Memorandum on the Republic of South Sudan Programme Audit report

The attached Audit and Investigations report sets out the conclusions of the programme audit of Gavi's support to the Republic of South Sudan Ministry of Health, executed by the Expanded Programme for Immunisation (EPI) along with other implementing partners.

The audit team reviewed the EPI and implementing partners' management of Gavi support to the routine immunisation programme provided during the period between 1 January 2017 to 31 December 2022. The audit scope including the following grants: "health systems strengthening, the measles rubella catch-up campaign, as well as other vaccines and cold chain equipment. The audit also covered the vaccine and cash provided by Gavi's COVAX facility in support of South Sudan's COVID-19 emergency operations.

The report's executive summary (pages 3 to 7) summarises the key conclusions, the details of which are set out in the body of the report:

1. There is an overall audit rating of **"needs significant improvement"**, which means, "One or few significant issues were noted. Internal controls, governance and risk management practices have some weaknesses in design or operating effectiveness such that, until they are addressed, there is not yet reasonable assurance that the objectives are likely to be met."
2. In total, 36 issues were identified in the following areas: (i) programme management; (ii) governance and oversight; (iii) vaccine supply management; (iv) immunisation data management; (v) budgeting and financial management; and (vi) fixed assets management.

3. To address the risks associated with the issues, the audit team raised 23 recommendations of which 14 were rated as high priority.

4. Key findings were that:

    a. The governance bodies functionalities and oversight mechanisms needs to be strengthened, as it did not have the necessary level of oversight over EPI programmes.
    b. The role of the MoH in coordinating and monitoring the immunisation programme's multiple stakeholders of their respective commitments needs to be improve, so that the MoH step ups its involvement, by: holding quarterly meetings, directly engaging the TCA partners with MoH senior officials, and regularly monitoring and validating progress against plans. Additionally, the MoH should ensure that any donor-funded health initiatives are aligned with the country's health priorities and HSSP.

c. Sustainability challenges within the current Health Pooled Fund (HPF) model need to be addressed within the next proposed pooled funding mechanism. This also follows due to identifying challenges in the previous HPF's operations, including an absence of clear processes to hand-over its interventions and the absence of a strategy for how to transition activities, once these are no longer supported.
d. As of September 2024, Gavi's discussions with South Sudan and the immunisation partners on the future pooled fund arrangements – and which health facilities will be covered within its scope – have not yet been concluded. In the interim, until HPF3 is fully retired, the residual fund activities are being managed by the Gavi Alliance partners.
e. The vaccine inventory management practices at both the national and subnational levels need to improve. The vaccine receipt procedures were not adequate with little evidence of MoH or EPI being sufficiently involved, there were unexplained stock record variances, including discrepancies in the electronic stock management tool and intermittent stock outs were reported. In addition, cold chain management practices, including the maintenance of equipment, need to be strengthened.
f. There were significant variances and anomalies identified in the administrative immunisation coverage data, and the denominators used to calculate vaccination coverage were inaccurate. The supervision and monitoring over various data quality aspects were weak, and progress in implementing the various data quality improvement activities was slow.

The findings of the programme audit were discussed with the Ministry of Health and implementing partners. They accepted the audit findings, acknowledged the weaknesses identified, and committed to implement a detailed management action plan.

The Gavi Secretariat continues to work with the Ministry of Health to ensure that their commitments are implemented, and to agree on how to make the programme whole. This includes Gavi and the Government jointly resolving two issues from 2017, relating to the supply of Gavi-funded vehicles, and an outstanding programmatic advance.

Geneva, November 2024

PROGRAMME AUDIT REPORT

Republic of South Sudan

November 2024

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1. Executive Summary

1.1 Overall audit opinion

Audit opinion:

The audit team assessed the Ministry of Health's management of Gavi support during the period 1 January 2017 to 31 December 2022 as "**needs significant improvement**" which means, "One or few significant issues were noted. Internal controls, governance and risk management practices have some weaknesses in design or operating effectiveness such that, until they are addressed, there is not yet reasonable assurance that the objectives are likely to be met."

Through our audit procedures, we have identified high risk issues relating to programme management; governance and oversight; vaccine supply management; and immunisation data processes. To address the risks associated with these issues, the audit team raised 23 recommendations, of which 14 (61%) were rated as high risk. These recommendations need to be addressed by implementing remedial measures according to the agreed management actions.

1.2 Summary of key audit issues

** The audit ratings attributed to each section of this report, the level of risk assigned to each audit issue and each recommendation, are defined in Annex 2 of this report.*

1.3 Summary of issues

Through our audit procedures, we identified seven high risk and six medium risk issues relating to the use and management of Gavi support. Section 3 of this report provides details of the fragile context and specific challenges of delivering an immunisation programme in South Sudan.

The impact of the Covid-19 pandemic, as with many countries, weakened the health system. At the time of the audit in May 2023, Gavi's support was channelled both through partners and the health pooled fund. As a result, the Expanded Programme on Immunisation (EPI) significantly relied on partners to lead and perform many of activities. Nevertheless, the audit team noted that the Government's role of overseeing such partner-led implementation was not sufficiently well-defined.

The high-risk issues are summarised below. The detailed issues are explained in Section 4 of this report.

Programme management

The Ministry of Health (MoH) conceived South Sudan's Health Sector Strategic Plan (HSSP) covering the six-year period 2017-2022 as a road map to implement the first phase of its National Health Policy. However, there were shortcomings in the operationalisation of this Strategic Plan, as no suitable HSSP monitoring mechanisms were put in place, nor were the mandatory, regular periodic reviews conducted – including five joint appraisal reviews. In June 2021 a performance review of the HSSP was undertaken, which identified issues such as: inconsistent indicator definitions; less than 50% of health facilities used the Health Management Information System to report results; and no current surveys or assessments of the Plan have been conducted. Had appropriate periodic monitoring been in place, the challenges to operationalise the Plan could have been identified and addressed sooner.

Between 2019-2022, Gavi provided USD 11 million of targeted country assistance (TCA) to accompany the delivery of vaccines and health systems strengthening support. However, there was no evidence that the MoH and the EPI were adequately involved in developing or validating the TCA interventions. Consequently, the MoH was not sufficiently implicated in the subsequent monitoring or endorsement of the TCA outcomes achieved.

While several stakeholders mapped out their individual programmes, a consolidated overview showing all the partners' interventions has yet to be developed, in order to better coordinate and monitor their commitments. Due to poor planning, there was some duplication in donor support, resulting in inefficiencies. Examples include similar activities included in both the TCA plans as well as the health systems strengthening (HSS) grant. A consolidated delivery approach to achieve synergies across the various donors' programmes has not yet been put into place.

The absence of periodic HSSP reviews, the MoH's insufficient involvement in monitoring TCA, and duplication of various HSS and technical assistance activities underscored challenges in South Sudan's health sector, including lapses in effectively coordinating the multiple interventions. The audit team recommends that the MoH clearly define and impose its coordination and convening role in respect of the partner-led implementation framework. The MoH should step up its involvement, by: holding quarterly meetings, directly engaging the TCA partners with MoH senior officials, and regularly monitoring and validating progress against plans. Additionally, the MoH should ensure that any donor-funded health initiatives are aligned with the country's health priorities and HSSP.

There were challenges in linking the Health Pooled Fund (HPF)'s funding sources with the expenditures incurred. None of the HPF financial reports included a breakdown of EPI-related expenditures, making it difficult to determine what was spent on EPI activities, or to reconcile amounts back to the Gavi approved budgets. The audit team also questioned the HPF's sustainability and the absence of a clear process for transferring its interventions. Currently in its third phase – the HPF or HPF3 – was scheduled to be wound up in March 2024, however as at May 2023 no transition plan was yet in place to prepare for its closure. The previous track record from March 2022, resulted in the HPF2 (second phase) withdrawing its support from

220 health facilities without a suitable contingency plan which resulted in a 53% reduction in pentavalent administered across those facilities.

Although the HSSP was developed by WHO in consultation with the Government and health partners, the MoH's role and responsibilities in this partner-led modality are not well defined. The implementing partners currently driving implementation and health sector funding remain reliant on donor funding, and the principle for how to ensure country ownership was not clarified in the HSSP. The team remains concerned given uncertainty with regards to public health funding in future, existing financial dependencies on external sources, and the lack of national involvement in strategic decisions associated with the HSSP.

The implementation of future Gavi-funded activities and sustainability of the immunisation programme in a fragile context such as South Sudan may be disrupted due to the inadequate coordination between health partners in the country, limited country ownership in managing and coordination partner led health interventions, and challenges in monitoring and supervision at health facility levels.

Post audit events impacting the Health Pooled Fund arrangements

Gavi's participation in the HPF under Crown Agents' management goes as far back as September 2019. In October 2023 in acknowledgement of the challenges within the existing health pooled fund arrangements (third phase), Gavi decided to restructure these arrangements, with the support of the Gavi Alliance partners. On 1 August 2024, HPF3's initial fund manager Crown Agents was formally liquidated, following a public announcement by the UK Government's insolvency service. As of September 2024, Gavi's discussions with South Sudan and the immunisation partners on the future pooled fund arrangements – and which health facilities will be covered within its scope – have not yet been concluded. In the interim, until HPF3 is fully retired, the residual fund activities are being managed by the Gavi Alliance partners.

Governance and oversight

The MoH's two principal governance bodies associated with immunisation are: the interagency coordination committee (ICC) – an advisory entity to the Ministry, which advises on national immunisation matters; and the South Sudan Immunisation Technical Advisory Group (SSITAG) – which is responsible for providing guidance based on the latest scientific developments and recommendations. An EPI technical working group (TWG) also operates as an ICC sub-committee, with the objective of providing oversight and collaborative decision-making on technical EPI matters.

The ICC and the SSITAG did not effectively oversee the implementation of EPI activities. For example, there was no evidence that the EPI annual work plans for 2020, 2021, and 2022 were approved by the ICC, nor were any suitable mechanisms in place to verify that planned activities were executed. Such lapses were partially attributed to the Covid-19 pandemic disruption, and the need to focus on managing the pandemic response. Several of the ICC and SSITAG's core functions were not performed in accordance with their terms of reference. Both committees largely focused on reviewing and endorsing grant applications, and did not address some of their other responsibilities, such as approving technical guidelines, undertaking policy analysis and providing guidance on national immunisation policies.

Also, both committees did not convene meetings as frequently as mandated; fewer than half of their required meetings were held. SSITAG meetings were poorly attended; on average only four out of eleven of the core members participated, according to the minutes. In addition, conclusions from the EPI technical working group meetings were not escalated and did not contribute to the ICC's discussions. Specifically, TWG meeting reports, including their key insights, were not shared with the ICC for them to help shape the ICC's strategic direction and decisions.

Both governance bodies did not have a structured process in place to monitor management's progress in implementing recommendations, and in general, the responsibility and timeline for who should follow-up actions and recommendations was lacking. Several key areas remained unaddressed such as: increasing

domestic EPI financing, augmenting the partners' accountability, and achieving immunisation services deadlines.

The governance and oversight shortcomings identified pose significant challenges in effectively implementing and monitoring the EPI's activities. In response to the audit risks noted, the MoH/EPI noted that the ICC had elected to attend training with another ICC to learn good practices to be implemented in the future.

Vaccine supply management

Vaccine receipt procedures were not adequate, and there was little evidence that the MoH or EPI were sufficiently involved. For example, representatives from UNICEF – were solely completing and signing vaccine arrival reports. Furthermore, the sub-national stores when receiving vaccine distributions did not conduct temperature checks. There were inaccuracies in the stock management tool (SMT) stock data. Discrepancies between closing and opening stock balances between different years resulted in unexplained differences for vaccines such as IPV and Pentavalent, affecting inventory management.

There were also discrepancies in the electronic stock management tool (e-SMT), due to the vaccine transaction records being incomplete. Key data was missing, with respect to stock inflows and outflows from the National vaccine store (NVS) and peripheral stores, compromising the reliability of the system. Having recognised some of these issues in the past, in January 2023 the NVS logistics' team introduced a manual vaccine control book. Unfortunately, this did not resolve the problems with its stock recording, as the entries made into the control book were incomplete. Thereafter in May 2023, the audit team conducted a stock count, which revealed substantial variances between e-SMT and the physical stock balances.

The records tracking the distribution of vaccines across the various supply chain tiers were incomplete; batch code information was often not recorded as the vaccines moved through the various tiers up to the service delivery level. Similarly, regular physical counts and reconciliations of stocks were not consistently carried out or documented, for most of the sites visited by the team. The absence of such controls reinforced lax procedures, as stock record errors occurring throughout the supply chain were not identified or were not properly investigated, to explain why the differences were occurring.

Intermittent vaccine stockouts occurred throughout the audit period at both the national vaccine store (NVS) and sub-national stores, affecting routine vaccines such as Inactivated Polio Virus (IPV), and Pentavalent. On other occasions surplus vaccines shelf-expired or were wasted. It was not possible to determine how long these stockouts lasted, nor how extensive were the wastage incidents, due to the poor state of the stock records. From discussions stockouts were described as sometimes occurring for periods of up to several weeks. Additionally, the audit team noted shortcomings in the management of cold chain equipment provided by Gavi with delayed repairs at national and subnational levels leaving equipment unusable for undocumented periods of time.

Overall, the shortcomings noted in the management of the vaccine supply chain management processes impact the visibility of vaccine stock levels throughout the supply chain and elevate the risk of stockouts and potential disruptions to the vaccination programme.

Immunisation data management

The reliability of immunisation coverage was undermined due to the use of inaccurate denominator data. The estimation of denominators was impaired due to the country's context, including ongoing conflicts and the migration of internally displaced populations, resulting in significant variations in each states' population but EPI continued to use the Bureau's unadjusted figures for the purpose of setting immunisation targets. The updated population estimates issued in April 2023 by the NBS reflect a 15% decrease in the country's total population, however, this reduction varied significantly across different states, resulting in substantial differences in administrative coverage when recalculated using these updated population estimates. Also, no Coverage Evaluation Survey was done since 2017, even though this could help recalibrate and update the denominator data. Furthermore, since 2018 the country's WUENIC data was not updated. The audit team

noted that presently there are significant disparities between the current administrative coverage reported and the recent WUENIC estimates. These disparities in coverage have significant implications for the planning, delivery, and evaluation of the EPI programme.

At the national level, the audit team identified anomalies in the administrative coverage reported, based on an analysis of the 6-year period 2017 to 2022, which demonstrated that the overall coverage was exaggerated, as the number of children reported as vaccinated over this period was not physically possible, based on the number of doses available in-country. Sub-nationally, similar overstatements in administrative coverage were also identified, as more than half of the states reported as having vaccinated more children with pentavalent and IPV, during the 4-year period (2017-2020) than was possible.

Many counties also failed to meet their monthly reporting deadlines, which resulted in them submitting their immunisation data late. In response, the EPI team prioritised the collection of data including overdue DHIS2 entries, without a formal cut-off limit. As a result, counties were allowed to belatedly enter data, record missing entries or even to modify data retroactively in DHIS2. There was little, if any, scrutiny over such modifications.

In 2018, following the completion of a data quality assessment (DQA), a data quality improvement plan (DQIP) was established in 2019 to address the issues identified. In 2020, an assessment of the DQIP's implementation status, identified that out of 35 planned activities: 10 were unimplemented; 18 were still in progress; and 7 were completed. Subsequently in 2021, another DQA was conducted which confirmed there had been little progress in implementing the previous plan, as the second assessment identified similar issues. No updated DQIP was developed in response to this second DQA, as the initial DQIP was still applicable.

Taken together, the above issues raise significant concerns about the reliability and accuracy of national immunisation data. Reliance on inaccurate immunisation coverage data can result in incorrect programmatic interventions and misallocation of resources, which could negatively impact the effectiveness of the immunisation programme and the health of the targeted population.

1.4. Financial consequences arising from Gavi's 2017 programme capacity assessment

In February 2017, WHO disbursed an advance of USD 541,000 to the MoH in support of immunisation activities. The funds were not used as intended and the advance was never cleared. In July 2018, the MoH acknowledged misuse and committed to repay Gavi the full amount. In January 2019, the MoH requested an extension, having agreed with the Ministry of Finance and Planning that it would reimburse Gavi in several instalments, starting from the 2019-2020 fiscal year. By May 2023, despite these assurances, the Government has not made any payment. As far back as 2017, the handling of Gavi-funded vehicles has raised concerns. At that time, Gavi's Programme Capacity Assessment recommended that the MoH explore effective methods for managing 11 such vehicles procured in 2017. In May 2023, the audit team attempted to physically verify these vehicles, and concluded that five of them could not be accounted for. It was noted that initially, the vehicles operated tracking devices, but the use of these devices was discontinued after one year.

Table 1: Questioned expenditure arising from Gavi's 2017 PCA

Item	Balance USD	Description
Questioned expenditures	*541,000*	See Section 4.5.1
Vehicles (five of these) unaccounted for	*375,000*	See Section 4.6.1
TOTAL	***916,000***	

1.5 Cash balances

Table 2: Gavi unspent grant funds, held on account at central level by implementing partners

Implementing partner	Balance USD	Date	Source of information
UNICEF	*2,975,479*	30 June 2023	Gavi finance records
WHO	*998,815*	30 June 2023	Gavi finance records
HPF / FCDO	*117,853*	30 June 2023	Gavi finance records
TOTAL	***4,092,147***		

2. Objectives and scope

2.1 Audit objectives

In line with the respective Partnership Framework Agreement and with Gavi's policy on transparency and accountability, countries that receive Gavi's support are periodically subject to a programme audit, whose primary objective is to provide reasonable assurance that Gavi's resources and support are managed in a transparent and accountable manner through systems that include appropriate oversight mechanisms and that the support is used according to the programme objectives as outlined in individual country agreements.

As a result, the audit team assessed the various processes and programme management arrangements governing Gavi's support (vaccines, cash and equipment) for which the respective entities were responsible, to assess if: the coordination and implementation arrangements were effective, that the existing grant oversight mechanisms provide reliable assurance on Gavi's investments, and that the vaccine supply chain management and immunisation data systems are effective.

The team also reviewed the relevance and reliability of the internal control systems, relative to: the accuracy and integrity of the books and records, management and operational information; the effectiveness of operations; the physical security of assets and resources; and compliance with national procedures and regulations.

2.2 Audit scope

We adopted a risk-based audit approach informed by our assessment of the risks across the immunisation programme areas supported by Gavi. This included: programme management, governance and oversight, vaccine supply management, immunisation data management, budgeting and financial management, and fixed assets management. In addition, Gavi's supplemental Covid-19 support (cash and vaccines), and the effectiveness of targeted country assistance were reviewed.

The audit scope covered the six-year period from 1 January 2017 to 31 December 2022. This scope was extended to May 2023 with respect to the Covid-19 response and consumption of COVAX vaccines delivered by 31 December 2022. The total cash, vaccine and ancillary support provided by Gavi to South Sudan as of 31 December 2022 is presented in Table 3 below.

Table 3: Cash, equipment, and vaccine support as of 31 December 2022

Cash grants	2017	2018	2019	2020	2021	2022	Total
HSS	6,414,622	7,331,417	24,492,553	1,285,168	6,573,820	3,627,627	**49,725,207**
Men. A – operational costs	1,246,247						**1,246,247**
MR catch-up campaign			3,425,182				**3,425,182**
Vaccine introduction grants (VIGs)	(53,438)				159,347		**105,909**
Yellow fever diagnostics				26,187	24,427	10,410	**61,024**
Covid-19 delivery support (CDS)					2,766,766	3,193,203	**5,959,969**
PEF/TCA			2,772,074	2,769,548	2,497,822	3,015,615	**11,055,059**
Total cash (a)	**7,607,431**	**7,331,417**	**30,689,809**	**4,080,903**	**12,022,182**	**9,846,855**	**71,578,597**
Equipment Support							
CCEOP (b)	**1,943,227**	-	**2,116,064**	**(143,270)**	**322,239**	**372,485**	**4,610,745**
Vaccine support							
Men A - campaign	1,588,081						**1,588,081**
Pentavalent	1,087,900	510,085	1,738,963	378,087	1,298,964	89,614	**5,103,613**
IPV	384,988	886,927	1,315,114	1,546,350	1,303,186	1,241,930	**6,678,495**
Measles-follow-up campaign			688,805	318,003			**1,006,808**
Injection safety devices	367,048	(29,178)	307,993				**645,863**
Covid-19 vaccines					6,793,379	20,718,303	**27,511,682**
Total vaccines (c)	**3,428,017**	**1,367,834**	**4,050,875**	**2,242,440**	**9,395,529**	**22,049,847**	**42,534,542**
Grand total (a) + (b) + (c)	**12,978,675**	**8,699,251**	**36,856,748**	**6,180,073**	**21,739,950**	**32,269,187**	**118,723,884**

2.3 Audit approach

The programme audit was conducted in two phases: an initial in-country scoping visit between 20 and 24 February 2023, followed by two weeks fieldwork conducted between 2 May 2023 and 12 May 2023.

The audit team visited the national vaccine store; five State offices and vaccines stores; eight county offices; six county vaccine stores; and 17 health facilities. See Annex 4 for a list of sites visited.

Over the six-year period (2017-2022), Gavi's support to South Sudan was disbursed to Gavi alliance partners, and expanded partners. Gavi signed grant agreements with all the partners and a Delegated Cooperation Agreement (DCA) with the Foreign, Commonwealth and Development Office (FCDO), with the specific aim of contributing funding to the South Sudan Health Pooled Fund.

For the period, Gavi disbursed overall amounts totalling USD 71.6 million to a range of implementers as illustrated in table 4 below. No Gavi funds were disbursed directly to the Government during that time. None of the expenditure during this period was audited directly and the audit team reviewed the related activities at national and sub national levels. In this situation of no direct disbursement by the Government, the audit team assessed Gavi's audit access and the risk around each of the implementers and determined that this audit would not directly test financial transactions, as shown in the table below. Nevertheless, the audit performed detailed reviews of the activities undertaken using Gavi support at national level and at the sampled provinces.

Table 4: Gavi's cash disbursements by grant and implementer as of 31 December 2022

Cash grants	Fund Recipient	Total USD	Audit comments:
HSS	UNICEF	*28,381,583*	Out of scope^
	WHO	*8,067,861*	Out of scope^
	FCDO	*9,685,458*	Scoped out by the audit team*
	IOM	*2,308,829*	~~Scoped out by the audit team~~ Out of scope^
	Crown Agents	*1,281,476*	Scoped out by the audit team^^
Sub-total HSS		***49,725,207***	
CDS	UNICEF	*1,513,764*	Out of scope^
	WHO	*1,286,115*	Out of scope^
	FCDO	*2,321,282*	Scoped out by the audit team*
	IOM	*60,030*	Out of scope^
	Crown Agents	*196,628*	Scoped out by the audit team^^
	Various	*582,150*	Scoped out by the audit team~
Sub-total CDS		***5,959,969***	
Measles catch-up campaign	UNICEF	*1,137,134*	Out of scope^
	WHO	*2,288,048*	Out of scope^
Sub-total Measles		***3,425,182***	
Men-A	UNICEF	*357,186*	Out of scope^
	WHO	*889,061*	Out of scope^
Sub-total Men-A		***1,246,247***	
PEF TCA	UNICEF	*4,213,831*	Out of scope^
	WHO	*2,565,491*	Out of scope^
	IOM	*349,001*	Out of scope^
	Crown Agents	*852,521*	Scoped out by the audit team^^
	CDC	*713,400*	Scoped out by the audit team~
	Embedded TA	*441,973*	Scoped out by the audit team~
	Others	*1,918,842*	Scoped out by the audit team~
Sub-total PEF TCA		***11,055,059***	
YF diagnostics	**Various**	***61,024***	**Scoped out by the audit team~**
VIGs (IPV, Penta)	**UNICEF**	***105,909***	**Out of scope^**
Grand total		***71,578,597***	

^ Not subject to our audit review due to the Single Audit Principle[1]
** The funds disbursed to FCDO was a contribution to the financing of the South Sudan Health Pooled Fund (HPF) which were used to provide support in delivering healthcare services. While the audit did not review specific expenditure at HPF per the DCA between Gavi and FCDO, detailed review was done on the activities undertaken by the HPF at national and sampled provinces.*
~ Scoped out as part of the audit risk assessment process.
^^ The funds received by Crown Agents were used mainly to support the implementation of the activities under HSS grant specifically support supervision activities, quarterly review meetings, reporting on HPF activities among others. While the audit did not review specific expenditure at Crown Agents, detailed work was done for the review of activities at national and sampled provinces.

During the scoping and fieldwork phases of the audit, the team interacted with a range of stakeholders including the EPI team; various Gavi alliance partners including WHO and UNICEF; Gavi expanded partners such as the African Field Epidemiology Network (AFENET); John Snow Inc (JSI); and Crown Agents.

2.4 Exchange rate

For information purposes and as part of the summary of this report, overall total amounts were reflected in United States Dollars (USD). Due to the volatility of the South Sudanese pound (SSP) against the USD, all translations to SSP are done at the point of payment but reported in USD.

Gavis's contributions to HPF3 were paid in USD and thereafter FCDO passed on these contributions, supplemented with its own contribution to HPF3 in GBP. As a result, although the HPF incurred expenditures in the local currency SSP, it reported back to the donors using GBP as its reporting currency.

[1] The single audit principle is part of a common internal control and audit framework in United Nations system organisations. It directs a system of checks and balances, where the control and audit functions regarding funds directly expensed by the UN agencies are based on common methods and framework enabling auditors of one institution to rely on the work of auditors from another institution instead of re-performing the audit themselves.

3. Background

3.1 Introduction

South Sudan, officially the Republic of South Sudan, is a landlocked country in East Africa. It is bordered by Ethiopia, Sudan, the Central African Republic, the Democratic Republic of Congo, Uganda, and Kenya[2]. South Sudan gained its independence from Sudan on 9 July 2011 following a referendum, making it the most recent sovereign state or country with widespread recognition as of 2023[3].

In December 2013, fighting broke out, igniting the South Sudanese civil war[4]. A peace agreement was signed in Ethiopia in August 2015. However, there was a second breakout of violence in Juba which led to another power-sharing agreement in August 2018. On 20 February 2020 a peace agreement was agreed and on 22 February 2020, a national unity government was formed[5]. The first democratic elections in South Sudan since the start of the civil war were scheduled for 2023 as part of the peace agreement that officially marked the end of the war, but in 2022 the transitional government and opposition agreed to defer these elections to late 2024[6].

Administrative arrangements

Under the terms of the February 2020 peace agreement, it was agreed that South Sudan's administrative structure would consist of 10 states, 2 administrative areas and 1 area with special administrative status[7]. These are further divided into 80 counties, 605 payams, 2,532 bomas, and 26,544 villages.

Economy and demographics

South Sudan is a low-income country with a nominal Gross Domestic Product (GDP) of USD 7.0 billion[8] and is heavily reliant on exploiting natural resources particularly crude oil, which accounts for an estimated 90% of the total government revenue, 95% of total exports and more than half of the country's gross domestic product (GDP).[9] The South Sudanese civil war, which started in December 2013, has undermined economic development since independence and as such, South Sudan has faced economic stagnation and instability in its first ten years after independence[10]. Real GDP contracted an estimated 2.9% in 2021/22, after contracting 4.9% in 2020/21, driven by the declines in the oil sector. GDP is projected to contract a further 0.4% in 2022/23, and thereafter recover by 4.6% growth in 2023/24, driven by increases in domestic oil production and higher global oil prices[11]. The population of South Sudan is estimated at 11.1 million in 2023[12] and the country ranks last, 191 out of 191, in the United Nations Development Programme human development index.[13] More than 90% of the population lives on less than 1 USD per day, and the absolute poverty rate is estimated to be between 40% and 50% of the total population[14].

3.2 National health sector

The Republic of South Sudan's constitution (2011) recognises health services as a basic human right to be respected, promoted, and protected. Following independence, the Government developed the South Sudan Development Plan 2011-2013, prioritising access to quality basic health services to promote health, economic productivity, and poverty eradication by strengthening the health system. These aspirations were detailed in the Health Sector Development Plan 2012-2016. The Government has also developed its National Health Policy (NHP) 2016-2026, which built on the previous policies and responded to the new post-independence realities in the health sector. The Health Policy envisions a healthy and productive population

[2] About South Sudan
[3] Newest countries profile
[4] South Sudan Civil War
[5] South Sudan Peace agreement
[6] South Sudan postpones elections
[7] *Final resolution of the meeting of the Presidency on the Number of States and their Boundaries*
[8] IMF economic outlook database 2023
[9] African Development Bank Group, The Political Economy of South Sudan, 2018
[10] World Bank Overview: South Sudan
[11] Africa Development Bank: South Sudan economic outlook
[12] UNFPA: Population of South Sudan
[13] Human Development Index | Human Development Reports (undp.org)
[14] South Sudan cMYP 2018-2022

and aims to contribute to attainment of universal health coverage and health-related sustainable development goals through the delivery of the Basic Package of Health and Nutrition Services (BPHNS). The NHP 2016-2026 is to be delivered through two Health Sector Strategic Plans – namely HSSP 2017-2022; followed by HSSP 2023-2026.

South Sudan has a health system structured into three tiers: Primary health care units (PHCU); Primary health care centres (PHCC); and hospitals (which are usually categorised as either state, county, police, or military hospitals). The structures in health services delivery are in the order of community, primary, secondary, and tertiary levels.

The national Ministry of Health (MoH) provides policy guidance, leadership, funding, monitoring, and evaluation. The state level oversees the implementation of health care services delivery at the rest of the levels. The community health offices are located at the village level and manned by community health workers. The primary level includes Primary Health Care Units and Primary Health Care Centres which provide a Basic Package of Health and Nutrition Services (BPHNS). The BPHNS covers preventive, curative, health promotion and managerial activities and is majorly financed by donors.

The country has a vision to improve service delivery at the grassroot level and there is a strong political commitment from the government of South Sudan and development partners to establish a community health system to reach communities with basic health services. This commitment is reflected in the National Health Policy and the Health Sector Strategic Plan, which seek to establish a community health system as a formal structure of the national health system by creating the structure and positions for Community Health Workers.

In 2017, the MoH launched the Boma Health Initiative (BHI), a national scale community health programme that aims to strengthen the health system in South Sudan and efficiently deliver an integrated package of health promotion and disease prevention activities at the boma level. The objectives of the initiative are first, to develop a community health structure as a formal component of the national health system at the boma or village level. Second, to increase access to quality health promotion, disease prevention, and selected curative services through community engagement and trained community health workers, and third, to provide leadership for the implementation of the BHI through inter-sectoral collaboration and community participation.

South Sudan's national health budget falls short of the 2001 Abuja Declaration, which suggests a 15% allocation of the government budget to healthcare. Over the past five years, the health sector's share of the national budget has consistently been less than 2% (with an even smaller fraction, less than 0.01%, allocated to immunisation)[15]. Consequently, the nation heavily relies on development assistance, which constitutes over 70% of its total healthcare expenditure. Public health services are primarily financed by donors including Health Pooled Fund (HPF), World Bank, Global Fund, the UN and Gavi[16].

3.3 Immunisation in South Sudan

Immunisation services provision is included in the Basic Package of Health and Nutrition Services (BPHNS). The BPHNS comprises addressing a selection of maternal and child health, control communicable diseases, improving community nutrition and the control of non-communicable diseases.

The latest UNICEF/WHO Estimates of National Immunisation Coverage (WUENIC) for South Sudan remains low with Diphtheria, Tetanus, Pertussis (DTP1) at 51%, DTP3 at 49% and measles at 49%[17]. The data also shows a progressive decline in routine immunisation (DTP3) from 71% in 2012 falling to 55% in 2013. Consequently, the country faces several outbreaks of vaccine preventable disease with the latest being in 2022. Between 1 January 2022 until 1 February 2023, the health authorities responded to an ongoing

[15] Independent Review Committee (IRC) Country Report 2023
[16] 2021 WHO Annual Report
[17] WUENIC data 2022

outbreak of measles, with 4,339 suspected cases including 388 (8.9%) laboratory-confirmed cases and 46 deaths (case fatality ratio: 1.06%) reported across the country[18].

The country continues to implement a range of activities to deliver immunisation services to children and women across all health facilities, including fixed, outreach and periodic intensification of routine immunisation (PIRI) approaches. The BHI health workers' role in vaccination is limited to community and household sensitisation and plays an important part in generating demand for routine immunisation, tracing unvaccinated and partially vaccinated children, and mobilising community support during SIAs.

3.4 Expanded Programme on Immunisation in South Sudan

South Sudan's national immunisation programme is under the responsibility of the Primary Health Care Directorate of the MoH. The EPI organisational structure is also reflected in the Directorate of Primary Health Care (PHC) for each of the respective State Ministries of Health, the EPI Unit in each County Health Department and as a functional unit within most health facilities across the country. The structures at lower levels have a semi-autonomous mandate with authority over decisions relating to resources mobilisation and resource utilisation, as well as responsibility for operating performance management systems.

In line with mandates from the national MoH, the National EPI programme is responsible for: policy, standards and priority setting, capacity building, coordinating with other stakeholders and partners, resource mobilisation, procurement of inputs such as vaccines and injection safety materials, monitoring, and technical support supervision to states and lower levels. In contrast, the states and counties are responsible for: planning, management, and delivery of EPI services. The community is involved in mobilisation and bringing the children for immunisation.

Immunisation is key part of the primary health care approach and is integrated into the child survival interventions at all levels. As of December 2022, the EPI offered a range of vaccines against vaccine preventable diseases, all of which were provided free of charge to citizens. See Annex 5 for the immunisation schedule.

Owing to the financing constraints noted in section 3.2, the country is still heavily reliant upon development partners to fund the majority of its vaccines including the BCG vaccine. In its comprehensive multi-year strategic plans (cMYP) (2018-2022), the country had outlined its intention to introduce PCV and Men A vaccines in 2020, followed by the rotavirus vaccine in 2021, and yellow fever in 2022. To date, none of these vaccine introductions took place, largely due to Covid-19 pandemic challenges as well as to the fragile country context. South Sudan's current full portfolio plan (FPP) (2023-2026) includes updated plans for introducing MCV2, Rota, and PCV in the fourth and fifth years of implementation.

3.5 Structure of the immunisation supply chain

South Sudan operates a four-tiered supply chain management system for vaccines and related supplies covering delivery points at: national, state, county, and service levels. Vaccines entering the country are transported by air and initially received at the National vaccine store (NVS) in Juba. Thereafter, vaccines are distributed from the NVS to the ten state vaccine stores (SVS) on a quarterly basis. These deliveries are determined in accordance with a "pull system" approach, where State stores request their vaccine allocation based on their state immunisation targets, less any current stock on hand. SVS vaccine orders are sent to national MoH/ EPI for approval, prior to being sent to the NVS for processing.

The physical distribution of vaccines from the NVS to SVS / CVS is currently supported by UNICEF. In general, air transport is used, due to the poor state of road infrastructure and the lack of security. Thereafter, the SVS vaccine distributions to County vaccine stores (CVS) are also done according to a "pull system" approach, where the CVS submit their orders, each month requesting their vaccines and related supplies allotment.

40 CVS (50%) receive their vaccines directly from the NVS, due to their unique geographical location and access difficulties and the other 40 CVS receive vaccines from their respective SVS. Thereafter, the CVS distribute

[18] Measles outbreak in South Sudan

vaccines to Primary Health Care Centres (PHCC), Primary Health Units (PHCU) and hospitals every month also using the pull system approach. Responsibility for the physical distribution of vaccines at this level uses a range of mixed models. For example, in some cases, the implementing partners collect the vaccines from the CVS to transport these to the health facilities. In other cases the health facilities collect the vaccines from the CVS. Vaccines are distributed in cooler boxes filled with ice packs. The NVS uses an excel-based stock management tool (SMT) to record stock at the NVS, however all other levels of the supply chain use manual stock cards.

3.6 Immunisation data

The EPI uses DHIS2 as its health management information system. Primary data is generated by health facilities who record their routine immunisation data using tally sheets. At the end of each month, the facilities consolidate their data using a monthly summary sheet, which is subsequently submitted to the county office. The county office reviews the data and then enters it into DHIS2, attributing it to the respective health facility. All counties' DHIS2 data entry task must be completed by the 10th day of the following month. The state responsibility is to undertake the review of the data entered into the DHIS2 by the counties. In case of discrepancies, they can modify / update the data.

The EPI is responsible for monitoring the timeliness of DHIS2 data inputs. If data is not submitted within the specified timeframe, the EPI will proactively engage with the concerned counties, to encourage them to input their DHIS2 data entries on time. A single DHIS2 user ID is assigned to each state and county. This user ID enables them to both enter and review the data.

3.7 South Sudan's partnership with Gavi

In 2013, the Republic of South Sudan signed a partnership framework agreement with Gavi. This agreement provides a framework for how Gavi's support to the country should be managed.

During the 6-year period 2017 to 2022, Gavi provided cash support totalling USD 54.3 million consisting of the following grants (see Table 3): health systems strengthening (USD 49.7 million); MR and meningitis A supplementary immunisation activities (totalling USD 4.6 million); and vaccine introductions (USD 0.16 million).

Gavi also provided commodities in the form of vaccines and ancillaries totalling: USD 14.7 million for meningitis A (USD 1.5 million); pentavalent (USD 5 million); IPV (USD 6.6 million); measles (USD 1 million); and injection safety devices (USD 0.6 million). Gavi also provided a cold chain equipment grant, totalling USD 4.6 million.

In June 2020, Gavi launched the Covid-19 vaccines advance market commitment (COVAX AMC), managed by the COVAX Facility. The COVAX AMC is an innovative financing instrument that supported the participation of 92 low- and middle-income economies – enabling them access to donor-funded doses of Covid-19 vaccines[19]. In December 2020, South Sudan joined as a participant, having signed the COVAX advance market commitment (AMC) standard terms and conditions. This resulted in COVAX providing additional support, consisting of three grants providing both: Covid-19 vaccines (signed: 18 March 2021); and Covid-19 delivery support funding (signed: 29 September 2021 and 19 April 2022). Overall, during the two-year period 2021-2022, COVAX provided vaccines valued at USD 27.5 million and cash support amounting to USD 6.6 million.

Gavi also provided catalytic technical assistance to strengthen the South Sudan national immunisation programme, totalling USD 11 million over the same 6-year period.

3.8 Entities involved in the executing and managing Gavi's funds.

Gavi funds were distributed to the Gavi alliance partners (WHO and UNICEF), the Health Pooled Fund (with FCDO as the lead donor); and in support of various technical assistance activities undertaken by a range of partners including: JSI, the University of Oslo, Centre for Disease Control (CDC), KPMG, Access for Humanity,

[19] About Gavi COVAX AMC

and the International Organisation for Migration (IOM). Gavi signed agreements with each of the partners elaborating what programme activities were to be implemented. Each partner was responsible for developing a detailed budget for their respective projects, in coordination with Gavi, the MoH, the EPI and other stakeholders.

Implementation of most immunisation activities is mainly led by UNICEF and the Health Pooled Fund (HPF).

Since April 2023, UNICEF is currently operating in three states (Jonglei, Unity and Upper Nile) to implement Gavi-funded activities. For these three states, this translates into implementation being executed by various contracted implementing partners (IPs) who operate in the counties concerned.

The HPF is responsible for implementation in the remaining seven states. FCDO (the lead donor) contracted Crown Agents as the fund managers for the HPF phase 3. HPF implements the EPI programme through its own network of 10 Implementing Partners, made up of 2 national Non-Governmental Organisation (NGOs) and 8 international NGOs, who operate in the respective counties across these seven states.

3.9 Covid-19 context and response

On 31 December 2019 health experts in Wuhan, China first identified and reported a coronavirus, responsible for the Covid-19 disease, later named as severe acute respiratory syndrome-Coronavirus 2 (SARS-CoV-2). On 30 January 2020, the World Health Organization (WHO) declared Coronavirus Disease 2019 (Covid-19) as a Public Health Emergency of International Concern (PHEIC). On 5 April 2020, it was confirmed that the virus had reached South Sudan, with the first four confirmed cases being UN workers[20].

The Government instituted several measures to mitigate the spread of Covid-19, including curfews and school closures. It also set up its national Covid 19 Task Force which was chaired by the Vice President to provide political guidance and communicate policy decisions to the country. The national Covid 19 Task force was supported by the National steering committee – itself chaired by the Director General, MoH – to coordinate the National-level response and interventions, and to provide integrated, comprehensive management of the pandemic across South Sudan.

In addition, a Covid 19 Technical team was set up to act as the vaccination technical working group, chaired by the Director General, Primary Health Care (DG-PHC) services. This Technical team was mandated to lead the coordination, planning and implementation of Covid-19 vaccinations.

Having received 132,000 doses of Astra Zeneca Covid-19 vaccine from COVAX, in April 2021 South Sudan began its Covid-19 immunisations, with vaccination taking place in three facilities in Juba (Juba Teaching and Referral Hospital, Juba Military Hospital, and Juba Police Hospital). These facilities focused on vaccinating health workers, the elderly, and security personnel (military, police) in Juba city. Covid-19 vaccinations were later extended to major hospitals in each of the 10 states, also targeting key priority populations (healthcare workers and the elderly population). However, due to the low uptake of the vaccine, the Ministry of Health decided to expand eligibility for the vaccine to all persons 18 years or older. Over an approximate 18-month period (3 January 2020 to 12 July 2023), South Sudan reported 18,368 confirmed cases of Covid-19 and 138 deaths to WHO. As of 7 May 2023, a total of 4,312,900 doses of Covid-19 vaccines had been administered[21].

3.10 Operational challenges in a fragile context

South Sudan has experienced protracted conflict, both before and since the country gained independence in 2011. Currently, South Sudan is ranked 3rd highest out of 178 countries on the Fragile States Index, consistently remaining in the top five for the past eight years. While seasonal flooding is expected, the severity and duration of floods have risen dramatically in recent years, affecting 835,000 people in South Sudan in 2021

[20] South Sudan reports first Covid-19 cases
[21] WHO South Sudan Covid-19 situation dashboard

and displacing over 500,000[22]. By 2021, over 8 million individuals, out of a population of 13 million, required humanitarian aid due to a combination of conflict, violence, extensive flooding, and the impact of the Covid-19 pandemic.

This has taken a toll on South Sudan's healthcare system which faces multiple challenges including shortage of healthcare professionals (3.5 health workers per 10,000 population, below WHO recommendations[23]), inadequate healthcare infrastructure; almost half of the country's 1,875 health facilities are reported as nonfunctional or moderately functional, failing to provide the complete Basic Package of Health and Nutrition Services, a facility-based delivery rate of 12.3%, and just 8% of facilities equipped with all six essential pieces of equipment. Furthermore, health teams are unavailable in 58% of Bomas, further straining the healthcare system[24]. These issues contribute to poor health indicators including high maternal mortality (800 deaths per 100,000 live births), high neonatal and under-five mortality rates (37 and 99 per 1,000 live births, respectively)[25] and 75% of child deaths are from preventable diseases, including diarrhoea, malaria, and pneumonia[26]. Life expectancy is 56.5 years and overall general service availability score is 30.4%, with health infrastructure and service utilisation indices at 43.2% and 15.05%, respectively[27]. Additionally, only one in four women give birth at a healthcare facility or receive care from a skilled birth attendant, increasing risks for both mothers and newborns. South Sudan's population is relatively small and widely dispersed across a vast territory. In a country where 90% of the population resides in rural areas and over 56% live more than five kilometres from a healthcare facility, accessing medicines and healthcare services is a challenge[28]. The road infrastructure is limited, and during the wet season, approximately 60% of the nation experiences flooding. Individuals in need of healthcare must navigate these obstacles, often undertaking long and costly journeys to access the care they require.

Fragile environments, conflicts, and emergencies disrupt vaccination efforts, leaving many vulnerable to vaccine-preventable diseases and impacting infrastructure and resources. To promote equitable immunisation in such contexts, Gavi may take on a higher risk appetite and a flexible, tailored approach of support[29]. In South Sudan, Gavi's support is facilitated through differentiated interventions, particularly subnational and community-based, by responding to contextual challenges and by promoting coordinated approaches with other development partners, through leveraging their comparative advantages. The administration of Gavi's support to South Sudan uses flexible and adapted implementation arrangements, currently resulting in Gavi's funding being managed by WHO, UNICEF, as well as several other partners including the Health Pooled Fund, African Field Epidemiology Network (AFENET), John Snow Inc (JSI), and Crown Agents. The primary mode of vaccination delivery is through periodic intensification of routine immunisation (PIRI). In 2017, the Gavi Board exceptionally approved a four-year vaccine co-financing waiver for the period 2017-2020. This waiver was later extended to cover 2021 and part of 2022. UNICEF also plays a central role in both the procurement as well as the distribution of vaccines across South Sudan, up to healthcare facilities.

3.11 Good Practices

The audit team noted the following good practices:

1. **Improvements in the country's cold chain capacity:** The audit team noted improvements in the cold chain equipment endowment. A five-year cold chain rehabilitation and expansion plan (2017-2021) was developed in accordance with the cold chain equipment optimisation plan (CCEOP) which has led to

[22] Climate change worsened 2021 weather extremes

[23] WHO recommends 44.5 health workers per 10,000.- WHO, 2016

[24] Independent Review Committee (IRC) Country Report

[25] WHO (2019) South Sudan Country Cooperation Strategy

[26] UNICEF (2021) South Sudan Health

[27] WHO 2021 Annual report

[28] OCHA (2021) Humanitarian Needs Overview South Sudan

[29] Gavi Alliance Fragility, Emergencies and Displaced Populations Policy

installation of 220 cold chain units during CCEOP first phase, and 265 units during CCEOP second phase. There is also a planned installation of 240 more units during CCEOP third phase.

- In a country without regular supplies of electricity, the audit team noted an increase in the provision of solar-powered CCEs units, with 13 out of 16 service delivery points, and 4 out of 5 state vaccine stores using solar power as their primary source, based on the team's site visits.
- CCE equipment was at 100% functionality at both the national vaccine stores and service delivery points visited. A 93% functionality rate was observed at state vaccine stores.
- A centralised temperature monitoring system was installed at National vaccine store, which has been in operation since 2018.

2. **Enhanced programme coordination and implementation using embedded technical assistance (TA):** The use of embedded TA has significantly bolstered the programme and helped enhance the central-level EPI team's capabilities.

   Also, the embedded TA staff were instrumental in facilitating and coordinating consultations among the in-country partners. This resulted in successfully formulating a comprehensive annual operational plan by EPI and in the TA staff helping identify which outstanding Health System Strengthening (HSS) activities are a priority for execution. Furthermore, the embedded TA staff have improved the immunisation programmes' monitoring and accountability mechanisms .

3. **The Health Pooled Fund met or exceeded expectations, for most of its outputs:** The Health Pooled Fund - third phase (HPF3), represents the most extensive public healthcare initiative in South Sudan. In its current inception, the Fund covers the period April 2019 – March 2024. HPF3 provides crucial support in delivering healthcare services in seven out of ten states. Since April 2023, HPF3 assistance extends across 514 public health facilities. This total is made up of: 17 hospitals, 178 Primary Health Care Centres (PHCCs), and 319 Primary Health Care Units (PHCUs). Furthermore, HPF3 has engaged over 4,400 Boma health workers (BHWs), who play a pivotal role in delivering essential healthcare services to communities.
   Despite the operational challenges noted in section 3.10 above, the HPF3 has consistently met or exceeded expectations across its key performance areas. For example, in its fourth year , its performance exceeded expectations in core areas such as: Output 3 – procurement and the distribution of medical commodities; and Output 4 - contributing towards building a stable, accountable, and responsive health system. HPF3 has also supported various national initiatives including:
   - Training and capacity-building to implementing partners that includes trainings on maternal and child health, health management information systems, medical logistics, financial management and pharmaceutical management information systems.
   - The delivery of drugs and medical supplies to health facilities by the HPF3 recipient implementing partners. These implementing partners were also trained to advocate, endorse and train on good planning/ ordering practices, last-mile delivery and storage management. These implementing partners also cascade the training to the health facilities.

4. **Assurance mechanisms were embedded as part of the roll-out of the Covid-19 programme:** During the roll-out of the Covid-19 vaccination programme, Gavi contracted a monitoring agent to provide assurance services, over the Covid-19 programme. This enabled the monitoring agent to provide regular reports on the coverage, vaccine stocks and various data points related to the vaccination programme. This resulted in Gavi having at its disposal an independent source of regular information, as a basis for responding to the pandemic response programme's needs.

4. Findings

4.1 Programme management

4.1.1 The role of the MoH in monitoring the immunisation programme needs to be enhanced

Context and Criteria

As noted on section 3.2, The national MoH provides policy guidance, leadership, funding, monitoring, and evaluation. The state level oversees the implementation of health care services delivery at the rest of the levels.

In the South Sudan context, the MoH only directly extends EPI services to only approximately 10% of the population. Therefore, much of Gavi's support is administered by technical and implementing partners for many other areas that are not covered by government services. Under this arrangement, donors and partners effectively fulfil many of the MoH's essential functions providing coverage to those areas otherwise not reached. It is important to recognise that this modality of operation is at the explicit request and with the full understanding of the MoH, given the absence of alternatives.

This approach was initially justified when the country first gained its independence, in consideration of the fragility and limited resources of its newly established national systems. Nevertheless, in the long run, it raises concerns regarding the progress of development, including the degree of national ownership and oversight, and establishing sustainable systems. The audit team observed that currently, the implication of multiple implementers within public health poses significant challenges in harmonising the EPI programme and with respect to planning, monitoring, and establishing oversight functions of its full range of activities.

The Ministry of Health developed, adopted, and launched its national health policy (NHP) 2016-2026 to provide the medium to long term direction to the sector. The national health policy envisions a healthy and productive population and aims to contribute to attainment of Universal Health Coverage and health related Sustainable Development Goals through the delivery of the Basic Package of Health and Nutrition Services (BPHNS). The NHP 2016-2026 is to be delivered through two Health Sector Strategic Plans (HSSP) 2017-2022 and HSSP 2023-2027.

The South Sudan HSSP 2017-2022 was developed to guide the first phase of implementing the National Health Policy. The HSSP articulates the strategic approaches, key interventions, resources requirements and implementation framework to guide the Ministry of Health and partners in delivering health services in the country. This strategic plan covering the period up to 2022, had core indicators with baselines and targets that were to be measured and tracked through various M&E mechanisms and platforms including HMIS/DHIS2, Human Resources Information Management System (HRIS), Logistic Management Information System (LMIS), reviews including Joint Annual Reviews (JAR), supportive supervision, programme evaluations, Joint Assessments of National Plan, Annual Health Sector Performance Reports, and surveys to ensure accountability to beneficiaries.

As noted previously in section 3.2, the Government's current allocation to public health services is less than 4% of the GDP; of which less than 0.001% of MoH budget is allocated on immunisation. As a result, most of public health services are financed by donors including Health Pooled Fund (HPF), World Bank, Global Fund, the UN and Gavi. The projected cost of the 2017-2022 HSSP was USD 2.8 billion. The available and projected funds available to implement this HSSP totalled USD 1.9 billion, of which the Government's limited contribution totalled USD 17 million (i.e. approximately 1%)

Gavi provides targeted country assistance (TCA) to complement Gavi's support for vaccines and health system strengthening. This assistance aims to bridge capacity gaps by leveraging the core competencies of Gavi Alliance partners based in-country. The nature of such support is usually determined based on a country's needs identified through national level discussions such as the

joint appraisal or full portfolio planning. During the 2017 – 2022 period, , overall Gavi provided USD 11 million of targeted country assistance funding, with an additional USD 10 million of further planned TCA support scheduled to be provided over the period 2022 – 2025.

Condition

The HSSP was not periodically reviewed and monitored: The Ministry of Health did not provide evidence of periodic review of the 2017-2022 HSSP during the period of implementation as required by the HSSP monitoring and evaluation framework e.g., five joint appraisal reviews (JARs) were targeted but these were not conducted. A Health Sector performance review was conducted in June 2021 (four and half years into the five-year strategy) and this review highlighted HSSP monitoring challenges including:

- *Inconsistent indicator definitions*: For some data elements, the indicators in DHIS2 were not clearly defined, and in other instances did not align with programme indicators making it difficult to assess the progress made towards achieving the HSSP targets.
- *Low completeness of HMIS reporting*: This was below 50% across all the years of the review, meaning that the data obtained from DHIS2 only reflected partial progress due to the incomplete reporting.
- *Absence of current surveys and/or assessments*: Data from surveys (particularly population-based surveys) and/or country-wide assessments were required for assessing the progress made towards achieving some of the HSSP indicators; however, due to inadequate funding, there were no recent surveys/assessments (e.g., the Demographic Household Survey) conducted to assess the progress made against some indicators.

Had suitable periodic monitoring been in place, these challenges could have been noted and addressed sooner.

Targeted country assistance support was not effectively monitored: The audit noted no evidence of the involvement of senior MoH officials in monitoring of TCA interventions.

Duplications of donor support provided to the MoH: While several stakeholders have mapped out their individual programmes, a consolidated overview of key partner interventions for better coordination and monitoring of commitments is yet to be developed. Consequently, there is duplication of activities in Gavi supported TCA and HSS grant. Examples of activities included in both TCA plans and HSS budget including: analyse the cold chain inventory assessment data within the SARA survey; training and supervision of CC logisticians, assistants and technicians on cold chain and vaccines; management and use of standard operating procedures; distribution, installation and monitoring of CCEs; conduct EVM follow-up assessment and develop improvement plan; support EPI workplan development and implementation; conduct review meetings at national and in the 10 state hubs; and support the 10 state hubs in micro planning and implementing PIRI activities.

Gavi's programme capacity assessment conducted in 2018, noted the inadequate coordination of technical assistance provided by the development partners and with the MoH which weakens government ownership and risks duplication and ineffective use of resources. The country's FPP application also notes that there is a multiplicity of donors and a lack of a consistent mapping of funding and activities that limits the capacity of the MoH to exert leadership.

Recommendation 1

The MoH should clearly articulate and transmit the government's role in a partner-led implementation framework. This would serve to enhance ownership of the programme, and its strategy for building greater continuity in national systems, in context of this fragile country.

Recommendation 2

The MoH, through the direction and guidance provided by its established governance bodies (i.e., at ICC level for immunisation, and via health sector committees) should ensure that all the donor-funded health activities remain aligned with the national Heath Sector Strategic Plan's priorities.

Recommendation 3

The MoH should:

- Monitor progress over the TCA activities, to ensure that the designated activities are implemented on time and that these target and address the EPI's programmatic and managerial challenges as initially identified.
- Convene and conduct regular quarterly meetings with the TCA partners and MoH senior official to regularly validate technical assistance reports, before these are formally submitted to Gavi, via the PEF portal.

<table>
<tr>
<td colspan="2">Root cause
• The Ministry of Health established the Health Sector Working Group (HSWG), Health Clusters, NGO Forum, and disease TWGs to oversee the implementation of the HSSP however,
  ○ attendance and frequency of the HSWG meetings are ad-hoc.
  ○ the terms of reference of the various working groups have not been synchronised to identify how they can support the ministry monitor the HSSP.
  ○ the ICC that oversees Gavi grants in the country has limited linkages to the MoH established coordination bodies.

• Multiplicity of PEF TCA partners operating in the country, including individual contractors, of whom MoH may not be fully aware of their activities till the time of reporting.
• PEF TCA partners report through the Gavi PEF reporting portal to which the MoH has no access. The audit team also noted that the PEF reporting portal does not provide visibility over the outcome of prior year milestones that were still incomplete at the year end, and for which outstanding actions remained.
• The timing of the FPP and HSSP was not aligned to funded interventions.</td>
<td>Management comments
See detailed management responses - Annex 7</td>
</tr>
<tr>
<td>Risk / Impact / Implications
• The past targets in the 2017-2022 HSSP related to immunisation were not achieved. The audit reviewed Health Sector Performance review report (conducted in June 2021) for the period 2017 to June 2021 and noted that:
  ○ Targets for 100% Bomas having Boma Health Initiative (BHI) not achieved with only 42% (934/2219) of Bomas implementing BHI by June 2021.
  ○ Human papillomavirus vaccine not introduced over the period of the HSSP.
  ○ Pentavalent 3 vaccination coverage was consistently below the target (80%) across all years.
  ○ Human resources for health information system (HRHIS) are non-functional.
  ○ Targets of for the total health expenditure as a percentage of GDP (target is 15%), health allocation as a percentage of national budget (target is 8%) and percentage of MoH budget allocation implemented (target is 100%) were not achieved with results of below 4%, 6% and 77% respectively.
• TCA plans may not achieve its desired outcomes without effective monitoring by the MoH.
• The Government’s limited visibility over its immunisation programme translates into constraining country ownership, restraining national appropriation and potentially undermines the programme’s future sustainability.</td>
<td>Responsibility
MoH, EPI</td>
<td>Deadline / Timetable
See - Annex 7</td>
</tr>
</table>

4.1.2 Sustainability challenges within the current HPF model should be addressed in the proposed pooled funding mechanism for Gavi 5.1

Context and Criteria

The South Sudan Health Pooled Fund (HPF), which is in its third phase – i.e. HPF3, is a five-year multi-donor programme led by the United Kingdom's Foreign Commonwealth and Development Office (FCDO), with contributions from the United States Agency for International Development; the Canadian Government; the Government of Sweden; Gavi, the Vaccine Alliance; and the European Union (EU). It represents the most extensive public healthcare initiative in South Sudan. In its current inception, the HPF3 covers the period April 2019 - March 2024 and provides crucial support in delivering healthcare services in seven out of ten states, while supporting nearly 8,000 health workers in 797 public health facilities (25 hospitals, 195 Primary Health Care Centres (PHCCs) and 577 Primary Health Care Units (PHCUs)) (reduced to 514 facilities since April 2023) through a blend of health worker training and incentives, wider service delivery support to health facilities, and technical assistance and oversight provided by a range of implementing partners.

Gavi signed a Delegated Cooperation Agreement (DCA) with the Department for International Development (DFID) on 6 September 2019 to contribute to the financing of the South Sudan Health Pooled Fund (HPF) under HSS2. Subsequently, the original DCA underwent modifications on two occasions, on 14 April 2020 and 4 June 2021. On 8 September 2021, Gavi signed another DCA, this time with the Foreign Commonwealth and Development Office (FCDO) under HSS3, which was subsequently amended on 19 October 2021.

The administration and oversight of the HPF rest with FCDO. They in turn have contracted Crown Agents to serve as fund managers. HPF3, carries out the implementation of the EPI through a network of 10 implementing partners (IPs). Since April 2023, this network includes 2 national NGOs and 8 international NGOs, all operating within the 7 states of South Sudan namely: Eastern Equatoria, Central Equatoria, Western Equatoria, Northern Bahr el Ghazal and Western Bahr el Ghazal, Warrap and Lakes.

As of the 31 December 2022, Gavi had allocated a total of USD 12 million to the Health Pooled Fund 3, comprising grant funding of USD 9.7 million for Health Systems Strengthening (HSS) and USD 2.3 million for Covid-19 Delivery Support (CDS), all disbursed to FCDO .

Section 13 of Gavi's guidelines on financial management and audit requirements (November 2017) state that, "*Gavi accepts pooled funding in general, and understands that it represents a special case with specific considerations for budgeting, reporting and assurance. The financial pre-requisites for Gavi to accept pooled funding are:*

- *The budget being funded by the pool is comprehensive and, within it, the immunisation related activities which Gavi would have funded separately in a discrete budget, are directly or at least indirectly identifiable.*
- *The reporting of expenditures against the budget provides a sufficient level of visibility that the budget has been followed, or reasons are provided as to any changed focus.*
- *The financial statements of the pool should clearly state the disbursements received from Gavi in the period; and*
- *The TAP policy and, as far as possible, all other requirements in terms of financial management and systems, apply regardless that the funding is being channelled through a pool. Any exceptions should be discussed with the Secretariat.*"

Section 2.3 of the Gavi's guidelines on external audit for Gavi cash-based support (November 2017) states that, " *In order for Gavi to accept a pool audit, Gavi requires the financial statements of the pool to state clearly the disbursements received from Gavi and to include a comparison of pool expenditures with the pool budget*."

Paragraph VI of the DCA with FCDO states that, "*The Fund manager will submit the following reports to the contributing donors: Quarterly progress narrative report, quarterly financial report, audited annual financial report, an end of programme narrative report within 3 months after end of programme and audited final financial report within 3 months after end of program*."

Condition

HPF3 remains a critical programme in enabling the population of South Sudan to access essential health services, particularly for maternal and child health. The consistent performance of the programme is one of the good practices noted in section 3.11. The Health Pooled Fund's (HPF) governance structure comprises two key bodies: the HPF Strategic Advisory Board, responsible for setting strategic direction and overall project implementation; and the HPF Steering/Advisory Committee which serves as the project's decision-making and governance body. The Strategic Advisory Board and the Advisory Committee are mandated to convene on a quarterly basis with representation from the Government, FCDO, and other donors.

The HPF fund manager, formulates an annual HPF work plan and budget, which includes a range of health interventions designed to deliver a basic package of primary health services, including EPI. Once approved by FCDO, this budget is allocated to different Implementing Partners. Gavi's funding is a contribution to the pooled fund and is not funding exclusively earmarked toward for EPI activities. Nonetheless, the Delegated Cooperation Agreement (DCA) with FCDO outlines a budget and a schedule of activities to be funded including last-mile delivery, mobile vaccination (covering hiring of motorbikes, boats, and vehicles), incentives for vaccinators, transport allowances for outreach, salaries for vaccinators, and vaccinator training).

Limited linkage between expenditures and funding provided to the HPF: The reports from the HPF fund manager lack specific breakdowns of the expenditures related to EPI activities, and they are not aligned with the budget approved by Gavi. Consequently, it is not feasible to determine the precise amount spent on EPI activities in comparison to Gavi's approved budget and/or schedule of funded activities**.** The audit team reviewed the financial reports provided by fund manager and noted that:

- The total expenditures on EPI activities for the period spanning April 2019 to March 2023 amounted to Great Britain Pounds (GBP) 6 million approximately USD 7.8 million (with yearly breakdowns of Y1 – GBP 0.4 million/USD 0.5 million, Y2 – GBP 1.7 million/USD 2.2 million, Y3 – GBP 2.1 million/USD 2.9 million, and Y4 – GBP 1.8 million/USD 2.2 million). Gavi's cumulative contribution was USD 9.7 million up to December 2022.
- Total expenditures on COVAX activities during the period from April 2020 to March 2023 was GBP 6 million, approximately USD 7.7 million (with yearly allocations of Y2 – GBP 3.3 million/USD 4.3 million, Y3 – GBP 1 million/USD 1.4 million, and Y4 – GBP 1.7 million/USD 2 million). Gavi's total contribution was USD 2.3 million up to March-2023.

There is no direct alignment between the funding provided by Gavi, and the corresponding reported expenditures for EPI and COVAX activities. It also remains challenging to determine whether all the activities outlined in the budget approved by Gavi were carried out as planned.

The audit team also reviewed the external audit reports for two financial years (i.e., 1 April 2021 to 31 March 2022 and 1 April 2022 to 31 March 2023) and noted that the reports did not state clearly the disbursements received from Gavi.

Challenges related to sustainability and transitioning of HPF interventions: Although HPF3 is scheduled to conclude in March 2024, there is no pre-established transition strategy for the supported initiatives, and no plan exists as to whether or how the MoH will assume responsibility, for components no longer covered by the pool fund after transition. A historic example of this occurred at the end of March

Recommendation 4

For future pooled funding arrangements, MoH and Gavi should ensure that the Management of the pool fund provide the necessary reports, which are compliant with Gavi's guidelines on financial management and audit requirements. This includes confirming that the:

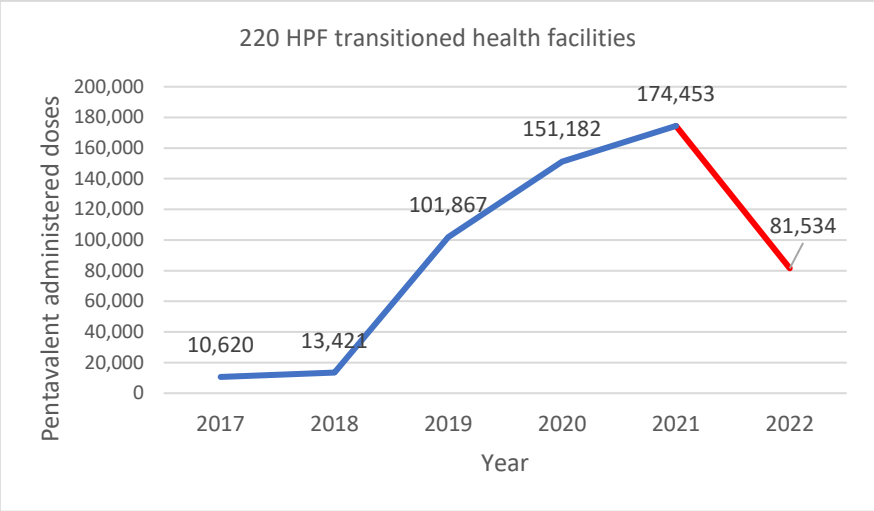
- Gavi-funded immunisation activities are directly identifiable;
- reporting of expenditures against the budget provides a sufficient level of granularity, showing that the budget has been followed, or providing suitable justifications reasons where any funding was reprogrammed or reallocated; and
- health pooled fund financial statements clearly state the total value of Gavi funding received during the period.

Recommendation 5

The MoH should work with the pool fund manager to help prepare a comprehensive transition plan for HPF3 programme's completion, including the corresponding transfer of roles and responsibilities associated. The transition plan should identify suitable strategies to minimise any potential service interruptions, including for any health facilities which will no longer receive any subsequent HPF funding and support.

2022, when HPF withdrew support from 220 primary health facilities, without any accompanying contingency being in place. Thereafter, the total number doses of pentavalent administered by those 220 facilities significantly dropped, from a peak of approximately 174,500 achieved in 2021 to 81,500 children vaccinated per in 2022 as illustrated below.

Figure 1: Penta 3 doses administered at 220 facilities where HPF transitioned.



Root cause

- The current reporting requirements do not require the pool fund Management to submit financial reports with sufficient, granular detail on the performance of Gavi-funded activities.
- Non-compliance with Gavi's guidelines on financial management and audit requirements.
- There is no documented transition plan for health facilities being serviced by the HPF.

Management comments

See detailed management responses - Annex 7

Risk / Impact / Implications

- The absence of a transition plan could potentially undermine the continuity of the immunisation programme, and disrupt the delivery of health services, when health pool support is withdrawn from select activities and components.
- The pooled funding existing reporting arrangements offer limited information in terms of what expenditures were incurred against each activity, undermining the transparency and possible continuity of the programme.

Responsibility

MoH, EPI, HSTP

Deadline / Timetable

See - Annex 7

4.1.3 Improvements required in the supportive supervision arrangements

Context and Criteria

Supportive supervision focuses on monitoring programme performance, by generating data for decisions and potential course correction. Such supervisions involve regularly following-up with staff on their progress and ensuring that activities are implemented as planned. The observations and findings from supervisions, enable supervisors to determine what course of action to propose, and what issues need to be followed-up for action in the longer term[30].

Condition

There are no specific policies for the monitoring and supervision of South Sudan's public health activities at national, state, county and local level. However, based on the best practices being followed, health-facility support supervisions are carried out by the implementing partners, with the participation of county health officials and/or state health officials. HPF-led supervisions used an integrated supportive supervision (ISS) tool known as the "HPF health facility monitoring guide", including a specific section on EPI activities. In addition, WHO developed a handheld-devices system (open data kit or ODK) to consolidate the findings from multiple support supervisions, as executed by a range partners and agents.

Lack of evidence of support supervisions conducted by MoH: During the 6 year audit period under review, there was no documented evidence that MoH officials had conducted a supportive supervision at 11 out of the 17 health facilities visited by the audit team. The audit team reviewed the data available in the ODK database and noted that for the 17 locations visited by the audit team, only half of the past support supervisions were conducted by an HPF representative, which also included an accompanying government official. In addition, the team noted that as the feedback from the supervision visits was recorded in the health facility's respective visitor book, this meant the information was often not readily accessible by the local immunisation officer, as the book was usually retained by the individual in charge of the facility. Additionally, there was no evidence to indicate that feedback from past supervisions was followed up during subsequent visits. Given that there was no reliable process to record and revisit supervision feedback, the audit team concluded the existing mechanism for tracking progress in implementing past supervision actions was not effective.

Gaps in supportive supervision of HPF health facilities: The audit team noted that once the HPF representatives completed their supervisory visit, frequently they did not print out or share a copy of the report. Moreover, there was no overall dashboard or system to consolidate the findings from all the supervisions and resultant recommendations. The audit team also noted that there was significant variation in the frequency that some health facilities were visited. Specifically, during the first three years of the programme, no supportive supervision took place at 17% (138) of all (797) the HPF health facilities.

Supervisions did not necessarily focus on the requirements of the immunisation programme: The national EPI team primarily focused on ensuring that health facilities consistently reported their monthly DHIS2 data, without any emphasis on the actual quality of the data. This means that other key areas were not reviewed, including: cross-referencing coverage data with logistics data, performing reconciliations between tally sheets and monthly reports, and quality control measures. The audit team recognises that although challenges in the

Recommendation 6

The MoH should update and standardise its support supervision tools, ensuring that these includes suitable immunisation data quality and stock management sections to be included as part of the review. Moreover, appropriate and robust feedback mechanisms should be implemented to ensure that the feedback from all supportive supervision visits is recorded on file and is accessible by the local EPI officer.

Recommendation 7

The MoH should:

- Implement an action tracker process to follow-up the implementation of recommendations from previous supportive supervision visits.
- Ensure that the follow-up of previous recommendations, is included as a standing agenda item in subsequent visits.

[30] WHO on supportive supervision

<table>
<tr><td colspan="2">immunisation data were discussed at both county and state-level meetings, the conclusions from such deliberations were not documented and it was unclear what, if any, remediation or action was taken as a result of these discussions. .</td><td></td></tr>
<tr><td colspan="2">Root cause
• The support supervision tool does not provide sufficient in-depth monitoring and guidance covering areas such as: data quality and vaccine supply management.
• Given the context for how supportive supervision is primarily a partner-led activity, the government's role is not adequately defined;
• Feedback from monitoring and support supervision visits is not consistently shared or subsequently followed-up/tracked.
• The MoH does not have access to the support supervision reports recorded in ODK.</td><td>Management comments
See detailed management responses - Annex 7</td></tr>
<tr><td>Risk / Impact / Implications
Inadequate monitoring and supervision, combined with inconsistent, or absent follow-up process, could result in missed opportunities to promptly identify and address operational issues. Without the positive, supervision reinforcement effect from regular feedback, potential improvements in how immunisation staff can better implement activities will be lost, resulting in the overall programme's effectiveness being reduced.</td><td>Responsibility
EPI, HSTP in liaison with WHO</td><td>Deadline / Timetable
See - Annex 7</td></tr>
</table>

4.2 Governance and oversight

4.2.1 Governance bodies need to be strengthened to improve oversight and country ownership

Context and Criteria

In 2007, the interagency coordination committee (ICC) was established, to serve as an advisory body to the MoH on all matters pertaining to immunisation, as per its Terms of Reference (ToRs). In 2012, the ICC established the EPI Technical Working Group (TWG) as a sub-committee with the aim of enhancing oversight and collaborative technical decision-making within the management of the Expanded Programme on Immunisation. This TWG also served as a platform for reinforcing coordination among partners.

In 2018, following a Programme Capacity Assessment review, the ICC's ToRs were updated, with Gavi support. The ICC's current roles and responsibilities include:

- Assisting the immunisation programme in adapting to health sector reforms, decentralisation, and other dynamic social and political transformations.
- Participating in the development and approval process of multi-year (cMYP) and annual operational plans aimed at enhancing the development of immunisation systems.
- Contributing to the appraisal and development of technical guidelines and policy implementation guides for the Immunisation program.
- Ensuring effective collaboration and coordination among existing and potential partners involved in Immunisation programs within the country.
- Providing technical and managerial oversight for the implementation of Immunisation activities, emphasising timeliness and value for resources.
- Supporting advocacy and social mobilisation efforts to secure the highest levels of political commitment and community engagement in immunisation programs.
- Engaging in reviews and other monitoring activities related to the Immunisation program.
- Utilising supervision, monitoring, and evaluation findings, as well as other relevant sources of information, to guide innovations aimed at improving Immunisation coverage and the surveillance of vaccine-preventable diseases.
- Mobilising the necessary resources, including financial, human, and material resources, to ensure the delivery of high-quality and effective Immunisation services.
- Monitoring and enhancing the functionality of all ICC sub-committees, ensuring their effectiveness and impact.

In September 2016, the South Sudan Immunisation Technical Advisory Group (SSITAG) was initially established, in accordance with Ministerial Order No. 1. No activities were undertaken by the SSITAG since its establishment. Thereafter, in December 2022, the SSITAG was reinstated, in accordance with Ministerial Order No. 14. SSITAG's primary mandate is to:

- provide guidance on contemporary scientific advancements and recommendations,
- support the country in conducting comprehensive situation analyses and assessments related to the EPI, and
- contribute to policy analysis and the formulation of strategic approaches.

Both the ICC's and the SSITAG's terms of references specify that they are required to convene quarterly meetings. Generally, good governance includes the running of successful meetings and documenting progress – both by identifying new recommendations and actions prospectively, and by ensuring that past meeting's recommendations are revisited retroactively and are fully addressed.

Condition

The governance bodies did not effectively oversee the implementation of EPI activities: The audit team reviewed the EPI's annual work plans for 2020, 2021, and 2022. These plans detailed the scheduled activities and the respective partners responsible for each activity. However, there was no evidence validating that the ICC approved the annual work plans. EPI quarterly progress reports were also produced, providing an update on the status of activities. The EPI reports were largely prepared based on information provided by the implementing partners. However, there was no mechanism to verify whether that the activities had been executed as intended.

The absence of an approved work plan and the lack of a monitoring mechanism adversely impacted the EPI's work. Thus, the ICC could not readily obtain a regular overview of the overall implementation status of the various grants, and the EPI manager's ability in effectively initiating, promoting and administering EPI activities was impeded.

Some ICC functions were not performed: The audit team noted gaps in the ICC's operational workings, and that it did not perform several of responsibilities, as mandated by its terms of reference (ToRs). The team reviewed ICC minutes for the 6-year period between 2017 to 2022 and noted that the ICC largely focused on reviewing and approving grant applications to Gavi, while in contrast its other essential functions were rarely conducted. Specifically, the ICC did not properly address its other responsibilities including: finalising multi-year and annual operational plans; developing technical guidelines; reviewing policy implementation guidance; promoting collaboration/ coordination among immunisation partners; and providing technical/ managerial oversight over EPI activities.

Some SSITAG functions were not performed: Similarly, the team noted that the SSITAG largely focused on reviewing and endorsing applications for the introduction of new vaccines. In contrast, the SSITAG did not fulfil all of its critical responsibilities, as mandated by its ToRs. Specifically, the following important functions were not carried out:

- Conducting policy analyses to inform and determine national immunisation policies;
- Providing guidance to the EPI for the development of multi-year strategies aimed at controlling and eliminating vaccine-preventable diseases through immunisation; and
- Offering direction to national authorities regarding the monitoring of the immunisation program, thereby enabling the quantification and measurement of its impact.

These unaddressed responsibilities represented notable gaps in the functioning of SSITAG.

The governance bodies did not convene meetings in accordance with their mandated frequency: The team's review of the available ICC's minutes, indicated that during the six-year period (2017-2022), only 12 out of the 24 ICC quarterly meetings took place, as expected. Similarly, a review of the SSITAG minutes, indicated that for the same period (2017-2022), only 7 out of the 24 SSITAG quarterly meetings took place, as expected. Furthermore, it was noted that for the SSITAG meetings which took place, on average only 4 out of the 11 possible core members were in attendance.

Gaps in monitoring governance bodies recommendations: There was no defined process for implementing and monitoring the status of recommendations from both the ICC and the SSITAG. Within the ICC, actions outlined in meeting minutes lacked assignment to responsible officers for implementation, and no specific timelines for completion were set. Moreover, some meeting minutes were not signed, and in

Recommendation 8

The MoH – with support from the partners – should:

- Undertake annual regular training of existing / new members of the ICC and SSITAG to re-acquaint them on the governing bodies' core objectives and refresh them on what roles and responsibility they need to fulfil.
- Strengthen accountability around the implementation of the ICC and SSITAG's recommendations – as well as the EPI taskforce's / EPI TWG actions – by developing a dashboard to track their progress. Furthermore, each recommendation should be assigned to a designated officer, with a clear deadline by when the action is to be completed.
- Ensure that reports summarising the EPI TWG's conclusions are prepared and submitted to the ICC for the purposes of supporting strategic decisions.
- Once a year, review the ICC resolutions and formally report any issues of non-compliance to the Committee , for consent.
- For the purposes of supporting the ICC and SSITAG's work planning and activity scheduling, put in place a workplan tracking tool to monitor which activities are delayed, or carried forward from previous years, to enable the ICC and SSITAG to prioritise their respective activities annually. The de-prioritisation of any work item should be acknowledged and endorsed by the ICC and SSITAG.

<table>
<tr><td>certain instances, action points were not documented, making it challenging to ascertain whether these recommendations had ever been acted upon. Examples of such recommendations included:

• Encouraging the government to increase domestic financing for the EPI, including routine immunisation (RI) services.
• Urging the MoH's leadership to insist on greater accountability from the partners involved in EPI implementation.
• Advocating for the institutionalisation of accelerated campaigns in remote, hard-to-reach areas during the dry season.
• Requesting that the EPI manager compile a comprehensive report on what Gavi vehicles were available.
• Highlighting the need for regular monitoring and review of action points, using a structured matrix / template, to be discussed in subsequent meetings.
• Emphasising the importance that the EPI team pioneer innovative strategies to extend immunisation services to increased numbers of children.

Similarly with respect the SSITAG's recommendations, there was not a structured process in place to monitor Management's progress in implementing recommendations, and in general, the responsibility and timeline for who should follow-up the actions/ recommendations was lacking.

There was no linkage between the EPI TWG and the ICC: The audit team found no evidence to indicate that the EPI Technical Working Group (TWG) meetings contributed to the ICC's deliberations. In addition, there was no indication that the TWG submitted suitable summarised reports to the ICC, to share its own insights for the purpose of supporting and advising the ICC on specific strategic decisions that contained technical dimensions. Finally, there was no suitable dashboard in place, to monitor and oversee the implementation of TWG action points.</td><td>Recommendation 9
The MoH should set up a secretariat function to support the ICC and SSITAG in their administration. This function should have its own ToRs and be responsible for scheduling meetings, keeping minutes, maintaining a dashboard to track actions, and the archiving of minutes and supporting papers.</td></tr>
<tr><td>Root cause
• There was no documentation to confirm that ICC and SSITAG members received and understood their (ToRs) and mandate.
• There is no functional secretariate to coordinate the efforts of the various governance structures.
• An official ICC calendar with agreed-upon meeting dates had not been formally approved.
• The frequent turnover in the office of the Minister of Health, who chairs the ICC, caused disruptions in the regular scheduling of ICC meetings.
• There was no structured dashboard or matrix for tracking the progress of the implementation of ICC, SSITAG, and EPI TWG recommendations, action points, and the annual work plan.
• Gaps in the document filing and archiving system.</td><td>Management comments
See detailed management responses - Annex 7</td></tr>
<tr><td>Risk / Impact / Implications
Inadequate oversight by governing bodies can result in delays in identifying and addressing crucial issues related to the immunisation programme.

Potential gaps in oversight can hinder the programme's ability in accomplishing its objectives as noted on 4.1.1</td><td>Responsibility
EPI</td><td>Deadline / Timetable
See - Annex 7</td></tr>
</table>

4.3 Vaccine supply management

4.3.1 Forecasting and quantification of the country's vaccine needs to be improved

Context and Criteria

Introducing data-driven forecasting and agile supply planning, represent opportunities which are aligned both with Gavi's investment priorities, as well as with Gavi's immunisation supply chain strategy, 2021 - 2025[31]. It is understood that there are synergies between countries which can generate accurate and representative stock forecasts meeting their vaccine supply requirements, and optimising the transportation and distribution of immunisation supplies, to minimise expenditures and reducing any stock wastages/ or expiries.

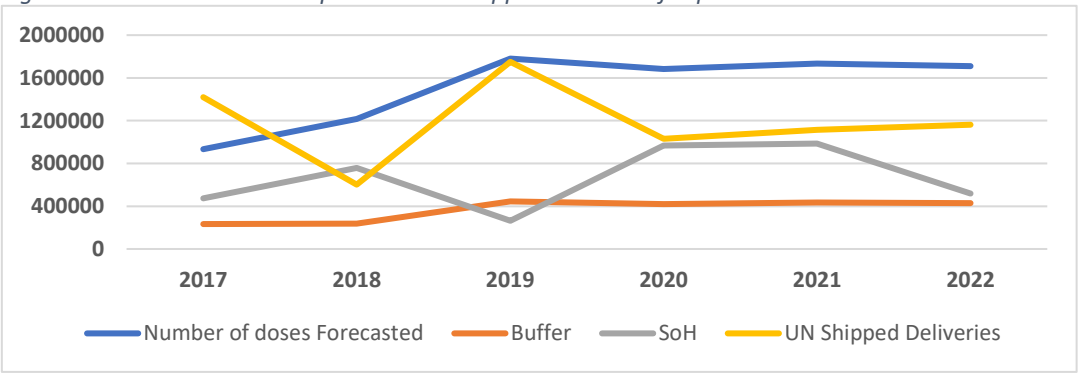
Typically, every September, South Sudan's begins its annual forecasting exercise for its vaccine and immunisation supplies. The forecasting process involves all the key stakeholders, so they can provide useful input and improve the quality of the forecast. The process is overseen by the UNICEF country office, and the forecast is drafted collaboratively by the MoH, EPI and UNICEF Supply Division – the latter being Gavi's procurement agent.

The underlying forecast data is prepared by the MoH and is used to complete the UNICEF forecasting tool which captures the following data inputs: target population, estimated coverage, estimated wastage rate, buffer quantity and stock on hand (SoH) at the time of generating the forecast. Thereafter, the draft forecast is reviewed and approved by the MoH/EPI. Once authorised, the forecast serves as the basis for UNICEF Supply Division to propose a suitable shipment plan for the immunisation products, which is endorsed by South Sudan before procurement begins.

Condition

Pentavalent vaccine forecast was not accurate: We reviewed the pentavalent vaccine forecasts for the period 2017 to 2022 and noted that the country consistently overestimated its vaccine needs. Gavi approved the shipment of vaccine quantities lower than those that had been initially forecasted.

Figure 2: Forecasted vaccine quantities vs. shipped deliveries for pentavalent vaccine



Recommendation 10

The Ministry of Health should ensure that in future:

- all annual immunisation forecasts incorporate and use the National Bureau of Statistics' approved harmonised population figures.
- forecast assumptions are thoroughly reviewed and checked, and that efforts are made to consistently use the excel-based stock monitoring tool to keep track of vaccine supplies held across all levels of the supply chain including National, state, and county levels.
- the EPI maintains on file its assumptions, documentation and working papers supporting its forecasting process, for reference.
- the EPI periodically reviews the accuracy of its annual forecast retroactively, to validate, and where necessary reevaluate its forecasts, so that future projections are more closely aligned to the actual demand. The accuracy of prior assumptions should be evaluated and recalibrated, if necessary.

[31] Gavi immunisation supply chain strategy for 2021 – 2025 – provide the link

<table>
<tr><td colspan="2">Periodic reviews of forecasts not performed: The audit team noted that the vaccine forecasting was only undertaken once a year, without any periodic assessments or retrospective revalidation. Considering that historically, there have been significant variances between past forecasts and the actual volume of stocks shipped to South Sudan, it is strongly suggested to undertake periodic reviews, in accordance with best practice. These retroactive reviews are valuable to check, and where necessary, to recalibrate past assumptions, so that subsequent forecast projections are better at modelling and predicting future demand.

Insufficient documentation of the forecasting process: The good practice of documenting and recording previous forecasting processes was not or kept on file. As a result, the evidence supporting prior forecasting decisions was not systematically archived or maintained. Information that was not retained included past forecast assumptions and minutes of forecasting deliberations.</td><td></td></tr>
<tr><td>Root cause
• Lack of a harmonised source for population data. There is a significant variation between population estimate figures used in the 2023 forecast and results from the South Sudan Population Estimation Survey, 2021 with a variance of ~ 2 million people (14%).
• Lack of visibility in sub-national vaccine stock balances.
• Incomplete stock records</td><td colspan="2">Management comments
See detailed management responses - Annex 7</td></tr>
<tr><td>Risk / Impact / Implications
• Inaccuracies in forecasted quantities increase the risk of over procurement and subsequent vaccine wastage due to expiries.
• Vaccine stock outs as noted on 4.3.2</td><td>Responsibility
EPI</td><td>Deadline / Timetable
See - Annex 7</td></tr>
</table>

4.3.2 Gaps in stock management practices impacted the accountability and the traceability of vaccine supplies

Context and Criteria

South Sudan's Standard operating procedures governing the receipt of vaccines and related supplies specify that the National Cold Chain Officer is responsible for receiving and verifying various aspects. This includes confirming that: the correct quantity of doses were supplied, that their shelf life is consistent with the consignment's documentation and confirming that other supporting documents - such as the packing list and lot release certificate – are available. This process is registered using the vaccine arrival report (VAR) form, which the officer completes, then provides a signed copy to UNICEF within 48 hours of the consignment's arrival.

Gavi's 2020 grant management requirements (GMRs) No. 10 required South Sudan to implement a suitable stock management system to manage its stocks at the central, state to county levels. These GMRs stipulated that this system should maintain up-to-date stock quantities available across the various store levels and be able to generate various stock management reports to support decision making. The system was also to capture stock details and data across the various supply chain levels, including: buffer stocks, open vial wastage, closed vial wastage, stock outs and temperature monitoring records.

GMR #11 stipulates that the MoH/EPI staff should perform periodic (ideally quarterly) physical stock verifications (using a process that includes an independent observer) at both the NVS and the 10 SVSs. The GMR also requires that the team undertaking the stock verification, should ensure that the stock records are adequately maintained in both manual (e.g. stock registers/ bin cards) as well as digital format (e.g. a logistics management information system, if available).

Gavi's immunisation supply chain strategy (2021-2025) stresses the value of digitising information, including how an electronic logistics management information system can significantly enhance the visibility and use of stock management data for decision making. During the period 2017 to 2020, UNICEF and WHO supported the use of a "stock management tool" (SMT) which is excel-based, for recording and reporting stock receipts and distributions to lower stores till county level. Thereafter SMT was discontinued.

Thereafter in 2021, the manual version of SMT was upgraded to its digital version, namely the "electronic-stock management tool" (e-SMT). The introduction of e-SMT was piloted by UNICEF, in collaboration with the MoH and EPI team. e-SMT is a web-based stock and cold chain equipment system. It includes desktop functionalities and is designed to operate fluidly across multiple vaccine stores throughout the supply chain, enabling the integration of each respective store's data. When optimised, e-SMT helps to automate cross-store transactions (i.e. disbursements matched by subsidiary receptions), as well as providing overall visibility over the entire stock consignment held for all the stores that are mapped, across the various supply chain levels. e-SMT's logical security is enabled using role-based access control, and the system includes a standardised training programme. Hierarchical user rights are assigned by the system's administrators, and the overall global administrator, is responsible for managing the master data.

Condition

Vaccine receipt procedures were not adhered to: Vaccine receipt procedures were not adequate, and there was little evidence that the MoH or EPI were sufficiently involved. For example, representatives from UNICEF – were solely completing and signing vaccine arrival reports. Furthermore, the sub-national stores on receiving vaccine distributions did not conduct temperature checks

Inaccuracies in SMT data: Based on the audit team's analysis of the NVS' SMT data from the 4-year period that it used the system (2017-2020), the team noted unexplained variances between the closing stock balance at the end of each given year and the opening stock balance for the subsequent year. As illustrated in table 5, these discrepancies resulted in significant doses (including OPV, IPV and pentavalent) being identified as missing between the year-end transition of 2017/2018, and some surplus doses being identified between the transitions of 2018/2019 and 2019/2020.

Recommendation 11

MoH in collaboration with UNICEF, should:

- Develop a detailed implementation roadmap for the continuation in deploying e-SMT or any other stock management tool to sub-national level stores, which fully meets the country's specific requirements.
- Ensure that the country's electronic logistics management information system is properly aligned and mapped with South Sudan's

Table 5: Variances between opening and closing balance in SMT.

Vaccines	Closing Balance	Opening Balance	Missing doses	Closing Balance	Opening Balance	Surplus doses	Closing Balance	Opening Balance	Missing/ (Surplus)
	31-Dec-17	1-Jan-18	variance	31-Dec-18	1-Jan-19	variance	31-Dec-19	1-Jan-20	variance
BCG	242,840	176,660	**66,180**	558,080	571,580	**(13,500)**	142,000	142,000	-
Oral polio vaccine (OPV)	1,646,020	827,140	**818,880**	75,600	311,660	**(236,060)**	1,666,160	1,663,980	**2,180**
Pentavalent	1,184,140	1,084,000	**100,140**	393,680	403,580	**(9,900)**	1,059,570	1,157,860	**(98,290)**
IPV	158,750	114,525	**44,225**	171,240	172,245	**(1,005)**	206,405	206,405	-
Men-A	906,350	846,090	**60,260**	259,200	259,510	**(310)**	2,126,140	2,126,140	-
Net Variances			**1,089,685**			**(260,775)**			**(96,110)**

Inaccuracies in e-SMT data: The vaccine stock data in e-SMT is incomplete and could not be relied upon, as the audit team noted that several transactions, including some NVS stock receipts and distributions to other SVS stores, were missing. In May 2023, based on the audit team site visits, NVS is using e-SMT, but none of the four SVS were using it. Furthermore, on 4 May 2023, the audit team undertook a physical stock verification comparing balances in e-SMT against physical stocks in the NVS store, and identified significant unexplained differences, as indicated in table 6 below.

Table 6: Stock variances between e-SMT and 4 May 2023 physical count

Name of Vaccine	Balance in e-SMT	Quantity counted	Missing/ (Surplus)
Pentavalent	24,500	363,020	**(338,520)**
IPV	610,200	20	**610,180**
MCV	35,001,800	570,410	**34,431,390**
J&J – Covid-19	8,808,950	897,020	**7,911,930**

Incomplete manual NVS stock records: In January 2023, in response to the national logistic team's challenges with the e-SMT system, a manual vaccine control book was introduced to record the movement of inventory at the NVS. In May 2023, the audit team reviewed the book's entries, and found them to be incomplete, as only vaccine issuances were recorded, without any vaccine receipts or the corresponding running total stock balances being recorded. See Annex 6a for details.

Vaccine stockouts at the NVS and subsidiary stores – The audit team noted several stockout incidents at the NVS, when there was effectively a zero balance of IPV. It was not possible for the audit team to determine how long these stockouts lasted, due to the poor state of the stock records. From discussions stockouts were described as sometimes occurring for periods of up to several weeks. At the sub-national level, stockouts occurred for at least one of the three sampled vaccines (pentavalent, IPV, BCG). During the 6-year period under

supply chain infrastructure, including considering incorporating all of the vaccine drop-off points in addition to the SVS and CVS, to reflect the full breadth of storage which matches the real time location of vaccines.

- Provide regular (e.g. annual) training and mentoring to the logistics staff – including at the state and county levels – on how to operate the logistics management information system, to improve system usage and application.
- While the implementation and embedding of the country's electronic logistics management information system (e.g. e-SMT) is ongoing, the storekeepers should continue to maintain manual vaccine control books, as a backup, duplicate record for recording stock movements and transactions .
- Utilise the vaccine control books) to consistently record all vaccine expirations or wastage incidents, including details on the quantity, type and timing for such events.

Recommendation 12

As the MoH moves forwards with its plans in integrating the Covid-19 vaccine into its routine immunisation programme, the EPI team should ensure that they properly prepare for the transition. This includes balancing stock demands verses supplies, so that for existing stocks, there is sufficient demand to consume the remaining doses and minimise the number of doses that potentially are wasted or shelf-expire.

review (2017-2022), such incidents were routinely noted by the audit team across many of the sites the team visited, including 4 out of 5 SVS, 3 out of 6 CVS, and 14 out of 17 service delivery points.

- For SVS, the average cumulative number of stockout days was 54.8 for pentavalent vaccine, 33.2 for IPV, and 33.6 for BCG.
- For the CVS, the average cumulative number of stockout days was 9.8 for pentavalent vaccine, 26.8 for IPV, and 10.8 for BCG.
- Service delivery points reported an average cumulative number of stockout days of 3.1 for pentavalent vaccine, 4.7 for IPV, and 16.4 for BCG during the review period.

The average length of stockouts was calculated based on length of stockouts observed across the various sites the team visited, for up to three stockout incidents (more incidents could have occurred, the team just tallied up to the first three incidents that were identified).
See Annex 6b for details.

Inability to track and trace vaccines distributed: The audit team reviewed a sample of vaccine transfers – by pairing the respective distribution and subsequent receipt between two stores (i.e. one store distributing stocks, matched to one store receiving the matching consignment). This enabled the team to verify distributions and receipts were correctly reported in both sets of records, including the particulars for each vaccine, such as batch number and expiry dates. The team's findings based on the sample transactions it reviewed indicated that:

- 54% of the NVS' distributions reviewed, equivalent to 61,710 doses received by corresponding SVS couldn't be traced to the recipient's records (refer to Annex 6c: Untraceable quantities from NVS to SVS).
- 46% of the SVS distributions reviewed, equivalent to 17,875 doses, received by corresponding CVSs couldn't be traced to the vaccine records (refer to Annex 6d: Untraceable quantities SVS to CVS).
- 64% of the CVS distributions reviewed, equivalent to 6,610 doses, received by corresponding service delivery points (SDPs) couldn't be traced to the records (refer to Annex 6e: Untraceable quantities CVS to SDP).

Regular physical counts of vaccine stocks and reconciliations were not consistently carried out: While the NVS conducted physical stock verifications each month, these exercises were not verified by an independent party, for example by a suitable representative from the MoH or EPI, i.e. from a separate team than the store personnel. Furthermore, following the stock count although adjustments were made to the stock records, the reason for such discrepancies between the vaccine records and the count were not properly investigated to explain why the difference occurred. The audit team also noted that 2 out of 5 SVS it visited, did not formally document or record any evidence of having conducted physical stock verifications.

Unexplained variances between physical stock counts and stock records: In May 2023, the audit team conducted its own physical stock verification exercises at the NVS, 5 SVSs, 6 CVSs, and 17 health facilities. Unexplained differences were frequently observed between the physical counts and stock records as follows:

- At the NVS, none of the 4 sampled vaccines stock balances counted matched the stock records balance in e-SMT. (Refer to Annex 6f: for details on the NVS physical verification checks).
- All 5 SVSs had variances between the physical stock counted and the stock records for pentavalent and IPV. (Refer to Annex 6g: for details on the SVS physical verification checks).

- Among the 6 CVSs sampled, 4 CVSs had discrepancies between the physical stock counted and the stock records for pentavalent and IPV. Also, four CVSs had similar discrepancies between physical and stock records for their Covid-19 vaccine. (Refer to Annex 6h: for details on the CVS physical verification checks).
- 15 out of 17 health facilities, had variances between the physical stock counted and the stock records for pentavalent. Similarly, 16 out of 17 had variances for their IPV; and 5 out of 6 health facilities that variances for their Covid-19 vaccines. (Refer to Annex 6i: for details on the SDP physical verification checks).

Inadequate accountability for vaccine expiries at sub-national levels – During the period under review and based on the audit team's visits, vaccine expiration incidents were reported at: 3 out of 5 state vaccine stores (SVS), all 3 county vaccine stores (CVS), and 8 out of 16 health facilities. However, none of these storage facilities maintained a register to record their expirations' particulars. The absence of adequate documentation and gaps in the stores' stock records, made it challenging to quantify the true extent of wastage and shelf-expiries.

Potential expiries of Covid-19 vaccines: The audit team noted that as of the 12 May 2023, there were 897,000 doses of J&J vaccine at the national vaccine store which were due to expire in December 2023. Given the consumption rate at that time, the stock available represents a sufficient quantity to meet 16 months of needs. Consequently, given the product's shelf life, it is estimated that approximately 380,000 doses of Covid-19 (Johnson and Johnson) are at a risk of expiry, based on the consumption rate.

Root cause

- Inadequate quality assurance monitoring the data input and stored in SMT and e-SMT for consistence, completeness, and accuracy
- *Incomplete Customisation of e-SMT for South Sudan Vaccine Distribution Network*: The e-SMT system had not been fully tailored to accommodate the specific requirements of the vaccine distribution network in South Sudan. Notably, the State and County stores were not integrated into the system, which consequently prevented the issuance of commodities to these stores through the system.
- Data loss resulting from the migration of stock transaction data from SMT to e-SMT in 2021.
- Inadequate support supervision of vaccine supply chain management components was noted, as certain issues observed by the audit team could have been identified and addressed during supervisory visits.
- There were no guidelines for min-max level of stock at various levels.
- There are no standardised registers recording the particulars of expired vaccine doses.
- Limited human resources to manage vaccine stocks at the sub national level.
- The country received more vaccines than they could consume.

Management comments

See detailed management responses - Annex 7

Risk / Impact / Implications

- Noncompliance with the standard operating procedures governing the receipt of vaccines.
- Challenges regarding assuring vaccine stock accountability and visibility.
- Inaccurate stock data detracts from making effective decisions e.g., for stock order replenishment and management

Responsibility

EPI

Deadline / Timetable

See - Annex 7

4.3.3 Previous EVM assessment recommendations were not implemented

Context and Criteria

The 2020 grant management requirements (GMR) require the MoH to work with UNICEF, to ensure that the past Effective Vaccine Management (EVM) actions from 2015 are implemented, and that the progress of any future EVM improvement plans arising, are also tracked and reported to the ICC and Gavi, every six months.

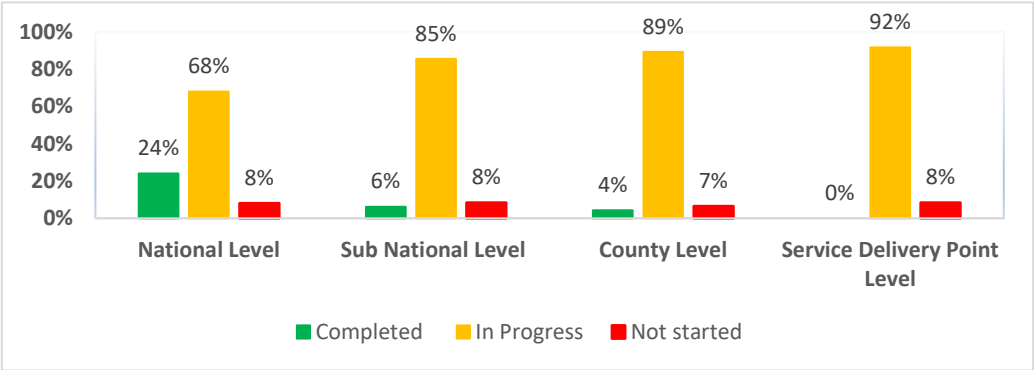
Effective Vaccine Managements (EVM) are an independent process (endorsed by WHO and UNICEF), to assess and prioritise improvements in national vaccine supply chains. In accordance with Gavi's Immunisation Supply Chain strategic approach, the output from a country's EVM exercise should be embedded as part of its vaccine management continuous improvement process.

Such immunisation supply chain continuous improvement plans (cIP) enable countries to build an evidence-based justification for their future supply chain investments, while also coordinating and promoting suitable improvement plans, which communicate and engage relevant stakeholders in how they can contribute and provide ongoing support.

Condition

Delayed implementation of the EVM assessment improvement plan – The country conducted an effective vaccine management (EVM) in 2012, which received an overall score of 39%. Thereafter, in 2019 an EVM assessment was subsequently conducted, showing significant progress, achieving an overall score of 65%. The EVM assessment was followed up by developing a continuous improvement plan, comprising a range of activities – including: 25 at the national level, 48 at the sub-national level, 46 at the county level, and 36 at the service delivery point (SDP) level. Most of the funding for these activities was earmarked to be financed by Gavi's Health Systems Strengthening grant, with the plan's implementation to be overseen by the MoH/EPI in collaboration with UNICEF. In May 2023, the audit team reviewed the status of the comprehensive improvement plan, noting that less than a quarter of the activities were complete – including: 24% at the national level, 6% at the sub-national level, 4% at the county level, and none at the SDP level, as indicated in figure 3 below. The audit team noted that the progression and implementation of several EVM activities had stopped, due to the lack of sufficient financial resources based on discussion with the national EPI unit.

Figure 3: Status of implementation of activities of the EVMA 2019 improvement plan



Recommendation 13

The MoH should consider undertaking another EVM assessment (using the new EVM methodology and tools), to obtain an up-to-date, comprehensive status of its vaccine management and supply chain.

Recommendation 14

Should resources not allow for an EVM assessment during the 5.0 implementation, MoH should:

- review the implementation status of its EVM / continuous improvement plan. Thereafter, it should prioritise and cost out the remaining activities, and align these to its existing funding allotment, to identify what funding gaps exist – if any – to fully implement its plan.
- Develop a dashboard which illustrates the status in implementing the continuous improvement plan. This dashboard (or equivalent) illustrating progress on completing plan, should be regularly discussed with the key stakeholders and governance functions responsible.

<table>
<tr><td colspan="2">Key activities in the improvement plan that have not been completed include:

• Data compilation on vaccine and supplies distributed from the SMT.
• Training of staff on use of SMT and monitoring implementation.
• Preparation of printed copies of stock records and properly archiving them
• Documentation of all types of vaccine wastage / loses.
• Maintaining dashboard of cold chain inventory in the state (type of fridge, model, make, volume, functionality status).
• Development of preventive maintenance plan for cold chain equipment
• Implementation of recommendation from the supervisory visits</td><td></td></tr>
<tr><td>Root cause
• Inadequate oversight of the EVMA Improvement plan – The improvement activities tracker was not update in a timely manner.
• Insufficient funding for the implementation of various aspects of the plan.</td><td colspan="2">Management comments

See detailed management responses - Annex 7</td></tr>
<tr><td>Risk / Impact / Implications
Potential delays in following through and implementing the continuous improvement plan, as based on past EVM findings, could result in vaccine management or supply chain risks crystalising, as suggested by some of the recent challenges experienced by the immunisation programme, including stock outs and inaccurate forecasts.</td><td>Responsibility

EPI</td><td>Deadline / Timetable

See - Annex 7</td></tr>
</table>

4.3.4 Cold chain management practices need to be strengthened

Context and Criteria

Robust, reliable cold chain infrastructure and equipment is necessary to ensure and maintain the potency of vaccines. In 2012, the Government conducted a cold chain inventory assessment. In 2015, this assessment was updated in preparation for the submission of a CCEOP grant proposal to Gavi. The CCEOP proposal, also included a five-year cold chain rehabilitation and expansion plan. It was estimated that overall, USD 9.4 million is required to finance the full rehabilitation and expansion plan, the majority of which is being financed as part of Gavi's CCEOP grant award, which was approved in 2017. Gavi also agreed that another 20% (~USD 1.8 million) of the rehabilitation and expansion plan will be financed from its HSS and Men A grants. Some additional financial contributions will also be provided by other partners.[32]

This plan has begun to be put into effect, illustrated by the installation of 220 cold chain units in 2017 as part of CCEOP1, and 265 cold chain units in 2019 as part of CCEOP 2. A post installation survey of the CCEOP2 component due to take place in 2021, was delayed due to the Covid-19 pandemic. It is anticipated that during the third phase - CCEOP3 – a further 240 cold chain units will be installed.

In addition, South Sudan – with partners' support – has deployed several passive vaccine storage devices at the Yambio CVS and Saura PHCU, in Yambio County

Condition

Incomplete cold chain equipment (CCE) inventory mapping and listing: The National vaccine store (NVS) did not maintain an on-site equipment register that would include details such as equipment names, serial numbers, installation dates, current functionality status, and other relevant parameters for the cold chain equipment and other related equipment. A physical verification of CCE was conducted at sampled vaccine handling points, including State, County, and Primary Health Care Centre/Unit (PHCC/PHCU) levels. The list of equipment found at these locations was compared with the cold chain inventory list, revealing discrepancies:

- At the state vaccine stores (SVS), 33% (30 out of 92) of CCE items listed on the inventory list were not found on-site, and 20% (18 out of 92) of CCE on-site were not included in the CCE inventory list.
- At the county vaccine stores (CVS), 28% (11 out of 40) pf CCE items on the inventory list were not found on-site, and 33% (13 out of 40) of CCE on-site were not documented on the CCE inventory list.
- At the primary health care centre/unit (PHCC/PHCU) level, 11% (2 out of 18) of CCE items listed on the inventory list were not found on-site, and 6% (1 out of 18) of CCE items inspected on-site were not included in the CCE inventory list.

Lack of preventive maintenance plans and logs at cold chain points: The NVS developed weekly and monthly cold room inspection checklists. However, it did not use these checklists when inspecting CCE and other associated equipment items. In addition, the last weekly and monthly inspection exercise that was documented was conducted in August 2020. Also, the NVS did not have preventive maintenance logs for its CCE. A process of maintaining ad-hoc job cards was in place at the NVS, to document when and what CCE corrective maintenance action was taken.

Recommendation 15

The MoH should:

- Regularly update its cold chain equipment inventory list to maintain an accurate reflection of the country's CCE status.
- Conduct annual training sessions and deploy cold chain technicians at the sub-national level.
- Establish and implement cold chain equipment preventive maintenance plans and schedules at all levels of the supply chain.

[32] Cold Chain Inventory Report, 2019

<table>
<tr><td>At the sub-national level, none of the 5 SVS or 6 CVS visited by the audit team had put a preventive maintenance plan in place. Similarly, no such plans existed for any of the 17 health facilities visited. Furthermore, none of the SVS, CVS or health facilities had maintained equipment maintenance logs, to record when and what type of CCE preventative maintenance activities they may have conducted.

Delayed CCE Repair Process: Equipment repair following a breakdown took more than 21 days in all 5 State vaccine stores (SVS) and 5 out of 6 County vaccine stores (CVS) visited by the audit team. Among the 17 health facilities that encountered CCE breakdowns during the review period, 4 experienced repair turnaround times varying from 2 days to over 60 days. Notably, at Malakia Primary Health Care Centre (PHCC), a refrigerator malfunctioned in November 2022 and was sent for repair but had not been returned as of the time of the audit.

Lack of Cold Chain Equipment (CCE) contingency plans: Contingency plans for Cold Chain Equipment (CCE) were absent in all 5 State vaccine stores (SVS), 3 out of 6 County vaccine stores (CVSs), and 13 out of 17 health facilities visited by the audit team. Notably, Juba CVS, Terekeka CVS, Yambio CVS, Yambio State Hospital, Moridi Primary Health Care Unit (PHCU), Malakia Primary Health Care Centre (PHCC), and Munuki had established contingency plans for CCE.</td><td></td></tr>
<tr><td>Root cause
The main root cause was staff attrition. Because of the fragile context, many individuals once trained may not remain in their post, due to the moderate to low benefits on offer, or may be attracted by better financial offers within South Sudan or internationally. As a consequence:
• Not all cold chain technicians at sub-national level had the necessary skills and capabilities; and
• There was limited oversight over the maintenance of cold chain equipment units.</td><td>Management comments
See detailed management responses - Annex 7</td></tr>
<tr><td>Risk / Impact / Implications
• The lack of a cold chain asset inventory for, raises concerns about the ability of the programme and its staff to keep track and regularly identify all assets which are in working-order. In addition, the lack of an inventory also potentially undermines staff's ability to safeguard assets from theft, vandalism, damage or loss, given the wide range of incidents which can occur either by accident or deliberately, and in consideration of the type, location and usage of such equipment.
• The lack of regular preventive maintenance can lead to equipment breaking down. During the course of the six-year period under review, several such breakdown incidents were reported, including most of the sites reviewed by the audit team, namely all 5 SVS and all 6 CVSs, as well as at 3 out of 17 of the service delivery points (SDPs) visited.</td><td>Responsibility
EPI, in liaison with UNICEF</td><td>Deadline / Timetable
See - Annex 7</td></tr>
</table>

4.4 Immunisation data management

4.4.1 There are challenges in estimating the target population for immunisation

Context and Criteria

Gavi's HSS and new vaccine support general guidelines (2015-2018), recommend that Gavi-supported countries ensure that their population projections of live births, should be broadly consistent with external projections. Furthermore, the guidelines recommend that Gavi-supported countries conduct high quality, national representative household surveys every five years.

Up to the start of 2023, the EPI continued to rely on population estimates derived from the 2008 national population census which was conducted prior to Sudan's partition. The National Bureau of Statistics' (NBS) projections are based on this same census, having applied a relevant growth factor in order to estimate the population figures. The NBS long term population projections (up to 2040) still use this historic basis, even going as far to providing current estimates with detailed breakdowns of each state's forecast population and age distribution.

In April 2023, the NBS released figures from a new population estimate survey (PES) that was conducted in 2021. The Government also mandated that the PES 2021 figures be used for all administrative purposes. Therefore prospectively, the EPI will now be relying on population estimates derived from the PES 2021, for the purposes of its setting future targets and monitoring coverage.

Condition

Outdated denominator data utilised for immunisation coverage monitoring: The country's context, characterised by ongoing conflicts and insecurity, have resulted in the migration and movement of significant groups of people from one region to another. The audit team noted that these movements were not factored into the NBS' population estimates which it provided. As a result, for the EPI's purposes of target setting and coverage monitoring, the EPI has continued to rely upon the NBS' unadjusted figures, which are derived from the 2008 population census.

The last coverage evaluation survey (CES) was done in 2017. No other surveys of this nature have since taken place. Similarly, the data from South Sudan's WHO/UNICEF estimates of national immunisation coverage (WUENIC) was last updated in 2018, as it is also draws from the 2017 survey. The audit team noted, that – in effect – the CES set a benchmark seven years ago, against which progressively, increasingly significant variances between the reported coverage based on administrative data, the WUENIC estimates, and the outcomes of the 2017 coverage evaluation survey have developed, as illustrated below:

Table 7: Comparison between administrative coverage, WUENIC and the 2017 coverage evaluation survey (CES)

Year	Admin coverage (%)	WUENIC (%)	CES 2017 (%)
2017	59	47	49
2018	56	49	-
2019	45	49	-
2020	60	49	-
2021	82	49	-
2022	84	49	-

Recommendation 16

The MoH should:

- Conduct a comprehensive analysis of the population data derived from the PES 2021, in order to rebase and realign the EPI's immunisation coverage targets and EPI activities.
- Expedite the execution of the next coverage evaluation survey, which is currently planned to be done in 2023, in order to establish more precise immunisation coverage figures.

The updated population estimates (PES 2021) resulted in some significant disparities in the states' immunisation percentage coverages, due to changes in the relevant denominator: In April 2023, the National Bureau of Statistics released its population estimate survey for 2021, which indicated that the country's overall population had decreased by 15%. This reduction, varied significantly across states. It also resulted in creating substantial differences in administrative coverage percentages, when contrasting the administrative coverage as derived from: the population census 2008, and the PES 2021 updated population estimates (see table below). Thus, there was a notable increase in relative administrative coverage in regions experiencing significant conflict – such as Jonglei and Upper Nile – which is partly explained by the net reduction in these states' population estimates as per PES 2021, due to people migrating away, to other less conflict-affected states.

Table 8: Coverage based on 2008 Census and PES 2021

State:	2022 coverage based on 2008 Census (%)	2022 coverage based on PES 2021 (%)
Central Equatoria	74	94
Eastern Equatoria	81	125
Jonglei	**49**	**94**
Lakes	91	82
Northern Bahr El Ghazal	110	62
Unity	108	90
Upper Nile	**77**	**143**
Warrap	91	48
Western Bahr El Ghazal	95	85
Western Equatoria	121	151
Overall national average	**84**	**95**

Root cause

- There are no published policies or guidelines which formally define the accepted method for computing, estimating, and revising coverage data to enhance data accuracy.
- The significant numbers of internally displaced persons across South Sudan, make it difficult to accurately estimate the current population across the various administrative areas.
- No WUENIC reviews have been conducted since 2018.

Management comments

See detailed management responses - Annex 7

Risk / Impact / Implications

The use of inaccurate denominators undermines the accuracy and credibility of the immunisation administrative coverage percentages which are reported.

Responsibility

EPI

Deadline / Timetable

See - Annex 7

4.4.2 There are weaknesses in the quality of immunisation data

Context and Criteria

Article No. 8 (d) of the 2013 partnership framework agreement, requires that all information provided to Gavi including its applications, progress reports, any supporting documentation, and other related operational and financial information or reports, is accurate and correct as of the date of the provision of such information. In addition, Article 16 – Annex 1 sets out additional provisions on the monitoring and reporting, specifying that "*the Government's use of Gavi's vaccine and cash support is subject to strict performance monitoring*," such that: "*Gavi seeks to use the Government's reports and existing country-level mechanisms to monitor performance*."

Gavi's application guidelines require Gavi-supported countries to improve their: data availability, data quality and use of data for their planning, programme management, understanding and documentation of results. These guidelines encourage the use of immunisation coverage data as part of an institutionalised process to: plan better, improve programme performance and manage resources effectively.

As already indicated on section 3.6, the national Health Management Information System (HMIS) uses the DHIS2 platform.

The assessment of immunisation programmes using data quality assessments (DQA), offers countries the opportunity to identify their data-related challenges and develop plans for improvement. Thereafter, Gavi-supported countries are strongly encouraged to design and establish a data improvement plan based on the DQA's findings. This improvement plan should: identify critical priority areas relating to data which need to be addressed including – to: clarify roles and responsibilities; outline resources available and whether further are required; establish timelines; and define key milestones. Since 2015, Gavi has mandated that countries undertake DQAs in accordance with the WHO-approved methodology, and has recommended that a DQA is regularly performed, every three to five years.

Condition

Anomalies in reported administrative coverage: Inconsistencies were noted from comparing the administrative coverage reported and the vaccine doses physically available – both at a national level, as well as the various states reviewed by the audit team.

- At the national level, the audit team conducted a data triangulation exercise spanning the 6-year period January 2017 to December 2022, cross-referencing the reported number of vaccinations in DHIS2 with the total vaccine doses available in the country during the same period. The findings indicated that the reported number of vaccinated children exceeded the actual vaccine doses physically available. Overall, there was an explained difference, an equivalent of 1.3 million additional children were erroneously claimed to have been vaccinated with pentavalent, and similarly 0.2 million additional children were erroneously claimed to have been vaccinated with IPV, as illustrated in the graph below.

Recommendation 17

The MoH should:

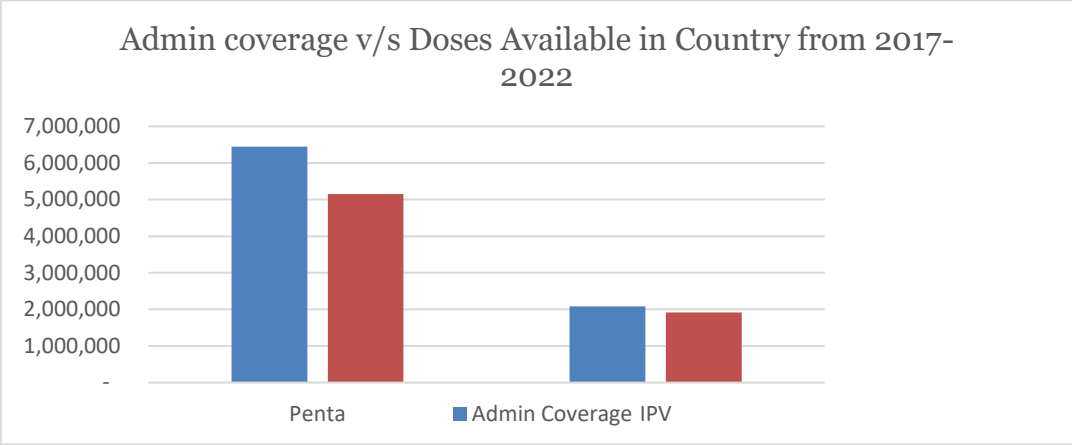
- Routinely perform a triangulation exercise, of their immunisation data, comparing the number of doses distributed, consumed and the administrative coverage; and
- Ensure that the data verification and validation exercises at the health facility levels are consistently completed.

Recommendation 18

Following the last data quality assessment undertaken in 2021, and in order to improve data quality, the MoH should:

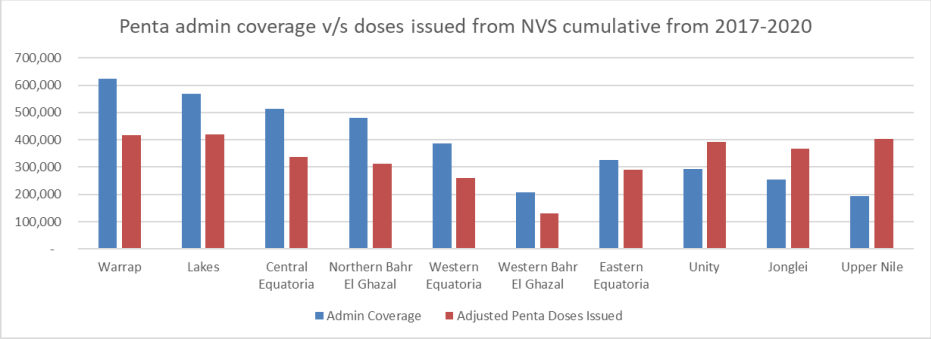
- Develop a costed data quality improvement plan, prioritising which actions are to be undertaken first. Tracking the progress of

Figure 4: Admin Coverage v/s Doses Available in Country from 2017-2022



- At the sub-national level, the audit team compared the number of doses issued by the National vaccine store to individual states against the absolute number of children reported as vaccinated by those states. This analysis showed that, during the 4-year period - 2017 to 2020, the number of vaccinated exceeded the doses available, in the case of 7 states with respect to pentavalent records, and in the case of 6 states with respect to IPV records, as illustrated in the graphs below.

Figure 5: Penta Admin Coverage v/s Doses Issued from NVS cumulative from 2017-2020

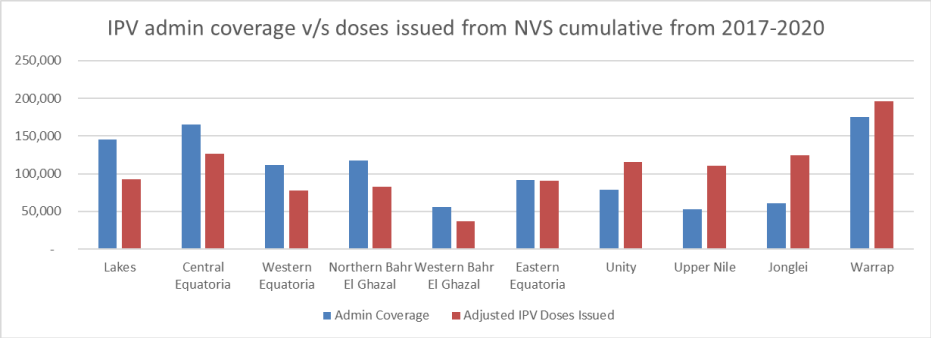


this plan, should also be included in the ICC dashboard.
- Properly monitor all the activities identified in the DQIP and promptly implement these according to the agreed deadlines.
- Design and put in place a process which systematically identifies and corrects data anomalies, at both national and sub-national levels.

Recommendation 19

MoH should:
- Implement a process where any DHIS2 data that is to be input or retroactively alter after the official submission deadlines, needs to be pre-approved by Management.
- Strengthen the capacity and capabilities of its state-level health staff, so that they can routinely conduct in-depth reviews of the immunisation data.

Figure 6: IPV Admin Coverage v/s Doses Issued from NVS cumulative from 2017-2020



Delayed reporting affecting immunisation data quality: The audit team noted that many counties are not meeting the reporting deadline of the 10th of the following month. The EPI programme has primarily prioritised data capture and collection given the historical challenges of low reporting rates in DHIS2, hence, strict cut-off controls for data entry into DHIS2 have not been implemented. Consequently, DHIS2 remains accessible for data entry beyond this deadline, allowing counties to input missing data or make modifications to previously entered data. The team also noted that the state-level data review procedures do not consistently scrutinise and validate such data modifications.

Slow progress in implementing data quality improvement activities: In 2018, following the completion of a data quality assessment (DQA), a data quality improvement plan (DQIP) was established in 2019 to address the issues identified. The audit team noted that certain activities identified in the DQA were not included in the DQIP for monitoring purposes. In 2020, an assessment of the DQIP's implementation status , identified that of the 35 planned activities: 10 were unimplemented, 18 were still in progress, and 7 were completed. Subsequently in 2021, another DQA was conducted. This confirmed that there had been little progress in implementing the previous improvement plan, as the second assessment identified similar issues to those already contained in the first assessment. Moreover, no updated DQIP was developed in response to this second DQA.

Root cause

- Lack of a systematic protocol for data quality review and assurance to ensure alignment between immunisation coverage data and vaccine stock data, both at the National and sub-national level
- Absence/inadequate data monitoring, supervision, and verification systems at the national, subnational and health facility level to ensure accuracy and completeness of data recorded and reported.
- DHIS2 data entry errors*:* County offices are responsible for inputting data into DHIS2, using the summary sheets submitted every month by health facilities. Nevertheless, the audit team observed discrepancies in most of the health facilities it visited, where inconsistencies were found between the information on the monthly summary sheets and the data entered into DHIS2.
- There are infrastructure challenges including sporadic internet access and power outages, which can lead to delayed reporting.
- The EPI programme's overall endowment of human resources, capacities and capabilities was limited. In addition, the programme experienced significant staff attrition, which can disrupt or delay the scheduled reporting of results in DHIS2.

Management comments

See detailed management responses - Annex 7

<table>
<tr><td colspan="2">• The EPI team prioritised the collection of data without a formal cut-off limit.
• Insufficient focus in following-through on the data quality implementation plan.</td><td></td></tr>
<tr><td>Risk / Impact / Implications
• Unexplained data anomalies undermine the credibility of the reported immunisation administrative coverage.
• Reporting inaccurate coverage via Gavi's performance framework is not compliant with the partnership framework agreement.
• Lack of reliable vaccination coverage compromises the immunisation programme's ability to identify under immunised children</td><td>Responsibility
EPI, in liaison with WHO</td><td>Deadline / Timetable
See - Annex 7</td></tr>
</table>

4.5 Budgeting and financial management

4.5.1 Delays in refunding questioned expenditures resulting from Gavi's 2017 programme capacity assessment

Context and Criteria

Article 19, Annex 2 of the partnership framework agreement (PFA) states that, "*Management and use of funds:*

In respect of all Gavi provided funds, the Government shall comply with Gavi requirements on the use and management of cash, including the following:
(a) the Government shall use the cash solely to fund Programme Activities;
(b) the Government shall ensure that the funds are prudently managed in accordance with the TAP Policy and Financial Management Requirements;"

Article 20, Annex 2 of the PFA also states that, "*Misuse of funds and supplies:*

20.1. Misuse of funds and supplies: In respect of all funds and vaccines and related supplies provided to the Government under the Programme(s), the Government shall comply with obligations and requirements on the use of such funds and supplies, including the following:
(a) the Government shall use the funds and vaccines, and related supplies received from GAVI under a Programme for the sole purpose of carrying out the Programme Activities of such Programme; (b) the Government shall ensure that there is no misuse or waste of, or corrupt, illegal or fraudulent activities involving the funds and vaccines and related supplies; and
(c) the Government shall ensure that all expenses relating to the use or application of funds are properly evidenced with supporting documentation sufficient to permit Gavi to verify such expenses. If the Government fails to comply with any of the above, such event shall be a "Misuse" (and "Misused" shall be construed accordingly).
20.2. Gavi determines Misuse: Gavi shall have the right in its absolute discretion but acting reasonably to determine whether Gavi's funds have been used solely to fund the Programme Activities or whether they have been Misused (in full or in part).
20.3. Notification by the Government: The Government shall immediately inform Gavi when it becomes aware of any potential or actual Misuse in connection with any Programmes."

Condition

In February 2017, the World Health Organisation (WHO) disbursed an advance of USD 541,000 to the MoH in support of immunisation programme activities. The funds were not used as intended and the advance was never cleared. On 12 July 2018, the MoH acknowledged misuse and committed to repay Gavi the full amount. On January 5, 2019, the MoH requested an extension, having agreed with the Ministry of Finance and Planning that it would reimburse Gavi in several instalments, beginning from the 2019-2020 fiscal year. Despite these assurances, by May 2023, the Government had not made any payment.

Recommendation 20

MoH should promptly reimburse USD 541,000, to WHO, which it received via WHO's Direct Financial Contribution (DFC) in 2017. Thereafter, the MoH should discuss and agree with Gavi and WHO on the appropriate reallocation of these funds towards other immunisation programme activities.

Root cause

Delays in obtaining government approvals to process the refund.

Management comments

See detailed management responses - Annex 7

Risk / Impact / Implications

Noncompliance with the partnership framework agreement (PFA) which may result in future Gavi funding restrictions.

Responsibility

MoH, EPI, in liaison with WHO

Deadline / Timetable

See - Annex 7

4.5.2 Some Gavi-funded expenditures did not demonstrate value for money

Context and Criteria

The concept of value for money highlights the importance of using resources in accordance with the principles of economy (cost minimisation), efficiency (output maximisation) and effectiveness (full attainment of the intended results). The audit team reviewed key programmatic outputs funded by Gavi, to assess whether these provided value for money.

Article 16 of the PFA states that: "*The Government's use of Gavi vaccine and cash support is subject to strict performance monitoring. Gavi seeks to use the Government reports and existing country-level mechanisms to monitor performance. The Government shall monitor and report on the use of vaccines and related supplies and the funds provided by Gavi stating the progress made towards achieving the objectives of the Programmers) during the preceding year by submitting the Annual Progress Report(s). The Government shall also share their internal management reports on the use of funds on a quarterly or periodic basis with Gavi. The Government shall also submit all documents and reports that are required to be submitted as part of the Annual Progress Reports and country applications. For certain cash support, Gavi shall monitor and review annually the progress made in the Country towards the funded objectives of the Programmers) by participating in the annual health sector review through existing country-level mechanisms. The Government shall submit all documents relevant to annual health sector reviews as requested by Gavi*.

Condition

Limited utility and value was obtained from the Service Availability and Readiness Assessment (SARA) and the Data Quality Assessment (DQA): In 2021, the country conducted a Service Availability and Readiness Assessment (SARA) and Data Quality Assessment (DQA), using USD 2 million and USD 70,300 of Gavi's financial support, respectively. The results of both these assessments, were never formally endorsed or released by the Government of South Sudan. As a result, the utility, impact and value for money arising from both these activities was severely limited.

Recommendation 21

Put in place a series of cascading approvals to release the necessary funding in various instalments for any future surveys / assessments funded by Gavi, , to ensure that Gavi's funds are only released once a formal decision to go ahead with the next key milestone or subsequent stage of activities is agreed. As a result, the MoH should ensure that:

- The design and implementation of each survey / assessment should include milestones which are to be validated and approved by the MoH. Regular progress monitoring to be undertaken for the achievement of milestone to determine release of funds at each stage;
- The preliminary design and methodology of the respective survey / assessment, should be formally signed off;
- A pre-testing phase of the survey / assessment methodology should be agreed upon, and validated after the initial pilots; and
- The final survey / assessment design and methodology should be formally approved before executing the principal phases of data collection, analysis and reporting.

Root cause

Past coverage survey and assessment results were not approved by the MoH.

Management comments

See detailed management responses - Annex 7

Risk / Impact / Implications	Responsibility	Deadline / Timetable
When Gavi funding is not used to good effect, or value for money is not obtained, this is tantamount to missing opportunities for the programme, in furthering public health or strengthening processes. Gavi funds could have been better spent on other immunisation activities.	EPI	See - Annex 7

4.6 Fixed asset management

4.6.1 Fixed asset management processes need to be improved

Context and Criteria

Gavi's GMR No. 8 requires South Sudan to establish and maintain a comprehensive fixed asset register (FAR) including all Gavi-funded assets, and not necessarily limited to large items, such as cold chain equipment, vehicles, and IT equipment procured (or planned to be acquired). The GMR No. 8 also requires that:

- The fixed asset register is regularly updated;
- All Gavi funded acquisitions are clearly marked with a unique identifier or tag, and
- An asset physical verification exercise is conducted at least once a year, ensuring the alignment between the physical assets count and condition with the FAR, across all levels of the health system where the assets are located or deployed.

The central EPI team maintained its own limited scope FAR for all of the items *that it procured/ which were procured on its behalf* using Gavi funds. This register included assets maintained at national and sub-national level, but of the items recorded, the listing of assets was not exhaustive, the details captured were incomplete and the register's scope and contents were inconsistent.

In 2017, UNICEF procured 11 vehicles on behalf of the MoH, using Gavi funds. Upon delivery, these vehicles were directly allocated to various MoH officers, even though technically such an approach circumvented usual procedures, which required that the Procurement and Logistics Department be involved. Moreover, the vehicles were allocated and transferred, to a range of States and MoH officers none of whom were directly engaged in EPI activities, which was a clear deviation from the original, asset distribution plan.

Later on in 2017, Gavi's undertook a programme capacity assessment, which recommended that Gavi – in collaboration with the MoH and the Alliance Partners – identify more effective methods for managing these vehicles. This recommendation was adopted, and incorporated into Gavi's grant management requirements, which were finalised in June 2020.

Condition

The fixed asset registers at national and sub-national were inadequately maintained: The overall FAR maintained by the national EPI team was incomplete, as it did not capture particulars for each item, including details on: location of the asset, unique identifiers, dates for when assets were put into operation. At the sub-national level, the audit team noted that for each of the five states visited, that none of these states maintained its own local-level fixed asset register, in order to help physically safeguard items under their immediate control.

Asset physical verifications exercises were not done: Over the past six years, the MoH did not carry out any physical verification exercises, even though per the GMR No. 8, these should have been done at least once a year.

Gaps in the management of Gavi procured vehicles: The audit team conducted an asset physical verification of the 11 vehicles procured on behalf of the MoH in 2017. The team successfully identified 6 vehicles which were still currently in use by the programme. However, another 5 of the vehicles could not be located or accounted for.

In November 2019, an exchange between Gavi and the MoH noted that each vehicle cost USD 75,000. Vehicle tracking devices were initially installed, but the operation of these devices was discontinued after one year. In November 2019 and February 2022, Gavi formally requested the MoH to handover and transfer control of all 11 vehicles to the HPF. In January 2023, the MoH responded to Gavi, requesting

Recommendation 22

MoH should:

- Update the FAR to capture all key parameters like location of the asset, unique identifier for assets, date of receipt of assets.
- Ensure that states maintain and update their fixed asset registers to ensure that programme assets are tracked, managed, and used for their designated purpose.
- Every year, carry out an asset verification exercise.

Recommendation 23

The MoH should promptly provide written evidence to Gavi, on the current existence and use of all of

<table>
<tr><td colspan="2">that each of the vehicles be retained by the designated staff member responsible, and claiming that the vehicles were being used for the purpose of last-mile vaccine deliveries.</td><td colspan="2">the 11 vehicles procured in 2017, so that a resolution on their appropriation and allotment can be decided.</td></tr>
<tr><td colspan="2">Root cause
Inadequate management and oversight of fixed assets.</td><td colspan="2">Management comments
See detailed management responses - Annex 7</td></tr>
<tr><td colspan="2">Risk / Impact / Implications
• Non-compliance with the GMRs;
• it is difficult to determine whether the vehicles were used for the intended objectives supporting immunisation activities;
• Inadequate controls over the use and custody of the assets may lead to the misuse and loss of programme assets.</td><td>Responsibility
EPI</td><td>Deadline / Timetable
See - Annex 7</td></tr>
</table>

5. Annexes

Annex 1 : Acronyms

AFENET	African Field Epidemiology Network
AZ	Astra Zeneca
BHI	Boma Health Initiative
BHW	Boma health workers
BPHNS	Basic Package of Health and Nutrition Services
C19	Covid-19
CCE	Cold chain equipment
CCEOP	Cold chain equipment optimisation plan
CDC	Centre for Disease Control
CDS	Covid-19 Delivery Support
CES	Coverage Evaluation Survey
CHD	County Health Department
COVAX	Covid-19 Vaccine Global Access
CVS	County Vaccine Store
DCA	Delegated Cooperation Agreement
DFC	Direct Financial Contribution
DFID	Department for International Development
DG	Director General
DHIS	District Health Information System
DQA	Data Quality assessment
DQIP	Data Quality improvement plan
DTP	Diphtheria, Tetanus, Pertussis
EAW	Early Access Window
EPI	Expanded Programme for Immunisation
EVM	Effective vaccine management
FAR	Fixed Asset Register
FCDO	Foreign, Commonwealth and Development Office
FPP	Full Portfolio Plan
FY	Financial Year
GBP	Great Britain Pound
GDP	Gross Domestic Product
GMR	Grant Management Requirement
HCW	Health Care Worker
HF	Health Facility
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HPF	Health Pooled Fund
HRHIS	Health Resources for Health Information System
HRIS	Health Resources Information Management System
HSS	Health Sector Strengthening
HSSP	Health Sector Strengthening Plan
HSWG	Health Sector Working Group
ICC	Interagency Coordination Committee
IOM	International Organisation for Migration
IP	Implementing Partner
IPV	Inactivated poliovirus Vaccine
ISC	Immunisation Supply Chain

JAR	Joint Annual Review
JSI	John Snow Inc
LMIS	Logistic Management Information System
MOFP	Ministry of Finance and Planning
MoH	Ministry of Health
MR	Measles Rubella
MYP	Multi Year Plan
NBS	National Bureau of Statistics
NHP	National Health Policy
NVS	National vaccine store
ODK	Open Data Kit
OPV	Oral Polio Vaccine
PEF	Partnership Engagement Framework
PES	Population Estimate Survey
PFA	partnership framework agreement
PHC	Primary Health Care
PHCC	Primary Health Care Centre
PHCU	Primary Health Care Unit
PHEIC	Primary Health Emergency of International Concern
PIRI	Periodic Intensification of Routine Immunisation
RI	Routine Immunisation
SARA	Service Availability and Readiness Assessment
SDP	Service Delivery Points
SIA	Supplementary Immunisation Activities
SMT	Stock Management Tool
SPRP	Strategic Preparedness and Response Plan
SSITAG	South Sudan Immunisation Technical Advisory Group
SSP	South Sudan pound
SVS	State vaccine store
TA	Technical assistance
TCA	Targeted Country Assistance
TWG	Technical Working Group
USD	United States Dollar
VAR	Vaccine Arrival Report
VIG	Vaccine Introduction Grants
WUENIC	WHO / UNICEF estimates of national immunisation coverage

Annex 2 : Methodology

Gavi's Audit and Investigations (A&I) audits are conducted in accordance with the Institute of Internal Auditors' ("the Institute") mandatory guidance which includes the definition of Internal Auditing, the Code of Ethics, and the International Standards for the Professional Practice of Internal Auditing (Standards). This mandatory guidance constitutes principles of the fundamental requirements for the professional practice of internal auditing and for evaluating the effectiveness of the audit activity's performance. The Institute of Internal Auditors' Practice Advisories, Practice Guides, and Position Papers are also be adhered to as applicable to guide operations. In addition, A&I staff will adhere to A&I's standard operating procedures manual.

The principles and details of the A&I's audit approach are described in its Board-approved Terms of Reference and Audit Manual and specific terms of reference for each engagement. These documents help our auditors to provide high quality professional work, and to operate efficiently and effectively. They help safeguard the independence of the A&I's auditors and the integrity of their work. The A&I's Audit Manual contains detailed instructions for carrying out its audits, in line with the appropriate standards and expected quality.

In general, the scope of A&I's work extends not only to the Gavi Secretariat but also to the programmes and activities carried out by Gavi's grant recipients and partners. More specifically, its scope encompasses the examination and evaluation of the adequacy and effectiveness of Gavi's governance, risk management processes, system of internal control, and the quality of performance in carrying out assigned responsibilities to achieve Stated goals and objectives.

Annex 3 : Definitions – audit opinion, audit rating and prioritisation

A. Overall Audit Opinion

The audit team ascribes an audit rating for each area/section reviewed, and the summation of these audit ratings underpins the overall audit opinion. The audit ratings and overall opinion are ranked according to the following scale:

Effective	**No issues or few minor issues noted**. Internal controls, governance and risk management processes are adequately designed, consistently well implemented, and effective to provide reasonable assurance that the objectives will be met.
Partially Effective	**Moderate issues noted.** Internal controls, governance and risk management practices are adequately designed, generally well implemented, but one or a limited number of issues were identified that may present a moderate risk to the achievement of the objectives.
Needs significant improvement	**One or few significant issues noted.** Internal controls, governance and risk management practices have some weaknesses in design or operating effectiveness such that, until they are addressed, there is not yet reasonable assurance that the objectives are likely to be met.
Ineffective	**Multiple significant and/or (a) material issue(s) noted.** Internal controls, governance and risk management processes are not adequately designed and/or are not generally effective. The nature of these issues is such that the achievement of objectives is seriously compromised**.**

B. Issue Rating

For ease of follow up and to enable management to focus effectively in addressing the issues in our report, we have classified the issues arising from our review in order of significance: High, Medium and Low. In ranking the issues between 'High,' 'Medium' and 'Low,' we have considered the relative importance of each matter, taken in the context of both quantitative and qualitative factors, such as the relative magnitude and the nature and effect on the subject matter. This is in accordance with the Committee of Sponsoring Organisations of the Treadway Committee (COSO) guidance and the Institute of Internal Auditors standards.

Rating	Implication
High	At least one instance of the criteria described below is applicable to the finding raised: • Controls mitigating high inherent risks or strategic business risks are either inadequate or ineffective. • The issues identified may result in a risk materialising that could either have: a major impact on delivery of organisational objectives; major reputation damage; or major financial consequences. • The risk has either materialised or the probability of it occurring is very likely and the mitigations put in place do not mitigate the risk. • Fraud and unethical behaviour including management override of key controls. • Management attention is required as a matter of priority.
Medium	At least one instance of the criteria described below is applicable to the finding raised: • Controls mitigating medium inherent risks are either inadequate or ineffective. • The issues identified may result in a risk materialising that could either have: a moderate impact on delivery of organisational objectives; moderate reputation damage; or moderate financial consequences. • The probability of the risk occurring is possible and the mitigations put in place moderately reduce the risk. Management action is required within a reasonable time period.
Low	At least one instance of the criteria described below is applicable to the finding raised: • Controls mitigating low inherent risks are either inadequate or ineffective. • The Issues identified could have a minor negative impact on the risk and control environment. • The probability of the risk occurring is unlikely to happen. Corrective action is required as appropriate.

Annex 4 : List of Facilities visited by the audit team

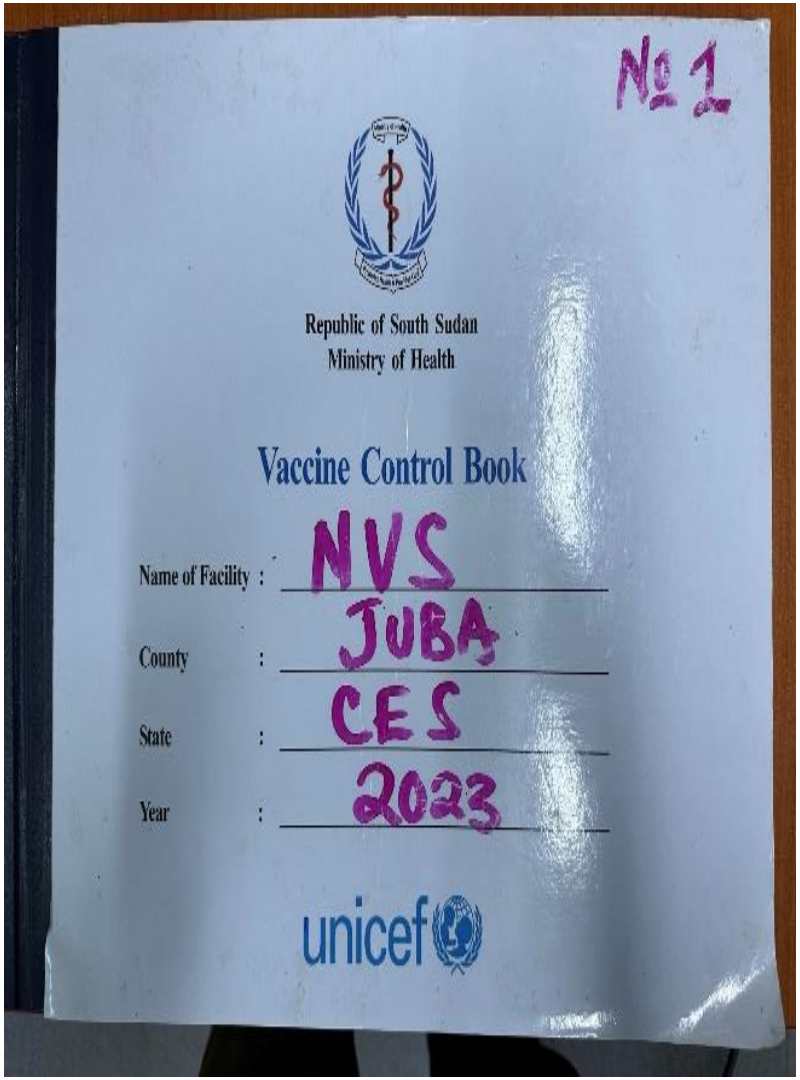
States (count = 5), including SVSs	Counties (count = 8), including CVSs	Health Facilities (total count = 17), including various service delivery points.
Central Equatoria	Juba; Terekaka.	Malakia, Munuki, Lojora, Moridi.
Western Equatoria	Yambio; Nzara.	Saura, Yambio state Hospital, Yambio PHCC, Nzara, Yabua.
Western Bahr El Ghazal	Wau; Jur River.	Hai Dinka, Sika Hadit, Muktah, Rocrocdong, Nyinakok.
Jonglei	Bor.	MCH, Gakyuom.
Upper Nile	Malakal.	Malakal Teaching Hospital.

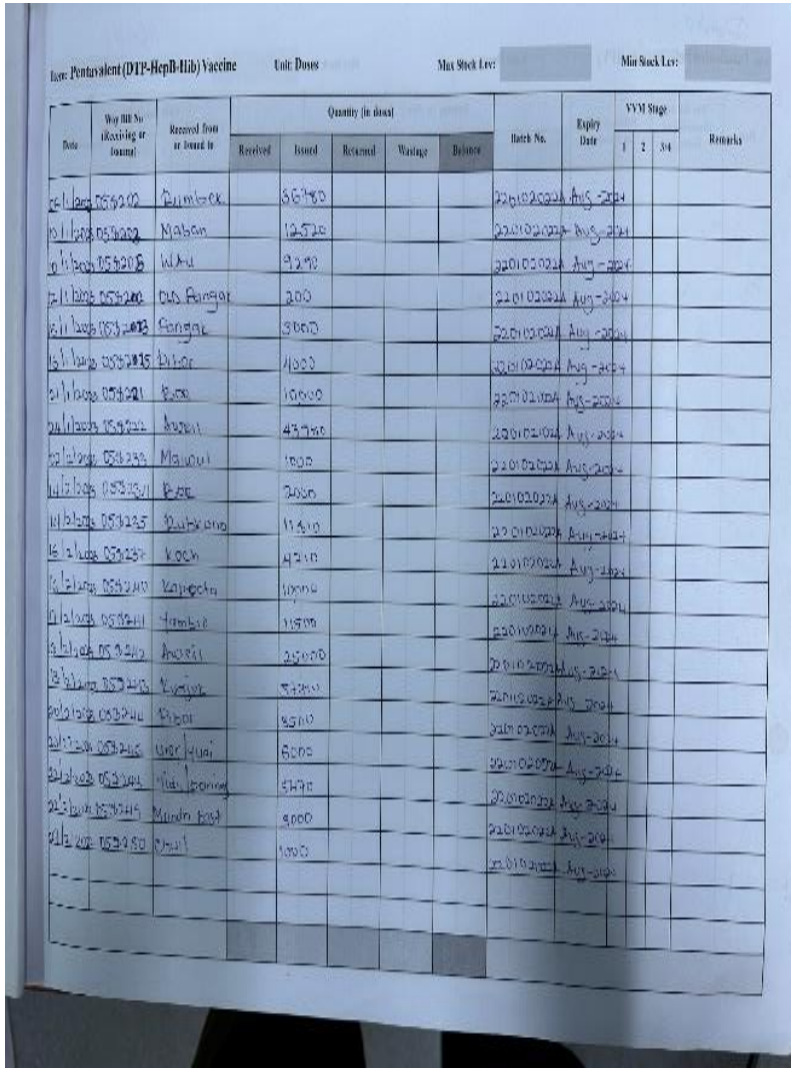
Annex 5 : South Sudan immunisation schedule

Vaccination of infants			Vaccination of women of reproductive age (15-49 years)		
Age	Visit	Vaccine	Visit	Vaccine	Interval
Birth	1	BCG, OPV	1	TT1	0 (as early as possible)
6 weeks	2	DTP-HepB-Hib (Penta) 1, OPV1	2	TT2	At least 4 weeks after TT1
10 weeks	3	DTP-HepB-Hib (Penta) 2, OPV2	3	TT3	At least 6 months after TT2
14 weeks	4	DTP-HepB-Hib (Penta) 3, OPV3, IPV	4	TT4	At least 1 year after TT3 if not, in a subsequent pregnancy
9 months	5	Measles	5	TT5	At least 1 year after TT4 if not, in a subsequent pregnancy

Annex 6: Gaps in Vaccine Supply Chain Management

a) Vaccine control book at NVS with missing receipt details





b) **Instances of stockouts incidents (i.e. stockouts measured by length in days) represented by three vaccines, across select state vaccine stores, visited by the audit team**

State	Penta			Total	IPV			Total	BCG			Total
	Incident 1 (Stock out)	Incident 2 (Stock out)	Incident 3 (Stock out)		Incident 1 (Stock out)	Incident 2 (Stock out)	Incident 3 (Stock out)		Incident 1 (Stock out)	Incident 2 (Stock out)	Incident 3 (Stock out)	
Western Bahr el Ghazal	0	0	0	0	0	0	0	0	0	0	0	0
Jonglei	14	61	0	75	13	0	0	13	0	0	0	0
Upper Nile State	39	12	41	92	20	12	0	32	51	0	0	51
Central Equatoria State	1	40	0	41	11	6	9	26	13	5	13	31
Western Equatoria	18	18	30	66	37	27	31	95	23	29	34	86
Average # of cumulative stock out days				**54.8**				**33.2**				**33.6**
Maximum # of stock out days				**61**				**37**				**51**

Instances of stokouts incidents (i.e. stockouts measured by length in days) represented by three vaccines, across select county vaccine stores, visited by the audit team

County	Penta			Total	IPV			Total	BCG			Total
	Incident 1 (Stock out)	Incident 2 (Stock out)	Incident 3 (Stock out)		Incident 1 (Stock out)	Incident 2 (Stock out)	Incident 3 (Stock out)		Incident 1 (Stock out)	Incident 2 (Stock out)	Incident 3 (Stock out)	
Wau County	30	2		32	21	2	24	47	5	17	13	35
Jury River	0	0	0	0	0	0	0	0	0	0	0	0
Jubba	0	0	0	0	9	0	0	9	0	0	0	0
Terekeka	0	0	0	0	0	0	0	0	0	0	0	0
Yambio	3	21	25	49	55	25	45	125	7	34	13	54
Nzara	0	0	0	0	0	0	0	0	0	0	0	0
Average # of cumulative stock out days				**9.8**				**26.8**				**10.8**
Maximum # of stock out days				**30**				**55**				**34**

Instances of stokouts incidents (i.e. stockouts measured by length in days) represented by three vaccines, across select county vaccine stores, visited by the audit team

PHCC/PHCU Level:	Penta				IPV				BCG			
	Incident 1 (Stock out)	Incident 2 (Stock out)	Incident 3 (Stock out)	Total	Incident 1 (Stock out)	Incident 2 (Stock out)	Incident 3 (Stock out)	Total	Incident 1 (Stock out)	Incident 2 (Stock out)	Incident 3 (Stock out)	Total
Sika Hadit	0	0	0	0	9	7	7	23	7	14	77	98
Hai Dinka	0	0	0	0	0	0	0	0	0	0	0	0
Muktah	0	0	0	0	0	0	0	0	0	0	0	0
Nyinakok	0	0	0	0	0	0	0	0	0	0	0	0
Rocrocdong	0	0	0	0	0	0	0	0	0	0	0	0
Gakyuom	3	0	0	3	0	0	0	0	0	0	0	0
MCH	0	0	0	0	0	0	0	0	13	38	24	75
Malakal Teachers Hospital PHCC	13	0	0	13	2	10	12	24	40	0	0	40
Malakia PHCC	1	0	0	1	1	11	0	12	2	3	14	19
Munuki PHCC	0	0	0	0	0	0	0	0	0	0	0	0
Moridi PHCU	0	0	0	0	0	0	0	0	0	0	0	0
Lojora	0	0	0	0	0	0	0	0	0	0	0	0
Yambio State Hospital	30	1	5	36	8	13	0	21	33	7	7	47
Yambio PHCC	0	0	0	0	0	0	0	0	0	0	0	0
Saura PHCU	0	0	0	0	0	0	0	0	0	0	0	0
Nzara PHCU	0	0	0	0	0	0	0	0	0	0	0	0
Yabua PHCU	0	0	0	0	0	0	0	0	0	0	0	0
Average # of cumulative stock out days				**3.1**				**4.7**				**16.4**
Maximum # of stock out days				**30**				**13**				**77**

c) **Unexplained differences between vaccine delivered by the NVS and received by SVSs**

Vaccine	State vaccine store	National vaccine store delivery			State vaccine store receipt			State store records	Unexplained variance missing/ (surplus)
		Date	Batch No.	# of doses	Date	Batch No.	# of doses	# of doses	
Pentavalent	Western Bahr el Ghazal State	4-Feb-20	PLU029A18	10,000				0	10,000
		6-Sep-20	PLU029A18	8,000				0	8,000
		9-Oct-20	PLU003419	8,000	15-09-20	PLU003419	5,600	5600	2,400
		1-Aug-22	2860X027B	2,000	11-Mar-22	2860X027B	9,560	9560	(7,560)
		21-03-22	2861X006B	9,000	22-03-22	2861X006B	9,000	9000	0
		17-06-22	2861X010A	7,520	17-06-22	2861X010A	7,520	7520	0
	Jonglei State Vaccine Store	28-Jan-22	2861X005B	12,000				0	12,000
		5-Apr-22	2861X005B	3,000				0	3,000
		17-Jun-22	2831X010A	500				0	500
		21-Jan-23	220102022A	10,000				0	10,000
		14-Feb-23	220102022A	2,000	14-Feb-23	220102022A	2,000	2000	0
	Upper Nile State Vaccine Store	26-Oct-20	PLUO19A19	9,000				0	9,000
		27-Mar-19	2PLU012A18	1,030				0	1,030
		14-Jun-19	PLU029B18	5,000				5000	0
	Western Equatoria State	3-Jan-20	PLU029A18	30,000	15-Jan-20	Plu034a18/Plu34a19	30,000	30,000	0
		22-May-20	PLU029A18	10,000	10-Jun-20	Plu034a18	10,000	10,000	0
		27-Jul-20	PLU003419	7,000	5-Aug-20	Plu003a19	7,000	7000	0
		29-Sep-20	PLU003419	15,000	2-10-20/7-10-20	Plu003a19	15,000	15000	0
		4-Mar-22	2861X006B	11,000	3-Mar-22	2860x006A	11,000	11,000	0
		17-Feb-23	220102022A	4,500				0	4,500
IPV	Western Bahr el Ghazal State	4-Feb-20	1914002A	2,800	5-Jul-20	1914002A	2,800	2800	0
		6-Sep-20	1914002A	1,750	6-Dec-20	1914002A	1,750	1750	0
		9-Oct-20	1942006A	2,800	15-09-20	1942006A	2,800	2800	0
		1-Aug-22	1A0033A	2,000	1-Aug-22	1A0033A	1,500	1500	500
		21-03-22	1A0033A	7,500	22-03-22	1A0033A	7,500	7500	0
		17-06-22	IA0041A	3,090	17-06-22	IA0041A	3,090	3090	0
		28-Jan-22	1A0033A	2,750				0	2,750
		5-Apr-22	1A0033A	8,000				0	8,000

Vaccine	State vaccine store	National vaccine store delivery			State vaccine store receipt			State store records	Unexplained variance missing/ (surplus)
		Date	Batch No.	# of doses	Date	Batch No.	# of doses	# of doses	
	Jonglei State Vaccine Store	17-Jun-22	IA0041A	500				0	500
		14-Feb-23	IA0081A	3,750	14-Feb-23	IA0081A	3,750	3750	0
	Upper Nile State Vaccine Store	23-Jan-19	1806004A	1,400				1500	(100)
		26-Oct-20	1941002A	1,500				5000	(3,500)
	Western Equatoria State	3-Jan-20	180006A	4,000	15-Jan-20	1836004A/1850006A	3,800	3800	200
		22-May-20	1914002A	3,750	10-Jun-20	1914002A	3,275	3275	475
		27-Jul-20	1914002A	2,000	5-Aug-20	1914002A	1,985	1985	15
		29-Sep-20	1941002A	3,750	2-10-202	1942006A/1914002A	3,750	3750	0
		17-Feb-23	IA0073A	20,000	17-Feb-23	IA0073A	20,000	20,000	0

# of batches tracked	**37**
# of untraceable batches	**20**
# of traceable batches	**17**
% of untraceable batches	**54%**
Net untraceable doses	**61,710**

d) **Untraceable vaccine quantities between SVS and CVS**

Vaccine	State vaccine store	County vaccine store	State Vaccine Store Delivery			County Vaccine Store Receipt			Store	
			Delivery Record			Receipt Note/Register			Vaccine control book	Variance in doses
			Date	Batch No.	# of doses	Date	Batch No.	# of doses	# of doses	
Pentavalent	Western Bahr El Ghazal State	Wau County	12-Aug-19	PLU029B18	1,500	20-Nov-19	PLU029B18	1,440	1440	60
			30-Dec-20	PLU003A19	1,500					1,500
			8-Feb-22	2860X027B	1,000					1,000
		Jur River	1-Dec-21	PLU003A19	600					600
			23-Jun-22	2860X027B	3,000					3,000
			12-Feb-22	2861X010A	2,500	12-Feb-22	2861X010A	2,500	2500	0
	Western Equatoria State	Yambio County	12-Feb-19	2plu011818	1,580	12-Feb-19	2PLU004A17	1,330	1330	250
			15-Mar-21	Plu020A19	3,000	3-Mar-21	PLU020A19	1,200	1200	1,800
			17-Jan-23	2862x002b	2,310	17-Jan-23	2862X00B	2,500	2500	(190)
		Nzara County	11-Apr-19	2plu011818	730	11-Apr-19	2plu011818	740	730	0
			11-Jan-20	Plu034A18	2,390					2,390
			5-Mar-23	2862x002b	810	6-Mar-23	2862x002b	810	810	0
	Central Equatoria State	Juba County	4-Jun-23	2201020221	10,200	4-Jun-23	2201020221	10,200	10200	0
			27-Jan-2023	2881X0110A	7,500	27-Jan-23	2881X0110A	7,500	7500	0
			28-Feb-2023	220102011522A	9,000	28-Feb-23	220102011522A	9,000	9000	0
			10-Mar-22	2861X010B	4,000	10-Mar-22	2861X010B	4,000	4000	0
		Terekeka County	28-Oct-2020	PLU003A19	4,000	28-Oct-20	PLU003A19	4,000	4000	0
			4-Aug-21	PLU003A19	4,500	4-Aug-21	PLU003A19	4,500	4500	0
			17-Dec-2021	2860X029A	500	17-Dec-21	2860X029A	500	500	0
IPV	Western Bahr El Ghazal State	Wau County	13-Mar-23	IA0045A	3,000					3,000
			8-Feb-22	IA0041A	500					500
		Jur River	10-Jan-20	1942006A	2,300					2,300
			15-Mar-23	IA0045A	1,500	14-04-23	1A0045A	500	500	1,000
	Western Equatoria State	Yambio County	15-Jan-19	1748001A	250				0	250
			9-Aug-21	I0012A	1,800	5-Aug-21	IA0018A	1,800	1800	0
			7-Jun-22	IA0030A	850	7-Jun-22	IA0030A	850	850	0

Vaccine	State vaccine store	County vaccine store	State Vaccine Store Delivery			County Vaccine Store Receipt			Store	
			Delivery Record			Receipt Note/Register			Vaccine control book	Variance in doses
			Date	Batch No.	# of doses	Date	Batch No.	# of doses	# of doses	
		Nzara	14-Jan-19	1748001A	40	Not recorded				40
			8-Apr-20	1850006A	175	Not recorded				175
			6-Mar-23	IA0073A	790	6-Mar-23	IA0073A	790	790	0
			27-Apr-23	IA0073A	200	Not recorded				200
	Central Equatoria State	Juba County	4-Jun-23	1A00773A	7,000	4-Jun-23	1A00773A	7,000	7000	0
			27-Jan-2023	1A0040A	3,500	27-Jan-23	1A0040A	3,500	3500	0
			28-Feb-2023	1A0045A	4,000	28-Feb-23	1A0045A	4,000	4000	0
			10-Mar-22	1A0033A	3,000	10-Mar-22	1A0033A	3,000	3000	0
		Terekeka County	28-Oct-2020	1914002A	1,400	28-Oct-20	1914002a	1,400	1400	0
			4-Aug-21	1A0012A	1,800	4-Aug-21	1A0012A	1,800	1800	0
			17-Dec-2021	1941002A	1,800	17-Dec-21	1941002A	1,800	1800	0
# of batches tracked	**37**									
# of untraceable batches	**17**									
# of traceable batches	**20**									
% of untraceable batches	**46%**									
Net untraceable doses	**17,875**									

e) **Untraceable vaccine quantities between CVS and SDP**

Vaccine	State	County	PHCC / PHCU	County Vaccine Store Delivery			PHC/PHCC Receipt			Store	
				Delivery Record			Receipt Note/Register			Vaccine Control Book	Variance
				Date	Batch No.	Quantity	Date	Batch No.	Quantity	Stock Quantity	Quantity
Pentavalent	Western Bahr el Ghazal	Wau	Sika Hadit	16-Sep-19	2PLU012A18	850					850
				8-Mar-20	PLU034A18	300	3/8/2020	PLU034A18	300	300	0
				4-Dec-23	2862X002B	200	11/4/2023	2862X002B	200	200	0
			Hai Dinka	27-Jul-20	PLU034A18	50					50
				4-Nov-23	2862X00278	100	13-03-23	2862X00278	100	100	0
			Muktah	8-Jun-19	2PLU012A18	100					100
				27-Jul-20	PLU034A18	50					50
		Jur River	Nyinakok	28-Mar-23	2862X002B	100					100
				20-Apr-23	2862X002B	100					100
				25-Apr-23	2862X002B	200					200
			Rocrocdong	31-Mar-23	2862X002B	100					100
	Jonglei State	Bor County	Gakyuom PHCU	16-Jun-22		500				500	0
				30-Aug-22		1,510				1,510	0
			MCH PHCC	3-Nov-22	2861x005b	740				740	0
				13-Feb-23	2860x29A	740				740	0
	Upper Nile State	Malakal County	Malakal Teachers Hospital PHCC	10-Jan-22	2860x027b	3,020				1,000	2,020

Vaccine	State	County	PHCC / PHCU	County Vaccine Store Delivery			PHC/PHCC Receipt			Store	
				Delivery Record			Receipt Note/Register			Vaccine Control Book	Variance
				Date	Batch No.	Quantity	Date	Batch No.	Quantity	Stock Quantity	Quantity
				3-Jun-22	2861x006A	300				0	300
	Western Equatoria	Yambio County	Yambio State Hospital	23-Aug-18	267x7002A	490	Record missing		0	0	490
				8-Jul-19	2plu11818	230	8-Jul-19	2plu11818	230	230	0
				28-Aug-19	2plu011818	300	28-Aug-19	2plu011818	300	300	0
			Suara PHCU	8-Aug-18	267x7002a	20	Record missing			0	20
				16-Jan-19	2PLU004A17	20	Record missing			0	20
			Yambio PHCC	12-Mar-19	2plu004A17	300	Record missing			0	300
				10-Jan-22	2860X24B	140	Record missing			0	140
		Nzara County	Nzara PHCC	14-Oct-20	plu003A19	100	No stock records				100
				7-Jan-22	2860x010A	190	No stock records				190
			Yabua PHCU	10-Sep-20	plu003A19	90	Not recorded				90
				21-Oct-21	2860x010A	100	Missing record				100
				19-Apr-23	2862x002B	100	2023 Record missing				100
	Central Equatorial State	Juba County	Malakia PHCC	12-Apr-23	220102022A	10	12-Apr-23	220102022A	10	10	0
IPV	Western Bahr el Ghazal	Wau		2-Jan-23		660				660	0
				27-Feb-23		260				260	0
			SIKA HADIT	19-Aug-19	1748001A	50	19-Aug-19	1748001A	50	50	0

Vaccine	State	County	PHCC / PHCU	County Vaccine Store Delivery			PHC/PHCC Receipt			Store	
				Delivery Record			Receipt Note/Register			Vaccine Control Book	Variance
				Date	Batch No.	Quantity	Date	Batch No.	Quantity	Stock Quantity	Quantity
				21-Jul-20	1914002A	100					100
				12-Apr-2023	1A0040A	50	11-Apr-2023	1A0040A	50	50	0
			HAI DINKA	9-Jan-2020	180006A	20					20
				11-Apr-2023	1A0040A	50	11-Apr-2023	1A0040A	50	50	0
			MUKTAH	15-Nov-19	181004A	10					10
				27-Jul-20	1914002A	20					20
		Jur River	NYINAKOK	28-Mar-23	1A0040A	25					25
				20-Apr-23	1A0040A	50					50
				25-Apr-23	1A0040A	50					50
			ROCROCDONG	31-Mar-23	1A0040A	25					25
	Jonglei State	Bor County	Gakyuom PHCU	2-Jan-23		660				660	0
				27-Feb-23		260				260	0
			MCH PHCC	3-Nov-22		247				247	0
				13-Feb-23		247				247	0
	Upper Nile State	Malakal County	Malakal Teachers Hospital	3-Jun-22	1A0033A	150				0	150
				13-Mar-23	1A0073A	500				500	0

Vaccine	State	County	PHCC / PHCU	County Vaccine Store Delivery			PHC/PHCC Receipt			Store	
				Delivery Record			Receipt Note/Register			Vaccine Control Book	Variance
				Date	Batch No.	Quantity	Date	Batch No.	Quantity	Stock Quantity	Quantity
	Western Equatoria	Yambio	Yambio State Hospital	10-Jul-2020	1914002a	75	10-Jul-2020	1914002a	75	75	0
				12-Mar-2021	IA001818	50	12-Mar-2021	IA001818	50	50	0
			Suara PHCU	10-Aug-2020	1914002A	50	No stock records			0	50
				3-Aug-2021	IA0011A	30	No stock records			0	30
				4-Dec-2022	IA0030A	30	No stock records			0	30
			Yambio PHCC	9-Oct-2020	1914002a	150	No stock records			0	150
				11-May-2020	19142006A	150	No stock records			0	150
		Nzara	Nzara PHCC	15-Dec-2021	IA0030A	25	No stock records			0	25
				14-Jul-2022	IA0030A	150	No stock records			0	150
				11-Apr-2023	IA0073A	45	No stock records			0	45
			Yabua PHCU	21-Oct-2021	IA00186	30	Not recorded			0	30

Vaccine	State	County	PHCC / PHCU	County Vaccine Store Delivery			PHC/PHCC Receipt			Store	
				Delivery Record			Receipt Note/Register			Vaccine Control Book	Variance
				Date	Batch No.	Quantity	Date	Batch No.	Quantity	Stock Quantity	Quantity
				1-Apr-2022	IA0030A	30	Not recorded			0	30
				16-Jan-2023	IA0045A	40	Not recorded			0	40
	Central Equatorial State	Juba County	Malakia PHCC	12-Apr-2023	1A0073A	10	12-Apr-2023	1A0073A	10	0	10
				29-Mar-2023	1A0045A	50	29-Mar-2023	1A0045A	50	50	0
# of batches tracked		**64**									
# of untraceable batches		**41**									
# of traceable batches		**23**									
% of untraceable batches		**64%**									
Net doses of untraceable vaccines		**6,610**									

f) **Unexplained stock variances at NVS (vaccine doses)**

Vaccine	Quantity counted by the audit team (a)	Quantity recorded in the vaccine control book (b)	Quantity recorded in e-SMT (c)	Unexplained variance 1 = (a) – (b)	Unexplained variance 2 = (a) – (c)
Pentavalent	363,020	0	24,500	363,020	338,520
IPV	20	0	610,200	20	(610,180)
MCV	570,410	0	35,001,800	570,410	(34,431,390)
J&J – Covid-19	897,020	0	8,808,950	897,020	(7,911,930)

g) **Unexplained stock variances at SVSs**

State-level vaccine store	Penta			IPV			J&J		
	Stock Record	Physical Count	(Surplus)/ or Missing doses	Stock Record	Physical Count	(Surplus)/ or Missing doses	Stock Record	Physical Count	(Surplus)/ or Missing doses
Western Bahr el Ghazal	-	16,620	**(16,620)**	-	10,535	**(10,535)**	-	-	**0**
Jonglei	1,939	17,120	**(15,181)**	1,275	6,450	**(5,175)**	7,683	-	**7,683**
Upper Nile State	25,450	21,130	**4,320**	15,225	15,830	**(605)**	32,520	34,070	**(1,550)**
Central Equatorial state	20,820	37,760	**(16,940)**	-	-	**-**	3,375	-	**3,375**
Western Equatoria	-	-	**-**	4,800	12,075	**(7,275)**	-	-	**-**

h) **Unexplained stock variances at CVS**

County Level	Penta			IPV			J&J		
	Stock Record	Physical Count	Variance	Stock Record	Physical Count	Variance	Stock Record	Physical Count	Variance
Wau County	500	1,000	**(500)**	-	-	**-**			**-**
Jur River	-	1,650	**(1,650)**	-	-	**-**			**-**
Juba	7,810	7,810	**-**	-	4,799	**(4,799)**	2,350	-	**2,350**
Terekeka	2,370	2,389	**(19)**	900	1,034	**(134)**	1,905	-	**1,905**
Nzara County	-	-	**-**	270	380	**(110)**	965	965	**-**
Yambio County	870	13,030	**(12,160)**	1,435	2,863	**(1,428)**	2,705	7,661	**(4,956)**

i) **Unexplained stock variances at SDPs**

PHCC/PHCU level	Penta			IPV			J&J		
Facility Name	Stock Record	Physical Count	Variance	Stock Recorded	Physical Count	Variance	Stock Record	Physical Count	Variance
Sika Hadit	-	110	(110)	-	70	(70)	-	-	-
Hai Dinka	-	80	(80)	-	50	(50)	-	-	-
Muktah	-	360	(360)	-	90	(90)	-	55	(55)
Nyinakok	-	90	(90)	-	35	(35)	-	-	-
Rocrocdong	-	60	(60)	-	20	(20)	100	100	-
Gakyuom PHCU	1,020	1,660	(640)	105	400	(295)	165	150	15
MCH PHCC	390	390	-	65	65	-			-
Malakal Teachers Hospital PHCC	-	-	-	130	260	(130)	35	10	25
Moridi PHCU	28	-	28	10	-	10	-	-	-
Lojora PHCU	26	170	(144)	38	-	38		-	-
Malakia PHCC	140	150	(10)	-	50	(50)	50	-	50
Munuki PHCC	50	10	40	105	150	(45)	60	-	60
Yambio PHCC	110	-	110	5	-	5			-
Yambio State Hospital	78	70	8	17	5	12	-	-	-
Saura PHCU	18	-	18	4	-	4	-	-	-
Nzara PHCC	49	-	49	120	-	120	-	-	-
Yabua PHCU	23	50	(27)	33	-	33			-

Annex 7: Detailed management responses

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
The role of the MoH in monitoring the immunisation programme needs to be enhanced	**Recommendation 24** The MoH should clearly articulate and transmit the government's role in a partner-led implementation framework. This would serve to enhance ownership of the programme, and its strategy for building greater continuity in national systems, in context of this fragile country.	**Action 1** Agreed. Three documents, the Partnership Framework Agreement, the MOU between MoH and partners, and the Grant Management Agreement, outline the MoH's responsibilities within a partner-led implementation framework. We will review the ToRs of the governance bodies, i.e. ICC and TWG, to enhance the ownership of the programme and ensure government role and oversight of the partner led activities.	**Action 1** EPI	**Action 1** December 2024
	Recommendation 25 The MoH, through the direction and guidance provided by its established governance bodies (i.e., at ICC level for immunisation, and via health sector committees) should ensure that all of the donor-funded health activities remain aligned with the national Heath Sector Strategic Plan's priorities.	**Action 2** Government has already begun implementing this recommendation. This was occurring via the DG PHC-chaired Technical ICC (EPI TWG). The implementation of the C-19 vaccination campaign exemplified how the country formulated a one-plan, one-budget, and one-performance monitoring plan. Moving forward, the Health Sector Transformation Project (HSTP) will rectify any potential misalignment of donor funding in the health sector.	**Action 2** MoH, EPI	**Action 2** December 2024
	Recommendation 26 The MoH should: • Monitor progress over the TCA activities, to ensure that the designated activities are implemented on time and that these target and address the EPI's programmatic and managerial challenges as initially identified. • Convene and conduct regular quarterly meetings with the TCA partners and MoH senior official to regularly validate technical assistance reports, before these are formally submitted to Gavi, via the PEF portal.	**Action 3** The MoH monitors TCA activities through quarterly reports from partners that were reviewed by the auditors. Also, the EPI manager has access to the TCA reporting portal, where he is able to appraise the inputs from each partner every six months. Going forward, the country will improve the monitoring by ensuring consistent documentation of all meetings. EPI will implement standardised process and timeline for review of the activities being undertaken by the partner, including all reports being submitted by them. Feedback provided to the partners will be documented. **Action 4** As above. Quarterly meeting will be conducted with the TCA partners and will include agenda item to review TCA reports and provide feedback to partners before submission to the Gavi portal.	**Action 3** EPI **Action 4** EPI	**Action 3** December 2024 **Action 4** December 2024
Sustainability challenges within the current HPF model	**Recommendation 27**	**Action 5**	**Action 5** MoH, EPI, HSTP	**Action 5** December 2024

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
should be addressed in the proposed pooled funding mechanism for Gavi 5.1	For future pooled funding arrangements, MoH and Gavi should ensure that the Management of the pool fund provide the necessary reports, which are compliant with Gavi's guidelines on financial management and audit requirements. This includes confirming that the: • Gavi-funded immunisation activities are directly identifiable; • reporting of expenditures against the budget provides a sufficient level of granularity, showing that the budget has been followed, or providing suitable justifications reasons where any funding was reprogrammed or reallocated; and • health pooled fund financial statements clearly state the total value of Gavi funding received during the period.	For the current pooled funding arrangement, the EPI activities are identifiable In the HPF workplans and costed for in the budget. However, the expenditures are not directly identifiable in the pooled fund. GAVI funds are deposited into the pooled fund as per agreement between GAVI and FCDO which HPF do not have visibility of. The Gavi country support team is already engaging with HSTP (proposed future pooled funding arrangement) to ensure compliance with Gavi's guidelines on financial management and would also be discussed with the Fund Manager as and when the fund manager is onboarded. The implementation of this recommendation is on-going. **Action 6** For the current pooled funding arrangement, the EPI activities are identifiable In the HPF workplans and costed for in the budget. However, the expenditures are not directly identifiable in the pooled fund. GAVI funds are deposited into the pooled fund as per agreement between GAVI and FCDO which HPF do not have visibility of. This would be implemented under HSTP. The Gavi country support team is already engaging with HSTP to ensure compliance with Gavi's guidelines on financial management. **Action 7** This will be implemented in the HSTP. The Gavi country support team is already engaging with HSTP to ensure compliance with Gavi's guidelines on financial management.	**Action 6** MoH, EPI, HSTP **Action 7** MoH, EPI, HSTP	**Action 6** December 2024 **Action 7** December 2024
	Recommendation 28 The MoH should work with the pool fund manager to help prepare a comprehensive transition plan for HPF3 programme's completion, including the corresponding transfer of roles and responsibilities associated. The transition plan should identify suitable strategies to minimise any potential service interruptions, including for any health facilities which will no longer receive any subsequent HPF funding and support.	**Action 8** At the time of the audit, the discussions of transition from HPF to the new programme had not begun. However, transition planning details are now on-going and weekly meetings are held with HPF / UNICEF / MoH / FCDO / WB. Transition to the new programme will be completed by Dec 2024. The transition from HPF to the HSTP will be completed in 2024, and the process is very comprehensive.	**Action 8** MoH, EPI, HSTP	**Action 8** December 2024

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
Improvements required in the supportive supervision arrangements	**Recommendation 29** The MoH should update and standardise its support supervision tools, ensuring that these includes suitable immunisation data quality and stock management sections to be included as part of the review. Moreover, appropriate and robust feedback mechanisms should be implemented to ensure that the feedback from all supportive supervision visits is recorded on file and is accessible by the local EPI officer, .	**Action 9** The integrated supervision checklist includes an overview of the data management and vaccine stock management parameters and if there are any observation, then the detailed checklists are followed for the respective areas. Going forward, the existing checklists will be reviewed, and additional monitoring parameters will be included.	**Action 9** EPI	**Action 9** December 2024
	Recommendation 30 The MoH should: • Implement an action tracker process to follow-up the implementation of recommendations from previous supportive supervision visits. • Ensure that the follow-up of previous recommendations, is included as a standing agenda item in subsequent visits.	**Action 10** Agreed. This will be implemented in the HSTP once the WHO 'companion' app on the ODK is finalised. **Action 11** Agreed. This will be implemented in the HSTP once the WHO 'companion' app on the ODK is finalised.	**Action 10** EPI, HSTP in liaison with WHO **Action 11** EPI, HSTP in liaison with WHO	**Action 10** December 2025 **Action 11** December 2025
Governance bodies need to be strengthened to improve oversight and country ownership	**Recommendation 31** The MoH – with support from the partners – should: • Undertake annual regular training of existing / new members of the ICC and SSITAG to re-acquaint them on the governing bodies' core objectives and refresh them on what roles and responsibility they need to fulfil. • Strengthen accountability around the implementation of the ICC and SSITAG's recommendations – as well as the EPI taskforce's / EPI TWG actions – by developing a dashboard to track their progress. Furthermore, each recommendation should be assigned to a designated officer, with a clear deadline by when the action is to be completed. • Ensure that reports summarising the EPI TWG's conclusions are prepared and submitted to the ICC for the purposes of supporting strategic decisions. • Once a year, review the ICC resolutions and formally report any issues of non-compliance to the Committee , for consent.	**Action 12** Agreed. The implementation of the recommendation is on-going. The country has reviewed the ICC ToRs and plans to sensitise the new members. Since the SSITAG is new, we plan to implement this recommendation going forward. **Action 13** Agreed. EPI will develop a dashboard which would provide a status update on the recommendations proposed by ICC, SSITAG and Taskforce. The dashboard would identify the designated official responsible for implementation of the recommendation along with the timeline. The dashboard would be implemented based on the availability of funding. **Action 14**	**Action 12** EPI **Action 13** EPI **Action 14** EPI	**Action 12** June 2025 **Action 13** December 2025 **Action 14** December 2024

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	• For the purposes of supporting the ICC and SSITAG's work planning and activity scheduling, put in place a workplan tracking tool to monitor which activities are delayed, or carried forward from previous years, to enable the ICC and SSITAG to prioritise their respective activities annually. The de-prioritisation of any work item should be acknowledged and endorsed by the ICC and SSITAG.	The strategic ICC's agenda is set by the EPI TWG. The TWG chooses the issues to present to the ICC for strategic guidance. From the next meeting, the conclusions and recommendations of the EPI TWG will be submitted to the ICC for strategic guidance **Action 15** Agreed. From the next meeting, ICC meeting will include an update on the status of the recommendations made by the ICC. **Action 16** Agreed. From the next meeting, ICC and SSITAG meeting will include an update on the status of the workplan along with the timeline for necessary decision making by the ICC and SSITAG.	**Action 15** EPI **Action 16** EPI	**Action 15** December2024 **Action 16** December 2024
	Recommendation 32 The MoH should set up a secretariat function to support the ICC and SSITAG in their administration. This function should have its own ToRs and be responsible for scheduling meetings, keeping minutes, maintaining a dashboard to track actions, and the archiving of minutes and supporting papers.	**Action 17** Agreed. The recommendation will be implemented subject to availability of funding. Currently, no funding to support the establishment of the secretariat for ICC or SSITAG	**Action 17** EPI	**Action 17** December 2025
Forecasting and quantification of the country's vaccine needs to be improved	**Recommendation 33** The Ministry of Health should ensure that in future: • all annual immunisation forecasts incorporate and use the National Bureau of Statistics' approved harmonised population figures. • forecast assumptions are thoroughly reviewed and checked, and that efforts are made to consistently use the excel-based stock monitoring tool to keep track of vaccine supplies held across all levels of the supply chain including National, state, and county levels. • the EPI maintains on file its assumptions, documentation and working papers supporting its forecasting process, for reference.	**Action 18** In the past years, the country was not able to provide the relevant documents to support forecast shared with Gavi leading to adjustments during the Gavi high panel review process. Starting 2024, Gavi has exceptionally agreed to use the population statistics provided by the National Bureau of Statistics, together with the WEUNIC coverage data. Additionally, Gavi has included some buffer stock with considerations for fragility to ensure that stock levels support programme implementation. As such there is no further action proposed by the audit team. **Action 19**	**Action 18** EPI **Action 19** EPI	**Action 18** June 2024 **Action 19** December 2024

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	• the EPI periodically reviews the accuracy of its annual forecast retroactively, to validate, and where necessary reevaluate its forecasts, so that future projections are more closely aligned to the actual demand. The accuracy of prior assumptions should be evaluated and recalibrated, if necessary.	Agreed. The PSR prioritised the scale up of SMT's use in the 10 states. This work is on-going. However, the recommendation shall be implemented fully subject to availability of funding to cover all the 37 counties. The implementation of this recommendation would also be subject to the on-going discussions on mSupply. EPI will also review the current assumptions to ensure that appropriate assumptions are being used. **Action 20** Agreed. The documentation of vaccine forecasting is inconsistent especially after trained iSC manager resigned due to inadequate incentives. However, the parameters for forecasting are simple and readily available. EPI will ensure that necessary documents would be maintained in future. **Action 21** Agreed. South Sudan has consistently received less vaccines than expected. As a result, the country frequently requests additional vaccines by the middle of the year. Additionally, annual forecast reviews will be conducted once the country projection is considered as basis for supply.	**Action 20** EPI **Action 21** EPI	**Action 20** December 2024 **Action 21** December 2024
Gaps in stock management practices at national and sub-national level impacted vaccine accountability and traceability	**Recommendation 34** MoH in collaboration with UNICEF, should: • Develop a detailed implementation roadmap for the continuation in deploying e-SMT or any other stock management tool to sub-national level stores, which fully meets the country's specific requirements. • Ensure that the country's electronic logistics management information system is properly aligned and mapped with South Sudan's supply chain infrastructure, including considering incorporating all of the vaccine drop-off points in addition to the SVS and CVS, to reflect the full breadth of storage which matches the real time location of vaccines. • Provide regular (e.g. annual) training and mentoring to the logistics staff – including at the state and county levels – on	**Action 22** The country is scaling up the use of SMT in the 10 states from Gavi. SMT would be scaled up to the county level based on the availability of funding. The same has been prioritised in the PSR as well. Further, the country is also discussing the implementation of mSupply. Implementation plan will be duly developed based on the decision taken. The implementation of the recommendation is on-going with new support from Gavi **Action 23** The PSR identified the need to assess the immunisation supply chain in South Sudan and redesign it to fit the country's context. However, the implementation is pending, subject to funding availability.	**Action 22** EPI **Action 23** EPI	**Action 22** December 2025 **Action 23** December 2025

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	how to operate the logistics management information system, so as to improve system usage and application. • While the implementation and embedding of the country's electronic logistics management information system (e.g. e-SMT) is ongoing, the storekeepers should continue to maintain manual vaccine control books, as a backup, duplicate record for recording stock movements and transactions . • Utilise the vaccine control books) to consistently record all vaccine expirations or wastage incidents, including details on the quantity, type and timing for such events.	**Action 24** This recommendation is implemented. Refresher trainings for state cold chain officers was funded and implemented by MoH and UNICEF in 2023. **Action 25** Agreed. However, the bottleneck is the inconsistent use of the manual stock control book and not the availability of the books. EPI will encourage use of the manual stock control books and perform checks during supervision visits. **Action 26** The manual vaccine control registers have provisions for reporting expired vaccines. EPI will undertake training and advocacy for utilising the existing vaccine control books to record expired vaccines.	**Action 24** EPI **Action 25** EPI **Action 26** EPI	**Action 24** June 2024 **Action 25** December 2025 **Action 26** June 2025
	Recommendation 35 As the MoH moves forwards with its plans in integrating the Covid-19 vaccine into its routine immunisation programme, the EPI team should ensure that they properly prepare for the transition. This includes balancing stock demands verses supplies, so that for existing stocks, there is sufficient demand to consume the remaining doses and minimise the number of doses that potentially are wasted or shelf-expire.	**Action 27** This recommendation is now fully implemented. The country conducted a third national campaign and a subnational campaign to expedite the utilisation of the covid vaccines.	**Action 27** EPI	**Action 27** June 2024
Previous EVM assessment recommendations were not implemented	**Recommendation 36** The MoH should consider undertaking another EVM assessment (using the new EVM methodology and tools), to obtain an up-to-date, comprehensive status of its vaccine management and supply chain.	**Action 28** The implementation of this recommendation is on-going. EPI is undertaking a new EVM assessment in 2024 and the improvement plan would be developed based on the results of the assessment.	**Action 28** EPI	**Action 28** June 2025

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	Recommendation 37 Should resources not allow for an EVM assessment during the 5.0 implementation, MoH should: • review the implementation status of its EVM / continuous improvement plan. Thereafter, it should prioritise and cost out the remaining activities, and align these to its existing funding allotment, to identify what funding gaps exist – if any – to fully implement its plan. • Develop a dashboard which illustrates the status in implementing the continuous improvement plan. This dashboard (or equivalent) illustrating progress on completing plan, should be regularly discussed with the key stakeholders and governance functions responsible.	**Action 29** This recommendation is valid. Another EVM is underway, and the process of comprehensively monitoring of the implementation of the improvement plan is documented in the PSR. Using Gavi funding, an MoH iSC manager was hired to continuously monitor the implementation of the improvement plan, among other duties. Other interventions and costing in the PSR are dependent on the findings of the assessment. **Action 30** EPI will develop a dashboard to monitor the implementation of improvement plan as explained above.	**Action 29** EPI **Action 30** EPI	**Action 29** June 2025 **Action 30** December 2025
Cold chain management practices need to be strengthened	**Recommendation 38** The MoH should: • Regularly update its cold chain equipment inventory list to maintain an accurate reflection of the country's CCE status. • Conduct annual training sessions and deploy cold chain technicians at the sub-national level. • Establish and implement cold chain equipment preventive maintenance plans and schedules at all levels of the supply chain.	**Action 31** The situational assessment that informed the PSR identified this as a need as well. Consequently, MoH with support from UNICEF conducted a desktop assessment of cold chain equipment in 2023. The results of the desktop assessment could be considered valid because UNICEF buys and installs over 99.9% of the cold chain equipment. However, a comprehensive assessment will be conducted subject to availability of funding. **Action 32** The implementation of this recommendation is complete. In Sep-Oct 2023 after the programme audit, MoH and UNICEF, in conjunction with a local training institution, jointly conducted two trainings. Additional training will only occur if funding is available. **Action 33** The cold chain technicians have been deployed in all 80 counties to support with preventive maintenance. The 5 state cold chain technicians and the 60+ cold chain assistants have plans but the lack of dedicated budgets hinders the execution of the plans especially in areas that require transport and per diem. Implementation of this recommendation is on-going	**Action 31** EPI, in liaison with UNICEF **Action 32** EPI, in liaison with UNICEF **Action 33** EPI	**Action 31** June 2024 **Action 32** June 2024 **Action 33** June 2024

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
There are challenges in estimating the target population for immunisation	**Recommendation 39** The MoH should: • Conduct a comprehensive analysis of the population data derived from the PES 2021, in order to rebase and realign the EPI's immunisation coverage targets and EPI activities. • Expedite the execution of the next coverage evaluation survey, which is currently planned to be done in 2023, in order to establish more precise immunisation coverage figures.	**Action 34** This recommendation is now fully implemented. The program used the estimates in the monitoring of the performance in 2023. This happened after the programme audit was conducted. Important to note that the country decided to revert to the previous population estimates because the PES estimates distorted the performance with so many counties performing over 100% for most vaccine. **Action 35** Agreed. However, the MICS that is currently underway might involve a survey which may subsume the coverage evaluation survey as well. Hence, a separate coverage evaluation survey may not be undertaken.	**Action 34** EPI **Action 35** EPI	**Action 34** June 2024 **Action 35** December 2025
There were gaps in the quality of immunisation data	**Recommendation 40** The MoH should: • Routinely perform a triangulation exercise, of their immunisation data, comparing the number of doses distributed, consumed and the administrative coverage; and • Ensure that the data verification and validation exercises at the health facility levels are consistently completed.	**Action 36** Agreed. However, the challenges with last mile vaccine visibility might make the implementation of this recommendation very difficult. Special effort is needed to address the bottlenecks pertaining last mile vaccine visibility in the country. The country will try to undertake data triangulation at the state and county level; however, the result may not be accurate due to lack of data accuracy from the health facilities. **Action 37** The inconsistent implementation of data quality self-assessments (DQSA) was identified as a challenge in the situational assessment that informed the PSR. The implementation of this recommendation is now funded and on-going under WHO TA.	**Action 36** EPI **Action 37** EPI, in liaison with WHO	**Action 36** December 2025 **Action 37** December 2025
	Recommendation 41 Following the last data quality assessment undertaken in 2021, and to improve data quality, the MoH should: • Develop a costed data quality improvement plan, prioritising which actions are to be undertaken first.	**Action 38** Recommendation is valid. A new DQA is planned to start in 2024. A costed data quality improvement plan will be developed based on the results of the 2024 DQA and will include a prioritisation plan. The implementation status will be included in the ICC dashboard. The activity has been included in the PSR and is funded.	**Action 38** EPI	**Action 38** June 2025

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	Tracking the progress of this plan, should also be included in the ICC dashboard. • Properly monitor all the activities identified in the DQIP and promptly implement these according to the agreed deadlines. • Design and put in place a process which systematically identifies and corrects data anomalies, at both national and sub-national levels.	**Action 39** Monitoring of activities would be undertaken after the development of the DQIP, and the implementation status would be included in the ICC Dashboard. **Action 40** Supportive supervision and an EPI WhatsApp group have been used to identify data-related problems. The WHO companion app will improve the system for following up on the implementation of action points from supportive supervision. WHO TA is providing necessary support for undertaking data verification and validation at the health facility level. Data anomalies identified during the verification and validation exercise would be duly updated. Regular quarterly data reviews will be undertaken on sample basis and gaps identified will be addressed.	**Action 39** EPI **Action 40** EPI, in liaison with WHO	**Action 39** December 2025 **Action 40** December 2025
	Recommendation 42 MoH should: • Implement a process where any DHIS2 data that is to be input or retroactively alter after the official submission deadlines, needs to be pre-approved by Management. • Strengthen the capacity and capabilities of its state-level health staff, so that they can routinely conduct in-depth reviews of the immunisation data.	**Action 41** Agreed. EPI, through the Director of Health will start the discussions with the Department of Monitoring and Evaluation as part of advocacy on the DHIS platform. If agreed by the Department of Monitoring and Evaluation, this recommendation will be implemented. Additional advocacy will be done with the support of WHO on data assurance. **Action 42** Agreed. Gavi, through the PEF TCA funding, contracted AFH, which is a local organisation, to support capacity building at the subnational level. This has been covered in the PSR too.	**Action 41** EPI and Department of Monitoring and Evaluation **Action 42** EPI	**Action 41** December 2025 **Action 42** December 2024
Delays in refunding questioned expenditure	**Recommendation 43** MoH should promptly reimburse USD 541,000, to WHO, which it received via WHO's Direct Financial Contribution (DFC) in 2017. Thereafter, the MoH should discuss and agree with Gavi and WHO on the appropriate reallocation of these funds towards other immunisation programme activities.	**Action 43** In February 2017, the World Health Organisation (WHO) provided an advance of USD 541,000 to the Ministry of Health (MoH) for the purpose of supporting immunisation programme activities. These funds were not utilised as intended and remained outstanding. The MoH officially communicated with Gavi on 12 July 2018, acknowledging that the funds had not been utilised as intended and committed to repay the amount. On January 5, 2019, the MoH	**Action 43** MoH, EPI, in liaison with WHO	**Action 43** December 2025

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		submitted a request to Gavi, seeking an extension for the repayment of the USD 541,000. They indicated that they had requested the Ministry of Finance and Planning (MOFP) to facilitate repayment, and MOFP had agreed to disburse the sum in instalments beginning 2019-20. However, as of the conclusion of the fieldwork, the MoH had yet to fulfil its commitment and repay Gavi Some actions have been taken as WHO no longer uses a DFC mechanism when engaging with the MoH rather DIs are used, however this is noted and will be discussed within WHO and also between WHO and MoH to ensure a resolution of this impasse. The country is committed to pay the amount when the economy improves. However, reallocating the funds from programme activities is unfortunate as it will end up denying the children and women the vaccines they need the most.		
Some Gavi-funded expenditures did not demonstrate value for money	**Recommendation 44** Put in place a series of cascading approvals to release the necessary funding in various instalments for any future surveys / assessments funded by Gavi, to ensure that Gavi's funds are only released once a formal decision to go ahead with the next key milestone or subsequent stage of activities is agreed. As a result, the MoH should ensure that: • The design and implementation of each survey / assessment should include milestones which are to be invalidated and approved by the MoH. Regular progress monitoring to be undertaken for the achievement of milestone to determine release of funds at each stage; • The preliminary design and methodology of the respective survey / assessment, should be formally signed off; • A pre-testing phase of the survey / assessment methodology should be agreed upon, and validated after the initial pilots; and • The final survey / assessment design and methodology should be formally approved before executing the principal phases of data collection, analysis and reporting.	**Action 44** The recommendation is valid. There was limited utility and value for money from the Service Availability and Readiness Assessment (SARA) and Data Quality Assessment (DQA). This is noted, and future surveys / assessment will be done differently and include the following: 1. Stakeholder Engagement: We will engage with all relevant stakeholders, including government entities and development partners, to build consensus on the importance of conducting the survey / assessment and formally endorsing and releasing the assessment results. 2. Capacity Building: Efforts will be made to strengthen the technical and analytical capacity within the relevant government departments to facilitate the review, endorsement, and application of the assessments' findings. 3. Implementation of Recommendations: Once formally endorsed, a detailed action plan with clear timelines and responsibilities for implementing the assessments' recommendations is assigned to ensure accountability and effectiveness. 4. Regular Updates and Reports: To ensure transparency and maintain momentum, regular updates on the progress made in implementing the recommendations and the impact thereof will be shared with all stakeholders.	**Action 44** EPI	**Action 44** June 2025

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
Fixed assets management processes need to be improved	**Recommendation 45** MoH should: • Update the FAR to capture all key parameters like location of the asset, unique identifier for assets, date of receipt of assets. • Ensure that states maintain and update their fixed asset registers to ensure that programme assets are tracked, managed, and used for their designated purpose. • Every year, carry out an asset verification exercise.	**Action 45** The recommendation is valid. EPI will update the FAR with the relevant details. **Action 46** The recommendation is valid. EPI will update the FAR with the relevant details. **Action 47** The recommendation is valid. EPI will communicate guidelines for asset verification.	**Action 45** EPI **Action 46** EPI **Action 47** EPI	**Action 45** June 2025 **Action 46** June 2025 **Action 47** June 2025
	Recommendation 46 The MoH should promptly provide written evidence to Gavi, on the current existence and use of all of the 11 vehicles procured in 2017, so that a resolution on their appropriation and allotment can be decided.	**Action 48** The recommendation is valid. The audit team was able to verify 6 out 11 vehicles based on the states visited by the audit team. EPI team will request states to provide evidence of the remaining vehicles.	**Action 48** EPI	**Action 48** June 2025