;
- c) Accuracy and completeness of inventory records. The Audit Team corroborated information in the physical records such as order sheets and vaccines stock ledgers with information in the Chanjo System;
- d) Sub County Facilities did not maintain separate vaccines stocks ledgers from the Sub County Stores. This necessitated the Audit Team to take longer in understanding the processes and operations so as to reach an understanding on how to account for all the vaccines received at the Sub County;
- e) Most of the Vaccinating Facilities had inadequate staff. This was mitigated by performing desktop analysis work in the Chanjo System ahead of the field visits to the Facilities. Further the officers accompanying the Audit Team alerted the Facilities of the planned visits ahead of time to minimize on the disruption of service delivery during the visits; and

- f) Complementary physical records in some of Facilities were found to be incomplete including those mapped in the Chanjo System. The Special Audit Team relied on the Chanjo System for the information.

The Audit Team had to also use the data from the forms used for vaccines receipts, utilization and balances at the individual facilities and reconciled the data with the Chanjo System.

## **2.6 Audit Approach and Methodology**

The Special Audit Team held several planning meetings with the MOH officials on diverse dates between January and February 2022. This was followed by entry and exit meetings on 21 February 2022 and 8 June 2022 respectively. At the County level, the Special Audit Team held entry and exit meetings with the County Health Management Teams on 9 May, 2022 and 2 June, 2022 respectively. During the entry meetings, uniform and detailed work plans were developed and adopted which were then applied in the execution of the audit. The following were the main evidence gathering methods applied during the audit execution:

### **2.6.1 Document Review**

To effectively plan for the audit and as a source of audit evidence, the Audit Teams reviewed various documents including the vaccine order sheets, vaccine stock ledgers, various training reports, outreaches, co-ordination activities and seizure/destruction forms.

### **2.6.2 Analytical Review**

The Audit Teams extracted the vaccine data from the Chanjo System and carried comparative analysis with records at the Regional Vaccine Stores and Vaccinating Facilities.

### **2.6.3 Physical Verification**

The Audit Team carried out physical verifications in all the County Stores, Sub-County stores and Vaccinating Facilities in the Country.

#### **2.6.4 Interviews**

The Audit Team interviewed senior officials from the County Governments to clarify the various issues raised during the audit.

#### **2.7 Audit Phases**

The audit was divided into Two Phases; Phase One involved review of processes at The National Treasury, Office of the Controller of Budget and the Ministry of Health. It also involved analysis of data maintained in eLMIS, Chanjo System and Kenya Health Information System. The information was used by the Audit Teams to inform the second audit phase.

Phase Two involved review of processes, data and verifications at Regional Vaccine Stores, Sub County Stores and the Vaccinating Facilities in the Counties. This Phase also involved verification and interview of staff.

#### **2.8 Report Structure**

This report is presented in the following format:

- a) Executive Summary
- b) Background and Introduction
- c) Detailed Findings
- d) Irregularities and Weaknesses in Management and Controls of Vaccines in Institutions
- e) Recommendations
- f) Appendices

The report should be read in its entirety in order to comprehend fully the approach to and findings of the audit. The report has covered analysis and facts as understood with the aim of informing Parliament, The National Treasury and the Ministry of Health on the status of the Covid-19 Vaccines Roll Out in the Country, bearing in mind the challenges and limitations experienced.

### **3.0 DETAILED FINDINGS**

#### **3.1 National Operation Findings**

##### **3.1.1 Covid-19 Vaccination Budget**

The Ministry of Health had an approved budget for Covid-19 vaccination of Kshs.9,175,855,286 in the financial year 2020/2021. This amount included World Bank funding of Kshs.8,075,855,286.

The issues detailed below were found to be unsatisfactory:

##### **3.1.2 Unconfirmed Expenditure on Covid-19 Vaccination Support Services**

The Covid-19 vaccination budget of Kshs.9,175,855,286 excludes USD.4,306,517 (Kshs.465,103,836) from Global Alliance for Vaccine Immunization (GAVI) for advocacy, social mobilization, vaccine distribution and training among others. These funds were to be provided through WHO, UNICEF and Clinton Health Access Initiative (CHAI) as the agreed Implementing Agencies by GAVI. According to the GAVI decision letter of reporting requirements, these funds were to be included in the budget and managed in a transparent and accountable manner through the Country Integrated Financial Management Information System (IFMIS) to ensure utilization according to the purposes for which they are provided. However, although Management indicated the support was provided by the above Agencies, the amount was not included in the budget. Further, the expenditure reports detailing the value of the support services were not provided for audit review.

Consequently, it has not been possible to confirm the amount received and the corresponding expenditure incurred.

##### **3.1.3 Loan Amount and Payments made for Covid-19 Vaccines**

Included in the total budget of Kshs.9,175,855,286 is a World Bank funded portion of Kshs.8,075,855,286. The Ministry of Health had secured a loan facility from the World Bank on 13 July, 2021 of EUR.106,700,000 (Kshs.13,649,874,920) to procure Covid-19 vaccines and related supplies from the United Nations Children's Fund (UNICEF) amounting to USD.116,253,234 (Kshs.12,733,495,773). However, as at 31 March, 2022 eight (8) months after the agreement date, the funding was yet to be received at the MOH Project

Implementation account despite payments of Kshs.2,014,092,509 having been made from the Ministry's Development Account for the procurement of the vaccines.

#### **3.1.4 Grant Funds from Kenya Private Sector Alliance**

The total Covid-19 vaccination budget of Kshs.9,175,855,286 also includes a grant of Kshs.1,100,000,000 (USD.10,000,000) from Kenya Private Sector Alliance (KEPSA) in respect to a financing agreement dated 19 August, 2021 between KEPSA and the National Treasury to procure 1,000,000 doses of Johnson and Johnson vaccines. According to Article 3 (c) of the agreement, the Ministry was required to open a Special Deposit Account and a Project Account at the Central Bank of Kenya for receiving of the grant funds and project implementation respectively. On 7 September, 2021 USD.2,000,000 was received in the Special Deposit Account from KEPSA to procure and issue the First Phase of 200,000 doses. However, the vaccines were issued from the existing stock while the donated amount of USD.2,000,000 remained unutilized and idle in the SDA held at the Central Bank of Kenya Project account as at 31 March, 2022.

#### **3.1.5 Training and Capacity Building**

##### **i) Reporting of Training Expenses**

The total Covid-19 vaccination budget of Kshs.9,175,855,286 includes World Bank funded portion of Kshs.8,075,855,286 out of which Kshs.169,839,604 relates to training and capacity building. Review of payment vouchers indicates that the Ministry of Health paid Kshs.36,366,850 in respect to Covid-19 vaccination training expenses. However, this expenditure was not reported separately as Covid-19 project expenditure but was reported as part of the normal operations of the Ministry of Health. This is contrary to National Treasury Circular No. 9/2020 dated 23 July, 2020 which requires Ministries, Departments and Agencies to report disaster related expenditures separately.

##### **ii) National Vaccine Immunization Program and County Health Management Training**

Trainings for different levels of personnel in the National and County Governments were conducted immediately after introduction of the Covid-19 vaccines. Review of the supporting documents provided revealed that:

In the First training, a total of one hundred and twenty (120) National Vaccine Immunization Programme level officers and County Government Officers were trained.

The training took place at the Tamarind Hotel on 2 and 3 March, 2021 and covered administration, dosage, reconstitution, storage, eligibility criteria of the vaccines, myths and misconceptions surrounding the vaccines, side effects, cold chain systems, skills to train at the operational level and the roles of the partners and Counties. The Training was conducted by the Ministry of Health at a cost of Kshs.444,000.

The Second training took place at the Crowne Plaza on 18 March 2021. It was explained that the CHAI facilitated and supported the training. Provided was an attendance register with 58 participants, however, supporting documentation including the training plan, training timetable and the cost to the donor were not provided for audit review. Further, no correspondence or documentation regarding donor facilitation and support were provided for audit review.

The Third training also took place at the Crowne Plaza on 19 and 20 of August, 2021. The training involved representatives from the MOH, County Departments of Health, Center for International Health, Education, and Biosecurity, Medicines, Technologies and Pharmaceutical Services Program-USAID, UNICEF, WHO and CHAI. The training covered Covid-19 vaccine introduction and multiple deployment of vaccines. Provided was a training report, training timetable/program and invitation for the training. However, an attendance list and the cost to the facilitator was not provided for audit review.

### **iii) Sub County Health Management Training**

The Ministry of Health approved Kshs.57,258,000 in March 2021 for training and capacity building of Sub County health management teams from each of the 300 Sub Counties and two vaccinators per health facility for Level IV and V health care facilities. Subsequently, imprest amounting to Kshs.49,281,600 was paid to County technical leads to train 3,148 health care workers in 658 health care facilities.

Review of imprest surrenders documents provided for audit revealed the following anomalies:

#### **a) Failure to Provide Imprest Surrenders and Training Reports**

The audit team reviewed imprest surrenders and noted that MOH trained 2,503 health care workers at a cost of Kshs.30,370,350. However, supporting documents including imprest surrenders for Siaya, Machakos, Laikipia and Samburu Counties amounting to

Kshs.3,303,200 were not provided to the audit team for review. Additionally, except for Trans Nzoia and Lamu Counties, training reports relating to each training in the rest of the 45 Counties were not provided for audit review. Consequently, the Audit Teams could not ascertain whether health care workers in the aforementioned Counties were trained.

#### **b) Overpayment of Daily Subsistence Allowance**

SRC Circular Ref No: SRC/ADMN/CIR/1/13/VOL. IV (2) dated 25 January, 2018 states that daily subsistence allowance for job group F to J is Kshs.6,300 for cities, Kshs.4,900 for County Headquarters, Malindi and Naivasha and Kshs.4,200 for all other towns.

The Audit Team noted that MOH paid the health care workers a flat rate of Kshs.6,300 irrespective of the town in which the training was being held. Only health care workers trained in Mombasa, Nairobi and Kisumu should have been paid at the rate of Kshs.6,300 per day. However, health care workers trained in the remaining 44 Counties should have been paid at the rate of Kshs.4,900 per day and not Kshs.6,300 leading to an overpayment of Kshs.1,400 per day. This resulted into overpayment of daily subsistence allowance of Kshs.4,247,600.

### **3.2 Sources and Distribution of Vaccines**

Documents provided for audit revealed that on arrival in the Country, Covid-19 Vaccines should ideally be transferred to the National Vaccine Store (NVS) which in turn distributes to the Regional Vaccine Stores (RVS). The RVS were then to distribute to the County Stores, which in turn distributes to Sub County Stores and ultimately to the facilities. However, actual vaccine distribution did not consistently follow this flow. In some instances, vaccines were distributed directly from the NVS to the facilities or from RVS to facilities or County Stores to facilities by-passing some of the distributional channels. There were also instances of inter-regional, inter County, Inter Sub County and Inter facility transfers. Failure to adhere to the ideal vaccine distribution flow coupled with the weak inbuilt controls over inventory management over the Chanjo System led to misstatements of the vaccine receipts and dispatches in the system.

The distribution of vaccines at National level took place at two levels namely the NVS and RVS.

### 3.2.1 Distribution at the National Vaccine Store

The Country had received 27,818,320 vaccine doses from donors and own purchase as at 31 March, 2022. Of the receipts, 23,588,350 doses had been dispatched to the RVS while 3,207,440 were still in stock. This is summarized in Table 3 below and detailed in Appendix I:

**Table 3: Vaccines Received and Distributed at the National Vaccine Store**

Vaccine	Doses Received	Doses Dispatched	Physical Count	Unexplained Variance
Janssen (Ad26.COVID-19-S)	7,273,350	4,786,950	2,284,800	201,600
Moderna	2,325,260	2,311,820	-	13,440
Oxford/AstraZeneca	10,366,740	9,959,060	60,000	347,680
Pfizer	7,652,970	6,500,520	692,640	459,810
Sinopharm SARS	200,000	30,000	170,000	-
<b>Grand Total</b>	<b>27,818,320</b>	<b>23,588,350</b>	<b>3,207,440</b>	<b>1,022,530</b>

The variance of 1,022,530 vaccine doses represents unexplained and unreconciled variances between vaccine doses received at the NVS, doses dispatched to RVS and stocks at hand as at 31 March 2022.

### 3.2.2 Distribution at the Regional Vaccine Store (RVS)

The Chanjo System indicates 27,461,487 vaccine doses were received at the Regional Vaccines Stores as at 31 March, 2022. However, the System also indicates dispatches from the National Vaccine Store to RVS for the same period totaled to 23,588,350 doses resulting to a variance of 3,873,137 vaccine doses as indicated in Table 4 below and detailed in Appendix II.

**Table 4: Vaccine Distribution at the Regional Vaccine Stores**

Vaccine	Doses Received	Doses Dispatched	Physical Count	Unexplained Variance
Janssen (Ad26.COVID-19-S)	6,017,425	4,167,544	1,323,085	526,796
Moderna	2,495,684	2,352,624	0	143,060
Oxford/AstraZeneca	11,384,088	10,237,130	776,241	370,717
Pfizer	7,534,290	5,432,913	1,385,304	716,073
Sinopharm SARS	30,000	8,716	21,279	5
<b>Grand Total</b>	<b>27,461,487</b>	<b>22,198,927</b>	<b>3,505,909</b>	<b>1,756,651</b>

Reconciliations carried out between the dispatches at NVS and the receipts at the RVS revealed the following anomalies: -

- a) Vaccine doses totaling to 1,575,566 were received at the RVS without having been dispatched from the NVS. This was attributed to inter Regional Vaccine Stores transfers for which the System failed to deduct the transferred vaccine doses from the Source Stores;
- b) Vaccine doses dispatches totaling to 7,624,570 by the NVS were receipted as 9,997,989 doses resulting in to an over receipt of 2,373,419 doses in the System; and
- c) Dispatches totaling to 146,580 by NVS to RVS and facilities were receipted as 70,732 doses resulting to an under receipting of 75,848 doses.

As at the time of the Special Audit, no action had been taken to correct the erroneous transactions totaling to 3,873,187 doses in the System.

Furthermore, the aggregation of the unexplained variances in **Tables 3 and 4** which ideally should be equal to the variance in table 5 below resulted to a total of 2,779,181 which differs with the unexplained variance of 1,566,973 in **Table 5** on utilization and transfer of vaccines between National and Regional Vaccine Store.

### **3.2.3 Vaccine Distribution at the National Level**

Vaccine receipts are accounted for at the two levels, National and County. The National level is accountable for the vaccine doses from receipt at the Port of entry through NVS to RVS until dispatched to the Counties. The Counties in turn take charge on receipt of the Vaccines from the National level until usage is accounted for.

Examination of records maintained in the Chanjo System revealed that as at 31 March, 2022, a total of 27,818,320 vaccine doses had been received in the Country. Out of the 27,818,320 Covid-19 vaccine doses received, 19,597,477 vaccine doses had been dispatched and receipts confirmed at the Counties while 6,713,349 were in stock as at 31 March, 2022. The balance of 1,566,973 was the unexplained/unreconciled deficit variance valued at Kshs.920,711,963 as summarized below in **Table 5** below.

**Table 5: Vaccine Distribution at National Level - National and Regional Vaccine Stores**

Vaccine	Doses Received	Doses to Counties	Physical Count	Unexplained Variance	Estimate Price per Dose (Kshs)	Total Amount (Kshs)
Janssen	7,273,350	3,311,807	3,607,885	353,658	753	266,310,504
Moderna	2,325,260	2,384,739	-	(59,479)	505	-
Oxford/Astr	10,366,740	8,821,752	836,241	708,747	446	316,258,031
Pfizer	7,652,970	5,070,474	2,077,944	504,552	670	338,134,524
Sinopharm	200,000	8,705	191,279	16	557	8,904
<b>Grand Total</b>	<b>27,818,320*</b>	<b>19,597,477</b>	<b>6,713,349</b>	<b>1,566,973</b>		<b>920,711,963</b>

\*Excludes Sputnik-V vaccine dose of 5,964

#### **3.2.4 Sputnik-V Vaccine**

The Special Audit noted that Nairobi City and Kiambu Counties received 5,005 and 959 doses of Sputnik-V Vaccine respectively, totaling 5,964 doses. The Vaccines were reported to have been received from the Nairobi Regional Vaccine Store for Nairobi City County and Bliss Health Care headquarters in Nairobi for Kiambu County. Out of the doses received, Nairobi City County reported having administered 3,859 doses while Kiambu County only administered 39 doses. The stock take exercise revealed Nil balances for the Sputnik-V Vaccine for both Counties. There was also no documentary evidence on how the balances of 1,146 and 920 for Nairobi City County and Kiambu County respectively, were accounted for. Further, the Special Audit could not establish whether the Sputnik-V Vaccine were procured by the Government of Kenya or were donations by the Development Partners as they were not processed through the Chanjo System.

### **3.3 Counties Operations Findings**

#### **3.3.1 Budgets and Sources of Vaccines**

##### **i) Unconfirmed Funding of Covid-19 Vaccination Activities**

Review of the Counties health services budgets for the 2021/2022 financial year revealed that the Counties did not budget for the Covid-19 vaccination activities. Covid-19 vaccination costs, including transportation, training and capacity building and procurement of auxiliary services such as syringes and safety boxes could not, therefore, be traced to specific budgets, an indication that they were not budgeted for. This was

contrary to Regulations 29. (1) of the Public Finance Management (County Governments) Regulations, 2015 which states that the Accounting Officer shall ensure that the draft estimates relating to her or his department are prepared in conformity with the Constitution, the Public Finance Management Act and the Public Finance Management Regulations. Management however, indicated that the expenditures were met by partner organizations, but this was not supported by way of any documentary evidence such as agreements.

### **3.3.2 Sources of Vaccines**

The Counties received 19,603,441 vaccines between March 2021 and 31 March 2022 from the National Government. A review of the Counties Health Services Budgets for the 2021/2022 financial year revealed that there were no provisions for the Covid-19 vaccine roll out.

### **3.4 Storage of Vaccines**

According to World Health Organization (WHO) Guidelines (Covid-19 vaccination: supply and logistics guidance, 12 February 2021) the Covid-19 vaccines should be stored as follows:

- a) Pfizer should be maintained at -80 °C to -60 °C in Ultra Low Temperatures (ULT) freezer, and for Undiluted thawed vaccine at +2 °C to +8 °C;
- b) Moderna should be maintained at -25 °C to -15 °C in ULT freezer, and unopened vials can be stored refrigerated between 2 °C to 8 °C for up to 30 days prior to first use;
- c) Oxford/AstraZeneca should be maintained at 2 °C to 8 °C; and
- d) Further, Centre for Disease Control (CDC) clinical guidance for Janssen Covid-19 Vaccine recommend storing of the vaccine at temperatures between 2°C and 8°C.

The storage conditions applied to the Regional, Sub - County and Facility Stores.

#### **3.4.1 Storage at the County and Sub-Counties Stores**

Review of documents provided for audit and physical verifications carried out at the Sub-Counties stores revealed various issues. The Special Audit Teams confirmed that Sub-County Stores did not have adequate written procedures on sanitation and pest control. Maintenance of cleaning logs were found to be insufficient.

### **3.4.2 Storage at the Facilities Level**

Review of documents provided for audit and physical verifications carried out at the Facilities revealed various issues. The Special Audit Teams confirmed that a significant number of Covid-19 Vaccinating Facilities did not have written procedures on sanitation, clean-up of spillages and maintenance of cleaning logs.

## **3.5 Distribution of Vaccines**

### **3.5.1 Distribution at County Level**

Documents provided for audit revealed that on arrival of Covid-19 Vaccines in the Country, they should be transferred to the National Vaccine Store which in turn distributes to the Regional Vaccine Stores. The Regional Vaccine Stores were then to distribute to the County Stores, which in turn distributes to Sub County Stores and to Facilities. The Counties had received 19,603,441 vaccine doses of the 27,818,320 doses received in the Country as at 31 March, 2022.

According to the National Policy Guidelines on Immunization, 2013, Storage And Transportation of Vaccines and Diluents, at all stages of vaccine transportation, a cold chain monitor must always accompany all vaccines whether in cold boxes, vaccine carriers or portable fridges and the temperature readings must be maintained between +2°C and +8°C, including age of conditioned ice packs. Diluents need not be transported at +2°C to +8°C unless they are being transported for outreach activities.

The Special Audit revealed that some of the Sub County Stores and Vaccinating Facilities failed to monitor temperatures during transportation of the vaccines. As a result, it may not be possible to ascertain if the temperatures deviated from the specified ranges.

## **3.6 Utilization of Vaccines**

Examination of records maintained in the Chanjo System revealed that 19,603,441 vaccine doses had been received in the Counties as at 31 March, 2022. Out of the 19,603,441 Covid-19 vaccine doses received, 16,933,213 vaccine doses were administered, 749,362 were in stock while the balance of 697,624 were either expired, damaged or had gone to waste as summarized below in **Table 6** below and detailed in **Appendix III**. There was however, an unexplained and unreconciled deficit variance of 1,223,242 vaccines doses.

**Table 6: Utilization of Vaccines at the County Level**

Vaccine Type	Doses Received	Doses Administered	Doses In Stock	Doses Expired	Doses Damaged	Doses Wasted	Unexplained Variance Doses	Estimate Price per Dose (Kshs)	Total Amount (Kshs)
Janssen	3,311,807	2,662,551	401,332	14,529	3,206	31,433	198,756	753	149,663,268
Moderna	2,384,739	1,956,537	37,107	10,846	2,069	42,768	335,412	505	169,383,060
Oxford/AstraZeneca	8,821,752	8,324,190	151,699	201,887	16,210	98,587	29,179	446	13,013,834
Pfizer	5,070,474	3,977,994	159,168	173,686	12,988	89,415	657,223	670	440,339,410
Sinopharm	8,705	8,043	56	0	0	0	606	557	337,542
Sputnik-V	5,964*	3,898	0	0	0	0	2,066	1,073	2,216,818
<b>Total</b>	<b>19,603,441</b>	<b>16,933,213</b>	<b>749,362</b>	<b>400,948</b>	<b>34,473</b>	<b>262,203</b>	<b>1,223,242</b>		<b>774,953,932</b>

\*Sputnik-V doses were not recorded in the Stocks ledger in the Chanjo System.

### 3.6.1 Administered Doses

The Chanjo System indicates that a total of 17,520,494 vaccine doses had been administered in the Counties as at 31 March, 2022. The administered doses are as summarized in Table 7 below:

**Table 7: Administered Vaccines in the Chanjo System**

Vaccine Type	First Dose	Second Dose	Booster Dose	Total
Janssen (Ad26.COv2-S)	2,769,904	39,008 *	2,686	2,811,598
Moderna	1,284,729	856,494	19,533	2,160,756
Oxford/AstraZeneca	4,984,522	3,486,613	93,469	8,564,604
Pfizer	2,673,330	1,125,422	172,851	3,971,603
Sinopharm	4,884	3,162	-	8,046
Sputnik-V	2,081	1,806	-	3,887
<b>Total</b>	<b>11,719,450</b>	<b>5,512,505</b>	<b>288,539</b>	<b>17,520,494</b>

\*Second dose vaccine administration for Janssen

The records accessed from the Chanjo Systems indicates second dose vaccine for Janssen of 39,008. It could not be established how the second dose vaccine could have been recorded in the Chanjo System as Janssen is a single dose vaccine.

The disparity between the administered doses in the trackers used during audit and the administered doses from the Chanjo System of 587,281 doses for the same period (1 March, 2021 and 31 March, 2022) was traced to retrospective entries of vaccinations the System.

### **3.6.2 Expired Doses**

These are vaccine doses that had not been administered as at the time of the manufactures use by date indicated on the vials totaling to 400,948 doses. Expired doses from the Facilities were reported to have been sent to Sub County Stores, which in turn transported the same to the Regional Vaccines Store.

### **3.6.3 Damaged Doses**

These were vaccines that were not administered as the vaccine vials had been damaged. All the damaged vaccine totalling to 34,473 doses in the Counties had been disposed off by the time of the Special Audit in May, 2022.

### **3.6.4 Wasted Doses**

These were vaccine doses that were not administered due to failure to utilize within the stipulated timelines upon opening of the vials. 262,203 vaccine doses were reported as wasted in the Counties and had been disposed off by the time of the Special Audit in May 2022.

### **3.6.5 Unexplained and Unreconciled Vaccine Variances**

Documents provided for audit revealed that 19,603,441 vaccine doses were received in the Counties. However, reconciliation of the vaccines received, administered, in stock, expired, damaged and wasted revealed an unexplained deficit/variance of 1,223,242 doses valued at an estimated cost of Kshs.774,953,932. The following weakness observed during the audit may have contributed to the unexplained deficit/variance:

- a) Wastage not reported at the Facilities;
- b) Vaccines doses utilized during the outreaches or in Facilities not defined in the Chanjo System, may not have been subsequently updated; and
- c) Vaccination data may not have been entered accurately, causing over-administration in some batches and under-administration in others in the records.

### **3.6.6 Vaccinating Facilities Not Defined In Chanjo System**

Documents provided for audit review revealed that 973 of the total vaccinating facilities of 4,255 were not mapped in the Chanjo System as detailed in **Appendix IV**.

### **3.7 Disposal of Vaccines**

Review of documents provided for audit revealed non-compliance with the disposal requirements as per Section 6.1 of the WHO Standard Operating Procedures (SOP) on waste management of Covid-19 vaccines vials and ancillary supplies. The procedures states that any used or discarded Covid-19 vaccine vials **MUST** be collected safely and separately from the rest of the waste. Both the empty vials and those with remaining vaccine doses discarded at the end of the daily vaccination activity shall be collected and safely stored until they are collected for final treatment and disposal. These vials should be counted and recorded by the responsible team for the purpose of vaccination activity analysis (e.g. utilization, coverage, wastage, etc.). Further, Section 6.6 provides that neutralized Covid-19 vaccine vials can be safely disposed in a manner that is not accessible or reusable, and neither being an environmental nor a health threat.

In the circumstance, the undisposed expired vaccines may pose a health risk to the general public and the health officers. Further, the audit revealed that disposal of the damaged and wasted vaccines in Facilities did not comply with the guidelines provided by WHO on waste management of used Covid-19 vaccines vials and ancillary supply. Further, Sub County Stores and Vaccinating Facilities failed to record or account for vaccines vials in the vaccine inventory report.

### **3.8 Human Resource Matters**

#### **Training at County Level**

The health care workers were to be trained and were required to be competent on; knowledge on Covid-19 disease; knowledge and skills in Covid-19 Vaccine demand creation, health facility preparation, safe vaccine administration, infection control practices, patient data management, adverse event reporting and management, documentation and monitoring of vaccine utilization and logistics, communication, waste management, mental health and multi-disciplinary team work.

Immediately after the Covid-19 vaccination programme was rolled out, trainings for different levels of personnel in the National and County Governments were conducted. County Health Management Teams indicated that trainings in all the Sub Counties were undertaken through the support of Development Partners. However, other than the budget allocations by Counties and Sub Counties, no other supporting documentation was provided for audit review to support partnership agreements.

The Counties and Sub Counties, however provided supporting documentation including the training plan, training timetable, venue, and the attendance lists. In the foregoing, the Special Audit Team could not establish the adequacy engagements of the Human Resources in the Covid-19 vaccines roll out programme.

### **3.9 Coordination of Players**

#### **Coordination at County Level**

According to the National Covid-19 Vaccine Deployment Plan 2021, the County Emergency Covid-19 Response Committees were to be adapted to form the Steering Committees. Review of documents provided for audit at the Counties, Sub- Counties and Facilities revealed anomalies as detailed in specific County reports.

Sub Counties which had established Co-ordination Task Force did not provided any documentation on the Terms of Reference, thus it was not possible to establish compliance.

### **3.10 Monitoring and Supervision**

#### **Monitoring and Supervision at the County and Facilities Level**

Review of documents provided for audit at the various levels of Covid-19 management revealed anomalies as detailed in specific County reports.

The Facilities failed to monitor temperatures during transportation of vaccines and as a result it was not be possible to ascertain deviations beyond the acceptable standards set by WHO. Further, Facilities had received tablets from the MOH for use in recording vaccine receipts and administration. Facilities that had received the tablets, reported their tablets as functional and in use. However, some facilities reported that they had not received the monthly airtime. Similarly, the Sub County Stores had each received tablets from MOH

which were in good working condition. Some Sub Counties personnel indicated they had not received the monthly airtime.

Consequently, there were inconsistencies in the release of the monthly airtime for the tablets in the Facilities and the Sub Counties which may have frustrated the staff.

#### 4.0 IRREGULARITIES AND WEAKNESSES IN MANAGEMENT AND CONTROLS OF VACCINES IN INSTITUTIONS AND RECOMMENDATIONS

##### Irregularities and Weaknesses at the County and Sub-County Level and Recommendations

The following irregularities and weaknesses and the corresponding recommendations were observed by the Special Audit at the County and Sub County levels.

**Table 8 :Irregularities and Weaknesses at the County and Sub County Level**

	<b>Irregularities and Weaknesses</b>	<b>Recommendations</b>
1.	Inconsistent use and delays in updating of the Chanjo system	Proper accountability of vaccines receipts, issues and utilization should be done through consistent use and updating in Chanjo System
2.	Most of the Facilities that were not defined in the Chanjo system were using eLMIS which is not the official system for the Covid-19 vaccine roll out and vaccine doses management. Consequently, there were notable inaccuracies and incomplete records	We recommend use of the Chanjo System to account for Covid-19 vaccines. For those Facilities not in Chanjo System, we recommend that they are defined for accountability purposes.
3.	Inadequate staffing of the vaccinators who at times doubled up to register the people being vaccinated	The County Governments should have adequate number of staff in their health Facilities to meet the increasing demand for the services
4.	The health records information officers/data clerks would at times feed in the system wrong batch numbers and wrong dates for vaccine administration. There would be instances of late data entries leading to loss of data where the information captured manually was not clear	The County should do follow-ups or reviews of work done by the officers to improve service delivery. Data should be captured on a real or near real time basis in the Chanjo system
5.	Lack of proper inventory records on the tablets in regard to distribution - up to the facility level and condition of the tablets	The County Governments should maintain proper and up-to-date inventory records on the tablets under custody of the Counties and undertake regular maintenance
6.	Failure to record expired/damaged/wasted vaccines	Management should institute proper recording measures of the expired/wasted/damaged vaccines
7.	Lack of a County budgets for Covid-19 vaccine roll out activities.	The Counties should budget for Covid-19 vaccine activities.

	<b>Irregularities and Weaknesses</b>	<b>Recommendations</b>
8.	Non-facilitation of the teams at Facilities and Sub Counties with airtime, internet bundles, and subsistence allowances	Management should ensure teams participating in the vaccination program are facilitated as appropriate for effective performance of their functions
9.	Inconsistent use and delays in updating of the Chanjo System.	Proper accountability of vaccines receipts, issues and utilization should be done through consistent use and updating in the Chanjo System
10.	Inadequate staffing of the vaccinators who at times doubled up to register the people being vaccinated	The County Government should have adequate number of staff in their Health Facilities to meet the demand for the services


## 5.0 CONCLUSION

The objective of the Special Audit was to determine the efficiency and effectiveness of the Covid-19 vaccine roll-out at the National and County level. Out of the 27,818,320 Covid-19 vaccine doses received in the Country, 19,597,477 doses had been dispatched and receipts confirmed at the Counties while 6,713,349 vaccine doses were in stock as at 31 March, 2022. However, there was unexplained/unreconciled deficit and variance of 1,566,973 vaccine doses valued at Kshs.920,711,963 at the National level.

Following the findings at the County Level, the Counties should ensure that all Vaccinating Facilities are defined in the Chanjo System, and effective supervision of the activities at the Counties, Sub Counties and Facilities on all matters relating to receipts, issues and administering of vaccines is instituted. The noted weaknesses resulted in an unexplained/unreconciled deficit variance of 1,223,242 vaccine doses valued at Kshs.774,953,932 based on the average Vaccine cost during the period at the County level.

In aggregate, the Special Audit established the unexplained/unreconciled deficit variance at the National and the County levels totaled to 2,790,215 vaccine doses valued at Kshs. 1,695,665,895 as at 31 March 2022. The unexplained/unreconciled deficit variances at National and County level should be reconciled to determine the actual position with a view of investigating all the residual unexplained balances and anomalies.

The Counties should also adhere to the cold chain and supply logistics guidelines as issued by WHO and MOH. In order to meet the increasing demand for health services, there is need to continuously assess the adequacy of health workers and build their capacity for effective service delivery to the citizens.

  
CPA Nancy Gathungu, CBS  
**AUDITOR-GENERAL**

8 July, 2022

**Nairobi**

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Report of the Auditor-General on the Consolidated Special Audit of Covid-19 Vaccine Roll Out in Kenya as at 31 March, 2022

## 6.0 APPENDICES

### APPENDIX I: VACCINES RECEIVED AND DISTRIBUTED AT THE NATIONAL VACCINE STORE

Vaccine	Batch	Doses Received	Doses Dispatched	Physical Count	Unexplained Variance
Janssen (Ad26.COVS-2-S)	202E21A	804,000	804,000	-	-
Janssen (Ad26.COVS-2-S)	217D21A	373,350	373,350	-	-
Janssen (Ad26.COVS-2-S)	ACB6047	573,600	151,200	422,400	-
Janssen (Ad26.COVS-2-S)	ACB6050	36,000	-	36,000	-
Janssen (Ad26.COVS-2-S)	ACB6958	1,488,000	530,400	756,000	201,600
Janssen (Ad26.COVS-2-S)	ACB6959	1,531,200	820,800	710,400	-
Janssen (Ad26.COVS-2-S)	ACB7168	662,400	302,400	360,000	-
Janssen (Ad26.COVS-2-S)	XE436	141,600	141,600	-	-
Janssen (Ad26.COVS-2-S)	XE442	504,000	504,000	-	-
Janssen (Ad26.COVS-2-S)	XE443	252,000	252,000	-	-
Janssen (Ad26.COVS-2-S)	XE528	907,200	907,200	-	-
<b>Janssen (Ad26.COVS-2-S) Total</b>		<b>7,273,350</b>	<b>4,786,950</b>	<b>2,284,800</b>	<b>201,600</b>
Moderna	019F21A	547,680	547,680	-	-
Moderna	049E21A	507,360	507,360	-	-
Moderna	050E21A	373,100	373,100	-	-
Moderna	061E21A	332,640	332,640	-	-
Moderna	940906	564,480	551,040	-	13,440
<b>Moderna Total</b>		<b>2,325,260</b>	<b>2,311,820</b>	<b>-</b>	<b>13,440</b>
Oxford/AstraZeneca	210005	160,800	160,800	-	-
Oxford/AstraZeneca	210102	48,000	48,000	-	-
Oxford/AstraZeneca	210105	21,600	21,600	-	-
Oxford/AstraZeneca	210152	55,200	55,200	-	-
Oxford/AstraZeneca	210155	800	800	-	-
Oxford/AstraZeneca	210157	211,200	211,200	-	-
Oxford/AstraZeneca	210180	105,600	105,600	-	-
Oxford/AstraZeneca	210215	184,800	184,800	-	-
Oxford/AstraZeneca	210216	683,700	634,900	-	48,800
Oxford/AstraZeneca	210217	684,300	684,300	-	-
Oxford/AstraZeneca	210218	151,200	151,200	-	-
Oxford/AstraZeneca	210304	667,200	667,200	-	-
Oxford/AstraZeneca	210343	98,400	98,400	-	-
Oxford/AstraZeneca	210548	40,000	40,000	-	-
Oxford/AstraZeneca	4120Z029	63,810	63,810	-	-
Oxford/AstraZeneca	4120Z029.	12,000	12,000	-	-
Oxford/AstraZeneca	4120Z030	956,190	924,190	-	32,000
Oxford/AstraZeneca	4121Z010	172,000	162,000	-	10,000
Oxford/AstraZeneca	4121Z253	278,330	278,330	-	-
Oxford/AstraZeneca	4121Z255	221,670	161,670	60,000	-
Oxford/AstraZeneca	77946	200,000	200,000	-	-
Oxford/AstraZeneca	AB0024	300,000	300,000	-	-

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Vaccine	Batch	Doses Received	Doses Dispatched	Physical Count	Unexplained Variance
Oxford/AstraZeneca	ABW0891	130,700	130,700	-	-
Oxford/AstraZeneca	ABW2953	14,400	14,400	-	-
Oxford/AstraZeneca	ABW4805	196,800	196,800	-	-
Oxford/AstraZeneca	ABW9941	16,800	16,800	-	-
Oxford/AstraZeneca	ABX4044	50,000	50,000	-	-
Oxford/AstraZeneca	ABY9147	130,000	130,000	-	-
Oxford/AstraZeneca	ABZ4667	5,600	5,600	-	-
Oxford/AstraZeneca	ABZ8944	226,700	175,200	-	51,500
Oxford/AstraZeneca	ABZ8962	175,200	226,700	-	(51,500)
Oxford/AstraZeneca	ACA1948	216,000	216,000	-	-
Oxford/AstraZeneca	ACB1237	115,200	115,200	-	-
Oxford/AstraZeneca	ACB1252	168,000	168,000	-	-
Oxford/AstraZeneca	ACB3580	484,800	324,000	-	160,800
Oxford/AstraZeneca	ACB3796	439,200	439,200	-	-
Oxford/AstraZeneca	No44A	200,200	104,120	-	96,080
Oxford/AstraZeneca	NH0239	358,200	358,200	-	-
Oxford/AstraZeneca	NH0296	101,100	101,100	-	-
Oxford/AstraZeneca	NJ0139	160,800	160,800	-	-
Oxford/AstraZeneca	NL0249	234,100	234,100	-	-
Oxford/AstraZeneca	NL0251	609,100	609,100	-	-
Oxford/AstraZeneca	NN0195	200,000	200,000	-	-
Oxford/AstraZeneca	PV46704	67,200	67,200	-	-
Oxford/AstraZeneca	PV46705	339,840	339,840	-	-
Oxford/AstraZeneca	PV46707	410,000	410,000	-	-
<b>Oxford/AstraZeneca Total</b>		<b>10,366,740</b>	<b>9,959,060</b>	<b>60,000</b>	<b>347,680</b>
Pfizer	32131BD	1,041,300	1,041,300	-	-
Pfizer	33040BD	179,010	179,010	-	-
Pfizer	34015BD	656,370	656,370	-	-
Pfizer	35065BD	456,300	230,490	225,810	-
Pfizer	36302BA	60,840	60,840	-	-
Pfizer	FG3532	1,310,400	1,310,400	-	-
Pfizer	FG3534	58,500	58,500	-	-
Pfizer	FG3536	3,510	3,510	-	-
Pfizer	FJ8759	987,480	527,670	-	459,810
Pfizer	FL3208	1,000,350	1,000,350	-	-
Pfizer	FR2458	234,000	234,000	-	-
Pfizer	FT5331	1,664,910	1,198,080	466,830	-
<b>Pfizer Total</b>		<b>7,652,970</b>	<b>6,500,520</b>	<b>692,640</b>	<b>459,810</b>
Sinopharm SARS	2021071947	146,948	-	146,948	-
Sinopharm SARS	2021071948	53,052	30,000	23,052	-
<b>Sinopharm SARS Total</b>		<b>200,000</b>	<b>30,000</b>	<b>170,000</b>	<b>-</b>
<b>Grand Total</b>		<b>27,818,320</b>	<b>23,588,350</b>	<b>3,207,440</b>	<b>1,022,530</b>

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**APPENDIX II: VACCINE DISTRIBUTION AT THE REGIONAL VACCINE STORES**

<b>Regional Store</b>	<b>Vaccine</b>	<b>Receipt</b>	<b>Dispatch</b>	<b>Total Physical Count</b>	<b>Unexplained Variance</b>
Garissa	Janssen (Ad26.CO2-S)	83,985	72,000	11,985	-
Garissa	Oxford/AstraZeneca	65,436	63,916	1,520	-
<b>Garissa Total</b>		<b>149,421</b>	<b>135,916</b>	<b>13,505</b>	-
Kakamega	Janssen (Ad26.CO2-S)	1,013,550	663,250	40,200	310,100
Kakamega	Moderna	344,400	204,960	-	139,440
Kakamega	Oxford/AstraZeneca	1,028,480	817,950	87,980	122,550
Kakamega	Pfizer	1,492,410	965,910	155,610	370,890
<b>Kakamega Total</b>		<b>3,878,840</b>	<b>2,652,070</b>	<b>283,790</b>	<b>942,980</b>
Kisumu	Janssen (Ad26.CO2-S)	639,200	627,200	3,000	9,000
Kisumu	Moderna	246,720	248,640	-	(1,920)
Kisumu	Oxford/AstraZeneca	1,147,490	1,136,820	10,670	-
Kisumu	Pfizer	1,357,200	1,058,850	298,350	-
<b>Kisumu Total</b>		<b>3,390,610</b>	<b>3,071,510</b>	<b>312,020</b>	<b>7,080</b>
Meru	Janssen (Ad26.CO2-S)	431,400	337,150	27,850	66,400
Meru	Moderna	68,670	68,670	-	-
Meru	Oxford/AstraZeneca	487,100	408,074	72,470	6,556
Meru	Pfizer	352,170	277,285	64,350	10,535
<b>Meru Total</b>		<b>1,339,340</b>	<b>1,091,179</b>	<b>164,670</b>	<b>83,491</b>
Mombasa	Janssen (Ad26.CO2-S)	533,600	434,900	97,450	1,250
Mombasa	Moderna	188,160	187,460	-	700
Mombasa	Oxford/AstraZeneca	1,013,950	800,299	202,200	11,451
Mombasa	Pfizer	587,340	274,950	312,390	-
<b>Mombasa Total</b>		<b>2,323,050</b>	<b>1,697,609</b>	<b>612,040</b>	<b>13,401</b>
Nairobi	Janssen (Ad26.CO2-S)	1,891,390	1,057,894	813,300	20,196
Nairobi	Moderna	1,021,762	1,010,402	-	11,360
Nairobi	Oxford/AstraZeneca	4,860,902	4,430,062	352,600	78,240
Nairobi	Pfizer	1,875,510	1,525,982	312,390	37,138

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Regional Store	Vaccine	Receipt	Dispatch	Total Physical Count	Unexplained Variance
Nairobi	Sinopharm SARS	30,000	8,716	21,279	5
<b>Nairobi Total</b>		<b>9,679,564</b>	<b>8,033,056</b>	<b>1,499,569</b>	<b>146,939</b>
Nakuru	Janssen (Ad26.COVID-19)	561,100	298,000	263,100	-
Nakuru	Moderna	184,800	184,380	-	420
Nakuru	Oxford/AstraZeneca	1,216,970	1,191,189	15,500	10,281
Nakuru	Pfizer	841,230	636,330	200,094	4,806
<b>Nakuru Total</b>		<b>2,804,100</b>	<b>2,309,899</b>	<b>478,694</b>	<b>15,507</b>
Nyeri	Janssen (Ad26.COVID-19)	304,800	235,000	66,200	3,600
Nyeri	Moderna	208,492	237,132	(28,640)	-
Nyeri	Oxford/AstraZeneca	708,320	675,019	33,301	-
Nyeri	Pfizer	459,810	415,650	42,120	2,040
<b>Nyeri Total</b>		<b>1,681,422</b>	<b>1,562,801</b>	<b>112,981</b>	<b>5,640</b>
Uasin Gishu	Janssen (Ad26.COVID-19)	558,400	442,150	-	116,250
Uasin Gishu	Moderna	232,680	210,980	-	21,700
Uasin Gishu	Oxford/AstraZeneca	855,440	713,801	-	141,639
Uasin Gishu	Pfizer	568,620	277,956	-	290,664
<b>Uasin Gishu Total</b>		<b>2,215,140</b>	<b>1,644,887</b>	<b>-</b>	<b>570,253</b>
<b>Grand Total</b>		<b>27,461,487</b>	<b>22,198,927</b>	<b>3,477,269</b>	<b>1,785,291</b>

**APPENDIX III: UTILIZATION AT COUNTY FACILITIES AS AT 31 MARCH, 2022**

County	Vaccine Type	Doses Received	Doses Administered	Doses In Stock	Doses Expired	Doses Damaged	Doses Wasted	Unexplained Variance	Estimate Price per Dose (Kshs)	Total Amount (Kshs)
Baringo	Janssen (Ad26. COV2-S)	50,100	37,462	4,349	1,193	5	258	6,833	753	5,145,366
	Moderna	16,990	17,860	28	362	-	(102)	(1,158)	505	-
	Oxford/AstraZeneca	57,710	63,761	-	5,977	-	516	(11,644)	446	-
	Pfizer	58,200	25,634	222	15,844	-	298	16,202	670	10,858,059
<b>Baringo Total</b>	<b>183,000</b>	<b>144,717</b>	<b>4,599</b>	<b>22,476</b>	<b>5</b>	<b>970</b>	<b>10,233</b>	<b>16,003,425</b>		
Bomet	Janssen (Ad26. COV2-S)	41,900	21,551	8,306	181	-	1,883	9,979	753	7,514,357
	Moderna	23,776	16,121	-	-	-	1,062	6,593	505	3,329,784
	Oxford/AstraZeneca	135,760	74,343	4,040	4,629	-	11,530	41,218	446	18,392,351
	Pfizer	123,288	60,814	6,471	6,000	62	3,149	46,792	670	31,358,494
<b>Bomet Total</b>	<b>324,724</b>	<b>172,829</b>	<b>18,817</b>	<b>10,810</b>	<b>62</b>	<b>17,624</b>	<b>104,582</b>	<b>60,594,986</b>		
Bungoma	Janssen (Ad26. COV2-S)	137,800	122,750	24,765	-	-	4,242	(13,957)	753	-
	Moderna	68,520	59,257	28	-	-	7,433	1,802	505	910,097
	Oxford/AstraZeneca	223,400	199,615	1,170	5,970	40	16,107	498	446	222,218
	Pfizer	217,620	182,486	5,752	7,258	6	9,479	12,639	670	8,470,251
<b>Bungoma Total</b>	<b>647,340</b>	<b>564,108</b>	<b>31,715</b>	<b>13,228</b>	<b>46</b>	<b>37,261</b>	<b>982</b>	<b>9,602,567</b>		
Busia	Janssen (Ad26. COV2-S)	108,600	51,995	44,121	-	-	590	11,894	753	8,956,385
	Moderna	42,500	32,357	-	327	-	543	9,273	505	4,683,314
	Oxford/AstraZeneca	176,624	123,009	1,011	38,769	10	1,500	12,325	446	5,499,678
	Pfizer	132,540	96,884	5,512	8,426	-	586	21,132	670	14,161,987
<b>Busia Total</b>	<b>460,264</b>	<b>304,245</b>	<b>50,644</b>	<b>47,522</b>	<b>10</b>	<b>3,219</b>	<b>54,624</b>	<b>33,301,363</b>		
Elgeyo Marakwet	Janssen (Ad26. COV2-S)	46,620	31,634	7,775	80	-	78	7,053	753	5,311,029
	Moderna	12,888	11,052	-	966	-	284	586	505	2,959,958
	Oxford/AstraZeneca	69,100	61,710	310	4,509	-	120	2,451	446	1,093,688
	Pfizer	6,252	2,594	-	2,166	42	-	1,450	670	971,743
<b>Elgeyo Marakwet Total</b>	<b>134,860</b>	<b>106,990</b>	<b>8,085</b>	<b>7,721</b>	<b>42</b>	<b>482</b>	<b>11,540</b>	<b>7,672,419</b>		

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County	Vaccine Type	Doses Received	Doses Administered	Doses In Stock	Doses Expired	Doses Damaged	Doses Wasted	Unexplained Variance	Estimate Price per Dose (Kshs)	Total Amount (Kshs)
Embu	Janssen (Ad26. COV2-S)	47,080	39,392	3,285	102	-	-	4,301	753	3,238,726
	Moderna	36,946	43,970	-	-	-	-	(7,024)	505	-
	Oxford/AstraZeneca	118,603	121,962	54	388	-	-	(3,801)	446	-
	Pfizer	109,898	60,314	1,086	2,814	-	-	45,684	670	30,615,948
<b>Embu Total</b>	<b>312,527</b>	<b>265,638</b>	<b>4,425</b>	<b>3,304</b>	-	-	<b>39,160</b>			<b>33,854,674</b>
Garissa	Janssen (Ad26. COV2-S)	48,525	43,273	4,823	-	50	3,451	(3,072)	753	-
	Oxford/AstraZeneca	19,508	16,080	387	66	-	2,737	238	446	106,201
<b>Garissa Total</b>		<b>68,033</b>	<b>59,353</b>	<b>5,210</b>	<b>66</b>	<b>50</b>	<b>6,188</b>	<b>(2,834)</b>		<b>106,201</b>
Homa Bay	Janssen (Ad26. COV2-S)	81,215	64,418	2,711	-	8	4,944	9,134	753	6,878,058
	Moderna	29,568	22,579	-	-	-	1,996	4,993	505	2,521,707
	Oxford/AstraZeneca	195,290	154,114	220	-	-	10,233	30,723	446	13,709,258
	Pfizer	140,288	109,135	892	18	88	4,070	26,085	670	17,481,328
<b>Homa Bay Total</b>		<b>446,361</b>	<b>350,246</b>	<b>3,823</b>	<b>18</b>	<b>96</b>	<b>21,243</b>	<b>70,935</b>		<b>40,590,350</b>
Isiolo	Janssen (Ad26. COV2-S)	16,400	11,434	3,971	-	-	63	932	753	701,812
	Oxford/AstraZeneca	15,260	12,809	-	325	-	-	2,126	446	948,667
<b>Isiolo Total</b>		<b>31,660</b>	<b>24,243</b>	<b>3,971</b>	<b>325</b>	<b>-</b>	<b>63</b>	<b>3,058</b>		<b>1,650,478</b>
Kajiado	Janssen (Ad26. COV2-S)	100,293	74,450	14,269	18	-	1,577	9,979	753	7,514,357
	Moderna	65,520	58,134	33	182	-	1,670	5,501	505	2,778,271
	Oxford/AstraZeneca	257,380	189,342	7,558	15,901	-	4,735	39,844	446	17,779,243
	Pfizer	84,240	50,319	14,881	742	-	3,367	14,931	670	10,006,276
<b>Kajiado Total</b>		<b>507,433</b>	<b>372,245</b>	<b>36,741</b>	<b>16,843</b>	<b>-</b>	<b>11,349</b>	<b>70,255</b>		<b>38,078,147</b>
Kakamega	Janssen (Ad26. COV2-S)	265,115	233,558	33,207	5,605	-	(1,304)	(5,951)	753	-
	Moderna	69,710	53,064	-	1,882	-	4,348	10,416	505	5,260,584
	Oxford/AstraZeneca	267,070	222,722	3,931	11,200	10	2,432	26,775	446	11,947,576
	Pfizer	268,124	225,125	2,087	11,378	-	7,400	22,134	670	14,833,495
<b>Kakamega Total</b>		<b>870,019</b>	<b>734,469</b>	<b>39,225</b>	<b>30,065</b>	<b>10</b>	<b>12,876</b>	<b>53,374</b>		<b>32,041,655</b>

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County	Vaccine Type	Doses Received	Doses Administered	Doses In Stock	Doses Expired	Doses Damaged	Doses Wasted	Unexplained Variance	Estimate Price per Dose (Kshs)	Total Amount (Kshs)
Kericho	Janssen (Ad26. COV2-S)	79,200	56,874	16,344	245	-	242	5,495	753	4,137,829
	Moderna	25,900	21,881	-	42	-	330	3,647	505	1,841,911
	Oxford/AstraZeneca	190,680	168,058	208	840	440	1,325	19,809	446	8,839,198
	Pfizer	108,810	74,376	4,685	3,238	1,114	530	24,867	670	16,665,064
<b>Kericho Total</b>	<b>404,590</b>	<b>321,189</b>	<b>21,237</b>	<b>4,365</b>	<b>1,554</b>	<b>2,427</b>	<b>53,818</b>		<b>31,484,002</b>	
Kiambu	Janssen (Ad26. COV2-S)	157,701	148,608	17	120	-	(5,402)	14,358	753	10,811,819
	Moderna	270,402	275,346	(8,203)	3,943	-	1,836	(2,520)	505	-
	Oxford/AstraZeneca	521,110	533,486	1,176	9,280	-	(11,611)	(11,221)	446	-
	Pfizer	237,600	201,721	2,822	10,502	-	11,710	10,845	670	7,267,970
	Sputnik-V	959	39	-	-	-	-	920	1,073	987,160
<b>Kiambu Total</b>	<b>1,187,772</b>	<b>1,159,200</b>	<b>(4,188)</b>	<b>23,845</b>	<b>-</b>	<b>(3,467)</b>	<b>12,382</b>		<b>19,066,949</b>	
Kilifi	Janssen (Ad26. COV2-S)	32,842	30,104	-	-	-	1,042	1,696	753	1,277,117
	Moderna	35,463	34,057	422	15	-	261	708	505	357,574
	Oxford/AstraZeneca	148,802	139,253	1,809	1,283	-	1,630	4,827	446	2,153,910
	Pfizer	79,796	69,892	2,317	942	-	723	5,922	670	3,968,734
<b>Kilifi Total</b>	<b>296,903</b>	<b>273,306</b>	<b>4,548</b>	<b>2,240</b>	<b>-</b>	<b>3,656</b>	<b>13,153</b>		<b>7,757,335</b>	
Kirinyaga	Janssen (Ad26. COV2-S)	45,413	48,190	525	65	-	3,088	(6,455)	753	-
	Moderna	50,650	47,392	-	55	-	2,350	853	505	430,806
	Oxford/AstraZeneca	178,246	160,398	-	246	-	27,157	(9,555)	446	-
	Pfizer	95,616	80,820	124	774	-	12,618	1,280	670	857,815
<b>Kirinyaga Total</b>	<b>369,925</b>	<b>336,800</b>	<b>649</b>	<b>1,140</b>	<b>-</b>	<b>45,213</b>	<b>(13,877)</b>		<b>1,288,621</b>	
Kisii	Janssen (Ad26. COV2-S)	117,620	101,488	1,075	-	-	636	14,421	753	10,859,259
	Moderna	21,840	19,177	-	-	-	22	2,641	505	1,333,833
	Oxford/AstraZeneca	177,340	159,436	20	40	31	(608)	18,421	446	8,219,843
	Pfizer	139,230	118,983	114	-	-	1,524	18,609	670	12,471,153
<b>Kisii Total</b>	<b>456,030</b>	<b>399,084</b>	<b>1,209</b>	<b>40</b>	<b>31</b>	<b>1,574</b>	<b>54,092</b>		<b>32,884,088</b>	

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County	Vaccine Type	Doses Received	Doses Administered	Doses In Stock	Doses Expired	Doses Damaged	Doses Wasted	Unexplained Variance	Estimate Price per Dose (Kshs)	Total Amount (Kshs)
Kisumu	Janssen (Ad26. COV2-S)	72,635	66,254	10,178	107	-	204	(4,108)	753	-
	Moderna	78,960	51,543	4,382	40	-	45	22,950	505	11,590,860
	Oxford/AstraZeneca	283,470	275,050	23,450	4,598	-	392	(20,020)	446	-
	Pfizer	209,430	167,475	19,951	3,336	-	228	18,440	670	12,557,895
<b>Kisumu Total</b>	<b>644,495</b>	<b>560,322</b>	<b>57,961</b>	<b>8,081</b>	<b>-</b>	<b>869</b>	<b>8,547</b>	<b>17,262</b>	<b>23,948,755</b>	<b>6,436,037</b>
Kitui	Janssen (Ad26. COV2-S)	51,500	34,913	7,707	-	-	333	8,547	753	6,436,037
	Moderna	4,824	3,288	54	-	-	96	1,386	505	699,997
	Oxford/AstraZeneca	162,385	142,745	2,345	70	-	2,373	14,852	446	6,627,279
	Pfizer	77,081	51,636	517	86	6	2,053	22,783	670	15,268,434
<b>Kitui Total</b>	<b>295,790</b>	<b>232,582</b>	<b>10,623</b>	<b>156</b>	<b>6</b>	<b>4,855</b>	<b>47,568</b>	<b>29,031,747</b>	<b>-</b>	<b>-</b>
Kwale	Janssen (Ad26. COV2-S)	30,471	38,441	1,105	-	-	416	(9,491)	753	-
	Moderna	26,522	19,524	29	26	26	26	6,891	505	3,480,288
	Oxford/AstraZeneca	55,741	52,171	(559)	142	141	141	3,705	446	1,653,250
	Pfizer	22,243	12,259	(1,546)	53	53	53	11,371	670	7,620,479
<b>Kwale Total</b>	<b>134,977</b>	<b>122,395</b>	<b>(971)</b>	<b>221</b>	<b>220</b>	<b>636</b>	<b>12,476</b>	<b>12,754,017</b>	<b>-</b>	<b>-</b>
Laikipia	Janssen (Ad26. COV2-S)	55,545	31,186	10,956	313	15	105	12,970	753	9,766,631
	Moderna	27,680	23,099	106	32	-	42	4,401	505	2,222,718
	Oxford/AstraZeneca	162,028	143,806	2,763	1,790	40	231	13,398	446	5,978,473
	Pfizer	55,392	41,800	4,750	2,184	27	913	5,718	670	3,832,020
<b>Laikipia Total</b>	<b>300,645</b>	<b>239,891</b>	<b>18,575</b>	<b>4,319</b>	<b>82</b>	<b>1,291</b>	<b>36,487</b>	<b>21,799,842</b>	<b>-</b>	<b>-</b>
Lamu	Janssen (Ad26. COV2-S)	12,415	11,141	2,930	235	6	203	(2,100)	753	-
	Oxford/AstraZeneca	20,759	14,583	3,822	410	1	205	1,738	446	775,533
<b>Lamu Total</b>	<b>33,174</b>	<b>25,724</b>	<b>6,752</b>	<b>645</b>	<b>7</b>	<b>408</b>	<b>7,404</b>	<b>(362)</b>	<b>775,533</b>	<b>-</b>
Machakos	Janssen (Ad26. COV2-S)	111,200	100,658	2,820	20	-	298	7,404	753	5,575,338
	Moderna	71,332	65,159	177	-	-	1,706	4,290	505	2,166,658
	Oxford/AstraZeneca	294,817	296,925	4,848	610	1	1,761	(9,328)	446	-
	Pfizer	152,820	131,467	4,751	1,834	18	1,145	13,605	670	9,117,633
<b>Machakos Total</b>	<b>630,169</b>	<b>594,209</b>	<b>12,596</b>	<b>2,464</b>	<b>19</b>	<b>4,910</b>	<b>15,971</b>	<b>16,859,629</b>	<b>-</b>	<b>-</b>

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County	Vaccine Type	Doses Received	Doses Administered	Doses In Stock	Doses Expired	Doses Damaged	Doses Wasted	Unexplained Variance	Estimate Price per Dose (Kshs)	Total Amount (Kshs)
Makueni	Janssen (Adz6. COV2-S)	68,835	52,757	6,463	474	103	889	8,149	753	6,136,336
	Moderna	26,426	19,092	-	56	49	1,006	6,223	505	3,142,916
	Oxford/AstraZeneca	181,199	171,137	-	16,254	480	2,112	(8,784)	446	-
	Pfizer	160,156	115,024	108	14,351	247	2,048	28,378	670	19,018,023
	Sinopharm	445	164	56	-	-	-	225	557	125,218
<b>Makueni Total</b>	<b>437,061</b>	<b>358,174</b>	<b>6,627</b>	<b>31,135</b>	<b>879</b>	<b>6,055</b>	<b>34,191</b>	<b>28,422,493</b>		
Mandera	Janssen (Adz6. COV2-S)	43,650	29,613	14,558	-	15	1,268	(1,804)	753	-
	Oxford/AstraZeneca	19,200	12,740	6,460	250	-	533	(783)	446	-
	Pfizer	2,038	1,224	702	96	-	51	(35)	670	-
<b>Mandera Total</b>	<b>64,888</b>	<b>43,577</b>	<b>21,720</b>	<b>346</b>	<b>15</b>	<b>1,852</b>	<b>(2,622)</b>			
Marsabit	Janssen (Adz6. COV2-S)	34,915	18,484	12,734	15	10	1,955	1,717	753	1,292,930
	Oxford/AstraZeneca	9,481	6,106	521	448	-	1,702	704	446	314,140
<b>Marsabit Total</b>	<b>44,396</b>	<b>24,590</b>	<b>13,255</b>	<b>463</b>	<b>10</b>	<b>3,657</b>	<b>2,421</b>			<b>1,607,070</b>
Meru	Janssen (Adz6. COV2-S)	103,000	82,486	12,338	355	20	2,453	4,848	753	3,650,627
	Moderna	25,312	19,902	-	79	-	496	4,835	505	2,441,909
	Oxford/AstraZeneca	308,385	289,665	860	14,135	6	7,913	(4,194)	446	-
	Pfizer	209,282	180,625	3,682	15,556	-	3,409	5,910	670	3,960,692
	<b>Meru Total</b>	<b>645,979</b>	<b>572,678</b>	<b>17,380</b>	<b>30,225</b>	<b>26</b>	<b>14,271</b>	<b>11,399</b>		
Migori	Janssen (Adz6. COV2-S)	40,880	33,352	70	216	894	1,356	4,992	753	3,759,061
	Moderna	119,780	71,580	29,157	80	1,575	1,376	16,012	505	8,086,835
	Oxford/AstraZeneca	143,120	124,125	564	1,590	10,477	3,233	3,131	446	1,397,119
	Pfizer	204,750	176,610	114	486	10,303	3,678	13,559	670	9,086,806
	<b>Migori Total</b>	<b>508,530</b>	<b>405,667</b>	<b>29,905</b>	<b>2,372</b>	<b>23,249</b>	<b>9,643</b>	<b>37,694</b>		
Mombasa	Janssen (Adz6. COV2-S)	84,368	89,855	5,114	101	-	(3,629)	(7,073)	753	-
	Moderna	74,873	72,398	-	-	-	4,075	(1,600)	505	-
	Oxford/AstraZeneca	216,326	229,512	3,203	530	20	(3,073)	(13,866)	446	-
	Pfizer	70,354	61,107	272	1,386	6	4,027	3,556	670	2,383,117
	<b>Mombasa Total</b>	<b>445,921</b>	<b>452,872</b>	<b>8,589</b>	<b>2,017</b>	<b>26</b>	<b>1,400</b>	<b>(18,983)</b>		

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County	Vaccine Type	Doses Received	Doses Administered	Doses In Stock	Doses Expired	Doses Damaged	Doses Wasted	Unexplained Variance	Estimate Price per Dose (Kshs)	Total Amount (Kshs)
Muranga	Janssen (Ad26. COV2-S)	24,050	26,413	1,985	710	22	80	(5,160)	753	-
	Moderna	68,456	67,662	116	42	32	95	509	505	257,070
	Oxford/AstraZeneca	257,462	285,079	10	1,810	10	311	(29,758)	446	-
	Pfizer	126,316	143,510	192	3,088	56	564	(21,094)	670	-
<b>Muranga Total</b>		<b>476,284</b>	<b>522,664</b>	<b>2,303</b>	<b>5,650</b>	<b>120</b>	<b>1,050</b>	<b>(55,503)</b>		<b>257,070</b>
Nairobi	Janssen (Ad26. COV2-S)	275,350	202,474	1,815	119	30	791	70,121	753	52,802,309
	Moderna	498,100	309,921	-	-	60	1,257	186,862	505	94,374,349
	Oxford/AstraZeneca	1,602,462	1,608,883	228	744	49	1,753	(9,195)	446	-
	Pfizer	559,742	377,058	66	2,769	-	1,320	178,529	670	119,644,394
	Sinopharm	8,260	7,879	-	-	-	-	381	557	212,036
	Sputnik-V	5,005	3,859	-	-	-	-	1,146	1,073	1,229,658
<b>Nairobi Total</b>		<b>2,948,919</b>	<b>2,510,074</b>	<b>2,109</b>	<b>3,632</b>	<b>139</b>	<b>5,121</b>	<b>427,844</b>		<b>268,262,747</b>
Nakuru	Janssen (Ad26. COV2-S)	119,740	96,391	19,777	144	-	198	3,230	753	2,432,245
	Moderna	85,719	61,975	519	602	70	2,128	20,425	505	10,315,613
	Oxford/AstraZeneca	711,973	693,468	27,480	19,592	454	(13,498)	(15,523)	446	-
	Pfizer	335,142	271,300	20,642	3,635	18	3,602	35,945	670	24,089,183
<b>Nakuru Total</b>		<b>1,252,574</b>	<b>1,123,134</b>	<b>68,418</b>	<b>23,973</b>	<b>542</b>	<b>(7,570)</b>	<b>44,077</b>		<b>36,837,041</b>
Nandi	Janssen (Ad26. COV2-S)	96,900	67,566	34,934	-	-	(1,121)	(4,479)	753	-
	Moderna	27,476	22,471	114	-	-	(396)	5,287	505	2,670,191
	Oxford/AstraZeneca	35,349	118,312	49	650	-	(2,773)	(80,889)	446	-
	Pfizer	5,740	10,453	3,296	5,714	-	(344)	(13,379)	670	-
<b>Nandi Total</b>		<b>165,465</b>	<b>218,802</b>	<b>38,393</b>	<b>6,364</b>	<b>-</b>	<b>(4,634)</b>	<b>(93,460)</b>		<b>2,670,191</b>
Narok	Janssen (Ad26. COV2-S)	40,340	45,444	5,270	290	200	442	(11,306)	753	-
	Moderna	2,118	2,012	-	-	-	-	106	505	53,535
	Oxford/AstraZeneca	141,906	102,251	13,105	10,895	1,420	1,244	12,991	446	5,796,861
	Pfizer	31,830	18,716	7,002	3,477	257	188	2,190	670	1,467,668
<b>Narok Total</b>		<b>216,194</b>	<b>168,423</b>	<b>25,377</b>	<b>14,662</b>	<b>1,877</b>	<b>1,874</b>	<b>3,981</b>		<b>7,318,064</b>

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County	Vaccine Type	Doses Received	Doses Administered	Doses In Stock	Doses Expired	Doses Damaged	Doses Wasted	Unexplained Variance	Estimate Price per Dose (Kshs)	Total Amount (Kshs)
Nyamira	Janssen (Adz6. COV2-S)	49,950	35,139	7,395	-	100	498	6,818	753	5,134,070
	Moderna	29,680	21,410	-	-	1	2,060	6,209	505	3,135,845
	Oxford/AstraZeneca	141,790	109,377	140	3,570	32	1,369	27,302	446	12,182,735
	Pfizer	86,580	72,475	138	-	83	1,041	12,843	670	8,606,966
<b>Nyamira Total</b>	<b>308,000</b>	<b>238,401</b>	<b>7,673</b>	<b>3,570</b>	<b>216</b>	<b>4,968</b>	<b>53,172</b>		<b>29,059,616</b>	
Nyandarua	Janssen (Adz6. COV2-S)	37,000	25,080	6,967	1,063	50	150	3,690	753	2,778,633
	Moderna	56,518	44,785	-	643	49	882	10,159	505	5,130,786
	Oxford/AstraZeneca	145,506	127,660	736	9,996	97	2,077	4,940	446	2,204,333
	Pfizer	114,028	73,319	2,817	7,006	95	1,280	29,511	670	19,771,323
<b>Nyandarua Total</b>	<b>353,052</b>	<b>270,844</b>	<b>10,520</b>	<b>18,708</b>	<b>291</b>	<b>4,389</b>	<b>48,300</b>		<b>29,891,076</b>	
Nyeri	Janssen (Adz6. COV2-S)	85,742	52,308	2,436	34	331	441	30,192	753	22,735,091
	Moderna	122,920	131,549	1,958	14	245	1,213	(12,059)	505	-
	Oxford/AstraZeneca	223,880	260,277	2,621	50	368	4,993	(44,429)	446	-
	Pfizer	141,870	143,952	1,991	1,558	261	2,097	(7,989)	670	-
<b>Nyeri Total</b>	<b>574,412</b>	<b>588,086</b>	<b>9,006</b>	<b>1,656</b>	<b>1,205</b>	<b>8,744</b>	<b>(34,285)</b>		<b>22,735,091</b>	
Samburu	Janssen (Adz6. COV2-S)	24,500	19,476	430	-	-	-	4,594	753	3,459,360
	Oxford/AstraZeneca	15,600	13,715	-	-	50	-	1,835	446	818,816
	Pfizer	7,020	3,454	-	2,328	-	-	1,238	670	829,668
	<b>Samburu Total</b>	<b>47,120</b>	<b>36,645</b>	<b>430</b>	<b>2,328</b>	<b>50</b>	<b>-</b>	<b>7,667</b>		<b>5,107,844</b>
Siaya	Janssen (Adz6. COV2-S)	68,100	46,275	19,565	2,262	-	525	(527)	753	-
	Moderna	39,720	39,013	6,761	3	-	1,223	(7,280)	505	-
	Oxford/AstraZeneca	204,900	172,125	19,727	64	-	1,105	11,879	446	5,300,663
	Pfizer	238,680	211,836	365	5,433	-	1,538	19,508	670	13,073,634
<b>Siaya Total</b>	<b>551,400</b>	<b>469,249</b>	<b>46,418</b>	<b>7,762</b>	<b>-</b>	<b>4,391</b>	<b>23,580</b>		<b>18,374,297</b>	
Taita Taveta	Janssen (Adz6. COV2-S)	15,680	7,847	4,890	-	10	884	2,049	753	1,542,932
	Moderna	45,216	42,489	629	503	28	127	1,440	505	727,270
	Oxford/AstraZeneca	99,630	97,473	5,838	4,686	26	875	(9,268)	446	-
	Pfizer	46,524	40,339	9,855	5,894	-	356	(9,920)	670	-
<b>Taita Taveta Total</b>	<b>207,050</b>	<b>188,148</b>	<b>21,212</b>	<b>11,083</b>	<b>64</b>	<b>2,242</b>	<b>(15,699)</b>		<b>2,270,202</b>	

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County	Vaccine Type	Doses Received	Doses Administered	Doses In Stock	Doses Expired	Doses Damaged	Doses Wasted	Unexplained Variance	Estimate Price per Dose (Kshs)	Total Amount (Kshs)
Tana River	Janssen (Adz6. COV2-S)	20,060	13,305	3,685	-	709	40	2,321	753	1,747,753
	Oxford/AstraZeneca	13,260	9,360	914	-	1,877	220	889	446	396,691
	Pfizer	6,094	2,218	1,434	1,434	144	-	864	670	579,025
<b>Tana River Total</b>		<b>39,414</b>	<b>24,883</b>	<b>6,033</b>	<b>1,434</b>	<b>2,730</b>	<b>260</b>	<b>4,074</b>		<b>2,723,468</b>
Tharaka Nithi	Janssen (Adz6. COV2-S)	24,360	14,789	-	-	-	-	9,571	753	7,207,126
	Moderna	56,160	29,909	397	222	-	21	25,611	505	12,934,794
	Oxford/AstraZeneca	70,960	52,665	-	60	-	25	18,210	446	8,125,690
	Pfizer	33,700	18,815	830	120	-	1	13,934	670	9,338,119
<b>Tharaka Nithi Total</b>		<b>185,180</b>	<b>116,178</b>	<b>1,227</b>	<b>402</b>	<b>-</b>	<b>47</b>	<b>67,326</b>		<b>37,605,729</b>
Trans Nzoia	Janssen (Adz6. COV2-S)	73,870	63,968	6,513	239	88	1,007	2,055	753	1,547,450
	Moderna	35,014	33,046	56	422	4	1,520	(34)	505	-
	Oxford/AstraZeneca	150,820	138,188	937	3,186	30	4,469	4,010	446	1,789,348
	Pfizer	113,985	101,499	3,494	2,758	64	1,576	4,594	670	3,078,751
<b>Trans Nzoia Total</b>		<b>373,689</b>	<b>336,701</b>	<b>11,000</b>	<b>6,605</b>	<b>186</b>	<b>8,572</b>	<b>10,625</b>		<b>6,415,549</b>
Turkana	Janssen (Adz6. COV2-S)	69,439	56,192	9,986	-	-	504	2,757	753	2,076,068
	Moderna	7,632	6,026	-	-	(70)	-	1,676	505	846,461
	Oxford/AstraZeneca	19,680	19,889	1,088	148	(118)	(35)	(1,292)	446	-
	Pfizer	9,611	5,885	2,994	48	(36)	14	706	670	473,138
<b>Turkana Total</b>		<b>106,362</b>	<b>87,992</b>	<b>14,068</b>	<b>196</b>	<b>(224)</b>	<b>483</b>	<b>3,847</b>		<b>3,395,668</b>
Uasin Gishu	Janssen (Adz6. COV2-S)	67,703	79,042	1,350	48	485	490	(13,712)	753	-
	Moderna	66,845	72,850	50	-	-	202	(6,257)	505	-
	Oxford/AstraZeneca	214,936	228,101	920	440	-	338	(14,863)	446	-
	Pfizer	79,828	64,922	818	1,470	-	7	12,611	670	8,451,487
<b>Uasin Gishu Total</b>		<b>429,312</b>	<b>444,915</b>	<b>3,138</b>	<b>1,958</b>	<b>485</b>	<b>1,037</b>	<b>(22,221)</b>		<b>8,451,487</b>
Vihiga	Janssen (Adz6. COV2-S)	51,260	40,747	4,623	-	-	3,577	2,313	753	1,741,728
	Moderna	16,083	13,286	126	140	-	1,535	996	505	503,028
	Oxford/AstraZeneca	120,738	94,875	7,110	3,910	10	1,293	13,540	446	6,041,837
	Pfizer	139,126	112,650	14,932	9,522	-	2,392	(370)	670	-

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<b>Vihiga Total</b>		<b>327,207</b>	<b>261,558</b>	<b>26,791</b>	<b>13,572</b>	<b>10</b>	<b>8,797</b>	<b>16,479</b>		<b>8,286,593</b>
Wajir	Janssen (Ad26. COV2-S)	36,070	32,327	5,164	-	-	-	(1,421)	753	-
	Oxford/AstraZeneca	11,127	12,144	-	1,936	-	7,120	(10,073)	446	-
	Pfizer	1,170	204	-	966	-	-	-	670	-
<b>Wajir Total</b>		<b>48,367</b>	<b>44,675</b>	<b>5,164</b>	<b>2,902</b>	<b>-</b>	<b>7,120</b>	<b>(11,494)</b>		<b>-</b>
West Pokot	Janssen (Ad26. COV2-S)	45,855	31,447	7,531	175	55	1,688	4,959	753	3,734,212
	Moderna	700	301	168	168	-	-	63	505	31,818
	Oxford/AstraZeneca	30,979	21,685	625	800	208	2,375	5,286	446	2,358,726
	Pfizer	28,440	7,065	8,036	6,896	74	724	5,645	670	3,783,097
<b>West Pokot Total</b>		<b>105,974</b>	<b>60,498</b>	<b>16,360</b>	<b>8,039</b>	<b>337</b>	<b>4,787</b>	<b>15,953</b>		<b>9,907,853</b>

**APPENDIX IV: VACCINATING FACILITIES DISTRIBUTION**

Code	County	Vaccinating Facilities		
		Number in Chanjo System	Number Not in Chanjo System	Total
001	Mombasa	53	0	53
002	Kwale	48	0	48
003	Kilifi	109	9	118
004	Tana River	17	3	20
005	Lamu	12	2	14
006	Taita Taveta	60	0	60
007	Garissa	72	0	72
008	Wajir	6	44	50
009	Mandera	8	38	46
010	Marsabit	85	0	85
011	Isiolo	19	0	19
012	Meru	105	0	105
013	Tharaka-Nithi	29	0	29
014	Embu	8	96	104
015	Kitui	149	6	155
016	Machakos	136	15	151
017	Makueni	135	0	135
018	Nyandarua	87	0	87
019	Nyeri	137	0	137
020	Kirinyaga	27	39	66
021	Muranga	96	0	96
022	Kiambu	51	70	121
023	Turkana	116	0	116
024	West Pokot	98	0	98
025	Samburu	6	0	6
026	Trans Nzoia	84	0	84
027	Uasin Gishu	14	16	30
028	Elgeyo Marakwet	40	0	40
029	Nandi	20	67	87
030	Baringo	98	35	133
031	Laikipia	6	1	7
032	Nakuru	150	60	210
033	Narok	100	3	103
034	Kajiado	98	24	122
035	Kericho	53	100	153
036	Bomet	67	38	105
037	Kakamega	22	143	165

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Code	County	Vaccinating Facilities		
		Number in Chanjo System	Number Not in Chanjo System	Total
038	Vihiga	65	0	65
039	Bungoma	133	0	133
040	Busia	9	0	9
041	Siaya	106	0	106
042	Kisumu	10	90	100
043	Homa Bay	125	21	146
044	Migori	106	12	118
045	Kisii	81	8	89
046	Nyamira	74	18	92
047	Nairobi	152	15	167
	<b>Total</b>	<b>3,282</b>	<b>973</b>	<b>4,255</b>

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