Memorandum on the Independent State of Papua New Guinea Programme Audit report

The attached Audit and Investigations report sets out the conclusions of the programme audit of Gavi's support to the Independent State of Papua New Guinea's National Department of Health (NDoH), executed by the Expanded Programme on 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 1 January 2019 to 31 December 2023. The audit scope included the following grants: Health Systems Strengthening, MR follow-up campaign, COVID-19 Vaccine Delivery Support (CDS) funds, as well as other vaccines and cold chain equipment.

Funds directly executed by WHO and UNICEF were not subject to our programme audit and were considered out of scope, in accordance with the United Nations single audit principle.

Conclusions on the review of Gavi-funded expenditures is not included in this report, as it will be subject to a separate, forthcoming audit engagement to be conducted later on during 2025.

The report's executive summary (pages 3 to 6) summarises the key conclusions, details of which are set out in the body of the report:

1. There is an overall audit rating of **"ineffective",** which means, "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".
2. In total, 23 issues were identified in the following areas: (i) governance, oversight and country's readiness for transition; (ii) programme management; (iii) vaccine management; (iv) supply chain and data management systems; and (iv) immunisation data management.
3. To address the risks associated with the issues, the audit team raised 31 recommendations, of which 24 were rated as high priority.

4. Key findings were that:
    a. The progress in implementing the National Immunisation strategy has been slow due to a lack of leadership. There have been significant delays in meeting the accountability framework's goals. The Government was unable to fund its vaccine purchases, undermining its ability to reach vaccination targets. Further, there is no plan for mobilizing the required shortfall and the NIS does not cover all of the programme's costs. Coordination mechanism between the National Department of Health (NDoH), the Provincial Health Authorities (PHAs) and Immunisation Service Providers (ISPs) is unclear. The Interagency Coordination Committee (ICC), was not effective in overseeing the immunisation programme. The EPI Technical Working Group (TWG) needs further strengthening and a National Immunisation

Technical Advisory Group (NITAG) has not been established although identified in NIS.

b. The country suffered with vaccine shortages and insufficient supplies which impeded its ability to reach vaccine targets. The EPI faces considerable staffing challenges resulting in it significantly relying on partners. No transition plan has been developed to integrate such support from the partners. The immunisation service providers (ISPs) work financed through the Accelerated Immunisation and Health System Strengthening Programme (AIHSS) is not aligned with an integrated health approach, and there were no measurable indicators to monitor their performance. No transition plan has been developed for the activities implemented by ISPs. NdoH had limited oversight over the AIHSS and ISPs activities and monitoring of partner-led activities was inadequate.
c. Reliability of vaccine data remained a concern due to issues with vaccine records, including inaccurate and missing stock records, discrepancies with physical verification among others. Vaccine expirations regularly occurred, but records of these were maintained. There were frequent stock outs of various vaccines and insufficient vaccine buffers were maintained. There were deficiencies in the integrity of the cold chain, due to faulty equipment, lack of maintenance plans, and improper temperature monitoring. Further, most of the Effective Vaccine Management (EVM) recommendations from 2022 were not implemented.
d. There were significant gaps in the design of mSupply system and lacked key features including audit logs and updated operating manuals. The NDoH remains significantly dependent on third party contractors to manage its various systems, potentially impacting the continuity of the programme. The national data storage for both mSupply and eNHIS is hosted outside the country, and there were no internal processes in place to ensure that the data was safeguarded and secure. No transition plan has been developed for transfer of both the system to Government.
e. The reliability of PNG's immunisation coverage was compromised due to inaccurate population data, lack of immunisation coverage evaluation survey, absence of data quality improvement plan and data quality reviews not conducted at most locations.

The findings of the programme audit were discussed with the National Department of Health (NDoH) and implementing partners. They accepted the audit findings, acknowledged the gaps identified, and committed to implement a detailed management action plan.

The Gavi Secretariat continues to work with the National Department of Health to ensure that the above commitments are met.

Geneva, September 2025

PROGRAMME AUDIT REPORT

Independent State of Papua New Guinea
September 2025

Gavi
The Vaccine Alliance

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1. Executive Summary

1.1 Overall audit opinion

Audit opinion:

The audit team assessed the National Department of Health's management of Gavi support during the period 1 January 2019 to 31 December 2023 as "ineffective" which means, **"Multiple significant and material issues were 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."

Through our audit procedures, we identified high risk issues relating to governance, oversight and country's readiness for transition; programme management; vaccine management; supply chain and data management systems; and immunisation data management.

To address the risks associated with these issues, the audit team raised 31 recommendations, of which 24 (77%) 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 21 issues (14 high risk and 7 medium risk) relating to the use and management of Gavi support.

Section 3 of this report provides details of the Independent State of Papua New Guinea's (PNG) fragile context and specific challenges in delivering its immunisation programme.

At the time of the audit in October 2024, Gavi's support was channelled through both partners and the pooled fund mechanism, with the Expanded Programme on Immunisation (EPI) significantly relying upon the partners to lead and perform many of the activities. However, the audit team noted that the Government's role in overseeing such partner-led implementation was not sufficiently defined.

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

Governance, oversight and country's readiness for transition

The National Immunisation Strategy (NIS) 2021-2025 articulates how to make PNG's immunisation programme sustainable. However, progress in implementing the strategy has been slow due to a lack of leadership, hindering the programme's long-term success. While an accountability framework for the EPI was created, there have been significant delays in meeting the framework's goals.

Between 2019 and 2023, each year the Government allocated less than 1% of its health budget to the EPI. As a result, the Government was unable to fund its vaccine purchases, undermining the overall level of vaccinations which the programme could achieve.

Currently, there is no clear plan for mobilising the necessary public funds for immunisation, even though the NIS highlights that a 35% programme funding gap will remain until at least 2030. Moreover, the NIS does not include all of the programme's costs and does not provide a suitable plan for how to bridge this gap. In addition, implementation of the NIS is delayed, and its timeline needs to be revised.

Coordination between the National Department of Health (NDoH) and the Provincial Health Authorities (PHAs) is unclear, and there is no structured plan for how they should work together. The deployment of Immunisation Service Providers (ISPs) is helping in some provinces, but there is little coordination between the government (NDoH/PHAs), and these ISPs, and their respective roles were not clearly defined.

The principal governance body, the Interagency Coordination Committee (ICC), was not effective in overseeing the immunisation programme. The terms of reference of the Health Sector Coordination Committee (HSCC) which oversees the entire health sector, were drafted in 2018 but have not been approved, and there is no evidence that this Committee met during the past five years (2019-2023). Similarly, the ICC did not meet as required, and many of its key tasks – such as tracking progress and providing oversight on programmatic activities – were not properly carried out. An EPI Technical Working Group (TWG), established in December 2022, supports the ICC but this TWG needs further strengthening. Although the NIS signalled that a National Immunisation Technical Advisory Group (NITAG) is needed, as of October 2024, no such group has been established.

The gaps in governance and oversight, including a lack of leadership and insufficient funding, present significant challenges to the programme's sustainability and success.

Programme management

The National Health Plan (NHP) includes achieving a target of 80% Penta 3 coverage by 2025, although current vaccine shortages and insufficient supplies (only 60% of needs were met) represent a major obstacle. The EPI faces considerable staffing challenges including the lack of permanent positions, resulting in it significantly relying on partners, including their financing several posts at the National Vaccine Store (NVS). There was no transition plan for how the Government might integrate such positions into its ranks, in the long term.

Since 2019, the Accelerated Immunisation and Health System Strengthening Programme (AIHSS) has financed several Immunisation Service Providers (ISPs) in support of the programme. However, the ISPs' work is not

aligned with an integrated health approach, and there were no measurable indicators to monitor their performance. Several tasks allocated to the ISPs and Abt Associates Pty Ltd (AIHSS fund manager, hereinafter "Abt") were not completed, and the 80% immunisation coverage target has not been met. The AIHSS 2 programme is set to close in 2027, but no transition plan has been developed yet. A different fund manager was assigned to oversee the CDS funds during the Covid19 pandemic.

Both the NDoH and its EPI team had limited oversight over the AIHSS and CDS funds and what resulting partner activities they were used to finance. The monitoring of all partner-led activities was inadequate, and funds allocated to the ISPs were not tracked.

These weaknesses underscore the need for: stronger oversight arrangements, clarified roles for the NDoH, and improved cross-partner coordination, so as to help attain sustainability in the programme. The audit team recommends that NDoH becomes pro-active in coordinating and monitoring partner activities, including hosting regular programmatic meetings. Unless these challenges are addressed, the programme's accomplishments could be placed at risk, particularly after Gavi's support ends, currently scheduled for 2027 subject to any changes under the new ELTRACO policy approved by Gavi board in December 2024.

Vaccine management

The audit team found significant issues with vaccine records, including inaccurate and missing stock records at both national and sub-national levels. The team also identified discrepancies between the existing records and our own stock counts, noting that regular physical stock verifications were not done.

Vaccine expirations regularly occurred, but no records of these were maintained, making it difficult to determine the extent of losses. Frequent stockouts, particularly of Pneumococcal Conjugate Vaccine (PCV) and Inactivated Polio Virus happened, sometimes for several weeks, and insufficient vaccine buffers including for BCG, BOPV, and PCV were maintained at the NVS. Additionally, there was insufficient dry storage capacity at both the national level and several sub-national stores.

There were deficiencies in the integrity of the cold chain, due to faulty equipment, lack of maintenance plans, and improper temperature monitoring. The cold chain systems also lacked contingency and emergency plans, and most of the Effective Vaccine Management (EVM) recommendations from 2022 were not implemented.

These gaps undermined the visibility, traceability, and accountability over vaccines and equipment, increasing the risk of stockouts and compromising the effectiveness and safety of operations.

Supply chain and data management systems

In 2013, the NDoH implemented mSupply, an electronic Logistics Management Information System (eLMIS), deploying it to both the NVS as well as to a limited number of health facilities. The audit team noted that this system included significant gaps in its design, such as its inability to calculate KPIs, the absence of historical trends for data analytics, and the lack of a module covering cold chain equipment. In addition, the system does not include other key features, such as user audit logs and updated operating manuals.

The NDoH remains significantly dependent on third party contractors to manage and update its systems due to staffing shortages, potentially impacting the continuity of the programme. Furthermore, national data storage for both mSupply and eNHIS is hosted outside the country, and there were no internal processes in place to ensure that the data was safeguarded and secure and could be potentially recovered. Finally, no proper plan was in place for how to transition both these systems over to the Government's control.

Uncertainties around the ownership, control and data access for both systems, unclear licensing arrangements, poses risks to operational efficiency and data integrity, and need to be addressed urgently.

Immunisation data management

The reliability of PNG's immunisation coverage was compromised due to inaccurate population data. The NDoH continued to use the 2011 census which led to inaccurate targets and did not sufficiently account for the challenges of estimating populations in remote areas. A new census has been conducted in 2024 which is

yet to be formally endorsed and is expected to be taken into consideration going forward. The country has never conducted an immunisation coverage evaluation survey, and its national immunisation coverage estimates were solely based on desk reviews, rather than on specific surveys.

Although data quality assessments were done in 2021, 2022, and 2023, these assessments were not followed up by developing costed plans to remediate and improve data quality. In addition, the proposed corrective actions arising from the quality assessments were not tracked. Data quality reviews were also not conducted at most locations visited by the audit team.

Issues in the management and quality of immunisation estimates undermined decision-making, leading to unsupported targets, overreported achievements, and limiting the effectiveness and impact of EPI interventions.

Overall comment on the programmatic challenges

The audit team recognised that strengthening EPI leadership presents a valuable opportunity to enhance the management of the immunisation programme. The audit highlighted the importance of establishing a fully resourced national EPI team equipped with the comprehensive capabilities and expertise needed to effectively lead and oversee the programme. This includes ensuring strong technical leadership as well as robust operational management and supervision at the provincial level. At present, several operational and technical functions are being effectively supported by partners, in collaboration with the acting EPI manager. The acting manager has shown commendable commitment to ensuring critical functions are maintained and has demonstrated a strong willingness to learn and collaborate. However, the addition of full-time personnel and additional support from NDoH senior leadership would create an enabling environment and further reinforce the EPI's capacity to deliver on essential responsibilities. Gavi continues to support and encourage the NDoH in prioritising the appointment of a complete and skilled national EPI team.

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 the design and operating effectiveness of the: supply chain processes to ensure delivery of vaccines to recipients; governance, oversight, programme and technical assistance arrangements to provide support and assurance over Gavi's investments; implementation arrangements of Gavi-funded programme activities, including the country's readiness for transition; and the mechanisms governing the data quality and financial management processes.

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

The audit scope covered the period from 1 January 2019 to 31 December 2023. The total cash, vaccines and ancillary support provided by Gavi to PNG during this five-year period is presented in Table below.

Table 1: Cash, PEF TCA, equipment and vaccines support (2019 to 2023) in USD

Grants	2019	2020	2021	2022	2023	Total
HSS	7,507,051	6,230,013	343,019	66,916	4,740,272	18,887,271
MR-FU-C	8,091,865			5,110,084		13,201,949
IPV			74,877			74,877
COVAX - CDS			2,173,591	1,904,359	479,596	4,557,546
Total cash (a)	**15,598,916**	**6,230,013**	**2,591,487**	**7,081,359**	**5,219,868**	**36,721,643**
PEF TCA	2,586,613	4,174,840	2,299,446	1,710,035	2,327,674	13,098,608
Total PEF TCA (b)	**2,586,613**	**4,174,840**	**2,299,446**	**1,710,035**	**2,327,674**	**13,098,608**
CCEOP	1,076,882					1,076,882
COVAX CCE	-	-	190,691	-	-	190,691
Total equipment (c)	1,076,882	**-**	**190,691**	**-**	**-**	**1,267,573**
IPV	655,508	572,519	1,109,954	1,268,329	305,110	3,911,420
Measles	36,827	73,616	12,838	-	-	123,281
Measles-Rubella	953,209	-	-	1,533,580	-	2,486,789
Penta	24,946	121,836	81,265	-	-	228,047
Pneumo	-	611,631	72,477	-	-	684,108
Injection Safety Devices	91,428	34,031	-	-	-	125,459
COVAX – Covid-19	-	-	7,423,835	180,978	2,295,000	9,899,813
Total vaccines (d)	**1,761,918**	**1,413,633**	**8,700,369**	**2,982,887**	**2,600,110**	**17,458,917**
Total = (a) + (b) + (c) + (d)	**21,024,329**	**11,818,486**	**13,781,993**	**11,774,281**	**10,147,652**	**68,546,741**

Table 2: Details of PEF TCA funding to partners (amounts in USD) – reprise of (b) from above

PEF TCA	2019	2020	2021	2022	2023	Grand Total
Abt	-	339,838	-	284	-	340,122
CDC	880,720	750,000	250,000	-	-	1,880,720
CHAI	14,913	258,635	180,717	444,375	-	898,640
University of Oslo	-	15,000	728	50,126	-	65,854
UNICEF	1,049,023	1,545,560	865,839	1,036,079	1,271,060	5,767,561
WHO	641,957	1,265,807	1,002,162	59,171	936,614	3,905,711
IBRD				120,000	120,000	240,000
Total	**2,586,613**	**4,174,840**	**2,299,446**	**1,710,035**	**2,327,674**	**13,098,608**

2.3 Audit approach

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 management, supply chain and data management systems, 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 (TCA) were reviewed.

The programme audit was conducted in two phases: an initial in-country scoping visit between 1 and 5 July 2024, followed by three weeks fieldwork conducted between 30 September and 18 October 2024.

The audit team visited: the national vaccine store; 9 provincial offices and vaccines stores; 3 district offices; and 30 health facilities. See Annex 4 for a list of sites visited.

Over the five-year period (2019-2023), Gavi's support to PNG was disbursed to Gavi alliance partners, expanded partners, and to the Accelerated Immunisation and Health System Strengthening Programme (AIHSS) which was primarily funded by DFAT (Australia), MFAT (New Zealand) and Gavi. Gavi's funding to this programme was managed via its designated fund managers – Abt. Gavi signed appropriate agreements with all of these partners and Abt. Abt signed grant agreements with ISPs.

During the course of its engagement, the audit team interacted with a range of stakeholders including: the EPI team; various Gavi alliance partners including WHO and UNICEF; Gavi expanded partners such as CHAI; AIHSS Fund Managers Abt; PWC; the Department of Foreign Affairs and Trade (DFAT) and Ministry of Foreign Affairs and Trade (MFAT).

2.4 Progress on previously identified audit issues

Gavi conducted its first programme audit of Gavi support to PNG in 2016. The prior PNG audit report was rated "unsatisfactory" based on the results of testing over various areas in scope including governance and oversight, programme management, vaccine supply management, budgetary and financial management, procurement, and fixed asset management.

Following the previous report's action plan, 31 out of 75 recommendations were implemented, resulting in improvement in several aspects of vaccine supply chain management, including routine temperature monitoring, training on vaccine supply chain management, development of standard operating procedures, maintenance of temperature records, availability of fridge tags among others.

Several prior audit issues are not yet fully addressed. While some controls and mitigating actions had been considered and/or designed in response to past audit issues, not all the actions were fully implemented, or the design of the controls did not adequately address the nature of the risks presented at the national and/or subnational levels.

Details of the issues not yet resolved are considered in section 4 of this report.

2.5 Exchange rate

Most in-country expenditures were incurred in cash using the PNG Kina (PGK). For information purposes and as part of the summary of this report, the equivalent amounts are also reflected in United States Dollars (USD). An overall rate was applied to the summary of expenditures, based on the average bank rate across the audit period. This equates to an exchange rate of PGK 3.6 against USD 1.00.

3. Background

3.1 Introduction

Papua New Guinea (PNG), officially the Independent State of Papua New Guinea, is a geographically diverse country made up of over 600 islands and 5,152 km of coastline. Its total land area is 462,840 sq. km, with only 27% of the land being inhabited. PNG comprises the eastern half of the island of New Guinea and includes offshore islands in Melanesia, such as New Britain, New Ireland, Bougainville, and Manus, along with many smaller islands. It shares a land border with Indonesia to the west and is close to Australia and the Solomon Islands.

The country is the most linguistically diverse in the world, with over 850 indigenous languages. The capital Port Moresby is situated on the southern coast. About 87% of PNG's population lives in rural areas, making it the country with the highest rural population proportion in the world. Access to electricity is very low, and only 3% of roads are paved. Many villages are accessible only by foot, and travel between provinces is mostly by air and Port Moresby is not connected by road to most of the country. The largest cities, such as Port Moresby and Lae, include marginalised settlements where under-vaccinated children may be found.

Administrative arrangements

PNG is a decentralised country, divided into 22 provinces, 89 districts, 318 Local-Level Governments (LLGs), and 5,745 wards. It is a member of the Commonwealth and operates under a parliamentary democracy based on the Westminster model.

As a federal constitutional monarchy, PNG has three levels of government: national, provincial, and local. The national parliament consists of a 118-member unicameral legislature, with members elected for five-year terms through universal suffrage. The Governor-General, appointed by the parliament, has the authority to appoint and dismiss the prime minister. The Governor-General also appoints the Cabinet (National Executive Council) on the recommendation of the prime minister.

Economy and demographics

PNG has strong growth potential, driven by its abundant resources, and is projected to see economic growth of 4.8% in 2024, up from 2.7% in 2023. The economy is dominated by two clusters: agriculture, forestry, and fishing – which employ most of the population, and the minerals and energy extraction sectors, which generates most of export earnings and GDP. However, despite its resource wealth, PNG faces economic challenges such as low productivity growth, reliance on natural resources, and a lack of exploitation of its human capital.

In 2023, PNG's GDP was USD 30.97 billion, with a GDP per capita of USD 2,994.5 and GNI per capita of USD 2,700. The country has a population of 10.5 million in 2024 and ranks 154 out of 193 on the United Nations Human Development Index. The Gender Inequality Index (GII) stood at 0.725 in 2021, the lowest in the East Asia and Pacific region and was ranked a1t 160 out of 161 countries. This highlights a notable degree of gender inequality in the country, particularly in terms of health, empowerment, and the labour market. Despite being a lower-middle-income economy, PNG struggles with low tax revenues, leading to insufficient government resources for public services.

The mining and petroleum industries play a vital role, contributing 26% to GDP and 84% of export revenue. However, benefits from this income stream are not shared widely, with much of the rural population depending on subsistence agriculture. In 2017, 37.5% of the population lived below the poverty line, and in 2021, 24% of the employed population earned below the international poverty threshold. PNG also faces significant multi-dimensional poverty (including dimensions associated with health, education, socio-economic and climate, etc.).

The country's economic growth is marked by boom-and-bust cycles due to fluctuations in the natural resource sector, leading to fiscal instability. The COVID-19 pandemic worsened economic performance, resulting in a 2.9% contraction in 2020, rising health expenditures, and tax revenue shortfalls. The country's fiscal situation remains precarious, with public debt exceeding 50% of GDP due to the accumulation of external debt.

3.2 National health sector [1]

PNG has developed a national health plan for 2021-2030 to guide its health sector stakeholders. The health sector operates under a decentralised system, headed by the National Department of Health (NDoH) which coordinates health services, and working with the Provincial Health Authorities (PHAs) established in each province. The health system is governed by multiple laws, including the National Health Administration Act (1997) and the Provincial Health Authorities Act (2007). While the PHAs are all established, there are conflicts across the various mandates due to different laws, which continues to complicate health service delivery.

PNG's health system is structured across six levels, from the national hospital in Port Moresby to community health posts and aid posts. However, the closure of many health facilities, particularly in rural areas, has negatively affected service accessibility. The health workforce faces significant challenges, with over 14,500 vacant positions out of 32,064 approved roles. The government has set a goal to increase the health workforce to 29,376 by 2030, with a majority of the increase supported by the government and churches, the latter which play a critical role in delivering healthcare in rural regions.

Several church organisations receive substantial funding from NDoH and the PHAs, to provide a large portion of healthcare services in PNG, including operating health facilities and training schools. Between 2018 to 2024, the national health budget has remained stable, equating to approximately 4-5% of the national expenditure.

3.3 Immunisation in PNG

The PNG EPI started in 1977, initially targeting six diseases, and has expanded over the years to include additional vaccines. As of December 2023, the programme provides free vaccinations against nine preventable diseases. See Annex 5 for the national immunisation schedule. The national EPI is managed within the family health services branch of the public health division and is responsible for providing oversight over both the central and provincial levels.

Despite its long-standing role in primary healthcare, routine immunisation in PNG faces significant challenges. These include: a scarcity of healthcare workers, vaccine shortages, poor management, insecurity, and inadequate financial resources. As of 2022, immunisation coverage remains low, with national coverage for Penta 3 attaining 39% and measles rubella at 38%. Similarly, the WHO/UNICEF Estimates of National Immunisation Coverage (WUENIC) report an average trend of 36% for DTP3 from 2019 to 2023, and administrative data which reported an average DTP3 coverage of 41% over the same period.

To address these issues, PNG developed a National Immunisation Strategy (NIS) for 2021-2025, focusing on immediate strategies during the resuscitation phase (2021-2022) and long-term system improvements in the rehabilitation phase (2021-2025). However, operational challenges remain, as 60% of the population can only be reached through the use of costly outreach services, often requiring overnight trips by health teams. Additionally, declining provincial funding and staff shortages lead to reduced outreach activities and weak programme performance.

3.4 Immunisation supply chain structure and systems

The PNG immunisation programme operates a four-tier supply chain system for vaccines and related supplies: across national, provincial, district, and health centre levels respectively. Vaccines, including Gavi-financed doses, are procured by UNICEF's Supply Division and are delivered by air to the National Vaccine Store (NVS) in Port Moresby. From there, the doses are distributed every three months to 22 Provincial Vaccine Stores

[1] National Health Plan 2021-2030.

(PVS) using contracted third-party logistics companies. Due to PNG's rugged terrain, vaccines have to be airlifted to 20 of the PVS, with only two PVS being accessible by road transport.

The vaccine ordering system uses a pull mechanism, with the PVS, District Vaccine Stores (DVS), and Health Facility Stores (HFS) placing orders based on their consumption and stock levels. Vaccines are either distributed by the PVS or picked up by the recipient facilities. Inventory management uses a blend of paper-based tools and the electronic Logistics Management Information System (mSupply). mSupply is only partially deployed at subnational levels, with many areas still relying primarily on manual systems.

The cold chain capacity has improved following various health initiative investments, including Gavi's 2017 CCEOP and HSS grants, as well as Covid-19 cold chain support. As of 2022, 821 health facilities (HFs) (out of 1618 HFs) were mapped within eNHIS, of which 92% were equipped with cold chain equipment. Overall, many HFs lacked suitable freezers or refrigeration to help prepare ice packs for outreach services.

The National Department of Health (NDoH) is responsible for the maintenance of cold chain equipment across the country. This remains a considerable challenge given the low numbers of cold chain technicians available at both the national and sub-national levels, resulting in having to frequently rely on provincial hospitals' biomedical technicians to conduct the repair and maintenance of equipment.

The Immunisation Supply Chain Working Group, established in 2017, oversees the supply chain operations and its role was expanded to support the Covid-19 vaccination logistics during the Covid-19 pandemic. "The mSupply Foundation (TMF)" was contracted to deploy and implement mSupply across 300 facilities, including 21 PVS, 8 DVS and 271 HFs, concluding on January 31, 2023. As of January 2023, 266 of the 271 facilities equipped with mSupply were operational. The 266 mSupply equipped facilities includes 149 sites supported by World Vision, that are funded by The Global Fund. The 149 sites represent at least one level of health care across the country's supply chain management system.

3.5 Immunisation data structure and systems

PNG's electronic National Health Information System (eNHIS) was developed to centralise the management of national health data. The eNHIS system was initiated in 2018, funded by the Asian Development Bank (ADB), with support from WHO and Remote Sensing Limited. It aims to streamline health information, improve data accuracy, and facilitate real-time reporting for critical health programmes, including immunisation, HIV, tuberculosis (TB), and malaria.

As of the end of 2022, eNIHS had been rolled out across all 22 provinces. It is the primary system used to manage immunisation data, as PNG does not use DHIS2. The system is designed to capture key performance and monitoring indicators outlined in the National Health Policy 2011-2020. However, its usage and effectiveness are somewhat limited (e.g. when compared to DHIS2) due to its relatively narrow scope. eNHIS is accessed via a password-protected mobile application. It allows healthcare workers at the health facility and district levels, to directly input routine immunisation data into eNHIS, using mobile tablets. This data is then consolidated with a monthly summary sheet and daily records. The workers' data inputs are validated and approved by provincial health information officers before being sent to the Performance, Monitoring, and Research Branch (PMRB) at the NDoH, where the data is analysed and reported at the national level.

A significant challenge to accurately reporting PNG's immunisation coverage is the variation in data obtained from different sources as well as microplanning. This in part is due to, data from the 2011 census that was conducted more than twelve years ago, is still used as the primary source to estimate target population figures, while acknowledging that the passage of time may introduce a wider range of variability and potential error when determining immunisation coverage estimates. The difficulties observed, in accurately measuring and improving immunisation coverage across the country, is further exacerbated by inaccuracies in the data reported, inadequate supervision, and a sub-optimal workforce in terms of their skillsets and limited numbers.

3.6 Covid-19 context, response and impact

COVID-19, caused by the SARS-CoV-2 virus, was first reported in December 2019, subsequently evolving into a global pandemic. WHO declared it a public health emergency of international concern (PHEIC) on 30 January 2020. Papua New Guinea (PNG) confirmed its first case of COVID-19 in March 2020.

In response, the Government took action to control the spread of the virus by: enacting a new pandemic law; establishing a National Control Center (NCC); declaring a state of emergency; and appointing an emergency controller to oversee the response.

Other measures included lockdowns in high transmission areas, inter-provincial travel restrictions, border closures, mandatory mask-wearing, and limited face-to-face meetings. However, these restrictions had unintended consequences, such as reducing the attendance at health clinics and decreasing the frequency of healthcare workers' outreach visits. This, in turn, negatively impacted the delivery of routine immunisation (RI) services, resulting in a noticeable decline in coverage during the first half of 2020. The pandemic further strained an already overburdened health system, especially in provinces with historically low immunisation coverage.

On 16 December 2020, PNG joined COVAX – Gavi's advance market commitment mechanism – being an innovative financing instrument supporting the participation of low- and middle-income economies in accessing safe and effective COVID-19 vaccines[2]. As a COVAX participant, PNG has received support totalling USD 14.1 million, primarily consisting of COVID-19 vaccines as well as COVID- 19 vaccine delivery support (CDS) funding.

In mid-2020, to address the negative impact of the pandemic on routine immunisation, the NDoH encouraged provinces to carry out catch-up activities to vaccinate children who missed their immunisation doses during the pandemic. This included outreach and mobile vaccination visits supported by WHO, UNICEF, and the PNG-Australia Transition to Health (PATH) program. In August 2020, the conduct of these catch-up activities, which targeted areas with high numbers of missed children, with the support of a WHO consultant and additional funding.

In March 2021, PNG began introducing COVID-19 vaccines as part of its national response. In September 2021, the Minister for Health and HIV established a ministerial taskforce to support the National Department of Health (NDoH) and the NCC in improving acceptance and uptake of the COVID-19 vaccine.

In 2022, WHO developed guidelines to integrate COVID-19 vaccination into routine immunisation and primary healthcare programmes, providing recommendations for how to functionally merge operations. Thereafter in May 2023, WHO declared that COVID-19 was no longer a PHEIC. Following this in September 2023, PNG with support from WHO, conducted a readiness assessment to evaluate the status of COVID-19 vaccine integration into the country's health systems. However, the recommendations from this assessment were not implemented.

By 15 October 2024, the country had received 1.7 million doses of COVID-19 vaccines (including AstraZeneca, Sinopharm, and Johnson & Johnson) of which approximately 0.55 million doses were administered. In effect, by mid-October 2024 only 6.5% of the eligible population was fully vaccinated.

3.7 PNG's partnership with Gavi

In November 2013, Gavi signed a partnership framework agreement (PFA) with PNG, providing a framework for the country's management of Gavi support. During the five-year period 2019 to 2023, PNG received a total of USD 65.7 million in cash, vaccine and equipment support from Gavi (see table 1 above for details).

Over the same period, Gavi also provided catalytic technical assistance totalling USD 9.1 million, to strengthen the PNG's national immunisation programme.

In accordance with Gavi's transition policy, PNG initially entered into an extended accelerated transition phase up scheduled to run up to the end of 2025. PNG crossed the Gavi eligibility threshold in January 2013 when its estimated GNI per capita was at USD 2,010, consistent with the country's rapid economic growth following the discovery of oil and natural gas.

PNG was initially scheduled to transition from Gavi support in 2020. However, in November 2018, the Government of PNG submitted a request to the Gavi Alliance Board for an exceptional extension of its transition period from 2020 until 2025. In June 2019, this request was approved by the Gavi Board. The

[2] About Gavi COVAX AMC

decision to extend PNG's transition timeline was based on an assessment of PNG's health landscape, which was found to be extremely fragile and given that the country has the lowest vaccine coverage rate in the region and high child mortality.

In December 2024, the Gavi Board approved the country's request to continue to receive support from Gavi till December 2027. The Gavi Board also approved the Eligibility, Transition & Co-Financing Policy (ELTRACO) policy under which PNG can request new HSS Support and new vaccine introduction for the period up to December 2031.

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

Gavi funds are channelled through the: Gavi alliance partners (WHO and UNICEF); AIHSS/PATH (with Abt as the fund manager); PWC as fund manager for CDS funds; and to a range of partners including: CHAI, Abt, University of Oslo and CDC in support of various technical assistance activities.

Gavi signed agreements with each of the partners elaborating what programme activities were to be implemented. The alliance partners WHO and UNICEF, subcontracted approximately 21% of their funding back to the Government, disbursing the funds to the health services improvement programme trust account (HSIP Trust Account) at NDoH.

On 25th February 2019, the Government of PNG designated 2019 as the 'Year of Immunisation' in accordance with a declaration by the Minister of Health & HIV; and requested that development partners extend their support to increase immunisation coverage up to at least 80%, to prevent any future outbreak of vaccine preventable diseases. Abt managing the PNG partnerships fund, was engaged by the Governments of PNG, Australia, New Zealand and by Gavi to manage the "Accelerating Immunisation and Health Systems Strengthening Programme".

Correspondingly, in July 2019, Gavi signed a grant agreement with Abt, for it to provide Gavi fund management services for the AIHSS programme. Similarly, Abt signed partnership grant agreements with five immunisation support providers (ISPs) under the Gavi component of the AIHSS1 programme and disbursed funding to them. The ISPs were contracted to support the implementation of the immunisation programme and work along with the respective PHAs

Each partner was responsible for developing a detailed budget for their respective projects, in coordination with Gavi, the NDoH, the EPI and other stakeholders.

3.9 Operational challenges in a fragile context

PNG operates in a complex health and equity situation, because of its decentralised system of local governance and which results in a fragmented health system. Thus, each province including the autonomous region of Bougainville, is responsible for delivering health and social services. The majority of the population reside in the rural areas, and have limited access to health care services, with only 33% of the people being covered by essential services.

The country faces significant challenges in improving the performance of its immunisation programme. Contributing structural factors include: difficult geography; the lack of infrastructure (few roads, low access to electricity); insufficient tax revenues to adequately finance the health sector; a shortage of health workers; low literacy rates; high poverty; gender inequality and gender-based violence.

Maternal and child health is a major issue in PNG – particularly in rural and remote areas, and among disadvantaged populations. Limited access to quality maternal and newborn health services in many parts of the country as well as low health literacy, traditional beliefs and practices and gender-based violence hinder access to health care. The maternal mortality ratio (MMR) in PNG is one of the highest in the region. In 2018, the MMR was 171 per 100,000 live births, the under 5 mortality rate was 49 per 1000 live births, the newborn mortality ratio was 20 per 1000 live births, and the infant mortality rate was 33 per 100 live births[3].

[3] PNG-WHO Country cooperation strategy, 2024-2028

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[4].

3.10 Good practices

The audit team noted the following good practices while executing the audit:

Governance and oversight: PNG's Provincial Health Authorities Act (2007) is the administrative instrument which established the PHAs and provided them a clear mandate for the establishment of decentralised governance mechanisms. In December 2022, NDoH approved the terms of reference for the EPI TWG, from which time the partners have participated in the EPI TWG monthly meetings.

Development of the National Health Plan and National Immunisation strategy: The NDoH, with support from the partners, has articulated clear, strategic plans through the creation of the National Health Plan 2021-2030, National Immunisation Strategy 2021-2025, and its National Maternal and Newborn Health Strategy 2021-2025.

Immunisation coverage in partner supported provinces has improved - Between 2019 and 2023, the AIHSS increased Pentavalent coverage in those provinces where this acceleration programme operated (for Penta 1, the coverage improved from 48% to 58% and for Penta 3, the coverage improved from 31% to 40%). In addition, for each of the ISPs operating under Abt, annual external audits of their respective operations were conducted. Annual audits were also conducted for the funds managed by PwC. The AIHSS partnership meetings were well-attended by representatives from the NDoH, WHO, UNICEF, GAVI, DFAT, New Zealand, and the World Bank.

Vaccine supply chain management: In 2022, the NDoH with support from its partners, updated the vaccine supply chain management SOPs and developed a costed and prioritised Effective vaccine management (EVM) comprehensive improvement plan (cIP) for the period 2023-2026. A cold chain extension and rehabilitation plan (2023-2025) was developed to improve CCE availability across all supply chain levels and an inventory and gap analysis (IGA) has been adopted by NDoH to record and monitor all in-country CCE (2023). The audit team noted that temperature monitoring devices, and temperature monitoring records were available at all of the sub-national vaccine handling points that it visited. Furthermore, since 2017 approximately 730 solar supported CCE units have been installed across many health facilities.

Immunisation data collection tools: Tablets to collect immunisation data were in use in all but one of the 30 health facilities the team visited. The HFs' average submission/completion rate for data capturing and reporting in the eNHIS was reported as 98% across the 822 government and faith-based health facilities mapped into the System. Suitable NHP indicators were developed, based on the KPIs identified in the previous National Health Plan (2011-2020), and are being tracked on a regular basis using eNHIS.

Supply chain and data management systems: In 2021, the country developed: the National M&E strategy (2021-2030); standard operating procedures for data management from health information systems; and a digital transformation policy – to guide the use of health systems. The audit team noted that the current digital tools in place are being used effectively to optimise immunisation data capture and reporting. Both the mSupply and the eNHIS mobile apps, have the capability to support offline reporting, for remote areas with limited internet connectivity.

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

4. Findings

4.1 Governance, oversight and country's readiness for transition

4.1.1 Leadership and accountability within NDoH needs strengthening

Context and Criteria

In October 2021, NDoH approved and published PNG's national health plan (2021-2030). Subsequently in December 2022, the related monitoring and evaluation strategic plan was approved by the national health board. NHP objective 5.1 is to "Improve health leadership, governance and management at all levels of the health system". Similarly, NHP strategy 5.3.2 is to "Strengthen governance across the health system to enhance accountability and transparency". On an overall basis, the NHP sets out the immunisation programme's target as being the percentage of children that are immunised with Penta 3.

In April 2022, the national immunisation strategy (NIS) 2021-2025 was developed and launched, with support from both Gavi and CHAI. The NIS represents the foundation for longer term immunisation objectives in PNG. It has three phases including: a resuscitation phase (2021-2022) focused on urgent strategies; a rehabilitation phase (2021-2025) depicting immunisation system and financing strategies for national and provincial governments; and a sustaining phase (2025-2030) focused on consolidating and sustaining the rehabilitation phase's strategies.

Though it was finalised in April 2022, NIS implementation began in December 2023. The NIS highlights that one of the root causes for the current fragile state of the EPI includes a "lack of prioritisation and ownership of the immunisation programme". Resuscitation phase, Pillar 2 objective states that "By the third quarter of 2021, all stakeholders have secured an "immunisation essential team" both at national (NDoH) and provincial (PHA) levels. Rehabilitation phase, Immunisation System Priority 1 objective states that "By 2025, the National Immunisation Programme is provisioned with leadership, management and coordination quality standards, and with a functional National Immunisation Technical Advisory Group (NITAG)".

In 2022, ADB and the NDoH jointly developed the Asian Development Bank (ADB)/PNG Health Services Sector Development Plan (HSSDP) Policy matrix. Leveraging this matrix, Gavi developed an accountability framework focused upon EPI strengthening and sustainability essential milestone indicators. As a result in November 2022, Gavi introduced an Accountability Framework to increase the Government's responsibility and ownership for the immunisation programme, by setting out specific milestone indicators against which its performance will be monitored. 19 indicators are grouped under six thematic areas including: vaccine financing; EPI staffing; coverage; coordination and oversight; data use for planning and decision making; and stock management. The framework also establishes a baseline for 2022, followed by progressive annual targets up until 2027. All the milestone indicators were agreed between Gavi and NDoH. Gavi's adoption of existing HSSDP matrix commitments, promotes donor coherence and alignment and is expected to result in simplified processes. Although Gavi has not placed any restrictions on the country if it does not achieve these initial commitments, the ADB has indicated that there would be consequences for how the Government performs against each milestone, which could potentially impact upon Gavi's ability to support EPI programming. Such an approach enables Gavi to align with the spirit of these commitments, while ADB retains the responsibility for determining any potential consequences.

In January 2023, the Full Portfolio Planning (FPP) process was initiated, and was subsequently approved in April 2023. This process enables programmatic alignment with the NIS and helps to focus upon which of the specific challenges it identified, are to be prioritised and addressed.

Condition	Recommendation 1
The audit team noted the following gaps in the immunisation programme's leadership: ***Absence of leadership within the senior management at NDoH –*** The senior management team at NDoH includes: a Health Secretary; three Deputy Secretaries – one of whom is responsible for Population and Health; one Executive Manager covering Population and Family Health; and two Branch Managers – one of whom is responsible for Family and Maternal Health.	To strengthen leadership over the EPI, the NDoH should: • Establish and endorse the organisational structure within the Ministry; • Appoint full-time EPI Executive Managers and Branch Managers positions;

At the time of the audit, the Deputy Secretary for Population and Health had retired, and the Branch Manager position for Family and Maternal Health – to which the EPI Manager reports – had been vacant for one year. The acting Branch Manager initially appointed in July 2024, was subsequently replaced by another acting Branch Manager by the time we completed our in-country audit work in October 2024.

Absence of an EPI manager for over two years - There has been no EPI manager in post since 2022. Both the NIS and AF require that the EPI manager position is occupied, along with other critical EPI middle management roles, related to data, cold chain, and vaccines and logistics. However, all of these positions remained vacant for more than two years.

While an acting EPI manager was appointed in 2022, there was no assessment of his capabilities to ensure that this individual met the position's qualifications. Furthermore, there has been no EPI capacity building plan to ensure that staff are empowered to manage the immunisation programme. Consequently, this resulted in:

1. ***Overreliance on partners to perform operational immunisation activities*** – In the absence of a fully staffed EPI team, some of the immunisation programme's operational activities were conducted by partners, financed from the technical assistance support. See more details in finding 4.2.7
2. ***Inability to track and meet agreed NIS and AF indicators*** - The following indicators (with yearly milestones) of NIS were missed in 2023.

Table 3: NIS Indicators

Indicator	Timeline	Audit observation
NDoH and development partners set up a full immunisation team within NDoH (inclusive of programme, data, cold chain, vaccine, and logistics managers).	By third quarter of 2021	The EPI manager is an acting assignation, and the incumbents for all EPI other positions are all technical assistance appointments contracted via Gavi's implementing partners.
"Immunisation service delivery" has increased by 10 percent from 2020 baselines resulting in better coverage of all antigens and equity in access	By the end of 2021	The supply of Pentavalent vaccines to the provinces, as a percentage of the total requirement remained stagnant at 58% in both 2020 and 2023.
All stakeholders have secured optimum, effective "Immunisation Funds Flows" both at national (NDoH) and provincial (PHA) levels.	By third quarter of 2021	The operational fund flow reduced from 0.014% in 2020 to 0.006% of the health budget in 2024. The NDoH and provinces continued to rely on the support from Development Partners for operational funding.
All vaccines currently in use in the routine immunisation programme are fully self-financed.	By the end of 2021	The vaccine procurement budget reduced from 1.13% in 2020 to 0.17% of the health budget in 2024. In 2024, against its annual requirement of PGK 27 million, the GoPNG only allocated PGK 3.47 million. ***See sustainability issue raised 4.1.2***
All immunisation-related national officer vacant positions in the NDoH are filled and functional.	By end of 2025	NDoH has not initiated any process for filling up these vacant positions.

- Appoint an EPI manager for the immunisation programme;
- Appoint EPI staff in support of the EPI manager. This team should consist of technically competent staff, in a bid to transition away from the temporary incumbents that are currently contracted via the technical assistance modality; and
- Establish a staff capacity building plan to facilitate the transition and management of operational activities, away from partners back to the EPI national team.

Recommendation 2

To strengthen the accountability within the immunisation programme, the NDoH and EPI should:

- Review and reset the NIS with updated indicators that are: specific; measurable; achievable; relevant and timebound;
- Re-evaluate the accountability framework's targets and indicators to ensure these align with the NIS. Establish a single measurement framework with defined indicators at strategic and operational levels for the NIS, instead of two separate measurement frameworks currently in place; and
- Empower the TWG, to track the programme's progress against the new set of strategic and operational performance indicators. The TWG should be chaired by a senior official from NDoH and report to the NDoH Senior Executive Management (SEM) Team till the ICC is established.

Recommendation 3

To strengthen the accountability at national level, Gavi should:

- Align all programmatic and technical assistance to support capacity building and eliminate all gap filling operational tasks within a defined timeline of not more than two years; and
- Review the newly developed measurement framework and determine which indicators, if any, should trigger consequences to reinforce accountability for the immunisation programme. Clearly define these

Similarly, the following indicators (with yearly milestones) of AF were missed in 2023:

Table 4: Accountability Framework Indicators

Indicator	Audit observation
National EPI team fully staffed (5 staff in place - EPI Manager, Data and VPD Surveillance Officer, Vaccines Logistics Officer, Cold Chain Officer and Senior Technical Officer)	Since 2022, the EPI manager position was vacant. While a staff member was appointed as acting EPI manager, the incumbent has not been formally confirmed in their position for almost 24 months. Additionally, the incumbents for these remaining positions, are all technical assistance appointments, contracted via Gavi's implementing partners
NITAG established and meets at least twice a year	The NITAG has not yet been established. ToRs have been developed but these are not yet approved.
ICC or equivalent, met at least twice a year	The ICC is in existence but does not regular meet (Specifically: 1 meeting was conducted in 2022, and no meetings were conducted in 2023).
100% of annual forecasted demand transferred	In 2024, the GoPNG only allocated PGK 3.47 million against an annual requirement of PGK 27 million for procurement of vaccines.
Penta 3 coverage of 46%, and more than 90% of provinces achieved 46% coverage	At the end of 2023, the overall Penta 3 coverage was 40%, with only 36% of provinces (8 out of 22) achieving more than 46% coverage.

(See Annex 6 for details)

consequences within the accountability framework to ensure that the National Department of Health (NDoH) remains responsible for programme performance and outcomes.

Root causes

- There is a frequent turnover in the NDoH leadership at the senior levels, as well as several strategic shifts in the direction provided by the interim leadership. The leadership has not been able to formally endorse and appoint an EPI team.
- While the ADB indicated that non-compliance with HSSDP commitments would result in consequences, such consequences were never formally documented and are therefore not monitored.
- While both the NIS and accountability framework (AF) were developed with the support of health and development partners, in substance the NDoH has not yet appropriated and assumed full ownership and accountability for their contents.
- The Gavi AF was not monitored and consequences for the NDoH's noncompliance were not triggered.

Management comments

See detailed management responses - Annex 13

Risk / Impact / Implications

- The immunisation programme has not progressed in the absence of clear leadership or direction. In effect, the country's ownership and implication in its immunisation programme has weakened, even though this is an essential component of Gavi's model. Moreover, while the programme continues to overly depend on the partners to manage its operations, the country's transition away from Gavi and other donor support is now imminent.
- Deficiencies in leadership will compound the challenges associated with transition, as highlighted in Finding 4.1.2 below

Responsibility

See detailed management responses - Annex 13

Deadline / Timetable

See detailed management responses - Annex 13

4.1.2 Challenges in the country's readiness for transition

Context and Criteria

Gavi's Transition Policy aims to ensure that when countries transition out of Gavi support, they have "successfully expanded their national immunisation programmes with vaccines of public health importance and are able to sustain these vaccines post-transition with high and equitable coverage of their target populations, while having robust systems and decision-making processes in place to support the introduction of future vaccines[5]."

Under Gavi 5.0, Gavi call for an end to immunisation inequity, by focusing on zero-dose children, defined *"as children who don't receive a single dose of diphtheria, tetanus and pertussis-containing vaccine"* – a key priority for the next five years. Gavi's stated goal is to reduce the number of zero-dose children by 25% by 2025, and by 50% by 2030, coinciding with the Sustainable Development Goals.[6]

According to Gavi's strategy, *"empowering countries to take ownership of their vaccination programmes is a core component of the Gavi business model. Based on their gross national income (GNI) per capita, countries are expected to allocate an increasing amount of their resources to vaccination. The long-term goal is for countries to achieve financial sustainability."*

In 2015, Gavi's Board first approved the eligibility and transition policy, which states that countries' eligibility will be determined by their average GNI per capita over the past three years. Two subsequent policy updates were approved in June 2018 and December 2022. The current policy in effect since 1 January 2023, indicates that either the latest GNI per capita, or the average over the past three years, must be below the threshold.

PNG was originally planned to transition from Gavi support in 2020, received an extension till 2025, under a special strategy, which was also extended to 2027. The country's performance has stagnated over the last few years, achieving immunisation coverage between 40-50%, and with the country being constrained by an economic crisis and chronic public health underfunding.

NDoH developed its NHP (2021-2030) which focuses the immunisation programme's target upon the percentage of children immunised with Penta 3. Consequently, the NDoH developed a NIS 2021-2025. This Strategy includes: a resuscitation phase (2021-2022) – focused on urgent strategies; and a rehabilitation phase (2021-2025) – setting out objectives for the immunisation system and financing by the national and provincial governments. The NIS lays a foundation for establishing longer-term immunisation objectives in PNG.

- Resuscitation phase, Pillar 4 objective states that "By quarter 3 of 2021, all stakeholders have secured optimum, effective "Immunisation Funds Flows" both at national (NDoH) and provincial (PHA) levels" with one of the interventions being "Establish a separate funding mechanism during the "resuscitation" phase, requesting special funding under budget line # 207 for short-term immunisation program priorities with a longer-term view of increasing budgetary provisions for immunisation".
- Resuscitation phase, Pillar 5 objective states that "By the end of 2021, all vaccines currently in use in the routine immunisation program are fully self-financed" with one of the interventions being "GoPNG commits to assuming 100 percent of routine vaccines financing when Gavi's support ceases for Gavi co-financed vaccines at the end of 2021".
- Rehabilitation phase, Financing Priority 2 objective states that "Central Agencies – NDoF, Treasury, National Economic and Fiscal Commission (NEFC) – support NDoH and PHAs to improve their health financial management and accountability mechanisms, and predictability of funding".

Condition	Recommendation 4
The audit noted the following challenges in the country's readiness to transition: ***Financial allocations to the immunisation programme reduced, despite sustained health allocation***: The audit observed a decline in financial allocations by the GoPNG to the EPI over the period (2019-2023), as well as for future projections. This reduction in funding raises	To ensure the resilience and sustainability of the country's immunisation investments after transition is completed, the NDoH/EPI should:

[5] Gavi Transition Policy
[6] The Zero-Dose Child: Explained

concerns about the sustainability of the programme, given that the Government is not able to cover its vaccine procurement costs. In addition, it highlights potential challenges in further expanding immunisation efforts without the necessary financial support being available.

Table 5: Comparison of relative funding for the health sector and for immunisation

Year	Health Budget allocation as a % of total budget	Vaccine Procurement Budget allocation as a % of health budget	Operational Cost Budget allocation as a % of health budget	Operational Cost Budget allocation as % Vaccine Procurement Budget
2018	2.11	1.64	0.004	0.24
2019	4.48	0.60	0.002	0.33
2020	2.84	1.13	0.014	1.24
2021	4.87	0.32	0.015	4.69
2022	4.09	0.78	0.079	10.13
2023	4.99	0.18	0.006	3.33
2024	4.33	0.17	0.006	3.53
2025*	3.17	0.02	0.105	-
2026*	2.61	0.02	0.126	-
2027*	2.48	0.02	0.137	-

* = forecast

Per the NIS, the annual vaccine procurement requirement totals approximately PGK 27 million. However, the GoPNG allocated PGK 3.47 million in 2023 and PGK 3.47 million in 2024, significantly less than required. From discussions between the audit team and the in-country health partners, it was determined that most of the funding shortfall was financed by development partners.

In addition, the country did not meet the programme's operational costs funding requirement. Specifically, no funds were allocated for key activities including transportation, training, and support supervision, among others. As a result, except for the salaries of its civil servant staff, the programme was largely dependent on the development partners' financing.

Progress made after the audit fieldwork - In 2025, with strong donor support, the NDoH/EPI successfully engaged the Department of Treasury, resulting in a substantial increase in the national budget allocation for vaccine procurement—from **PGK 3.4 million in 2024** to **PGK 18.9 million**. This marks a significant step forward toward financial sustainability and national ownership, bringing the allocation closer to the annual requirement of **PGK 27 million**.

There is no comprehensive visibility over financing for immunisation: As at October 2024, the country was unable to determine what proportion of its total health expenditure was funded from available government revenues, grants, or debt. Consequently, it was not possible to establish: How much does the country currently spends on its immunisation programme; What are the programme's resource requirements; and to what extent does the current national allocation and spending cover part of, or all of these requirements.

- Review all of its immunisation activities and develop a suitable transition plan, that remains aligned with the NIS, and which articulates how the country should navigate the transition process;
- Calculate what its funding gap is - by documenting and deducting all costs related to immunisation activities at the national and subnational levels, (including operational costs, vaccine co-financing and HR) – from existing funding sources (i.e. public funding, partners, and donors), to determine the magnitude of resources which needs to be mobilised; and then
- Continue to advocate for the Department of Treasury to secure and allocate sufficient funding to meet the EPI's consolidated needs, including the timely release of allocated funds. This funding should account for: ongoing interventions, the existing financing gap, the impacts of current funding shortfalls, the programme's return on investment, and the full budgetary requirements for both national and sub-national levels of the EPI including operational expenses.

In addition, the country has not yet determined its projected total resource requirements for the immunisation programme verses its existing available resources, and what specific sources of financing it plans to tap into or to target post-transition. The Department of Treasury is not aware of the level of funding which the NDoH receives directly into its HSIP-TA account, as these funds are not part of the national budget process. As a result, the Department of Finance and the Department of Treasury do not have any visibility over the actual requirements of the EPI programme, nor the magnitude of the resources which will have to be financed by the public purse in the future. Also, to date there has been no discussion on what funds the country will require to execute and sustain its EPI programme in the post-transition period. The NHP (2021-2030) is silent on the financing needs and cost of transition-related activities. The NIS 2021-2025 does highlight financing needs and estimates that an overall 35% funding gap will remain for at least ten years up to 2030. However, there is currently no clear plan for how PNG intends to address and close this funding gap. The audit team also noted that the NDoH has limited visibility over the respective EPI provincial budget allocations. ***Gaps in NIS***: In addition, between 2021 to 2024, the country did not develop any annual operational plans (AOP) to operationalise its NIS. The NDoH is currently in the process of developing an AOP for 2025. Moreover, the audit team noted the following gaps: • Although an M&E framework and implementation framework were developed for NHP 2021-2030, it does not include appropriate targets. In addition, there is no evidence of tracking status of implementation against the M&E framework. • Although the NIS was developed for the period 2021-2025, its progress is significantly delayed, since it only began to be implemented from the start of 2024. • There was no evidence of assessment of the previous comprehensive multiyear plan (cMYP) to inform development of the NIS. • The NIS fails to discuss several issues including: vaccine shortages, the use of Pentavalent doses more than 1 year old and digitalisation efforts of the NDoH. To address the programme's various challenges and requirements identified in the NIS, a FPP process was performed in preparation of the funding for 2023-2027 period. However, the following gaps in this process were noted: • A review of the EPI was not carried out to inform the FPP. • A transition roadmap has not yet been developed, both to apprise the FPP, as well as to help structure and frame necessary processes and decisions that need to be revisited, in accompaniment of the country as it progresses towards transition. It is not evident whether the suggested interventions identified in the NIS, will be able to address the programme's structural, financial and operational issues. This because previous interventions that were undertaken, failed to bring about the desired increase in the overall immunisation coverage.	
Root causes • No transition plan in place • Absence of advocacy in support of the programme by NDoH senior levels. Limited understanding of the need and value of the immunisation programme at the Department of Treasury resulting in allocations to other country priorities. The returns on investment through immunisation have not been considered in the immunisation strategy and other health sector strategic documents. • The partners' advocacy for immunisation funding did not result in an adequate increase of public funds being allocated to achieve the targets in NHP.	Management comments See detailed management responses - Annex 13

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- PNG's transition readiness has not been properly documented. The various challenges over and above the financing of vaccines have not been sufficiently considered or articulated, therefore suitable remediation measures were not identified
- Outcomes from the NIS and the FPP provided limited guidance on what arrangements are necessary to manage the transition process.

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Risk / Impact / Implications

- If suitable transition preparations are not identified and promptly implemented, the national immunisation programme team might fail to introduce and establish necessary sustainability considerations into the programme in time.
- The absence of a transition plan could potentially undermine the continuity of the immunisation programme and disrupt the delivery of health services.

</td><td>Responsibility

See detailed management responses - Annex 13</td><td>Deadline / Timetable

See detailed management responses - Annex 13</td></tr>
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4.1.3 Coordination and oversight arrangements over the immunisation programme at the PHAs needs to be improved

Context and Criteria

The National Health Administration Act 1997 defines the administrative functions of Provincial Governments and Local-level Governments. This includes public health, in accordance to Sections 43 and 45 of the Organic Law, and Section 16 of the Provincial Governments Administration Act 1997. The national ACT further sets out details of the administrative arrangements and reciprocal functions and responsibilities for health, in relation as to how the National Department of Health, the offices of Provincial Administrator and District Administrator interact, in accordance with Section 80(3) of the Organic Law, and others.

The Provincial Health Authority Act 2007 was established to define provinces' public health requirements and the delivery of health services. However, the Act is silent regarding what is the NDoH's respective role and responsibility, or the nature of the relationship established between the NDoH and PHAs. Each PHA is governed by a Board and its day-to-day functions are managed by a Chief Executive Officer. There are no specific policies or terms for reference outlining the PHAs responsibilities or linkages back to central oversight bodies. Provinces have a designated Provincial EPI Officer, as well as EPI officers embedded within the health facilities, to implement immunisation activities across both urban and rural communities. These officers each report to the Officer-in-Charge (OIC) of their respective health facilities. The OIC, in turn, reports to the Provincial EPI officer. Thereon, the Provincial EPI officers report to the Director of Public Health and participate in the EPI Technical Working Committee. The Director of Public Health is accountable to the Chief Executive Officer (CEO). The CEO reports to the Board of the Provincial Health Authority, which in turn reports to the Minister for Health. In addition to the Board, there is a Senior Executive Team which meets weekly and includes all of the PHA Directors. The CEO also has a reporting line to the NDoH Secretary for Administration.

In February 2019, the Government of PNG designated 2019 as the 'Year of Immunisation'. As a consequence, the Government requested that development partners support efforts to accelerate to 80% immunisation coverage. to prevent future outbreaks of vaccine preventable diseases. NDoH, in consultation with the development partners, identified 15 priority provinces for this programme to focus upon increasing routine immunisation.

The PNG partnerships fund, managed by Abt, was designated by the Governments of PNG, Australia, and New Zealand, as well as Gavi to manage the "Accelerating Immunisation and Health Systems Strengthening (AIHSS) Programme". Correspondingly, in July 2019, Gavi signed a grant agreement with Abt, for it to provide Gavi fund management services within the PNG partnership fund. Similarly, Abt signed partnership grant agreements with five immunisation support provider (ISPs) and disbursed funding to them under AIHSS. The ISPs were contracted to support the implementation of the immunisation programme and work along with the respective PHAs. The objectives of the ISPs assignment were to support NDoH and ICC in the management and the delivery of Health System Strengthening support in Papua New Guinea, in accordance with the requirements and objectives of Gavi and the other funding partners (DFAT and MFAT).

Gavi's initial grant agreement with Abt totalled USD 3.8 million, for a July 2019 period from 1 March 2019 to 30 April 2020. Thereafter, the Abt agreement was extended to 30 Dec 2023 with an additional grant amount totalling USD 4.5 million. Under AIHSS1 up to December 2023, 12 provinces were supported, including 5 Gavi-supported provinces, and 7 DFAT-supported provinces. ISPs were sub-contracted in each of Gavi's 5 provinces, except for the Eastern Highlands province for which the funding was disbursed directly to the PHA via the HSIP-Trust Account. The second phase of AIHSS is scheduled to run concurrently from Jan 2024 until December 2028. In this second phase, 15 provinces are being jointly supported by Gavi, DFAT and MFAT – with Gavi contributing 43% of the total cost. An initial one-year agreement was signed in Nov 2023, subject to being potentially extended thereafter. The first-year budget allocation totals USD 3.2 million for 2024.

In those AIHSS supported provinces including the 5 Gavi supported provinces where an ISP was appointed, the ISP supports the implementation of the immunisation activities, by working along with the PHAs and by providing necessary funds and technical support to carry out immunisation activities. In the remaining provinces, the AIHSS funds are disbursed via the HSIP-TA account managed by the NDoH.

Condition We reviewed the coordination and oversight mechanisms over the immunisation programme and noted that: ***No formal oversight of the immunisation programme at the subnational level:*** The working modalities and arrangements between the National Department of Health (NDoH) and the Provincial Health Authorities (PHAs) are not clearly defined. Neither the NHA Act nor the PHA Act, specify NDoH's roles or responsibilities with respect to how it should be implicated in the PHAs' provision of health. Consequently, whilst PHAs are tasked with delivering health services, there is no formal oversight or accountability mechanism in place or role for the NDoH, in guiding or monitoring the PHAs' immunisation activities. Furthermore, the coordination of the NDoH and PHAs' immunisation efforts remains undefined and undocumented. ***There is a need to streamline the arrangement between the NDoH/EPI programme and the ISPs:*** Abt signed PNG partnership grant agreements with five immunisation support providers (ISPs) supporting the PHAs' implementation of immunisation activities. The audit team noted the following gaps in the ISP arrangements: • ***Selection and agreement of immunisation activities*** - NDoH/EPI does not have all the ISPs' TORs, and there is no evidence indicating that the EPI participated in the process of contracting the ISPs. • ***Coordination*** – There is no structured mechanism to coordinate the EPI and the ISPs' immunisation activities. In addition, the EPI does not have visibility with regards to what funding and what activities the ISPs implemented in the PHAs. • ***Accountability to the immunisation programme*** - The ISPs report and are accountable to the Fund Manager Abt. As such, there is no reporting requirement in place between the ISPs and the NDoH. / PHAs • ***Congruence in ISP approach and funding modalities*** – The ISPs operate via various modalities, but are not consistently following an integrated health approach. The audit team observed that while some ISPs' role is limited to reimbursing funds, other ISPs are collaborating closely with the PHAs with regards to the implementation of activities. Meanwhile, a few ISPs are operating quasi-autonomously, without any direct involvement of the PHAs.	Recommendation 5 To strengthen programme management structures, the NDoH/EPI should: • Develop suitable guidelines that operationalise the NHA and PHAs Acts, by ensuring that there is substantive and regular coordination and oversight between the NDoH and the PHAs. • Establish necessary oversight structures, including the related supervision and monitoring processes with respect to PHAs' grant agreements. Recommendation 6 To strengthen the ISPs' role, NDoH/EPI should work with the fund manager to: • establish the coordination mechanism between NdoH/EPI, PHA and all the ISPs; and • determine suitable reporting structures for the ISPs grant agreements at both the PHA and at EPI national levels Recommendation 7 To strengthen the ISPs' role, MoH/EPI in collaboration with Gavi and the fund manager should: • Define the ISPs role by clearly articulating what responsibilities and accountabilities they have for the immunisation programme; and • Having defined the role, all subsequent ISP grant agreements should meet these requirements including proper accountability to the PHAs and NDoH on immunisation programme activities.
Root causes • There were no clear guidelines defining the collaboration and relationship between the NDoH and the PHAs. • No formal agreements in place regulating the ISPs' engagement with both the NDoH and the PHAs. As a result the ISPs were largely independent, being only required to report to the Fund Manager. • Several ISPs were effectively acting as autonomous fund managers, rather than executing immunisation activities as an implementation partner accountable to the local PHA government.	Management comments See detailed management responses - Annex 13

Risk / Impact / Implications	Responsibility	Deadline / Timetable
• Insufficient coordination between the NDoH and the PHAs may hinder progress in achieving national immunisation targets. • Poor collaboration between the ISPs and the PHAs could impede the effective execution of key programme interventions. • ISP-led activities may lack sustainability, including if the interventions are not embedded in local or institutional systems, or if the activities are not anchored within a longer term planning horizon.	See detailed management responses - Annex 13	See detailed management responses - Annex 13

4.1.4 Governance mechanisms need to be formalised to improve country ownership

Context and Criteria

The immunisation governance structure consists of two principal bodies: the Health Sector Coordination Committee (HSCC), the Interagency Coordination Committee (ICC), as well as an EPI Technical Working Group (TWG).

The Health Sector Coordination Committee (HSCC) led by the Minister and supported by the Secretary for Health - NDoH is the primary forum for dialogue and coordination of donor investments in the health sector, in support of the NHP. The Health Sector Coordination Committee ToRs dated May 2018 have not been formally signed off and approved. The ToRs require the HSCC to convene on a quarterly basis, plus for additional meetings to address priority issues, such as budget submissions, as required. The roles, responsibilities and functions of the HSCC will include:

- Providing strategic oversight on development cooperation for health to ensure alignment with National Health Plan and additionality to domestic health resources.
- A focus on delivering results through improved health service performance and improved health outcomes.
- Develop and approve an annual workplan of activities to improve annual coordination and alignment of health cooperation to support national health plans.
- Ensure all development assistance for health is aligned with national health plan and national priorities and is reflected in national health budgets and work plans.
- Strategic oversight of annual Department of Child Health (DCH) planning and progress review processes to ensure contribution to national health system improvements and health outcomes.
- Strategic oversight of annual technical assistance and capacity building planning and delivery process.
- Coordination of all international NGO inputs in support of national plans.

The HSCC ToRs also propose creating four working groups including: Health Financing; Immunisation; Human Resources; and sub-national service delivery. These working groups are needed to offer the necessary forum for technical discussions on thematic areas of work, and to escalate relevant topics and results to committee proceedings. This allows for these groups to provide detailed feedback which can be subsequently shared with the Secretary for Health, donors, and delivery partners.

Rehabilitation Immunisation System Priority 1 Objective states that “By 2025, the National Immunisation Programme is provisioned with leadership, management, and coordination quality standards and with a functional National Immunisation Technical Advisory Group (NITAG)”. In addition, strengthening national capacity to formulate evidence-based policies and decisions and to provide oversight of the NIP, through strengthening the ICC, setting up a technical advisory group (NITAG or interim authority while NITAG is being set up), and conducting regular meetings among these two bodies to strengthen accountability.

The ICC is instrumental for the coordination and collaboration amongst in-country immunisation stakeholders. An effective ICC enables the programme’s: coordination, strategic planning, optimal allocation of resources, accountability measures, advocacy, and the functionality of its partnerships. According to the ICC ToRs revised in June 2020, the ICC’s purpose is to: promote the achievement of the immunisation goals; as well as the NIS and NHP objectives. The ICC is chaired by the Secretary for Health - NDoH or his/her nominee. The core membership of the ICC includes: NDoH, the Department of Planning and Monitoring, PNG School of Medicine, PNG Institute of Medical Research, Catholic Health Services, PNG Church Health Services, WHO, UNICEF, CHAI, an NGO representative, DFAT, MFAT, and a PNG Partnership Fund representative. The ICC is expected to meet quarterly to execute the following functions:

- Technical discussion and endorsement of proposals and activities related to implementation of the NIS including new vaccine introductions.
- Strategic planning on prioritisation of activities under the NIS given available resources.
- Coordination of partners including guidance on location, type and timing of immunisation related activities.
- Monitoring and review of progress of the immunisation programme using relevant M&E frameworks.
- Identification of systematic challenges to achievement of objectives under the NIS and discuss options to address them.

- Review of research results, implementation lessons and other evidence from both local and international contexts.
- Advocacy and mobilisation of funding and resources to advance objectives of the NIS.
- Liaison with other relevant bodies within the health sector and across sectors.

Condition

Several of the existing immunisation governance mechanisms are not functioning effectively. The audit team identified weaknesses in the existing governance and oversight structures:

- **Health Sector Coordination Committee (HSCC) remains non-functional:** Despite being established in 2018, there was no evidence that the HSCC convened any meetings during the period (2019-2023). Furthermore, the none of the HSCC TWGs were established including the immunisation working group.

- **National Immunisation Technical Advisory Group (NITAG) is not established:** As of October 2024, no NITAG was in place, despite the NIS mandating that it needed to be established. Although WHO supported the NDoH in developing a NITAG draft charter, this was not yet approved by NDoH's senior management.

- **Gaps in ICC Functionality and Oversight –** The audit team assessed the effectiveness of the ICC's oversight by reviewing committee meeting minutes from 2019 to 2023. The team's review highlighted several areas for improvement:
  - ***Inconsistent meeting frequency:*** The ICC did not meet as frequently as mandated. Out of a possible 20 meetings over the five-year period, only six were held—one each in 2019, 2020, and 2022; three in 2021; and none in 2023. Notably, the ICC was not involved in the COVID-19 pandemic response, which was managed by a separate task force.
  - ***ICC core functions not fully executed:*** There were significant gaps in the ICC's performance of its responsibilities as outlined in its ToRs. Functions that were not adequately addressed include:
    - Advocacy and mobilisation of funding and resources in support of the NIS.
    - Review and integration of research findings, implementation lessons, and evidence from local and international sources.
    - Monitoring and evaluation of immunisation programme's progress using established M&E frameworks.
    - Partner coordination, including providing strategic guidance on the location, type, and timing of immunisation-related activities.

Recommendation 8

To strengthen the programme's governance and oversight, the NDoH/EPI should:

- Review the current governance structures with regards to the HSCC and ICC and establish the appropriate governing structure to meet the country's needs ensuring that the existing government structure is strengthened instead of creating new committees;
- Establish the NITAG as mandated by the NIS; and
- Ensure that Terms of Reference are approved so that the defined governance structure can be formally operationalised.

Root causes

The following root causes were identified:

- **Overlapping governance structures strain limited resources:** The existence of multiple governance bodies requiring input from the same limited pool of personnel creates challenges in the coordination and individuals' engagement. The NDoH has not yet assessed which of these structures are necessary to ensuring effective oversight of the programme. Additionally, the EPI faces human resource constraints, limiting its ability to coordinate its efforts and to provide a dedicated secretariat service in support of its governance mechanisms.

Management comments

See detailed management responses - Annex 13

<table>
<tr><td colspan="2">• Terms of Reference not finalised or endorsed: The audit observed that the ToRs for three of the governance bodies— namely the ICC, the HSCC, and the NITAG charter—remained in draft form and were not formally approved by NDoH's senior executive management.</td><td></td></tr>
<tr><td>Risk / Impact / Implications
• Ineffective governance structures may result may in insufficient guidance to help direct the programme in achieving its objectives, including diluted controls over certain programme activities.
• Inadequate oversight may impact the ability of the programme to achieve its objectives and to sustain its institutional capabilities after transition.</td><td>Responsibility
See detailed management responses - Annex 13</td><td>Deadline / Timetable
See detailed management responses - Annex 13</td></tr>
</table>

4.1.5 Governance coordination and oversight role needs to be strengthened

Context and Criteria

The HSCC, led by the Minister of Health and supported by the Secretary for Health – NDoH, is the principal forum for the discussion and coordination of donor investments in the health sector, in support of the NHP implementation. The ICC is instrumental for the coordination and collaboration amongst in-country stakeholders involved in immunisation.

In December 2022, the EPI TWG ToRs were signed off and formally endorsed by the Secretary for Health and became operational in 2023. Under the purview of the ICC, the EPI TWG was set up with 3 main objectives including: supporting the implementation of the NIS; developing plans, strategies, and support implementation of the recommendations of the NITAG; and providing TA in implementing any priority activities related to EPI, as directed by the Health Secretary. The EPI TWG is chaired by the Executive Manager, Public Health. The TWG is expected to meet every month and report to the Deputy Secretary for Public Health every quarter. The TWG has 10 members including the: Executive Manager, Public Health, the EPI Manager (who is also the TWG Secretary), Manager Family Health Services, Technical advisors on Child Health, Maternal Health, Nutrition program, Manager Emergency & Surveillance Program, Manager Health promotion, UNICEF and WHO.

A universal principle for managing successful meetings, is to ensure that "*the meeting's recommendations are accomplished and/or action items identified are followed up*."

Rehabilitation Immunisation System Priority 1 Objective states that "by 2025, all PHAs are provisioned with a provincial committee on immunisation and with a standard annual implementation plan (AIP)".

Condition

No functional linkage between the EPI TWG and the ICC – The audit team found no evidence of a structural relationship between the EPI TWG and the ICC. Specifically, there was no indication that outputs from the TWG meetings were shared with the ICC, or that the TWG provided summarised reports or escalated its technical recommendations to inform ICC deliberations.

Although the monthly EPI TWG meetings throughout 2023 were well-attended, including partner participation, their discussions were primarily focused on the MR supplementary immunisation activity. Nevertheless, during that time, no progress or engagement was documented for several of the TWG's key mandates, including:

- Identifying options for securing the necessary resources and funding for the EPI;
- Collaborating with the ICC and development partners in support of EPI implementation;
- Engaging with the e-Health Steering Committee to improve EPI data management; and
- Supporting the national AEFI committee to strengthen surveillance systems and ensure vaccine safety.

Weak monitoring and planning mechanisms supporting the immunisation programme

- <u>*No defined process for monitoring the implementation of recommendations*</u> - The audit team revealed that there were no functional mechanisms in place to review the status of HSCC, ICC and TWG recommendations. This includes the tracking, follow-up, and monitoring of the implementation status of recommendations or decisions taken by these governance bodies. Although certain actions were sometimes assigned to specific individuals, timelines were not established to ensure prompt implementation, and meetings' minutes did not consistently document the follow-ups of previous recommendations/decisions.

Recommendation 9

To strengthen Governance coordination, and oversight roles, the National Department of Health (NDoH) / Expanded Programme on Immunisation (EPI), with support from the development partners, should implement the following actions:

- **Improve information flow and decision-making:** Ensure that issues discussed at the EPI Technical Working Group (TWG) chaired by Senior Official of NDoH are escalated to the Senior Executive Management Team of NDoH for decision-making till the time ICC is established. The TWG should also leverage its existing platform, to regularly monitor the implementation progress on the partners' activities.
- **Standardise meeting documentation and follow-up mechanisms:** Develop and adopt a standardised format for recording meeting minutes. Establish a dashboard to track the status of the SEM, and the EPI TWG recommendations and decisions. Each recommendation should clearly identify the responsible officer, and by when the action will be completed, to ensure accountability.
- **Strengthen reporting to the SEM:** Ensure that the EPI TWG prepares and submits concise summary reports to the SEM, highlighting its key conclusions and technical inputs in support of the SEM's deliberations and strategic decision-making.

• *Absence of Annual Operational Plans* - Throughout the audit period, the EPI had no annual operational plans (AOPs). The absence of such plans limited the EPI's ability to systematically guide and monitor its internal activities as well those undertaken by the immunisation partners. In addition, it was not possible to properly benchmark progress and assess the programme's performance.	• **Annual review of TWG resolutions:** Conduct an annual review of TWG resolutions/ decisions, and highlight to the SEM, all instances of non-compliance or insufficient progress, for the Committee to revisit and review. • **Enhance planning and prioritisation using a workplan tracking tool** – Develop and implement a tool to monitor the status of TWG activities, including documenting any delays or any actions brought forward from previous years. Any activities which are deprioritised should be formally endorsed by the SEM. • **Establish a dashboard to track implementation**: Create a dashboard to visualise and monitor the implementation status of immunisation activities, helping to identify any bottlenecks, so that the TWG can propose timely interventions for the EPI to facilitate and execute. • **Develop annual operational plans** – implement a formal annual operational planning process into the EPI, including scheduling partner-supported activities. These annual plans should be subsequently used to guide implementation, track achievements, and facilitate decision-making in the case of activities being delayed.
Root causes • **Lack of operational plans:** There are no governance work plans in place to support institutional structures' operations, and no EPI annual operational plans are in place to help direct and manage the programme. • **Absence of standardised meeting documentation:** Minutes from meetings are recorded in a brief summary format, without using a consistent template to capture and track key decisions and follow-up actions from previous meetings. • **Unclear accountability relating to recommendations**: Recommendations and action points lack a designated officer, and completion timeline, to ensure accountability and follow-up. • **No tracking system for implementation:** There were no structured tracking systems for the ICC, SSITAG, and EPI TWG, to enable the monitoring of progress when implementing: recommendations, action points, or annual work plans.	Management comments See detailed management responses - Annex 13
Risk / Impact / Implications • Inadequate governance oversight over immunisation, could lead to delays in identifying and addressing critical programmatic challenges. • Insufficient coordination could undermine the programme's goals, as it may struggle to meet its overarching objectives and build the necessary institutional resilience, in anticipation of transition. • Ineffective tracking and monitoring mechanisms may delay the resolution of key issues.	Responsibility See detailed management responses - Annex 13 Deadline / Timetable See detailed management responses - Annex 13

4.1.6 Grant management requirements and audit recommendations are still outstanding

Context and Criteria

In 2016, the Gavi's Audit and Investigations unit carried out a programme audit of the Gavi-supported programmes in Papua New Guinea and issued a set of recommendations.

In 2019, Gavi carried out a programme capacity assessment (PCA) of the NDoH, covering the following three areas: financial management capacity - including an evaluation of the funding mechanism; vaccine cold chain management; and programme management. Upon concluding this assessment, a set of grant management requirements (GMRs) were agreed between the NDoH and Gavi. Thereafter, in December 2021, Gavi provided a revised set of grant management requirements (GMRs) to NDoH.

Condition

The audit team determined that 4 out of 18 of the GMRs are no longer applicable due to changes in the country context relating to Gavi's support (see annex 6 for a detailed status of GMRs). Of the remaining 14 GMRs, 7 (50%) of these were not fully implemented. The following GMRs remain unfulfilled:

- ***National EPI management and staffing*** **-** The NDoH committed to ensuring the appointment of suitably qualified and experienced personnel, including a national EPI manager, vaccine and logistics officer, and cold chain officer, each with clear Terms of Reference (ToRs) and proper supervision. As at October 2024, while the cold chain officer was permanently hired, the national EPI manager is serving in an acting capacity, and the vaccine and logistics officer was hired on a temporary basis through CHAI.
- ***Annual workplans and budgets*** **-** The NDoH was to develop national and provincial EPI annual workplans and budgets aligned with the Government of Papua New Guinea's (GoPNG) budget cycles. This has yet to be fully implemented.
- ***Financial reporting and accountability*** **-** The NDoH committed to accounting for funds disbursed by Gavi or other sources, and to preparing and submitting quarterly financial reports to Gavi, in line with Gavi's financial management and audit guidelines. This process remains incomplete.
- ***Asset management*** **-** A comprehensive fixed asset register was to be maintained and regularly updated across all levels of the health system. The NDoH also committed to performing an annual physical inventory count of fixed assets, along with periodic surprise spot checks. This has not been fully achieved.
- ***Stock management and reporting*** **-** The central mSupply tool maintained at NVS was to be updated monthly with stock data (physical inventory counts, vaccine consumption, stock-outs, wastage, and expiries) from provincial vaccine stores. These updates are not being consistently done.
- ***Logistics and contractual arrangements*** **-** The NDoH was tasked with reviewing and discussing its contractual agreements with the national logistics and forwarding company, including defining INCOTERMS and liability in case of vaccine damage or loss. This process has not been fully implemented.
- ***Insurance and safeguards for assets and vaccines*** **-** The GoPNG was expected to maintain adequate insurance coverage for assets and vaccines. Due to a lack of government funding for insurance, as an alternative physical safeguard – such as fire safety and access control measures, were to be implemented to protect assets and vaccines from potential losses due to disasters, negligence, or theft. These safeguards have not been fully implemented.

Recommendation 10

To improve oversight and accountability with regard to outstanding actions and audit recommendations, the NDoH/EPI should implement the following measures:

- Reassess the GMRs in light of the current country context, and where necessary revise them to ensure they remain relevant and actionable;
- Create a tracking system at the EPI operational level to capture the recommendations, categorised by priority (high, medium, low). For recurring recommendations across multiple reviews, aggregate them under one action item with a single action owner, and ensure that the action addresses issues identified in all relevant reports. For example, recommendations that appear in both the programme audit report and GMR should be combined, with a unified action plan;
- Develop a dashboard for governance oversight that differentiates between GMRs and assurance recommendations. Ensure these are assigned to appropriate action owners, with clearly defined timelines for implementation; and
- Introduce a semi-annual process into TWG meetings, so that the latest implementation status of actions and recommendations can be reviewed by the TWG. A summary of the TWG's review should be shared with Gavi after it is endorsed by the Committee.

<table>
<tr><td colspan="2">Gavi's 2016 programme audit recommendations were not all implemented: Progress has been made in addressing some of the 2016 programme audit recommendations. The team noted that 23 out of 75 of the programme audit recommendations are no longer applicable due to changes in the country context. Of the remaining 54 recommendations, 21 (39%) were not fully implemented. These issues were taken up again and have been incorporated and reintroduced into the relevant sections of this report.</td></tr>
<tr><td>Root causes
• No tracking of outstanding actions and recommendations – Actions and recommendations from various assessments were not systematically tracked by the immunisation governance bodies. The ICC did not have a standing agenda item for it to regularly review progress in implementing actions and recommendations.
• Insufficient accountability – not all recommendations/ actions were assigned action owners to ensure timely follow-up.
• Absence of a process to converge or combine actions/ recommendations from various reviews - There is no established mechanism to monitor and consolidate the implementation of recommendations from different reviews.</td><td>Management comments
See detailed management responses - Annex 13</td></tr>
<tr><td>Risk / Impact / Implications
• Unresolved issues from prior audits and reviews may result in internal control weaknesses persisting or aggravating operations, ultimately potentially undermining the programme implementation or impacting overall grant performance.
• Failure to comply with the GMRs could lead to delays, suspension, or termination of Gavi's funding, resulting in missed opportunities for the country, as stipulated in the signed PFA.
• Insufficient oversight may impede the programme's ability to achieve its objectives.</td><td>Responsibility
See detailed management responses - Annex 13</td><td>Deadline / Timetable
See detailed management responses - Annex 13</td></tr>
</table>

4.1.7 EVM assessment recommendations not fully implemented

Context and Criteria

Over the past eight years, PNG has conducted two Effective Vaccine Management (EVM) assessments – a 2022 EVM which achieved a score of 58%; and a 2016 EVM which achieved 52%. The EVM initiative provides important information on the supply chain to help countries monitor, assess and improve its performance. Prior to 2019, countries were evaluated against nine vaccine management criteria. Thereafter, an updated EVM assessment tool was introduced, with thirteen criteria —nine relating to operations and four focused on management.

Following the EVM assessment, a tailored improvement plan is generated, with specific activities and timelines to address the assessment's challenges. It is necessary for countries to prioritise, budget for, and implement the plan's actions to strengthen their supply chain. As part of Gavi's Immunisation Supply Chain strategic approach, the results of the EVM exercise are to be integrated into the country's ongoing vaccine management improvement process.

Comprehensive Immunisation Supply Chain Improvement Plans (cIP) help countries build evidence-based justifications for future supply chain investments. They also facilitate coordination, ensuring that improvement plans are communicated effectively to relevant stakeholders and fostering their continued support.

Rehabilitation Immunisation System priority 3 objective states that "By 2025, the WHO-UNICEF Effective Vaccine Management (EVM) standard indicators reach 80 percent at the national level".

Condition

Delayed implementation of the EVM continuous improvement plan (cIP) – PNG's two successive EVMs, achieved 52% in 2016 and 58% in 2022, showing a net improvement. Also, this second assessment used the updated EVM tool (see Annex 6 for detailed status).

Overall, these results indicate that several processes were still performing poorly in 2022. Out of the 13 criteria assessed, 7 scored below 60%, with the lowest scores recorded for supportive supervision and immunisation supply chain (ISC) performance monitoring. A sub-national disaggregation of the EVM scoring across various decentralised levels highlights the following

- **Primary Level -** At the national level, the overall score improved significantly from 41% to 63%, with 6 out of 9 criteria showing progression. Notable improvements were seen in vaccine arrivals, temperature management, stock management, and vaccine distribution (see Annex 6 for detailed status).
- **Sub-National Level -** At the sub-national level, the net score showed a slight progression from 57% to 60%. There was a marginal improvement in cold chain equipment (CCE) maintenance and stock management; however, a significant decline was observed in waste management (see Annex 6 for detailed status).
- **Service Point Level -** At the service point level, there was a notable decrease in score from 57% to 51%, with all 8 criteria showing a reduction compared to the 2016 assessment (see Annex 6 for detailed status).

In February 2023, PNG's cIP was developed following the EVM assessment, which outlined 67 activities in total. These activities were spread across all six EVM areas: infrastructure; equipment; information technology; human resources; policies and procedures; and financial resources.

The implementation of this plan is scheduled to take place between 2023 and 2026, with the majority of the funding resources being provided from Gavi's HSS grant. The NDoH/EPI, in collaboration with UNICEF, will oversee the implementation.

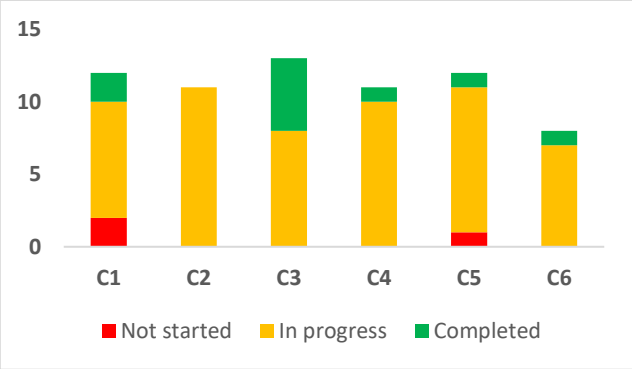
Recommendation 11

To enhance oversight and accountability over the status and implementation of actions or recommendations from cIP, the NDoH/EPI should:

- Regularly review the implementation status of its EVM comprehensive improvement plan. Based on this review, they should re-prioritise what remaining funding is available and adjust the estimated completion timelines for any delayed activities.
- Create a dashboard (or an equivalent monitoring tool) to clearly illustrate the implementation status of the continuous improvement plan. This dashboard should track progress against key activities and milestones, and be regularly reviewed in the EPI TWG to support accountability and timely decision-making.

In October 2024, the audit team reviewed the status of the activities outlined in the cIP, which showed that 4% of the activities had not yet been started, 81% were in progress, and 15% had been completed, as illustrated below:

Figure 1: Completion status of activities of the EVM cIP - 2022



Key cIP plan activities that had not been started include: (i) the preparation of a temperature monitoring study report; (ii) ensuring the availability of dry storage at the NVS with adequate air conditioning; (iii) and addressing guttering and drainage issues at provincial store buildings. Additionally, it was noted that while some activities in the cIP had been costed, the necessary funds had not yet been allocated.

Root causes

- Inadequate oversight of the cIP by UNICEF and EPI-NDoH.
- There was no evidence that joint review meetings took place, to assess the plan's progress and that any necessary remedial actions (such as dealing with any delays) were agreed and addressed.

Management comments

See detailed management responses - Annex 13

Risk / Impact / Implications

- Delays in implementing and completing the past EVM improvement plan recommendations, put at risk the integrity of the supply chain, as was also substantiated in part, due to some weaknesses materialising, as evidenced by the challenges experienced and identified in the present vaccine supply chain.

Responsibility

See detailed management responses - Annex 13

Deadline / Timetable

See detailed management responses - Annex 13

4.2 Programme management

4.2.1 Inadequate financing impeding vaccine supply

Context and Criteria

Gavi's Transition Policy aims to ensure that when countries transition out of Gavi support, they have "successfully expanded their national immunisation programmes with vaccines of public health importance, and are able to sustain these vaccines post-transition with high and equitable coverage of their target populations, while having robust systems and decision-making processes in place to support the introduction of future vaccines[7]."

Under Gavi 5.0, Gavi call for an end to immunisation inequity, by focusing on zero-dose children, defined *"as children who don't receive a single dose of diphtheria, tetanus and pertussis-containing vaccine"* – a key priority for the next five years. Gavi's stated goal is to reduce the number of zero-dose children by 25% by 2025, and by 50% by 2030, coinciding with the Sustainable Development Goals.[8]

PNG's national health plan 2021-2030, aims to achieve Penta 3 70% immunisation coverage by the end of 2024, and 80% coverage by the end of 2025.

Also, the NIS, estimates that PNG's vaccines procurement requirements total around PGK 27 million every year. However, the GoPNG only allocated PGK 3.47 million in 2023 and PGK 3.47 million in 2024. The allocation has been increased to PGK 18.9 million in 2025.

Condition

Inability to achieve immunisation targets due to vaccine shortages - The NHP set a target of achieving 80% Penta 3 coverage by 2025. However, this target is unlikely to be met, as the PHAs currently receive on average, only 60% of the required Penta vaccine supply. This significant shortfall in the volume of vaccines available is a critical barrier in achieving the stated national immunisation goals. Many of the PHAs recurring challenges in meeting their immunisation targets were largely attributed to the limited availability of vaccines.

Progress made after the audit fieldwork - In 2025, with strong donor support, the NDoH/EPI successfully engaged the Department of Treasury, resulting in a substantial increase in the national budget allocation for vaccine procurement—from PGK 3.4 million in 2024 to PGK 18.9 million. This marks a significant step forward toward financial sustainability and national ownership, bringing the allocation closer to the annual requirement of PGK 27 million.

Recommendation 12

To increase the relevance of the country's immunisation program and to achieve its defined targets and National Immunisation Strategy, the NDoH/EPI should:

- Continue undertaking robust, concerted advocacy measures targeting the Department of Treasury and the Ministry of Finance, requesting for an increase in funding, which is converted into a sustained constitutional EPI budgetary allocation as well as actual release, taking into consideration both the national and sub-national levels funding needs.
- Re-evaluate the proposed NHP (2021-2030) targets to reflect the funding allocation.

[7] Gavi Transition Policy

Table 6: Details of Pentavalent supplies and consumption by province

Province (PHA)	% Penta consumed against requirements (a)	% Penta supplied in comparison to requirements (b)	% efficiency of Penta consumption vs. supplied (a/b)
ARoB	64.54	69.17	93.31
Central	50.36	58.33	86.34
Chimbu	54.31	58.55	92.77
East New Britain	61.31	79.67	76.95
East Sepik	47.65	50.91	93.60
Eastern Highlands	61.30	61.49	99.69
Enga	48.80	42.27	115.44
Gulf	45.05	71.25	63.22
Hela	71.42	39.44	181.09
Jiwaka	50.97	39.81	128.02
Madang	40.95	48.38	84.64
Manus	74.11	92.01	80.55
Milne Bay	75.31	84.70	88.92
Morobe	52.33	60.21	86.91
National Capital District	88.33	100.23	88.13
New Ireland	58.56	62.90	93.10
Northern	47.69	56.49	84.41
Southern Highlands	43.78	41.82	104.67
West New Britain	46.83	49.83	93.98
West Sepik	75.48	79.03	95.52
Western	58.40	68.58	85.15
Western Highlands	66.47	66.65	99.74
Total	**56.09**	**59.81**	**93.79**

Root causes

- Inadequate allocation of funding for vaccine procurement. Unless the vaccine funding gap is addressed, it will impede increases in immunisation coverage.
- Advocacy for more funding for vaccines has not resulted in adequate resources being allocated by the Department of Treasury to achieve the targets outlined in NHP.

Management comments

See detailed management responses -Annex 13

<table>
<tr><td colspan="3">• Some provinces achieved low immunisation coverage due to these being among “hard to reach” areas with geographical or topographic accessibility issues. Despite these challenges, suitable targeted strategies were not developed.</td></tr>
<tr><td>Risk / Impact / Implications
• Low immunisation coverage (whether localised, regional or widespread) could hinder the country from achieving its goal of mitigating vaccine-preventable diseases.
• The number of under-vaccinated and unvaccinated children could further increase, detrimentally impacting upon the PNG’s NIS goals and objectives.</td><td>Responsibility
See detailed management responses - Annex 13</td><td>Deadline / Timetable
See detailed management responses - Annex 13</td></tr>
</table>

4.2.2 Lack of equity in the supply of available vaccines

Context and Criteria

Gavi's Transition Policy aims to ensure that when countries transition out of Gavi support, they have "successfully expanded their national immunisation programmes with vaccines of public health importance and are able to sustain these vaccines post-transition with high and equitable coverage of their target populations, while having robust systems and decision-making processes in place to support the introduction of future vaccines[9]."

Under Gavi 5.0, Gavi initiated a global call to bring an end to immunisation inequity, making reaching zero-dose children –" defined *as children who don't receive a single dose of diphtheria, tetanus and pertussis-containing vaccine"* – a key priority for the next five years. The stated goal is to reduce the number of zero-dose children by 25% by 2025, and by 50% by 2030, coinciding with the Sustainable Development Goals.[10]

PNG's national health plan 2021-2030, aims to achieve Penta 3 70% immunisation coverage by the end of 2024, and 80% coverage by the end of 2025.

Resuscitation pillar 3's objective states that "By the end of 2021, "immunisation service delivery" has increased by 10 percent from the 2020 baselines, resulting in better coverage of all antigens and equity in access". The NIS estimates that PNG's vaccines procurement requirements total around PGK 27 million every year. However, the GoPNG only allocated PGK 3.47 million in 2023 and PGK 3.47 million in 2024.

Condition

Substantial disparities in immunisation administrative coverage among provinces: During the audit period (2019–2023), the national Penta 3 immunisation coverage fluctuated around an average of 40%. However, significant discrepancies were observed across provinces, with further intra-provincial variations in the coverage from year to year. These differences highlight the need for more targeted and data-driven interventions, to address persistent disparities in immunisation coverage across and within provinces.

The audit team also noted substantial variations in the quantity of vaccines supplied to different provinces. Despite these supply differences, provinces demonstrated the ability to consume relatively high levels of vaccine doses which they received. If the distribution of vaccines was uneven, this could be a contributory factor to variances in the immunisation coverage level achieved. This also highlights the importance of implementing a needs-based vaccine allocation mechanism.

Recommendation 13

To ensure equity in supply and coverage, the NDoH/EPI should:

- **Develop a targeted catch-up plan for low-performing provinces.** A clear, actionable catch-up plan should be developed specifically for provinces which are struggling to meet their immunisation targets. This plan should address the root causes of low coverage and include targeted interventions, including outreach, to increase immunisation rates in these areas.
- **Create a vaccine distribution plan -** A comprehensive vaccine distribution plan should be designed, to ensure access across the provinces, taking into account their geographical challenges and local needs. The plan should help to ensure that underserved or hard-to-reach areas receive adequate vaccines, with an overall objective of reducing disparities in coverage.

[9] Gavi Transition Policy
[10] The Zero-Dose Child: Explained

Table 7: Penta 3 coverage details

Province	Penta 3 Coverage % 2019	Penta 3 Coverage % 2020	Penta 3 Coverage % 2021	Penta 3 Coverage % 2022	Penta 3 Coverage % 2023
ARoB	37.46	56.41	34.57	75.28	41.43
Central	35.13	41.26	41.23	47.57	46.06
Chimbu	46.85	48.46	35.14	50.25	40.53
East New Britain	51.27	49.20	57.97	52.32	44.28
East Sepik	14.74	36.21	33.87	33.77	28.55
Eastern Highlands	41.21	52.75	36.90	43.92	40.93
Enga	63.04	54.68	34.44	34.60	30.44
Gulf	21.94	35.00	25.38	34.30	24.24
Hela	62.45	60.30	50.13	52.15	48.39
Jiwaka	25.47	43.96	38.89	46.83	43.54
Madang	22.61	29.42	17.26	17.23	20.10
Manus	65.97	73.05	55.02	63.72	58.63
Milne Bay	68.51	75.84	58.34	58.42	58.35
Morobe	34.60	35.97	29.65	32.03	34.46
National Capital District	94.00	81.18	70.87	70.88	77.30
New Ireland	51.45	41.59	44.37	49.16	56.49
Northern	34.21	31.93	30.08	38.62	36.04
Southern Highlands	37.18	38.23	33.14	33.14	31.84
West New Britain	39.13	36.73	29.73	40.83	31.96
West Sepik	31.57	52.44	34.76	61.72	46.18
Western	19.89	26.01	29.12	36.98	42.88
Western Highlands	59.95	50.63	50.47	43.26	59.85
Grand Total	**40.67**	**45.31**	**37.18**	**42.33**	**39.84**

Root causes

The following root causes were identified:

- Absence of a vaccine distribution plan – There is no tailored distribution plan in place to address the specific needs and challenges of different provinces, particularly those with lower coverage. Provinces having high consumption are not being provided supplied as per their needs as compared to provinces having low consumption but still being supplied adequately.
- Geographical barriers to reaching low-coverage provinces – The provinces with the lowest immunisation coverage face significant geographical challenges, making them difficult to reach. However, no targeted strategies have been developed to overcome these barriers and ensure equitable vaccine distribution to these hard-to-reach areas.

Management comments

See detailed management responses - Annex 13

Risk / Impact / Implications

- Low immunisation coverage in some provinces may hinder the country's ability to achieve its goal of reducing vaccine-preventable diseases. If not addressed, these gaps could undermine PNG's progress in reducing morbidity and mortality.

Responsibility

See detailed management responses - Annex 13

Deadline / Timetable

See detailed management responses - Annex 13

• An increase in under and unvaccinated children could jeopardise the immunisation agenda for 2030 and PNG's NIS objectives. Rising missed immunisation opportunities also poses a threat in achieving global immunisation targets and reducing the disease burden, affecting the country's standing with regards to international health commitments. • Equitable access to vaccines aligns with Gavi's key principles. The inability to align with this principle, risks detracting from Gavi's immunisation support objectives.		

4.2.3 Support supervision arrangements need to improve

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 arising 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[11].

The NDoH is responsible for support supervision at the provincial level. Similarly, provinces are responsible for support supervision at the health facility level. In addition, all the 12 provincial ISPs under AIHSS out of which 5 are Gavi supported are also expected to undertake support supervision of their respective provinces.

The NdoH's responsibilities for supportive supervision include: (i) developing checklists for support supervision; (ii) providing training to the provinces for undertaking support supervision at the health facilities; and (iii) monitoring whether the provinces are undertaking the support supervision appropriately or not.

Integrated checklists were recently developed in July 2024 and training is being undertaken, which will be deployed by the provinces down to the HFs. Going forward the Open Data Kit (ODK) platform will be used to capture and summarise all of the support supervisions and findings which are done by the various immunisation actors.

Condition

Current subnational supervision and monitoring, over the immunisation programme is suboptimal: The audit team found no evidence that supportive supervisions were conducted in 6 out of 9 PHAs, 3 out of 3 DHOs, and 24 out of 30 HFs, which the team visited. Additionally, there were no documented minutes for the respective meetings held by the provincial Technical Working Groups (TWGs) regarding immunisation, nor were there any mechanisms in place to enable the TWGs to follow-up on the action points its discussed. Due to the lack of a reliable process for recording and revisiting supervision feedback, the audit team concluded that the current system for tracking the implementation of past supervision actions is ineffective.

No supervision plans were found at either the national or sub-national levels, meaning that supervision visits effectively occurred on an ad-hoc basis. Although general supervision guidelines and an integrated health checklist were recently developed by NDoH with support from the partners, these were not tailored to the country's specific needs, and provide limited coverage of the vaccine supply chain and immunisation-related areas.

While some provinces informed development of support supervision plans, these were not implemented due to funding constraints. The audit team also noted that there was a general lack of training and understanding, around the concept of supportive supervision.
In provinces where district offices exist, no supportive supervision activities had been carried out at the district level, nor had any training been conducted.

At the sub-national level, while the immunisation programme's performance and challenges were reportedly discussed during senior executive meetings in each province, there was no documentation on file, summarising what conclusions were reached. As a result, it remains unclear what remedial actions, if any, were taken by the PHA senior executive members following these discussions.

Recommendation 14

To strengthen governance and oversight, the NDoH/EPI with support from partners should:

- Institutionalise the monitoring and supportive supervision guidelines which includes dedicated sections for immunisation data quality and vaccine stock management. Using these guidelines, the NDoH should conduct supportive supervisions at the PHA level, while PHAs should be responsible for conducting supportive supervision at the health facility (HF) level;
- Implement robust feedback mechanisms to ensure that immunisation findings from all supervision visits are formally documented and accessible by the local EPI officers;
- Introduce an action tracker system to monitor the implementation status of recommendations from previous supportive supervision visits, as well as a process to ensure that these are regularly followed up and updated accordingly; and

[11] WHO on supportive supervision

Gaps in supportive supervision of AIHSS supported facilities: In addition to NDOH's supportive supervisions, the fund manager and implementing service providers (ISPs) under the AIHSS initiative do not have structured support supervision plans in place, meaning that their own supervision visits were in effect, conducted on an ad-hoc basis. Also there were no established feedback or follow-up mechanism in place, to ensure that any deficiencies identified by the ISPs during the supervision visit, are addressed in a timely and effective manner.	• Ensure that the review of action points from previous supervisory visits is included as a standing, mandatory task for all subsequent supervision visits, so as to reinforce individuals' accountability in implementing previous agreed actions.
Root causes • Absence of documented guidelines - There are no formalised monitoring and supportive supervision guidelines currently in places. • Inadequate supervision tools - The existing supportive supervision tools lacks sufficient depth to effectively monitor and guide critical areas such as data quality and vaccine supply management. • Lack of feedback and follow-up mechanisms – Feedback from monitoring and supportive supervision visits was not consistently shared, nor was there a structured process in place to track and follow-up on the progress in addressing issues previously identified.	Management comments See detailed management responses - Annex 13
Risk / Impact / Implications • Insufficient monitoring and supervision, coupled with inconsistent or absent follow-up mechanisms, can lead to missed opportunities to promptly identify and resolve operational issues. • Without regular, constructive feedback, the reinforcing benefits of supportive supervision are diminished. • Frontline immunisation staff may lack guidance to improve their implementation practice, impacting on the immunisation programme.	Responsibility See detailed management responses - Annex 13 Deadline / Timetable See detailed management responses - Annex 13

4.2.4 Weaknesses in the fund management model should be addressed to improve sustainability

Context and Criteria

In February 2019, consistent with the Minister of Health & HIV's declaration, the PNG Government designated 2019 as the 'Year of Immunisation'. As a consequence, the Government requested that development partners support efforts to accelerate to 80% immunisation coverage. to prevent future outbreaks of vaccine preventable diseases. NDoH, in consultation with the development partners, identified 15 priority provinces for this programme to focus upon increasing routine immunisation.

Abt managing the PNG partnerships fund, was designated by the Governments of PNG, Australia, and New Zealand, as well as Gavi to manage the "Accelerating Immunisation and Health Systems Strengthening (AIHSS) Programme". Correspondingly, in July 2019, Gavi signed a grant agreement with Abt, for it to provide Gavi fund management services. Similarly, Abt signed partnership grant agreements with five immunisation support provider (ISPs) and disbursed funding to them. The ISPs were contracted to support the implementation of the immunisation programme and work along with the respective PHAs. The objectives of the ISPs assignment were to support NDoH and ICC in the management and the delivery of Health System Strengthening support in Papua New Guinea, in accordance with the requirements and objectives of Gavi and the other funding partners (DFAT and MFAT).

Gavi's initial grant agreement with Abt totalled USD 3.8 million, for a 12-month period from 1 March 2019 to 30 April 2020. Thereafter, the Abt agreement was extended to 30 Dec 2023 with an additional grant amount totalling USD 4.5 million. Under the first phase of AIHSS up to December 2023, 12 provinces were supported, including 5 Gavi-supported provinces, and 7 DFAT-supported provinces. ISPs were sub-contracted in each of Gavi's 5 provinces, except for the Eastern Highlands province for which the funding was disbursed directly to the PHA via the HSIP-Trust Account. The second phase of AIHSS is scheduled to run concurrently from Jan 2024 until December 2028. In this second phase, 15 provinces are being jointly supported by Gavi, DFAT and MFAT – with Gavi contributing 43% of the total cost. An initial one-year agreement was signed in Nov 2023, subject to being potentially extended thereafter. The first-year budget allocation totals USD 3.2 million for 2024. In addition, in October 2021 Gavi provided Abt with CDS funds totalling USD 2.2 million to provide support to 6 provinces.

In those AIHSS supported provinces where an ISP was appointed (12 of these, or which 5 relate to Gavi), the ISP supports the implementation of the immunisation activities, by working along with the PHAs and by providing necessary funds and technical support to carry out immunisation activities. In the remaining provinces, the AIHSS funds are disbursed via the HSIP-Trust Account managed by the NDoH.

More than half of the health facilities in the designated AIHSS provinces are managed by faith-based organisation. These faith-based organisations also received funding from the government to carry out immunisation activities.

Condition

Several tasks allocated to the AIHSS fund manager were not performed: The audit team reviewed Abt's ToRs and its corresponding deliverables. It was observed that there was no evidence to confirm that the following tasks were executed:

- **Follow-up on quarterly monitoring visits –** Even though Abt conducted quarterly monitoring visits as required, there was no documentation evidencing that the resultant recommendations arising from Abt's monitoring were followed-up or addressed. The lack of follow-through raises concerns about the effectiveness of the monitoring process.

Recommendation 15

To strengthen the AIHSS programme management structures, the NDoH/EPI in conjunction with the Fund Manager should:

- Develop technical indicators for monitoring the performance of the ISPs, and monitor their performance on quarterly basis.
- Improve coordination mechanisms between EPI, PHA and the ISPs.

The ISPs' roles need to be modified to enhance their impact: The audit team reviewed the list of activities undertaken by the ISPs, and identified several issues: • **Limited impact of ISP activities –** According to the June 2023 AIHSS evaluation report, the ISPs have had limited impact in several areas, such as: PHA capacity building; coordination of immunisation programmes; support supervision; and monitoring programmatic progress. As a result, several key targets, including the outreach programme target(s), were not met. • **Lack of tangible technical indicators -** No technical indicators were put in place, to monitor the performance and impact of the ISPs activities. The lack of measurable outcomes hinders assessing the ISPs effectiveness and what they contributed towards achieving the immunisation goals. • **Inadequate monitoring frameworks –** Abt and the ISPs operate as fund managers. Abt has a financial management framework for the grantees to be followed, however, the monitoring framework and the risk assessment has not been explicitly defined beyond external audit requirements to ensure that the funds allocated and handled by these entities were properly managed, with accountability. • **Variation in human resources and project administration costs -** The human resource costs charged by each respective ISP range between 16% to 55% of their total costs. Similarly, their project administration costs ranged between 0% to 14%. The breadth and variation in costs suggests there may be inefficiencies in how the ISPs used resources and allocated costs, and raising doubts as to whether some of the ISPs' costs structures can be justified. ***Findings on the AIHSS Programme and the resulting change in immunisation coverage -*** The audit team identified several issues regarding the AIHSS programme and its contributions towards achieving the immunisation coverage objective: • <u>Failure to achieve 80% coverage goal</u> - The end goal objective for the AIHSS programme was to achieve 80% coverage. This was not achieved. Despite the budget being fully spent, the planned activities were only partially implemented. The evaluation report and half-yearly reports of AIHSS1, highlighted that many of the activities were not completed as intended, contributing to the failure to meet the coverage target. • <u>Sustainability issues with regards the ISPs' activities</u> - The activities carried out by the ISPs were found to be unsustainable due to there being limited or no involvement, by the Provincial Health Authorities (PHAs). Additionally, there was no transfer of capacities or programme outcomes from the ISP to the PHAs, which hindered the ability of the PHAs to take over and sustain the immunisation activities, once the support ended. • <u>Vaccine supply constraints</u> - The PHAs supported by the AIHSS programme received an average of 57% of their overall Pentavalent requirements. Given that supplies were constrained, even though the PHAs consumed an average of 94% of the vaccines which they received, the constraints resulted in their immunisation coverage to stagnate. Overall, the priority PHAs' coverage continued to average below 50% between 2019 and 2023, meaning that the priority PHAs did not demonstratively outperform, when compared to the other PHAs that did not receive AIHSS support.	• Develop suitable supportive supervision mechanisms for monitoring of ISPs, including the follow up of their remediation of issues. • Develop a mechanism for tracking of implementation of activities. • Develop annual work plans to monitor the progress of the activities and achievements as well as to facilitate swift decision making in case of delays and to monitor the performance of the ISPs. • Have an EPI oversight over the transition of PHA from the AIHSS support with the view that the government takes more ownership and agree and establish a roles and responsibility matrix with ISPs. • Work with the AIHSS fund manager to help prepare a comprehensive plan to handover the AIHSS programme activities to the PHAs, including a corresponding transfer of the roles and responsibilities associated. • Establish an accountability framework for the Fund Manager, in discussion with Gavi, which identifies suitable targets and indicators to support further funding through the pooled fund mechanism. Consequences should be defined for non-achievement of targets to ensure that Abt remain accountable to the immunisation programme.

Table 8: Penta coverage in AIHSS Provinces, verses Penta coverage in non-AIHSS Provinces

	AIHSS supported Provinces				Non-AIHSS Provinces			
Year	Penta 1 (%)	Penta 2 (%)	Penta 3 (%)	Penta >1yr	Penta 1 (%)	Penta 2 (%)	Penta 3 (%)	Penta >1yr
2019	48	39	31	33	67	60	53	18
2020	60	49	42	43	68	60	52	19
2021	52	41	35	24	60	52	45	12
2022	60	49	43	30	66	57	49	16
2023	58	46	41	22	66	57	49	18
Average:	**53**	**42**	**36**	**29**	**62**	**54**	**47**	**16**

The 2023 AIHSS evaluation findings are not resolved. Several key issues persist, which are mirrored by the audit findings

The June 2023 evaluation of the AIHSS programme highlighted several issues that have affected the programme's effectiveness. In addition, the audit team noted that there was no mechanism in place to track and assess the progress in addressing the evaluation's recommendations. Key issues identified in the evaluation include:

- Ineffective M&E system - The Monitoring and evaluation (M&E) system was found to be insufficient, as it failed to provide clear, reliable, and strategically focused data for programme monitoring, oversight, and decision-making. This impacted upon the ability for the programme outcomes to be monitored effectively.
- Accountability concerns - The performance reporting framework (PRF) used for programme monitoring and reporting was not effective in accurately measuring progress towards the end of programme output target. This absence of reliable data affects both the implementing partners' accountability, as well as the lack of overall transparency for the programme.
- Lack of a logical framework - There was no clear logical framework for the programme, mapping out what were the relationships between the inputs, activities, outputs and outcomes, in terms of the desired health systems, PFM capacity-building objectives, and the end of programme output target. In the absence of a suitable logical framework, this contributed to the variable quality of the ISP progress reports and made it difficult to systematically track programmatic progress.
- Performance monitoring gaps - It was unclear how well the grantees (i.e. the ISPs) performed against their respective workplan, and insufficient detail was provided on which activities were conducted and how and what resources these activities received in terms of support from the programme.
- Limited data relating to capacity building- The evaluation identified that there was little data relating to capacity building activities, contributing to gaps in the understanding of how effective and what was the quality of the activities undertaken. This makes it difficult to gauge whether the capacity-building component of the program is having a positive impact.
- Lack of information sharing - The evaluation also noted the absence of structured opportunities for ISP information sharing and learning, which could help improve the programme's overall effectiveness and ensure continuous improvement.

Root causes

Management comments

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- There was no mechanism to track progress against AIHSS recommendations: While various issues were highlighted in the June 2023 evaluation, there was no system in place to track the implementation of these recommendations or assess progress in addressing the identified gaps.
- The lack of an accurate monitoring framework and M&E system, combined with unclear performance metrics, means that stakeholders had limited insight over the programme's actual progress.
- Some ISPs operated as a fund manager, instead of as a partner undertaking direct implementation.
- Recommendations from the Fund Manager's supervision were not followed up to ensure these were fulfilled.

</td><td colspan="2">See detailed management responses - Annex 13</td></tr>
<tr><td>Risk / Impact / Implications

- The overall AIHSS outcome of an 80% immunisation coverage is not achieved.
- Activities undertaken by the ISPs will not be sustained by the Provincial Health Authorities after the end of the programme.

</td><td>Responsibility

See detailed management responses - Annex 13</td><td>Deadline / Timetable

See detailed management responses - Annex 13</td></tr>
</table>

4.2.5 Inadequate tracking and monitoring of the performance of partners' targeted country assistance (TCA) and partner led activities

Context and Criteria

The guiding principles of PEF TCA covers country ownership; technical assistance is embedded within the EPI team; technical assistance activities are clearly focused on the transfer of skills with a goal towards achieving sustainability; cost effectiveness; and strong accountability.

Gavi has signed agreements with its partners, including WHO, UNICEF, PwC and Abt, for the implementation of Gavi-funded immunisation activities. A portion of Gavi's HSS grant funds are channelled through the accelerated immunisation and health system strengthening (AIHSS) programme, which is a multi-donor pooled fund managed by Abt. The other portion of HSS funds, as well as all other Gavi cash grants are managed by alliance partners (WHO and UNICEF). One of AIHSS' management processes is to hold a monthly senior management meeting, including the principal development partners, namely DFAT, MFAT, UNICEF, WHO and NDoH, which are all represented.

Targeted country assistance (TCA) complements Gavi's vaccines support and health systems strengthening. Once determined, the proposed TCA activities are consolidated into an annual TCA joint plan (the One TA plan), aligned with the relevant programmatic areas. Subsequently, the impact of the TCA support is assessed as part of the country's overall grant performance indicators.

NDoH responsibilities for PEF-TCA include: leading the process in developing the One TA plan, managing the identification process of TCA needs, overseeing the activities assigned to the partners, and convening quarterly meetings to review TCA implementation progress. Similarly, the TCA partners are required to report against their respective milestones at the end of both June and November each year via the online partner portal.

By design, country ownership of PEF-TCA is best facilitated by regularly involving and engaging the NDoH and EPI within the TCA process milestones.

During 2019 - 2023, PNG received approximately USD 9.3 million in TCA (see table 1 for details). This support was agreed based on need, identified in EPI TWG meetings and covers the eight principal investment areas. These are defined as: i) service delivery; ii) human resources for health; iii) supply chain; iv) health information systems and monitoring & learning; v) vaccine preventable disease surveillance; vi) demand generation and community engagement; vii) governance, policy, strategic planning and programme management, and viii) health financing). PNG's TCA activities are consolidated into a joint plan for TCA activities (the One TA plan), aligned with the relevant programmatic areas. The one TA plan aimed to address capacity gaps in NDoH/EPI by drawing upon the in-country partners' core competencies. In practice, this resulted in most of the TCA activities being implemented by the Gavi alliance UN partners (i.e., WHO, UNICEF).

In addition to above, as the funds were channelled to the country through the partners, all of the funding for TCA and non-TCA was disbursed and undertaken by the partners, whilst the programme (represented by the NDoH and EPI) is ultimately, the intended beneficiary of the outcomes. Furthermore, the Government provided only limited EPI operational funding, resulting in most of the support to operations – except for government staff salaries – being provided by the partners.

Condition

The audit team noted the following gaps in the tracking and monitoring of TCA activities:

The NDoH/EPI is not tracking and monitoring the partners' progress in implementing TCA against the approved one TA plan: There was no evidence that the NDoH and EPI reviewed or discussed the progress and performance of TCA activities, in accordance with Gavi's PEF TCA guidance. For example, the progress of TCA should have been discussed during the EPI TWG meeting, and quarterly during the ICC meetings. Overall, the implementation of most TCA activities were delayed, when compared to plan. Thus, during the period 2019-2023 only 40% (109 out of 270) of TCA activities were completed on time. 19% (49) of these activities had delays (either major or minor), and 11% (29) were re-programmed, with the remaining 29% being on track. See details in the table below.

Recommendation 16

The coordination and monitoring of PEF TCA performance should be strengthened, consistent with Gavi's TCA guiding principles (e.g. country ownership, focused on skills transfer, cost effective and with accountability). NDoH/EPI's management and the TCA partners should regularly meet, discuss and share information on the implementation and outcome of TCA activities, by:

Table 9: PEF-TCA activity status

Status indicator	Count of activities	Percentage count
Completed	109	40%
Major delays	15	6%
Minor delays	34	13%
Re-programmed	29	11%
No status indicated	4	1%
On track	79	29%
Total activities	**293**	**100%**

Overdue TCA activities were rated as facing either major or minor delays, with delayed activities including: the NITAG establishment; national and subnational data quality analysis and management; the development of an EVM cIP; and a workshop on the digital health strategic plan.

The main contributing factor cited as causing delays was the COVID-19 pandemic. However, in the absence of a thorough assessment by the NDoH/EPI and the TCA partners on the root causes, the audit team was unable to substantiate that the pandemic was the only factor at work.

Significant PEF/TCA funds allocated to staff costs: The one TA plan for the period 2022 – 2023 shows that 62% of total resources were allocated to fund human resources. There are 18 staff and 11 consultant positions covered by Gavi TCA support fund as shown in the table below.

Table 10: Staff supported under PEF-TCA

Headcount of the number of staff and consultants			
Implementing partner	**# Staff**	**# Consultant**	**Total**
WHO	2	3	5
UNICEF	8	3	11
Expanded Partner	8	4	12
Local Partner	0	1	1
Total	**18**	**11**	**29**

The audit team noted that most of the PEF-TCA staff were deployed for gap filling rather than skills transfer. For example, partners staff handle key tasks such as:

- Develop and implement EPI unit annual activities, including maintaining an effective vaccine management system across PNG.
- Provide strategic and technical guidance, coordinate SIA campaigns, oversee immunisation supply chain SOPs, and support immunisation program development and implementation.
- Ensure accurate and up-to-date information for immunisation programs, conduct field monitoring and supervision, and support immunisation staff training and development.
- Provide technical assistance for EVMA and EVM improvement plan, support immunisation supply chain SOP rollout and capacity development, and assist NDoH in vaccine forecasting and procurement.
- Assigning that the EPI TWG meetings, regularly review TCA performance, and assess progress against the approved one TA workplan;
- Mandating that the EPI TWG reviews the implementation status and performance of TCA activities, every three months;
- Requiring the TCA partners to submit their reports to the EPI TWG on their implementation of TCA priorities. The EPI TWG and partners should jointly review and validate progress on the TCA activities against the PEF TCA milestones. This is in line with the TCA guiding principles which required that the NDoH should have complete insight over reporting and be able to review their partner's performance on a regular basis;
- Ensuring that there is no conflict of interest while assigning roles for seconded staff from implementing partners.
- Reviewing and validating the completion of each grant activities undertaken by the implementing partners, based on the annual work plan approved by the NDoH. This should be made a standing agenda item within the EPI TWG.

Recommendation 17

The NDoH/EPI should clearly delineate, define and communicate to the TCA partners what is its role in a partner-led framework. Subsequently, the Government should serve to enhance ownership of the programme, and its strategy for building greater continuity in national systems, in context of this fragile country.

<table>
<tr><td>

- Coordinate with PHAs for stock monitoring, report delays in dispatches and vaccine arrivals, and assist in rolling out the national iSCM strategy.

Insufficient oversight over partners by NDoH: While the government and NDoH are the intended grant and TCA beneficiaries, the oversight provided by the NDoH over partners such as WHO, UNICEF, PWC, and Abt is insufficient, with a lack of evidence regarding the NDoH's visibility, assessment, and validation of partner-led activities, so as to hold them to account. Although partners attended the EPI TWG meetings, there is no indication that the meetings were leveraged to monitor the progress of partner activity implementation. In addition, there is no evidence that the NDoH through the ICC and/or HSCC monitored performance of the activities implemented by Partners and there is no evidence to confirm that partners submitted progress reports to the ICC/HSCC.

No formalised process to validate the achievement of TCA milestones - The monitoring and validation of TCA activity milestones and deliverables was not performed, i.e., the EPI/NDoH did not receive any form of reports from PEF/TCA partners on the achievement of TCA milestones and deliverables and validate their legitimacy before reporting in the Gavi portal. Partners independently prepare and submit reports through an online Gavi reporting portal.

</td><td></td></tr>
<tr><td>

Root causes

- Gavi's PEF TCA guidelines, 2022-2025, were not fully adopted.
- **Coordination** – the roles and responsibilities for PEF TCA coordination were not well defined. There was no coordination mechanism to bring together the TCA partners and the EPI, to review performance and progress against the approved "One TA plan".
- **Oversight/ review** –the ICC did not review TCA progress and performance every three months, in accordance with the PEF TCA guidelines.
- **Monitoring** – Absence of suitable monitoring, review and follow-up mechanisms, to ascertain that implementation of the planned TCA programme of activities were undertaken in line with Gavi TCA guidance, 2022-2025.
- **Reporting** – There were no country-led reporting mechanisms in place to validate for partner-led activities and milestones. Partners submitted their TCA reports (milestones and deliverables) directly to Gavi, without NDoH validation, diluting country ownership and accountability.
- EPI staff shortages.

</td><td>

Management comments

See detailed management responses - Annex 13

</td></tr>
<tr><td>

Risk / Impact / Implications

- Shortcomings in technical assistance are likely to adversely impact on anchoring in-country capacity and capabilities, especially for a country which has entered its accelerated transition phase.
- In the absence of robust accountability measures, there is a risk that technical assistance (TA) activities may fall short of their intended objectives. Investments made through targeted country assistance (TCA) may lack sustained follow-through, and without active engagement by the NDoH, partner-facilitated TCA activities might not be executed in a manner that prioritises sustainability.
- 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

See detailed management responses - Annex 13

</td><td>

Deadline / Timetable

See detailed management responses - Annex 13

</td></tr>
</table>

4.3 Vaccine Management

4.3.1 Gaps in forecasting and quantifying annual vaccine needs

Context and Criteria

Gavi's immunisation supply chain strategy 2021-2025 and investment priorities, stipulate the need for countries to strengthen data-driven forecasting and supply planning. If countries generate accurate, representative stock forecasts which meet their vaccine supply requirements, and this can help to optimise the subsequent transportation and distribution of immunisation supplies, while minimising costs and reducing any stock wastage.

Every September, PNG initiates its forecasting process to determine what vaccines and supplies it requires in the subsequent year. This is done using the UNICEF immunisation forecast template, which outlines key steps, and which draws upon country-specific data including: target population, estimated coverage, national level-based wastage rate, buffer quantity and national level stock on hand at the time of generating the forecast. Country-specific assumptions are also stated. This process involves the key immunisation stakeholders, who provide their inputs and help to improve the quality of the forecast.

The output from the forecast is jointly drafted by the NDoH/EPI and UNICEF supply division. Currently, UNICEF PNG's country office oversees the forecasting process, due to the EPI and NDoH's human resource constraints. Once the draft forecast is approved by the EPI and NDoH, it becomes the basis for UNICEF supply division to propose an annual procurement plan to the Government. Thereafter, following the GoPNG formally endorsing the UNICEF supply division plan, the procurement process begins.

Condition

During 2019-2023, the programme has faced low stock levels and intermittent stockouts. One key contributory factor was PNG's public funding challenges, along with insufficient guidelines for forecasting and supply planning. In 2022 and 2023, the NDoH/EPI's involvement in the forecasting process was significantly restricted, because of constraints in its human resources. As a consequence, UNICEF''s role in the forecasting was concomitantly enlarged and amplified. The audit team noted the following:

Variances between doses forecast and doses received – The audit team compared PNG's annual vaccine forecasts to the country's actual receipts. Based on a review of sample of vaccines managed between 2019 and 2023, the country's annual receipts of PCV and Pentavalent doses were consistently lower than the forecast, with reduction in the quantities of vaccines received averaging at 36% and 20%, respectively over the five-year period. This suggests that in general, the country procured fewer doses than it required. Worth noting that forecasting vaccine supplies does not fully account for set targets due to funding constraints. The table below illustrates this analysis:

Table 11: Variances between the quantities of doses forecast and doses received

Period	Pneumococcal conjugate vaccine (PCV)			Pentavalent		
	Doses Forecast	Doses Received	Variance reduction against forecast	Doses Forecast	Doses Received	Variance reduction against forecast
2019	986,682	725,700	26%	986,682	827,761	16%
2020	850,600	661,610	22%	639,800	548,710	14%
2021	756,087	728,000	4%	756,687	590,244	22%
2022	833,841	317,400	62%	876,909	522,655	40%
2023	815,441	297,031	64%	773,025	751,983	3%

Recommendation 18

To improve the vaccine forecasting process, NDoH/EPI in collaboration with UNICEF should:

- Work with the Ministry of Finance to review and optimise the timing of vaccine co-financing payments.
- Review and adjust assumptions and planning calculations (where applicable), to ensure that it procures and holds adequate buffer stocks.
- Furthermore, the EPI should retroactively review the accuracy of its annual forecast to reevaluate its process. In future, its forecast projections should be more closely aligned to the actual demand. The accuracy of prior assumptions should be evaluated and recalibrated, if necessary.

<table>
<tr><td>Periodic reviews of forecasts not performed – The audit team noted that the only vaccine forecasting done in PNG, was the annual process initiated in September, and that no other periodic assessments or retrospective revalidation of past forecasts was undertaken, despite the significant variances being observed. Best practise encourages that periodic reviews are done, to monitor and where necessary recalibrate past assumptions, to strengthen subsequent forecast projections and to better model and predict future demand.</td><td colspan="2">• Conduct periodic country stock level reviews to ensure that the sub-national stock data is accurate and complete, so that it can be taken into consideration in the annual forecast process.
• Design and develop SOPs to enhance EPI capacity and forecasting process ownership.</td></tr>
<tr><td>Root causes
• Delays in the Government’s co-financing disbursements delayed shipments of its self-financed doses.
• Other than the annual forecasting process, there was no other process to review and assess the accuracy of past forecasts, to feedforward learnings and improve future projections.
• Lack of visibility over sub-national vaccine stock balances, compounded by incomplete national and sub-national stock records.
• Insufficient EPI staff bandwidth, hindered its participation in the forecasting process.</td><td colspan="2">Management comments
See detailed management responses -</td></tr>
<tr><td>Risk / Impact / Implications
• Inaccurate forecasts in a cash constrained environment, increase the likelihood of insufficient stock levels, resulting in intermittent vaccine stock-outs and potential disruptions to immunisation activities.
• Course-correcting for insufficient stocks, could inadvertently result in over-procurement, and subsequent increases in vaccine wastage due to dose expirations.</td><td>Responsibility
See detailed management responses - Annex 13</td><td>Deadline / Timetable
See detailed management responses - Annex 13</td></tr>
</table>

4.3.2 Vaccine storage and distribution processes need to be strengthened to improve traceability

Context and Criteria

Successful immunisation programmes depend upon end-to-end supply chain and logistics systems. Properly functioning systems enable effective vaccine storage, distribution, handling, management, and cold chain integrity. Similarly, logistics management information systems help to track supply chain data and monitor effective and efficient performance. The goal is to ensure the uninterrupted availability of quality vaccines from manufacturer to service-delivery levels, so that opportunities to vaccinate are not missed, which can arise if vaccines not been available[12].

PNG's vaccines are procured by UNICEF's supply division, and delivered to the NVS in Badili, Port Moresby, where they are received. Thereafter, electronic vaccine arrival reports (e-VAR) are generated and entered into the electronic logistics management information system (mSupply).

Distribution is done using third parties. NDoH contracted Third party logistics (3PL) companies, to undertake quarterly vaccine distributions from the NVS to provincial stores. Each delivery is supported with a manual invoice, packing list and dispatch note. Similarly, district vaccine stores (DVS) and service delivery points (SDPs) place their monthly vaccine orders using either manual vaccine order forms or via mSupply, for delivery or/ pick up from the PVS. At the sub-national level, receptions of vaccines are safely stored, and the transaction is recorded in vaccine and injection material control books (VMCB) or stock cards and or, mSupply system (where the eLMIS is operational).

Gavi's grant management requirements (2020), require NDoH to regularly review its contractual arrangements with the national logistics and forwarding companies. In addition, the arrangements concerning all consignment services should clearly indicate the applicable INCOTERMS, to clarify where liability lies in the event of vaccine damage or loss. Additionally, the GoPNG is expected to put in place adequate physical safeguards, regarding fire safety and access control measures, covering all assets and vaccines against potential losses, disasters (such as fire or floods), negligence or theft.

The PNG standard operating procedure (SOP) governing the management of stocks for vaccines and injections, specifies that manual stock cards/registers, in addition to the eLMIS must be kept up to date, to ensure the effective management and monitoring of stock levels. Similarly, the procedure for updating stock cards or registers re-enforces the need to maintain accurate, updated stock records at the vaccine store.

Condition

At both the national and subnational levels, not all of vaccine doses could not be accounted for due to unreliable or incomplete records. The audit team noted the following unexplained differences:

National Level

Variances in NVS distribution data in eLMIS - The audit team determined that the vaccine distribution data in mSupply could not be relied upon, as there were variances between the expected closing balance and the actual closing balance in the system, as provided by EPI, as shown in the table below.

Recommendation 19

To improve vaccine storage and distribution practices, the NDoH/EPI in collaboration with UNICEF should:

- Provide annual training and mentoring to the logistics staff – including at the subnational level on: (i) how to operate the logistics management information system; and (ii) apply the vaccine supply chain management SOPs.
- Develop and implement suitable archiving and retention periods for all stock records across the supply chain.

[12] WHO: Importance of vaccine supply chains

Table 12: Unexplained discrepancies in the vaccine stock distribution at NVS

mSupply data extract (8.10.24)							
Vaccines & Commodities	Opening Balance as per mSupply - Jan 2023 (a)	Receipts as per mSupply Jan 2023 - Sept 2024 (b)	mSupply distributions Jan 2023 – Sept 2024 (c)	mSupply adjustments (d)	Expected closing Balance (a + b) – (c) + (d) = (e)	Closing Balance as per mSupply – 30 Sept 2024 (f)	Variance = (e) – (f)
Measles and Rubella	16,900	219,750	252,230	68,080	52,500	53,000	-500
Pneumococcal Conjugate Vaccine (PCV)	-12,351	653,800	881,143	229523	-10,171	13,200	-23,371
Pentavalent vaccine	366,495	1,215,019	1,074,690	63,368	570,192	374,217	195,975
IPV	86,847	65,749	130,713	60,152	82,035	64,194	17,841
Janssen	88,180	62,880	38,260	-38,490	74,310	2,870	71,440

Unavailable and incomplete manual records – At the NVS, despite the logistics staffs' awareness or familiarity with the SOP, requiring them to routinely monitor the vaccines and injection materials and to regularly maintain and update stock records, the manual vaccine stock cards were not used. Instead, the logistics staff only used mSupply system for recording stock movements and physical stock takes, because of challenges in the system (see section 4.4. for details). Finally, there was no evidence that the completed manual invoices, issue vouchers and dispatch notes, supporting each vaccine delivery were captured in the mSupply system.

Lack of TORs for logistics and forwarding companies – there were no contractual agreements in place between the NDoH and the logistics companies. Also, there were no legacy data in place for pilferage and vaccine losses , to address if any contingencies arose, or to mitigate risk resulting from vaccine losses, pilferage or theft. In addition, there were no key performance indicators (KPIs) for the 3PL companies; roles and responsibilities of the 3PL companies and consequences if there are any untoward incidents. As a consequence of any delayed or aborted delivery incidents, vaccine stock outs at the sub-national level could occur. Moreover, NDoH did not put in place any insurance coverage, and any existing safeguards were not documented, should an event incident occurs, e.g. fire, or natural disaster like floods.

Subnational Level

Manual stock records were incomplete or unavailable – The audit team observed poor or incomplete record keeping including missing stock cards, registers and/or vaccine and injection material control books. The records' entries also contained inconsistencies in their details, such as overlapping data, and key missing information including dates and batch numbers. These contributed to challenges within tracing and maintaining accountability over stocks. In addition, none of the 9 Provincial vaccine stores (PVS) that the team visited, maintained a suitable distribution plan to ensure that they promptly managed their vaccine replenishments and supplies, in accordance with best practice.

Inability to track and trace the movement of vaccines between NVS, PVS, DVS and SDP stores - The audit team reviewed a sample of vaccine movements – by matching the distribution and subsequent receipt between two stores (i.e. the distributing store, matched to one store receiving the matching consignment). This enabled the team to validate the consistency across the respective distributions and receipts records, including the particulars for each vaccine, batch number and expiry dates. Based on the team's sample review, it noted that: 212,936 miscellaneous doses were distributed to several PVS which couldn't be traced to the respective records at PVS (refer to Annex 8, for details). Similarly, 20,422 miscellaneous doses were distributed to several service delivery points (SDPs) which couldn't be traced to the respective stock records at SDPs (see, Annex 8).

Recommendation 20

The NDoH/EPI should regularly review, manage and update its contracts with its 3PL contractors. The contractual agreements should include suitable KPIs as well as legal and insurance clauses, to ensure that:

- ownership and liability with regards to supplies while under 3PL custody and distribution, is clarified and enhanced.
- historic data points on determinant indicators like On-Time-In Full (OTIF), Failed Handovers etc are provided by 3PL and monitored.

<table>
<tr><td>Root causes
• Inadequate assurance and monitoring over the quality of mSupply data, including accuracy, completeness and consistency.
• Absence of supporting documentation accompanying vaccine and supplies' distributions at both national and subnational level.
• Non-compliance with standard operating procedures (SOPs) with regards to supply chain operations.
• Gaps in logistics staff training and capabilities, with regards to supply chain management and mSupply.
• Inadequate support supervision over supply chain management.</td><td colspan="2">Management comments
See detailed management responses - Annex 13</td></tr>
<tr><td>Risk / Impact / Implications
• Inaccurate or incomplete stock data hinders effective decision-making, with respect to orders, replenishments and stock management.
• Limited assurance over the availability, visibility and accountability for supplies.</td><td>Responsibility
See detailed management responses - Annex 13</td><td>Deadline / Timetable
See detailed management responses - Annex 13</td></tr>
</table>

4.3.3 Inefficient inventory management at national and sub-national levels

Context and Criteria

Immunisation supply chains are a key component of the health system for reaching zero-dose children, enabling the delivery of services to underserved communities, ensuring vaccine availability and potency, and helping to maximise the effectiveness and use of resources. The equity goal for Gavi's 5.0 strategy is that *"health systems sustainably reach all zero-dose and under-immunised children and their communities with the full range of vaccines, as the first step towards providing integrated Primary Health Care (PHC) services"*. Gavi defines zero-dose children as those children who have not received their first dose of the diphtheria-pertussis-tetanus containing vaccine (DPT1)[13].

Gavi's immunisation supply chain (iSC) strategy (2021-2025) stresses the value of digitising information, elaborating how an eLMIS can significantly enhance the visibility and use of stock management data for decision making. Furthermore, GMR on "stock management and reporting" (2021) mandates that the mSupply maintained at the NVS should be fully updated every month. This includes all of stock data (physical inventory counts, vaccine consumption, stock outs, wastage and expiries) relating to the provincial stores, to ensure the completeness and reliability of the stock data. In 2013, mSupply was first introduced at the NVS. The deployment of mSupply has since been extended, and it is now operational at the NVS and at nine PVS. Deployment of the System at the SDP level was on-going as at October 2024. It has completed introducing mSupply in the SDPs in at least two Provinces – namely, the NCD and Central, these two being among some of the provinces which the audit team visited during its sub-national visits.

One of the Gavi iSC strategy's priority areas, is to use "systems that allow for dynamic management of inventory and inform operational and strategic decisions". Good inventory management practice ensures that vaccine stores keep track of their respective stocks at any given point in time, including their vaccine receipts, issuances and stock on hand. Therefore, stock data should be promptly recorded to act as a reliable reference point for informed decision making.

PNG's SOP for "performing stock counts" stipulates that physical stock verifications of vaccines and injection materials should be done every month, as well as whenever doubts arise regarding an item's stock levels. The procedure goes further, and recommends that where any stock variances arise (e.g. differences between stock card balances, eLMIS system balances and the physical count), that an investigation be conducted and a variance report written, to summarise and explain the differences noted, and what adjustments (if any) were subsequently made to correct for the variances. Thereafter, the report should be submitted to the NDoH EPI Logistics manager, to be filed and kept for reference.

Rehabilitation immunisation system Priority 3 objective states that "by 2025, no vaccine stockouts occur at provincial level, and all health facilities providing immunisation are equipped with functioning cold chain equipment".

Condition

The audit team noted the following:

Below minimum threshold stock levels – As at October 2024, the audit team noted that the stock levels for BCG, BOPV and PCV were below the three months tolerable threshold, recommended by PNG SOP. The NVS had 0.2 months of supply for BCG, 0.6 months of supply for BOPV and 0.1 months of supply for PCV. There was no BCG stock delivery out on order. In addition, for BOPV and PCV the projected stock deliveries on order until the end 2024, were insufficient to significantly raise the stock levels above the minimum threshold, as indicated below.

Recommendation 21

To improve vaccine management at all levels, NDoH/EPI in collaboration with UNICEF, should:

- Develop and implement buffer and minimum stock level for all vaccine supply chain management related stock records across the different supply chain levels.

[13] Gavi: Defining zero dose.

Table 13: Below minimum stock levels and scheduled pipeline (i.e. pending stock deliveries on order)

#	Vaccine	Monthly requirement* (in doses)	Stock on hand (doses) on 08 Oct 2024	Months of supply in stock	Stock deliveries on order pipeline- GoPNG (doses)	Scheduled delivery est. arrival	Project stock on hand (after scheduled delivery	MoS
1	BCG-20	71,953	11,526	0.2	0	No Pipeline		0.0
2	BOPV-10	67,456	42,170	0.6	170,000	15 Oct.2024	212,170	3.1
3	PCV-13-1	59,961	8,000	0.1	175,000	23 Oct 2024	183,000	3.1

*Source: Vaccine stock status reports

Vaccine stock outs at national and subnational stores – At the NVS, the audit team noted incidents of stockouts for PCV and BCG occurring sporadically in both 2023 and 2024. There had been PCV stockouts between January 2023 to March 2023 and two stockouts for BCG from January 2023 to March 2023, and from November 2023 to January 2024.

Similarly, at the subnational level, intermittent stockouts also occurred for all of these three vaccines (BCG, OPV and PCV) as well as for two other vaccines (Penta, MR). Moreover, where complete stock records were available, the audit team was able to measure the length of some of these subnational stockouts for various sites – including at 3 of 9 PVS and 14 of 30 SDPs, which the team visited:

- Across the PVS that it visited, the audit team noted that the cumulative number of stockout days was 59 for Pentavalent, 365 for IPV, 170 for PCV, 370 for MR and 240 for Janssen
- At service delivery points visited, the noted cumulative number of stockout days was 445 for Pentavalent, 354 for IPV, 642 for PCV, 91 for MR and 22 for Janssen.

The average length of stockouts was calculated based on the length of stockouts experienced during the 5-year (2019-2023) period across the various sites visited with manual stock records. See **Annex 7** for details

Physical stocks verifications were not consistently carried out: At the NVS, while the logistics staff conducted monthly stock verifications and adjusted the stock records accordingly, there was no evidence that they undertook any investigations to explain the reason(s) why such differences had arisen. Furthermore, the audit team noted that for 1 of 9 PVS and for 16 of 30 SDPs it visited, that they did not keep any records indicating that they conducted physical stock verifications or any subsequent investigations.

Unexplained variances between stock verifications and stock records: In October 2024, the audit team conducted physical verifications at the NVS, 9 PVS and 30 SDPs. The team observed unexplained differences between the physical stocks and stock records as follows:

- At the NVS, variances between the physical count and the mSupply records were noted for three vaccines: MR, Pentavalent and IPV (refer to **Annex 9:** details on the NVS physical stock verifications).
- All 9 PVS, had variances between the physical count and their manual records (where available). Equally they all had variances between the physical count and the mSupply records (refer to **Annex 9:** details on the PVS physical stock verifications).
- All 30 SDPs had variances between the physical count and their manual records (where available). Equally, for the SDPs using mSupply, variances also existed between the physical count and the mSupply records (refer to **Annex 9:** details on the SDP physical stock verifications).

Inadequate accountability for vaccine expirations at the sub-national level – From the team's visits, it observed several past vaccine expiration incidents had been reported at: 6 of 9 PVS and 13 of 30 SDPs. However, none of these 19 storage facilities had maintained a formal record documenting the expirations' details. Due to this omission and to gaps in stock records, it was not possible to quantify the true extent of vaccine expirations and wastage. No designated location to store quarantined, vaccines or expired vaccines was available.

- Put in place a process to record vaccine incidents. For example, by using the vaccine control books/registers to record all vaccine expirations or wastage events, including details on the quantity, type and when it occurred.
- Determine human resource needs given the frequent changes within the immunisation program to ensure sustainability and continuity.
- Expedite the waste management assessment given it is a planned EVM cIP action, and subsequently develop an SOP and waste management plans.
- Enhance accountability of the provincial level through policy guidelines highlighting the roles and responsibilities of the PHAs.

Recommendation 22

The NDoH/EPI should strengthen its supportive supervision in relation to stock management. Such supportive visits should be documented including feedback, and there should be a follow up upon the agreed actions. Supportive supervision visits should confirm for example that:

- Regular physical stock verifications are conducted and documented in line with NDoH guidelines.
- Ensure adequate supervision over the sub-national data

Limited dry goods storage capacity and inadequate waste management- At both national and subnational levels, the team observed boxes containing immunisation supplies that were improperly stored. For example, supplies being placed on the floor without pallets, stored between aisles, or scattered in multiple location across the facility due to inadequate storage space. As a consequence, some of these supplies were at risk of degrading before their natural shelf life. Furthermore, wasted or expired commodities were stored alongside viable supplies, which is not consistent with best practice, as this put the supplies at risk of being misidentified. Furthermore, during the audit period, although some vaccines were formally destroyed, no certificates officially documenting the event were available and no contractual agreements with the waste disposal firm were on record.

High vaccine wastage - At the national level, the audit team conducted a data triangulation exercise spanning the 5-year period (2019 to 2023), between the total number of pentavalent doses available in-country with the number of vaccinations reported in eNHIS. The total doses available were adjusted downwards using WHO recommended wastage rates. For Pentavalent vaccine, the exercise indicated that consumption was greater than reported vaccinations for four out of five years, the overall wastage rates being slightly higher that the WHO recommended wastage rates, as illustrated below

Table 14: Consumption vs coverage data for Pentavalent (1,2,3 and above 1 year)

Year	Consumption (a)	Coverage (b)	Variance (a-b)	%age ((c-b)/b)
2019	545,186	498,039	(47,147)	(9%)
2020	528,308	569,280	40,972	8%
2021	527,644	461,180	(66,464)	(13%)
2022	586,932	538,270	(48,662)	(8%)
2023	598,915	513,708	(85,207)	(14%)
Total	2,786,985	2,580,477	(206,508)	(7%)

collection and management including follow-ups of actions, to address data management gaps arising from supervision visits.

Root causes

- Non-adherence to the standard operating procedures (SOPs) for supply chain operations.
- No waste management SOP.
- Training and capacity gaps in vaccine supply chain management and waste management.
- Inadequate supportive supervision of vaccine supply chain management
- Frequent changes in staff with weak institutional handovers
- Weak operational processes for forecasting, physical stock management, stock record entries, data quality reviews, data quality monitoring, supportive supervision, expiries management and record archival. -

Management comments

See detailed management responses - Annex 13

Risk / Impact / Implications

- Inaccurate stock and consumption data adversely impacting decision-making;
- Incomplete assurance over stocks visibility and accountabilities.
- Stockouts disrupting attaining immunisation coverage targets.
- Uncontrolled vaccine wastage can result in inefficient planning and allocation of resources.
- Inadequate supportive supervision process could undermine data quality, completeness or integrity.

Responsibility

See detailed management responses - Annex 13

Deadline / Timetable

See detailed management responses - Annex 13

4.3.4 Cold chain management practices need strengthening

Context and Criteria

Gavi's iSC Strategy (2021-2025) designates "continued support to maintain adequate cold chain equipment capacity and supply chain infrastructure" as an area of priority investment. Cold chain management is a critical component of the national immunisation programme to maintain the conditions of vaccines as they are distributed along the supply chain to the beneficiaries. For bulk storage of vaccines, ensuring that all areas of a cold room are maintaining optimal temperatures for vaccine storage is critical to prevent exposure of vaccines to temperatures outside. the recommended range. All new temperature-controlled storage areas must be temperature-mapped as part of a fully documented verification process and subsequent mapping exercises must be carried out periodically to demonstrate continuing compliance[14].

In 2018, the country conducted a cold chain inventory assessment that resulted into development of a cold chain extension and rehabilitation plan (2023-2024) aimed at enhancing cold chain equipment availability at all supply chain levels. Through GAVI CCEOP (2018-2019) fund, 364 cold chain equipment were procured with a service bundle covering distribution, installation, commissioning and training of staff. Deployment was completed later in 2021 following covid-19 disruptions and country lockdown. Furthermore, an additional 323 cold chain equipment were procured and deployed using GAVI HSS-2 (2021-2023) funds. Currently, 91% (757) of the service delivery points (835) are equipped with cold chain equipment with over 57% having direct drive solar installation and only 24% Electricity grid based. In an initiative to increase coverage in the hard to reach/underserved populations, the country has adopted Arktek passive vaccine storage devices that require no external power source and can store vaccines for a period of 1 month between 0^0C to 10^0C utilising lined ice packs.

Robust, reliable cold chain infrastructure and equipment is necessary to ensure and maintain the potency of vaccines. In 2022, Papua New Guinea's EPI team in collaboration with UNICEF and the health facilities services branch developed cold chain management guideline which was used to conduct training on cold chain equipment maintenance and repair for cold chain technicians on aspects ranging from cold chain management, types of cold chain equipment and utilisation, inventory, inspection and maintenance (preventive and corrective), repair to the disposal requirements of cold chain equipment. The technicians were equipped with skills ranging from fault finding and troubleshooting, emergency situations handling to contingency planning among others.

Objective of immunisation system priority no. 3 of the rehabilitation phase of the NIS states "By 2025, no vaccine stockouts occur at provincial level, and all health facilities providing immunisation are equipped with functioning cold chain equipment".

Condition

Non-functional cold chain equipment (CCE) at national and subnational stores **-** During the field visit, the audit team noted that 3 out 10 walk-in cold rooms (WICR) at NVS were not functional; two obsolete (aged 19 years) WICRs equivalent to 80 M^3 with no clear decommissioning plans and one WICR (aged 1 year) equivalent to 40 M^3, all contributing to limitations in vaccine cold chain space. In addition, 7 out of 9 PVS and 5 out of 30 SDPs visited had non-functional CCE.

Lack of maintenance plans and logs at cold chain points **-** The NVS did not have both CCE inspection and preventive maintenance plans (IPM) and corrective plans despite the 3 non-functional WICRs noted by the audit team during the field visit. It was informed to the audit team that maintenance is being undertaken, however, there were no maintenance checklists or logs to support the information, indicating that equipment is maintained on an ad-hoc basis by the health facilities services branch (unit of NDoH) who are responsible for the maintenance of the CCE. Furthermore, no such plans or logs existed at all the 39 sub-national facilities visited (9 out of 9 PVS and 30 out of

Recommendation 23

To strengthen cold chain management, NDoH/EPI should:

- Reinforce overall cold chain management ownership at national level (Health Facilities Service Branch (HFSB)) and subnational (PHA).
- Establish and implement cold chain equipment preventive and corrective

[14] Cold Chain mapping studies - WHO-IVB-18.05-eng

30 SDPs), to record when and what type of CCE preventative maintenance activities they may have conducted. It was informed that there have been instances of breakdown of equipment for which the repair usually took more than 3 weeks. ***Temperature mapping of Walk-In Cold Rooms (WICRs) and CCE calibration not done***: The audit team noted that no evidence of temperature mapping and calibration was available during the audit period for Walk-In Cold Rooms (WICRs) and CCEs at the NVS and at all the 9 PVS visited by the audit team. The temperature mapping should be undertaken at an interval of 2-3 years. ***Temperature recording and monitoring was inadequate at subnational level*** **-** While all 39 sub-national sites visited were well equipped with temperature monitoring devices (fridge tags) and temperature monitoring charts, there were inconsistencies in recording temperature readings by the store's personnel i.e., readings were either not recorded on a twice daily basis as recommended or untended for days. Additionally, the audit team noted intermittent incidences of temperature excursions of above 8^0C at 4 out of the 9 PVS and 12 out of 30 SDPs visited raising concern and suspicion around the efficacy of the vaccine stocks ultimately administered. ***Inadequacies in power back-up systems to support CCE functionality*** **-** During the audit team's field visit at the NVS, there were several power fluctuations despite the availability of a functional generator. As a result, the warehouse had registered and discarded 36,400 doses of IPV in July 2024 due to unusable Vaccine Vial Monitor (VVM) (stage 4). In addition, one of the SDPs visited had recorded in the vaccine and injection material control book (VMCB) 323 vials recommending that they are discarded following an overnight black-out due to generator fault. Notwithstanding, the audit team noted that the vaccines were unceasingly issued out thereafter (refer to **Annex 10**; details of the VMCB to discard unusable vials). Further still, 12 out of 30 service delivery points visited did not have power backup systems in place. ***CCE contingency plan was not being utilised –*** Despite the training conducted on cold chain equipment maintenance and repair, none of the locations visited by the audit team have a contingency plan or template in place with clear instructions on future actions in case of CCE breakdown or emergencies.	maintenance plans, schedules and logs at all levels of the supply chain. • Schedule and conduct temperature mapping across all supply chain levels. • Regularly update its cold chain equipment inventory list to maintain an accurate reflection of the country's CCE status. • Develop and disseminate job aids on cold chain management to all vaccine handing points. • The NDoH should support subnational vaccine handling points to design vaccine contingency plans tailor made to suit their context and train staff on how to implement them.
Root causes The main root cause identified is the lack of human resources and individuals' capacity to undertake cold chain management. The following other root causes were identified: • Insufficient oversight over the cold chain management function at both national and subnational levels (PHA). • Not all cold chain technicians at subnational level had the necessary skills and capabilities. This is further compounded by lack of training to the technicians. • Non-availability of fixed asset (FA) register at the provincial level. • Lack of job aids and plans at the vaccine handling point for routine cold chain equipment maintenance and management.	Management comments See detailed management responses - Annex 13
Risk / Impact / Implications • The lack of regular inspection and preventive maintenance can lead to increased risk of equipment breaking down for prolonged periods. During the five-year period under review, several such breakdown incidents were reported at most of the sites visited by the audit team. • The absence of equipment contingency plans may lead to vaccine loss in case of equipment break down for prolonged periods.	Responsibility See detailed management responses - Annex 13 Deadline / Timetable See detailed management responses - Annex 13

4.4 Supply chain and data management systems

4.4.1 mSupply design and implementation gaps

Context and Criteria

In 2013, NDoH selected mSupply as its electronic logistics management information system (eLMIS) to strengthen its supply chain management for health commodities. The System's introduction was initially supported by the Global Fund through World Vision for various health commodities. In 2015, the system's scope was expanded to include vaccine management.
This expansion was carried out within the Mobile Vaccine Expansion (MOVEX1) project, implemented by The mSupply Foundation (TMF) (formerly Sustainable Solutions). One component of the project, which aimed to enhance vaccine management capabilities across PNG, was the provision of android-enabled tablets for mSupply data entry to 300 facilities. One tablet was distributed to each of the following sites: 21 PVS, 8 DVS, and 271 HFs. MOVEX1's initial funding was supported by UNICEF, with the project concluding on 31 January 2023.
Thereafter the project was continued as MOVEX2, with UNICEF's support and Gavi funding. MOVEX2's aim is to: improve the utilisation of mSupply; add enhancements to the reporting dashboard tool (Grafana); and upgrade mSupply considerations. As at October 2024, this second phase was still being implemented.

PNG's mSupply system is currently managed by the mSupply Foundation (TMF), a third-party contractor, which also provides ongoing technical support. The system interfaces with a data visualisation (dashboard) and data analytics tool (codename: Grafana). mSupply encompasses the following modules[15]:

(i) Stock inventory management – managing inventory by batch, recording stock locations, stock takes and inventory counts;
(ii) Supplier and customer management – including contact information for supplier and customers, credit terms and transaction history; and
(iii) Reporting – basic reporting of stock levels, item usage and transaction history.

mSupply data entry begins at the NVS, where the initial vaccine receipt is used to generate a unique record of each batch according to the manufacturer's specifics. This process then advances to the provincial vaccine store and health facility level (where available), where additional data is recorded.

As at October 2024, 266 out of 271 HFs (98%) were still technically equipped with tablets (see Annex 12 for details) from the initial MOVEX1 sites that were supplied. However, the use and functionality of these tablets varied: 57 (21.4%) are actively used, 54 (20.3%) are operational, 63 (23.7%) are active without data, while 14 (3%) are missing. The remaining 78 tablets are at NDoH.

In addition, World Vision, funded by The Global Fund, continued to equip mSupply across another 149 sites (this project also includes support provision), for the management of HIV, Malaria, TB and associated supplies.

Gavi has developed specific software standards (TSS) against which vaccine supply chain information systems can be benchmarked. The TSS include ensuring the availability of key functionalities, including reporting (also with drill-down capabilities), decision making, and the use of intuitive dashboards. The use and promotion of open standards, helps to facilitate data exchange of metadata, and promotes interoperability across different systems.[16]

Furthermore, ISO guideline 22600:2014 on "Health Informatics – privilege management and access control" (Parts 1 through 3) serves as an advisory standard endorsing policy-based access control. This guideline sets out the following principles for audit logs: (i) All actions stemming from user-defined events should be meticulously recorded; and (ii) Either all recorded audit information or a specified subset thereof must be electronically displayed or printed for user/administrative review upon request or at predetermined intervals.

[15] Unicef Movex 1 Report
[16] Gavi targeted software standards

Condition

The audit team identified the following gaps in the design and implementation of the mSupply tool:

Gaps in core functionality impacting operating effectiveness: In October 2024, the team noted the following gaps in mSupply's offering, including the: (i) inability to compute key performance indicators such as the wastage rate, primarily due to incomplete datasets; (ii) limited functionality for the stocks' vaccine vial monitor (VVM) status, which could not be amended after reception, resulting in inaccuracies in recording the viability of vaccines; (iii) system's inability to provide information on historical physical counts and what adjustments were made (iii) gaps in tracking expirations, as the system lacked the ability to generate expiration reports and did not distinguish between expired stock from viable inventory, increasing the risk of administering ineffective vaccines.

Performance gaps in the monitoring dashboard (Grafana)*:* the associated dashboard lacks the capability to generate historical data, offering only real-time snapshots, which restricts trend analysis over time. The dashboard monitors indicators on the: last updated, number of unfinalised stock information (SI); last stock take; last order and customer invoice – with none of these indicators being specific to the immunisation programme. The options to query the dashboard are inflexible, particularly for when seeking to customise date ranges, and the choice in selecting various exporting data formats, such as Excel, often resulting in missing key reporting periods. Also, some data points on the dashboard are outdated, including the display of decommissioned sites.

Limited visibility on health facility level data: As at October 2024, the roll out of mSupply covered all provincial vaccine stores (PVS – 21 of these) and district vaccine stores (DVS – 8 of these). In contrast, mSupply only provides partial coverage of 54 health facilities, most of which are primarily located in the central and NCD province. What is in effect, a relatively low coverage of the HFs (i.e. less than 7% of them), limiting the mSupply's overall effectiveness, as the programme team's ability to monitor the overall inventory workflow across the entire supply chain was hampered.

Use of outdated SOPs: EPI currently operates mSupply version 7.10.13, having undergone substantial updates since its implementation. Despite this, the EPI's SOPs still refer to version 6 of the system which was released in 2015. The absence of updated SOPs hindered the users' effectively operating the system, as they lacked an up-to-date reference guide.

Non-alignment with Gavi Target Software Standards (TSS): PNG's mSupply system only meets 3 out of the 10 TSS proposed by Gavi. For mSupply to become an optimised vaccine supply chain system, in accordance with the standards it would need to include components such as cold chain equipment (CCE) monitoring, remote temperature monitoring, and distribution tracking – which presently are not part of the system. See summary below (See Annex 11 for details).

Recommendation 24

To address the design challenges identified in mSupply, NDoH/EPI - in liaison with the respective partners - should:

- Conduct an in-depth review of mSupply to identify any gaps in its security and functionality, data quality and completeness issues, with a view of developing a plan to address these bottlenecks, in line with Gavi's TSS.
- Adopt a consolidated, integrated approach in identifying and supporting facilities benefiting from the roll out of mSupply. This includes determining how to collaborate and cost-share with other donor funded mSupply interventions, on components such as trainings, hardware maintenance and replacement, rollout of the system and end user support to facilities
- Develop and operationalise a plan to roll out mSupply to the remaining health facilities in PNG by securing national funds.
- Update and distribute the programme's SOPs to align these with the latest version of mSupply.
- Improve the mSupply monitoring dashboard's monitoring and reporting, by incorporating suitable immunisation indicators into it.
- Implement and retain an audit trail of all user's actions.
- Assess the system's operational and maintenance costs, with a view of the feasibility of continuing to maintain it, in consideration of the significant maintenance and licensing costs. Consider reviewing what other eLMIS options exist, with a view to exploring whether the NDoH

Table 15: Implementation of Gavi TSS Key Features in mSupply

	GAVI TSS Key Features	Description	Present in mSupply
1	Forecasting & Supply Planning	Configure and use calculations for ideal stock amounts (ISA) for supply planning.	No
2	Orders & Receipts, Supplier Management	Order fulfilment and supplier management	No
3	Distribution management	Vaccine distribution & delivery management	No
4	CCE module	Track cold chain equipment inventory	No
5	Temperature Monitoring	Integration with RTM devices (fridge tags)	No
6	Analytics and Dashboards	Stock indicator dashboards. Available through	No
7	Interoperability	Integration with other systems	No
8	Requisition and Issue	Stock requests and issues workflows	Yes
9	Inventory Management	Inventory data and stock movements to provide an overview of full stock availability	Yes
10	Early warning alerts	Stock alarms (potential expiry and potential stock out)	Yes

Suboptimal audit trail management: mSupply audit logs, tracing user's actions at the front end of the system, were not maintained. The non-retention of user logs is not consistent with ISO standard 27002 and the TSS, both of which require that a system maintains a comprehensive audit log. Audit log capture useful information including transactional data fields, which provide essential support for troubleshooting security issues, and assist in restoring the system, in the event of a security breach.

Use of mSupply was suspended for 12 months: mSupply was unused throughout 2023 after the completion of the MOVEX1 project at the end of 2022, due to the lack of financing, which hindered the purchase of data bundles for internet connectivity for facilities (63 facilities) thus limiting the usage of mSupply as the system cannot be operated offline. This mSupply interruption, prevented staff from accessing the programme's inventory management tools and hampered those health workers affected, from being able to report back and to track the distribution of their vaccines, effectively. Furthermore, **during the period the system was offline there was** no assessment of data completeness, which raises concerns about the quality and reliability of the information **that was** collected.

should consider transitioning to a more cost-effective and rationalised system.

Root causes

- Partially adoption of mSupply – only 7% of health facilities use the system (it currently focuses on less than ten percent of the provinces)
- Limited oversight and supportive supervision related to immunisation and vaccine systems.
- Older versions of mSupply lacking core functionalities, due to funding constraints;
- The NDoH depends on third party suppliers for the operation, technical support and maintenance of mSupply, and are thus unable to undertake real time updates and improvements.

Management comments

See detailed management responses - Annex 13

Risk / Impact / Implications

- Incomplete or inaccurate vaccine and logistics data in mSupply hinders the tracking of resources, impacting upon decision-making and future resource allocation.
- Also, if the vaccine stock management tools do not operate efficiently, this could potentially lead to stockouts, overstocking, or increased vaccine expirations, compromising the effectiveness of vaccination operations.

Responsibility

See detailed management responses - Annex 13

Deadline / Timetable

See detailed management responses - Annex 13

• Until manual data and practices are replaced with digital data and the use of systems, data quality will remain compromised due to the risk of human errors, leading to inconsistencies and inaccuracies. • If the dashboards' performance remains ineffective, this could undermine the speed and value which insights and information can bring to the programme. • Increased workload for healthcare workers due to: mSupply operational limitations; reporting inefficiencies; and the associated SOPs being outdated.		

4.4.2 eNHIS' design needs to be improved

Context and Criteria

PNG's electronic National Health Information System (eNHIS) was developed to centralise the management of national health data. The eNHIS system was initiated in 2018, funded by the Asian Development Bank (ADB), with support from WHO and Remote Sensing Limited. It aims to streamline health information, improve data accuracy, and facilitate real-time reporting for critical health programmes, including immunisation, HIV, tuberculosis (TB), and malaria. As of the end of 2022, eNIHS had been rolled out across all 22 provinces. It is the primary system used to manage immunisation data, as PNG does not use DHIS2.

eNHIS is accessed via a password-protected mobile application. It allows healthcare workers at the health facility and district levels, to directly input routine immunisation data into eNHIS, using mobile tablets. eNHIS encompasses: national health data, automated data summaries, a repository of national and international guidelines, a data dictionary and a facility contact list. National data from the various health services are input into eNHIS every month, including information on: outpatients, inpatients, well-baby services, immunisations, malaria, leprosy, HIV, tuberculosis, school health services, family planning, antenatal care, deliveries and drug shortages. Ultimately, all of this data is aggregated as part of an online platform which NDoH health authority staff can access.

Up to December 2023, Gavi financed amounts totalling USD 770,000 to strengthen and help implement eNHIS including via capacity building.

Condition

The audit team identified the following eNHIS design areas needing improvement:

Critical KPIs missing from eNHIS: Some vaccination metrics are not captured within the system such as: IPV2 (Inactivated polio vaccine – 2nd dose); COVID-19 vaccinations; and new reporting forms as per National Health Plan (2021-2030). To compensate for these gaps requires time-consuming manual reporting, which increases the likelihood of human input error, and complicates the accuracy of monitoring and evaluating overall vaccination coverages.

Delays in responding to support requests: In October 2024, it was noted that the EPI team's "change requests" which it submitted to Remote Sensing – the technology partner responsible for implementing updates to the eNHIS system – faced extended review periods lasting between 1 to 3 years. In interim, and as a result of these delays, the EPI team was often forced to rely upon manual work arounds, compromising data quality and potentially creating gaps in the overall data integrity.

***Visibility gaps into district reports by the provincial health information officer*:** The audit team noted that eNHIS did not facilitate access to the districts' quarterly reports. Without easy access to the relevant eNHIS reports, the provincial health information officers' ability to effectively monitor health outcomes in their jurisdiction was curtailed. Instead, health officials had to rely on manually printed copies of reports that the various districts shared, which occasionally created additional delays in order processing and increased the workload.

Inefficiencies in reporting templates: The audit team noted that the system could not generate the necessary reports on a consolidated basis and that it reported outputs could not be easily aggregated manually thereafter. As a result, the additional reports needed to be generated on a provincial basis, which complicates data monitoring and analysis and also delays the generation of vital reports necessary for informed decision-making.

Recommendation 25

To address the challenges identified in eNHIS' data management and reporting – NDoH/EPI, in liaison with the respective vendors, should:

- Conduct an in-depth review of eNHIS to identify gaps in the system's functionality, data quality and completeness, and subsequently develop a plan to address these issues consistent with Gavi targeted software standards.
- Update the eNHIS SOPs so that these are aligned with the current eNHIS system, and then disseminate these to improve the end user understanding and guidance;
- Engage with the technology partners responsible, to accelerate the execution of change requests / and missing eNHIS data points i.e., the new reporting forms as per national health plan 2021-2030 and IPV2.

<table>
<tr><td>Root causes
• Limited oversight and supportive supervision related to immunisation and vaccine systems. An oversight committee responsible for digital systems was formed, but its meetings were held infrequently which did not provide sufficient bandwidth to address the system's issues.
• eNHIS funding constraints and the significant cost attached to implementing change requests, constrained the number of improvements required to be undertaken in the system.
• Dependency on third party vendors to manage and maintain the system – The NDoH's dependency on external service providers to support the system, meant that NDoH was unable to undertake real time updates and improvement.</td><td colspan="2">Management comments
See detailed management responses - Annex 13</td></tr>
<tr><td>Risk / Impact / Implications
• The sub-optimal dashboard information prevented the EPI team from accessing the necessary information that would provide comprehensive, actionable insights on the programme.
• Increased workload for healthcare workers due to: eNHIS technical limitations; reporting inefficiencies; and the associated SOPs being outdated, also contributing to delays and gaps in data management.</td><td>Responsibility
See detailed management responses - Annex 13</td><td>Deadline / Timetable
See detailed management responses - Annex 13</td></tr>
</table>

4.4.3 Sustainability challenges impacting the continuity and operation of systems

Context and Criteria

In Papua New Guinea, systems like **mSupply** (see also 4.4.1) and **eNHIS** (see also 4.4.2) are critical to the effective management of immunisation programmes and broader public health initiatives. mSupply, facilitates the management of essential medical supplies, including inventory management, and the reporting and tracking of supplies. Similarly, eNHIS, creates a central repository and facilitates the management of national public health data.

NDoH significantly depends on two third party organisations to support these systems, as their technical expertise is required to keep the systems functioning (specifically The mSupply Foundation and Remote Sensing Limited, respectively). Moreover, the over-reliance on external providers and short-term thinking limits the extent to which knowledge transfer and local capacity development of NDoH is seen to be necessary.

Recently, the eNHIS contract was extended for 2-years from February 2025 until February 2027, which offers a temporary reprieve to NDoH's operating capacity. However, this does not address NDoH's requirement for determining how to achieve the necessary self-sufficiency and sustainability competency, so that in future it will be able to directly operate this system by itself.

Furthermore, the audit team noted that: mSupply operators' practice and familiarity of using the system needs to increase; accessing systems can be hampered due to missing equipment (e.g., tablets); that currently there is no integration between mSupply and eNHIS. The ICT TWG has been set up by NDoH to oversee and monitor all digital initiatives.

Condition

Continuity in operating and sustaining key digital health systems requires a sufficient degree of ownership and oversight by the Ministry's senior administration and NDoH. It also requires that the total costs of operating the systems (fixed costs and operational costs), be computed and reliably allocated to national budgets. The audit team reviewed administrative arrangements for both mSupply and eNHIS and noted the following gaps:

Limited oversight and ownership of technical activities related to systems at NDoH: Currently, the NDoH relies upon external partners to facilitate the implementation, support, and monitoring of mSupply and eNHIS, which diminishes the NDoH's role in actively managing and guiding these activities. This also contributes to a lack of institutional knowledge and expertise in NDoH, making it challenging to adapt and evolve the systems further, in response to emerging needs.

Capability gaps in managing systems at both central and subnational level: mSupply and eNHIS' technical support and administration are both outsourced to external entities due to the absence of suitably trained personnel in NDoH. Furthermore, NDoH lacks administrative rights for basic system tasks, hindering NDoH's ability in managing the systems' users and performing essential maintenance. Also, the Provincial Health Office (PHO) ICT officers are not currently involved in supporting either system, which prevents cascading any technical support to lower levels, potentially leading data management challenges across the country.

Critical data system backups are hosted and managed outside PNG: Both systems' backups are currently hosted and managed by third parties outside of PNG, with no real visibility over the processes involved, and restricting NDoH's access. Furthermore, there is no documentation evidencing what monitoring and quality assurance processes these parties have put in place, nor whether these are sufficient to assure that the backups' security and integrity is adequately managed. In effect, the absence of

Recommendation 26

To ensure the financial sustainability of mSupply and eNHIS, the NDoH/EPI with support of partners should:

- Undertake comprehensive cost analyses for the fixed and recurring operational and maintenance expenses related to maintaining both mSupply and eNHIS. These analyses should include each of the national, provincial, and district-level costs, for effective planning and resource allocation.
- Use these comprehensive cost analyses as a resource planning tool to mobilise funding, so as to ensure that the resources to sustain the operation for mSupply and eNHIS are secured, budgeted and allocated for and fully financed.

Recommendation 27

To ensure that NDoH progressively assumes full responsibility for mSupply and eNHIS, and that suitable national staff acquire the necessary skills from third party providers, the following process should be undertaken:

any transparency or control, poses a significant risk to public data security, potentially undermining due process, should data recovery or system restoration become necessary in case of system failure. ***Gaps in transition planning may pose significant risks to operational continuity and effective management:*** There is no comprehensive plan defining how expenditures for both current and future maintenance are to be transferred to the Government. Discussions are underway to conduct a total cost of ownership (TCO) assessment, however there is no evidence that the TCO will comprehensively cover essential areas such as server capacity, preventive maintenance, internet upgrades, patch management, and training resources. Relatedly, there is currently no evidence of a clear plan to transition mSupply and eNHIS management to the NDoH, and the lack of trained ICT personnel within NDoH raises concerns about long-term system sustainability and effective management. The respective vendors, supported by donor funding, remains pivotal in the day-to-day management and maintenance of the system. This includes overseeing system maintenance (including patch management, software development, and backup), implementing functional modifications, and providing technical support through the help desk. Furthermore, as the system undergoes expanded deployment and utilisation, additional costs are anticipated. These may include investments in technology hardware (including upgrades to server infrastructure), internet usage, and personnel training. The audit team also noted that the licensing arrangements, including transferable rights, data access, and license scope, remain undefined. There is also a lack of clarity regarding when the source code becomes the property of the NDoH. ***Fragmented immunisation and vaccine data systems:*** The lack of interoperability between the mSupply system and eNHIS, potentially constrains NDoH from achieving additional synergies that the integration and interfacing of both data sets could yield. Similarly, the partial usage and rollout of mSupply (i.e. fragmentation) complicates the management of supply chain data and prevents a comprehensive overview of vaccine inventory and distribution, and in order to match immunisation coverage targets. Currently, there is no plans to conduct such an integration process.	• Strengthen the ICT TWG (eHealth TWG) oversight functions of the by including the implementation partners as members of TWG enhancing their responsibility and accountability. • The identification and training of suitable national ICT personnel within NDoH, to manage and support mSupply, eNHIS or equivalent systems, reducing reliance on external vendors. • Developing a robust governance framework with clearly defined NdoH roles and responsibilities for overseeing and managing these systems: including mechanisms to monitor and ensure the accountability of any third-party vendors' activities. • Developing a plan to migrate these systems' backups over to data servers in PNG to ensure compliance with data security, accessibility, and national regulations. • Obtain a clear understanding of the existing licensing and legal terms and agreements for mSupply and eNHIS. Where not defined, ensure that the necessary transferable rights for the software are explicitly included in any legal agreement, to ensure that the necessary rights can be carried over during the migration. • Develop an implementation plan for the digital health strategy. Recommendation 28 To improve mSupply and eNHIS' data quality, help eliminate data redundancy, and improve data consistency and visibility, NDoH/EPI - with support from partners - should: • Formulate a tailored roadmap focused on interfacing or integrating mSupply and eNHIS, including standardised definitions of data formats, a change management strategy, and suitable mechanisms for mapping across the respective data sources. • Conduct a systems maturity assessment to evaluate the readiness to interface or integrate both systems, and address any gaps.

<table>
<tr><td>Root causes
• No trained NDoH personnel with the necessary capability to manage key systems (such as mSupply and eNHIS).
• Infrequent ICT TWG oversight committee meetings, limiting the quality assurance activities.
• The enterprise architecture to potentially integrate or interface systems has not been defined despite the dependency of both the systems on each other for data and information.
• IT system transition planning has not been undertaken, despite NDoH's low IT skills and capacity constraints and its dependency on external service providers.</td><td colspan="2">Management comments
See detailed management responses - Annex 13</td></tr>
<tr><td>Risk / Impact / Implications
• The offshore storage of backups of critical systems outside of PNG's jurisdiction, without proper oversight and monitoring, raises concerns about data security, privacy, and compliance with national regulations. In case of an incident, such as data breach or loss of sensitive information, the legal consequences or repercussions would be complex.
• NDoH's lack of transition planning and current low internal ICT capacity and expertise, could result in significant disruptions in case of operational or system failures. The non availability of a critical system would impact on the immunisation programmes, hindering data collection and reporting, and could compromise the programme's agility to respond to public health needs.
• Over-reliance on external, third-party partners or providers, could jeopardise the long-term sustainability and effectiveness of digital health initiatives.
• Limited interoperability between different systems and data sets, can result in redundancies or potential vulnerabilities in the systems, ultimately impacting on the challenge of maintaining separate systems.
• Without a robust internal capacity and engagement in owning its systems, the NDoH may struggle to ensure the continuity and long-term sustainability of digital health initiatives.
• The reliance on external vendors creates a critical dependency and poses risks to long-term sustainability.</td><td>Responsibility
See detailed management responses - Annex 13</td><td>Deadline / Timetable
See detailed management responses - Annex 13</td></tr>
</table>

4.5 Immunisation data management

4.5.1 Challenges in estimating the immunisation target population

Context and Criteria

Gavi's HSS and new vaccine support (NVS) general guidelines (2015-2018), recommend that Gavi-supported countries align that their population projection of live births is consistent with external projections. Furthermore, the guidelines also recommend that countries should conduct a high quality, nationally representative household survey every five years. However, NDoH's Performance, Monitoring, and Research Branch (PMRB) currently still relies on population estimates from the 2011 national population census. Similarly, the National Statistic Office's projections are based on this same census, after applying a relevant growth factor to estimate the population. A new population census is currently being undertaken for which the report is expected to be released in 2025.

PFA clause No. 8 (d), requires that "all information that is 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, PFA Annex 2, Article 16 also sets out additional provisions on 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."

The WHO recommends that immunisation coverage evaluation surveys, are conducted periodically i.e., 3-5 years[17] in accordance with standard survey methods. The primary objective of a coverage survey, is to provide a coverage estimate for selected vaccines or a set of vaccines (fully vaccinated for age) among infants, children and/or women of childbearing age, etc. Furthermore, such surveys facilitate assessing the degree of equity within immunisation, by allowing disaggregating coverage by factors such as place of residence, sex, maternal education, economic status or subnational region[18]. Similarly, Gavi's application guidelines also require countries to improve the availability, quality and use of data, for their planning, programme management, and documentation of results. Furthermore, the guidelines encourage the routine use of immunisation coverage data where available as part of an established process for better planning, programme performance and the management of resources. PNG's National Health Plan (2021 – 2030) designates that the immunisation programme's target is to track the percentage of children immunised with Penta 3.

[17] WHO on immunisation coverage frequency

[18] WHO on coverage evaluation surveys

Condition

Outdated denominator from the 2011 census is being used for immunisation coverage monitoring: PNG's remote and insecure country context has contributed to the inadequate supply of vaccines including hard to access areas. The audit team noted that the country has never conducted an immunisation coverage evaluation survey (CES) or a similar survey. As a consequence, NDoH's Performance, Monitoring, and Research Branch (PMRB) relied on population estimates from the 2011 national census, to determine the denominator and contributing to the computation of the country's immunisation coverage, which is reported via eNHIS. Similarly, WUENIC estimates relied on the country's official estimates – as in the case of PNG, no specific WUENIC survey was undertaken. WUENIC has maintained a consistent 5% variance with the administrative data over the entire period of 2019-2023.

The audit team noted that since 2021, the country has not been able to meet its stated immunisation targets as stated in the NHP. Further, the EPI did not develop a catch-up plan to try to narrow the gap with its target. Consequently, the NDoH has not been able to set realistic targets consistent and based on the observed realities and availability of vaccines. The targets for the provinces and districts were set based on the national population estimates.

The table below illustrates the disparities in the Penta3 immunisation data over the period from 2019 to 2023, based on PNG's administrative coverage, WHO/UNICEF's WUENIC report, and NHP national targets.

Table 16: highlights disparities between estimated coverage by different data sources and the national target.

Coverage data source	2019	2020	2021	2022	2023
Administrative data (a)	40%	45%	37%	42%	40%
WUENIC report data (b)	35%	40%	32%	37%	35%
NHP national target (c)	No target	44%	51%	60%	65%
Variance (a-b)	**5%**	**5%**	**5%**	**5%**	**5%**
Variance (c-a)	**N/A**	**-1%**	**14%**	**18%**	**25%**

Recommendation 29

To ensure the availability of accurate and reliable immunisation data for decision making, NDoH/EPI management should with the support from the partners:

- conduct a comprehensive analysis of the data derived from the census currently ongoing in 2024, to rebase and realign the immunisation coverage targets and NDoH activities.
- based on the updated census, determine whether a survey or other processes are required to establish more precise immunisation coverage figures and to better target zero dose children.
- work with relevant partners to review data using sample studies, instead of desk-based reviews, to establish a more accurate picture of the country's progress.
- develop a policy or guidelines, outlining NDoH's methods for computing, estimating, and revising coverage data, to allow for necessary adjustments and enhance data accuracy.

Root causes

- Outdated census data of 2011 being used for estimation. The national census report is not expected to be released until 2025.
- No immunisation coverage evaluation survey or WUENIC surveys has been conducted, to help determine the appropriate denominator.
- NDoH does not have a stated policy or guideline, outlining its methods for computing, estimating, and revising coverage data to allow for necessary adjustments and enhance data accuracy.
- Due to the country context (including hard to reach areas, migration and climate change), it is difficult to estimate the population across the various provinces.

Management comments

See detailed management responses - Annex 13

Risk / Impact / Implications

- When vaccination coverage data is unreliable, it can hamper the programme's ability to identify under-immunised and un-immunised children.

Responsibility

See detailed management

Deadline / Timetable

See detailed management responses - Annex 13

• Use of erroneous data or incorrect denominator can lead to inaccurate administrative coverage reporting, which does not comply with Gavi's partnership framework agreement, and undermines confidence in administrative coverage. • The programme may be unable to suitable design interventions tailored to identifying the majority of its zero dose children, due to its use of inaccurate target data.	responses - Annex 13	

4.5.2 Data quality assurance needs to be improved

Context and Criteria

Gavi has recommended that Gavi-supported countries regularly undertake Data quality assessments (DQA), at least every three to five years, in accordance with the WHO-approved methodology. Such DQAs help to identify data-related challenges and to develop plans to improve immunisation programmes data. Upon completing their assessment, countries are encouraged to design and establish a strategic 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, clarify roles and responsibilities; outline resources required and available; establish timelines; and define key milestones.

PFA clause No. 8 (d), 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 (2024) 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.

Rehabilitation Immunisation System Priority 3 objective states that "By 2025, annual data quality assessments are implemented in each province".

Condition

Integrated DQAs conducted in 2021-2023 identified challenges in data quality management: The audit team noted that over the past three years, the NDoH PMRB conducted several DQAs covering various HFs scattered across the provinces. This includes: 41 HFs in 10 provinces during 2021; 40 HFs in 7 provinces during 2022; and 28 HFs in 6 provinces during 2023. The results of these DQAs revealed discrepancies, specifically for Penta3 coverage, with this data being either overreported or underreported for most of the sampled HFs. This includes: 70% of the HFs reviewed in 2021; 57% of the HFs in 2022; and 66% of the HFs in 2023. These findings highlighted that challenges in data quality management persisted. The DQAs noted several reasons for data inaccuracies, including: untrained staff, irregular supervisory visits, lack of eNHIS guidelines, and inadequate data analysis.

Despite conducting integrated DQAs, DQIPs were not developed: Subsequently, the DQAs (2021-2023) recommended the following actions be taken: routine data quality reviews, developing eNHIS recording/reporting SOPs, staff training, and providing a data dictionary to address the issues. However, no such DQIP plans with the necessary actions and strategies were developed, to address these data quality challenges.

Data quality reviews at sub-national level need to be put in place and improved: The audit team noted that for most of the various sites it visited that:

- no data quality reviews were conducted at: 23 of 30 HFs; 3 of 3 DHOs; and 8 of 9 PHAs. This highlights major gaps in the consistency and completeness of data, given the absence of evidence of a data quality assurance process.

Recommendation 30

To improve the availability, quality and use of data, the NDoH's Performance, Monitoring, and Research Branch should design and establish suitable data quality improvement plans, based on the DQA's findings, including prioritisation of what actions need to be implemented to improve data quality. These plans should be costed, resourced and financed appropriately.

Recommendation 31

To improve the availability, quality and use of data, NDoH/EPI management should:

- Ensure that all primary data collection tools are completed correctly and that their data correlate or is consistent across the various data sources.
- Introduce standardised tools for daily reporting at the outreach centres to the health facilities .
- Undertake training for field staff on the documentation required to be maintained for

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- Supportive supervision and training were not conducted at most of the same sites, including: 24 of 30 HFs; 3 of 3 DHOS; and 6 of 9 PHAs. This indicates the lack of capacity-building efforts, crucial for maintaining high standards of data quality in immunisation practices.
- Immunisation targets were not met across: 26 of 30 HFs; 3 of 3 DHOs; and 8 of 9 PHAs, with minimal efforts being undertaken to address the gaps.

The audit team also noted data discrepancies across other sources including – vaccine register books, tally sheets, and monthly summary reports – at all the health facilities and districts it visited. Data collection tools and forms were missing at: 14 of 30 HFs; 2 of 3 DHOs; and 4 of 9 PHAs. Further, the data collection and reporting tools did not include all the antigens. Microplans were missing for: 22 of 30 HFs; 1 of 3 DHOs; and 3 of 9 PHAs. The audit team also noted that 4 of 30 HFs did not have access to eNHIS portal. Furthermore, there were no AEFI reporting tools, forms and guidelines available in any of the HFs visited by the audit team.

No evidence was available that the information captured in eNHIS was reviewed and whether the information generated from eNHIS being used for any decision making for programme interventions.

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reporting immunisation data, and develop guidelines for the maintenance of these records.
- Undertake regular support supervision to monitor adherence to support supervision guidelines.

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Root causes

- No DQIPs were developed to remediate data challenges identified in past DQAs, and as a result opportunities to improve targeted interventions were missed.
- Inaccurate or inconsistent vaccination record-keeping – data collection tools at health facilities and districts were not regularly reviewed, validated or their data verified.

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Management comments

See detailed management responses - Annex 13

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Risk / Impact / Implications

- Without undertaking DQIPs, it is difficult to demonstrate improvements in coverage data quality.
- Data quality priority areas may not be addressed on time which could lead to inaccurate, incomplete, inconsistent, and unreliable immunisation data.
- Inaccurate immunisation coverage data might be reported to Gavi, which is not compliant with the partnership framework agreement.

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Responsibility

See detailed management responses - Annex 13

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Deadline / Timetable

See detailed management responses - Annex 13

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Annexes

Annex 1 : Acronyms

Abt	Abt Associates
AEFI	Adverse Events Following Immunisation
AIHSS	Accelerated Immunisation Health System Strengthening
AZ	Astra Zeneca
BCG	Bacillus Calmette Guerin
CCE	Cold Chain Equipment
CCEOP	Cold chain equipment optimisation plan
CDC	Centre for Disease Control
CDS	Covid 19 Delivery Support
COVAX	Covid 19 Vaccine Global Access
DG	Director General
DHIS	District Health Information System
DQA	Data Quality assessment
DQIP	Data Quality improvement plan
DTP	Diphtheria, Tetanus, Pertussis
EPI	Expanded Programme for Immunisation
EVM	Effective Vaccine Management
FAR	Fixed Asset Register
FPP	Full Portfolio Proposal
FY	Financial Year
GDP	Gross Domestic Product
GMR	Grant Management Requirement
HF	Health Facility
HIV	Human Immunodeficiency Virus
HR	Human resources
HSS	Health Sector Strengthening
HSCC	Health Sector Coordination Committee
ICC	Interagency Coordination Committee
IP	Implementing Partner
IPV	Inactivated poliovirus Vaccine
iSC	Immunisation Supply Chain
ISS	Integrated support Supervision
eLMIS	Electronic Logistic Management Information System
MR	Measles Rubella
NGO	Non-Governmental Organisation
NVS	National Vaccine Store
OPV	Oral Polio Vaccine
PATH	PNG Australia Transition to Health
PCA	Programme Capacity Assessment
PEF	Partnership Engagement Framework
PFA	Partnership Framework Agreement
RI	Routine Immunisation
SDG	Sustainable Development Goals
SDP	Service Delivery Points
SEM	Senior Executive Management
SIA	Supplementary Immunisation Activities

SOP	Standard operating procedures
TA	Technical Assistance
TB	Tuberculosis
TCA	Targeted Country Assistance
TWG	Technical Working Group
USD	United States Dollar
VAR	Vaccine Arrival Report
VPD	Vaccine Preventable Diseases
VVM	Vaccine Vial Monitor
WICR	Walk in Cold Room
WUENIC	WHO / UNICEF estimates of national immunisation coverage

Annex 2 : Methodology

Gavi's Audit and Investigations (A&I) audits are conducted in conformance with the Global Internal Audit Standards of the Institute of Internal Auditors. These Standards constitute 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' Global Guidance is also adhered to as applicable to guide operations. In addition, A&I staff adhere to A&I's Audit 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

Provinces (9)	Districts (3)	Health Facilities (30)
NCD		Tokarara Clinic, St Therese Clinic, Karua Medical Center, Lawes Urban Clinic, Gordons Clinic
Central	Rigo	Kwikila Hospital, Porebada, Pacific Adventist University (PAU) Clinic
Jiwaka		Kimil, Minj, Dona
Morobe		Buimo, Centre of Mercy, Situm
Southern Highlands	Ialibu District- Ialibu District Hospital	Muli, Mongol,
Eastern Highlands	Goroka	West Goroka Urban Clinic, Asaro,
Western		Ougelbeng, Paiakona, Togoba, Tipulga,
Gulf		Malalaua, Terapo, Murua, Kerema Urban Clinic
Madang		Yagaum, Town Clinic, Bunabun, Mugil

Annex 5 : PNG immunisation schedule

Vaccine	Doses	Age of administration
BCG	1	Birth to 11 months
Hep B	1	Birth within 24 hours
Bopv	3	1,2,3 months
IPV	2	3 months and 9 months
Penta	3	1,2,3 months
PCV	3	1,2,3 months
Measles Rubella	3	6,9,18 months
TT/Td	5	Women of childbearing age

Annex 6: status of accountability framework, GMR and 2016 programme audit recommendations

a) Status of Accountability framework

S/N	Theme	Level	Objectives	Indicator	Description/comments	2024 Target	Status
1	Vaccines financing	National	Improve planning and budgeting for vaccine financing (this includes financing needed for procurement and co-financing for new vaccines)	Vaccine financing plan for the next year developed and updated by end of March of the current year	This plan should be used to inform the vaccine budget and to assess any resource gap and make decisions about affordability of new vaccine introductions. It also increases transparency of vaccine planning and financing. The plan will include forecasts, transparent assumptions about coverage, wastage, and new introduction timelines, and expected data sources/resource gap. It will be endorsed by GoPNG before August of the current year. All stakeholders include: NDoH, Treasury, Planning	$7,702,893 / PGK 28,007,717	Achieved
2a	Vaccines financing	National	Timely funds mobilisation and procurement of **RI** vaccines	Timeliness of release of funding for vaccines	Timely release of funds (vaccine financing requirements for the year released and received by UNICEF by end April of the same year)	100% of original appropriation received by UNICEF end of April, remainder of reallocated received end of September 2024	Not achieved
2b		National	Adequate domestic funds mobilisation and procurement of **RI** vaccines	Adequate release of domestic funds to procure traditional vaccines	100% of domestic funds released and received by UNICEF against annual forecasted demand for vaccine procurement in annual financing plan	100% of annual forecasted demand transferred	Not achieved
3	EPI staffing	National	EPI manager, supply chain/logistician, data manager (Full time Government staff, funded by NDoH)	National EPI team fully staffed	EPI manager with full responsibility and authority, with a team technically qualified (refer to NDoH plans)	5 staff in place - EPI Manager, Data and VPD Surveillance Officer, Vaccines Logistics Officer, Cold Chain Officer and Senior Technical Officer	Not achieved
4		Provincial	EPI focal point and logistician in each province	Provincial EPI fully staffed	All provinces have Provincial EPI Officer and Provincial Cold Chain Officer in place	Provincial EPI Officer and Provincial Cold Chain Officer in 50% province	Achieved
5	Coverage	National performance	Increased immunisation coverage (raising DTP3 coverage to 65-70% by the end of 2025)	Penta 1	coverage for each antigen monitored, with reporting rate and data quality assessment regularly conducted	55% WUENIC	Not achieved
				Penta 3		46% WUENIC	Not achieved
				IPV2		54% WUENIC	Not achieved
				MCV1		54% WUENIC	Not achieved
				MCV2		35% WUENIC	Not achieved
		Provincial performance	Increased immunisation coverage	Penta 1	coverage for each antigen monitored, with reporting rate and data quality assessment regularly conducted	>90% provinces reported 55%	Not achieved
				Penta 3		>90% provinces reported 46%	Not achieved
				IPV2		>90% provinces reported 54%	Not achieved
				MCV1		>90% provinces reported 54%	Not achieved
				MCV2		>90% provinces reported 54%	Not achieved
6	coordination & oversight	National	ICC (or equivalent) fully functional	meeting minutes, attendance with high level representation	immunisation coordinating and oversight committee fully functional, chaired by the Minister (or Secretary?) and meeting regularly. Alternatively sub-commission of HSACC	ICC or Equivalent met at least twice a year	Not achieved
7	coordination & oversight	National	NITAG established and fully functional	list of nominees, meeting minutes	NITAG providing scientific guidance to the NDoH, critical if new vaccines are to be introduced	NITAG established and meets at least twice a year	Not achieved

S/N	Theme	Level	Objectives	Indicator	Description/comments	2024 Target	Status
8	data use for planning & decision making	National & provincial	Use of eNHIS monthly entry, data quality, analyses and reporting	No of meetings held each year and every meeting has actions outcomes documented based on analysis of eNHIS data	Improve data use for monitoring and planning at all levels of the health care system	Quarterly reviews of eNHIS data and annual EPI Report are available for both provincial and national information	Achieved
9	Stock Management	National & provincial	Availability of vaccine stock	Monthly vaccine stock reports from all provinces	all provinces submitted the monthly vaccine stock report in the first week of every month	Monthly vaccine stock report from 17 provinces and Quarterly review of the vaccine stock and actions taken	Achieved

b) Status of GMR Recommendations

Section	GMR	Status
Governance and programme management	**Governance and oversight on immunisation activities** The National Department of Health (NDoH) will ensure that immunisation is included as a standing agenda item on the Health Sector Coordinating Committee (HSCC) meetings OR revise the Terms of Reference (ToRs) for the ICC in agreement with other key stakeholders (see Gavi's guidance for Coordination Forums http://www.gavi.org/support/coordination/) to consider the following: 1. Have the Secretary, NDoH or Minister of Health as the ICC chair. 2.Clearly define the criteria for selection of members of the ICC and its sub-committees, roles and reporting requirements of the various ICC sub-committees as appropriate. 3.Articulate how meetings will be conducted, for example, what constitutes a quorum, the need for a schedule calendar of quarterly meetings and secretariat support for agenda setting, logistics for meetings and sharing of minutes. 4.Outline the information requirements to be supplied by the ICC Secretariat (currently the EPI) ahead of ICC meetings including but not limited to programmatic progress, status of implementation of EVM Improvement Plan, minutes of EPI review meetings and status of implementation of prior internal, external and other audit findings.	Implemented
	Signing of the Partnership Framework Agreement NDoH will liaise with the Department of Finance and Department of Treasury and ensure that persons with appropriate authority countersigns on the Partnership Framework Agreement which has already been signed by Gavi and NDoH.	Implemented
	Staffing of EPI critical positions NDoH will ensure that a suitably qualified and experienced National EPI Manager, Vaccine and Logistics Officer and Cold Chain Officer are in place with clear TOR and appropriately supervised to ensure optimal programme management.	Not implemented
Budgeting and financial management	**Planning and budgeting** NDoH will ensure that national and provincial annual workplans and budgets for the EPI are developed in line with GoPNG budget cycles. The workplans and budgets will include activities including separate allocation for vaccine procurement expected to be financed from GoPNG funding, indicating the different source of funding (e.g., Health Functional grant, Provincial contribution, others). Development Partners' funding including Gavi grants, and will be reflected in the printed government budgetary estimates as appropriate. NDoH will further liaise with department of provincial and local government affairs in coordinating planning and budgeting for EPI activities by provincial and local-level governments.	Not implemented

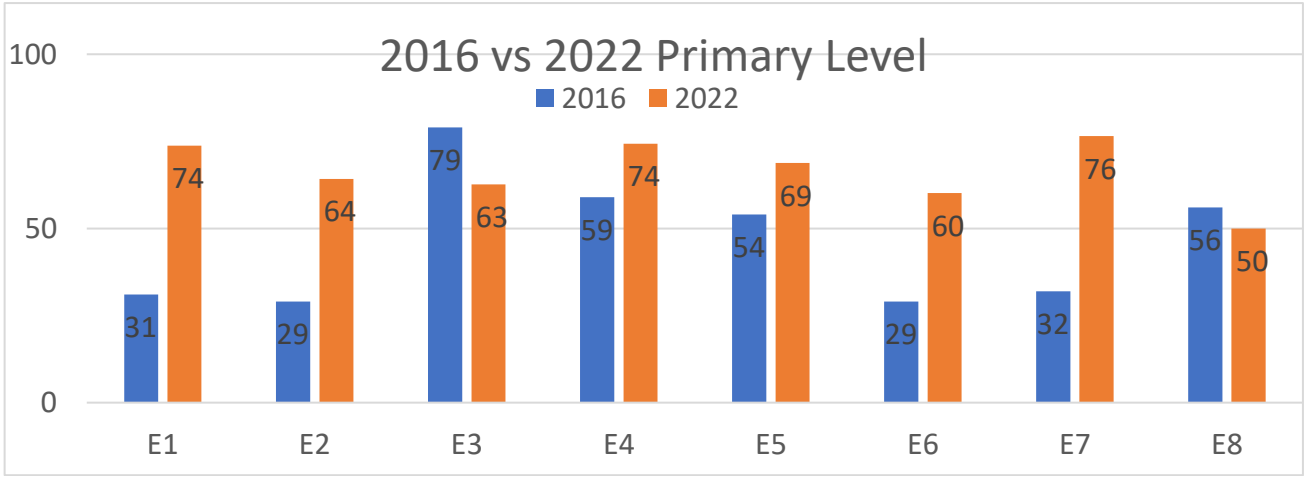
Section	GMR	Status
	Funds flow modalities In recognition of the complexities in programme and financial management within PNG, and in order to manage fiduciary risks while at the same time promoting country ownership, Gavi will channel direct financial support through different modalities, subject to endorsement by the ICC and fulfilment of the conditions outlined below and in respective grant agreements. **1. Direct funding through NDoH – HSIP Trust Account** In order for Gavi to resume direct granting and disbursements to the Government of PNG, the NDoH will be required to demonstrate that the following actions have been completed to Gavi's satisfaction: •Re-activate the ''Designated Account'' previously used to receive Gavi funding denominated in US Dollars and opened in Bank South Pacific commercial bank and operated by the HSIP TA finance team. •NDoH will implement and/or continue to maintain the various recommendations contained in Gavi's program audit and investigation reports of 2016, as detailed in Schedule A annexed to this document. •Agreeing on Terms of Reference for a Fiduciary Agent (FA) engaged by Gavi (or Gavi's appointed agent) to provide financial management oversight for all Gavi programs funded through the NDoH. The role of the FA will be to support NDoH in meeting all Gavi financial management requirements and to ensure the appropriate use of grant funds at national and provincial levels. The FA will be responsible for putting the necessary procedures, control mechanisms and capacity building measures in place to provide effective financial management of grant funds. •Provide reasonable timelines endorsed by the Department of Finance for implementation of the IFMS and adequate financial management staffing at the Provincial level, at least for the provinces that will be prioritised for implementation of HSS grant activities to enhance and sustain national financial management systems.	Not applicable
	2. Funding through PNG Partnership Fund (PPF) •To enhance efficiency, collaboration and alignment with other developing partners funding immunisation activities in PNG, Gavi will channel part of the HSS funding through the PPF model, currently used by Australia's Department of Foreign Affairs (DFAT), subject to complying with Gavi's procurement procedures in selecting a management services firm, and other conditions as outlined in the respective Grant Agreement. •Considering the fiduciary risks noted with the HSIP TA modality, the selected PPF Management Services firm will agree with Gavi the necessary additional safeguard measures and associated costs to enhance fiduciary assurance for disbursements to national and provincial levels. •Funds will be disbursed in US Dollars to an account opened in ANZ Bank, Australia and operated by Abt	Implemented
	3. Funding through Alliance Partners •Gavi will disburse funds for some activities under HSS and other cash grants to the Alliance Partners based on the competitive advantages available to them. •Given the fiduciary risks identified with NDoH, Gavi will agree with UNICEF/WHO on additional safeguard measures necessary, and associated costs, to enhance fiduciary assurance for disbursements to NDoH and any other implementing partners based on the risk ratings contained in assurance plans of the Alliance Partners. These will include, but not limited to, the nature and frequency of audits, spot checks, third party monitoring and other assurance measures, and will include sharing with Gavi the relevant plans, subsequent assurance reports and reports for micro-assessment and other capacity assessments. •Particularly, additional measures for assurance and risk management during campaigns will need to be agreed with Gavi, including, but not limited to, having a Monitoring Agent providing real time assurance before, during and after the campaign.	Implemented
	4. Funding through a Fund Manager (PwC PNG) Gavi will disburse funds for some activities under Covid-19 Vaccine Delivery Support (CDS) and other cash grants as may be approved by Gavi to PwC PNG as a Fund Manager. Disbursements will be made to a Gavi- dedicated account in accordance with a schedule agreed with PwC PNG and upon fulfilment of specified pre- disbursement conditions. Funds will be disbursed in US Dollars to a PNG Kina (PGK) account opened and operated by PwC PNG. PwC PNG will perform the fund management services in line with Standard Operating Procedures (SOPs) that will be developed and approved by Gavi. The SOPs will at least cover procedures for bank account management, payments requisition and approval, advances management, procurement, fixed assets management, financial reporting (formats, frequency, audience), and audits.	Implemented
	Financial accounting and reporting PPF, PwC PNG and Alliance Partners receiving Gavi funds will report to Gavi as will be specified in the respective grant agreements with Gavi. These recipients will further share copies of the reports with the ICC and the NDoH for consolidation as outlined below. If and when funds are disbursed to NDoH either directly from Gavi or through other modalities, the NDoH will account for the funds, prepare and submit financial reports to Gavi every 3 months in line with the Gavi Guidelines on Financial Management and Audit Requirements1. This will include ensuring proper linking of activities to budgets and consolidation with reports received from other partners as indicated above. Actual expenditure incurred (and not advances) at the Provincial and district levels will also be correctly recorded	Not implemented
	Capacity building plan to strengthen the programme and fiduciary systems of HSIP TA A capacity building plan of NDoH programme and financial management structures and systems will be developed and agreed with the government based on weaknesses identified in the 2018 Programme Capacity Assessment (PCA) and other relevant sources, with clear milestones for expected outcomes. This will include, but not limited to, sustainable measures for: •Staffing: finance and accounting, procurement and internal audit at national and provincial levels •Skills enhancement for: budgeting and budget monitoring, cash and advance management, reporting •IFMS roll out to provinces and training of staff •Procurement: compliance with applicable laws and regulations, procurement planning, documentation	Not applicable

Section	GMR	Status
	and record keeping •Assets management: defined processes and responsibilities for receiving, tagging, recording and ongoing monitoring •Institutionalising risk-based internal audit to provide the necessary level of fiduciary assurance.	
	Non-vaccine procurement •Procurement of all cold chain equipment (CCE) including cold rooms, freezer rooms and other related vaccine store equipment; refrigerators, freezers; insulated cooling containers, temperature monitoring devices, cold chain accessories, spare parts for CCE; sharp disposal equipment and vehicles (including notably refrigerated and non-refrigerated trucks and vehicles) will be conducted by UNICEF as per the agreement to be entered into by the parties. •NDoH will be responsible to meet all costs related to in-country clearing and warehousing of all items procured through Gavi funds, including those procured through UNICEF. Any import-customs duty and VAT (if applicable) to the above-mentioned goods and any registration cost (for vehicles) will be paid by the NDoH. •Procurement for other lower value items for funding channelled through NDoH, except those procured through UNICEF, will be conducted in line with national procurement laws, regulations and guidelines with oversight from the Fiduciary Agent as and when appointed. Such procurement will be included in the Annual Procurement Plan prepared and approved in line with requirements of the national procurement laws and regulations. •Procurement for other items for any other funding channels will be conducted in line with the respective entities' procurement policies, regulations and guidelines.	Implemented
	Assets management •NDoH will enhance the asset management practices and procedures, as guided in the final Gavi Programme Capacity Assessment report of March 2019. Particularly, a comprehensive Fixed Asset Register (FAR) will be maintained and regularly updated for assets at all levels, including cold chain equipment and vehicles procured through Gavi grants to PNG. •NDoH will ensure that physical inventory count of fixed assets is performed at least once a year and periodic surprise spot checks of fixed assets as a control measure to protect them from loss, theft, fraud, waste and abuse will be carried out as deemed necessary.	Not implemented
Vaccines and cold chain management	**Development of Standard Operating Procedures for Vaccines Management** •NDoH will liaise with technical partners for support to develop Standard Operating Procedures (SoPs) for management of vaccines and related supplies and include procedures for submission of requisitions from various levels (from provinces to national level; from health facilities to provinces), among other critical components like Vaccine arrival procedures, temperature monitoring and vaccine vial monitoring.	Implemented
	Stock management and reporting •NDoH will ensure that appropriately qualified staff are put in place at the National Vaccine Store (NVS). •The central mSupply tool maintained at NVS will be updated on a monthly basis, including with stock data (physical inventory counts, vaccine consumption, stock outs, wastage and expiries) received from Provincial vaccine stores to ensure completeness and reliability of stock data. •All requisitions and issues of vaccines and related supplies will be properly documented, and such documentation filed appropriately.	Not implemented
	Review of contractual arrangements National logistics and forwarding company •As recommended in the Gavi programme audit report of 2016, NDoH will review and discuss its contractual arrangements with its national logistics and forwarding company to incorporate consignment services, including defining INCOTERMS and liability in the event of vaccine damage or loss.	Not implemented
	Insurance •The GoPNG is expected to maintain appropriate insurance cover for assets and vaccines. In light of the current lack of funds to insure assets and health commodities by the government, adequate physical safeguards regarding fire safety and access control measures will be put in place to cover any assets and vaccines against potential losses from potential disasters (such as fire or floods), negligence or theft.	Not implemented
Internal and External Audit Arrangements	**Internal audit arrangements** •Internal audit arrangements for funds channelled through PPF, PwC PNG or Alliance Partners will be specified in the respective grant agreements with Gavi. •For any direct funding to NDoH, internal audit arrangements will be strengthened in terms of staff capacity and risk-based auditing as part of the capacity building plan of NDoH mentioned above. In the meantime, Gavi may engage the services of a Monitoring Agent to provide the necessary risk-based assurance services in relation to Gavi supported activities.	Not applicable
	External audit arrangements •External audit arrangements for funds channelled through PPF or Alliance Partners will be specified in the respective grant agreements with Gavi. •For any direct funding to NDoH, Gavi will engage a private audit firm to conduct annual external audits, in line with ToRs to be agreed between the firm, NDoH and Gavi. •For funding to PwC PNG as fund manager, annual external audits will be conducted on the fund management operations in line with Terms of Reference to be agreed with Gavi, by an independent firm selected in agreement with Gavi.	Not applicable

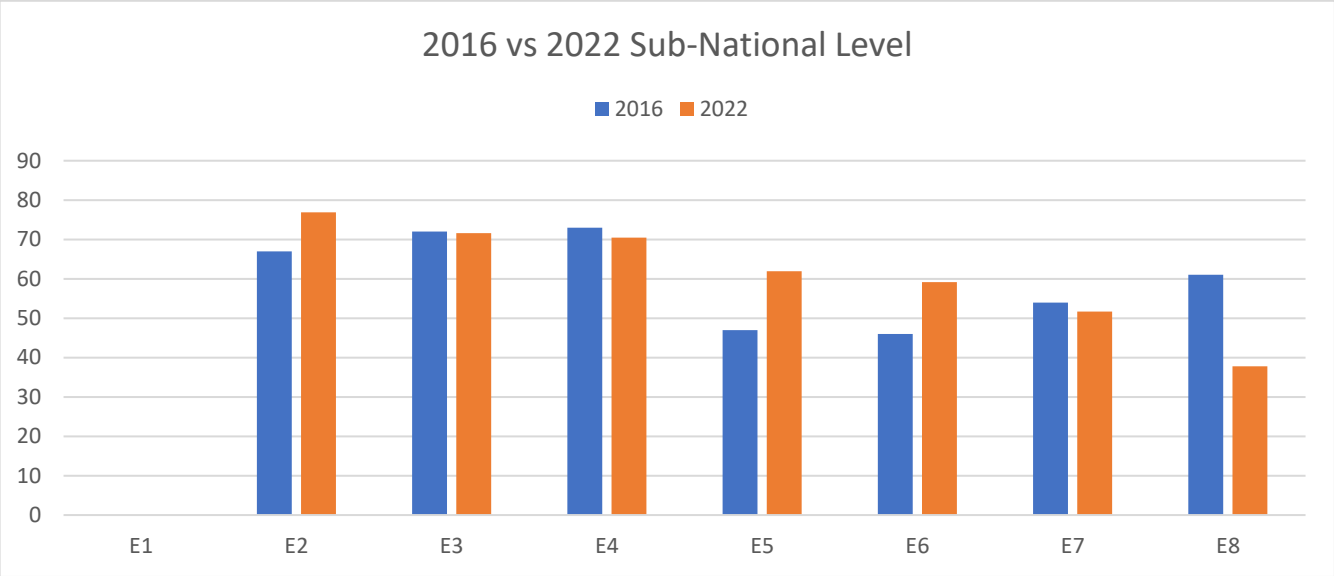
c) **EVM Score**

EVM		Infrastructure	Equipment	Information technology	Human resources	Policies & procedures	Financial resources			TOTAL
		C1	C2	C3	C4	C5	C6	OUTPUTS	PERFORMANCE	
Vaccine arrivals	E1			100	83	33		87		74
Temperature management	E2			73	79	3		42	81	66
Storage and transportation capacity	E3	10	86		98	3	26	79	100	66
Facility infrastructure and equipment	E4	60	84	81			31	72		70
Maintenance and repair	E5			33	81	2	30	53	80	60
Stock management	E6			86	61	6		40	5	49
Distribution of vaccines and dry goods	E7		96	10	62	2	48	81	69	60
Vaccine management	E8				76	3		57		44
Waste management	E9		64		42	21	19	17	81	46
Annual needs forecasting	M1				58	2		18	13	37
Annual work planning	M2				60	6	79	10	38	43
Supportive supervision	M3	94	94	8	71	4	50	28		35
iSC performance monitoring	M4			59	60	5		33		35
TOTAL		60	84	73	70	8	74	55	65	**58**

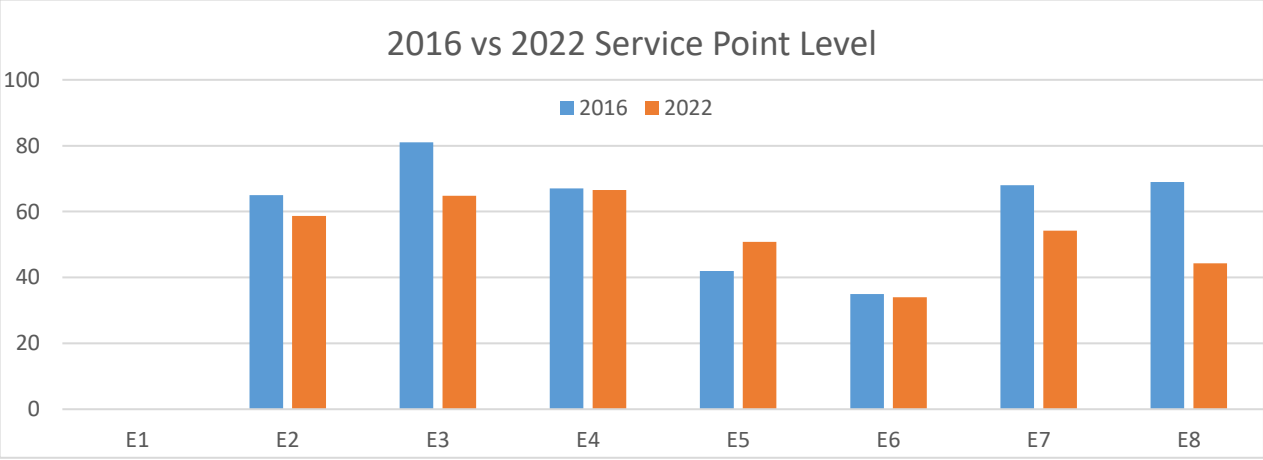
d) **Comparison at Primary Level results between 2016 and 2022**



e) Comparison at sub-national level results between 2016 and 2022



f) Comparison at service point level results between 2016 and 2022



Annex 7: Details of vaccine stock outs

a) Incidences of vaccine stock outs at PVS visited by the audit team

	No. of Stock Out (Days)				
Province Vaccine Store Name	Pentavalent	IPV	PCV	MR	Janssen
Eastern Highlands Province	19	56	145	0	240
Jiwaka Province	0	309	0	23	0
Morobe Province	40	0	25	347	0
Total Days	**59**	**365**	**170**	**370**	**240**

b) Incidences of vaccine stock outs at SDPs visited by the audit team

	No. of Stock out (Days)				
Health Facility Name	Pentavalent	IPV	PCV	MR	Janssen
Kwikila Hospital	0	12	0	0	0
Gordons Clinic	0	0	3	0	0
Porebada Health Centre	0	3	3	0	0
Tokarara Clinic HF	7	3	125	1	0
Pacific Adventist University (PAU) Clinic	0	35	2	13	21
West Goroka Urban Clinic	0	0	0	0	1
Buimo Health Facility	0	15	184	0	0
Murua Health Centre	0	13	45	0	0
Centre of Mercy UC	5	0	0	63	0
Togoba Health Center	0	3	0	0	0
Kerema Urban Clinic	82	8	86	0	0
Yagaum Health Facility	0	102	0	0	0
Madang Town UC	297	95	129	14	0
Mugil Health facility	54	65	65	0	0
Total Days	**445**	**354**	**642**	**91**	**22**

Annex 8: Details of Untraceable stock

a) Details of untraceable vaccine stock (Doses) at PVS

Province Vaccine Store	Pentavalent	IPV-2022	IPV-2023	PCV	MR	Janssen
Central Province	-15,360	-2,470	4,000	13,600	48,000	500
Eastern Highlands Province	6,144	0	0	0	0	0
Jiwaka Province	-80	-450	3,500	0	-16,100	0
Southern Highlands Province	2,000	0	0	2,900	13,800	500
NCD Province	0	0	0	0	0	10,000
Western Province	864	0	-3,600	-2,200	0	0
Morobe Province	6,688	4,200	14,000	15,000	106,000	1,500

b) Details of untraceable vaccine stock (Doses) at SDP

#	HF Vaccine Store Name	Pentavalent	IPV-2022	IPV-2023	PCV	MR	Janssen
1	Gordons Clinic	1,450	547	0	1,150	790	75
2	Muli Sub-Health Centre	100	50	50	100	500	0
3	Mongol Health Centre	70	70	0	70	4500	0
4	Porebada Health Centre	100	50	409	93	93	0
5	Tokarara Clinic HF	-400	0	575	600	530	0
6	Pacific Adventist University (PAU) Clinic	93	45	0	100	100	10
7	West Goroka Urban Clinic	76	70	0	200	80	50
8	Ougelbeng Community Health Post	0	100	-2	0	0	0
9	Asaro Health Centre	106	35	0	61	40	50
10	St Therese Clinic	1150	505	0	1250	950	150
11	Paiakona Community Health Post	50	25	10	50	20	0
12	Murua Health Centre	19	5	5	50	20	0
13	Centre of Mercy UC	291	11	0	262	0	0
14	Situm Rural H/C	50	0	0	200	0	0
15	Togoba Health Center	24	50	100	50	20	0
16	Karua Medical Center	250	225	0	300	600	0
17	Lawes Road Urban Clinic	200	50	150	200	100	50
18	Madang Town UC	0	104	-10	0	0	0
19	Bunabun	0	0	100	0	0	0

Annex 9: Variances during physical count

a) Unexplained stock variances (Doses) at NVS

Name of Vaccine	Batch No.	Location	Quantity counted (A) (Doses)	Quantity recorded in mSupply (B)	Variance (A-B)
Measles and Rubella Vaccine	0123w075	WICR 08	519,500	520,000	-500
Pentavalent Vaccine	220101024A	WICR 04	50,310	50,310	0
	220100724D	WICR 04	136,080	132,388	3,692
	E5V013139	WICR 05	4,700	4,053	647
	E5V013142	WICR 05	55,200	52,000	3,200
	E5V013140	WICR 05	38,900	38,900	0
	E5V013141	WICR 05	86,500	86,500	0
	E5V013067	WICR 05	400	655	-255
IPV	241008A	WICR 05	273,000	272,800	200
	2329001A	WICR 05	3,120	4,200	-1,080
	2401003A	WICR 05	35,000	35,000	0
	2320004A	WICR 09	1,870	1,970	-100

b) Unexplained stock variances (Doses) at PVS

	Pentavalent					IPV			
Province Vaccine Store Name	Quantity on Manual register/Stock card (b)	Quantity recorded in mSupply (C)	Total Quantity Counted (a)	Variance in Quantities counted (a - b) - Penta - stock card	Variance in Quantities counted (a - c) - Penta - mSupply	Quantity on Manual register/Stock card (b)	Quantity recorded in mSupply (C)	Total Quantity Counted (a)	Variance in Quantities counted (a - b) - IPV - stock card
Central Province	0	2,298	1,994	1,994	-304	0	360	745	745
Eastern Highlands Province	5,650	8,470	6,773	1,123	-1697	4055	5210	5150	1095
Jiwaka Province	3,180	780	2,400	-780	1620	391	0	1240	849
Southern Highlands Province	8,735	0	5,266	-3,469	5266	5690	0	619	-5071
NCD Province	1,610	2,350	1,610	0	-740	4,200	4,525	4,200	0
Western Province	787	0	2,352	1,565	2352	977	0	967	-10
Gulf Province	0	0	1,200	1,200	1200	0	0	1640	1640
Morobe Province	9,638	6,416	5,590	-4,048	-826	3114	13055	12920	9806
Madang Province	0	4,190	3,840	3,840	-350	0	1371	1340	1340
Grand Totals	**29,600**	**24,504**	**31,025**	**1,425**	**6,521**	**18,427**	**24,521**	**28,821**	**10,394**
	PCV					**MR**			
Province Vaccine Store Name	**Quantity on Manual register/Stock card (b)**	**Quantity recorded in mSupply (C)**	**Total Quantity Counted (a)**	**Variance in Quantities counted (a - b) - PCV - stock card**	**Variance in Quantities counted (a - c) - PCV - mSupply**	**Quantity on Manual register/Stock card (b)**	**Quantity recorded in mSupply (C)**	**Total Quantity Counted (a)**	**Variance in Quantities counted (a - b) - MR - stock card**
Central Province	0	2050	1744	1744	-306	0	1860	1860	1860
Eastern Highlands Province	7440	9488	7751	311	-1737	5650	15640	13310	7660
Jiwaka Province	1345	2160	1195	-150	-965	2572	25500	27670	25098
Southern Highlands Province	8840	0	3890	-4950	3890	10930	0	540	-10390
NCD Province	4,410	4,950	4,410	0	-540	4,970	6,370	4,970	0
Western Province	4207	0	3503	-704	3503	504	0	406	-98
Gulf Province		0	1650	1650	1650	0	0	2800	2800
Morobe Province	19400	4769	3458	-15942	-1311	0	5550	5800	5800
Madang Province	0	5554	5200	5200	-354	0	1603	1562	1562
Grand Totals	**45,642**	**28,971**	**32,801**	**-12,841**	**3,830**	**24,626**	**56,523**	**58,918**	**34,292**

c) Unexplained stock variances (Doses) at SDP

		Pentavalent					IPV				
#	HF Vaccine Store Name	Quantity on Manual register/Stock card (b)	Quantity recorded in mSupply (C)	Total Quantity Counted (a)	Variance in Quantities counted (a - b) - Penta - stock card	Variance in Quantities counted (a - c) - Penta - mSupply	Quantity on Manual register/Stock card (b)	Quantity recorded in mSupply (C)	Total Quantity Counted (a)	Variance in Quantities counted (a - b) - IPV - stock card	Variance in Quantities counted (a - c) - IPV - mSupply
1	Kwikila Hospital	154	599	154	0	-445	0	0	0	0	0
2	Gordons Clinic	158	183	159	1	-24	75	75	85	10	10
3	Muli Sub-Health Centre	0	0	34	34	34	0	0	10	10	10
4	Mongol Health Centre	240	0	225	-15	225	190	0	108	-82	108
5	Minj HC	0	0	990	990	990	0	0	21	21	21

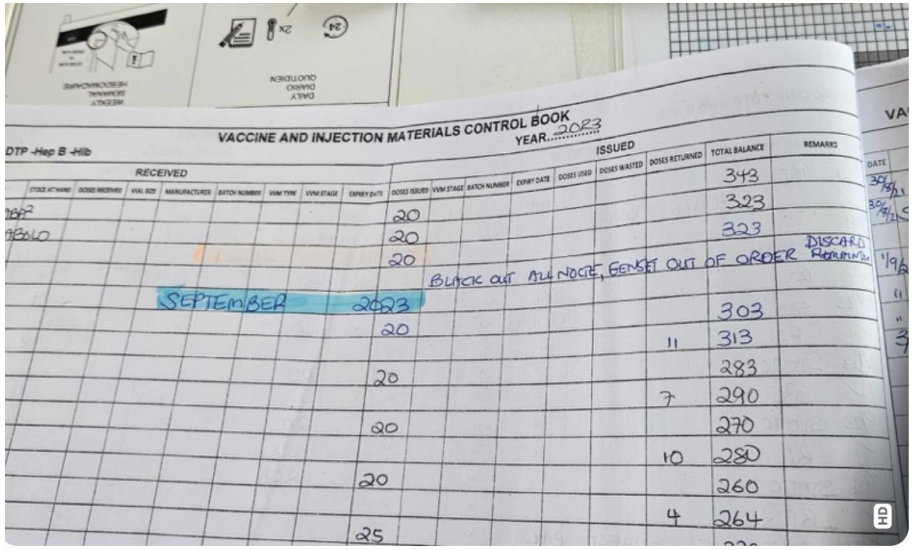
6	Dona HC	0	0	97	97	97	0	0	0	0	0
7	Porebada Health Centre	423	0	379	-44	379	275	0	260	-15	260
8	Kimil	0	0	0	0	0	0	0	0	0	0
9	Tokarara Clinic HF	259	427	260	1	-167	75	85	35	-40	-50
10	Pacific Adventist University (PAU) Clinic	311	0	920	609	920	0	0	20	20	20
11	West Goroka Urban Clinic	0	0	90	90	90	0	0	10	10	10
12	Ougelbeng Community Health Post	26	0	26	0	26	55	0	50	-5	50
13	Asaro Health Centre	0	0	38	38	38	0	0	10	10	10
14	St Therese Clinic	203	200	203	0	3	145	100	140	-5	40
15	Malalaua Health Centre	0	0	393	393	393	0	0	100	100	100
16	Paiakona Community Health Post	0	0	38	38	38	0	0	5	5	5
17	Buimo	0	0	201	201	201	0	0	11	11	11
18	Terapo Sub Health Centre	0	0	216	216	216	0	0	65	65	65
19	Murua Health Centre	0	0	0	0	0	0	0	0	0	0
20	Centre of Mercy UC	0	0	565	565	565	0	0	87	87	87
21	Situm Rural H/C	0	0	0	0	0	0	0	5	5	5
22	Togoba Health Center	128	0	31	-97	31	110	0	30	-80	30
23	Kerema Urban Clinic	99	0	103	4	103	45	0	40	-5	40
24	Karua Medical Center	0	0	50	50	50	0	0	50	50	50
25	Lawes Road Urban Clinic	0	0	100	100	100	0	3	0	0	-3
26	Tipulga Community Health Post	0	0		0	0	0	0	0	0	0
27	Yagaum Health Facility	0	0	148	148	148	0	35	60	60	25
28	Madang Town UC	0	0	152	152	152	0	0	50	50	50
29	Bunabun	22	0	190	168	190	75	0	70	-5	70
30	Mugil	200	0	100	-100	100	250	0	195	-55	195
	Grand Totals	**2,223**	**1,409**	**5,862**	**3,639**	**4,453**	**1,295**	**298**	**1,517**	**222**	**1,219**

		PCV					MR					Janssen				
#	HF Vaccine Store Name	Quantity on Manual register/Stock card (b)	Quantity recorded in mSupply (C)	Total Quantity Counted (a)	Variance in Quantities counted (a - b) - PCV - stock card	Variance in Quantities counted (a - c) - PCV - mSupply	Quantity on Manual register/Stock card (b)	Quantity recorded in mSupply (C)	Total Quantity Counted (a)	Variance in Quantities counted (a - b) - MR - stock card	Variance in Quantities counted (a - c) - MR - mSupply	Quantity on Manual register/Stock card (b)	Quantity recorded in mSupply (C)	Total Quantity Counted (a)	Variance in Quantities counted (a - b) - Janseen - stock card	Variance in Quantities counted (a - c) - Janseen - mSupply
1	Kwikila Hospital	123	656	123	0	-533	170	82	170	0	88	0	0	0	0	0
2	Gordons Clinic	183	320	184	1	-136	130	130	130	0	0	45	45	50	5	5
3	Muli Sub-Health Centre	0	0	64	64	64	0	0	0	0	0	0	0	0	0	0
4	Mongol Health Centre	67	0	55	-12	55	680	0	670	-10	670	0	0	0	0	0
5	Minj HC	0	0	121	121	121	0	0	0	0	0	0	0	0	0	0
6	Dona HC	0	0	68	68	68	0	0	1,740	1,740	1,740	0	0	0	0	0
7	Porebada Health Centre	0	0	300	300	300	0	0	110	110	110	0	0	0	0	0
8	Kimil	0	0	0	0	0	0	0		0	0	0	0	0	0	0
9	Tokarara Clinic HF	211	374	178	-33	-196	200	240	160	-40	-80	0	0	0	0	0

10	Pacific Adventist University (PAU) Clinic	114	0	10	-104	10	69	0	140	71	140	0	0	0	0	0
11	West Goroka Urban Clinic	0	0	110	110	110	0	0	160	160	160	0	0	0	0	0
12	Ougelbeng Community Health Post	21	0	24	3	24	110	0	110	0	110	0	0	0	0	0
13	Asaro Health Centre	0	0	20	20	20	0	0	1,350	1,350	1,350	0	0	0	0	0
14	St Therese Clinic	195	200	195	0	-5	80	7	80	0	73	0	0	0	0	0
15	Malalaua Health Centre	0	0	384	384	384	0	0	910	910	910	0	0	0	0	0
16	Paiakona Community Health Post	0	0	37	37	37	0	0	20	20	20	0	0	0	0	0
17	Buimo	0	0	175	175	175	0	0	0	0	0	0	0	0	0	0
18	Terapo Sub Health Centre	0	0	207	207	207	0	0	680	680	680	0	0	0	0	0
19	Murua Health Centre	31	0	7	-24	7	30	0	10	-20	10	0	0	0	0	0
20	Centre of Mercy UC	0	0	584	584	584	0	0	32	32	32	0	0	0	0	0
21	Situm Rural H/C	0	0	0	0	0	0	0	12	12	12	0	0	0	0	0
22	Togoba Health Center	154	0	26	-128	26	56	0	56	0	56	0	0	0	0	0
23	Kerema Urban Clinic	101	0	107	6	107	3,270	0	3,160	-110	3,160	0	0	45	45	45
24	Karua Medical Center	0	0	45	45	45	0	0	0	0	0	0	0	0	0	0
25	Lawes Road Urban Clinic	0	0	50	50	50	0	44	30	30	-14	0	6	0	0	-6
26	Tipulga Community Health Post	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Yagaum Health Facility	0	0	125	125	125	0	0	270	270	270	0	0	0	0	0
28	Madang Town UC	0	0	158	158	158	0	0	100	100	100	0	0	0	0	0
29	Bunabun	0	0	163	163	163	1,290	0	210	-1,080	210	0	0	0	0	0
30	Mugil	200	0	90	-110	90	1,800	0	1,690	-110	1,690	0	0	0	0	0
	Grand Totals	**1,400**	**1,550**	**3,610**	**2,210**	**2,060**	**7,885**	**503**	**12,000**	**4,115**	**11,497**	**45**	**51**	**95**	**50**	**44**

Annex 10: Gaps in Cold Chain management

a) Picture of VMCB with vials recommended for discarding but unceasingly issued out for administration



Annex 11: Gavi Targeted Software Standards for VX eLMIS vs mSupply score

	GAVI TSS Key Features	Description	Present in mSupply
1	Forecasting & Supply Planning	Configure and use calculations for ideal stock amounts (ISA) for supply planning.	No
2	Orders & Receipts, Supplier Management	Order fulfilment and supplier management	No
3	Distribution management	Vaccine distribution & delivery management	No
4	CCE module	Track cold chain equipment inventory	No
5	Temperature Monitoring	Integration with RTM devices (fridge tags)	No
6	Analytics and Dashboards	Stock indicator dashboards. Available through	No
7	Interoperability	Integration with other systems	No
8	Requisition and Issue	Stock requests and issues workflows	Yes
9	Inventory Management	Inventory data and stock movements to provide an overview of full stock availability	Yes
10	Early warning alerts	Stock alarms (potential expiry and potential stock out)	Yes

Annex 12: Table showing status of tablet utilisation for mSupply system

Status at facilities	Central	EBN	EHP	JIWAKA	Madang	NCD	NIP	SIMBU	WHP	Grand Total	%
Tablets functional, at NDoH, postpaid data inactive	2	11	14	4	11	0	8	1	12	63	23.7%
Functional tablets at NDoH, with active data	26	0	6	3	7	1		0	14	57	21.4%
Functional tablets at HFs with mSupply	4	15	4	4	2	19	5	1	0	54	20.3%
Tablets status unknown, postpaid data active	1	1	1	9	2		2	16	1	33	12.4%
Tablets status unknown, postpaid data inactive	0	0	5	4	6	1	10	4	2	32	12.0%
Stolen	0		2		11	1				14	5.3%
Functional tablets, at NDoH, with active data							7			7	2.6%
Faulty	1	1	0		1				2	5	1.9%
Decommissioned									1	1	0.4%
Grand Total	**34**	**28**	**32**	**24**	**40**	**22**	**32**	**22**	**32**	**266**	

Annex 13: Detailed management responses

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
Leadership and accountability within NDoH needs strengthening	Recommendation 1 To strengthen leadership over the EPI, the NDoH should: • Establish and endorse the organisational structure within the Ministry; • Appoint full-time EPI Executive Managers and Branch Managers positions; • Appoint an EPI manager for the immunisation programme; • Appoint EPI staff in support of the EPI manager. This team should consist of technically competent staff, in a bid to transition away from the temporary incumbents that are currently contracted via the technical assistance modality; and • Establish a staff capacity building plan to facilitate the transition and management of operational activities, away from partners back to the EPI national team.	**Action 1** • The organisational structure has been established and endorsed, and its implementation is currently underway within the Ministry. The recruitment process for key management vacancies is actively in progress. This rollout will be a progressive and ongoing process. • The recruitment of EPI Executive Managers is currently in progress, with the goal of filling these positions by July 2025, in accordance with the endorsed organisational structure. Once the executive roles are filled, the process will continue to address other vacancies within this new structure. • The recruitment process is expected to align with the endorsed organisational structure. • The positions outlined in the new organisational structure have been fully established. The temporary incumbents are expected to be integrated through the formal recruitment process to fill the various roles in the new structure. **Action 2** A capacity building plan will be developed and approved by end of 2026.	**Action 1** NDoH **Action 2** NDoH, CHAI	**Action 1** December 2025 **Action 2** December 2026
	Recommendation 2 To strengthen the accountability within the immunisation programme, the NDoH and EPI should: • Review and reset the NIS with updated indicators that are: specific; measurable; achievable; relevant and timebound; • Re-evaluate the accountability framework's targets and indicators to ensure these align with the NIS. Establish a single measurement framework with defined indicators at strategic and operational levels for the NIS, instead of two separate measurement frameworks currently in place; and	**Action 3** The review and updation of the NIS is an ongoing process. Relevant updates in line with relevant recommendations is expected to be completed by June 2026. **Action 4** An Accountability Framework has been developed and updated since the audit, in collaboration with GAVI, with the most recent version dated January 2025. Alignment of the accountability framework with NIS is ongoing alongside NIS review. **Action 5**	**Action 3** NDoH, WHO/CHAI **Action 4** EPI TWG **Action 5** NDoH	**Action 3** June 2026 **Action 4** December 2025 **Action 5** December 2025

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	• Empower the TWG, to track the programme's progress against the new set of strategic and operational performance indicators. The TWG should be chaired by a senior official from NDoH and report to the NDoH Senior Executive Management (SEM) Team till the ICC is established.	At this time, the country is prioritising the strengthening of the TWG, which actively reports to the NDoH Senior Executive Management and serves as the main coordination and decision-making platform. While the ICC and other governance structures are ideal, the focus is on consolidating the TWG's role to ensure effective oversight and partner coordination. Once fully functional, the TWG will provide a foundation for future decisions on re-establishing broader mechanisms such as the ICC.		
	Recommendation 3 To strengthen the accountability at national level, Gavi should: • Align all programmatic and technical assistance to support capacity building and eliminate all gap filling operational tasks within a defined timeline of not more than two years; and • Review the newly developed measurement framework and determine which indicators, if any, should trigger consequences to reinforce accountability for the immunisation programme. Clearly define these consequences within the accountability framework to ensure that the National Department of Health (NDoH) remains responsible for programme performance and outcomes.	**Action 6** NDoH is currently undergoing an ongoing process of recruitment under the new organisational structure with partner support still required to be channelled towards TA to fill the gaps. Upon filling of the vacant positions partners can focus TA towards capacity building. **Audit Note - The audit notes the management response, however, the TA support will be required to be reviewed in view of the Gavi 6.0 guidelines.** **Action 7** An Accountability Framework has been developed and updated since the audit, in collaboration with GAVI, with the most recent version dated January 2025. **Audit Note - The audit notes the management response, however, the compliance will be followed up as part of the follow up of the recommendations of this report to ensure the achievement of indicators under the accountability framework.**	**Action 6** NDoH **Action 7** NDoH	**Action 6** December 2025 **Action 7** December 2025
Challenges in the country's readiness for transition	Recommendation 4 To ensure the resilience and sustainability of the country's immunisation investments after transition is completed, the NDoH/EPI should: • Review all of its immunisation activities and develop a suitable transition plan, that remains aligned with	**Action 8** The current FPP was developed as a transition plan for PNG and runs until 2027. While this document will be updated to align with the Gavi 6.0 strategy, the development of a new transition plan is not feasible. **Audit Note - While the FPP was developed as a transition plan, at the time of the audit, the FPP was already was already 4 years old and none of the indicators were tracked or achieved. Gavi has developed**	**Action 8** NDoH	**Action 8** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	the NIS, and which articulates how the country should navigate the transition process; • Calculate what its funding gap is - by documenting and deducting all costs related to immunisation activities at the national and subnational levels, (including operational costs, vaccine co-financing and HR) – from existing funding sources (i.e. public funding, partners, and donors), to determine the magnitude of resources which needs to be mobilised; and then • Continue to advocate for the Department of Treasury to secure and allocate sufficient funding to meet the EPI's consolidated needs, including the timely release of allocated funds. This funding should account for: ongoing interventions, the existing financing gap, the impacts of current funding shortfalls, the programme's return on investment, and the full budgetary requirements for both national and sub-national levels of the EPI including operational expenses.	**the 6.0 strategy and within the HSS strategy, the country will be provided with guidelines on transition which are binding for the country and the country is expected to align with the 6.0 strategy.** **Action 9** The World Bank is currently supporting the NDOH to document the overall health sector funding gap, which includes immunisation. However, generating a detailed funding gap analysis for both the national and subnational levels may not be achievable in the short term. **Action 10** Agreed and ongoing currently	**Action 9** NDoH, WB and UNICEF **Action 10** NDoH, WB and UNICEF	**Action 9** December 2027 **Action 10** December 2027
Coordination and oversight arrangements over the immunisation programme at the PHAs needs to be improved	Recommendation 5 To strengthen programme management structures, the NDoH/EPI should: • Develop suitable guidelines that operationalise the NHA and PHAs Acts, by ensuring that there is substantive and regular coordination and oversight between the NDoH and the PHAs. • Establish necessary oversight structures, including the related supervision and monitoring processes with respect to PHAs' grant agreements.	**Action 11** Agreed. Guidelines will be developed and rolled out by end of 2026. **Action 12** The AIHSS2 is exploring the formulation of an Accountability Framework with KPIs to track the individual performance of the ISPs and PHAs.	**Action 11** NDoH **Action 12** NDoH, AIHSS2, UNICEF, WHO	**Action 11** December 2026 **Action 12** June 2026
	Recommendation 6 To strengthen the ISPs' role, NDoH/EPI should work with the fund manager to: • establish the coordination mechanism between NdoH/EPI, PHA and all the ISPs; and	**Action 13** • Currently, NDoH are part of the Senior Management Group along with Gavi, MFAT, DFAT and DNPM who meet quarterly to discuss AIHSS2 progress. NDoH also contribute to the biannual Learning and Reflection Workshops and the biannual PHA/ISP meetings. This facilitates coordination between NDoH/EPI, PHA and ISPs.	**Action 13** NDoH, AIHSS2	**Action 13** June 2026

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	• determine suitable reporting structures for the ISPs grant agreements at both the PHA and at EPI national levels	• In 2025, AIHSS2 grantee workplans for outreach and mobile services are informed by Health Facility micro plans developed by PHAs and shared with the EPI unit, although not all facilities receive AIHSS2 funding. The collaboration between agencies has improved with both PIRI and AIHSS2 funds being used for outreach and mobile services. Other health system strengthening and GEDSI activities are captured in the grantee workplans and semi-annual and annual reports.		
	Recommendation 7 To strengthen the ISPs' role, MoH/EPI in collaboration with Gavi and the fund manager should: • Define the ISPs role by clearly articulating what responsibilities and accountabilities they have for the immunisation programme; and • Having defined the role, all subsequent ISP grant agreements should meet these requirements including proper accountability to the PHAs and NDoH on immunisation programme activities.	**Action 14** AIHSS2 is exploring whether an annual stocktake of Grantee responsibilities is a better way of monitoring or if a number of indicators not already used can be included into the MEL Plan. A responsibility and accountability framework is also being developed to determine what additional responsibilities need to be included in grant agreements if appropriate to monitor the support provided to the PHAs. Currently, grant agreements include key deliverables and compliance (safeguarding and fraud) requirements. Additionally, the tender document that went out to market to engage the ISPs outlined the role and responsibility of the ISPs. A panel was established that included the PHA CEO or delegate, NDoH EPI manager, Abt team members to decide on the most appropriate ISP for that PHA.	**Action 14** NDoH, AIHSS2	**Action 14** December 2025
Governance mechanisms need to be formalised to improve country ownership	Recommendation 8 To strengthen the programme's governance and oversight, the NDoH/EPI should: • Review the current governance structures with regards to the HSCC and ICC and establish the appropriate governing structure to meet the country needs ensuring that the existing government structure is strengthened instead of creating new committees; • Establish the NITAG as mandated by the NIS; and • Ensure that Terms of Reference are approved so that the defined governance structure can be formally operationalised.	**Action 15** The NDoH acknowledges the importance of strong governance and oversight structures. At present, the focus is on strengthening the TWG, which directly reports to senior NDoH leadership and is functioning as the main coordinating platform. This approach ensures alignment with existing government structures and avoids the creation of parallel committees. While the ICC remains the long-term goal, efforts are currently directed toward consolidating the TWG to serve as a foundation for broader governance reforms, including future reactivation of the ICC where appropriate. **Action 16** Agreed. WHO will provide the technical and advocacy support to NDOH to strengthen the governance mechanisms including establishing NITAG.	**Action 15** NDoH **Action 16** NDoH and WHO	**Action 15** December 2027 **Action 16** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		Action 17 The NITAG TOR has been approved in Q1 2025.	**Action 17** NDoH and WHO	**Action 17** June 2025
Governance coordination and oversight role needs to be strengthened	Recommendation 9 To strengthen Governance coordination, and oversight roles, the National Department of Health (NDoH) / Expanded Programme on Immunisation (EPI), with support from the development partners, should implement the following actions: • **Improve information flow and decision-making:** Ensure that issues discussed at the EPI Technical Working Group (TWG) chaired by Senior Official of NDoH are escalated to the Senior Executive Management Team of NDoH for decision-making till the time ICC is established. The TWG should also leverage its existing platform, to regularly monitor the implementation progress on the partners' activities. • **Standardise meeting documentation and follow-up mechanisms:** Develop and adopt a standardised format for recording meeting minutes. Establish a dashboard to track the status of the SEM, and the EPI TWG recommendations and decisions. Each recommendation should clearly identify the responsible officer, and by when the action will be completed, to ensure accountability. • **Strengthen reporting to the SEM:** Ensure that the EPI TWG prepares and submits concise summary reports to the SEM, highlighting its key conclusions and technical inputs in support of the SEM's deliberations and strategic decision-making. • **Annual review of TWG resolutions:** Conduct an annual review of TWG resolutions/ decisions, and highlight to the SEM, all instances of non-compliance	**Action 18** • At present, the EPI TWG is being strengthened to serve as the primary coordination and oversight platform. The TWG reports to and escalates key issues to the SEM, ensuring decisions are made within existing government structures. While the ICC remains a long-term goal, our current priority is to enhance the functionality of the TWG, including systematic monitoring of partner activities and ensuring effective coordination with oversight from SEM • Agreed. Standardised templates for recording meeting minutes exist. The action/decision tracker will be developed with the dashboard to track the status of the implementation to review at TWG meetings. • At this stage, the EPI TWG is being strengthened to serve as the primary coordination platform and reports directly to the NDoH SEM for decision-making. The TWG will continue to submit concise summary reports to SEM for strategic decision making. • Agreed. Annual review of the EPI TWG resolutions will be implemented. • The NDoH acknowledges the importance of strong governance and oversight structures. At present, the focus is on strengthening the TWG, which directly reports to senior NDoH leadership and is functioning as the main coordinating platform. This approach ensures alignment with existing government structures and avoids the creation of parallel committees. While the ICC remains the long-term goal, efforts are currently directed toward consolidating the TWG to serve as a foundation for broader governance reforms, including future reactivation of the ICC where appropriate. • As mentioned earlier, EPI TWG be functioning as the main coordination platform and oversight body of EPI workplan implementation and endorsement of any adjustment to the workplan.	**Action 18** NDoH	**Action 18** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	or insufficient progress, for the Committee to revisit and review. • **Enhance planning and prioritisation using a workplan tracking tool** – Develop and implement a tool to monitor the status of TWG activities, including documenting any delays or any actions brought forward from previous years. Any activities which are deprioritised should be formally endorsed by the SEM. • **Establish a dashboard to track implementation**: Create a dashboard to visualise and monitor the implementation status of immunisation activities, helping to identify any bottlenecks, so that the TWG can propose timely interventions for the EPI to facilitate and execute. • **Develop annual operational plans** – implement a formal annual operational planning process into the EPI, including scheduling partner-supported activities. These annual plans should be subsequently used to guide implementation, track achievements, and facilitate decision-making in the case of activities being delayed.	• The EPI Program is currently developing a consolidated activity plan that incorporates both NDoH and partner-supported immunisation activities. This plan will serve as a basis for tracking implementation progress, with bi-annual reviews to identify bottlenecks and inform timely decision-making.		
Grant management requirements and audit recommendations are still outstanding	Recommendation 10 To improve oversight and accountability with regard to outstanding actions and audit recommendations, the NDoH/EPI should implement the following measures: • Reassess the GMRs in light of the current country context, and where necessary revise them to ensure they remain relevant and actionable; • Create a tracking system at the EPI operational level to capture the recommendations, categorised by priority (high, medium, low). For recurring recommendations across multiple reviews, aggregate them under one action item with a single	**Action 19** The GMRs will be substituted by prioritised actions from the audit. **Action 20** Agreed. Tracking system will be developed to consolidate and track recommendations. **Action 21** Dashboard Development planned for June 2026. NDoH to assist in the monitoring of the dashboard. **Action 22** Agreed. The NDoH acknowledges the importance of strong governance and oversight structures. At present, the focus is on strengthening the TWG, which directly reports to senior NDoH	**Action 19** EPI/NDoH **Action 20** NDoH, CHAI **Action 21** NDoH, CHAI **Action 22** NDoH	**Action 19** December 2027 **Action 20** December 2027 **Action 21** December 2026 **Action 22** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	action owner, and ensure that the action addresses issues identified in all relevant reports. For example, recommendations that appear in both the programme audit report and GMR should be combined, with a unified action plan; • Develop a dashboard for governance oversight that differentiates between GMRs and assurance recommendations. Ensure these are assigned to appropriate action owners, with clearly defined timelines for implementation; and • Introduce a semi-annual process into TWG meetings, so that the latest implementation status of actions and recommendations can be reviewed by the TWG. A summary of the TWG's review should be shared with Gavi after it is endorsed by the Committee.	leadership and is functioning as the main coordinating platform. This approach ensures alignment with existing government structures and avoids the creation of parallel committees. While the ICC remains the long-term goal, efforts are currently directed toward consolidating the TWG to serve as a foundation for broader governance reforms, including future reactivation of the ICC where appropriate.		
EVM assessment recommendations not fully implemented	Recommendation 11 To enhance oversight and accountability over the status and implementation of actions or recommendations from cIP, the NDoH/EPI should: • Regularly review the implementation status of its EVM comprehensive improvement plan. Based on this review, they should re-prioritise what remaining funding is available and adjust the estimated completion timelines for any delayed activities. • Create a dashboard (or an equivalent monitoring tool) to clearly illustrate the implementation status of the continuous improvement plan. This dashboard should track progress against key activities and milestones, and be regularly reviewed in the EPI TWG to support accountability and timely decision-making.	**Action 23** The EVM implementation was overseen by the NLWG which is in place. The excel tracking sheet and progress dashboard is in place. UNICEF will continue to support NDOH NLWG to regularly monitor and report to EPI TWG regarding the implementation progress of cIP. There is monthly NLGW meeting organised one week prior to EPI TWG where the update is presented to EPI TWG. **Audit Note - While the country is expected to conduct monthly NLGW, the audit notes that these were not happening. This will be followed up as part of the follow-up of the audit recommendations.** **Action 24** The EVM implementation as overseen by the NDoH NLWG is now in place. There is an excel tracking sheet and dashboard in place. UNICEF will continue to support NDoH NLWG to regularly monitor and report to EPI TWG regarding implementation progress of cIP. Monthly NLWG meetings are organised a week prior to EPI TWG to ensure an update is presented to EPI TWG	**Action 23** NDoH and UNICEF **Action 24** NDoH	**Action 23** December 2027 **Action 24** June 2025

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
Inadequate financing impeding vaccine supply	Recommendation 12 To increase the relevance of the country's immunisation program and to achieve its defined targets and National Immunisation Strategy, the NDoH/EPI should: • Continue undertaking robust, concerted advocacy measures targeting the Department of Treasury and the Ministry of Finance, requesting for an increase in funding, which is converted into a sustained constitutional EPI budgetary allocation as well as actual release, taking into consideration both the national and sub-national levels funding needs. • Re-evaluate the proposed NHP (2021-2030) targets to reflect the funding allocation.	**Action 25** This is currently ongoing with NDoH working together with the various donors and partners. UNICEF will also support the NDoH along with GAVI, world Bank (Including its TA) for evidence based budgeting and budget narrative preparation, engagement with the Treasury for sustained financing and advocacy with the Parliamentary Committee for Children and Young People to monitor the implementation. **Action 26** The NIS review will be conducted in 2025, to review and update the NIS as commencement was only in 2023, as such targets and implementation timelines need to be updated. WHO has planned to support NDoH align with partners to review and update the existing NIS.	**Action 25** NDoH **Action 26** NDoH, WHO	**Action 25** June 2026 **Action 26** December 2025
Lack of equity in the supply of available vaccines	Recommendation 13 To ensure equity in supply and coverage, the NDoH/EPI should: • **Develop a targeted catch-up plan for low-performing provinces.** A clear, actionable catch-up plan should be developed specifically for provinces which are struggling to meet their immunisation targets. This plan should address the root causes of low coverage and include targeted interventions, including outreach, to increase immunisation rates in these areas. • **Create an vaccine distribution plan** - A comprehensive vaccine distribution plan should be designed, to ensure access across the provinces, taking into account their geographical challenges and local needs. The plan should help to ensure that underserved or hard-to-reach areas receive adequate vaccines, with an overall objective of reducing disparities in coverage.	**Action 27** WHO, UINCEF, AHISS, CHAI are conducting the deep dive exercises on the immunisation program performance by visiting the low performing provinces with high number of zero doses children (Madang, Morobe, West New Britain provinces). The joint review and action plan development was developed. It has been agreed that the review of the progress will be done on a quarterly basis. Six provinces with low performing provinces will be visited by Q3 2025 and the regular data review, analysis, and feedbacks will be conducted through onsite and online meetings with provinces on quarterly basis. With Gavi support through WHO, and AIHSS, NDOH is conducting PIRI (periodic intensification of routine immunisation) in 12 provinces in 2025. **Action 28** The vaccine distribution plan has been revised with consideration of the buffer stock and the optimised distribution schedule for provinces. A tool has been developed to review the vaccine orders and decide the approved quantities. The Immunisation Supply Chain working group (NLWG) under the EPI TWG has been in place to update the vaccine stock status at the national and provincial level, and the vaccine distribution status. The monthly NLWG meeting is in place to	**Action 27** NDoH **Action 28** NDoH, UNICEF	**Action 27** December 2027 **Action 28** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		review the stock status across all provinces, to look at the health facilities stock out report, provide feedback and take actions to mitigate and address any stock out situation. **Audit Note - The audit notes the management response, however, at the time of audit, evidence of monthly NLWG meeting was not available. This will be followed up as part of the follow-up of the recommendations of this report.**		
Support supervision arrangements need to improve	Recommendation 24 To strengthen governance and oversight, the NDoH/EPI with support from partners should: • Institutionalise the monitoring and supportive supervision guidelines which includes dedicated sections for immunisation data quality and vaccine stock management. Using these guidelines, the NDoH should conduct supportive supervisions at the PHA level, while PHAs should be responsible for conducting supportive supervision at the health facility (HF) level; • Implement robust feedback mechanisms to ensure that immunisation findings from all supervision visits are formally documented and accessible by the local EPI officers; • Introduce an action tracker system to monitor the implementation status of recommendations from previous supportive supervision visits, as well as a process to ensure that these are regularly followed-up and updated accordingly; and • Ensure that the review of action points from previous supervisory visits is included as a standing, mandatory task for all subsequent supervision visits, so as to reinforce individuals' accountability in implementing previous agreed actions.	**Action 29** NDoH supported by UNICEF developed electronic supervisory monitoring tools for health facilities, cold chain, ACSM, immunisation session that can be used by any of the partners and PHA staff. The checklist was revised in line with WHO IIP guideline with inputs from NDOH (EPI TWG), WHO , UNICEF and partners. WHO supported the conducting of an immunisation data quality assessment in 2023 by adopting tools from the WHO Immunisation Data Quality Assessment toolkit and the NDoH data quality audit tool. This can be institutionalised to regularly check immunisation data quality by the NDoH. **Action 30** All officers are trained in the use of the electronic supervisory tools and have access to enter data and view actions from previous monitoring visits. **Action 31** NDOH has data quality assessment feedbacks tracker for health facilities and the NDOH and PHA revisits the action trackers during follow up visit. In the electronic supportive supervision visit dashboard there is an action tracking for follow up and feedbacks to health facilities by NDOH and PHA. **Action 32** As stated above, the supportive supervision will be enhanced by ensuring the scheduled regular visit to health facilities is conducted by NDoH, PHA, Districts and Partners (WHO, UNICEF, CHAI, AIHSS, etc) and use of the supportive supervision guidelines and tools in place.	**Action 29** NDoH, UNICEF and WHO **Action 30** NDoH, UNICEF **Action 31** NDoH **Action 32** NDoH and all partners	**Action 29** June 2026 **Action 30** December 2025 **Action 31** December 2025 **Action 32** June 2026

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		The findings of the supervisory visits and actions will be tracked to discuss at the PHA EPI review and National level EPI review meetings for corrective actions and follow up.		
Weaknesses in the fund management model should be addressed to improve sustainability	Recommendation 15 To strengthen the AIHSS programme management structures, the NDoH/EPI in conjunction with the Fund Manager should: • Develop technical indicators for monitoring the performance of the ISPs, and monitor their performance on quarterly basis. • Improve coordination mechanisms between EPI, PHA and the ISPs. • Develop suitable supportive supervision mechanisms for monitoring of ISPs, including the follow up of their remediation of issues. • Develop a mechanism for tracking of implementation of activities. • Develop annual work plans to monitor the progress of the activities and achievements as well as to facilitate swift decision making in case of delays and to monitor the performance of the ISPs. • Have an EPI oversight over the transition of PHA from the AIHSS support with the view that the government takes more ownership and agree and establish a roles and responsibility matrix with ISPs. • Work with the AIHSS fund manager to help prepare a comprehensive plan to handover the AIHSS programme activities to the PHAs, including a corresponding transfer of the roles and responsibilities associated. • Establish an accountability framework for the Fund Manager, in discussion with Gavi, which identifies suitable targets and indicators to support further funding through the pooled fund mechanism. Consequences should be defined for non-achievement of targets to ensure that Abt remain accountable to the immunisation programme.	**Action 33** Two AIHSS2 dashboard pages have been created to monitor the timeliness of the key grant deliverables (Reports for: finances, M&E, progress, CAP and others: MOUs, M&E plans, transition plans, financial audits) and the funds spent on each of the EOPOs, ISP costs and overheads to provide better oversight of Grantee performance and how the funds are being spent. These dashboards will be included in the Quarterly AIHSS2 update report to the Senior Management Group (Gavi, MFAT, DFAT, NDoH, DNPM) who meet quarterly. Under discussion is the usefulness of an annual stocktake of ISPs or the development of more indicators. **Audit Note - The response from the fund manager is noted, however, at the time of the audit, there was no evidence of these technical indicators and these will be followed up as part of the follow-up of recommendations for this report.** **Action 34** NDoH are included in the biannual AIHSS2 PHA/ISP meeting updates, the biannual learning and reflection workshops. A SharePoint folder for the Senior Management Group has been established for the AIHSS2 SMG quarterly meeting documents however additional documents (Grantee workplans, progress reports etc.) can be provided for ease of access. **Audit Note - The response from the fund manager is noted, however, at the time of the audit, there was no evidence of these technical indicators and these will be followed up as part of the follow-up of recommendations for this report.** **Action 35** Activity is ongoing: Grant agreements outline actions that can be taken if Grantees are not compliant. Senior Grant Managers monitor and approve delays and save emails and other correspondence in the	**Action 33** NDoH, AIHSS2 **Action 34** NDoH, AIHSS2 **Action 35** NDoH, AIHSS2	**Action 33** December 2025 **Action 34** December 2025 **Action 35** December 2025

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		appropriate folders. If the Grantee needs remediation a Performance Improvement Plan will be developed and monitored. The AIHSS2 is exploring the formulation of an Accountability Framework with KPIs to track the individual performance of the ISPs and PHAs. **Audit Note - The response from the fund manager is noted, however, at the time of the audit, there was no evidence of the mechanisms for monitoring of ISPs and these will be followed up as part of the follow-up of recommendations for this report.** **Action 36** Activity is ongoing: Implementation activities from the Grantee workplans are tracked monthly by the SGMs during the monthly Grantee meetings. A summary of the activities progress will be provided in the 6 month and annual progress reports under the grant management heading. **Audit Note - The response from the fund manager is noted, however, at the time of the audit, there was no evidence of these monthly tracking and these will be followed up as part of the follow-up of recommendations for this report.** **Action 37** The roles and responsibilities (report writing, finances, M&E, CAP, planning) matrix will be developed for ISPs to handover to PHAs to become direct recipients to AIHSS2 and then from AIHSS2 to NDoH. Agreed. AIHSS2 provide funding and technical support to the ISPs and PHAs. The AIHSS2 program activities are mostly related to grant management of donor funds and PFM support. **Action 38** The current accountability framework encompasses all relevant partners. The accountability framework was reviewed and updated with the latest version dated January 2025.	**Action 36** NDoH, AIHSS2 **Action 37** NDoH, AIHSS2 **Action 38** NDoH, AIHSS2	**Action 36** December 2027 **Action 37** December 2027 **Action 38** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		Audit Note - The current accountability framework is applicable for EPI covering all the partners, however, there is no specific framework specifically for Abt Associates. The performance of the Abt Associates will also be monitored against the overall accountability framework to the extent applicable. These will be followed up as part of the follow-up of recommendations for this report.		
Inadequate tracking and monitoring of the performance of partners' targeted country assistance (TCA) and partner led activities	Recommendation 16 The coordination and monitoring of PEF TCA performance should be strengthened, consistent with Gavi's TCA guiding principles (e.g. country ownership, focused on skills transfer, cost effective and with accountability). NDoH/EPI's management and the TCA partners should regularly meet, discuss and share information on the implementation and outcome of TCA activities, by: • Assigning that the EPI TWG meetings, regularly review TCA performance, and assess progress against the approved one TA workplan; • Mandating that the EPI TWG reviews the implementation status and performance of TCA activities, every three months; • Requiring the TCA partners to submit their reports to the EPI TWG on their implementation of TCA priorities. The EPI TWG and partners should jointly review and validate progress on the TCA activities against the PEF TCA milestones. This is in line with the TCA guiding principles which required that the NDoH should have complete insight over reporting and be able to review their partner's performance on a regular basis; • Ensuring that there is no conflict of interest while assigning roles for seconded staff from implementing partners. • Reviewing and validating the completion of each grant activities undertaken by the implementing partners, based on the annual work plan approved by	**Action 39** This is ongoing. Partners in collaboration with NDOH-EPI are currently developing TCA performance review mechanisms. NDOH-EPI will be coordinating with TCA partners to review the TCA performance updates through EPI TWG meetings. Currently, the TCA related activities are aligned with NDOH-EPI workplan and priorities as well as FPP implementation. The regular update on such activities happen at EPI TWG. It will be ensured that there are no conflict of interest for the seconded staff. The standing agenda has been updated to include review and validation of each grant activities completed by the implementing partner based on the annual work plan.	**Action 39** EPI/WHO/UNICEF/CHAI/AIHSS	**Action 39** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	the NDoH. This should be made a standing agenda item within the EPI TWG.			
	Recommendation 17 The NDoH/EPI should clearly delineate, define and communicate to the TCA partners what is its role in a partner-led framework. Subsequently, the Government should serve to enhance ownership of the programme, and its strategy for building greater continuity in national systems, in context of this fragile country.	**Action 40** The role of partners are already defined and the review mechanism is being developed to ensure overall accountability of NDoH.	**Action 40** NDoH	**Action 40** December 2027
Gaps in forecasting and quantifying annual vaccine needs	Recommendation 18 To improve the vaccine forecasting process, NDoH/EPI in collaboration with UNICEF should: • Work with the Ministry of Finance to review and optimise the timing of vaccine co-financing payments. • Review and adjust assumptions and planning calculations (where applicable), to ensure that it procures and holds adequate buffer stocks. • Furthermore, the EPI should retroactively review the accuracy of its annual forecast to reevaluate its process. In future, its forecast projections should be more closely aligned to the actual demand. The accuracy of prior assumptions should be evaluated and recalibrated, if necessary. • Conduct periodic country stock level reviews to ensure that the sub-national stock data is accurate and complete, so that it can be taken into consideration in the annual forecast process. • Design and develop SOPs to enhance EPI capacity and forecasting process ownership.	**Action 41** This NIS is being reviewed and should take into consideration that UNICEF will advocate through Parliamentary Committee for Children and Young People for increased and sustained financing for the vaccines. Through World Bank TA support, NDOH and UNICEF will work closely with Department of Treasury for review of the budget submission, approval and timely release of the funds on procurement of the vaccines including future co-financing requirements. **Action 42** This is done already as part of the SOPs. The national level forecast included 6 months buffer stock to avoid stock out due to the fund transfer delay. These will be reviewed in line with the SOPs to ensure regular review of the assumptions in the case of changes in circumstance or vaccine shortages noted. **Action 43** This is done already as part of the SOPs. The national level forecast included 6 months buffer stock to avoid stock out due to the fund transfer delay. EPI to review annually on the assumptions and forecasts. UNICEF will continue to strengthen the forecasting exercise, regular review of the forecasted projections, assumptions and utilisation of the vaccines. **Action 44** This is an ongoing activity and it will be enhanced through regular NLWG meeting to review the stock level and track utilisation against	**Action 41** NDoH/UNCEF/WB **Action 42** NDoH/UNICEF **Action 43** NDoH/UNICEF **Action 44** NDoH/UNICEF	**Action 41** December 2027 **Action 42** June 2025 **Action 43** December 2027 **Action 44** June 2025

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		the delivered vaccine and vaccinated number of children as well as vaccine stock level. **Action 45** There is a SOPs in place which has rollout to all provinces in 2023 and 2024. The continuous support and on-the-job training will be integrated with the supportive supervision and the upcoming IIP trainings.	**Action 45** NDoH/UNICEF	**Action 45** December 2025
Vaccine storage and distribution processes need to be strengthened to improve traceability	Recommendation 19 To improve vaccine storage and distribution practices, the NDoH/EPI in collaboration with UNICEF should: • Provide annual training and mentoring to the logistics staff – including at the subnational level on: (i) how to operate the logistics management information system; and (ii) apply the vaccine supply chain management SOPs. • Develop and implement suitable archiving and retention periods for all stock records across the supply chain.	**Action 46** • The Immunisation Supply Chain (ISC) SOP has been trained to all PHA vaccines in 2024 and 2025. The immunisation supply chain SOP was also integrated into the national IIP trainings. The ISC SOP tools and job aids were already designed. The printing and distribution of the job aids will be done to reinforce the training quality and capacity of the health workers. The mSupply (Logistics information management system) is currently functional at Provincial and District level. The open mSupply will be deployed to up to level 2 health facilities (selected based on the feasibility and staff availability) in 15 provinces to enhance the LMIS and improve stock visibility and finally the availability. • The NDoH together with UNICEF will explore better ways to manage records by exploring the capabilities of mSupply and the data storage and retention.	**Action 46** NDoH, UNICEF	**Action 46** December 2025
	Recommendation 20 The NDoH/EPI should regularly review, manage and update its contracts with its 3PL contractors. The contractual agreements should include suitable KPIs as well as legal and insurance clauses, to ensure that: • ownership and liability with regards to supplies while under 3PL custody and distribution, is clarified and enhanced. • historic data points on determinant indicators like On-Time-In Full (OTIF), Failed Handovers etc are provided by 3PL and monitored.	**Action 47** • Agree with auditor observation. Current contractual terms to be revisited to include suitable KPIs and clarify ownership and liability. • Agreed with auditor observation. Current contractual terms to be revisited to include suitable KPIs and clarify ownership and liability. These will be monitored in line with the updated SLAs.	**Action 47** NDoH	**Action 47** December 2025
Inefficient inventory management at	Recommendation 21	**Action 48**	**Action 48** NDoH, UNICEF	**Action 48** December 2025

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
national and sub-national levels	To improve vaccine management at all levels, NDoH/EPI in collaboration with UNICEF, should: • Develop and implement buffer and minimum stock level for all vaccine supply chain management related stock records across the different supply chain levels. • Put in place a process to record vaccine incidents. For example by using the vaccine control books/registers to record all vaccine expirations or wastage events, including details on the quantity, type and when it occurred. • Determine human resource needs given the frequent changes within the immunisation program to ensure sustainability and continuity. • Expedite the waste management assessment given it is a planned EVM cIP action, and subsequently develop an SOP and waste management plans. • Enhance accountability of the provincial level through policy guidelines highlighting the roles and responsibilities of the PHAs.	This is done already as part of the SOPs. The national level forecast included 6 months buffer stock to avoid stock out due to the fund transfer delay. Timely fund transfer from National Budget to NDoH as well as to fast-track the fund transfer process within NDoH and the timely fund transfer from Bank of PNG is critical to ensure availability of the supplies to implement the buffer policies. UNICEF will advocate through Parliamentary Committee for Children and Young People for increased and sustained financing for the vaccines. **Action 49** The revised ISC tools includes the process and placeholder to record the vaccine incidents. The ISC tools will be oriented to all PHAs and Health Facilities to improve vaccine logistics information management practices. **Action 50** The organisational structure has been established and endorsed, and its implementation is currently underway within the Ministry. This rollout will be a progressive and ongoing process and will be a phased implementation in 2025 and 2026. **Action 51** Waste management policy, strategic plan and training guideline development is in progress. The consultancy has been announced and the work will be completed by the end of 2025. **Action 52** The tools for vaccine stock monitoring exist (eNHIS, mSupply). The PHAs are provided with the access to eNHIS. The provincial and health facilities vaccine stock out report will be generated and shared with provinces for taking the corrective actions.	**Action 49** NDoH, UNICEF **Action 50** NDoH **Action 51** NDoH, UNICEF **Action 52** NDoH, UNICEF	**Action 49** December 2025 **Action 50** June 2026 **Action 51** December 2025 **Action 52** December 2025
	Recommendation 22 The NDoH/EPI should strengthen its supportive supervision in relation to stock management. Such supportive visits, should be documented including feedback, and there should be a follow up upon the	**Action 53** • The supportive supervision checklist has been developed and rolled out to all provinces. The checklist covers " stock out" and wastage monitoring. The dashboard is designed to capture the findings including action points. The recommended checkpoint " regular physical stock verifications are conducted and	**Action 53** NDoH, UNICEF	**Action 53** December 2025

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	agreed actions. Supportive supervision visits should confirm for example that: • Regular physical stock verifications are conducted and documented in line with NDoH guidelines. • Ensure adequate supervision over the sub-national data collection and management including follow-ups of actions, to address data management gaps arising from supervision visits.	documented in line with NDOH guideline" is in place in the checklist. • The EPI supervision checklist includes the detailed section on the " Data Collection, Reporting , Monitoring & Use" with adequate checkpoint and procedures on use of the tools, completeness of the data, evidence of submission to higher level using the NDoH guidelines.		
Cold chain management practices need strengthening	Recommendation 23 To strengthen cold chain management, NDoH/EPI should: • Reinforce overall cold chain management ownership at national level (Health Facilities Service Branch (HFSB)) and subnational (PHA). • Establish and implement cold chain equipment preventive and corrective maintenance plans, schedules and logs at all levels of the supply chain. • Schedule and conduct temperature mapping across all supply chain levels. • Regularly update its cold chain equipment inventory list to maintain an accurate reflection of the country's CCE status. • Develop and disseminate job aids on cold chain management to all vaccine handing points. • The NDoH should support subnational vaccine handling points to design vaccine contingency plans tailor made to suit their context and train staff on how to implement them.	**Action 54** Agreed. This is a planned activity. The efforts are ongoing to establish a cold chain training centre at national level and to conduct regular training on the cold chain repair and maintenance activities by PHA technician. The TOT master training will be conducted in collaboration with National Vaccine and Cold Chain Management Centre of India. **Action 55** The cold chain equipment inventory is now digitised and rollout to all PHAs. The CCE inventory is updated and there is an cold chain equipment ticketing system to inform to PHA and NDoH (HFSB) about the cold chain issues and to log all the maintenance activities. The capacity of cold chain technicians and biomedical engineers will be reinforced through the cold chain training centre to be established in 2026 with Gavi's support. The costed cold chain maintenance plan will be developed and NDoH /UNICEF will advocate to the PHAs to be included in the annual operational plan (AOP). The HFSB will be supported to lead and coordinate the cold chain management system across all PHAs. **Action 56** The temperature mapping and monitoring study is planned for Q3 2025. **Action 57** This is ongoing and 6 months cold chain inventory update system is in place and all CCE are digitised. **Action 58**	**Action 54** NDoH, UNICEF **Action 55** NDoH//PHA/UNICEF **Action 56** NDoH, UNICEF **Action 57** NDoH, UNICEF **Action 58** NDoH, UNICEF	**Action 54** December 2027 **Action 55** December 2027 **Action 56** December 2025 **Action 57** December 2027 **Action 58** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		Planned activities. Hand aid developed and under field testing with printing and distribution planned for Q4 of 2025. **Action 59** ISC SOP was rolled out and training conducted for all cold chain persons including the contingency plan. The contingency will be updated for all provinces by working with the provinces. Through supportive supervision visits, the contingency plan will be reviewed and reinforced in collaboration with the PHAs and Health Facilities.	**Action 59** NDoH, UNICEF	**Action 59** December 2027
mSupply design and implementation gaps	Recommendation 24 To address the design challenges identified in mSupply, NDoH/EPI - in liaison with the respective partners - should: • Conduct an in-depth review of mSupply to identify any gaps in its security and functionality, data quality and completeness issues, with a view of developing a plan to address these bottlenecks, in line with Gavi's TSS. • Adopt a consolidated, integrated approach in identifying and supporting facilities benefiting from the roll out of mSupply. This includes determining how to collaborate and cost-share with other donor funded mSupply interventions, on components such as trainings, hardware maintenance and replacement, rollout of the system and end user support to facilities • Develop and operationalise a plan to roll out mSupply to the remaining health facilities in PNG by securing national funds. • Update and distribute the programme's SOPs to align these with the latest version of mSupply • Improve the mSupply monitoring dashboard's monitoring and reporting, by incorporating suitable immunisation indicators into it.	**Action 60** • A detailed review of mSupply's security and data quality framework is embedded within the TSS compliance stream of the Open mSupply transition. This includes a structured UAT (User Acceptability Testing) and EQA (External Quality Assurance) training for MSU and PHA teams to systematically test the system's security, performance, and adherence to global eLMIS and TSS standards. In parallel, comprehensive data validation rules are being embedded across modules to detect anomalies, ensure consistency, and flag quality issues early. Continuous learning loops, audits and stakeholder-driven enhancements will ensure system robustness. UNFPA is conducting the assessment of mSupply in PNG in line with the recommended aspect, UNICEF will coordinate with UNFPA to receive the analysis and results and incorporate in the review process as mentioned above. • The rollout of Open mSupply embraces a unified facility-level implementation model known as the 'Main Store' configuration. This approach reduces fragmentation across programs (EPI, TB, HIV, etc.) by housing all program stocks under one digital inventory system per across facility. UNICEF and NDoH are leveraging the MSU under MSPDD to drive donor harmonisation across training, deployments, and infrastructure, minimising duplication of efforts. Upcoming deployments include shared use of UNICEF-procured tablets and SOPs co-developed across partner programs to foster cost-sharing and sustainability. • The MOVEX 3 (Current contract) roadmap targets 480 health sites, representing a blend of migration from mSupply mobile and	**Action 60** NDoH, UNICEF	**Action 60** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	• Implement and retain an audit trail of all user's actions. • Assess the system's operational and maintenance costs, with a view of the feasibility of continuing to maintain it, in consideration of the significant maintenance and licensing costs. Consider reviewing what other eLMIS options exist, with a view to exploring whether the NDoH should consider transitioning to a more cost-effective and rationalised system.	fresh deployments. The scale-up is planned in batches based on provincial readiness, device availability, and site assessments. Funding is being mobilised from national government allocations and donor support from UNICEF, Gavi, etc. Provincial engagement through readiness assessments and capacity building ensures local buy-in and sustainability of installations. A feedback mechanism through the MSU informs each phase, promoting adaptive management and equity. • The current mSupply SOPs are outdated and misaligned with the upgraded Open mSupply interface. TMF, under its institutional contract with UNICEF, is developing updated SOPs that reflect real-time dashboards, new user roles, audit trail functionalities, and mobile device workflows. These SOPs are integrated into both face-to-face and online training modules and will be published in PDF and SCORM formats to ensure accessibility and continuous reference during deployment and use. An online Wiki is also under development which will be updated each time there is a new release of Open mSupply. • The new Open mSupply dashboard is designed with layered access: senior management receives summaries and forecasts; middle management views operational KPIs and trends; and frontline staff access site-specific actions. Immunisation-specific metrics such as stockouts, expired stock, wastage, on-time deliveries, and CCE performance are visualised. Filters, drill-down maps, automated reports, and role-based dashboards enable granular monitoring and faster action. Dashboard development aligns with the MOVEX 3 concept and dashboard design guide. • Open mSupply introduces an audit trail feature to ensure every transaction, data entry, and user action is logged. This function supports ISO/IEC 27002 compliance, reinforces data security protocols, and enhances system accountability. Logs are time stamped and role-attributed, enabling efficient troubleshooting, audit readiness, and retrospective verification of activity. Regular security patching and access reviews are included in the MSU and TMF support cycle. • Open mSupply significantly reduces licensing dependency by leveraging open-source architecture. Compared to the		

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		commercial mSupply system, the new model reduces costs by more than 60% per device over three years. The system also supports modular deployments and customisations without additional licensing fees. The government is planning on conducting comparative assessments on long-term sustainability and interoperability with eNHIS and other HIS platforms, further informing decisions on rationalised system models across the health sector.		
eNHIS' design needs to be improved	Recommendation 25 To address the challenges identified in eNHIS' data management and reporting – NDoH/EPI, in liaison with the respective vendors, should: • Conduct an in-depth review of eNHIS to identify gaps in the system's functionality, data quality and completeness, and subsequently develop a plan to address these issues consistent with Gavi targeted software standards. • Update the eNHIS SOPs so that these are aligned with the current eNHIS system, and then disseminate these to improve the end user understanding and guidance; • Engage with the technology partners responsible, to accelerate the execution of change requests / and missing eNHIS data points i.e., the new reporting forms as per national health plan 2021-2030 and IPV2.	**Action 61** • With the extension of Remote Sensing Centre Ltd.'s contract to manage the eNHIS through 2027, it is essential to begin transition planning as early as possible to ensure that the NDoH is fully prepared to take over responsibility by 1 January 2028. • The government supports the recommendation for a comprehensive review of the eNHIS, recognising its importance - particularly in informing the transition process. However, decisions regarding the scope and methodology of this review should be made by the proposed National Health Information System Management Sub-Committee. This Sub-Committee was requested by the Secretary for Health following the renewal of the management contract. • The Sub-Committee will advise the eHealth Steering Committee, the Secretary for Health, and the National Health Board on matters relating to the maintenance and further development of the National Health Information System. Its role is to ensure that the System aligns with the Department's responsibilities under the National Health Administration Act of 1997 and meets the health information needs of all stakeholders. The Sub-Committee has not yet held its first meeting. • It is proposed that the Sub-Committee consider the recommendation to conduct an in-depth review and, if in agreement, advise the Secretary for Health accordingly, including a suggested methodology. Should the review be approved, the Government will require support to develop terms of reference (TORs), identify suitable experts, and ensure timely implementation of the review.	**Action 61** NDoH	**Action 61** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		• Additionally, the Government seeks clarification on what is meant by "GAVI-targeted software standards." Any review of the eNHIS will be aligned with the National Digital Health Strategy 2025–2030, the Monitoring and Evaluation Strategic Plan for the National Health Plan 2021–2030, and existing guidelines governing routine health information systems in Papua New Guinea. • The Remote Sensing Centre Ltd currently has documentation on metadata for indicators in the eNHIS, as well as documentation on the backend structure. There is also a user guide on how to use the eNHIS. The NDoH also published Standard Operating Procedures for Management of Data from Routine Information Systems in 2023, and orientations have been provided to PHIOs and Medical Records Officers. Trainings are on-going for district health managers and health facility OICs. Scaling to all provinces will take some time. • The Government engages with the eNHIS vendor to process and implement change requests. However, as the eNHIS is a custom-built system, even minor updates typically require modifications to the underlying code, which incur associated costs. Funding to support these changes is not always readily available, resulting in delays in implementation. Furthermore, certain updates, particularly those involving coding changes and configurations for the tablets, require technical inputs and with longer associated timelines. • The Government fully acknowledges the urgency of implementing the changes required for the new forms in the eNHIS. A meeting of the Sub-Committee will be convened shortly to explore funding options and determine how best to source funds and proceed with implementing these changes as soon as possible.		
Sustainability challenges impacting the continuity and	Recommendation 26 To ensure the financial sustainability of mSupply and eNHIS, the NDoH/EPI with support of partners should:	**Action 62** The EPI program is leading the transitioning of open mSupply from the legacy and mobile mSupply. The deployment will be done using the national and provincial teams (MSPDB, ICT, EPI managers, PCCLO, Pharmacy Officers and Family Health Services Coordinator). The	**Action 62** NDoH, UNICEF	**Action 62** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
operation of systems	• Undertake comprehensive cost analyses for the fixed and recurring operational and maintenance expenses related to maintaining both mSupply and eNHIS. These analyses should include each of the national, provincial, and district-level costs, for effective planning and resource allocation. • Use these comprehensive cost analyses as a resource planning tool to mobilise funding, so as to ensure that the resources to sustain the operation for mSupply and eNHIS are secured, budgeted and allocated for and fully financed.	training of the provincial team, and deployment of mSupply to health facilities through the trained PHAs team is a new approach in open mSupply. This approach will be documented with cost analysis to inform the transitioning of mSupply to NDoH with full ownership and sustained allocation of the resources.		
	Recommendation 27 To ensure that NDoH progressively assumes full responsibility for mSupply and eNHIS, and that suitable national staff acquire the necessary skills from third party providers, the following process should be undertaken: • Strengthen the ICT TWG (eHealth TWG) oversight functions of the by including the implementation partners as members of TWG enhancing their responsibility and accountability. • The identification and training of suitable national ICT personnel within NDoH, to manage and support mSupply, eNHIS or equivalent systems, reducing reliance on external vendors. • Developing a robust governance framework with clearly defined NdoH roles and responsibilities for overseeing and managing these systems: including mechanisms to monitor and ensure the accountability of any third-party vendors' activities. • Developing a plan to migrate these systems' backups over to data servers in PNG to ensure compliance with data security, accessibility, and national regulations. • Obtain a clear understanding of the existing licensing and legal terms and agreements for mSupply and eNHIS. Where not defined, ensure that the necessary	**Action 63** WHO, UNICEF, FHI 360, ADB, HSSDP are supporting the eHealth TWG. The membership was revised in May 2025 and the regular meetings are ongoing. In addition, the eLMIS TWG is being revitalised with the support of UNICEF and partners. The upcoming WB support (2025-2027) includes the appointment of 4 TAs embedded within NDOH, MSPDB and ICT to oversee and lead the mSupply deployments to provinces. The TWG will ensure proper governance and coordination of the eLMIS to strengthen the Medical Supply Chain System in PNG. and Provide strategic direction and oversight for the implementation and utilisation of the eLMIS system **Action 64** The National mSupply Support unit including NDOH mSupply team and ICT persons will be trained on the mSupply superuser training. The National TOT Master training on mSupply and the NDOH and PHA mSupply team will lead the deployment of the mSupply to the health facilities. **Action 65** Governance mechanisms are being established to oversee the functioning of the eNHIS and mSupply. In addition, the eHTWG is in place, functional and meeting regularly. From quarter 3 2025, vendors of scaled digital systems, will be required to provide an update to the eHTWG on a quarterly basis on any key issues and changes to the	**Action 63** NDoH and all partners **Action 64** NDoH, UNICEF **Action 65** NDoH	**Action 63** December 2027 **Action 64** December 2027 **Action 65** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	transferable rights for the software are explicitly included in any legal agreement, to ensure that the necessary rights can be carried over during the migration. • Develop an implementation plan for the digital health strategy.	systems for national oversight. There will be enhanced accountability through these governance mechanisms. **Action 66** The EPI program is leading the transitioning of open mSupply from the legacy and mobile mSupply. The deployment will be done using the national and provincial teams (MSPDB, ICT, EPI managers, PCCLO, Pharmacy Officers and Family Health Services Coordinator). The training of the provincial team, and deployment of mSupply to health facilities through the trained PHAs team is a new approach in open mSupply. This approach will be documented with cost analysis to inform the transitioning of mSupply to NDoH with full ownership and sustained allocation of the resources. **Action 67** mSupply will be migrated to open mSupply especially for the EPI under the current FPP support. The features include 1) Transition to a full open-source solution (no license fees), 2) Redesigned with improved navigation and features for a simpler, more modern solution. 3). Migrating all mSupply tools into one solution. The NDoH and PHA will be supported to manage the mSupply independently so that the maintenance of the system will be sustained through NDoH ownership and capability after the transition. **Action 68** The digital health strategy was launched on 10th June 2025. The digital health strategy entailed the costed implementation plan with M&E framework. WHO, UNICEF and partners are supporting the priority implementation of the strategy such as digital literacy, health facility master listing, and interoperability, etc. The FPP support will enable WHO and UNICEF to support NDoH implement some of the key priorities and the continued advocacy to NDOH and donors for implementation is ongoing.	**Action 66** NDoH, UNICEF **Action 67** NDoH, UNICEF **Action 68** NDoH and partners	**Action 66** December 2027 **Action 67** December 2027 **Action 68** December 2026
	Recommendation 28 To improve mSupply and eNHIS' data quality, help eliminate data redundancy, and improve data consistency	**Action 69** • Interoperability is a core pillar of the approved National Digital Health Strategy 2025–2030. The Strategy outlines foundational actions, including the development of data standards, key	**Action 69** NDoH and partners	**Action 69** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	and visibility, NDoH/EPI - with support from partners - should: • Formulate a tailored roadmap focused on interfacing or integrating mSupply and eNHIS, including standardised definitions of data formats, a change management strategy, and suitable mechanisms for mapping across the respective data sources. • Conduct a systems maturity assessment to evaluate the readiness to interface or integrate both systems and address any gaps.	registries, and a Health Information Exchange to support integration across systems. Work led by WHO and UNICEF, under the eHTWG's oversight, is already underway to finalise a Master Health Facility List, which will underpin a national Health Facility Register and support interoperability. • While the Government supports the recommendation to integrate mSupply and eNHIS, it must be approached in a phased manner. Establishing a robust interoperability framework will take time and must align with national priorities and ongoing foundational work. • The Government, with support from WHO, conducted a national digital health maturity assessment in 2023, covering 14 provinces. The findings directly informed the development of the National Digital Health Strategy 2025–2030, which includes a clear roadmap toward achieving interoperability. As such, a separate readiness assessment is not considered necessary at this stage. A follow-up maturity assessment is planned closer to 2030 to evaluate progress against the Strategy.		
Challenges in estimating the immunisation target population	Recommendation 29 To ensure the availability of accurate and reliable immunisation data for decision making, NDoH/EPI management should with the support from the partners: • conduct a comprehensive analysis of the data derived from the census currently ongoing in 2024, to rebase and realign the immunisation coverage targets and NDoH activities. • based on the updated census, determine whether a survey or other processes are required to establish more precise immunisation coverage figures and to better target zero dose children. • work with relevant partners to review data using sample studies, instead of desk-based reviews, to establish a more accurate picture of the country's progress.	**Action 70** Agreed. WHO, UNICEF will support NDOH to review and align the immunisation coverage targets. WHO will support NDoH to review and revise NIS.	**Action 70** NDoH and partners	**Action 70** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	• develop a policy or guidelines, outlining NDoH's methods for computing, estimating, and revising coverage data, to allow for necessary adjustments and enhance data accuracy.			
Data quality assurance needs to be improved	Recommendation 30 To improve the availability, quality and use of data, the NDoH's Performance, Monitoring, and Research Branch should design and establish suitable data quality improvement plans, based on the DQA's findings, including prioritisation of what actions need to be implemented to improve data quality. These plans should be costed, resourced and financed appropriately.	**Action 71** The NDoH PMRB has been conducting annual data quality checks and has also developed a data quality audit guideline and tool. NDoH needs to continue institutionalising this activity within PHAs, with appropriate budget allocation.	**Action 71** NDOH PMRB and WHO	**Action 71** December 2027
	Recommendation 31 To improve the availability, quality and use of data, NDoH/EPI management should: • Ensure that all primary data collection tools are completed correctly and that their data correlate or is consistent across the various data sources. • Introduce standardised tools for daily reporting at the outreach centres to the health facilities. • Undertake training for field staff on the documentation required to be maintained for reporting immunisation data and develop guidelines for the maintenance of these records. • Undertake regular support supervision to monitor adherence to support supervision guidelines.	**Action 72** • Agreed. The NDoH PMRB needs to roll out the revised and endorsed NHIS tools. • Currently, outreach and mobile vaccination data are submitted under each health facility conducting the activity. The eNHIS only captures data on planned and conducted outreach sessions. If the recommendation is to disaggregate the data by individual outreach session, the current reporting forms are not designed to support this, and there has been no recent revision scheduled in the eNHIS. • The NDOH Data Quality Audit guidelines and Standard Operating Procedures for the Management of Data from Routine Health Information Systems already exist. Trainings are ongoing on the documentation required as per the SOPs • NDoH supported by UNICEF developed electronic supervisory monitoring tools for health facilities, cold chain, ACSM, immunisation session that can be used by any of the partners and PHA staff. The checklist was revised in line with WHO IIP guideline with inputs from NDOH (EPI TWG), WHO, UNICEF and partners. • WHO supported the conducting of an immunisation data quality assessment in 2023 by adopting tools from the WHO	**Action 72** NDoH PMRB and WHO	**Action 72** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		Immunisation Data Quality Assessment toolkit and the NDoH data quality audit tool. This can be institutionalised to regularly check immunisation data quality by the NDoH. **Audit Note - The audit notes the management response and will follow up as part of the follow up of the recommendations in this report.**		

PROGRAMME AUDIT REPORT

Independent State of Papua New Guinea
September 2025

Gavi
The Vaccine Alliance

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1. Executive Summary

1.1 Overall audit opinion

Audit opinion:

The audit team assessed the National Department of Health's management of Gavi support during the period 1 January 2019 to 31 December 2023 as "ineffective" which means, **"Multiple significant and material issues were 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."

Through our audit procedures, we identified high risk issues relating to governance, oversight and country's readiness for transition; programme management; vaccine management; supply chain and data management systems; and immunisation data management.

To address the risks associated with these issues, the audit team raised 31 recommendations, of which 24 (77%) 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 21 issues (14 high risk and 7 medium risk) relating to the use and management of Gavi support.

Section 3 of this report provides details of the Independent State of Papua New Guinea's (PNG) fragile context and specific challenges in delivering its immunisation programme.

At the time of the audit in October 2024, Gavi's support was channelled through both partners and the pooled fund mechanism, with the Expanded Programme on Immunisation (EPI) significantly relying upon the partners to lead and perform many of the activities. However, the audit team noted that the Government's role in overseeing such partner-led implementation was not sufficiently defined.

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

Governance, oversight and country's readiness for transition

The National Immunisation Strategy (NIS) 2021-2025 articulates how to make PNG's immunisation programme sustainable. However, progress in implementing the strategy has been slow due to a lack of leadership, hindering the programme's long-term success. While an accountability framework for the EPI was created, there have been significant delays in meeting the framework's goals.

Between 2019 and 2023, each year the Government allocated less than 1% of its health budget to the EPI. As a result, the Government was unable to fund its vaccine purchases, undermining the overall level of vaccinations which the programme could achieve.

Currently, there is no clear plan for mobilising the necessary public funds for immunisation, even though the NIS highlights that a 35% programme funding gap will remain until at least 2030. Moreover, the NIS does not include all of the programme's costs and does not provide a suitable plan for how to bridge this gap. In addition, implementation of the NIS is delayed, and its timeline needs to be revised.

Coordination between the National Department of Health (NDoH) and the Provincial Health Authorities (PHAs) is unclear, and there is no structured plan for how they should work together. The deployment of Immunisation Service Providers (ISPs) is helping in some provinces, but there is little coordination between the government (NDoH/PHAs), and these ISPs, and their respective roles were not clearly defined.

The principal governance body, the Interagency Coordination Committee (ICC), was not effective in overseeing the immunisation programme. The terms of reference of the Health Sector Coordination Committee (HSCC) which oversees the entire health sector, were drafted in 2018 but have not been approved, and there is no evidence that this Committee met during the past five years (2019-2023). Similarly, the ICC did not meet as required, and many of its key tasks – such as tracking progress and providing oversight on programmatic activities – were not properly carried out. An EPI Technical Working Group (TWG), established in December 2022, supports the ICC but this TWG needs further strengthening. Although the NIS signalled that a National Immunisation Technical Advisory Group (NITAG) is needed, as of October 2024, no such group has been established.

The gaps in governance and oversight, including a lack of leadership and insufficient funding, present significant challenges to the programme's sustainability and success.

Programme management

The National Health Plan (NHP) includes achieving a target of 80% Penta 3 coverage by 2025, although current vaccine shortages and insufficient supplies (only 60% of needs were met) represent a major obstacle. The EPI faces considerable staffing challenges including the lack of permanent positions, resulting in it significantly relying on partners, including their financing several posts at the National Vaccine Store (NVS). There was no transition plan for how the Government might integrate such positions into its ranks, in the long term.

Since 2019, the Accelerated Immunisation and Health System Strengthening Programme (AIHSS) has financed several Immunisation Service Providers (ISPs) in support of the programme. However, the ISPs' work is not

aligned with an integrated health approach, and there were no measurable indicators to monitor their performance. Several tasks allocated to the ISPs and Abt Associates Pty Ltd (AIHSS fund manager, hereinafter "Abt") were not completed, and the 80% immunisation coverage target has not been met. The AIHSS 2 programme is set to close in 2027, but no transition plan has been developed yet. A different fund manager was assigned to oversee the CDS funds during the Covid19 pandemic.

Both the NDoH and its EPI team had limited oversight over the AIHSS and CDS funds and what resulting partner activities they were used to finance. The monitoring of all partner-led activities was inadequate, and funds allocated to the ISPs were not tracked.

These weaknesses underscore the need for: stronger oversight arrangements, clarified roles for the NDoH, and improved cross-partner coordination, so as to help attain sustainability in the programme. The audit team recommends that NDoH becomes pro-active in coordinating and monitoring partner activities, including hosting regular programmatic meetings. Unless these challenges are addressed, the programme's accomplishments could be placed at risk, particularly after Gavi's support ends, currently scheduled for 2027 subject to any changes under the new ELTRACO policy approved by Gavi board in December 2024.

Vaccine management

The audit team found significant issues with vaccine records, including inaccurate and missing stock records at both national and sub-national levels. The team also identified discrepancies between the existing records and our own stock counts, noting that regular physical stock verifications were not done.

Vaccine expirations regularly occurred, but no records of these were maintained, making it difficult to determine the extent of losses. Frequent stockouts, particularly of Pneumococcal Conjugate Vaccine (PCV) and Inactivated Polio Virus happened, sometimes for several weeks, and insufficient vaccine buffers including for BCG, BOPV, and PCV were maintained at the NVS. Additionally, there was insufficient dry storage capacity at both the national level and several sub-national stores.

There were deficiencies in the integrity of the cold chain, due to faulty equipment, lack of maintenance plans, and improper temperature monitoring. The cold chain systems also lacked contingency and emergency plans, and most of the Effective Vaccine Management (EVM) recommendations from 2022 were not implemented.

These gaps undermined the visibility, traceability, and accountability over vaccines and equipment, increasing the risk of stockouts and compromising the effectiveness and safety of operations.

Supply chain and data management systems

In 2013, the NDoH implemented mSupply, an electronic Logistics Management Information System (eLMIS), deploying it to both the NVS as well as to a limited number of health facilities. The audit team noted that this system included significant gaps in its design, such as its inability to calculate KPIs, the absence of historical trends for data analytics, and the lack of a module covering cold chain equipment. In addition, the system does not include other key features, such as user audit logs and updated operating manuals.

The NDoH remains significantly dependent on third party contractors to manage and update its systems due to staffing shortages, potentially impacting the continuity of the programme. Furthermore, national data storage for both mSupply and eNHIS is hosted outside the country, and there were no internal processes in place to ensure that the data was safeguarded and secure and could be potentially recovered. Finally, no proper plan was in place for how to transition both these systems over to the Government's control.

Uncertainties around the ownership, control and data access for both systems, unclear licensing arrangements, poses risks to operational efficiency and data integrity, and need to be addressed urgently.

Immunisation data management

The reliability of PNG's immunisation coverage was compromised due to inaccurate population data. The NDoH continued to use the 2011 census which led to inaccurate targets and did not sufficiently account for the challenges of estimating populations in remote areas. A new census has been conducted in 2024 which is

yet to be formally endorsed and is expected to be taken into consideration going forward. The country has never conducted an immunisation coverage evaluation survey, and its national immunisation coverage estimates were solely based on desk reviews, rather than on specific surveys.

Although data quality assessments were done in 2021, 2022, and 2023, these assessments were not followed up by developing costed plans to remediate and improve data quality. In addition, the proposed corrective actions arising from the quality assessments were not tracked. Data quality reviews were also not conducted at most locations visited by the audit team.

Issues in the management and quality of immunisation estimates undermined decision-making, leading to unsupported targets, overreported achievements, and limiting the effectiveness and impact of EPI interventions.

Overall comment on the programmatic challenges

The audit team recognised that strengthening EPI leadership presents a valuable opportunity to enhance the management of the immunisation programme. The audit highlighted the importance of establishing a fully resourced national EPI team equipped with the comprehensive capabilities and expertise needed to effectively lead and oversee the programme. This includes ensuring strong technical leadership as well as robust operational management and supervision at the provincial level. At present, several operational and technical functions are being effectively supported by partners, in collaboration with the acting EPI manager. The acting manager has shown commendable commitment to ensuring critical functions are maintained and has demonstrated a strong willingness to learn and collaborate. However, the addition of full-time personnel and additional support from NDoH senior leadership would create an enabling environment and further reinforce the EPI's capacity to deliver on essential responsibilities. Gavi continues to support and encourage the NDoH in prioritising the appointment of a complete and skilled national EPI team.

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 the design and operating effectiveness of the: supply chain processes to ensure delivery of vaccines to recipients; governance, oversight, programme and technical assistance arrangements to provide support and assurance over Gavi's investments; implementation arrangements of Gavi-funded programme activities, including the country's readiness for transition; and the mechanisms governing the data quality and financial management processes.

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

The audit scope covered the period from 1 January 2019 to 31 December 2023. The total cash, vaccines and ancillary support provided by Gavi to PNG during this five-year period is presented in Table below.

Table 1: Cash, PEF TCA, equipment and vaccines support (2019 to 2023) in USD

Grants	2019	2020	2021	2022	2023	Total
HSS	7,507,051	6,230,013	343,019	66,916	4,740,272	18,887,271
MR-FU-C	8,091,865			5,110,084		13,201,949
IPV			74,877			74,877
COVAX - CDS			2,173,591	1,904,359	479,596	4,557,546
Total cash (a)	**15,598,916**	**6,230,013**	**2,591,487**	**7,081,359**	**5,219,868**	**36,721,643**
PEF TCA	2,586,613	4,174,840	2,299,446	1,710,035	2,327,674	13,098,608
Total PEF TCA (b)	**2,586,613**	**4,174,840**	**2,299,446**	**1,710,035**	**2,327,674**	**13,098,608**
CCEOP	1,076,882					1,076,882
COVAX CCE	-	-	190,691	-	-	190,691
Total equipment (c)	1,076,882	**-**	**190,691**	**-**	**-**	**1,267,573**
IPV	655,508	572,519	1,109,954	1,268,329	305,110	3,911,420
Measles	36,827	73,616	12,838	-	-	123,281
Measles-Rubella	953,209	-	-	1,533,580	-	2,486,789
Penta	24,946	121,836	81,265	-	-	228,047
Pneumo	-	611,631	72,477	-	-	684,108
Injection Safety Devices	91,428	34,031	-	-	-	125,459
COVAX – Covid-19	-	-	7,423,835	180,978	2,295,000	9,899,813
Total vaccines (d)	**1,761,918**	**1,413,633**	**8,700,369**	**2,982,887**	**2,600,110**	**17,458,917**
Total = (a) + (b) + (c) + (d)	**21,024,329**	**11,818,486**	**13,781,993**	**11,774,281**	**10,147,652**	**68,546,741**

Table 2: Details of PEF TCA funding to partners (amounts in USD) – reprise of (b) from above

PEF TCA	2019	2020	2021	2022	2023	Grand Total
Abt	-	339,838	-	284	-	340,122
CDC	880,720	750,000	250,000	-	-	1,880,720
CHAI	14,913	258,635	180,717	444,375	-	898,640
University of Oslo	-	15,000	728	50,126	-	65,854
UNICEF	1,049,023	1,545,560	865,839	1,036,079	1,271,060	5,767,561
WHO	641,957	1,265,807	1,002,162	59,171	936,614	3,905,711
IBRD				120,000	120,000	240,000
Total	**2,586,613**	**4,174,840**	**2,299,446**	**1,710,035**	**2,327,674**	**13,098,608**

2.3 Audit approach

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 management, supply chain and data management systems, 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 (TCA) were reviewed.

The programme audit was conducted in two phases: an initial in-country scoping visit between 1 and 5 July 2024, followed by three weeks fieldwork conducted between 30 September and 18 October 2024.

The audit team visited: the national vaccine store; 9 provincial offices and vaccines stores; 3 district offices; and 30 health facilities. See Annex 4 for a list of sites visited.

Over the five-year period (2019-2023), Gavi's support to PNG was disbursed to Gavi alliance partners, expanded partners, and to the Accelerated Immunisation and Health System Strengthening Programme (AIHSS) which was primarily funded by DFAT (Australia), MFAT (New Zealand) and Gavi. Gavi's funding to this programme was managed via its designated fund managers – Abt. Gavi signed appropriate agreements with all of these partners and Abt. Abt signed grant agreements with ISPs.

During the course of its engagement, the audit team interacted with a range of stakeholders including: the EPI team; various Gavi alliance partners including WHO and UNICEF; Gavi expanded partners such as CHAI; AIHSS Fund Managers Abt; PWC; the Department of Foreign Affairs and Trade (DFAT) and Ministry of Foreign Affairs and Trade (MFAT).

2.4 Progress on previously identified audit issues

Gavi conducted its first programme audit of Gavi support to PNG in 2016. The prior PNG audit report was rated "unsatisfactory" based on the results of testing over various areas in scope including governance and oversight, programme management, vaccine supply management, budgetary and financial management, procurement, and fixed asset management.

Following the previous report's action plan, 31 out of 75 recommendations were implemented, resulting in improvement in several aspects of vaccine supply chain management, including routine temperature monitoring, training on vaccine supply chain management, development of standard operating procedures, maintenance of temperature records, availability of fridge tags among others.

Several prior audit issues are not yet fully addressed. While some controls and mitigating actions had been considered and/or designed in response to past audit issues, not all the actions were fully implemented, or the design of the controls did not adequately address the nature of the risks presented at the national and/or subnational levels.

Details of the issues not yet resolved are considered in section 4 of this report.

2.5 Exchange rate

Most in-country expenditures were incurred in cash using the PNG Kina (PGK). For information purposes and as part of the summary of this report, the equivalent amounts are also reflected in United States Dollars (USD). An overall rate was applied to the summary of expenditures, based on the average bank rate across the audit period. This equates to an exchange rate of PGK 3.6 against USD 1.00.

3. Background

3.1 Introduction

Papua New Guinea (PNG), officially the Independent State of Papua New Guinea, is a geographically diverse country made up of over 600 islands and 5,152 km of coastline. Its total land area is 462,840 sq. km, with only 27% of the land being inhabited. PNG comprises the eastern half of the island of New Guinea and includes offshore islands in Melanesia, such as New Britain, New Ireland, Bougainville, and Manus, along with many smaller islands. It shares a land border with Indonesia to the west and is close to Australia and the Solomon Islands.

The country is the most linguistically diverse in the world, with over 850 indigenous languages. The capital Port Moresby is situated on the southern coast. About 87% of PNG's population lives in rural areas, making it the country with the highest rural population proportion in the world. Access to electricity is very low, and only 3% of roads are paved. Many villages are accessible only by foot, and travel between provinces is mostly by air and Port Moresby is not connected by road to most of the country. The largest cities, such as Port Moresby and Lae, include marginalised settlements where under-vaccinated children may be found.

Administrative arrangements

PNG is a decentralised country, divided into 22 provinces, 89 districts, 318 Local-Level Governments (LLGs), and 5,745 wards. It is a member of the Commonwealth and operates under a parliamentary democracy based on the Westminster model.

As a federal constitutional monarchy, PNG has three levels of government: national, provincial, and local. The national parliament consists of a 118-member unicameral legislature, with members elected for five-year terms through universal suffrage. The Governor-General, appointed by the parliament, has the authority to appoint and dismiss the prime minister. The Governor-General also appoints the Cabinet (National Executive Council) on the recommendation of the prime minister.

Economy and demographics

PNG has strong growth potential, driven by its abundant resources, and is projected to see economic growth of 4.8% in 2024, up from 2.7% in 2023. The economy is dominated by two clusters: agriculture, forestry, and fishing – which employ most of the population, and the minerals and energy extraction sectors, which generates most of export earnings and GDP. However, despite its resource wealth, PNG faces economic challenges such as low productivity growth, reliance on natural resources, and a lack of exploitation of its human capital.

In 2023, PNG's GDP was USD 30.97 billion, with a GDP per capita of USD 2,994.5 and GNI per capita of USD 2,700. The country has a population of 10.5 million in 2024 and ranks 154 out of 193 on the United Nations Human Development Index. The Gender Inequality Index (GII) stood at 0.725 in 2021, the lowest in the East Asia and Pacific region and was ranked a1t 160 out of 161 countries. This highlights a notable degree of gender inequality in the country, particularly in terms of health, empowerment, and the labour market. Despite being a lower-middle-income economy, PNG struggles with low tax revenues, leading to insufficient government resources for public services.

The mining and petroleum industries play a vital role, contributing 26% to GDP and 84% of export revenue. However, benefits from this income stream are not shared widely, with much of the rural population depending on subsistence agriculture. In 2017, 37.5% of the population lived below the poverty line, and in 2021, 24% of the employed population earned below the international poverty threshold. PNG also faces significant multi-dimensional poverty (including dimensions associated with health, education, socio-economic and climate, etc.).

The country's economic growth is marked by boom-and-bust cycles due to fluctuations in the natural resource sector, leading to fiscal instability. The COVID-19 pandemic worsened economic performance, resulting in a 2.9% contraction in 2020, rising health expenditures, and tax revenue shortfalls. The country's fiscal situation remains precarious, with public debt exceeding 50% of GDP due to the accumulation of external debt.

3.2 National health sector [1]

PNG has developed a national health plan for 2021-2030 to guide its health sector stakeholders. The health sector operates under a decentralised system, headed by the National Department of Health (NDoH) which coordinates health services, and working with the Provincial Health Authorities (PHAs) established in each province. The health system is governed by multiple laws, including the National Health Administration Act (1997) and the Provincial Health Authorities Act (2007). While the PHAs are all established, there are conflicts across the various mandates due to different laws, which continues to complicate health service delivery.

PNG's health system is structured across six levels, from the national hospital in Port Moresby to community health posts and aid posts. However, the closure of many health facilities, particularly in rural areas, has negatively affected service accessibility. The health workforce faces significant challenges, with over 14,500 vacant positions out of 32,064 approved roles. The government has set a goal to increase the health workforce to 29,376 by 2030, with a majority of the increase supported by the government and churches, the latter which play a critical role in delivering healthcare in rural regions.

Several church organisations receive substantial funding from NDoH and the PHAs, to provide a large portion of healthcare services in PNG, including operating health facilities and training schools. Between 2018 to 2024, the national health budget has remained stable, equating to approximately 4-5% of the national expenditure.

3.3 Immunisation in PNG

The PNG EPI started in 1977, initially targeting six diseases, and has expanded over the years to include additional vaccines. As of December 2023, the programme provides free vaccinations against nine preventable diseases. See Annex 5 for the national immunisation schedule. The national EPI is managed within the family health services branch of the public health division and is responsible for providing oversight over both the central and provincial levels.

Despite its long-standing role in primary healthcare, routine immunisation in PNG faces significant challenges. These include: a scarcity of healthcare workers, vaccine shortages, poor management, insecurity, and inadequate financial resources. As of 2022, immunisation coverage remains low, with national coverage for Penta 3 attaining 39% and measles rubella at 38%. Similarly, the WHO/UNICEF Estimates of National Immunisation Coverage (WUENIC) report an average trend of 36% for DTP3 from 2019 to 2023, and administrative data which reported an average DTP3 coverage of 41% over the same period.

To address these issues, PNG developed a National Immunisation Strategy (NIS) for 2021-2025, focusing on immediate strategies during the resuscitation phase (2021-2022) and long-term system improvements in the rehabilitation phase (2021-2025). However, operational challenges remain, as 60% of the population can only be reached through the use of costly outreach services, often requiring overnight trips by health teams. Additionally, declining provincial funding and staff shortages lead to reduced outreach activities and weak programme performance.

3.4 Immunisation supply chain structure and systems

The PNG immunisation programme operates a four-tier supply chain system for vaccines and related supplies: across national, provincial, district, and health centre levels respectively. Vaccines, including Gavi-financed doses, are procured by UNICEF's Supply Division and are delivered by air to the National Vaccine Store (NVS) in Port Moresby. From there, the doses are distributed every three months to 22 Provincial Vaccine Stores

[1] National Health Plan 2021-2030.

(PVS) using contracted third-party logistics companies. Due to PNG's rugged terrain, vaccines have to be airlifted to 20 of the PVS, with only two PVS being accessible by road transport.

The vaccine ordering system uses a pull mechanism, with the PVS, District Vaccine Stores (DVS), and Health Facility Stores (HFS) placing orders based on their consumption and stock levels. Vaccines are either distributed by the PVS or picked up by the recipient facilities. Inventory management uses a blend of paper-based tools and the electronic Logistics Management Information System (mSupply). mSupply is only partially deployed at subnational levels, with many areas still relying primarily on manual systems.

The cold chain capacity has improved following various health initiative investments, including Gavi's 2017 CCEOP and HSS grants, as well as Covid-19 cold chain support. As of 2022, 821 health facilities (HFs) (out of 1618 HFs) were mapped within eNHIS, of which 92% were equipped with cold chain equipment. Overall, many HFs lacked suitable freezers or refrigeration to help prepare ice packs for outreach services.

The National Department of Health (NDoH) is responsible for the maintenance of cold chain equipment across the country. This remains a considerable challenge given the low numbers of cold chain technicians available at both the national and sub-national levels, resulting in having to frequently rely on provincial hospitals' biomedical technicians to conduct the repair and maintenance of equipment.

The Immunisation Supply Chain Working Group, established in 2017, oversees the supply chain operations and its role was expanded to support the Covid-19 vaccination logistics during the Covid-19 pandemic. "The mSupply Foundation (TMF)" was contracted to deploy and implement mSupply across 300 facilities, including 21 PVS, 8 DVS and 271 HFs, concluding on January 31, 2023. As of January 2023, 266 of the 271 facilities equipped with mSupply were operational. The 266 mSupply equipped facilities includes 149 sites supported by World Vision, that are funded by The Global Fund. The 149 sites represent at least one level of health care across the country's supply chain management system.

3.5 Immunisation data structure and systems

PNG's electronic National Health Information System (eNHIS) was developed to centralise the management of national health data. The eNHIS system was initiated in 2018, funded by the Asian Development Bank (ADB), with support from WHO and Remote Sensing Limited. It aims to streamline health information, improve data accuracy, and facilitate real-time reporting for critical health programmes, including immunisation, HIV, tuberculosis (TB), and malaria.

As of the end of 2022, eNIHS had been rolled out across all 22 provinces. It is the primary system used to manage immunisation data, as PNG does not use DHIS2. The system is designed to capture key performance and monitoring indicators outlined in the National Health Policy 2011-2020. However, its usage and effectiveness are somewhat limited (e.g. when compared to DHIS2) due to its relatively narrow scope. eNHIS is accessed via a password-protected mobile application. It allows healthcare workers at the health facility and district levels, to directly input routine immunisation data into eNHIS, using mobile tablets. This data is then consolidated with a monthly summary sheet and daily records. The workers' data inputs are validated and approved by provincial health information officers before being sent to the Performance, Monitoring, and Research Branch (PMRB) at the NDoH, where the data is analysed and reported at the national level.

A significant challenge to accurately reporting PNG's immunisation coverage is the variation in data obtained from different sources as well as microplanning. This in part is due to, data from the 2011 census that was conducted more than twelve years ago, is still used as the primary source to estimate target population figures, while acknowledging that the passage of time may introduce a wider range of variability and potential error when determining immunisation coverage estimates. The difficulties observed, in accurately measuring and improving immunisation coverage across the country, is further exacerbated by inaccuracies in the data reported, inadequate supervision, and a sub-optimal workforce in terms of their skillsets and limited numbers.

3.6 Covid-19 context, response and impact

COVID-19, caused by the SARS-CoV-2 virus, was first reported in December 2019, subsequently evolving into a global pandemic. WHO declared it a public health emergency of international concern (PHEIC) on 30 January 2020. Papua New Guinea (PNG) confirmed its first case of COVID-19 in March 2020.

In response, the Government took action to control the spread of the virus by: enacting a new pandemic law; establishing a National Control Center (NCC); declaring a state of emergency; and appointing an emergency controller to oversee the response.

Other measures included lockdowns in high transmission areas, inter-provincial travel restrictions, border closures, mandatory mask-wearing, and limited face-to-face meetings. However, these restrictions had unintended consequences, such as reducing the attendance at health clinics and decreasing the frequency of healthcare workers' outreach visits. This, in turn, negatively impacted the delivery of routine immunisation (RI) services, resulting in a noticeable decline in coverage during the first half of 2020. The pandemic further strained an already overburdened health system, especially in provinces with historically low immunisation coverage.

On 16 December 2020, PNG joined COVAX – Gavi's advance market commitment mechanism – being an innovative financing instrument supporting the participation of low- and middle-income economies in accessing safe and effective COVID-19 vaccines[2]. As a COVAX participant, PNG has received support totalling USD 14.1 million, primarily consisting of COVID-19 vaccines as well as COVID- 19 vaccine delivery support (CDS) funding.

In mid-2020, to address the negative impact of the pandemic on routine immunisation, the NDoH encouraged provinces to carry out catch-up activities to vaccinate children who missed their immunisation doses during the pandemic. This included outreach and mobile vaccination visits supported by WHO, UNICEF, and the PNG-Australia Transition to Health (PATH) program. In August 2020, the conduct of these catch-up activities, which targeted areas with high numbers of missed children, with the support of a WHO consultant and additional funding.

In March 2021, PNG began introducing COVID-19 vaccines as part of its national response. In September 2021, the Minister for Health and HIV established a ministerial taskforce to support the National Department of Health (NDoH) and the NCC in improving acceptance and uptake of the COVID-19 vaccine.

In 2022, WHO developed guidelines to integrate COVID-19 vaccination into routine immunisation and primary healthcare programmes, providing recommendations for how to functionally merge operations. Thereafter in May 2023, WHO declared that COVID-19 was no longer a PHEIC. Following this in September 2023, PNG with support from WHO, conducted a readiness assessment to evaluate the status of COVID-19 vaccine integration into the country's health systems. However, the recommendations from this assessment were not implemented.

By 15 October 2024, the country had received 1.7 million doses of COVID-19 vaccines (including AstraZeneca, Sinopharm, and Johnson & Johnson) of which approximately 0.55 million doses were administered. In effect, by mid-October 2024 only 6.5% of the eligible population was fully vaccinated.

3.7 PNG's partnership with Gavi

In November 2013, Gavi signed a partnership framework agreement (PFA) with PNG, providing a framework for the country's management of Gavi support. During the five-year period 2019 to 2023, PNG received a total of USD 65.7 million in cash, vaccine and equipment support from Gavi (see table 1 above for details).

Over the same period, Gavi also provided catalytic technical assistance totalling USD 9.1 million, to strengthen the PNG's national immunisation programme.

In accordance with Gavi's transition policy, PNG initially entered into an extended accelerated transition phase up scheduled to run up to the end of 2025. PNG crossed the Gavi eligibility threshold in January 2013 when its estimated GNI per capita was at USD 2,010, consistent with the country's rapid economic growth following the discovery of oil and natural gas.

PNG was initially scheduled to transition from Gavi support in 2020. However, in November 2018, the Government of PNG submitted a request to the Gavi Alliance Board for an exceptional extension of its transition period from 2020 until 2025. In June 2019, this request was approved by the Gavi Board. The

[2] About Gavi COVAX AMC

decision to extend PNG's transition timeline was based on an assessment of PNG's health landscape, which was found to be extremely fragile and given that the country has the lowest vaccine coverage rate in the region and high child mortality.

In December 2024, the Gavi Board approved the country's request to continue to receive support from Gavi till December 2027. The Gavi Board also approved the Eligibility, Transition & Co-Financing Policy (ELTRACO) policy under which PNG can request new HSS Support and new vaccine introduction for the period up to December 2031.

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

Gavi funds are channelled through the: Gavi alliance partners (WHO and UNICEF); AIHSS/PATH (with Abt as the fund manager); PWC as fund manager for CDS funds; and to a range of partners including: CHAI, Abt, University of Oslo and CDC in support of various technical assistance activities.

Gavi signed agreements with each of the partners elaborating what programme activities were to be implemented. The alliance partners WHO and UNICEF, subcontracted approximately 21% of their funding back to the Government, disbursing the funds to the health services improvement programme trust account (HSIP Trust Account) at NDoH.

On 25th February 2019, the Government of PNG designated 2019 as the 'Year of Immunisation' in accordance with a declaration by the Minister of Health & HIV; and requested that development partners extend their support to increase immunisation coverage up to at least 80%, to prevent any future outbreak of vaccine preventable diseases. Abt managing the PNG partnerships fund, was engaged by the Governments of PNG, Australia, New Zealand and by Gavi to manage the "Accelerating Immunisation and Health Systems Strengthening Programme".

Correspondingly, in July 2019, Gavi signed a grant agreement with Abt, for it to provide Gavi fund management services for the AIHSS programme. Similarly, Abt signed partnership grant agreements with five immunisation support providers (ISPs) under the Gavi component of the AIHSS1 programme and disbursed funding to them. The ISPs were contracted to support the implementation of the immunisation programme and work along with the respective PHAs

Each partner was responsible for developing a detailed budget for their respective projects, in coordination with Gavi, the NDoH, the EPI and other stakeholders.

3.9 Operational challenges in a fragile context

PNG operates in a complex health and equity situation, because of its decentralised system of local governance and which results in a fragmented health system. Thus, each province including the autonomous region of Bougainville, is responsible for delivering health and social services. The majority of the population reside in the rural areas, and have limited access to health care services, with only 33% of the people being covered by essential services.

The country faces significant challenges in improving the performance of its immunisation programme. Contributing structural factors include: difficult geography; the lack of infrastructure (few roads, low access to electricity); insufficient tax revenues to adequately finance the health sector; a shortage of health workers; low literacy rates; high poverty; gender inequality and gender-based violence.

Maternal and child health is a major issue in PNG – particularly in rural and remote areas, and among disadvantaged populations. Limited access to quality maternal and newborn health services in many parts of the country as well as low health literacy, traditional beliefs and practices and gender-based violence hinder access to health care. The maternal mortality ratio (MMR) in PNG is one of the highest in the region. In 2018, the MMR was 171 per 100,000 live births, the under 5 mortality rate was 49 per 1000 live births, the newborn mortality ratio was 20 per 1000 live births, and the infant mortality rate was 33 per 100 live births[3].

[3] PNG-WHO Country cooperation strategy, 2024-2028

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[4].

3.10 Good practices

The audit team noted the following good practices while executing the audit:

Governance and oversight: PNG's Provincial Health Authorities Act (2007) is the administrative instrument which established the PHAs and provided them a clear mandate for the establishment of decentralised governance mechanisms. In December 2022, NDoH approved the terms of reference for the EPI TWG, from which time the partners have participated in the EPI TWG monthly meetings.

Development of the National Health Plan and National Immunisation strategy: The NDoH, with support from the partners, has articulated clear, strategic plans through the creation of the National Health Plan 2021-2030, National Immunisation Strategy 2021-2025, and its National Maternal and Newborn Health Strategy 2021-2025.

Immunisation coverage in partner supported provinces has improved - Between 2019 and 2023, the AIHSS increased Pentavalent coverage in those provinces where this acceleration programme operated (for Penta 1, the coverage improved from 48% to 58% and for Penta 3, the coverage improved from 31% to 40%). In addition, for each of the ISPs operating under Abt, annual external audits of their respective operations were conducted. Annual audits were also conducted for the funds managed by PwC. The AIHSS partnership meetings were well-attended by representatives from the NDoH, WHO, UNICEF, GAVI, DFAT, New Zealand, and the World Bank.

Vaccine supply chain management: In 2022, the NDoH with support from its partners, updated the vaccine supply chain management SOPs and developed a costed and prioritised Effective vaccine management (EVM) comprehensive improvement plan (cIP) for the period 2023-2026. A cold chain extension and rehabilitation plan (2023-2025) was developed to improve CCE availability across all supply chain levels and an inventory and gap analysis (IGA) has been adopted by NDoH to record and monitor all in-country CCE (2023). The audit team noted that temperature monitoring devices, and temperature monitoring records were available at all of the sub-national vaccine handling points that it visited. Furthermore, since 2017 approximately 730 solar supported CCE units have been installed across many health facilities.

Immunisation data collection tools: Tablets to collect immunisation data were in use in all but one of the 30 health facilities the team visited. The HFs' average submission/completion rate for data capturing and reporting in the eNHIS was reported as 98% across the 822 government and faith-based health facilities mapped into the System. Suitable NHP indicators were developed, based on the KPIs identified in the previous National Health Plan (2011-2020), and are being tracked on a regular basis using eNHIS.

Supply chain and data management systems: In 2021, the country developed: the National M&E strategy (2021-2030); standard operating procedures for data management from health information systems; and a digital transformation policy – to guide the use of health systems. The audit team noted that the current digital tools in place are being used effectively to optimise immunisation data capture and reporting. Both the mSupply and the eNHIS mobile apps, have the capability to support offline reporting, for remote areas with limited internet connectivity.

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

4. Findings

4.1 Governance, oversight and country's readiness for transition

4.1.1 Leadership and accountability within NDoH needs strengthening

Context and Criteria

In October 2021, NDoH approved and published PNG's national health plan (2021-2030). Subsequently in December 2022, the related monitoring and evaluation strategic plan was approved by the national health board. NHP objective 5.1 is to "Improve health leadership, governance and management at all levels of the health system". Similarly, NHP strategy 5.3.2 is to "Strengthen governance across the health system to enhance accountability and transparency". On an overall basis, the NHP sets out the immunisation programme's target as being the percentage of children that are immunised with Penta 3.

In April 2022, the national immunisation strategy (NIS) 2021-2025 was developed and launched, with support from both Gavi and CHAI. The NIS represents the foundation for longer term immunisation objectives in PNG. It has three phases including: a resuscitation phase (2021-2022) focused on urgent strategies; a rehabilitation phase (2021-2025) depicting immunisation system and financing strategies for national and provincial governments; and a sustaining phase (2025-2030) focused on consolidating and sustaining the rehabilitation phase's strategies.

Though it was finalised in April 2022, NIS implementation began in December 2023. The NIS highlights that one of the root causes for the current fragile state of the EPI includes a "lack of prioritisation and ownership of the immunisation programme". Resuscitation phase, Pillar 2 objective states that "By the third quarter of 2021, all stakeholders have secured an "immunisation essential team" both at national (NDoH) and provincial (PHA) levels. Rehabilitation phase, Immunisation System Priority 1 objective states that "By 2025, the National Immunisation Programme is provisioned with leadership, management and coordination quality standards, and with a functional National Immunisation Technical Advisory Group (NITAG)".

In 2022, ADB and the NDoH jointly developed the Asian Development Bank (ADB)/PNG Health Services Sector Development Plan (HSSDP) Policy matrix. Leveraging this matrix, Gavi developed an accountability framework focused upon EPI strengthening and sustainability essential milestone indicators. As a result in November 2022, Gavi introduced an Accountability Framework to increase the Government's responsibility and ownership for the immunisation programme, by setting out specific milestone indicators against which its performance will be monitored. 19 indicators are grouped under six thematic areas including: vaccine financing; EPI staffing; coverage; coordination and oversight; data use for planning and decision making; and stock management. The framework also establishes a baseline for 2022, followed by progressive annual targets up until 2027. All the milestone indicators were agreed between Gavi and NDoH. Gavi's adoption of existing HSSDP matrix commitments, promotes donor coherence and alignment and is expected to result in simplified processes. Although Gavi has not placed any restrictions on the country if it does not achieve these initial commitments, the ADB has indicated that there would be consequences for how the Government performs against each milestone, which could potentially impact upon Gavi's ability to support EPI programming. Such an approach enables Gavi to align with the spirit of these commitments, while ADB retains the responsibility for determining any potential consequences.

In January 2023, the Full Portfolio Planning (FPP) process was initiated, and was subsequently approved in April 2023. This process enables programmatic alignment with the NIS and helps to focus upon which of the specific challenges it identified, are to be prioritised and addressed.

Condition	Recommendation 1
The audit team noted the following gaps in the immunisation programme's leadership: ***Absence of leadership within the senior management at NDoH –*** The senior management team at NDoH includes: a Health Secretary; three Deputy Secretaries – one of whom is responsible for Population and Health; one Executive Manager covering Population and Family Health; and two Branch Managers – one of whom is responsible for Family and Maternal Health.	To strengthen leadership over the EPI, the NDoH should: • Establish and endorse the organisational structure within the Ministry; • Appoint full-time EPI Executive Managers and Branch Managers positions;

At the time of the audit, the Deputy Secretary for Population and Health had retired, and the Branch Manager position for Family and Maternal Health – to which the EPI Manager reports – had been vacant for one year. The acting Branch Manager initially appointed in July 2024, was subsequently replaced by another acting Branch Manager by the time we completed our in-country audit work in October 2024.

Absence of an EPI manager for over two years - There has been no EPI manager in post since 2022. Both the NIS and AF require that the EPI manager position is occupied, along with other critical EPI middle management roles, related to data, cold chain, and vaccines and logistics. However, all of these positions remained vacant for more than two years.

While an acting EPI manager was appointed in 2022, there was no assessment of his capabilities to ensure that this individual met the position's qualifications. Furthermore, there has been no EPI capacity building plan to ensure that staff are empowered to manage the immunisation programme. Consequently, this resulted in:

1. ***Overreliance on partners to perform operational immunisation activities*** – In the absence of a fully staffed EPI team, some of the immunisation programme's operational activities were conducted by partners, financed from the technical assistance support. See more details in finding 4.2.7
2. ***Inability to track and meet agreed NIS and AF indicators*** - The following indicators (with yearly milestones) of NIS were missed in 2023.

Table 3: NIS Indicators

Indicator	Timeline	Audit observation
NDoH and development partners set up a full immunisation team within NDoH (inclusive of programme, data, cold chain, vaccine, and logistics managers).	By third quarter of 2021	The EPI manager is an acting assignation, and the incumbents for all EPI other positions are all technical assistance appointments contracted via Gavi's implementing partners.
"Immunisation service delivery" has increased by 10 percent from 2020 baselines resulting in better coverage of all antigens and equity in access	By the end of 2021	The supply of Pentavalent vaccines to the provinces, as a percentage of the total requirement remained stagnant at 58% in both 2020 and 2023.
All stakeholders have secured optimum, effective "Immunisation Funds Flows" both at national (NDoH) and provincial (PHA) levels.	By third quarter of 2021	The operational fund flow reduced from 0.014% in 2020 to 0.006% of the health budget in 2024. The NDoH and provinces continued to rely on the support from Development Partners for operational funding.
All vaccines currently in use in the routine immunisation programme are fully self-financed.	By the end of 2021	The vaccine procurement budget reduced from 1.13% in 2020 to 0.17% of the health budget in 2024. In 2024, against its annual requirement of PGK 27 million, the GoPNG only allocated PGK 3.47 million. ***See sustainability issue raised 4.1.2***
All immunisation-related national officer vacant positions in the NDoH are filled and functional.	By end of 2025	NDoH has not initiated any process for filling up these vacant positions.

- Appoint an EPI manager for the immunisation programme;
- Appoint EPI staff in support of the EPI manager. This team should consist of technically competent staff, in a bid to transition away from the temporary incumbents that are currently contracted via the technical assistance modality; and
- Establish a staff capacity building plan to facilitate the transition and management of operational activities, away from partners back to the EPI national team.

Recommendation 2

To strengthen the accountability within the immunisation programme, the NDoH and EPI should:

- Review and reset the NIS with updated indicators that are: specific; measurable; achievable; relevant and timebound;
- Re-evaluate the accountability framework's targets and indicators to ensure these align with the NIS. Establish a single measurement framework with defined indicators at strategic and operational levels for the NIS, instead of two separate measurement frameworks currently in place; and
- Empower the TWG, to track the programme's progress against the new set of strategic and operational performance indicators. The TWG should be chaired by a senior official from NDoH and report to the NDoH Senior Executive Management (SEM) Team till the ICC is established.

Recommendation 3

To strengthen the accountability at national level, Gavi should:

- Align all programmatic and technical assistance to support capacity building and eliminate all gap filling operational tasks within a defined timeline of not more than two years; and
- Review the newly developed measurement framework and determine which indicators, if any, should trigger consequences to reinforce accountability for the immunisation programme. Clearly define these

Similarly, the following indicators (with yearly milestones) of AF were missed in 2023:

Table 4: Accountability Framework Indicators

Indicator	Audit observation
National EPI team fully staffed (5 staff in place - EPI Manager, Data and VPD Surveillance Officer, Vaccines Logistics Officer, Cold Chain Officer and Senior Technical Officer)	Since 2022, the EPI manager position was vacant. While a staff member was appointed as acting EPI manager, the incumbent has not been formally confirmed in their position for almost 24 months. Additionally, the incumbents for these remaining positions, are all technical assistance appointments, contracted via Gavi's implementing partners
NITAG established and meets at least twice a year	The NITAG has not yet been established. ToRs have been developed but these are not yet approved.
ICC or equivalent, met at least twice a year	The ICC is in existence but does not regular meet (Specifically: 1 meeting was conducted in 2022, and no meetings were conducted in 2023).
100% of annual forecasted demand transferred	In 2024, the GoPNG only allocated PGK 3.47 million against an annual requirement of PGK 27 million for procurement of vaccines.
Penta 3 coverage of 46%, and more than 90% of provinces achieved 46% coverage	At the end of 2023, the overall Penta 3 coverage was 40%, with only 36% of provinces (8 out of 22) achieving more than 46% coverage.

(See Annex 6 for details)

consequences within the accountability framework to ensure that the National Department of Health (NDoH) remains responsible for programme performance and outcomes.

Root causes

- There is a frequent turnover in the NDoH leadership at the senior levels, as well as several strategic shifts in the direction provided by the interim leadership. The leadership has not been able to formally endorse and appoint an EPI team.
- While the ADB indicated that non-compliance with HSSDP commitments would result in consequences, such consequences were never formally documented and are therefore not monitored.
- While both the NIS and accountability framework (AF) were developed with the support of health and development partners, in substance the NDoH has not yet appropriated and assumed full ownership and accountability for their contents.
- The Gavi AF was not monitored and consequences for the NDoH's noncompliance were not triggered.

Management comments

See detailed management responses - Annex 13

Risk / Impact / Implications

- The immunisation programme has not progressed in the absence of clear leadership or direction. In effect, the country's ownership and implication in its immunisation programme has weakened, even though this is an essential component of Gavi's model. Moreover, while the programme continues to overly depend on the partners to manage its operations, the country's transition away from Gavi and other donor support is now imminent.
- Deficiencies in leadership will compound the challenges associated with transition, as highlighted in Finding 4.1.2 below

Responsibility

See detailed management responses - Annex 13

Deadline / Timetable

See detailed management responses - Annex 13

4.1.2 Challenges in the country's readiness for transition

Context and Criteria

Gavi's Transition Policy aims to ensure that when countries transition out of Gavi support, they have "successfully expanded their national immunisation programmes with vaccines of public health importance and are able to sustain these vaccines post-transition with high and equitable coverage of their target populations, while having robust systems and decision-making processes in place to support the introduction of future vaccines[5]."

Under Gavi 5.0, Gavi call for an end to immunisation inequity, by focusing on zero-dose children, defined *"as children who don't receive a single dose of diphtheria, tetanus and pertussis-containing vaccine"* – a key priority for the next five years. Gavi's stated goal is to reduce the number of zero-dose children by 25% by 2025, and by 50% by 2030, coinciding with the Sustainable Development Goals.[6]

According to Gavi's strategy, *"empowering countries to take ownership of their vaccination programmes is a core component of the Gavi business model. Based on their gross national income (GNI) per capita, countries are expected to allocate an increasing amount of their resources to vaccination. The long-term goal is for countries to achieve financial sustainability."*

In 2015, Gavi's Board first approved the eligibility and transition policy, which states that countries' eligibility will be determined by their average GNI per capita over the past three years. Two subsequent policy updates were approved in June 2018 and December 2022. The current policy in effect since 1 January 2023, indicates that either the latest GNI per capita, or the average over the past three years, must be below the threshold.

PNG was originally planned to transition from Gavi support in 2020, received an extension till 2025, under a special strategy, which was also extended to 2027. The country's performance has stagnated over the last few years, achieving immunisation coverage between 40-50%, and with the country being constrained by an economic crisis and chronic public health underfunding.

NDoH developed its NHP (2021-2030) which focuses the immunisation programme's target upon the percentage of children immunised with Penta 3. Consequently, the NDoH developed a NIS 2021-2025. This Strategy includes: a resuscitation phase (2021-2022) – focused on urgent strategies; and a rehabilitation phase (2021-2025) – setting out objectives for the immunisation system and financing by the national and provincial governments. The NIS lays a foundation for establishing longer-term immunisation objectives in PNG.

- Resuscitation phase, Pillar 4 objective states that "By quarter 3 of 2021, all stakeholders have secured optimum, effective "Immunisation Funds Flows" both at national (NDoH) and provincial (PHA) levels" with one of the interventions being "Establish a separate funding mechanism during the "resuscitation" phase, requesting special funding under budget line # 207 for short-term immunisation program priorities with a longer-term view of increasing budgetary provisions for immunisation".
- Resuscitation phase, Pillar 5 objective states that "By the end of 2021, all vaccines currently in use in the routine immunisation program are fully self-financed" with one of the interventions being "GoPNG commits to assuming 100 percent of routine vaccines financing when Gavi's support ceases for Gavi co-financed vaccines at the end of 2021".
- Rehabilitation phase, Financing Priority 2 objective states that "Central Agencies – NDoF, Treasury, National Economic and Fiscal Commission (NEFC) – support NDoH and PHAs to improve their health financial management and accountability mechanisms, and predictability of funding".

Condition	Recommendation 4
The audit noted the following challenges in the country's readiness to transition: ***Financial allocations to the immunisation programme reduced, despite sustained health allocation***: The audit observed a decline in financial allocations by the GoPNG to the EPI over the period (2019-2023), as well as for future projections. This reduction in funding raises	To ensure the resilience and sustainability of the country's immunisation investments after transition is completed, the NDoH/EPI should:

[5] Gavi Transition Policy
[6] The Zero-Dose Child: Explained

concerns about the sustainability of the programme, given that the Government is not able to cover its vaccine procurement costs. In addition, it highlights potential challenges in further expanding immunisation efforts without the necessary financial support being available.

Table 5: Comparison of relative funding for the health sector and for immunisation

Year	Health Budget allocation as a % of total budget	Vaccine Procurement Budget allocation as a % of health budget	Operational Cost Budget allocation as a % of health budget	Operational Cost Budget allocation as % Vaccine Procurement Budget
2018	2.11	1.64	0.004	0.24
2019	4.48	0.60	0.002	0.33
2020	2.84	1.13	0.014	1.24
2021	4.87	0.32	0.015	4.69
2022	4.09	0.78	0.079	10.13
2023	4.99	0.18	0.006	3.33
2024	4.33	0.17	0.006	3.53
2025*	3.17	0.02	0.105	-
2026*	2.61	0.02	0.126	-
2027*	2.48	0.02	0.137	-

* = forecast

Per the NIS, the annual vaccine procurement requirement totals approximately PGK 27 million. However, the GoPNG allocated PGK 3.47 million in 2023 and PGK 3.47 million in 2024, significantly less than required. From discussions between the audit team and the in-country health partners, it was determined that most of the funding shortfall was financed by development partners.

In addition, the country did not meet the programme's operational costs funding requirement. Specifically, no funds were allocated for key activities including transportation, training, and support supervision, among others. As a result, except for the salaries of its civil servant staff, the programme was largely dependent on the development partners' financing.

Progress made after the audit fieldwork - In 2025, with strong donor support, the NDoH/EPI successfully engaged the Department of Treasury, resulting in a substantial increase in the national budget allocation for vaccine procurement—from **PGK 3.4 million in 2024** to **PGK 18.9 million**. This marks a significant step forward toward financial sustainability and national ownership, bringing the allocation closer to the annual requirement of **PGK 27 million**.

There is no comprehensive visibility over financing for immunisation: As at October 2024, the country was unable to determine what proportion of its total health expenditure was funded from available government revenues, grants, or debt. Consequently, it was not possible to establish: How much does the country currently spends on its immunisation programme; What are the programme's resource requirements; and to what extent does the current national allocation and spending cover part of, or all of these requirements.

- Review all of its immunisation activities and develop a suitable transition plan, that remains aligned with the NIS, and which articulates how the country should navigate the transition process;
- Calculate what its funding gap is - by documenting and deducting all costs related to immunisation activities at the national and subnational levels, (including operational costs, vaccine co-financing and HR) – from existing funding sources (i.e. public funding, partners, and donors), to determine the magnitude of resources which needs to be mobilised; and then
- Continue to advocate for the Department of Treasury to secure and allocate sufficient funding to meet the EPI's consolidated needs, including the timely release of allocated funds. This funding should account for: ongoing interventions, the existing financing gap, the impacts of current funding shortfalls, the programme's return on investment, and the full budgetary requirements for both national and sub-national levels of the EPI including operational expenses.

In addition, the country has not yet determined its projected total resource requirements for the immunisation programme verses its existing available resources, and what specific sources of financing it plans to tap into or to target post-transition. The Department of Treasury is not aware of the level of funding which the NDoH receives directly into its HSIP-TA account, as these funds are not part of the national budget process. As a result, the Department of Finance and the Department of Treasury do not have any visibility over the actual requirements of the EPI programme, nor the magnitude of the resources which will have to be financed by the public purse in the future. Also, to date there has been no discussion on what funds the country will require to execute and sustain its EPI programme in the post-transition period. The NHP (2021-2030) is silent on the financing needs and cost of transition-related activities. The NIS 2021-2025 does highlight financing needs and estimates that an overall 35% funding gap will remain for at least ten years up to 2030. However, there is currently no clear plan for how PNG intends to address and close this funding gap. The audit team also noted that the NDoH has limited visibility over the respective EPI provincial budget allocations. ***Gaps in NIS***: In addition, between 2021 to 2024, the country did not develop any annual operational plans (AOP) to operationalise its NIS. The NDoH is currently in the process of developing an AOP for 2025. Moreover, the audit team noted the following gaps: • Although an M&E framework and implementation framework were developed for NHP 2021-2030, it does not include appropriate targets. In addition, there is no evidence of tracking status of implementation against the M&E framework. • Although the NIS was developed for the period 2021-2025, its progress is significantly delayed, since it only began to be implemented from the start of 2024. • There was no evidence of assessment of the previous comprehensive multiyear plan (cMYP) to inform development of the NIS. • The NIS fails to discuss several issues including: vaccine shortages, the use of Pentavalent doses more than 1 year old and digitalisation efforts of the NDoH. To address the programme's various challenges and requirements identified in the NIS, a FPP process was performed in preparation of the funding for 2023-2027 period. However, the following gaps in this process were noted: • A review of the EPI was not carried out to inform the FPP. • A transition roadmap has not yet been developed, both to apprise the FPP, as well as to help structure and frame necessary processes and decisions that need to be revisited, in accompaniment of the country as it progresses towards transition. It is not evident whether the suggested interventions identified in the NIS, will be able to address the programme's structural, financial and operational issues. This because previous interventions that were undertaken, failed to bring about the desired increase in the overall immunisation coverage.	
Root causes • No transition plan in place • Absence of advocacy in support of the programme by NDoH senior levels. Limited understanding of the need and value of the immunisation programme at the Department of Treasury resulting in allocations to other country priorities. The returns on investment through immunisation have not been considered in the immunisation strategy and other health sector strategic documents. • The partners' advocacy for immunisation funding did not result in an adequate increase of public funds being allocated to achieve the targets in NHP.	Management comments See detailed management responses - Annex 13

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- PNG's transition readiness has not been properly documented. The various challenges over and above the financing of vaccines have not been sufficiently considered or articulated, therefore suitable remediation measures were not identified
- Outcomes from the NIS and the FPP provided limited guidance on what arrangements are necessary to manage the transition process.

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Risk / Impact / Implications

- If suitable transition preparations are not identified and promptly implemented, the national immunisation programme team might fail to introduce and establish necessary sustainability considerations into the programme in time.
- The absence of a transition plan could potentially undermine the continuity of the immunisation programme and disrupt the delivery of health services.

</td><td>Responsibility

See detailed management responses - Annex 13</td><td>Deadline / Timetable

See detailed management responses - Annex 13</td></tr>
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4.1.3 Coordination and oversight arrangements over the immunisation programme at the PHAs needs to be improved

Context and Criteria

The National Health Administration Act 1997 defines the administrative functions of Provincial Governments and Local-level Governments. This includes public health, in accordance to Sections 43 and 45 of the Organic Law, and Section 16 of the Provincial Governments Administration Act 1997. The national ACT further sets out details of the administrative arrangements and reciprocal functions and responsibilities for health, in relation as to how the National Department of Health, the offices of Provincial Administrator and District Administrator interact, in accordance with Section 80(3) of the Organic Law, and others.

The Provincial Health Authority Act 2007 was established to define provinces' public health requirements and the delivery of health services. However, the Act is silent regarding what is the NDoH's respective role and responsibility, or the nature of the relationship established between the NDoH and PHAs. Each PHA is governed by a Board and its day-to-day functions are managed by a Chief Executive Officer. There are no specific policies or terms for reference outlining the PHAs responsibilities or linkages back to central oversight bodies. Provinces have a designated Provincial EPI Officer, as well as EPI officers embedded within the health facilities, to implement immunisation activities across both urban and rural communities. These officers each report to the Officer-in-Charge (OIC) of their respective health facilities. The OIC, in turn, reports to the Provincial EPI officer. Thereon, the Provincial EPI officers report to the Director of Public Health and participate in the EPI Technical Working Committee. The Director of Public Health is accountable to the Chief Executive Officer (CEO). The CEO reports to the Board of the Provincial Health Authority, which in turn reports to the Minister for Health. In addition to the Board, there is a Senior Executive Team which meets weekly and includes all of the PHA Directors. The CEO also has a reporting line to the NDoH Secretary for Administration.

In February 2019, the Government of PNG designated 2019 as the 'Year of Immunisation'. As a consequence, the Government requested that development partners support efforts to accelerate to 80% immunisation coverage. to prevent future outbreaks of vaccine preventable diseases. NDoH, in consultation with the development partners, identified 15 priority provinces for this programme to focus upon increasing routine immunisation.

The PNG partnerships fund, managed by Abt, was designated by the Governments of PNG, Australia, and New Zealand, as well as Gavi to manage the "Accelerating Immunisation and Health Systems Strengthening (AIHSS) Programme". Correspondingly, in July 2019, Gavi signed a grant agreement with Abt, for it to provide Gavi fund management services within the PNG partnership fund. Similarly, Abt signed partnership grant agreements with five immunisation support provider (ISPs) and disbursed funding to them under AIHSS. The ISPs were contracted to support the implementation of the immunisation programme and work along with the respective PHAs. The objectives of the ISPs assignment were to support NDoH and ICC in the management and the delivery of Health System Strengthening support in Papua New Guinea, in accordance with the requirements and objectives of Gavi and the other funding partners (DFAT and MFAT).

Gavi's initial grant agreement with Abt totalled USD 3.8 million, for a July 2019 period from 1 March 2019 to 30 April 2020. Thereafter, the Abt agreement was extended to 30 Dec 2023 with an additional grant amount totalling USD 4.5 million. Under AIHSS1 up to December 2023, 12 provinces were supported, including 5 Gavi-supported provinces, and 7 DFAT-supported provinces. ISPs were sub-contracted in each of Gavi's 5 provinces, except for the Eastern Highlands province for which the funding was disbursed directly to the PHA via the HSIP-Trust Account. The second phase of AIHSS is scheduled to run concurrently from Jan 2024 until December 2028. In this second phase, 15 provinces are being jointly supported by Gavi, DFAT and MFAT – with Gavi contributing 43% of the total cost. An initial one-year agreement was signed in Nov 2023, subject to being potentially extended thereafter. The first-year budget allocation totals USD 3.2 million for 2024.

In those AIHSS supported provinces including the 5 Gavi supported provinces where an ISP was appointed, the ISP supports the implementation of the immunisation activities, by working along with the PHAs and by providing necessary funds and technical support to carry out immunisation activities. In the remaining provinces, the AIHSS funds are disbursed via the HSIP-TA account managed by the NDoH.

Condition We reviewed the coordination and oversight mechanisms over the immunisation programme and noted that: ***No formal oversight of the immunisation programme at the subnational level:*** The working modalities and arrangements between the National Department of Health (NDoH) and the Provincial Health Authorities (PHAs) are not clearly defined. Neither the NHA Act nor the PHA Act, specify NDoH's roles or responsibilities with respect to how it should be implicated in the PHAs' provision of health. Consequently, whilst PHAs are tasked with delivering health services, there is no formal oversight or accountability mechanism in place or role for the NDoH, in guiding or monitoring the PHAs' immunisation activities. Furthermore, the coordination of the NDoH and PHAs' immunisation efforts remains undefined and undocumented. ***There is a need to streamline the arrangement between the NDoH/EPI programme and the ISPs:*** Abt signed PNG partnership grant agreements with five immunisation support providers (ISPs) supporting the PHAs' implementation of immunisation activities. The audit team noted the following gaps in the ISP arrangements: • ***Selection and agreement of immunisation activities*** - NDoH/EPI does not have all the ISPs' TORs, and there is no evidence indicating that the EPI participated in the process of contracting the ISPs. • ***Coordination*** – There is no structured mechanism to coordinate the EPI and the ISPs' immunisation activities. In addition, the EPI does not have visibility with regards to what funding and what activities the ISPs implemented in the PHAs. • ***Accountability to the immunisation programme*** - The ISPs report and are accountable to the Fund Manager Abt. As such, there is no reporting requirement in place between the ISPs and the NDoH. / PHAs • ***Congruence in ISP approach and funding modalities*** – The ISPs operate via various modalities, but are not consistently following an integrated health approach. The audit team observed that while some ISPs' role is limited to reimbursing funds, other ISPs are collaborating closely with the PHAs with regards to the implementation of activities. Meanwhile, a few ISPs are operating quasi-autonomously, without any direct involvement of the PHAs.	Recommendation 5 To strengthen programme management structures, the NDoH/EPI should: • Develop suitable guidelines that operationalise the NHA and PHAs Acts, by ensuring that there is substantive and regular coordination and oversight between the NDoH and the PHAs. • Establish necessary oversight structures, including the related supervision and monitoring processes with respect to PHAs' grant agreements. Recommendation 6 To strengthen the ISPs' role, NDoH/EPI should work with the fund manager to: • establish the coordination mechanism between NdoH/EPI, PHA and all the ISPs; and • determine suitable reporting structures for the ISPs grant agreements at both the PHA and at EPI national levels Recommendation 7 To strengthen the ISPs' role, MoH/EPI in collaboration with Gavi and the fund manager should: • Define the ISPs role by clearly articulating what responsibilities and accountabilities they have for the immunisation programme; and • Having defined the role, all subsequent ISP grant agreements should meet these requirements including proper accountability to the PHAs and NDoH on immunisation programme activities.
Root causes • There were no clear guidelines defining the collaboration and relationship between the NDoH and the PHAs. • No formal agreements in place regulating the ISPs' engagement with both the NDoH and the PHAs. As a result the ISPs were largely independent, being only required to report to the Fund Manager. • Several ISPs were effectively acting as autonomous fund managers, rather than executing immunisation activities as an implementation partner accountable to the local PHA government.	Management comments See detailed management responses - Annex 13

Risk / Impact / Implications	Responsibility	Deadline / Timetable
• Insufficient coordination between the NDoH and the PHAs may hinder progress in achieving national immunisation targets. • Poor collaboration between the ISPs and the PHAs could impede the effective execution of key programme interventions. • ISP-led activities may lack sustainability, including if the interventions are not embedded in local or institutional systems, or if the activities are not anchored within a longer term planning horizon.	See detailed management responses - Annex 13	See detailed management responses - Annex 13

4.1.4 Governance mechanisms need to be formalised to improve country ownership

Context and Criteria

The immunisation governance structure consists of two principal bodies: the Health Sector Coordination Committee (HSCC), the Interagency Coordination Committee (ICC), as well as an EPI Technical Working Group (TWG).

The Health Sector Coordination Committee (HSCC) led by the Minister and supported by the Secretary for Health - NDoH is the primary forum for dialogue and coordination of donor investments in the health sector, in support of the NHP. The Health Sector Coordination Committee ToRs dated May 2018 have not been formally signed off and approved. The ToRs require the HSCC to convene on a quarterly basis, plus for additional meetings to address priority issues, such as budget submissions, as required. The roles, responsibilities and functions of the HSCC will include:

- Providing strategic oversight on development cooperation for health to ensure alignment with National Health Plan and additionality to domestic health resources.
- A focus on delivering results through improved health service performance and improved health outcomes.
- Develop and approve an annual workplan of activities to improve annual coordination and alignment of health cooperation to support national health plans.
- Ensure all development assistance for health is aligned with national health plan and national priorities and is reflected in national health budgets and work plans.
- Strategic oversight of annual Department of Child Health (DCH) planning and progress review processes to ensure contribution to national health system improvements and health outcomes.
- Strategic oversight of annual technical assistance and capacity building planning and delivery process.
- Coordination of all international NGO inputs in support of national plans.

The HSCC ToRs also propose creating four working groups including: Health Financing; Immunisation; Human Resources; and sub-national service delivery. These working groups are needed to offer the necessary forum for technical discussions on thematic areas of work, and to escalate relevant topics and results to committee proceedings. This allows for these groups to provide detailed feedback which can be subsequently shared with the Secretary for Health, donors, and delivery partners.

Rehabilitation Immunisation System Priority 1 Objective states that “By 2025, the National Immunisation Programme is provisioned with leadership, management, and coordination quality standards and with a functional National Immunisation Technical Advisory Group (NITAG)”. In addition, strengthening national capacity to formulate evidence-based policies and decisions and to provide oversight of the NIP, through strengthening the ICC, setting up a technical advisory group (NITAG or interim authority while NITAG is being set up), and conducting regular meetings among these two bodies to strengthen accountability.

The ICC is instrumental for the coordination and collaboration amongst in-country immunisation stakeholders. An effective ICC enables the programme’s: coordination, strategic planning, optimal allocation of resources, accountability measures, advocacy, and the functionality of its partnerships. According to the ICC ToRs revised in June 2020, the ICC’s purpose is to: promote the achievement of the immunisation goals; as well as the NIS and NHP objectives. The ICC is chaired by the Secretary for Health - NDoH or his/her nominee. The core membership of the ICC includes: NDoH, the Department of Planning and Monitoring, PNG School of Medicine, PNG Institute of Medical Research, Catholic Health Services, PNG Church Health Services, WHO, UNICEF, CHAI, an NGO representative, DFAT, MFAT, and a PNG Partnership Fund representative. The ICC is expected to meet quarterly to execute the following functions:

- Technical discussion and endorsement of proposals and activities related to implementation of the NIS including new vaccine introductions.
- Strategic planning on prioritisation of activities under the NIS given available resources.
- Coordination of partners including guidance on location, type and timing of immunisation related activities.
- Monitoring and review of progress of the immunisation programme using relevant M&E frameworks.
- Identification of systematic challenges to achievement of objectives under the NIS and discuss options to address them.

- Review of research results, implementation lessons and other evidence from both local and international contexts.
- Advocacy and mobilisation of funding and resources to advance objectives of the NIS.
- Liaison with other relevant bodies within the health sector and across sectors.

Condition

Several of the existing immunisation governance mechanisms are not functioning effectively. The audit team identified weaknesses in the existing governance and oversight structures:

- **Health Sector Coordination Committee (HSCC) remains non-functional:** Despite being established in 2018, there was no evidence that the HSCC convened any meetings during the period (2019-2023). Furthermore, the none of the HSCC TWGs were established including the immunisation working group.

- **National Immunisation Technical Advisory Group (NITAG) is not established:** As of October 2024, no NITAG was in place, despite the NIS mandating that it needed to be established. Although WHO supported the NDoH in developing a NITAG draft charter, this was not yet approved by NDoH's senior management.

- **Gaps in ICC Functionality and Oversight –** The audit team assessed the effectiveness of the ICC's oversight by reviewing committee meeting minutes from 2019 to 2023. The team's review highlighted several areas for improvement:
  - ***Inconsistent meeting frequency:*** The ICC did not meet as frequently as mandated. Out of a possible 20 meetings over the five-year period, only six were held—one each in 2019, 2020, and 2022; three in 2021; and none in 2023. Notably, the ICC was not involved in the COVID-19 pandemic response, which was managed by a separate task force.
  - ***ICC core functions not fully executed:*** There were significant gaps in the ICC's performance of its responsibilities as outlined in its ToRs. Functions that were not adequately addressed include:
    - Advocacy and mobilisation of funding and resources in support of the NIS.
    - Review and integration of research findings, implementation lessons, and evidence from local and international sources.
    - Monitoring and evaluation of immunisation programme's progress using established M&E frameworks.
    - Partner coordination, including providing strategic guidance on the location, type, and timing of immunisation-related activities.

Recommendation 8

To strengthen the programme's governance and oversight, the NDoH/EPI should:

- Review the current governance structures with regards to the HSCC and ICC and establish the appropriate governing structure to meet the country's needs ensuring that the existing government structure is strengthened instead of creating new committees;
- Establish the NITAG as mandated by the NIS; and
- Ensure that Terms of Reference are approved so that the defined governance structure can be formally operationalised.

Root causes

The following root causes were identified:

- **Overlapping governance structures strain limited resources:** The existence of multiple governance bodies requiring input from the same limited pool of personnel creates challenges in the coordination and individuals' engagement. The NDoH has not yet assessed which of these structures are necessary to ensuring effective oversight of the programme. Additionally, the EPI faces human resource constraints, limiting its ability to coordinate its efforts and to provide a dedicated secretariat service in support of its governance mechanisms.

Management comments

See detailed management responses - Annex 13

• **Terms of Reference not finalised or endorsed:** The audit observed that the ToRs for three of the governance bodies— namely the ICC, the HSCC, and the NITAG charter—remained in draft form and were not formally approved by NDoH's senior executive management.		
Risk / Impact / Implications • Ineffective governance structures may result may in insufficient guidance to help direct the programme in achieving its objectives, including diluted controls over certain programme activities. • Inadequate oversight may impact the ability of the programme to achieve its objectives and to sustain its institutional capabilities after transition.	Responsibility See detailed management responses - Annex 13	Deadline / Timetable See detailed management responses - Annex 13

4.1.5 Governance coordination and oversight role needs to be strengthened

Context and Criteria

The HSCC, led by the Minister of Health and supported by the Secretary for Health – NDoH, is the principal forum for the discussion and coordination of donor investments in the health sector, in support of the NHP implementation. The ICC is instrumental for the coordination and collaboration amongst in-country stakeholders involved in immunisation.

In December 2022, the EPI TWG ToRs were signed off and formally endorsed by the Secretary for Health and became operational in 2023. Under the purview of the ICC, the EPI TWG was set up with 3 main objectives including: supporting the implementation of the NIS; developing plans, strategies, and support implementation of the recommendations of the NITAG; and providing TA in implementing any priority activities related to EPI, as directed by the Health Secretary. The EPI TWG is chaired by the Executive Manager, Public Health. The TWG is expected to meet every month and report to the Deputy Secretary for Public Health every quarter. The TWG has 10 members including the: Executive Manager, Public Health, the EPI Manager (who is also the TWG Secretary), Manager Family Health Services, Technical advisors on Child Health, Maternal Health, Nutrition program, Manager Emergency & Surveillance Program, Manager Health promotion, UNICEF and WHO.

A universal principle for managing successful meetings, is to ensure that "*the meeting's recommendations are accomplished and/or action items identified are followed up*."

Rehabilitation Immunisation System Priority 1 Objective states that "by 2025, all PHAs are provisioned with a provincial committee on immunisation and with a standard annual implementation plan (AIP)".

Condition

No functional linkage between the EPI TWG and the ICC – The audit team found no evidence of a structural relationship between the EPI TWG and the ICC. Specifically, there was no indication that outputs from the TWG meetings were shared with the ICC, or that the TWG provided summarised reports or escalated its technical recommendations to inform ICC deliberations.

Although the monthly EPI TWG meetings throughout 2023 were well-attended, including partner participation, their discussions were primarily focused on the MR supplementary immunisation activity. Nevertheless, during that time, no progress or engagement was documented for several of the TWG's key mandates, including:

- Identifying options for securing the necessary resources and funding for the EPI;
- Collaborating with the ICC and development partners in support of EPI implementation;
- Engaging with the e-Health Steering Committee to improve EPI data management; and
- Supporting the national AEFI committee to strengthen surveillance systems and ensure vaccine safety.

Weak monitoring and planning mechanisms supporting the immunisation programme

- *No defined process for monitoring the implementation of recommendations* - The audit team revealed that there were no functional mechanisms in place to review the status of HSCC, ICC and TWG recommendations. This includes the tracking, follow-up, and monitoring of the implementation status of recommendations or decisions taken by these governance bodies. Although certain actions were sometimes assigned to specific individuals, timelines were not established to ensure prompt implementation, and meetings' minutes did not consistently document the follow-ups of previous recommendations/decisions.

Recommendation 9

To strengthen Governance coordination, and oversight roles, the National Department of Health (NDoH) / Expanded Programme on Immunisation (EPI), with support from the development partners, should implement the following actions:

- **Improve information flow and decision-making:** Ensure that issues discussed at the EPI Technical Working Group (TWG) chaired by Senior Official of NDoH are escalated to the Senior Executive Management Team of NDoH for decision-making till the time ICC is established. The TWG should also leverage its existing platform, to regularly monitor the implementation progress on the partners' activities.
- **Standardise meeting documentation and follow-up mechanisms:** Develop and adopt a standardised format for recording meeting minutes. Establish a dashboard to track the status of the SEM, and the EPI TWG recommendations and decisions. Each recommendation should clearly identify the responsible officer, and by when the action will be completed, to ensure accountability.
- **Strengthen reporting to the SEM:** Ensure that the EPI TWG prepares and submits concise summary reports to the SEM, highlighting its key conclusions and technical inputs in support of the SEM's deliberations and strategic decision-making.

• *Absence of Annual Operational Plans* - Throughout the audit period, the EPI had no annual operational plans (AOPs). The absence of such plans limited the EPI's ability to systematically guide and monitor its internal activities as well those undertaken by the immunisation partners. In addition, it was not possible to properly benchmark progress and assess the programme's performance.	• **Annual review of TWG resolutions:** Conduct an annual review of TWG resolutions/ decisions, and highlight to the SEM, all instances of non-compliance or insufficient progress, for the Committee to revisit and review. • **Enhance planning and prioritisation using a workplan tracking tool** – Develop and implement a tool to monitor the status of TWG activities, including documenting any delays or any actions brought forward from previous years. Any activities which are deprioritised should be formally endorsed by the SEM. • **Establish a dashboard to track implementation**: Create a dashboard to visualise and monitor the implementation status of immunisation activities, helping to identify any bottlenecks, so that the TWG can propose timely interventions for the EPI to facilitate and execute. • **Develop annual operational plans** – implement a formal annual operational planning process into the EPI, including scheduling partner-supported activities. These annual plans should be subsequently used to guide implementation, track achievements, and facilitate decision-making in the case of activities being delayed.
Root causes • **Lack of operational plans:** There are no governance work plans in place to support institutional structures' operations, and no EPI annual operational plans are in place to help direct and manage the programme. • **Absence of standardised meeting documentation:** Minutes from meetings are recorded in a brief summary format, without using a consistent template to capture and track key decisions and follow-up actions from previous meetings. • **Unclear accountability relating to recommendations**: Recommendations and action points lack a designated officer, and completion timeline, to ensure accountability and follow-up. • **No tracking system for implementation:** There were no structured tracking systems for the ICC, SSITAG, and EPI TWG, to enable the monitoring of progress when implementing: recommendations, action points, or annual work plans.	Management comments See detailed management responses - Annex 13
Risk / Impact / Implications • Inadequate governance oversight over immunisation, could lead to delays in identifying and addressing critical programmatic challenges. • Insufficient coordination could undermine the programme's goals, as it may struggle to meet its overarching objectives and build the necessary institutional resilience, in anticipation of transition. • Ineffective tracking and monitoring mechanisms may delay the resolution of key issues.	Responsibility See detailed management responses - Annex 13 Deadline / Timetable See detailed management responses - Annex 13

4.1.6 Grant management requirements and audit recommendations are still outstanding

Context and Criteria

In 2016, the Gavi's Audit and Investigations unit carried out a programme audit of the Gavi-supported programmes in Papua New Guinea and issued a set of recommendations.

In 2019, Gavi carried out a programme capacity assessment (PCA) of the NDoH, covering the following three areas: financial management capacity - including an evaluation of the funding mechanism; vaccine cold chain management; and programme management. Upon concluding this assessment, a set of grant management requirements (GMRs) were agreed between the NDoH and Gavi. Thereafter, in December 2021, Gavi provided a revised set of grant management requirements (GMRs) to NDoH.

Condition

The audit team determined that 4 out of 18 of the GMRs are no longer applicable due to changes in the country context relating to Gavi's support (see annex 6 for a detailed status of GMRs). Of the remaining 14 GMRs, 7 (50%) of these were not fully implemented. The following GMRs remain unfulfilled:

- ***National EPI management and staffing*** **-** The NDoH committed to ensuring the appointment of suitably qualified and experienced personnel, including a national EPI manager, vaccine and logistics officer, and cold chain officer, each with clear Terms of Reference (ToRs) and proper supervision. As at October 2024, while the cold chain officer was permanently hired, the national EPI manager is serving in an acting capacity, and the vaccine and logistics officer was hired on a temporary basis through CHAI.
- ***Annual workplans and budgets*** **-** The NDoH was to develop national and provincial EPI annual workplans and budgets aligned with the Government of Papua New Guinea's (GoPNG) budget cycles. This has yet to be fully implemented.
- ***Financial reporting and accountability*** **-** The NDoH committed to accounting for funds disbursed by Gavi or other sources, and to preparing and submitting quarterly financial reports to Gavi, in line with Gavi's financial management and audit guidelines. This process remains incomplete.
- ***Asset management*** **-** A comprehensive fixed asset register was to be maintained and regularly updated across all levels of the health system. The NDoH also committed to performing an annual physical inventory count of fixed assets, along with periodic surprise spot checks. This has not been fully achieved.
- ***Stock management and reporting*** **-** The central mSupply tool maintained at NVS was to be updated monthly with stock data (physical inventory counts, vaccine consumption, stock-outs, wastage, and expiries) from provincial vaccine stores. These updates are not being consistently done.
- ***Logistics and contractual arrangements*** **-** The NDoH was tasked with reviewing and discussing its contractual agreements with the national logistics and forwarding company, including defining INCOTERMS and liability in case of vaccine damage or loss. This process has not been fully implemented.
- ***Insurance and safeguards for assets and vaccines*** **-** The GoPNG was expected to maintain adequate insurance coverage for assets and vaccines. Due to a lack of government funding for insurance, as an alternative physical safeguard – such as fire safety and access control measures, were to be implemented to protect assets and vaccines from potential losses due to disasters, negligence, or theft. These safeguards have not been fully implemented.

Recommendation 10

To improve oversight and accountability with regard to outstanding actions and audit recommendations, the NDoH/EPI should implement the following measures:

- Reassess the GMRs in light of the current country context, and where necessary revise them to ensure they remain relevant and actionable;
- Create a tracking system at the EPI operational level to capture the recommendations, categorised by priority (high, medium, low). For recurring recommendations across multiple reviews, aggregate them under one action item with a single action owner, and ensure that the action addresses issues identified in all relevant reports. For example, recommendations that appear in both the programme audit report and GMR should be combined, with a unified action plan;
- Develop a dashboard for governance oversight that differentiates between GMRs and assurance recommendations. Ensure these are assigned to appropriate action owners, with clearly defined timelines for implementation; and
- Introduce a semi-annual process into TWG meetings, so that the latest implementation status of actions and recommendations can be reviewed by the TWG. A summary of the TWG's review should be shared with Gavi after it is endorsed by the Committee.

<table>
<tr><td colspan="2">Gavi's 2016 programme audit recommendations were not all implemented: Progress has been made in addressing some of the 2016 programme audit recommendations. The team noted that 23 out of 75 of the programme audit recommendations are no longer applicable due to changes in the country context. Of the remaining 54 recommendations, 21 (39%) were not fully implemented. These issues were taken up again and have been incorporated and reintroduced into the relevant sections of this report.</td></tr>
<tr><td>Root causes
• No tracking of outstanding actions and recommendations – Actions and recommendations from various assessments were not systematically tracked by the immunisation governance bodies. The ICC did not have a standing agenda item for it to regularly review progress in implementing actions and recommendations.
• Insufficient accountability – not all recommendations/ actions were assigned action owners to ensure timely follow-up.
• Absence of a process to converge or combine actions/ recommendations from various reviews - There is no established mechanism to monitor and consolidate the implementation of recommendations from different reviews.</td><td>Management comments
See detailed management responses - Annex 13</td></tr>
<tr><td>Risk / Impact / Implications
• Unresolved issues from prior audits and reviews may result in internal control weaknesses persisting or aggravating operations, ultimately potentially undermining the programme implementation or impacting overall grant performance.
• Failure to comply with the GMRs could lead to delays, suspension, or termination of Gavi's funding, resulting in missed opportunities for the country, as stipulated in the signed PFA.
• Insufficient oversight may impede the programme's ability to achieve its objectives.</td><td>Responsibility
See detailed management responses - Annex 13</td><td>Deadline / Timetable
See detailed management responses - Annex 13</td></tr>
</table>

4.1.7 EVM assessment recommendations not fully implemented

Context and Criteria

Over the past eight years, PNG has conducted two Effective Vaccine Management (EVM) assessments – a 2022 EVM which achieved a score of 58%; and a 2016 EVM which achieved 52%. The EVM initiative provides important information on the supply chain to help countries monitor, assess and improve its performance. Prior to 2019, countries were evaluated against nine vaccine management criteria. Thereafter, an updated EVM assessment tool was introduced, with thirteen criteria —nine relating to operations and four focused on management.

Following the EVM assessment, a tailored improvement plan is generated, with specific activities and timelines to address the assessment's challenges. It is necessary for countries to prioritise, budget for, and implement the plan's actions to strengthen their supply chain. As part of Gavi's Immunisation Supply Chain strategic approach, the results of the EVM exercise are to be integrated into the country's ongoing vaccine management improvement process.

Comprehensive Immunisation Supply Chain Improvement Plans (cIP) help countries build evidence-based justifications for future supply chain investments. They also facilitate coordination, ensuring that improvement plans are communicated effectively to relevant stakeholders and fostering their continued support.

Rehabilitation Immunisation System priority 3 objective states that "By 2025, the WHO-UNICEF Effective Vaccine Management (EVM) standard indicators reach 80 percent at the national level".

Condition

Delayed implementation of the EVM continuous improvement plan (cIP) – PNG's two successive EVMs, achieved 52% in 2016 and 58% in 2022, showing a net improvement. Also, this second assessment used the updated EVM tool (see Annex 6 for detailed status).

Overall, these results indicate that several processes were still performing poorly in 2022. Out of the 13 criteria assessed, 7 scored below 60%, with the lowest scores recorded for supportive supervision and immunisation supply chain (ISC) performance monitoring. A sub-national disaggregation of the EVM scoring across various decentralised levels highlights the following

- **Primary Level -** At the national level, the overall score improved significantly from 41% to 63%, with 6 out of 9 criteria showing progression. Notable improvements were seen in vaccine arrivals, temperature management, stock management, and vaccine distribution (see Annex 6 for detailed status).
- **Sub-National Level -** At the sub-national level, the net score showed a slight progression from 57% to 60%. There was a marginal improvement in cold chain equipment (CCE) maintenance and stock management; however, a significant decline was observed in waste management (see Annex 6 for detailed status).
- **Service Point Level -** At the service point level, there was a notable decrease in score from 57% to 51%, with all 8 criteria showing a reduction compared to the 2016 assessment (see Annex 6 for detailed status).

In February 2023, PNG's cIP was developed following the EVM assessment, which outlined 67 activities in total. These activities were spread across all six EVM areas: infrastructure; equipment; information technology; human resources; policies and procedures; and financial resources.

The implementation of this plan is scheduled to take place between 2023 and 2026, with the majority of the funding resources being provided from Gavi's HSS grant. The NDoH/EPI, in collaboration with UNICEF, will oversee the implementation.

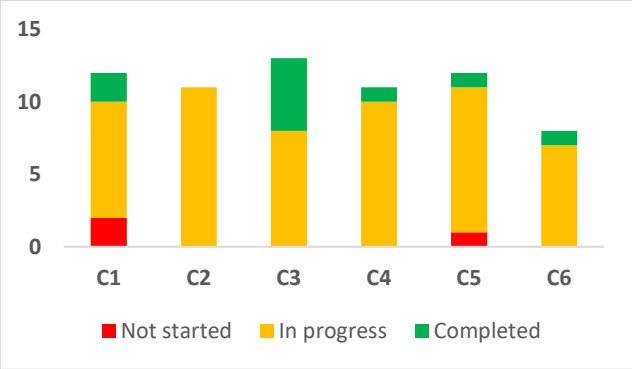
Recommendation 11

To enhance oversight and accountability over the status and implementation of actions or recommendations from cIP, the NDoH/EPI should:

- Regularly review the implementation status of its EVM comprehensive improvement plan. Based on this review, they should re-prioritise what remaining funding is available and adjust the estimated completion timelines for any delayed activities.
- Create a dashboard (or an equivalent monitoring tool) to clearly illustrate the implementation status of the continuous improvement plan. This dashboard should track progress against key activities and milestones, and be regularly reviewed in the EPI TWG to support accountability and timely decision-making.

In October 2024, the audit team reviewed the status of the activities outlined in the cIP, which showed that 4% of the activities had not yet been started, 81% were in progress, and 15% had been completed, as illustrated below:

Figure 1: Completion status of activities of the EVM cIP - 2022



Key cIP plan activities that had not been started include: (i) the preparation of a temperature monitoring study report; (ii) ensuring the availability of dry storage at the NVS with adequate air conditioning; (iii) and addressing guttering and drainage issues at provincial store buildings. Additionally, it was noted that while some activities in the cIP had been costed, the necessary funds had not yet been allocated.

Root causes

- Inadequate oversight of the cIP by UNICEF and EPI-NDoH.
- There was no evidence that joint review meetings took place, to assess the plan's progress and that any necessary remedial actions (such as dealing with any delays) were agreed and addressed.

Management comments

See detailed management responses - Annex 13

Risk / Impact / Implications

- Delays in implementing and completing the past EVM improvement plan recommendations, put at risk the integrity of the supply chain, as was also substantiated in part, due to some weaknesses materialising, as evidenced by the challenges experienced and identified in the present vaccine supply chain.

Responsibility

See detailed management responses - Annex 13

Deadline / Timetable

See detailed management responses - Annex 13

4.2 Programme management

4.2.1 Inadequate financing impeding vaccine supply

Context and Criteria

Gavi's Transition Policy aims to ensure that when countries transition out of Gavi support, they have "successfully expanded their national immunisation programmes with vaccines of public health importance, and are able to sustain these vaccines post-transition with high and equitable coverage of their target populations, while having robust systems and decision-making processes in place to support the introduction of future vaccines[7]."

Under Gavi 5.0, Gavi call for an end to immunisation inequity, by focusing on zero-dose children, defined *"as children who don't receive a single dose of diphtheria, tetanus and pertussis-containing vaccine"* – a key priority for the next five years. Gavi's stated goal is to reduce the number of zero-dose children by 25% by 2025, and by 50% by 2030, coinciding with the Sustainable Development Goals.[8]

PNG's national health plan 2021-2030, aims to achieve Penta 3 70% immunisation coverage by the end of 2024, and 80% coverage by the end of 2025.

Also, the NIS, estimates that PNG's vaccines procurement requirements total around PGK 27 million every year. However, the GoPNG only allocated PGK 3.47 million in 2023 and PGK 3.47 million in 2024. The allocation has been increased to PGK 18.9 million in 2025.

Condition

Inability to achieve immunisation targets due to vaccine shortages - The NHP set a target of achieving 80% Penta 3 coverage by 2025. However, this target is unlikely to be met, as the PHAs currently receive on average, only 60% of the required Penta vaccine supply. This significant shortfall in the volume of vaccines available is a critical barrier in achieving the stated national immunisation goals. Many of the PHAs recurring challenges in meeting their immunisation targets were largely attributed to the limited availability of vaccines.

Progress made after the audit fieldwork - In 2025, with strong donor support, the NDoH/EPI successfully engaged the Department of Treasury, resulting in a substantial increase in the national budget allocation for vaccine procurement—from PGK 3.4 million in 2024 to PGK 18.9 million. This marks a significant step forward toward financial sustainability and national ownership, bringing the allocation closer to the annual requirement of PGK 27 million.

Recommendation 12

To increase the relevance of the country's immunisation program and to achieve its defined targets and National Immunisation Strategy, the NDoH/EPI should:

- Continue undertaking robust, concerted advocacy measures targeting the Department of Treasury and the Ministry of Finance, requesting for an increase in funding, which is converted into a sustained constitutional EPI budgetary allocation as well as actual release, taking into consideration both the national and sub-national levels funding needs.
- Re-evaluate the proposed NHP (2021-2030) targets to reflect the funding allocation.

[7] Gavi Transition Policy

Table 6: Details of Pentavalent supplies and consumption by province

Province (PHA)	% Penta consumed against requirements (a)	% Penta supplied in comparison to requirements (b)	% efficiency of Penta consumption vs. supplied (a/b)
ARoB	64.54	69.17	93.31
Central	50.36	58.33	86.34
Chimbu	54.31	58.55	92.77
East New Britain	61.31	79.67	76.95
East Sepik	47.65	50.91	93.60
Eastern Highlands	61.30	61.49	99.69
Enga	48.80	42.27	115.44
Gulf	45.05	71.25	63.22
Hela	71.42	39.44	181.09
Jiwaka	50.97	39.81	128.02
Madang	40.95	48.38	84.64
Manus	74.11	92.01	80.55
Milne Bay	75.31	84.70	88.92
Morobe	52.33	60.21	86.91
National Capital District	88.33	100.23	88.13
New Ireland	58.56	62.90	93.10
Northern	47.69	56.49	84.41
Southern Highlands	43.78	41.82	104.67
West New Britain	46.83	49.83	93.98
West Sepik	75.48	79.03	95.52
Western	58.40	68.58	85.15
Western Highlands	66.47	66.65	99.74
Total	**56.09**	**59.81**	**93.79**

Root causes

- Inadequate allocation of funding for vaccine procurement. Unless the vaccine funding gap is addressed, it will impede increases in immunisation coverage.
- Advocacy for more funding for vaccines has not resulted in adequate resources being allocated by the Department of Treasury to achieve the targets outlined in NHP.

Management comments

See detailed management responses -Annex 13

<table>
<tr><td colspan="2">• Some provinces achieved low immunisation coverage due to these being among “hard to reach” areas with geographical or topographic accessibility issues. Despite these challenges, suitable targeted strategies were not developed.</td><td></td></tr>
<tr><td>Risk / Impact / Implications
• Low immunisation coverage (whether localised, regional or widespread) could hinder the country from achieving its goal of mitigating vaccine-preventable diseases.
• The number of under-vaccinated and unvaccinated children could further increase, detrimentally impacting upon the PNG’s NIS goals and objectives.</td><td>Responsibility
See detailed management responses - Annex 13</td><td>Deadline / Timetable
See detailed management responses - Annex 13</td></tr>
</table>

4.2.2 Lack of equity in the supply of available vaccines

Context and Criteria

Gavi's Transition Policy aims to ensure that when countries transition out of Gavi support, they have "successfully expanded their national immunisation programmes with vaccines of public health importance and are able to sustain these vaccines post-transition with high and equitable coverage of their target populations, while having robust systems and decision-making processes in place to support the introduction of future vaccines[9]."

Under Gavi 5.0, Gavi initiated a global call to bring an end to immunisation inequity, making reaching zero-dose children –" defined *as children who don't receive a single dose of diphtheria, tetanus and pertussis-containing vaccine"* – a key priority for the next five years. The stated goal is to reduce the number of zero-dose children by 25% by 2025, and by 50% by 2030, coinciding with the Sustainable Development Goals.[10]

PNG's national health plan 2021-2030, aims to achieve Penta 3 70% immunisation coverage by the end of 2024, and 80% coverage by the end of 2025.

Resuscitation pillar 3's objective states that "By the end of 2021, "immunisation service delivery" has increased by 10 percent from the 2020 baselines, resulting in better coverage of all antigens and equity in access". The NIS estimates that PNG's vaccines procurement requirements total around PGK 27 million every year. However, the GoPNG only allocated PGK 3.47 million in 2023 and PGK 3.47 million in 2024.

Condition

Substantial disparities in immunisation administrative coverage among provinces: During the audit period (2019–2023), the national Penta 3 immunisation coverage fluctuated around an average of 40%. However, significant discrepancies were observed across provinces, with further intra-provincial variations in the coverage from year to year. These differences highlight the need for more targeted and data-driven interventions, to address persistent disparities in immunisation coverage across and within provinces.

The audit team also noted substantial variations in the quantity of vaccines supplied to different provinces. Despite these supply differences, provinces demonstrated the ability to consume relatively high levels of vaccine doses which they received. If the distribution of vaccines was uneven, this could be a contributory factor to variances in the immunisation coverage level achieved. This also highlights the importance of implementing a needs-based vaccine allocation mechanism.

Recommendation 13

To ensure equity in supply and coverage, the NDoH/EPI should:

- **Develop a targeted catch-up plan for low-performing provinces.** A clear, actionable catch-up plan should be developed specifically for provinces which are struggling to meet their immunisation targets. This plan should address the root causes of low coverage and include targeted interventions, including outreach, to increase immunisation rates in these areas.
- **Create a vaccine distribution plan -** A comprehensive vaccine distribution plan should be designed, to ensure access across the provinces, taking into account their geographical challenges and local needs. The plan should help to ensure that underserved or hard-to-reach areas receive adequate vaccines, with an overall objective of reducing disparities in coverage.

[9] Gavi Transition Policy
[10] The Zero-Dose Child: Explained

Table 7: Penta 3 coverage details

Province	Penta 3 Coverage % 2019	Penta 3 Coverage % 2020	Penta 3 Coverage % 2021	Penta 3 Coverage % 2022	Penta 3 Coverage % 2023
ARoB	37.46	56.41	34.57	75.28	41.43
Central	35.13	41.26	41.23	47.57	46.06
Chimbu	46.85	48.46	35.14	50.25	40.53
East New Britain	51.27	49.20	57.97	52.32	44.28
East Sepik	14.74	36.21	33.87	33.77	28.55
Eastern Highlands	41.21	52.75	36.90	43.92	40.93
Enga	63.04	54.68	34.44	34.60	30.44
Gulf	21.94	35.00	25.38	34.30	24.24
Hela	62.45	60.30	50.13	52.15	48.39
Jiwaka	25.47	43.96	38.89	46.83	43.54
Madang	22.61	29.42	17.26	17.23	20.10
Manus	65.97	73.05	55.02	63.72	58.63
Milne Bay	68.51	75.84	58.34	58.42	58.35
Morobe	34.60	35.97	29.65	32.03	34.46
National Capital District	94.00	81.18	70.87	70.88	77.30
New Ireland	51.45	41.59	44.37	49.16	56.49
Northern	34.21	31.93	30.08	38.62	36.04
Southern Highlands	37.18	38.23	33.14	33.14	31.84
West New Britain	39.13	36.73	29.73	40.83	31.96
West Sepik	31.57	52.44	34.76	61.72	46.18
Western	19.89	26.01	29.12	36.98	42.88
Western Highlands	59.95	50.63	50.47	43.26	59.85
Grand Total	**40.67**	**45.31**	**37.18**	**42.33**	**39.84**

Root causes

The following root causes were identified:

- Absence of a vaccine distribution plan – There is no tailored distribution plan in place to address the specific needs and challenges of different provinces, particularly those with lower coverage. Provinces having high consumption are not being provided supplied as per their needs as compared to provinces having low consumption but still being supplied adequately.
- Geographical barriers to reaching low-coverage provinces – The provinces with the lowest immunisation coverage face significant geographical challenges, making them difficult to reach. However, no targeted strategies have been developed to overcome these barriers and ensure equitable vaccine distribution to these hard-to-reach areas.

Management comments

See detailed management responses - Annex 13

Risk / Impact / Implications

- Low immunisation coverage in some provinces may hinder the country's ability to achieve its goal of reducing vaccine-preventable diseases. If not addressed, these gaps could undermine PNG's progress in reducing morbidity and mortality.

Responsibility

See detailed management responses - Annex 13

Deadline / Timetable

See detailed management responses - Annex 13

• An increase in under and unvaccinated children could jeopardise the immunisation agenda for 2030 and PNG's NIS objectives. Rising missed immunisation opportunities also poses a threat in achieving global immunisation targets and reducing the disease burden, affecting the country's standing with regards to international health commitments. • Equitable access to vaccines aligns with Gavi's key principles. The inability to align with this principle, risks detracting from Gavi's immunisation support objectives.		

4.2.3 Support supervision arrangements need to improve

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 arising 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[11].

The NDoH is responsible for support supervision at the provincial level. Similarly, provinces are responsible for support supervision at the health facility level. In addition, all the 12 provincial ISPs under AIHSS out of which 5 are Gavi supported are also expected to undertake support supervision of their respective provinces.

The NdoH's responsibilities for supportive supervision include: (i) developing checklists for support supervision; (ii) providing training to the provinces for undertaking support supervision at the health facilities; and (iii) monitoring whether the provinces are undertaking the support supervision appropriately or not.

Integrated checklists were recently developed in July 2024 and training is being undertaken, which will be deployed by the provinces down to the HFs. Going forward the Open Data Kit (ODK) platform will be used to capture and summarise all of the support supervisions and findings which are done by the various immunisation actors.

Condition

Current subnational supervision and monitoring, over the immunisation programme is suboptimal: The audit team found no evidence that supportive supervisions were conducted in 6 out of 9 PHAs, 3 out of 3 DHOs, and 24 out of 30 HFs, which the team visited. Additionally, there were no documented minutes for the respective meetings held by the provincial Technical Working Groups (TWGs) regarding immunisation, nor were there any mechanisms in place to enable the TWGs to follow-up on the action points its discussed. Due to the lack of a reliable process for recording and revisiting supervision feedback, the audit team concluded that the current system for tracking the implementation of past supervision actions is ineffective.

No supervision plans were found at either the national or sub-national levels, meaning that supervision visits effectively occurred on an ad-hoc basis. Although general supervision guidelines and an integrated health checklist were recently developed by NDoH with support from the partners, these were not tailored to the country's specific needs, and provide limited coverage of the vaccine supply chain and immunisation-related areas.

While some provinces informed development of support supervision plans, these were not implemented due to funding constraints. The audit team also noted that there was a general lack of training and understanding, around the concept of supportive supervision.
In provinces where district offices exist, no supportive supervision activities had been carried out at the district level, nor had any training been conducted.

At the sub-national level, while the immunisation programme's performance and challenges were reportedly discussed during senior executive meetings in each province, there was no documentation on file, summarising what conclusions were reached. As a result, it remains unclear what remedial actions, if any, were taken by the PHA senior executive members following these discussions.

Recommendation 14

To strengthen governance and oversight, the NDoH/EPI with support from partners should:

- Institutionalise the monitoring and supportive supervision guidelines which includes dedicated sections for immunisation data quality and vaccine stock management. Using these guidelines, the NDoH should conduct supportive supervisions at the PHA level, while PHAs should be responsible for conducting supportive supervision at the health facility (HF) level;
- Implement robust feedback mechanisms to ensure that immunisation findings from all supervision visits are formally documented and accessible by the local EPI officers;
- Introduce an action tracker system to monitor the implementation status of recommendations from previous supportive supervision visits, as well as a process to ensure that these are regularly followed up and updated accordingly; and

[11] WHO on supportive supervision

Gaps in supportive supervision of AIHSS supported facilities: In addition to NDOH's supportive supervisions, the fund manager and implementing service providers (ISPs) under the AIHSS initiative do not have structured support supervision plans in place, meaning that their own supervision visits were in effect, conducted on an ad-hoc basis. Also there were no established feedback or follow-up mechanism in place, to ensure that any deficiencies identified by the ISPs during the supervision visit, are addressed in a timely and effective manner.	• Ensure that the review of action points from previous supervisory visits is included as a standing, mandatory task for all subsequent supervision visits, so as to reinforce individuals' accountability in implementing previous agreed actions.
Root causes • Absence of documented guidelines - There are no formalised monitoring and supportive supervision guidelines currently in places. • Inadequate supervision tools - The existing supportive supervision tools lacks sufficient depth to effectively monitor and guide critical areas such as data quality and vaccine supply management. • Lack of feedback and follow-up mechanisms – Feedback from monitoring and supportive supervision visits was not consistently shared, nor was there a structured process in place to track and follow-up on the progress in addressing issues previously identified.	Management comments See detailed management responses - Annex 13
Risk / Impact / Implications • Insufficient monitoring and supervision, coupled with inconsistent or absent follow-up mechanisms, can lead to missed opportunities to promptly identify and resolve operational issues. • Without regular, constructive feedback, the reinforcing benefits of supportive supervision are diminished. • Frontline immunisation staff may lack guidance to improve their implementation practice, impacting on the immunisation programme.	Responsibility See detailed management responses - Annex 13 Deadline / Timetable See detailed management responses - Annex 13

4.2.4 Weaknesses in the fund management model should be addressed to improve sustainability

Context and Criteria

In February 2019, consistent with the Minister of Health & HIV's declaration, the PNG Government designated 2019 as the 'Year of Immunisation'. As a consequence, the Government requested that development partners support efforts to accelerate to 80% immunisation coverage. to prevent future outbreaks of vaccine preventable diseases. NDoH, in consultation with the development partners, identified 15 priority provinces for this programme to focus upon increasing routine immunisation.

Abt managing the PNG partnerships fund, was designated by the Governments of PNG, Australia, and New Zealand, as well as Gavi to manage the "Accelerating Immunisation and Health Systems Strengthening (AIHSS) Programme". Correspondingly, in July 2019, Gavi signed a grant agreement with Abt, for it to provide Gavi fund management services. Similarly, Abt signed partnership grant agreements with five immunisation support provider (ISPs) and disbursed funding to them. The ISPs were contracted to support the implementation of the immunisation programme and work along with the respective PHAs. The objectives of the ISPs assignment were to support NDoH and ICC in the management and the delivery of Health System Strengthening support in Papua New Guinea, in accordance with the requirements and objectives of Gavi and the other funding partners (DFAT and MFAT).

Gavi's initial grant agreement with Abt totalled USD 3.8 million, for a 12-month period from 1 March 2019 to 30 April 2020. Thereafter, the Abt agreement was extended to 30 Dec 2023 with an additional grant amount totalling USD 4.5 million. Under the first phase of AIHSS up to December 2023, 12 provinces were supported, including 5 Gavi-supported provinces, and 7 DFAT-supported provinces. ISPs were sub-contracted in each of Gavi's 5 provinces, except for the Eastern Highlands province for which the funding was disbursed directly to the PHA via the HSIP-Trust Account. The second phase of AIHSS is scheduled to run concurrently from Jan 2024 until December 2028. In this second phase, 15 provinces are being jointly supported by Gavi, DFAT and MFAT – with Gavi contributing 43% of the total cost. An initial one-year agreement was signed in Nov 2023, subject to being potentially extended thereafter. The first-year budget allocation totals USD 3.2 million for 2024. In addition, in October 2021 Gavi provided Abt with CDS funds totalling USD 2.2 million to provide support to 6 provinces.

In those AIHSS supported provinces where an ISP was appointed (12 of these, or which 5 relate to Gavi), the ISP supports the implementation of the immunisation activities, by working along with the PHAs and by providing necessary funds and technical support to carry out immunisation activities. In the remaining provinces, the AIHSS funds are disbursed via the HSIP-Trust Account managed by the NDoH.

More than half of the health facilities in the designated AIHSS provinces are managed by faith-based organisation. These faith-based organisations also received funding from the government to carry out immunisation activities.

Condition

Several tasks allocated to the AIHSS fund manager were not performed: The audit team reviewed Abt's ToRs and its corresponding deliverables. It was observed that there was no evidence to confirm that the following tasks were executed:

- **Follow-up on quarterly monitoring visits –** Even though Abt conducted quarterly monitoring visits as required, there was no documentation evidencing that the resultant recommendations arising from Abt's monitoring were followed-up or addressed. The lack of follow-through raises concerns about the effectiveness of the monitoring process.

Recommendation 15

To strengthen the AIHSS programme management structures, the NDoH/EPI in conjunction with the Fund Manager should:

- Develop technical indicators for monitoring the performance of the ISPs, and monitor their performance on quarterly basis.
- Improve coordination mechanisms between EPI, PHA and the ISPs.

The ISPs' roles need to be modified to enhance their impact: The audit team reviewed the list of activities undertaken by the ISPs, and identified several issues: • **Limited impact of ISP activities –** According to the June 2023 AIHSS evaluation report, the ISPs have had limited impact in several areas, such as: PHA capacity building; coordination of immunisation programmes; support supervision; and monitoring programmatic progress. As a result, several key targets, including the outreach programme target(s), were not met. • **Lack of tangible technical indicators -** No technical indicators were put in place, to monitor the performance and impact of the ISPs activities. The lack of measurable outcomes hinders assessing the ISPs effectiveness and what they contributed towards achieving the immunisation goals. • **Inadequate monitoring frameworks –** Abt and the ISPs operate as fund managers. Abt has a financial management framework for the grantees to be followed, however, the monitoring framework and the risk assessment has not been explicitly defined beyond external audit requirements to ensure that the funds allocated and handled by these entities were properly managed, with accountability. • **Variation in human resources and project administration costs -** The human resource costs charged by each respective ISP range between 16% to 55% of their total costs. Similarly, their project administration costs ranged between 0% to 14%. The breadth and variation in costs suggests there may be inefficiencies in how the ISPs used resources and allocated costs, and raising doubts as to whether some of the ISPs' costs structures can be justified. ***Findings on the AIHSS Programme and the resulting change in immunisation coverage -*** The audit team identified several issues regarding the AIHSS programme and its contributions towards achieving the immunisation coverage objective: • <u>Failure to achieve 80% coverage goal</u> - The end goal objective for the AIHSS programme was to achieve 80% coverage. This was not achieved. Despite the budget being fully spent, the planned activities were only partially implemented. The evaluation report and half-yearly reports of AIHSS1, highlighted that many of the activities were not completed as intended, contributing to the failure to meet the coverage target. • <u>Sustainability issues with regards the ISPs' activities</u> - The activities carried out by the ISPs were found to be unsustainable due to there being limited or no involvement, by the Provincial Health Authorities (PHAs). Additionally, there was no transfer of capacities or programme outcomes from the ISP to the PHAs, which hindered the ability of the PHAs to take over and sustain the immunisation activities, once the support ended. • <u>Vaccine supply constraints</u> - The PHAs supported by the AIHSS programme received an average of 57% of their overall Pentavalent requirements. Given that supplies were constrained, even though the PHAs consumed an average of 94% of the vaccines which they received, the constraints resulted in their immunisation coverage to stagnate. Overall, the priority PHAs' coverage continued to average below 50% between 2019 and 2023, meaning that the priority PHAs did not demonstratively outperform, when compared to the other PHAs that did not receive AIHSS support.	• Develop suitable supportive supervision mechanisms for monitoring of ISPs, including the follow up of their remediation of issues. • Develop a mechanism for tracking of implementation of activities. • Develop annual work plans to monitor the progress of the activities and achievements as well as to facilitate swift decision making in case of delays and to monitor the performance of the ISPs. • Have an EPI oversight over the transition of PHA from the AIHSS support with the view that the government takes more ownership and agree and establish a roles and responsibility matrix with ISPs. • Work with the AIHSS fund manager to help prepare a comprehensive plan to handover the AIHSS programme activities to the PHAs, including a corresponding transfer of the roles and responsibilities associated. • Establish an accountability framework for the Fund Manager, in discussion with Gavi, which identifies suitable targets and indicators to support further funding through the pooled fund mechanism. Consequences should be defined for non-achievement of targets to ensure that Abt remain accountable to the immunisation programme.

Table 8: Penta coverage in AIHSS Provinces, verses Penta coverage in non-AIHSS Provinces

	AIHSS supported Provinces				Non-AIHSS Provinces			
Year	Penta 1 (%)	Penta 2 (%)	Penta 3 (%)	Penta >1yr	Penta 1 (%)	Penta 2 (%)	Penta 3 (%)	Penta >1yr
2019	48	39	31	33	67	60	53	18
2020	60	49	42	43	68	60	52	19
2021	52	41	35	24	60	52	45	12
2022	60	49	43	30	66	57	49	16
2023	58	46	41	22	66	57	49	18
Average:	**53**	**42**	**36**	**29**	**62**	**54**	**47**	**16**

The 2023 AIHSS evaluation findings are not resolved. Several key issues persist, which are mirrored by the audit findings

The June 2023 evaluation of the AIHSS programme highlighted several issues that have affected the programme's effectiveness. In addition, the audit team noted that there was no mechanism in place to track and assess the progress in addressing the evaluation's recommendations. Key issues identified in the evaluation include:

- Ineffective M&E system - The Monitoring and evaluation (M&E) system was found to be insufficient, as it failed to provide clear, reliable, and strategically focused data for programme monitoring, oversight, and decision-making. This impacted upon the ability for the programme outcomes to be monitored effectively.
- Accountability concerns - The performance reporting framework (PRF) used for programme monitoring and reporting was not effective in accurately measuring progress towards the end of programme output target. This absence of reliable data affects both the implementing partners' accountability, as well as the lack of overall transparency for the programme.
- Lack of a logical framework - There was no clear logical framework for the programme, mapping out what were the relationships between the inputs, activities, outputs and outcomes, in terms of the desired health systems, PFM capacity-building objectives, and the end of programme output target. In the absence of a suitable logical framework, this contributed to the variable quality of the ISP progress reports and made it difficult to systematically track programmatic progress.
- Performance monitoring gaps - It was unclear how well the grantees (i.e. the ISPs) performed against their respective workplan, and insufficient detail was provided on which activities were conducted and how and what resources these activities received in terms of support from the programme.
- Limited data relating to capacity building- The evaluation identified that there was little data relating to capacity building activities, contributing to gaps in the understanding of how effective and what was the quality of the activities undertaken. This makes it difficult to gauge whether the capacity-building component of the program is having a positive impact.
- Lack of information sharing - The evaluation also noted the absence of structured opportunities for ISP information sharing and learning, which could help improve the programme's overall effectiveness and ensure continuous improvement.

Root causes

Management comments

<table>
<tr><td>

- There was no mechanism to track progress against AIHSS recommendations: While various issues were highlighted in the June 2023 evaluation, there was no system in place to track the implementation of these recommendations or assess progress in addressing the identified gaps.
- The lack of an accurate monitoring framework and M&E system, combined with unclear performance metrics, means that stakeholders had limited insight over the programme's actual progress.
- Some ISPs operated as a fund manager, instead of as a partner undertaking direct implementation.
- Recommendations from the Fund Manager's supervision were not followed up to ensure these were fulfilled.

</td><td colspan="2">See detailed management responses - Annex 13</td></tr>
<tr><td>Risk / Impact / Implications

- The overall AIHSS outcome of an 80% immunisation coverage is not achieved.
- Activities undertaken by the ISPs will not be sustained by the Provincial Health Authorities after the end of the programme.

</td><td>Responsibility

See detailed management responses - Annex 13</td><td>Deadline / Timetable

See detailed management responses - Annex 13</td></tr>
</table>

4.2.5 Inadequate tracking and monitoring of the performance of partners' targeted country assistance (TCA) and partner led activities

Context and Criteria

The guiding principles of PEF TCA covers country ownership; technical assistance is embedded within the EPI team; technical assistance activities are clearly focused on the transfer of skills with a goal towards achieving sustainability; cost effectiveness; and strong accountability.

Gavi has signed agreements with its partners, including WHO, UNICEF, PwC and Abt, for the implementation of Gavi-funded immunisation activities. A portion of Gavi's HSS grant funds are channelled through the accelerated immunisation and health system strengthening (AIHSS) programme, which is a multi-donor pooled fund managed by Abt. The other portion of HSS funds, as well as all other Gavi cash grants are managed by alliance partners (WHO and UNICEF). One of AIHSS' management processes is to hold a monthly senior management meeting, including the principal development partners, namely DFAT, MFAT, UNICEF, WHO and NDoH, which are all represented.

Targeted country assistance (TCA) complements Gavi's vaccines support and health systems strengthening. Once determined, the proposed TCA activities are consolidated into an annual TCA joint plan (the One TA plan), aligned with the relevant programmatic areas. Subsequently, the impact of the TCA support is assessed as part of the country's overall grant performance indicators.

NDoH responsibilities for PEF-TCA include: leading the process in developing the One TA plan, managing the identification process of TCA needs, overseeing the activities assigned to the partners, and convening quarterly meetings to review TCA implementation progress. Similarly, the TCA partners are required to report against their respective milestones at the end of both June and November each year via the online partner portal.

By design, country ownership of PEF-TCA is best facilitated by regularly involving and engaging the NDoH and EPI within the TCA process milestones.

During 2019 - 2023, PNG received approximately USD 9.3 million in TCA (see table 1 for details). This support was agreed based on need, identified in EPI TWG meetings and covers the eight principal investment areas. These are defined as: i) service delivery; ii) human resources for health; iii) supply chain; iv) health information systems and monitoring & learning; v) vaccine preventable disease surveillance; vi) demand generation and community engagement; vii) governance, policy, strategic planning and programme management, and viii) health financing). PNG's TCA activities are consolidated into a joint plan for TCA activities (the One TA plan), aligned with the relevant programmatic areas. The one TA plan aimed to address capacity gaps in NDoH/EPI by drawing upon the in-country partners' core competencies. In practice, this resulted in most of the TCA activities being implemented by the Gavi alliance UN partners (i.e., WHO, UNICEF).

In addition to above, as the funds were channelled to the country through the partners, all of the funding for TCA and non-TCA was disbursed and undertaken by the partners, whilst the programme (represented by the NDoH and EPI) is ultimately, the intended beneficiary of the outcomes. Furthermore, the Government provided only limited EPI operational funding, resulting in most of the support to operations – except for government staff salaries – being provided by the partners.

Condition

The audit team noted the following gaps in the tracking and monitoring of TCA activities:

The NDoH/EPI is not tracking and monitoring the partners' progress in implementing TCA against the approved one TA plan: There was no evidence that the NDoH and EPI reviewed or discussed the progress and performance of TCA activities, in accordance with Gavi's PEF TCA guidance. For example, the progress of TCA should have been discussed during the EPI TWG meeting, and quarterly during the ICC meetings. Overall, the implementation of most TCA activities were delayed, when compared to plan. Thus, during the period 2019-2023 only 40% (109 out of 270) of TCA activities were completed on time. 19% (49) of these activities had delays (either major or minor), and 11% (29) were re-programmed, with the remaining 29% being on track. See details in the table below.

Recommendation 16

The coordination and monitoring of PEF TCA performance should be strengthened, consistent with Gavi's TCA guiding principles (e.g. country ownership, focused on skills transfer, cost effective and with accountability). NDoH/EPI's management and the TCA partners should regularly meet, discuss and share information on the implementation and outcome of TCA activities, by:

Table 9: PEF-TCA activity status

Status indicator	Count of activities	Percentage count
Completed	109	40%
Major delays	15	6%
Minor delays	34	13%
Re-programmed	29	11%
No status indicated	4	1%
On track	79	29%
Total activities	**293**	**100%**

Overdue TCA activities were rated as facing either major or minor delays, with delayed activities including: the NITAG establishment; national and subnational data quality analysis and management; the development of an EVM cIP; and a workshop on the digital health strategic plan.

The main contributing factor cited as causing delays was the COVID-19 pandemic. However, in the absence of a thorough assessment by the NDoH/EPI and the TCA partners on the root causes, the audit team was unable to substantiate that the pandemic was the only factor at work.

Significant PEF/TCA funds allocated to staff costs: The one TA plan for the period 2022 – 2023 shows that 62% of total resources were allocated to fund human resources. There are 18 staff and 11 consultant positions covered by Gavi TCA support fund as shown in the table below.

Table 10: Staff supported under PEF-TCA

Headcount of the number of staff and consultants			
Implementing partner	**# Staff**	**# Consultant**	**Total**
WHO	2	3	5
UNICEF	8	3	11
Expanded Partner	8	4	12
Local Partner	0	1	1
Total	**18**	**11**	**29**

The audit team noted that most of the PEF-TCA staff were deployed for gap filling rather than skills transfer. For example, partners staff handle key tasks such as:

- Develop and implement EPI unit annual activities, including maintaining an effective vaccine management system across PNG.
- Provide strategic and technical guidance, coordinate SIA campaigns, oversee immunisation supply chain SOPs, and support immunisation program development and implementation.
- Ensure accurate and up-to-date information for immunisation programs, conduct field monitoring and supervision, and support immunisation staff training and development.
- Provide technical assistance for EVMA and EVM improvement plan, support immunisation supply chain SOP rollout and capacity development, and assist NDoH in vaccine forecasting and procurement.
- Assigning that the EPI TWG meetings, regularly review TCA performance, and assess progress against the approved one TA workplan;
- Mandating that the EPI TWG reviews the implementation status and performance of TCA activities, every three months;
- Requiring the TCA partners to submit their reports to the EPI TWG on their implementation of TCA priorities. The EPI TWG and partners should jointly review and validate progress on the TCA activities against the PEF TCA milestones. This is in line with the TCA guiding principles which required that the NDoH should have complete insight over reporting and be able to review their partner's performance on a regular basis;
- Ensuring that there is no conflict of interest while assigning roles for seconded staff from implementing partners.
- Reviewing and validating the completion of each grant activities undertaken by the implementing partners, based on the annual work plan approved by the NDoH. This should be made a standing agenda item within the EPI TWG.

Recommendation 17

The NDoH/EPI should clearly delineate, define and communicate to the TCA partners what is its role in a partner-led framework. Subsequently, the Government should serve to enhance ownership of the programme, and its strategy for building greater continuity in national systems, in context of this fragile country.

- Coordinate with PHAs for stock monitoring, report delays in dispatches and vaccine arrivals, and assist in rolling out the national iSCM strategy.

Insufficient oversight over partners by NDoH: While the government and NDoH are the intended grant and TCA beneficiaries, the oversight provided by the NDoH over partners such as WHO, UNICEF, PWC, and Abt is insufficient, with a lack of evidence regarding the NDoH's visibility, assessment, and validation of partner-led activities, so as to hold them to account. Although partners attended the EPI TWG meetings, there is no indication that the meetings were leveraged to monitor the progress of partner activity implementation. In addition, there is no evidence that the NDoH through the ICC and/or HSCC monitored performance of the activities implemented by Partners and there is no evidence to confirm that partners submitted progress reports to the ICC/HSCC.

No formalised process to validate the achievement of TCA milestones - The monitoring and validation of TCA activity milestones and deliverables was not performed, i.e., the EPI/NDoH did not receive any form of reports from PEF/TCA partners on the achievement of TCA milestones and deliverables and validate their legitimacy before reporting in the Gavi portal. Partners independently prepare and submit reports through an online Gavi reporting portal.

Root causes

- Gavi's PEF TCA guidelines, 2022-2025, were not fully adopted.
- **Coordination** – the roles and responsibilities for PEF TCA coordination were not well defined. There was no coordination mechanism to bring together the TCA partners and the EPI, to review performance and progress against the approved "One TA plan".
- **Oversight/ review** –the ICC did not review TCA progress and performance every three months, in accordance with the PEF TCA guidelines.
- **Monitoring** – Absence of suitable monitoring, review and follow-up mechanisms, to ascertain that implementation of the planned TCA programme of activities were undertaken in line with Gavi TCA guidance, 2022-2025.
- **Reporting** – There were no country-led reporting mechanisms in place to validate for partner-led activities and milestones. Partners submitted their TCA reports (milestones and deliverables) directly to Gavi, without NDoH validation, diluting country ownership and accountability.
- EPI staff shortages.

Management comments

See detailed management responses - Annex 13

Risk / Impact / Implications

- Shortcomings in technical assistance are likely to adversely impact on anchoring in-country capacity and capabilities, especially for a country which has entered its accelerated transition phase.
- In the absence of robust accountability measures, there is a risk that technical assistance (TA) activities may fall short of their intended objectives. Investments made through targeted country assistance (TCA) may lack sustained follow-through, and without active engagement by the NDoH, partner-facilitated TCA activities might not be executed in a manner that prioritises sustainability.
- 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.

Responsibility

See detailed management responses - Annex 13

Deadline / Timetable

See detailed management responses - Annex 13

4.3 Vaccine Management

4.3.1 Gaps in forecasting and quantifying annual vaccine needs

Context and Criteria

Gavi's immunisation supply chain strategy 2021-2025 and investment priorities, stipulate the need for countries to strengthen data-driven forecasting and supply planning. If countries generate accurate, representative stock forecasts which meet their vaccine supply requirements, and this can help to optimise the subsequent transportation and distribution of immunisation supplies, while minimising costs and reducing any stock wastage.

Every September, PNG initiates its forecasting process to determine what vaccines and supplies it requires in the subsequent year. This is done using the UNICEF immunisation forecast template, which outlines key steps, and which draws upon country-specific data including: target population, estimated coverage, national level-based wastage rate, buffer quantity and national level stock on hand at the time of generating the forecast. Country-specific assumptions are also stated. This process involves the key immunisation stakeholders, who provide their inputs and help to improve the quality of the forecast.

The output from the forecast is jointly drafted by the NDoH/EPI and UNICEF supply division. Currently, UNICEF PNG's country office oversees the forecasting process, due to the EPI and NDoH's human resource constraints. Once the draft forecast is approved by the EPI and NDoH, it becomes the basis for UNICEF supply division to propose an annual procurement plan to the Government. Thereafter, following the GoPNG formally endorsing the UNICEF supply division plan, the procurement process begins.

Condition

During 2019-2023, the programme has faced low stock levels and intermittent stockouts. One key contributory factor was PNG's public funding challenges, along with insufficient guidelines for forecasting and supply planning. In 2022 and 2023, the NDoH/EPI's involvement in the forecasting process was significantly restricted, because of constraints in its human resources. As a consequence, UNICEF''s role in the forecasting was concomitantly enlarged and amplified. The audit team noted the following:

Variances between doses forecast and doses received – The audit team compared PNG's annual vaccine forecasts to the country's actual receipts. Based on a review of sample of vaccines managed between 2019 and 2023, the country's annual receipts of PCV and Pentavalent doses were consistently lower than the forecast, with reduction in the quantities of vaccines received averaging at 36% and 20%, respectively over the five-year period. This suggests that in general, the country procured fewer doses than it required. Worth noting that forecasting vaccine supplies does not fully account for set targets due to funding constraints. The table below illustrates this analysis:

Table 11: Variances between the quantities of doses forecast and doses received

Period	Pneumococcal conjugate vaccine (PCV)			Pentavalent		
	Doses Forecast	Doses Received	Variance reduction against forecast	Doses Forecast	Doses Received	Variance reduction against forecast
2019	986,682	725,700	26%	986,682	827,761	16%
2020	850,600	661,610	22%	639,800	548,710	14%
2021	756,087	728,000	4%	756,687	590,244	22%
2022	833,841	317,400	62%	876,909	522,655	40%
2023	815,441	297,031	64%	773,025	751,983	3%

Recommendation 18

To improve the vaccine forecasting process, NDoH/EPI in collaboration with UNICEF should:

- Work with the Ministry of Finance to review and optimise the timing of vaccine co-financing payments.
- Review and adjust assumptions and planning calculations (where applicable), to ensure that it procures and holds adequate buffer stocks.
- Furthermore, the EPI should retroactively review the accuracy of its annual forecast to reevaluate its process. In future, its forecast projections should be more closely aligned to the actual demand. The accuracy of prior assumptions should be evaluated and recalibrated, if necessary.

<table>
<tr><td>Periodic reviews of forecasts not performed – The audit team noted that the only vaccine forecasting done in PNG, was the annual process initiated in September, and that no other periodic assessments or retrospective revalidation of past forecasts was undertaken, despite the significant variances being observed. Best practise encourages that periodic reviews are done, to monitor and where necessary recalibrate past assumptions, to strengthen subsequent forecast projections and to better model and predict future demand.</td><td colspan="2">• Conduct periodic country stock level reviews to ensure that the sub-national stock data is accurate and complete, so that it can be taken into consideration in the annual forecast process.
• Design and develop SOPs to enhance EPI capacity and forecasting process ownership.</td></tr>
<tr><td>Root causes
• Delays in the Government’s co-financing disbursements delayed shipments of its self-financed doses.
• Other than the annual forecasting process, there was no other process to review and assess the accuracy of past forecasts, to feedforward learnings and improve future projections.
• Lack of visibility over sub-national vaccine stock balances, compounded by incomplete national and sub-national stock records.
• Insufficient EPI staff bandwidth, hindered its participation in the forecasting process.</td><td colspan="2">Management comments
See detailed management responses -</td></tr>
<tr><td>Risk / Impact / Implications
• Inaccurate forecasts in a cash constrained environment, increase the likelihood of insufficient stock levels, resulting in intermittent vaccine stock-outs and potential disruptions to immunisation activities.
• Course-correcting for insufficient stocks, could inadvertently result in over-procurement, and subsequent increases in vaccine wastage due to dose expirations.</td><td>Responsibility
See detailed management responses - Annex 13</td><td>Deadline / Timetable
See detailed management responses - Annex 13</td></tr>
</table>

4.3.2 Vaccine storage and distribution processes need to be strengthened to improve traceability

Context and Criteria

Successful immunisation programmes depend upon end-to-end supply chain and logistics systems. Properly functioning systems enable effective vaccine storage, distribution, handling, management, and cold chain integrity. Similarly, logistics management information systems help to track supply chain data and monitor effective and efficient performance. The goal is to ensure the uninterrupted availability of quality vaccines from manufacturer to service-delivery levels, so that opportunities to vaccinate are not missed, which can arise if vaccines not been available[12].

PNG's vaccines are procured by UNICEF's supply division, and delivered to the NVS in Badili, Port Moresby, where they are received. Thereafter, electronic vaccine arrival reports (e-VAR) are generated and entered into the electronic logistics management information system (mSupply).

Distribution is done using third parties. NDoH contracted Third party logistics (3PL) companies, to undertake quarterly vaccine distributions from the NVS to provincial stores. Each delivery is supported with a manual invoice, packing list and dispatch note. Similarly, district vaccine stores (DVS) and service delivery points (SDPs) place their monthly vaccine orders using either manual vaccine order forms or via mSupply, for delivery or/ pick up from the PVS. At the sub-national level, receptions of vaccines are safely stored, and the transaction is recorded in vaccine and injection material control books (VMCB) or stock cards and or, mSupply system (where the eLMIS is operational).

Gavi's grant management requirements (2020), require NDoH to regularly review its contractual arrangements with the national logistics and forwarding companies. In addition, the arrangements concerning all consignment services should clearly indicate the applicable INCOTERMS, to clarify where liability lies in the event of vaccine damage or loss. Additionally, the GoPNG is expected to put in place adequate physical safeguards, regarding fire safety and access control measures, covering all assets and vaccines against potential losses, disasters (such as fire or floods), negligence or theft.

The PNG standard operating procedure (SOP) governing the management of stocks for vaccines and injections, specifies that manual stock cards/registers, in addition to the eLMIS must be kept up to date, to ensure the effective management and monitoring of stock levels. Similarly, the procedure for updating stock cards or registers re-enforces the need to maintain accurate, updated stock records at the vaccine store.

Condition

At both the national and subnational levels, not all of vaccine doses could not be accounted for due to unreliable or incomplete records. The audit team noted the following unexplained differences:

National Level

Variances in NVS distribution data in eLMIS - The audit team determined that the vaccine distribution data in mSupply could not be relied upon, as there were variances between the expected closing balance and the actual closing balance in the system, as provided by EPI, as shown in the table below.

Recommendation 19

To improve vaccine storage and distribution practices, the NDoH/EPI in collaboration with UNICEF should:

- Provide annual training and mentoring to the logistics staff – including at the subnational level on: (i) how to operate the logistics management information system; and (ii) apply the vaccine supply chain management SOPs.
- Develop and implement suitable archiving and retention periods for all stock records across the supply chain.

[12] WHO: Importance of vaccine supply chains

Table 12: Unexplained discrepancies in the vaccine stock distribution at NVS

mSupply data extract (8.10.24)							
Vaccines & Commodities	Opening Balance as per mSupply - Jan 2023 (a)	Receipts as per mSupply Jan 2023 - Sept 2024 (b)	mSupply distributions Jan 2023 – Sept 2024 (c)	mSupply adjustments (d)	Expected closing Balance (a + b) – (c) + (d) = (e)	Closing Balance as per mSupply – 30 Sept 2024 (f)	Variance = (e) – (f)
Measles and Rubella	16,900	219,750	252,230	68,080	52,500	53,000	-500
Pneumococcal Conjugate Vaccine (PCV)	-12,351	653,800	881,143	229523	-10,171	13,200	-23,371
Pentavalent vaccine	366,495	1,215,019	1,074,690	63,368	570,192	374,217	195,975
IPV	86,847	65,749	130,713	60,152	82,035	64,194	17,841
Janssen	88,180	62,880	38,260	-38,490	74,310	2,870	71,440

Unavailable and incomplete manual records – At the NVS, despite the logistics staffs' awareness or familiarity with the SOP, requiring them to routinely monitor the vaccines and injection materials and to regularly maintain and update stock records, the manual vaccine stock cards were not used. Instead, the logistics staff only used mSupply system for recording stock movements and physical stock takes, because of challenges in the system (see section 4.4. for details). Finally, there was no evidence that the completed manual invoices, issue vouchers and dispatch notes, supporting each vaccine delivery were captured in the mSupply system.

Lack of TORs for logistics and forwarding companies – there were no contractual agreements in place between the NDoH and the logistics companies. Also, there were no legacy data in place for pilferage and vaccine losses , to address if any contingencies arose, or to mitigate risk resulting from vaccine losses, pilferage or theft. In addition, there were no key performance indicators (KPIs) for the 3PL companies; roles and responsibilities of the 3PL companies and consequences if there are any untoward incidents. As a consequence of any delayed or aborted delivery incidents, vaccine stock outs at the sub-national level could occur. Moreover, NDoH did not put in place any insurance coverage, and any existing safeguards were not documented, should an event incident occurs, e.g. fire, or natural disaster like floods.

Subnational Level

Manual stock records were incomplete or unavailable – The audit team observed poor or incomplete record keeping including missing stock cards, registers and/or vaccine and injection material control books. The records' entries also contained inconsistencies in their details, such as overlapping data, and key missing information including dates and batch numbers. These contributed to challenges within tracing and maintaining accountability over stocks. In addition, none of the 9 Provincial vaccine stores (PVS) that the team visited, maintained a suitable distribution plan to ensure that they promptly managed their vaccine replenishments and supplies, in accordance with best practice.

Inability to track and trace the movement of vaccines between NVS, PVS, DVS and SDP stores - The audit team reviewed a sample of vaccine movements – by matching the distribution and subsequent receipt between two stores (i.e. the distributing store, matched to one store receiving the matching consignment). This enabled the team to validate the consistency across the respective distributions and receipts records, including the particulars for each vaccine, batch number and expiry dates. Based on the team's sample review, it noted that: 212,936 miscellaneous doses were distributed to several PVS which couldn't be traced to the respective records at PVS (refer to **Annex 8**, for details). Similarly, 20,422 miscellaneous doses were distributed to several service delivery points (SDPs) which couldn't be traced to the respective stock records at SDPs (see, **Annex 8**).

Recommendation 20

The NDoH/EPI should regularly review, manage and update its contracts with its 3PL contractors. The contractual agreements should include suitable KPIs as well as legal and insurance clauses, to ensure that:

- ownership and liability with regards to supplies while under 3PL custody and distribution, is clarified and enhanced.
- historic data points on determinant indicators like On-Time-In Full (OTIF), Failed Handovers etc are provided by 3PL and monitored.

<table>
<tr><td>Root causes
• Inadequate assurance and monitoring over the quality of mSupply data, including accuracy, completeness and consistency.
• Absence of supporting documentation accompanying vaccine and supplies' distributions at both national and subnational level.
• Non-compliance with standard operating procedures (SOPs) with regards to supply chain operations.
• Gaps in logistics staff training and capabilities, with regards to supply chain management and mSupply.
• Inadequate support supervision over supply chain management.</td><td colspan="2">Management comments
See detailed management responses - Annex 13</td></tr>
<tr><td>Risk / Impact / Implications
• Inaccurate or incomplete stock data hinders effective decision-making, with respect to orders, replenishments and stock management.
• Limited assurance over the availability, visibility and accountability for supplies.</td><td>Responsibility
See detailed management responses - Annex 13</td><td>Deadline / Timetable
See detailed management responses - Annex 13</td></tr>
</table>

4.3.3 Inefficient inventory management at national and sub-national levels

Context and Criteria

Immunisation supply chains are a key component of the health system for reaching zero-dose children, enabling the delivery of services to underserved communities, ensuring vaccine availability and potency, and helping to maximise the effectiveness and use of resources. The equity goal for Gavi's 5.0 strategy is that *"health systems sustainably reach all zero-dose and under-immunised children and their communities with the full range of vaccines, as the first step towards providing integrated Primary Health Care (PHC) services"*. Gavi defines zero-dose children as those children who have not received their first dose of the diphtheria-pertussis-tetanus containing vaccine (DPT1)[13].

Gavi's immunisation supply chain (iSC) strategy (2021-2025) stresses the value of digitising information, elaborating how an eLMIS can significantly enhance the visibility and use of stock management data for decision making. Furthermore, GMR on "stock management and reporting" (2021) mandates that the mSupply maintained at the NVS should be fully updated every month. This includes all of stock data (physical inventory counts, vaccine consumption, stock outs, wastage and expiries) relating to the provincial stores, to ensure the completeness and reliability of the stock data. In 2013, mSupply was first introduced at the NVS. The deployment of mSupply has since been extended, and it is now operational at the NVS and at nine PVS. Deployment of the System at the SDP level was on-going as at October 2024. It has completed introducing mSupply in the SDPs in at least two Provinces – namely, the NCD and Central, these two being among some of the provinces which the audit team visited during its sub-national visits.

One of the Gavi iSC strategy's priority areas, is to use "systems that allow for dynamic management of inventory and inform operational and strategic decisions". Good inventory management practice ensures that vaccine stores keep track of their respective stocks at any given point in time, including their vaccine receipts, issuances and stock on hand. Therefore, stock data should be promptly recorded to act as a reliable reference point for informed decision making.

PNG's SOP for "performing stock counts" stipulates that physical stock verifications of vaccines and injection materials should be done every month, as well as whenever doubts arise regarding an item's stock levels. The procedure goes further, and recommends that where any stock variances arise (e.g. differences between stock card balances, eLMIS system balances and the physical count), that an investigation be conducted and a variance report written, to summarise and explain the differences noted, and what adjustments (if any) were subsequently made to correct for the variances. Thereafter, the report should be submitted to the NDoH EPI Logistics manager, to be filed and kept for reference.

Rehabilitation immunisation system Priority 3 objective states that "by 2025, no vaccine stockouts occur at provincial level, and all health facilities providing immunisation are equipped with functioning cold chain equipment".

Condition

The audit team noted the following:

Below minimum threshold stock levels – As at October 2024, the audit team noted that the stock levels for BCG, BOPV and PCV were below the three months tolerable threshold, recommended by PNG SOP. The NVS had 0.2 months of supply for BCG, 0.6 months of supply for BOPV and 0.1 months of supply for PCV. There was no BCG stock delivery out on order. In addition, for BOPV and PCV the projected stock deliveries on order until the end 2024, were insufficient to significantly raise the stock levels above the minimum threshold, as indicated below.

Recommendation 21

To improve vaccine management at all levels, NDoH/EPI in collaboration with UNICEF, should:

- Develop and implement buffer and minimum stock level for all vaccine supply chain management related stock records across the different supply chain levels.

[13] Gavi: Defining zero dose.

Table 13: Below minimum stock levels and scheduled pipeline (i.e. pending stock deliveries on order)

#	Vaccine	Monthly requirement* (in doses)	Stock on hand (doses) on 08 Oct 2024	Months of supply in stock	Stock deliveries on order pipeline- GoPNG (doses)	Scheduled delivery est. arrival	Project stock on hand (after scheduled delivery	MoS
1	BCG-20	71,953	11,526	0.2	0	No Pipeline		0.0
2	BOPV-10	67,456	42,170	0.6	170,000	15 Oct.2024	212,170	3.1
3	PCV-13-1	59,961	8,000	0.1	175,000	23 Oct 2024	183,000	3.1

*Source: Vaccine stock status reports

Vaccine stock outs at national and subnational stores – At the NVS, the audit team noted incidents of stockouts for PCV and BCG occurring sporadically in both 2023 and 2024. There had been PCV stockouts between January 2023 to March 2023 and two stockouts for BCG from January 2023 to March 2023, and from November 2023 to January 2024.

Similarly, at the subnational level, intermittent stockouts also occurred for all of these three vaccines (BCG, OPV and PCV) as well as for two other vaccines (Penta, MR). Moreover, where complete stock records were available, the audit team was able to measure the length of some of these subnational stockouts for various sites – including at 3 of 9 PVS and 14 of 30 SDPs, which the team visited:

- Across the PVS that it visited, the audit team noted that the cumulative number of stockout days was 59 for Pentavalent, 365 for IPV, 170 for PCV, 370 for MR and 240 for Janssen
- At service delivery points visited, the noted cumulative number of stockout days was 445 for Pentavalent, 354 for IPV, 642 for PCV, 91 for MR and 22 for Janssen.

The average length of stockouts was calculated based on the length of stockouts experienced during the 5-year (2019-2023) period across the various sites visited with manual stock records. See **Annex 7** for details

Physical stocks verifications were not consistently carried out: At the NVS, while the logistics staff conducted monthly stock verifications and adjusted the stock records accordingly, there was no evidence that they undertook any investigations to explain the reason(s) why such differences had arisen. Furthermore, the audit team noted that for 1 of 9 PVS and for 16 of 30 SDPs it visited, that they did not keep any records indicating that they conducted physical stock verifications or any subsequent investigations.

Unexplained variances between stock verifications and stock records: In October 2024, the audit team conducted physical verifications at the NVS, 9 PVS and 30 SDPs. The team observed unexplained differences between the physical stocks and stock records as follows:

- At the NVS, variances between the physical count and the mSupply records were noted for three vaccines: MR, Pentavalent and IPV (refer to **Annex 9:** details on the NVS physical stock verifications).
- All 9 PVS, had variances between the physical count and their manual records (where available). Equally they all had variances between the physical count and the mSupply records (refer to **Annex 9:** details on the PVS physical stock verifications).
- All 30 SDPs had variances between the physical count and their manual records (where available). Equally, for the SDPs using mSupply, variances also existed between the physical count and the mSupply records (refer to **Annex 9:** details on the SDP physical stock verifications).

Inadequate accountability for vaccine expirations at the sub-national level – From the team's visits, it observed several past vaccine expiration incidents had been reported at: 6 of 9 PVS and 13 of 30 SDPs. However, none of these 19 storage facilities had maintained a formal record documenting the expirations' details. Due to this omission and to gaps in stock records, it was not possible to quantify the true extent of vaccine expirations and wastage. No designated location to store quarantined, vaccines or expired vaccines was available.

- Put in place a process to record vaccine incidents. For example, by using the vaccine control books/registers to record all vaccine expirations or wastage events, including details on the quantity, type and when it occurred.
- Determine human resource needs given the frequent changes within the immunisation program to ensure sustainability and continuity.
- Expedite the waste management assessment given it is a planned EVM cIP action, and subsequently develop an SOP and waste management plans.
- Enhance accountability of the provincial level through policy guidelines highlighting the roles and responsibilities of the PHAs.

Recommendation 22

The NDoH/EPI should strengthen its supportive supervision in relation to stock management. Such supportive visits should be documented including feedback, and there should be a follow up upon the agreed actions. Supportive supervision visits should confirm for example that:

- Regular physical stock verifications are conducted and documented in line with NDoH guidelines.
- Ensure adequate supervision over the sub-national data

Limited dry goods storage capacity and inadequate waste management- At both national and subnational levels, the team observed boxes containing immunisation supplies that were improperly stored. For example, supplies being placed on the floor without pallets, stored between aisles, or scattered in multiple location across the facility due to inadequate storage space. As a consequence, some of these supplies were at risk of degrading before their natural shelf life. Furthermore, wasted or expired commodities were stored alongside viable supplies, which is not consistent with best practice, as this put the supplies at risk of being misidentified. Furthermore, during the audit period, although some vaccines were formally destroyed, no certificates officially documenting the event were available and no contractual agreements with the waste disposal firm were on record.

High vaccine wastage - At the national level, the audit team conducted a data triangulation exercise spanning the 5-year period (2019 to 2023), between the total number of pentavalent doses available in-country with the number of vaccinations reported in eNHIS. The total doses available were adjusted downwards using WHO recommended wastage rates. For Pentavalent vaccine, the exercise indicated that consumption was greater than reported vaccinations for four out of five years, the overall wastage rates being slightly higher that the WHO recommended wastage rates, as illustrated below

Table 14: Consumption vs coverage data for Pentavalent (1,2,3 and above 1 year)

Year	Consumption (a)	Coverage (b)	Variance (a-b)	%age ((c-b)/b)
2019	545,186	498,039	(47,147)	(9%)
2020	528,308	569,280	40,972	8%
2021	527,644	461,180	(66,464)	(13%)
2022	586,932	538,270	(48,662)	(8%)
2023	598,915	513,708	(85,207)	(14%)
Total	2,786,985	2,580,477	(206,508)	(7%)

collection and management including follow-ups of actions, to address data management gaps arising from supervision visits.

Root causes

- Non-adherence to the standard operating procedures (SOPs) for supply chain operations.
- No waste management SOP.
- Training and capacity gaps in vaccine supply chain management and waste management.
- Inadequate supportive supervision of vaccine supply chain management
- Frequent changes in staff with weak institutional handovers
- Weak operational processes for forecasting, physical stock management, stock record entries, data quality reviews, data quality monitoring, supportive supervision, expiries management and record archival. -

Management comments

See detailed management responses - Annex 13

Risk / Impact / Implications

- Inaccurate stock and consumption data adversely impacting decision-making;
- Incomplete assurance over stocks visibility and accountabilities.
- Stockouts disrupting attaining immunisation coverage targets.
- Uncontrolled vaccine wastage can result in inefficient planning and allocation of resources.
- Inadequate supportive supervision process could undermine data quality, completeness or integrity.

Responsibility

See detailed management responses - Annex 13

Deadline / Timetable

See detailed management responses - Annex 13

4.3.4 Cold chain management practices need strengthening

Context and Criteria

Gavi's iSC Strategy (2021-2025) designates "continued support to maintain adequate cold chain equipment capacity and supply chain infrastructure" as an area of priority investment. Cold chain management is a critical component of the national immunisation programme to maintain the conditions of vaccines as they are distributed along the supply chain to the beneficiaries. For bulk storage of vaccines, ensuring that all areas of a cold room are maintaining optimal temperatures for vaccine storage is critical to prevent exposure of vaccines to temperatures outside. the recommended range. All new temperature-controlled storage areas must be temperature-mapped as part of a fully documented verification process and subsequent mapping exercises must be carried out periodically to demonstrate continuing compliance[14].

In 2018, the country conducted a cold chain inventory assessment that resulted into development of a cold chain extension and rehabilitation plan (2023-2024) aimed at enhancing cold chain equipment availability at all supply chain levels. Through GAVI CCEOP (2018-2019) fund, 364 cold chain equipment were procured with a service bundle covering distribution, installation, commissioning and training of staff. Deployment was completed later in 2021 following covid-19 disruptions and country lockdown. Furthermore, an additional 323 cold chain equipment were procured and deployed using GAVI HSS-2 (2021-2023) funds. Currently, 91% (757) of the service delivery points (835) are equipped with cold chain equipment with over 57% having direct drive solar installation and only 24% Electricity grid based. In an initiative to increase coverage in the hard to reach/underserved populations, the country has adopted Arktek passive vaccine storage devices that require no external power source and can store vaccines for a period of 1 month between 0^0C to 10^0C utilising lined ice packs.

Robust, reliable cold chain infrastructure and equipment is necessary to ensure and maintain the potency of vaccines. In 2022, Papua New Guinea's EPI team in collaboration with UNICEF and the health facilities services branch developed cold chain management guideline which was used to conduct training on cold chain equipment maintenance and repair for cold chain technicians on aspects ranging from cold chain management, types of cold chain equipment and utilisation, inventory, inspection and maintenance (preventive and corrective), repair to the disposal requirements of cold chain equipment. The technicians were equipped with skills ranging from fault finding and troubleshooting, emergency situations handling to contingency planning among others.

Objective of immunisation system priority no. 3 of the rehabilitation phase of the NIS states "By 2025, no vaccine stockouts occur at provincial level, and all health facilities providing immunisation are equipped with functioning cold chain equipment".

Condition

Non-functional cold chain equipment (CCE) at national and subnational stores - During the field visit, the audit team noted that 3 out 10 walk-in cold rooms (WICR) at NVS were not functional; two obsolete (aged 19 years) WICRs equivalent to 80 M^3 with no clear decommissioning plans and one WICR (aged 1 year) equivalent to 40 M^3, all contributing to limitations in vaccine cold chain space. In addition, 7 out of 9 PVS and 5 out of 30 SDPs visited had non-functional CCE.

Lack of maintenance plans and logs at cold chain points - The NVS did not have both CCE inspection and preventive maintenance plans (IPM) and corrective plans despite the 3 non-functional WICRs noted by the audit team during the field visit. It was informed to the audit team that maintenance is being undertaken, however, there were no maintenance checklists or logs to support the information, indicating that equipment is maintained on an ad-hoc basis by the health facilities services branch (unit of NDoH) who are responsible for the maintenance of the CCE. Furthermore, no such plans or logs existed at all the 39 sub-national facilities visited (9 out of 9 PVS and 30 out of

Recommendation 23

To strengthen cold chain management, NDoH/EPI should:

- Reinforce overall cold chain management ownership at national level (Health Facilities Service Branch (HFSB)) and subnational (PHA).
- Establish and implement cold chain equipment preventive and corrective

[14] Cold Chain mapping studies - WHO-IVB-18.05-eng

30 SDPs), to record when and what type of CCE preventative maintenance activities they may have conducted. It was informed that there have been instances of breakdown of equipment for which the repair usually took more than 3 weeks. ***Temperature mapping of Walk-In Cold Rooms (WICRs) and CCE calibration not done***: The audit team noted that no evidence of temperature mapping and calibration was available during the audit period for Walk-In Cold Rooms (WICRs) and CCEs at the NVS and at all the 9 PVS visited by the audit team. The temperature mapping should be undertaken at an interval of 2-3 years. ***Temperature recording and monitoring was inadequate at subnational level*** **-** While all 39 sub-national sites visited were well equipped with temperature monitoring devices (fridge tags) and temperature monitoring charts, there were inconsistencies in recording temperature readings by the store's personnel i.e., readings were either not recorded on a twice daily basis as recommended or untended for days. Additionally, the audit team noted intermittent incidences of temperature excursions of above 8^0C at 4 out of the 9 PVS and 12 out of 30 SDPs visited raising concern and suspicion around the efficacy of the vaccine stocks ultimately administered. ***Inadequacies in power back-up systems to support CCE functionality*** **-** During the audit team's field visit at the NVS, there were several power fluctuations despite the availability of a functional generator. As a result, the warehouse had registered and discarded 36,400 doses of IPV in July 2024 due to unusable Vaccine Vial Monitor (VVM) (stage 4). In addition, one of the SDPs visited had recorded in the vaccine and injection material control book (VMCB) 323 vials recommending that they are discarded following an overnight black-out due to generator fault. Notwithstanding, the audit team noted that the vaccines were unceasingly issued out thereafter (refer to **Annex 10**; details of the VMCB to discard unusable vials). Further still, 12 out of 30 service delivery points visited did not have power backup systems in place. ***CCE contingency plan was not being utilised –*** Despite the training conducted on cold chain equipment maintenance and repair, none of the locations visited by the audit team have a contingency plan or template in place with clear instructions on future actions in case of CCE breakdown or emergencies.	maintenance plans, schedules and logs at all levels of the supply chain. • Schedule and conduct temperature mapping across all supply chain levels. • Regularly update its cold chain equipment inventory list to maintain an accurate reflection of the country's CCE status. • Develop and disseminate job aids on cold chain management to all vaccine handing points. • The NDoH should support subnational vaccine handling points to design vaccine contingency plans tailor made to suit their context and train staff on how to implement them.
Root causes The main root cause identified is the lack of human resources and individuals' capacity to undertake cold chain management. The following other root causes were identified: • Insufficient oversight over the cold chain management function at both national and subnational levels (PHA). • Not all cold chain technicians at subnational level had the necessary skills and capabilities. This is further compounded by lack of training to the technicians. • Non-availability of fixed asset (FA) register at the provincial level. • Lack of job aids and plans at the vaccine handling point for routine cold chain equipment maintenance and management.	Management comments See detailed management responses - Annex 13
Risk / Impact / Implications • The lack of regular inspection and preventive maintenance can lead to increased risk of equipment breaking down for prolonged periods. During the five-year period under review, several such breakdown incidents were reported at most of the sites visited by the audit team. • The absence of equipment contingency plans may lead to vaccine loss in case of equipment break down for prolonged periods.	Responsibility See detailed management responses - Annex 13 Deadline / Timetable See detailed management responses - Annex 13

4.4 Supply chain and data management systems

4.4.1 mSupply design and implementation gaps

Context and Criteria

In 2013, NDoH selected mSupply as its electronic logistics management information system (eLMIS) to strengthen its supply chain management for health commodities. The System's introduction was initially supported by the Global Fund through World Vision for various health commodities. In 2015, the system's scope was expanded to include vaccine management.
This expansion was carried out within the Mobile Vaccine Expansion (MOVEX1) project, implemented by The mSupply Foundation (TMF) (formerly Sustainable Solutions). One component of the project, which aimed to enhance vaccine management capabilities across PNG, was the provision of android-enabled tablets for mSupply data entry to 300 facilities. One tablet was distributed to each of the following sites: 21 PVS, 8 DVS, and 271 HFs. MOVEX1's initial funding was supported by UNICEF, with the project concluding on 31 January 2023.
Thereafter the project was continued as MOVEX2, with UNICEF's support and Gavi funding. MOVEX2's aim is to: improve the utilisation of mSupply; add enhancements to the reporting dashboard tool (Grafana); and upgrade mSupply considerations. As at October 2024, this second phase was still being implemented.

PNG's mSupply system is currently managed by the mSupply Foundation (TMF), a third-party contractor, which also provides ongoing technical support. The system interfaces with a data visualisation (dashboard) and data analytics tool (codename: Grafana). mSupply encompasses the following modules[15]:

(i) Stock inventory management – managing inventory by batch, recording stock locations, stock takes and inventory counts;
(ii) Supplier and customer management – including contact information for supplier and customers, credit terms and transaction history; and
(iii) Reporting – basic reporting of stock levels, item usage and transaction history.

mSupply data entry begins at the NVS, where the initial vaccine receipt is used to generate a unique record of each batch according to the manufacturer's specifics. This process then advances to the provincial vaccine store and health facility level (where available), where additional data is recorded.

As at October 2024, 266 out of 271 HFs (98%) were still technically equipped with tablets (see Annex 12 for details) from the initial MOVEX1 sites that were supplied. However, the use and functionality of these tablets varied: 57 (21.4%) are actively used, 54 (20.3%) are operational, 63 (23.7%) are active without data, while 14 (3%) are missing. The remaining 78 tablets are at NDoH.

In addition, World Vision, funded by The Global Fund, continued to equip mSupply across another 149 sites (this project also includes support provision), for the management of HIV, Malaria, TB and associated supplies.

Gavi has developed specific software standards (TSS) against which vaccine supply chain information systems can be benchmarked. The TSS include ensuring the availability of key functionalities, including reporting (also with drill-down capabilities), decision making, and the use of intuitive dashboards. The use and promotion of open standards, helps to facilitate data exchange of metadata, and promotes interoperability across different systems.[16]

Furthermore, ISO guideline 22600:2014 on "Health Informatics – privilege management and access control" (Parts 1 through 3) serves as an advisory standard endorsing policy-based access control. This guideline sets out the following principles for audit logs: (i) All actions stemming from user-defined events should be meticulously recorded; and (ii) Either all recorded audit information or a specified subset thereof must be electronically displayed or printed for user/administrative review upon request or at predetermined intervals.

[15] Unicef Movex 1 Report
[16] Gavi targeted software standards

Condition

The audit team identified the following gaps in the design and implementation of the mSupply tool:

Gaps in core functionality impacting operating effectiveness: In October 2024, the team noted the following gaps in mSupply's offering, including the: (i) inability to compute key performance indicators such as the wastage rate, primarily due to incomplete datasets; (ii) limited functionality for the stocks' vaccine vial monitor (VVM) status, which could not be amended after reception, resulting in inaccuracies in recording the viability of vaccines; (iii) system's inability to provide information on historical physical counts and what adjustments were made (iii) gaps in tracking expirations, as the system lacked the ability to generate expiration reports and did not distinguish between expired stock from viable inventory, increasing the risk of administering ineffective vaccines.

Performance gaps in the monitoring dashboard (Grafana)*:* the associated dashboard lacks the capability to generate historical data, offering only real-time snapshots, which restricts trend analysis over time. The dashboard monitors indicators on the: last updated, number of unfinalised stock information (SI); last stock take; last order and customer invoice – with none of these indicators being specific to the immunisation programme. The options to query the dashboard are inflexible, particularly for when seeking to customise date ranges, and the choice in selecting various exporting data formats, such as Excel, often resulting in missing key reporting periods. Also, some data points on the dashboard are outdated, including the display of decommissioned sites.

Limited visibility on health facility level data: As at October 2024, the roll out of mSupply covered all provincial vaccine stores (PVS – 21 of these) and district vaccine stores (DVS – 8 of these). In contrast, mSupply only provides partial coverage of 54 health facilities, most of which are primarily located in the central and NCD province. What is in effect, a relatively low coverage of the HFs (i.e. less than 7% of them), limiting the mSupply's overall effectiveness, as the programme team's ability to monitor the overall inventory workflow across the entire supply chain was hampered.

Use of outdated SOPs: EPI currently operates mSupply version 7.10.13, having undergone substantial updates since its implementation. Despite this, the EPI's SOPs still refer to version 6 of the system which was released in 2015. The absence of updated SOPs hindered the users' effectively operating the system, as they lacked an up-to-date reference guide.

Non-alignment with Gavi Target Software Standards (TSS): PNG's mSupply system only meets 3 out of the 10 TSS proposed by Gavi. For mSupply to become an optimised vaccine supply chain system, in accordance with the standards it would need to include components such as cold chain equipment (CCE) monitoring, remote temperature monitoring, and distribution tracking – which presently are not part of the system. See summary below (See Annex 11 for details).

Recommendation 24

To address the design challenges identified in mSupply, NDoH/EPI - in liaison with the respective partners - should:

- Conduct an in-depth review of mSupply to identify any gaps in its security and functionality, data quality and completeness issues, with a view of developing a plan to address these bottlenecks, in line with Gavi's TSS.
- Adopt a consolidated, integrated approach in identifying and supporting facilities benefiting from the roll out of mSupply. This includes determining how to collaborate and cost-share with other donor funded mSupply interventions, on components such as trainings, hardware maintenance and replacement, rollout of the system and end user support to facilities
- Develop and operationalise a plan to roll out mSupply to the remaining health facilities in PNG by securing national funds.
- Update and distribute the programme's SOPs to align these with the latest version of mSupply.
- Improve the mSupply monitoring dashboard's monitoring and reporting, by incorporating suitable immunisation indicators into it.
- Implement and retain an audit trail of all user's actions.
- Assess the system's operational and maintenance costs, with a view of the feasibility of continuing to maintain it, in consideration of the significant maintenance and licensing costs. Consider reviewing what other eLMIS options exist, with a view to exploring whether the NDoH

Table 15: Implementation of Gavi TSS Key Features in mSupply

	GAVI TSS Key Features	Description	Present in mSupply
1	Forecasting & Supply Planning	Configure and use calculations for ideal stock amounts (ISA) for supply planning.	No
2	Orders & Receipts, Supplier Management	Order fulfilment and supplier management	No
3	Distribution management	Vaccine distribution & delivery management	No
4	CCE module	Track cold chain equipment inventory	No
5	Temperature Monitoring	Integration with RTM devices (fridge tags)	No
6	Analytics and Dashboards	Stock indicator dashboards. Available through	No
7	Interoperability	Integration with other systems	No
8	Requisition and Issue	Stock requests and issues workflows	Yes
9	Inventory Management	Inventory data and stock movements to provide an overview of full stock availability	Yes
10	Early warning alerts	Stock alarms (potential expiry and potential stock out)	Yes

Suboptimal audit trail management: mSupply audit logs, tracing user's actions at the front end of the system, were not maintained. The non-retention of user logs is not consistent with ISO standard 27002 and the TSS, both of which require that a system maintains a comprehensive audit log. Audit log capture useful information including transactional data fields, which provide essential support for troubleshooting security issues, and assist in restoring the system, in the event of a security breach.

Use of mSupply was suspended for 12 months: mSupply was unused throughout 2023 after the completion of the MOVEX1 project at the end of 2022, due to the lack of financing, which hindered the purchase of data bundles for internet connectivity for facilities (63 facilities) thus limiting the usage of mSupply as the system cannot be operated offline. This mSupply interruption, prevented staff from accessing the programme's inventory management tools and hampered those health workers affected, from being able to report back and to track the distribution of their vaccines, effectively. Furthermore, **during the period the system was offline there was** no assessment of data completeness, which raises concerns about the quality and reliability of the information **that was** collected.

should consider transitioning to a more cost-effective and rationalised system.

Root causes

- Partially adoption of mSupply – only 7% of health facilities use the system (it currently focuses on less than ten percent of the provinces)
- Limited oversight and supportive supervision related to immunisation and vaccine systems.
- Older versions of mSupply lacking core functionalities, due to funding constraints;
- The NDoH depends on third party suppliers for the operation, technical support and maintenance of mSupply, and are thus unable to undertake real time updates and improvements.

Management comments

See detailed management responses - Annex 13

Risk / Impact / Implications

- Incomplete or inaccurate vaccine and logistics data in mSupply hinders the tracking of resources, impacting upon decision-making and future resource allocation.
- Also, if the vaccine stock management tools do not operate efficiently, this could potentially lead to stockouts, overstocking, or increased vaccine expirations, compromising the effectiveness of vaccination operations.

Responsibility

See detailed management responses - Annex 13

Deadline / Timetable

See detailed management responses - Annex 13

• Until manual data and practices are replaced with digital data and the use of systems, data quality will remain compromised due to the risk of human errors, leading to inconsistencies and inaccuracies. • If the dashboards' performance remains ineffective, this could undermine the speed and value which insights and information can bring to the programme. • Increased workload for healthcare workers due to: mSupply operational limitations; reporting inefficiencies; and the associated SOPs being outdated.		

4.4.2 eNHIS' design needs to be improved

Context and Criteria

PNG's electronic National Health Information System (eNHIS) was developed to centralise the management of national health data. The eNHIS system was initiated in 2018, funded by the Asian Development Bank (ADB), with support from WHO and Remote Sensing Limited. It aims to streamline health information, improve data accuracy, and facilitate real-time reporting for critical health programmes, including immunisation, HIV, tuberculosis (TB), and malaria. As of the end of 2022, eNIHS had been rolled out across all 22 provinces. It is the primary system used to manage immunisation data, as PNG does not use DHIS2.

eNHIS is accessed via a password-protected mobile application. It allows healthcare workers at the health facility and district levels, to directly input routine immunisation data into eNHIS, using mobile tablets. eNHIS encompasses: national health data, automated data summaries, a repository of national and international guidelines, a data dictionary and a facility contact list. National data from the various health services are input into eNHIS every month, including information on: outpatients, inpatients, well-baby services, immunisations, malaria, leprosy, HIV, tuberculosis, school health services, family planning, antenatal care, deliveries and drug shortages. Ultimately, all of this data is aggregated as part of an online platform which NDoH health authority staff can access.

Up to December 2023, Gavi financed amounts totalling USD 770,000 to strengthen and help implement eNHIS including via capacity building.

Condition

The audit team identified the following eNHIS design areas needing improvement:

Critical KPIs missing from eNHIS: Some vaccination metrics are not captured within the system such as: IPV2 (Inactivated polio vaccine – 2nd dose); COVID-19 vaccinations; and new reporting forms as per National Health Plan (2021-2030). To compensate for these gaps requires time-consuming manual reporting, which increases the likelihood of human input error, and complicates the accuracy of monitoring and evaluating overall vaccination coverages.

Delays in responding to support requests: In October 2024, it was noted that the EPI team's "change requests" which it submitted to Remote Sensing – the technology partner responsible for implementing updates to the eNHIS system – faced extended review periods lasting between 1 to 3 years. In interim, and as a result of these delays, the EPI team was often forced to rely upon manual work arounds, compromising data quality and potentially creating gaps in the overall data integrity.

***Visibility gaps into district reports by the provincial health information officer*:** The audit team noted that eNHIS did not facilitate access to the districts' quarterly reports. Without easy access to the relevant eNHIS reports, the provincial health information officers' ability to effectively monitor health outcomes in their jurisdiction was curtailed. Instead, health officials had to rely on manually printed copies of reports that the various districts shared, which occasionally created additional delays in order processing and increased the workload.

Inefficiencies in reporting templates: The audit team noted that the system could not generate the necessary reports on a consolidated basis and that it reported outputs could not be easily aggregated manually thereafter. As a result, the additional reports needed to be generated on a provincial basis, which complicates data monitoring and analysis and also delays the generation of vital reports necessary for informed decision-making.

Recommendation 25

To address the challenges identified in eNHIS' data management and reporting – NDoH/EPI, in liaison with the respective vendors, should:

- Conduct an in-depth review of eNHIS to identify gaps in the system's functionality, data quality and completeness, and subsequently develop a plan to address these issues consistent with Gavi targeted software standards.
- Update the eNHIS SOPs so that these are aligned with the current eNHIS system, and then disseminate these to improve the end user understanding and guidance;
- Engage with the technology partners responsible, to accelerate the execution of change requests / and missing eNHIS data points i.e., the new reporting forms as per national health plan 2021-2030 and IPV2.

<table>
<tr><td>Root causes
• Limited oversight and supportive supervision related to immunisation and vaccine systems. An oversight committee responsible for digital systems was formed, but its meetings were held infrequently which did not provide sufficient bandwidth to address the system's issues.
• eNHIS funding constraints and the significant cost attached to implementing change requests, constrained the number of improvements required to be undertaken in the system.
• Dependency on third party vendors to manage and maintain the system – The NDoH's dependency on external service providers to support the system, meant that NDoH was unable to undertake real time updates and improvement.</td><td colspan="2">Management comments
See detailed management responses - Annex 13</td></tr>
<tr><td>Risk / Impact / Implications
• The sub-optimal dashboard information prevented the EPI team from accessing the necessary information that would provide comprehensive, actionable insights on the programme.
• Increased workload for healthcare workers due to: eNHIS technical limitations; reporting inefficiencies; and the associated SOPs being outdated, also contributing to delays and gaps in data management.</td><td>Responsibility
See detailed management responses - Annex 13</td><td>Deadline / Timetable
See detailed management responses - Annex 13</td></tr>
</table>

4.4.3 Sustainability challenges impacting the continuity and operation of systems

Context and Criteria

In Papua New Guinea, systems like **mSupply** (see also 4.4.1) and **eNHIS** (see also 4.4.2) are critical to the effective management of immunisation programmes and broader public health initiatives. mSupply, facilitates the management of essential medical supplies, including inventory management, and the reporting and tracking of supplies. Similarly, eNHIS, creates a central repository and facilitates the management of national public health data.

NDoH significantly depends on two third party organisations to support these systems, as their technical expertise is required to keep the systems functioning (specifically The mSupply Foundation and Remote Sensing Limited, respectively). Moreover, the over-reliance on external providers and short-term thinking limits the extent to which knowledge transfer and local capacity development of NDoH is seen to be necessary.

Recently, the eNHIS contract was extended for 2-years from February 2025 until February 2027, which offers a temporary reprieve to NDoH's operating capacity. However, this does not address NDoH's requirement for determining how to achieve the necessary self-sufficiency and sustainability competency, so that in future it will be able to directly operate this system by itself.

Furthermore, the audit team noted that: mSupply operators' practice and familiarity of using the system needs to increase; accessing systems can be hampered due to missing equipment (e.g., tablets); that currently there is no integration between mSupply and eNHIS. The ICT TWG has been set up by NDoH to oversee and monitor all digital initiatives.

Condition

Continuity in operating and sustaining key digital health systems requires a sufficient degree of ownership and oversight by the Ministry's senior administration and NDoH. It also requires that the total costs of operating the systems (fixed costs and operational costs), be computed and reliably allocated to national budgets. The audit team reviewed administrative arrangements for both mSupply and eNHIS and noted the following gaps:

Limited oversight and ownership of technical activities related to systems at NDoH: Currently, the NDoH relies upon external partners to facilitate the implementation, support, and monitoring of mSupply and eNHIS, which diminishes the NDoH's role in actively managing and guiding these activities. This also contributes to a lack of institutional knowledge and expertise in NDoH, making it challenging to adapt and evolve the systems further, in response to emerging needs.

Capability gaps in managing systems at both central and subnational level: mSupply and eNHIS' technical support and administration are both outsourced to external entities due to the absence of suitably trained personnel in NDoH. Furthermore, NDoH lacks administrative rights for basic system tasks, hindering NDoH's ability in managing the systems' users and performing essential maintenance. Also, the Provincial Health Office (PHO) ICT officers are not currently involved in supporting either system, which prevents cascading any technical support to lower levels, potentially leading data management challenges across the country.

Critical data system backups are hosted and managed outside PNG: Both systems' backups are currently hosted and managed by third parties outside of PNG, with no real visibility over the processes involved, and restricting NDoH's access. Furthermore, there is no documentation evidencing what monitoring and quality assurance processes these parties have put in place, nor whether these are sufficient to assure that the backups' security and integrity is adequately managed. In effect, the absence of

Recommendation 26

To ensure the financial sustainability of mSupply and eNHIS, the NDoH/EPI with support of partners should:

- Undertake comprehensive cost analyses for the fixed and recurring operational and maintenance expenses related to maintaining both mSupply and eNHIS. These analyses should include each of the national, provincial, and district-level costs, for effective planning and resource allocation.
- Use these comprehensive cost analyses as a resource planning tool to mobilise funding, so as to ensure that the resources to sustain the operation for mSupply and eNHIS are secured, budgeted and allocated for and fully financed.

Recommendation 27

To ensure that NDoH progressively assumes full responsibility for mSupply and eNHIS, and that suitable national staff acquire the necessary skills from third party providers, the following process should be undertaken:

any transparency or control, poses a significant risk to public data security, potentially undermining due process, should data recovery or system restoration become necessary in case of system failure. ***Gaps in transition planning may pose significant risks to operational continuity and effective management:*** There is no comprehensive plan defining how expenditures for both current and future maintenance are to be transferred to the Government. Discussions are underway to conduct a total cost of ownership (TCO) assessment, however there is no evidence that the TCO will comprehensively cover essential areas such as server capacity, preventive maintenance, internet upgrades, patch management, and training resources. Relatedly, there is currently no evidence of a clear plan to transition mSupply and eNHIS management to the NDoH, and the lack of trained ICT personnel within NDoH raises concerns about long-term system sustainability and effective management. The respective vendors, supported by donor funding, remains pivotal in the day-to-day management and maintenance of the system. This includes overseeing system maintenance (including patch management, software development, and backup), implementing functional modifications, and providing technical support through the help desk. Furthermore, as the system undergoes expanded deployment and utilisation, additional costs are anticipated. These may include investments in technology hardware (including upgrades to server infrastructure), internet usage, and personnel training. The audit team also noted that the licensing arrangements, including transferable rights, data access, and license scope, remain undefined. There is also a lack of clarity regarding when the source code becomes the property of the NDoH. ***Fragmented immunisation and vaccine data systems:*** The lack of interoperability between the mSupply system and eNHIS, potentially constrains NDoH from achieving additional synergies that the integration and interfacing of both data sets could yield. Similarly, the partial usage and rollout of mSupply (i.e. fragmentation) complicates the management of supply chain data and prevents a comprehensive overview of vaccine inventory and distribution, and in order to match immunisation coverage targets. Currently, there is no plans to conduct such an integration process.	• Strengthen the ICT TWG (eHealth TWG) oversight functions of the by including the implementation partners as members of TWG enhancing their responsibility and accountability. • The identification and training of suitable national ICT personnel within NDoH, to manage and support mSupply, eNHIS or equivalent systems, reducing reliance on external vendors. • Developing a robust governance framework with clearly defined NdoH roles and responsibilities for overseeing and managing these systems: including mechanisms to monitor and ensure the accountability of any third-party vendors' activities. • Developing a plan to migrate these systems' backups over to data servers in PNG to ensure compliance with data security, accessibility, and national regulations. • Obtain a clear understanding of the existing licensing and legal terms and agreements for mSupply and eNHIS. Where not defined, ensure that the necessary transferable rights for the software are explicitly included in any legal agreement, to ensure that the necessary rights can be carried over during the migration. • Develop an implementation plan for the digital health strategy. Recommendation 28 To improve mSupply and eNHIS' data quality, help eliminate data redundancy, and improve data consistency and visibility, NDoH/EPI - with support from partners - should: • Formulate a tailored roadmap focused on interfacing or integrating mSupply and eNHIS, including standardised definitions of data formats, a change management strategy, and suitable mechanisms for mapping across the respective data sources. • Conduct a systems maturity assessment to evaluate the readiness to interface or integrate both systems, and address any gaps.

<table>
<tr><td>Root causes
• No trained NDoH personnel with the necessary capability to manage key systems (such as mSupply and eNHIS).
• Infrequent ICT TWG oversight committee meetings, limiting the quality assurance activities.
• The enterprise architecture to potentially integrate or interface systems has not been defined despite the dependency of both the systems on each other for data and information.
• IT system transition planning has not been undertaken, despite NDoH's low IT skills and capacity constraints and its dependency on external service providers.</td><td colspan="2">Management comments
See detailed management responses - Annex 13</td></tr>
<tr><td>Risk / Impact / Implications
• The offshore storage of backups of critical systems outside of PNG's jurisdiction, without proper oversight and monitoring, raises concerns about data security, privacy, and compliance with national regulations. In case of an incident, such as data breach or loss of sensitive information, the legal consequences or repercussions would be complex.
• NDoH's lack of transition planning and current low internal ICT capacity and expertise, could result in significant disruptions in case of operational or system failures. The non availability of a critical system would impact on the immunisation programmes, hindering data collection and reporting, and could compromise the programme's agility to respond to public health needs.
• Over-reliance on external, third-party partners or providers, could jeopardise the long-term sustainability and effectiveness of digital health initiatives.
• Limited interoperability between different systems and data sets, can result in redundancies or potential vulnerabilities in the systems, ultimately impacting on the challenge of maintaining separate systems.
• Without a robust internal capacity and engagement in owning its systems, the NDoH may struggle to ensure the continuity and long-term sustainability of digital health initiatives.
• The reliance on external vendors creates a critical dependency and poses risks to long-term sustainability.</td><td>Responsibility
See detailed management responses - Annex 13</td><td>Deadline / Timetable
See detailed management responses - Annex 13</td></tr>
</table>

4.5 Immunisation data management

4.5.1 Challenges in estimating the immunisation target population

Context and Criteria

Gavi's HSS and new vaccine support (NVS) general guidelines (2015-2018), recommend that Gavi-supported countries align that their population projection of live births is consistent with external projections. Furthermore, the guidelines also recommend that countries should conduct a high quality, nationally representative household survey every five years. However, NDoH's Performance, Monitoring, and Research Branch (PMRB) currently still relies on population estimates from the 2011 national population census. Similarly, the National Statistic Office's projections are based on this same census, after applying a relevant growth factor to estimate the population. A new population census is currently being undertaken for which the report is expected to be released in 2025.

PFA clause No. 8 (d), requires that "all information that is 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, PFA Annex 2, Article 16 also sets out additional provisions on 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."

The WHO recommends that immunisation coverage evaluation surveys, are conducted periodically i.e., 3-5 years[17] in accordance with standard survey methods. The primary objective of a coverage survey, is to provide a coverage estimate for selected vaccines or a set of vaccines (fully vaccinated for age) among infants, children and/or women of childbearing age, etc. Furthermore, such surveys facilitate assessing the degree of equity within immunisation, by allowing disaggregating coverage by factors such as place of residence, sex, maternal education, economic status or subnational region[18]. Similarly, Gavi's application guidelines also require countries to improve the availability, quality and use of data, for their planning, programme management, and documentation of results. Furthermore, the guidelines encourage the routine use of immunisation coverage data where available as part of an established process for better planning, programme performance and the management of resources. PNG's National Health Plan (2021 – 2030) designates that the immunisation programme's target is to track the percentage of children immunised with Penta 3.

[17] WHO on immunisation coverage frequency

[18] WHO on coverage evaluation surveys

Condition

Outdated denominator from the 2011 census is being used for immunisation coverage monitoring: PNG's remote and insecure country context has contributed to the inadequate supply of vaccines including hard to access areas. The audit team noted that the country has never conducted an immunisation coverage evaluation survey (CES) or a similar survey. As a consequence, NDoH's Performance, Monitoring, and Research Branch (PMRB) relied on population estimates from the 2011 national census, to determine the denominator and contributing to the computation of the country's immunisation coverage, which is reported via eNHIS. Similarly, WUENIC estimates relied on the country's official estimates – as in the case of PNG, no specific WUENIC survey was undertaken. WUENIC has maintained a consistent 5% variance with the administrative data over the entire period of 2019-2023.

The audit team noted that since 2021, the country has not been able to meet its stated immunisation targets as stated in the NHP. Further, the EPI did not develop a catch-up plan to try to narrow the gap with its target. Consequently, the NDoH has not been able to set realistic targets consistent and based on the observed realities and availability of vaccines. The targets for the provinces and districts were set based on the national population estimates.

The table below illustrates the disparities in the Penta3 immunisation data over the period from 2019 to 2023, based on PNG's administrative coverage, WHO/UNICEF's WUENIC report, and NHP national targets.

Table 16: highlights disparities between estimated coverage by different data sources and the national target.

Coverage data source	2019	2020	2021	2022	2023
Administrative data (a)	40%	45%	37%	42%	40%
WUENIC report data (b)	35%	40%	32%	37%	35%
NHP national target (c)	No target	44%	51%	60%	65%
Variance (a-b)	**5%**	**5%**	**5%**	**5%**	**5%**
Variance (c-a)	**N/A**	**-1%**	**14%**	**18%**	**25%**

Recommendation 29

To ensure the availability of accurate and reliable immunisation data for decision making, NDoH/EPI management should with the support from the partners:

- conduct a comprehensive analysis of the data derived from the census currently ongoing in 2024, to rebase and realign the immunisation coverage targets and NDoH activities.
- based on the updated census, determine whether a survey or other processes are required to establish more precise immunisation coverage figures and to better target zero dose children.
- work with relevant partners to review data using sample studies, instead of desk-based reviews, to establish a more accurate picture of the country's progress.
- develop a policy or guidelines, outlining NDoH's methods for computing, estimating, and revising coverage data, to allow for necessary adjustments and enhance data accuracy.

Root causes

- Outdated census data of 2011 being used for estimation. The national census report is not expected to be released until 2025.
- No immunisation coverage evaluation survey or WUENIC surveys has been conducted, to help determine the appropriate denominator.
- NDoH does not have a stated policy or guideline, outlining its methods for computing, estimating, and revising coverage data to allow for necessary adjustments and enhance data accuracy.
- Due to the country context (including hard to reach areas, migration and climate change), it is difficult to estimate the population across the various provinces.

Management comments

See detailed management responses - Annex 13

Risk / Impact / Implications

- When vaccination coverage data is unreliable, it can hamper the programme's ability to identify under-immunised and un-immunised children.

Responsibility

See detailed management

Deadline / Timetable

See detailed management responses - Annex 13

• Use of erroneous data or incorrect denominator can lead to inaccurate administrative coverage reporting, which does not comply with Gavi's partnership framework agreement, and undermines confidence in administrative coverage. • The programme may be unable to suitable design interventions tailored to identifying the majority of its zero dose children, due to its use of inaccurate target data.	responses - Annex 13	

4.5.2 Data quality assurance needs to be improved

Context and Criteria

Gavi has recommended that Gavi-supported countries regularly undertake Data quality assessments (DQA), at least every three to five years, in accordance with the WHO-approved methodology. Such DQAs help to identify data-related challenges and to develop plans to improve immunisation programmes data. Upon completing their assessment, countries are encouraged to design and establish a strategic 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, clarify roles and responsibilities; outline resources required and available; establish timelines; and define key milestones.

PFA clause No. 8 (d), 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 (2024) 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.

Rehabilitation Immunisation System Priority 3 objective states that "By 2025, annual data quality assessments are implemented in each province".

Condition

Integrated DQAs conducted in 2021-2023 identified challenges in data quality management: The audit team noted that over the past three years, the NDoH PMRB conducted several DQAs covering various HFs scattered across the provinces. This includes: 41 HFs in 10 provinces during 2021; 40 HFs in 7 provinces during 2022; and 28 HFs in 6 provinces during 2023. The results of these DQAs revealed discrepancies, specifically for Penta3 coverage, with this data being either overreported or underreported for most of the sampled HFs. This includes: 70% of the HFs reviewed in 2021; 57% of the HFs in 2022; and 66% of the HFs in 2023. These findings highlighted that challenges in data quality management persisted. The DQAs noted several reasons for data inaccuracies, including: untrained staff, irregular supervisory visits, lack of eNHIS guidelines, and inadequate data analysis.

Despite conducting integrated DQAs, DQIPs were not developed: Subsequently, the DQAs (2021-2023) recommended the following actions be taken: routine data quality reviews, developing eNHIS recording/reporting SOPs, staff training, and providing a data dictionary to address the issues. However, no such DQIP plans with the necessary actions and strategies were developed, to address these data quality challenges.

Data quality reviews at sub-national level need to be put in place and improved: The audit team noted that for most of the various sites it visited that:

- no data quality reviews were conducted at: 23 of 30 HFs; 3 of 3 DHOs; and 8 of 9 PHAs. This highlights major gaps in the consistency and completeness of data, given the absence of evidence of a data quality assurance process.

Recommendation 30

To improve the availability, quality and use of data, the NDoH's Performance, Monitoring, and Research Branch should design and establish suitable data quality improvement plans, based on the DQA's findings, including prioritisation of what actions need to be implemented to improve data quality. These plans should be costed, resourced and financed appropriately.

Recommendation 31

To improve the availability, quality and use of data, NDoH/EPI management should:

- Ensure that all primary data collection tools are completed correctly and that their data correlate or is consistent across the various data sources.
- Introduce standardised tools for daily reporting at the outreach centres to the health facilities .
- Undertake training for field staff on the documentation required to be maintained for

<table>
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- Supportive supervision and training were not conducted at most of the same sites, including: 24 of 30 HFs; 3 of 3 DHOS; and 6 of 9 PHAs. This indicates the lack of capacity-building efforts, crucial for maintaining high standards of data quality in immunisation practices.
- Immunisation targets were not met across: 26 of 30 HFs; 3 of 3 DHOs; and 8 of 9 PHAs, with minimal efforts being undertaken to address the gaps.

The audit team also noted data discrepancies across other sources including – vaccine register books, tally sheets, and monthly summary reports – at all the health facilities and districts it visited. Data collection tools and forms were missing at: 14 of 30 HFs; 2 of 3 DHOs; and 4 of 9 PHAs. Further, the data collection and reporting tools did not include all the antigens. Microplans were missing for: 22 of 30 HFs; 1 of 3 DHOs; and 3 of 9 PHAs. The audit team also noted that 4 of 30 HFs did not have access to eNHIS portal. Furthermore, there were no AEFI reporting tools, forms and guidelines available in any of the HFs visited by the audit team.

No evidence was available that the information captured in eNHIS was reviewed and whether the information generated from eNHIS being used for any decision making for programme interventions.

</td><td colspan="2">

reporting immunisation data, and develop guidelines for the maintenance of these records.
- Undertake regular support supervision to monitor adherence to support supervision guidelines.

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Root causes

- No DQIPs were developed to remediate data challenges identified in past DQAs, and as a result opportunities to improve targeted interventions were missed.
- Inaccurate or inconsistent vaccination record-keeping – data collection tools at health facilities and districts were not regularly reviewed, validated or their data verified.

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Management comments

See detailed management responses - Annex 13

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Risk / Impact / Implications

- Without undertaking DQIPs, it is difficult to demonstrate improvements in coverage data quality.
- Data quality priority areas may not be addressed on time which could lead to inaccurate, incomplete, inconsistent, and unreliable immunisation data.
- Inaccurate immunisation coverage data might be reported to Gavi, which is not compliant with the partnership framework agreement.

</td><td>

Responsibility

See detailed management responses - Annex 13

</td><td>

Deadline / Timetable

See detailed management responses - Annex 13

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Annexes

Annex 1 : Acronyms

Abt	Abt Associates
AEFI	Adverse Events Following Immunisation
AIHSS	Accelerated Immunisation Health System Strengthening
AZ	Astra Zeneca
BCG	Bacillus Calmette Guerin
CCE	Cold Chain Equipment
CCEOP	Cold chain equipment optimisation plan
CDC	Centre for Disease Control
CDS	Covid 19 Delivery Support
COVAX	Covid 19 Vaccine Global Access
DG	Director General
DHIS	District Health Information System
DQA	Data Quality assessment
DQIP	Data Quality improvement plan
DTP	Diphtheria, Tetanus, Pertussis
EPI	Expanded Programme for Immunisation
EVM	Effective Vaccine Management
FAR	Fixed Asset Register
FPP	Full Portfolio Proposal
FY	Financial Year
GDP	Gross Domestic Product
GMR	Grant Management Requirement
HF	Health Facility
HIV	Human Immunodeficiency Virus
HR	Human resources
HSS	Health Sector Strengthening
HSCC	Health Sector Coordination Committee
ICC	Interagency Coordination Committee
IP	Implementing Partner
IPV	Inactivated poliovirus Vaccine
iSC	Immunisation Supply Chain
ISS	Integrated support Supervision
eLMIS	Electronic Logistic Management Information System
MR	Measles Rubella
NGO	Non-Governmental Organisation
NVS	National Vaccine Store
OPV	Oral Polio Vaccine
PATH	PNG Australia Transition to Health
PCA	Programme Capacity Assessment
PEF	Partnership Engagement Framework
PFA	Partnership Framework Agreement
RI	Routine Immunisation
SDG	Sustainable Development Goals
SDP	Service Delivery Points
SEM	Senior Executive Management
SIA	Supplementary Immunisation Activities

SOP	Standard operating procedures
TA	Technical Assistance
TB	Tuberculosis
TCA	Targeted Country Assistance
TWG	Technical Working Group
USD	United States Dollar
VAR	Vaccine Arrival Report
VPD	Vaccine Preventable Diseases
VVM	Vaccine Vial Monitor
WICR	Walk in Cold Room
WUENIC	WHO / UNICEF estimates of national immunisation coverage

Annex 2 : Methodology

Gavi's Audit and Investigations (A&I) audits are conducted in conformance with the Global Internal Audit Standards of the Institute of Internal Auditors. These Standards constitute 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' Global Guidance is also adhered to as applicable to guide operations. In addition, A&I staff adhere to A&I's Audit 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

Provinces (9)	Districts (3)	Health Facilities (30)
NCD		Tokarara Clinic, St Therese Clinic, Karua Medical Center, Lawes Urban Clinic, Gordons Clinic
Central	Rigo	Kwikila Hospital, Porebada, Pacific Adventist University (PAU) Clinic
Jiwaka		Kimil, Minj, Dona
Morobe		Buimo, Centre of Mercy, Situm
Southern Highlands	Ialibu District- Ialibu District Hospital	Muli, Mongol,
Eastern Highlands	Goroka	West Goroka Urban Clinic, Asaro,
Western		Ougelbeng, Paiakona, Togoba, Tipulga,
Gulf		Malalaua, Terapo, Murua, Kerema Urban Clinic
Madang		Yagaum, Town Clinic, Bunabun, Mugil

Annex 5 : PNG immunisation schedule

Vaccine	Doses	Age of administration
BCG	1	Birth to 11 months
Hep B	1	Birth within 24 hours
Bopv	3	1,2,3 months
IPV	2	3 months and 9 months
Penta	3	1,2,3 months
PCV	3	1,2,3 months
Measles Rubella	3	6,9,18 months
TT/Td	5	Women of childbearing age

Annex 6: status of accountability framework, GMR and 2016 programme audit recommendations

a) Status of Accountability framework

S/N	Theme	Level	Objectives	Indicator	Description/comments	2024 Target	Status
1	Vaccines financing	National	Improve planning and budgeting for vaccine financing (this includes financing needed for procurement and co-financing for new vaccines)	Vaccine financing plan for the next year developed and updated by end of March of the current year	This plan should be used to inform the vaccine budget and to assess any resource gap and make decisions about affordability of new vaccine introductions. It also increases transparency of vaccine planning and financing. The plan will include forecasts, transparent assumptions about coverage, wastage, and new introduction timelines, and expected data sources/resource gap. It will be endorsed by GoPNG before August of the current year. All stakeholders include: NDoH, Treasury, Planning	$7,702,893 / PGK 28,007,717	Achieved
2a	Vaccines financing	National	Timely funds mobilisation and procurement of **RI** vaccines	Timeliness of release of funding for vaccines	Timely release of funds (vaccine financing requirements for the year released and received by UNICEF by end April of the same year)	100% of original appropriation received by UNICEF end of April, remainder of reallocated received end of September 2024	Not achieved
2b		National	Adequate domestic funds mobilisation and procurement of **RI** vaccines	Adequate release of domestic funds to procure traditional vaccines	100% of domestic funds released and received by UNICEF against annual forecasted demand for vaccine procurement in annual financing plan	100% of annual forecasted demand transferred	Not achieved
3	EPI staffing	National	EPI manager, supply chain/logistician, data manager (Full time Government staff, funded by NDoH)	National EPI team fully staffed	EPI manager with full responsibility and authority, with a team technically qualified (refer to NDoH plans)	5 staff in place - EPI Manager, Data and VPD Surveillance Officer, Vaccines Logistics Officer, Cold Chain Officer and Senior Technical Officer	Not achieved
4		Provincial	EPI focal point and logistician in each province	Provincial EPI fully staffed	All provinces have Provincial EPI Officer and Provincial Cold Chain Officer in place	Provincial EPI Officer and Provincial Cold Chain Officer in 50% province	Achieved
5	Coverage	National performance	Increased immunisation coverage (raising DTP3 coverage to 65-70% by the end of 2025)	Penta 1	coverage for each antigen monitored, with reporting rate and data quality assessment regularly conducted	55% WUENIC	Not achieved
				Penta 3		46% WUENIC	Not achieved
				IPV2		54% WUENIC	Not achieved
				MCV1		54% WUENIC	Not achieved
				MCV2		35% WUENIC	Not achieved
		Provincial performance	Increased immunisation coverage	Penta 1	coverage for each antigen monitored, with reporting rate and data quality assessment regularly conducted	>90% provinces reported 55%	Not achieved
				Penta 3		>90% provinces reported 46%	Not achieved
				IPV2		>90% provinces reported 54%	Not achieved
				MCV1		>90% provinces reported 54%	Not achieved
				MCV2		>90% provinces reported 54%	Not achieved
6	coordination & oversight	National	ICC (or equivalent) fully functional	meeting minutes, attendance with high level representation	immunisation coordinating and oversight committee fully functional, chaired by the Minister (or Secretary?) and meeting regularly. Alternatively sub-commission of HSACC	ICC or Equivalent met at least twice a year	Not achieved
7	coordination & oversight	National	NITAG established and fully functional	list of nominees, meeting minutes	NITAG providing scientific guidance to the NDoH, critical if new vaccines are to be introduced	NITAG established and meets at least twice a year	Not achieved

S/N	Theme	Level	Objectives	Indicator	Description/comments	2024 Target	Status
8	data use for planning & decision making	National & provincial	Use of eNHIS monthly entry, data quality, analyses and reporting	No of meetings held each year and every meeting has actions outcomes documented based on analysis of eNHIS data	Improve data use for monitoring and planning at all levels of the health care system	Quarterly reviews of eNHIS data and annual EPI Report are available for both provincial and national information	Achieved
9	Stock Management	National & provincial	Availability of vaccine stock	Monthly vaccine stock reports from all provinces	all provinces submitted the monthly vaccine stock report in the first week of every month	Monthly vaccine stock report from 17 provinces and Quarterly review of the vaccine stock and actions taken	Achieved

b) Status of GMR Recommendations

Section	GMR	Status
Governance and programme management	**Governance and oversight on immunisation activities** The National Department of Health (NDoH) will ensure that immunisation is included as a standing agenda item on the Health Sector Coordinating Committee (HSCC) meetings OR revise the Terms of Reference (ToRs) for the ICC in agreement with other key stakeholders (see Gavi's guidance for Coordination Forums http://www.gavi.org/support/coordination/) to consider the following: 1. Have the Secretary, NDoH or Minister of Health as the ICC chair. 2.Clearly define the criteria for selection of members of the ICC and its sub-committees, roles and reporting requirements of the various ICC sub-committees as appropriate. 3.Articulate how meetings will be conducted, for example, what constitutes a quorum, the need for a schedule calendar of quarterly meetings and secretariat support for agenda setting, logistics for meetings and sharing of minutes. 4.Outline the information requirements to be supplied by the ICC Secretariat (currently the EPI) ahead of ICC meetings including but not limited to programmatic progress, status of implementation of EVM Improvement Plan, minutes of EPI review meetings and status of implementation of prior internal, external and other audit findings.	Implemented
	Signing of the Partnership Framework Agreement NDoH will liaise with the Department of Finance and Department of Treasury and ensure that persons with appropriate authority countersigns on the Partnership Framework Agreement which has already been signed by Gavi and NDoH.	Implemented
	Staffing of EPI critical positions NDoH will ensure that a suitably qualified and experienced National EPI Manager, Vaccine and Logistics Officer and Cold Chain Officer are in place with clear TOR and appropriately supervised to ensure optimal programme management.	Not implemented
Budgeting and financial management	**Planning and budgeting** NDoH will ensure that national and provincial annual workplans and budgets for the EPI are developed in line with GoPNG budget cycles. The workplans and budgets will include activities including separate allocation for vaccine procurement expected to be financed from GoPNG funding, indicating the different source of funding (e.g., Health Functional grant, Provincial contribution, others). Development Partners' funding including Gavi grants, and will be reflected in the printed government budgetary estimates as appropriate. NDoH will further liaise with department of provincial and local government affairs in coordinating planning and budgeting for EPI activities by provincial and local-level governments.	Not implemented

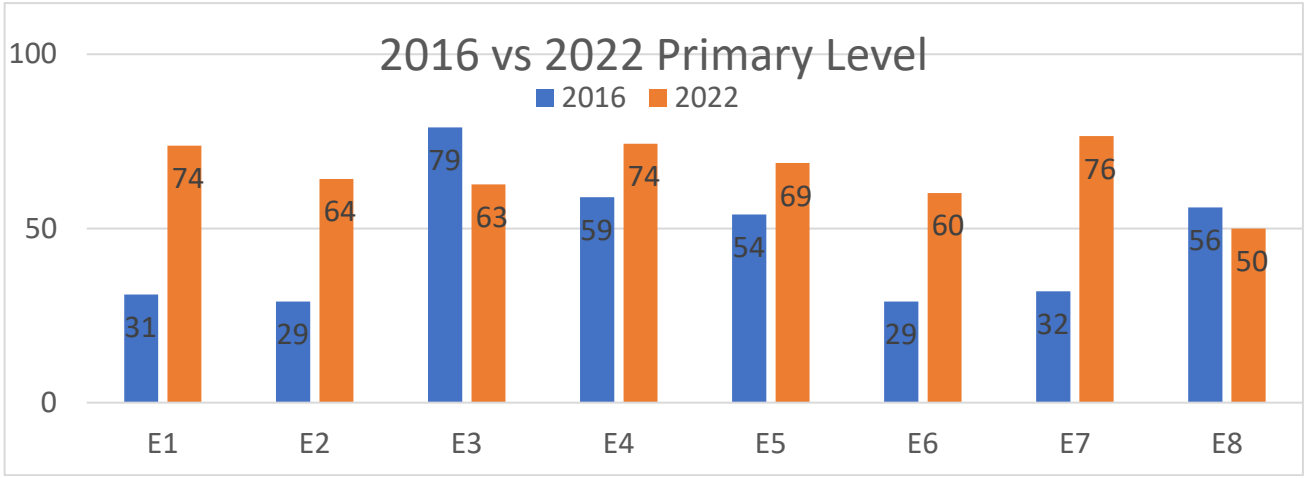
Section	GMR	Status
	Funds flow modalities In recognition of the complexities in programme and financial management within PNG, and in order to manage fiduciary risks while at the same time promoting country ownership, Gavi will channel direct financial support through different modalities, subject to endorsement by the ICC and fulfilment of the conditions outlined below and in respective grant agreements. **1. Direct funding through NDoH – HSIP Trust Account** In order for Gavi to resume direct granting and disbursements to the Government of PNG, the NDoH will be required to demonstrate that the following actions have been completed to Gavi's satisfaction: •Re-activate the ''Designated Account'' previously used to receive Gavi funding denominated in US Dollars and opened in Bank South Pacific commercial bank and operated by the HSIP TA finance team. •NDoH will implement and/or continue to maintain the various recommendations contained in Gavi's program audit and investigation reports of 2016, as detailed in Schedule A annexed to this document. •Agreeing on Terms of Reference for a Fiduciary Agent (FA) engaged by Gavi (or Gavi's appointed agent) to provide financial management oversight for all Gavi programs funded through the NDoH. The role of the FA will be to support NDoH in meeting all Gavi financial management requirements and to ensure the appropriate use of grant funds at national and provincial levels. The FA will be responsible for putting the necessary procedures, control mechanisms and capacity building measures in place to provide effective financial management of grant funds. •Provide reasonable timelines endorsed by the Department of Finance for implementation of the IFMS and adequate financial management staffing at the Provincial level, at least for the provinces that will be prioritised for implementation of HSS grant activities to enhance and sustain national financial management systems.	Not applicable
	2. Funding through PNG Partnership Fund (PPF) •To enhance efficiency, collaboration and alignment with other developing partners funding immunisation activities in PNG, Gavi will channel part of the HSS funding through the PPF model, currently used by Australia's Department of Foreign Affairs (DFAT), subject to complying with Gavi's procurement procedures in selecting a management services firm, and other conditions as outlined in the respective Grant Agreement. •Considering the fiduciary risks noted with the HSIP TA modality, the selected PPF Management Services firm will agree with Gavi the necessary additional safeguard measures and associated costs to enhance fiduciary assurance for disbursements to national and provincial levels. •Funds will be disbursed in US Dollars to an account opened in ANZ Bank, Australia and operated by Abt	Implemented
	3. Funding through Alliance Partners •Gavi will disburse funds for some activities under HSS and other cash grants to the Alliance Partners based on the competitive advantages available to them. •Given the fiduciary risks identified with NDoH, Gavi will agree with UNICEF/WHO on additional safeguard measures necessary, and associated costs, to enhance fiduciary assurance for disbursements to NDoH and any other implementing partners based on the risk ratings contained in assurance plans of the Alliance Partners. These will include, but not limited to, the nature and frequency of audits, spot checks, third party monitoring and other assurance measures, and will include sharing with Gavi the relevant plans, subsequent assurance reports and reports for micro-assessment and other capacity assessments. •Particularly, additional measures for assurance and risk management during campaigns will need to be agreed with Gavi, including, but not limited to, having a Monitoring Agent providing real time assurance before, during and after the campaign.	Implemented
	4. Funding through a Fund Manager (PwC PNG) Gavi will disburse funds for some activities under Covid-19 Vaccine Delivery Support (CDS) and other cash grants as may be approved by Gavi to PwC PNG as a Fund Manager. Disbursements will be made to a Gavi- dedicated account in accordance with a schedule agreed with PwC PNG and upon fulfilment of specified pre- disbursement conditions. Funds will be disbursed in US Dollars to a PNG Kina (PGK) account opened and operated by PwC PNG. PwC PNG will perform the fund management services in line with Standard Operating Procedures (SOPs) that will be developed and approved by Gavi. The SOPs will at least cover procedures for bank account management, payments requisition and approval, advances management, procurement, fixed assets management, financial reporting (formats, frequency, audience), and audits.	Implemented
	Financial accounting and reporting PPF, PwC PNG and Alliance Partners receiving Gavi funds will report to Gavi as will be specified in the respective grant agreements with Gavi. These recipients will further share copies of the reports with the ICC and the NDoH for consolidation as outlined below. If and when funds are disbursed to NDoH either directly from Gavi or through other modalities, the NDoH will account for the funds, prepare and submit financial reports to Gavi every 3 months in line with the Gavi Guidelines on Financial Management and Audit Requirements1. This will include ensuring proper linking of activities to budgets and consolidation with reports received from other partners as indicated above. Actual expenditure incurred (and not advances) at the Provincial and district levels will also be correctly recorded	Not implemented
	Capacity building plan to strengthen the programme and fiduciary systems of HSIP TA A capacity building plan of NDoH programme and financial management structures and systems will be developed and agreed with the government based on weaknesses identified in the 2018 Programme Capacity Assessment (PCA) and other relevant sources, with clear milestones for expected outcomes. This will include, but not limited to, sustainable measures for: •Staffing: finance and accounting, procurement and internal audit at national and provincial levels •Skills enhancement for: budgeting and budget monitoring, cash and advance management, reporting •IFMS roll out to provinces and training of staff •Procurement: compliance with applicable laws and regulations, procurement planning, documentation	Not applicable

Section	GMR	Status
	and record keeping •Assets management: defined processes and responsibilities for receiving, tagging, recording and ongoing monitoring •Institutionalising risk-based internal audit to provide the necessary level of fiduciary assurance.	
	Non-vaccine procurement •Procurement of all cold chain equipment (CCE) including cold rooms, freezer rooms and other related vaccine store equipment; refrigerators, freezers; insulated cooling containers, temperature monitoring devices, cold chain accessories, spare parts for CCE; sharp disposal equipment and vehicles (including notably refrigerated and non-refrigerated trucks and vehicles) will be conducted by UNICEF as per the agreement to be entered into by the parties. •NDoH will be responsible to meet all costs related to in-country clearing and warehousing of all items procured through Gavi funds, including those procured through UNICEF. Any import-customs duty and VAT (if applicable) to the above-mentioned goods and any registration cost (for vehicles) will be paid by the NDoH. •Procurement for other lower value items for funding channelled through NDoH, except those procured through UNICEF, will be conducted in line with national procurement laws, regulations and guidelines with oversight from the Fiduciary Agent as and when appointed. Such procurement will be included in the Annual Procurement Plan prepared and approved in line with requirements of the national procurement laws and regulations. •Procurement for other items for any other funding channels will be conducted in line with the respective entities' procurement policies, regulations and guidelines.	Implemented
	Assets management •NDoH will enhance the asset management practices and procedures, as guided in the final Gavi Programme Capacity Assessment report of March 2019. Particularly, a comprehensive Fixed Asset Register (FAR) will be maintained and regularly updated for assets at all levels, including cold chain equipment and vehicles procured through Gavi grants to PNG. •NDoH will ensure that physical inventory count of fixed assets is performed at least once a year and periodic surprise spot checks of fixed assets as a control measure to protect them from loss, theft, fraud, waste and abuse will be carried out as deemed necessary.	Not implemented
Vaccines and cold chain management	**Development of Standard Operating Procedures for Vaccines Management** •NDoH will liaise with technical partners for support to develop Standard Operating Procedures (SoPs) for management of vaccines and related supplies and include procedures for submission of requisitions from various levels (from provinces to national level; from health facilities to provinces), among other critical components like Vaccine arrival procedures, temperature monitoring and vaccine vial monitoring.	Implemented
	Stock management and reporting •NDoH will ensure that appropriately qualified staff are put in place at the National Vaccine Store (NVS). •The central mSupply tool maintained at NVS will be updated on a monthly basis, including with stock data (physical inventory counts, vaccine consumption, stock outs, wastage and expiries) received from Provincial vaccine stores to ensure completeness and reliability of stock data. •All requisitions and issues of vaccines and related supplies will be properly documented, and such documentation filed appropriately.	Not implemented
	Review of contractual arrangements National logistics and forwarding company •As recommended in the Gavi programme audit report of 2016, NDoH will review and discuss its contractual arrangements with its national logistics and forwarding company to incorporate consignment services, including defining INCOTERMS and liability in the event of vaccine damage or loss.	Not implemented
	Insurance •The GoPNG is expected to maintain appropriate insurance cover for assets and vaccines. In light of the current lack of funds to insure assets and health commodities by the government, adequate physical safeguards regarding fire safety and access control measures will be put in place to cover any assets and vaccines against potential losses from potential disasters (such as fire or floods), negligence or theft.	Not implemented
Internal and External Audit Arrangements	**Internal audit arrangements** •Internal audit arrangements for funds channelled through PPF, PwC PNG or Alliance Partners will be specified in the respective grant agreements with Gavi. •For any direct funding to NDoH, internal audit arrangements will be strengthened in terms of staff capacity and risk-based auditing as part of the capacity building plan of NDoH mentioned above. In the meantime, Gavi may engage the services of a Monitoring Agent to provide the necessary risk-based assurance services in relation to Gavi supported activities.	Not applicable
	External audit arrangements •External audit arrangements for funds channelled through PPF or Alliance Partners will be specified in the respective grant agreements with Gavi. •For any direct funding to NDoH, Gavi will engage a private audit firm to conduct annual external audits, in line with ToRs to be agreed between the firm, NDoH and Gavi. •For funding to PwC PNG as fund manager, annual external audits will be conducted on the fund management operations in line with Terms of Reference to be agreed with Gavi, by an independent firm selected in agreement with Gavi.	Not applicable

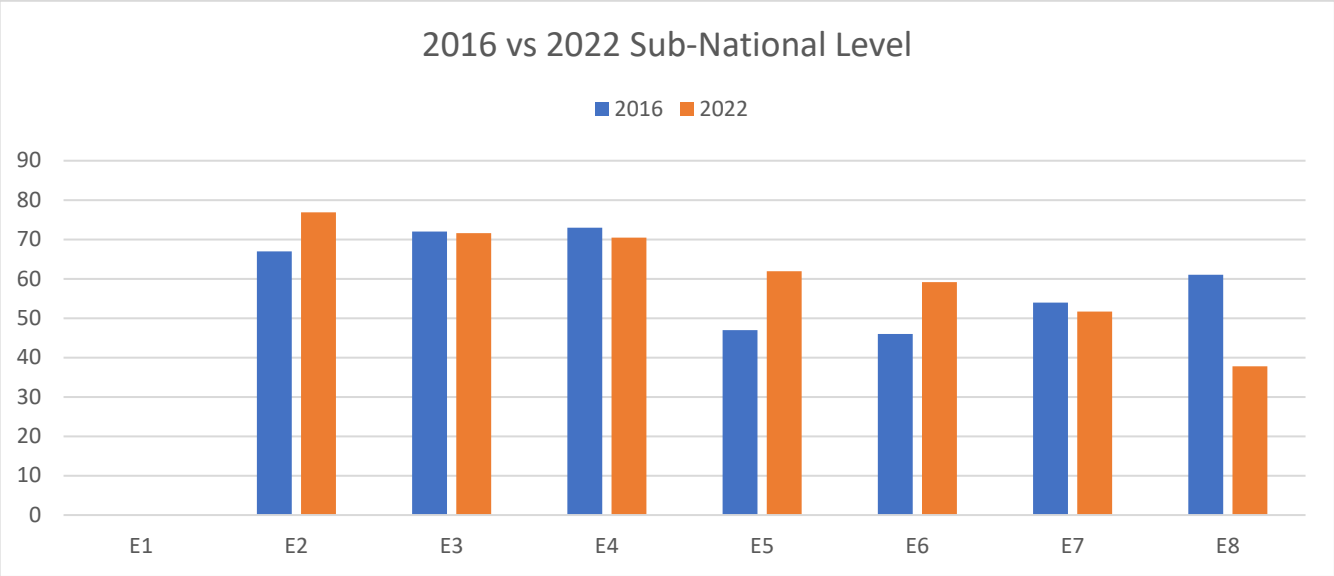
c) **EVM Score**

EVM		Infrastructure	Equipment	Information technology	Human resources	Policies & procedures	Financial resources			TOTAL
		C1	C2	C3	C4	C5	C6	OUTPUTS	PERFORMANCE	
Vaccine arrivals	E1			100	83	33		87		74
Temperature management	E2			73	79	3		42	81	66
Storage and transportation capacity	E3	10	86		98	3	26	79	100	66
Facility infrastructure and equipment	E4	60	84	81			31	72		70
Maintenance and repair	E5			33	81	2	30	53	80	60
Stock management	E6			86	61	6		40	5	49
Distribution of vaccines and dry goods	E7		96	10	62	2	48	81	69	60
Vaccine management	E8				76	3		57		44
Waste management	E9		64		42	21	19	17	81	46
Annual needs forecasting	M1				58	2		18	13	37
Annual work planning	M2				60	6	79	10	38	43
Supportive supervision	M3	94	94	8	71	4	50	28		35
iSC performance monitoring	M4			59	60	5		33		35
TOTAL		60	84	73	70	8	74	55	65	**58**

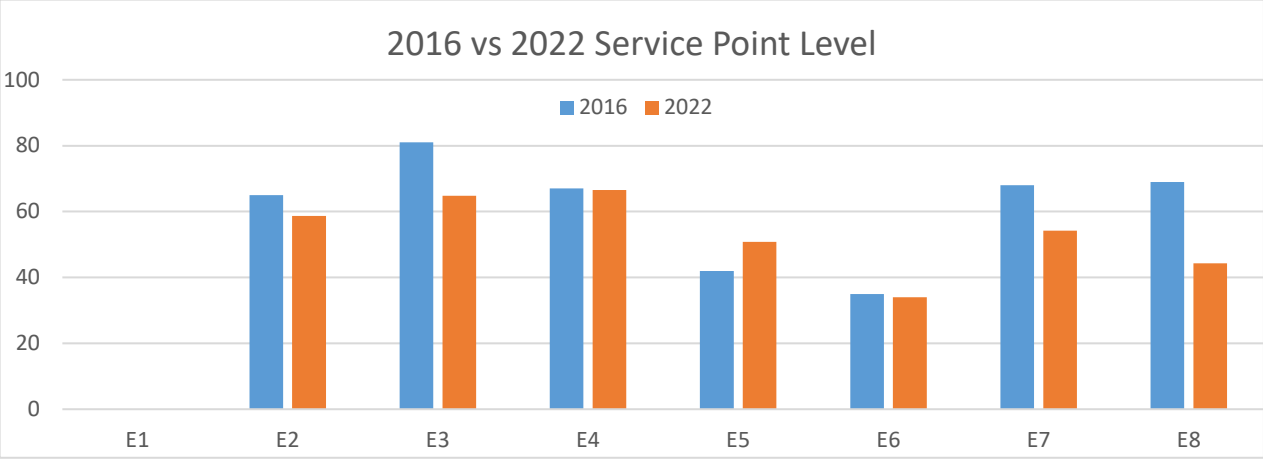
d) **Comparison at Primary Level results between 2016 and 2022**



e) Comparison at sub-national level results between 2016 and 2022



f) Comparison at service point level results between 2016 and 2022



Annex 7: Details of vaccine stock outs

a) Incidences of vaccine stock outs at PVS visited by the audit team

	No. of Stock Out (Days)				
Province Vaccine Store Name	Pentavalent	IPV	PCV	MR	Janssen
Eastern Highlands Province	19	56	145	0	240
Jiwaka Province	0	309	0	23	0
Morobe Province	40	0	25	347	0
Total Days	**59**	**365**	**170**	**370**	**240**

b) Incidences of vaccine stock outs at SDPs visited by the audit team

	No. of Stock out (Days)				
Health Facility Name	Pentavalent	IPV	PCV	MR	Janssen
Kwikila Hospital	0	12	0	0	0
Gordons Clinic	0	0	3	0	0
Porebada Health Centre	0	3	3	0	0
Tokarara Clinic HF	7	3	125	1	0
Pacific Adventist University (PAU) Clinic	0	35	2	13	21
West Goroka Urban Clinic	0	0	0	0	1
Buimo Health Facility	0	15	184	0	0
Murua Health Centre	0	13	45	0	0
Centre of Mercy UC	5	0	0	63	0
Togoba Health Center	0	3	0	0	0
Kerema Urban Clinic	82	8	86	0	0
Yagaum Health Facility	0	102	0	0	0
Madang Town UC	297	95	129	14	0
Mugil Health facility	54	65	65	0	0
Total Days	**445**	**354**	**642**	**91**	**22**

Annex 8: Details of Untraceable stock

a) Details of untraceable vaccine stock (Doses) at PVS

Province Vaccine Store	Pentavalent	IPV-2022	IPV-2023	PCV	MR	Janssen
Central Province	-15,360	-2,470	4,000	13,600	48,000	500
Eastern Highlands Province	6,144	0	0	0	0	0
Jiwaka Province	-80	-450	3,500	0	-16,100	0
Southern Highlands Province	2,000	0	0	2,900	13,800	500
NCD Province	0	0	0	0	0	10,000
Western Province	864	0	-3,600	-2,200	0	0
Morobe Province	6,688	4,200	14,000	15,000	106,000	1,500

b) Details of untraceable vaccine stock (Doses) at SDP

#	HF Vaccine Store Name	Pentavalent	IPV-2022	IPV-2023	PCV	MR	Janssen
1	Gordons Clinic	1,450	547	0	1,150	790	75
2	Muli Sub-Health Centre	100	50	50	100	500	0
3	Mongol Health Centre	70	70	0	70	4500	0
4	Porebada Health Centre	100	50	409	93	93	0
5	Tokarara Clinic HF	-400	0	575	600	530	0
6	Pacific Adventist University (PAU) Clinic	93	45	0	100	100	10
7	West Goroka Urban Clinic	76	70	0	200	80	50
8	Ougelbeng Community Health Post	0	100	-2	0	0	0
9	Asaro Health Centre	106	35	0	61	40	50
10	St Therese Clinic	1150	505	0	1250	950	150
11	Paiakona Community Health Post	50	25	10	50	20	0
12	Murua Health Centre	19	5	5	50	20	0
13	Centre of Mercy UC	291	11	0	262	0	0
14	Situm Rural H/C	50	0	0	200	0	0
15	Togoba Health Center	24	50	100	50	20	0
16	Karua Medical Center	250	225	0	300	600	0
17	Lawes Road Urban Clinic	200	50	150	200	100	50
18	Madang Town UC	0	104	-10	0	0	0
19	Bunabun	0	0	100	0	0	0

Annex 9: Variances during physical count

a) Unexplained stock variances (Doses) at NVS

Name of Vaccine	Batch No.	Location	Quantity counted (A) (Doses)	Quantity recorded in mSupply (B)	Variance (A-B)
Measles and Rubella Vaccine	0123w075	WICR 08	519,500	520,000	-500
Pentavalent Vaccine	220101024A	WICR 04	50,310	50,310	0
	220100724D	WICR 04	136,080	132,388	3,692
	E5V013139	WICR 05	4,700	4,053	647
	E5V013142	WICR 05	55,200	52,000	3,200
	E5V013140	WICR 05	38,900	38,900	0
	E5V013141	WICR 05	86,500	86,500	0
	E5V013067	WICR 05	400	655	-255
IPV	241008A	WICR 05	273,000	272,800	200
	2329001A	WICR 05	3,120	4,200	-1,080
	2401003A	WICR 05	35,000	35,000	0
	2320004A	WICR 09	1,870	1,970	-100

b) Unexplained stock variances (Doses) at PVS

	Pentavalent					IPV			
Province Vaccine Store Name	Quantity on Manual register/Stock card (b)	Quantity recorded in mSupply (C)	Total Quantity Counted (a)	Variance in Quantities counted (a - b) - Penta - stock card	Variance in Quantities counted (a - c) - Penta - mSupply	Quantity on Manual register/Stock card (b)	Quantity recorded in mSupply (C)	Total Quantity Counted (a)	Variance in Quantities counted (a - b) - IPV - stock card
Central Province	0	2,298	1,994	1,994	-304	0	360	745	745
Eastern Highlands Province	5,650	8,470	6,773	1,123	-1697	4055	5210	5150	1095
Jiwaka Province	3,180	780	2,400	-780	1620	391	0	1240	849
Southern Highlands Province	8,735	0	5,266	-3,469	5266	5690	0	619	-5071
NCD Province	1,610	2,350	1,610	0	-740	4,200	4,525	4,200	0
Western Province	787	0	2,352	1,565	2352	977	0	967	-10
Gulf Province	0	0	1,200	1,200	1200	0	0	1640	1640
Morobe Province	9,638	6,416	5,590	-4,048	-826	3114	13055	12920	9806
Madang Province	0	4,190	3,840	3,840	-350	0	1371	1340	1340
Grand Totals	**29,600**	**24,504**	**31,025**	**1,425**	**6,521**	**18,427**	**24,521**	**28,821**	**10,394**
	PCV					**MR**			
Province Vaccine Store Name	**Quantity on Manual register/Stock card (b)**	**Quantity recorded in mSupply (C)**	**Total Quantity Counted (a)**	**Variance in Quantities counted (a - b) - PCV - stock card**	**Variance in Quantities counted (a - c) - PCV - mSupply**	**Quantity on Manual register/Stock card (b)**	**Quantity recorded in mSupply (C)**	**Total Quantity Counted (a)**	**Variance in Quantities counted (a - b) - MR - stock card**
Central Province	0	2050	1744	1744	-306	0	1860	1860	1860
Eastern Highlands Province	7440	9488	7751	311	-1737	5650	15640	13310	7660
Jiwaka Province	1345	2160	1195	-150	-965	2572	25500	27670	25098
Southern Highlands Province	8840	0	3890	-4950	3890	10930	0	540	-10390
NCD Province	4,410	4,950	4,410	0	-540	4,970	6,370	4,970	0
Western Province	4207	0	3503	-704	3503	504	0	406	-98
Gulf Province		0	1650	1650	1650	0	0	2800	2800
Morobe Province	19400	4769	3458	-15942	-1311	0	5550	5800	5800
Madang Province	0	5554	5200	5200	-354	0	1603	1562	1562
Grand Totals	**45,642**	**28,971**	**32,801**	**-12,841**	**3,830**	**24,626**	**56,523**	**58,918**	**34,292**

c) Unexplained stock variances (Doses) at SDP

		Pentavalent					IPV				
#	HF Vaccine Store Name	Quantity on Manual register/Stock card (b)	Quantity recorded in mSupply (C)	Total Quantity Counted (a)	Variance in Quantities counted (a - b) - Penta - stock card	Variance in Quantities counted (a - c) - Penta - mSupply	Quantity on Manual register/Stock card (b)	Quantity recorded in mSupply (C)	Total Quantity Counted (a)	Variance in Quantities counted (a - b) - IPV - stock card	Variance in Quantities counted (a - c) - IPV - mSupply
1	Kwikila Hospital	154	599	154	0	-445	0	0	0	0	0
2	Gordons Clinic	158	183	159	1	-24	75	75	85	10	10
3	Muli Sub-Health Centre	0	0	34	34	34	0	0	10	10	10
4	Mongol Health Centre	240	0	225	-15	225	190	0	108	-82	108
5	Minj HC	0	0	990	990	990	0	0	21	21	21

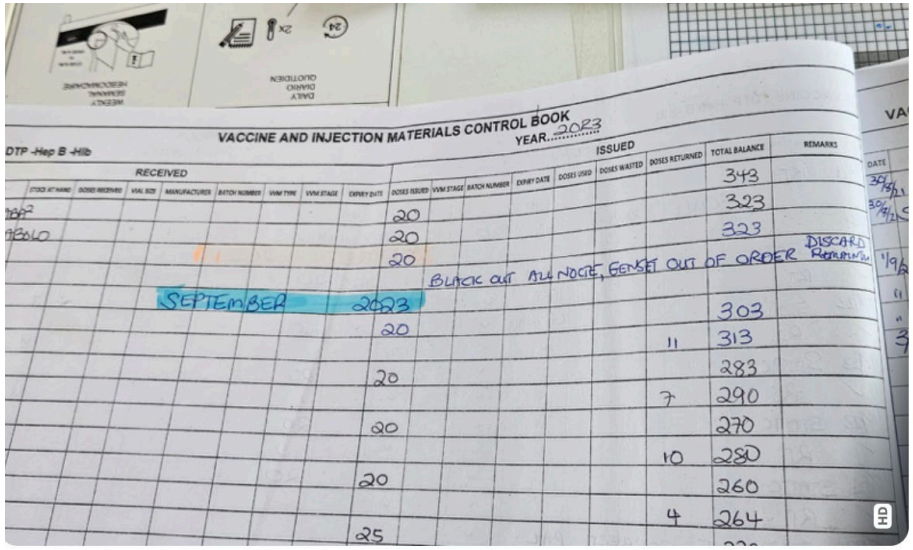
6	Dona HC	0	0	97	97	97	0	0	0	0	0
7	Porebada Health Centre	423	0	379	-44	379	275	0	260	-15	260
8	Kimil	0	0	0	0	0	0	0	0	0	0
9	Tokarara Clinic HF	259	427	260	1	-167	75	85	35	-40	-50
10	Pacific Adventist University (PAU) Clinic	311	0	920	609	920	0	0	20	20	20
11	West Goroka Urban Clinic	0	0	90	90	90	0	0	10	10	10
12	Ougelbeng Community Health Post	26	0	26	0	26	55	0	50	-5	50
13	Asaro Health Centre	0	0	38	38	38	0	0	10	10	10
14	St Therese Clinic	203	200	203	0	3	145	100	140	-5	40
15	Malalaua Health Centre	0	0	393	393	393	0	0	100	100	100
16	Paiakona Community Health Post	0	0	38	38	38	0	0	5	5	5
17	Buimo	0	0	201	201	201	0	0	11	11	11
18	Terapo Sub Health Centre	0	0	216	216	216	0	0	65	65	65
19	Murua Health Centre	0	0	0	0	0	0	0	0	0	0
20	Centre of Mercy UC	0	0	565	565	565	0	0	87	87	87
21	Situm Rural H/C	0	0	0	0	0	0	0	5	5	5
22	Togoba Health Center	128	0	31	-97	31	110	0	30	-80	30
23	Kerema Urban Clinic	99	0	103	4	103	45	0	40	-5	40
24	Karua Medical Center	0	0	50	50	50	0	0	50	50	50
25	Lawes Road Urban Clinic	0	0	100	100	100	0	3	0	0	-3
26	Tipulga Community Health Post	0	0		0	0	0	0	0	0	0
27	Yagaum Health Facility	0	0	148	148	148	0	35	60	60	25
28	Madang Town UC	0	0	152	152	152	0	0	50	50	50
29	Bunabun	22	0	190	168	190	75	0	70	-5	70
30	Mugil	200	0	100	-100	100	250	0	195	-55	195
	Grand Totals	**2,223**	**1,409**	**5,862**	**3,639**	**4,453**	**1,295**	**298**	**1,517**	**222**	**1,219**

		PCV					MR					Janssen				
#	HF Vaccine Store Name	Quantity on Manual register/Stock card (b)	Quantity recorded in mSupply (C)	Total Quantity Counted (a)	Variance in Quantities counted (a - b) - PCV - stock card	Variance in Quantities counted (a - c) - PCV - mSupply	Quantity on Manual register/Stock card (b)	Quantity recorded in mSupply (C)	Total Quantity Counted (a)	Variance in Quantities counted (a - b) - MR - stock card	Variance in Quantities counted (a - c) - MR - mSupply	Quantity on Manual register/Stock card (b)	Quantity recorded in mSupply (C)	Total Quantity Counted (a)	Variance in Quantities counted (a - b) - Janseen - stock card	Variance in Quantities counted (a - c) - Janseen - mSupply
1	Kwikila Hospital	123	656	123	0	-533	170	82	170	0	88	0	0	0	0	0
2	Gordons Clinic	183	320	184	1	-136	130	130	130	0	0	45	45	50	5	5
3	Muli Sub-Health Centre	0	0	64	64	64	0	0	0	0	0	0	0	0	0	0
4	Mongol Health Centre	67	0	55	-12	55	680	0	670	-10	670	0	0	0	0	0
5	Minj HC	0	0	121	121	121	0	0	0	0	0	0	0	0	0	0
6	Dona HC	0	0	68	68	68	0	0	1,740	1,740	1,740	0	0	0	0	0
7	Porebada Health Centre	0	0	300	300	300	0	0	110	110	110	0	0	0	0	0
8	Kimil	0	0	0	0	0	0	0		0	0	0	0	0	0	0
9	Tokarara Clinic HF	211	374	178	-33	-196	200	240	160	-40	-80	0	0	0	0	0

10	Pacific Adventist University (PAU) Clinic	114	0	10	-104	10	69	0	140	71	140	0	0	0	0	0
11	West Goroka Urban Clinic	0	0	110	110	110	0	0	160	160	160	0	0	0	0	0
12	Ougelbeng Community Health Post	21	0	24	3	24	110	0	110	0	110	0	0	0	0	0
13	Asaro Health Centre	0	0	20	20	20	0	0	1,350	1,350	1,350	0	0	0	0	0
14	St Therese Clinic	195	200	195	0	-5	80	7	80	0	73	0	0	0	0	0
15	Malalaua Health Centre	0	0	384	384	384	0	0	910	910	910	0	0	0	0	0
16	Paiakona Community Health Post	0	0	37	37	37	0	0	20	20	20	0	0	0	0	0
17	Buimo	0	0	175	175	175	0	0	0	0	0	0	0	0	0	0
18	Terapo Sub Health Centre	0	0	207	207	207	0	0	680	680	680	0	0	0	0	0
19	Murua Health Centre	31	0	7	-24	7	30	0	10	-20	10	0	0	0	0	0
20	Centre of Mercy UC	0	0	584	584	584	0	0	32	32	32	0	0	0	0	0
21	Situm Rural H/C	0	0	0	0	0	0	0	12	12	12	0	0	0	0	0
22	Togoba Health Center	154	0	26	-128	26	56	0	56	0	56	0	0	0	0	0
23	Kerema Urban Clinic	101	0	107	6	107	3,270	0	3,160	-110	3,160	0	0	45	45	45
24	Karua Medical Center	0	0	45	45	45	0	0	0	0	0	0	0	0	0	0
25	Lawes Road Urban Clinic	0	0	50	50	50	0	44	30	30	-14	0	6	0	0	-6
26	Tipulga Community Health Post	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Yagaum Health Facility	0	0	125	125	125	0	0	270	270	270	0	0	0	0	0
28	Madang Town UC	0	0	158	158	158	0	0	100	100	100	0	0	0	0	0
29	Bunabun	0	0	163	163	163	1,290	0	210	-1,080	210	0	0	0	0	0
30	Mugil	200	0	90	-110	90	1,800	0	1,690	-110	1,690	0	0	0	0	0
	Grand Totals	**1,400**	**1,550**	**3,610**	**2,210**	**2,060**	**7,885**	**503**	**12,000**	**4,115**	**11,497**	**45**	**51**	**95**	**50**	**44**

Annex 10: Gaps in Cold Chain management

a) Picture of VMCB with vials recommended for discarding but unceasingly issued out for administration



Annex 11: Gavi Targeted Software Standards for VX eLMIS vs mSupply score

	GAVI TSS Key Features	Description	Present in mSupply
1	Forecasting & Supply Planning	Configure and use calculations for ideal stock amounts (ISA) for supply planning.	No
2	Orders & Receipts, Supplier Management	Order fulfilment and supplier management	No
3	Distribution management	Vaccine distribution & delivery management	No
4	CCE module	Track cold chain equipment inventory	No
5	Temperature Monitoring	Integration with RTM devices (fridge tags)	No
6	Analytics and Dashboards	Stock indicator dashboards. Available through	No
7	Interoperability	Integration with other systems	No
8	Requisition and Issue	Stock requests and issues workflows	Yes
9	Inventory Management	Inventory data and stock movements to provide an overview of full stock availability	Yes
10	Early warning alerts	Stock alarms (potential expiry and potential stock out)	Yes

Annex 12: Table showing status of tablet utilisation for mSupply system

Status at facilities	Central	EBN	EHP	JIWAKA	Madang	NCD	NIP	SIMBU	WHP	Grand Total	%
Tablets functional, at NDoH, postpaid data inactive	2	11	14	4	11	0	8	1	12	63	23.7%
Functional tablets at NDoH, with active data	26	0	6	3	7	1		0	14	57	21.4%
Functional tablets at HFs with mSupply	4	15	4	4	2	19	5	1	0	54	20.3%
Tablets status unknown, postpaid data active	1	1	1	9	2		2	16	1	33	12.4%
Tablets status unknown, postpaid data inactive	0	0	5	4	6	1	10	4	2	32	12.0%
Stolen	0		2		11	1				14	5.3%
Functional tablets, at NDoH, with active data							7			7	2.6%
Faulty	1	1	0		1				2	5	1.9%
Decommissioned									1	1	0.4%
Grand Total	**34**	**28**	**32**	**24**	**40**	**22**	**32**	**22**	**32**	**266**	

Annex 13: Detailed management responses

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
Leadership and accountability within NDoH needs strengthening	Recommendation 1 To strengthen leadership over the EPI, the NDoH should: • Establish and endorse the organisational structure within the Ministry; • Appoint full-time EPI Executive Managers and Branch Managers positions; • Appoint an EPI manager for the immunisation programme; • Appoint EPI staff in support of the EPI manager. This team should consist of technically competent staff, in a bid to transition away from the temporary incumbents that are currently contracted via the technical assistance modality; and • Establish a staff capacity building plan to facilitate the transition and management of operational activities, away from partners back to the EPI national team.	**Action 1** • The organisational structure has been established and endorsed, and its implementation is currently underway within the Ministry. The recruitment process for key management vacancies is actively in progress. This rollout will be a progressive and ongoing process. • The recruitment of EPI Executive Managers is currently in progress, with the goal of filling these positions by July 2025, in accordance with the endorsed organisational structure. Once the executive roles are filled, the process will continue to address other vacancies within this new structure. • The recruitment process is expected to align with the endorsed organisational structure. • The positions outlined in the new organisational structure have been fully established. The temporary incumbents are expected to be integrated through the formal recruitment process to fill the various roles in the new structure. **Action 2** A capacity building plan will be developed and approved by end of 2026.	**Action 1** NDoH **Action 2** NDoH, CHAI	**Action 1** December 2025 **Action 2** December 2026
	Recommendation 2 To strengthen the accountability within the immunisation programme, the NDoH and EPI should: • Review and reset the NIS with updated indicators that are: specific; measurable; achievable; relevant and timebound; • Re-evaluate the accountability framework's targets and indicators to ensure these align with the NIS. Establish a single measurement framework with defined indicators at strategic and operational levels for the NIS, instead of two separate measurement frameworks currently in place; and	**Action 3** The review and updation of the NIS is an ongoing process. Relevant updates in line with relevant recommendations is expected to be completed by June 2026. **Action 4** An Accountability Framework has been developed and updated since the audit, in collaboration with GAVI, with the most recent version dated January 2025. Alignment of the accountability framework with NIS is ongoing alongside NIS review. **Action 5**	**Action 3** NDoH, WHO/CHAI **Action 4** EPI TWG **Action 5** NDoH	**Action 3** June 2026 **Action 4** December 2025 **Action 5** December 2025

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	• Empower the TWG, to track the programme's progress against the new set of strategic and operational performance indicators. The TWG should be chaired by a senior official from NDoH and report to the NDoH Senior Executive Management (SEM) Team till the ICC is established.	At this time, the country is prioritising the strengthening of the TWG, which actively reports to the NDoH Senior Executive Management and serves as the main coordination and decision-making platform. While the ICC and other governance structures are ideal, the focus is on consolidating the TWG's role to ensure effective oversight and partner coordination. Once fully functional, the TWG will provide a foundation for future decisions on re-establishing broader mechanisms such as the ICC.		
	Recommendation 3 To strengthen the accountability at national level, Gavi should: • Align all programmatic and technical assistance to support capacity building and eliminate all gap filling operational tasks within a defined timeline of not more than two years; and • Review the newly developed measurement framework and determine which indicators, if any, should trigger consequences to reinforce accountability for the immunisation programme. Clearly define these consequences within the accountability framework to ensure that the National Department of Health (NDoH) remains responsible for programme performance and outcomes.	**Action 6** NDoH is currently undergoing an ongoing process of recruitment under the new organisational structure with partner support still required to be channelled towards TA to fill the gaps. Upon filling of the vacant positions partners can focus TA towards capacity building. **Audit Note - The audit notes the management response, however, the TA support will be required to be reviewed in view of the Gavi 6.0 guidelines.** **Action 7** An Accountability Framework has been developed and updated since the audit, in collaboration with GAVI, with the most recent version dated January 2025. **Audit Note - The audit notes the management response, however, the compliance will be followed up as part of the follow up of the recommendations of this report to ensure the achievement of indicators under the accountability framework.**	**Action 6** NDoH **Action 7** NDoH	**Action 6** December 2025 **Action 7** December 2025
Challenges in the country's readiness for transition	Recommendation 4 To ensure the resilience and sustainability of the country's immunisation investments after transition is completed, the NDoH/EPI should: • Review all of its immunisation activities and develop a suitable transition plan, that remains aligned with	**Action 8** The current FPP was developed as a transition plan for PNG and runs until 2027. While this document will be updated to align with the Gavi 6.0 strategy, the development of a new transition plan is not feasible. **Audit Note - While the FPP was developed as a transition plan, at the time of the audit, the FPP was already was already 4 years old and none of the indicators were tracked or achieved. Gavi has developed**	**Action 8** NDoH	**Action 8** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	the NIS, and which articulates how the country should navigate the transition process; • Calculate what its funding gap is - by documenting and deducting all costs related to immunisation activities at the national and subnational levels, (including operational costs, vaccine co-financing and HR) – from existing funding sources (i.e. public funding, partners, and donors), to determine the magnitude of resources which needs to be mobilised; and then • Continue to advocate for the Department of Treasury to secure and allocate sufficient funding to meet the EPI's consolidated needs, including the timely release of allocated funds. This funding should account for: ongoing interventions, the existing financing gap, the impacts of current funding shortfalls, the programme's return on investment, and the full budgetary requirements for both national and sub-national levels of the EPI including operational expenses.	**the 6.0 strategy and within the HSS strategy, the country will be provided with guidelines on transition which are binding for the country and the country is expected to align with the 6.0 strategy.** **Action 9** The World Bank is currently supporting the NDOH to document the overall health sector funding gap, which includes immunisation. However, generating a detailed funding gap analysis for both the national and subnational levels may not be achievable in the short term. **Action 10** Agreed and ongoing currently	**Action 9** NDoH, WB and UNICEF **Action 10** NDoH, WB and UNICEF	**Action 9** December 2027 **Action 10** December 2027
Coordination and oversight arrangements over the immunisation programme at the PHAs needs to be improved	Recommendation 5 To strengthen programme management structures, the NDoH/EPI should: • Develop suitable guidelines that operationalise the NHA and PHAs Acts, by ensuring that there is substantive and regular coordination and oversight between the NDoH and the PHAs. • Establish necessary oversight structures, including the related supervision and monitoring processes with respect to PHAs' grant agreements.	**Action 11** Agreed. Guidelines will be developed and rolled out by end of 2026. **Action 12** The AIHSS2 is exploring the formulation of an Accountability Framework with KPIs to track the individual performance of the ISPs and PHAs.	**Action 11** NDoH **Action 12** NDoH, AIHSS2, UNICEF, WHO	**Action 11** December 2026 **Action 12** June 2026
	Recommendation 6 To strengthen the ISPs' role, NDoH/EPI should work with the fund manager to: • establish the coordination mechanism between NdoH/EPI, PHA and all the ISPs; and	**Action 13** • Currently, NDoH are part of the Senior Management Group along with Gavi, MFAT, DFAT and DNPM who meet quarterly to discuss AIHSS2 progress. NDoH also contribute to the biannual Learning and Reflection Workshops and the biannual PHA/ISP meetings. This facilitates coordination between NDoH/EPI, PHA and ISPs.	**Action 13** NDoH, AIHSS2	**Action 13** June 2026

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	• determine suitable reporting structures for the ISPs grant agreements at both the PHA and at EPI national levels	• In 2025, AIHSS2 grantee workplans for outreach and mobile services are informed by Health Facility micro plans developed by PHAs and shared with the EPI unit, although not all facilities receive AIHSS2 funding. The collaboration between agencies has improved with both PIRI and AIHSS2 funds being used for outreach and mobile services. Other health system strengthening and GEDSI activities are captured in the grantee workplans and semi-annual and annual reports.		
	Recommendation 7 To strengthen the ISPs' role, MoH/EPI in collaboration with Gavi and the fund manager should: • Define the ISPs role by clearly articulating what responsibilities and accountabilities they have for the immunisation programme; and • Having defined the role, all subsequent ISP grant agreements should meet these requirements including proper accountability to the PHAs and NDoH on immunisation programme activities.	**Action 14** AIHSS2 is exploring whether an annual stocktake of Grantee responsibilities is a better way of monitoring or if a number of indicators not already used can be included into the MEL Plan. A responsibility and accountability framework is also being developed to determine what additional responsibilities need to be included in grant agreements if appropriate to monitor the support provided to the PHAs. Currently, grant agreements include key deliverables and compliance (safeguarding and fraud) requirements. Additionally, the tender document that went out to market to engage the ISPs outlined the role and responsibility of the ISPs. A panel was established that included the PHA CEO or delegate, NDoH EPI manager, Abt team members to decide on the most appropriate ISP for that PHA.	**Action 14** NDoH, AIHSS2	**Action 14** December 2025
Governance mechanisms need to be formalised to improve country ownership	Recommendation 8 To strengthen the programme's governance and oversight, the NDoH/EPI should: • Review the current governance structures with regards to the HSCC and ICC and establish the appropriate governing structure to meet the country needs ensuring that the existing government structure is strengthened instead of creating new committees; • Establish the NITAG as mandated by the NIS; and • Ensure that Terms of Reference are approved so that the defined governance structure can be formally operationalised.	**Action 15** The NDoH acknowledges the importance of strong governance and oversight structures. At present, the focus is on strengthening the TWG, which directly reports to senior NDoH leadership and is functioning as the main coordinating platform. This approach ensures alignment with existing government structures and avoids the creation of parallel committees. While the ICC remains the long-term goal, efforts are currently directed toward consolidating the TWG to serve as a foundation for broader governance reforms, including future reactivation of the ICC where appropriate. **Action 16** Agreed. WHO will provide the technical and advocacy support to NDOH to strengthen the governance mechanisms including establishing NITAG.	**Action 15** NDoH **Action 16** NDoH and WHO	**Action 15** December 2027 **Action 16** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		Action 17 The NITAG TOR has been approved in Q1 2025.	**Action 17** NDoH and WHO	**Action 17** June 2025
Governance coordination and oversight role needs to be strengthened	Recommendation 9 To strengthen Governance coordination, and oversight roles, the National Department of Health (NDoH) / Expanded Programme on Immunisation (EPI), with support from the development partners, should implement the following actions: • **Improve information flow and decision-making:** Ensure that issues discussed at the EPI Technical Working Group (TWG) chaired by Senior Official of NDoH are escalated to the Senior Executive Management Team of NDoH for decision-making till the time ICC is established. The TWG should also leverage its existing platform, to regularly monitor the implementation progress on the partners' activities. • **Standardise meeting documentation and follow-up mechanisms:** Develop and adopt a standardised format for recording meeting minutes. Establish a dashboard to track the status of the SEM, and the EPI TWG recommendations and decisions. Each recommendation should clearly identify the responsible officer, and by when the action will be completed, to ensure accountability. • **Strengthen reporting to the SEM:** Ensure that the EPI TWG prepares and submits concise summary reports to the SEM, highlighting its key conclusions and technical inputs in support of the SEM's deliberations and strategic decision-making. • **Annual review of TWG resolutions:** Conduct an annual review of TWG resolutions/ decisions, and highlight to the SEM, all instances of non-compliance	**Action 18** • At present, the EPI TWG is being strengthened to serve as the primary coordination and oversight platform. The TWG reports to and escalates key issues to the SEM, ensuring decisions are made within existing government structures. While the ICC remains a long-term goal, our current priority is to enhance the functionality of the TWG, including systematic monitoring of partner activities and ensuring effective coordination with oversight from SEM • Agreed. Standardised templates for recording meeting minutes exist. The action/decision tracker will be developed with the dashboard to track the status of the implementation to review at TWG meetings. • At this stage, the EPI TWG is being strengthened to serve as the primary coordination platform and reports directly to the NDoH SEM for decision-making. The TWG will continue to submit concise summary reports to SEM for strategic decision making. • Agreed. Annual review of the EPI TWG resolutions will be implemented. • The NDoH acknowledges the importance of strong governance and oversight structures. At present, the focus is on strengthening the TWG, which directly reports to senior NDoH leadership and is functioning as the main coordinating platform. This approach ensures alignment with existing government structures and avoids the creation of parallel committees. While the ICC remains the long-term goal, efforts are currently directed toward consolidating the TWG to serve as a foundation for broader governance reforms, including future reactivation of the ICC where appropriate. • As mentioned earlier, EPI TWG be functioning as the main coordination platform and oversight body of EPI workplan implementation and endorsement of any adjustment to the workplan.	**Action 18** NDoH	**Action 18** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	or insufficient progress, for the Committee to revisit and review. • **Enhance planning and prioritisation using a workplan tracking tool** – Develop and implement a tool to monitor the status of TWG activities, including documenting any delays or any actions brought forward from previous years. Any activities which are deprioritised should be formally endorsed by the SEM. • **Establish a dashboard to track implementation**: Create a dashboard to visualise and monitor the implementation status of immunisation activities, helping to identify any bottlenecks, so that the TWG can propose timely interventions for the EPI to facilitate and execute. • **Develop annual operational plans** – implement a formal annual operational planning process into the EPI, including scheduling partner-supported activities. These annual plans should be subsequently used to guide implementation, track achievements, and facilitate decision-making in the case of activities being delayed.	• The EPI Program is currently developing a consolidated activity plan that incorporates both NDoH and partner-supported immunisation activities. This plan will serve as a basis for tracking implementation progress, with bi-annual reviews to identify bottlenecks and inform timely decision-making.		
Grant management requirements and audit recommendations are still outstanding	Recommendation 10 To improve oversight and accountability with regard to outstanding actions and audit recommendations, the NDoH/EPI should implement the following measures: • Reassess the GMRs in light of the current country context, and where necessary revise them to ensure they remain relevant and actionable; • Create a tracking system at the EPI operational level to capture the recommendations, categorised by priority (high, medium, low). For recurring recommendations across multiple reviews, aggregate them under one action item with a single	**Action 19** The GMRs will be substituted by prioritised actions from the audit. **Action 20** Agreed. Tracking system will be developed to consolidate and track recommendations. **Action 21** Dashboard Development planned for June 2026. NDoH to assist in the monitoring of the dashboard. **Action 22** Agreed. The NDoH acknowledges the importance of strong governance and oversight structures. At present, the focus is on strengthening the TWG, which directly reports to senior NDoH	**Action 19** EPI/NDoH **Action 20** NDoH, CHAI **Action 21** NDoH, CHAI **Action 22** NDoH	**Action 19** December 2027 **Action 20** December 2027 **Action 21** December 2026 **Action 22** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	action owner, and ensure that the action addresses issues identified in all relevant reports. For example, recommendations that appear in both the programme audit report and GMR should be combined, with a unified action plan; • Develop a dashboard for governance oversight that differentiates between GMRs and assurance recommendations. Ensure these are assigned to appropriate action owners, with clearly defined timelines for implementation; and • Introduce a semi-annual process into TWG meetings, so that the latest implementation status of actions and recommendations can be reviewed by the TWG. A summary of the TWG's review should be shared with Gavi after it is endorsed by the Committee.	leadership and is functioning as the main coordinating platform. This approach ensures alignment with existing government structures and avoids the creation of parallel committees. While the ICC remains the long-term goal, efforts are currently directed toward consolidating the TWG to serve as a foundation for broader governance reforms, including future reactivation of the ICC where appropriate.		
EVM assessment recommendations not fully implemented	Recommendation 11 To enhance oversight and accountability over the status and implementation of actions or recommendations from cIP, the NDoH/EPI should: • Regularly review the implementation status of its EVM comprehensive improvement plan. Based on this review, they should re-prioritise what remaining funding is available and adjust the estimated completion timelines for any delayed activities. • Create a dashboard (or an equivalent monitoring tool) to clearly illustrate the implementation status of the continuous improvement plan. This dashboard should track progress against key activities and milestones, and be regularly reviewed in the EPI TWG to support accountability and timely decision-making.	**Action 23** The EVM implementation was overseen by the NLWG which is in place. The excel tracking sheet and progress dashboard is in place. UNICEF will continue to support NDOH NLWG to regularly monitor and report to EPI TWG regarding the implementation progress of cIP. There is monthly NLGW meeting organised one week prior to EPI TWG where the update is presented to EPI TWG. **Audit Note - While the country is expected to conduct monthly NLGW, the audit notes that these were not happening. This will be followed up as part of the follow-up of the audit recommendations.** **Action 24** The EVM implementation as overseen by the NDoH NLWG is now in place. There is an excel tracking sheet and dashboard in place. UNICEF will continue to support NDoH NLWG to regularly monitor and report to EPI TWG regarding implementation progress of cIP. Monthly NLWG meetings are organised a week prior to EPI TWG to ensure an update is presented to EPI TWG	**Action 23** NDoH and UNICEF **Action 24** NDoH	**Action 23** December 2027 **Action 24** June 2025

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
Inadequate financing impeding vaccine supply	Recommendation 12 To increase the relevance of the country's immunisation program and to achieve its defined targets and National Immunisation Strategy, the NDoH/EPI should: • Continue undertaking robust, concerted advocacy measures targeting the Department of Treasury and the Ministry of Finance, requesting for an increase in funding, which is converted into a sustained constitutional EPI budgetary allocation as well as actual release, taking into consideration both the national and sub-national levels funding needs. • Re-evaluate the proposed NHP (2021-2030) targets to reflect the funding allocation.	**Action 25** This is currently ongoing with NDoH working together with the various donors and partners. UNICEF will also support the NDoH along with GAVI, world Bank (Including its TA) for evidence based budgeting and budget narrative preparation, engagement with the Treasury for sustained financing and advocacy with the Parliamentary Committee for Children and Young People to monitor the implementation. **Action 26** The NIS review will be conducted in 2025, to review and update the NIS as commencement was only in 2023, as such targets and implementation timelines need to be updated. WHO has planned to support NDoH align with partners to review and update the existing NIS.	**Action 25** NDoH **Action 26** NDoH, WHO	**Action 25** June 2026 **Action 26** December 2025
Lack of equity in the supply of available vaccines	Recommendation 13 To ensure equity in supply and coverage, the NDoH/EPI should: • **Develop a targeted catch-up plan for low-performing provinces.** A clear, actionable catch-up plan should be developed specifically for provinces which are struggling to meet their immunisation targets. This plan should address the root causes of low coverage and include targeted interventions, including outreach, to increase immunisation rates in these areas. • **Create an vaccine distribution plan -** A comprehensive vaccine distribution plan should be designed, to ensure access across the provinces, taking into account their geographical challenges and local needs. The plan should help to ensure that underserved or hard-to-reach areas receive adequate vaccines, with an overall objective of reducing disparities in coverage.	**Action 27** WHO, UINCEF, AHISS, CHAI are conducting the deep dive exercises on the immunisation program performance by visiting the low performing provinces with high number of zero doses children (Madang, Morobe, West New Britain provinces). The joint review and action plan development was developed. It has been agreed that the review of the progress will be done on a quarterly basis. Six provinces with low performing provinces will be visited by Q3 2025 and the regular data review, analysis, and feedbacks will be conducted through onsite and online meetings with provinces on quarterly basis. With Gavi support through WHO, and AIHSS, NDOH is conducting PIRI (periodic intensification of routine immunisation) in 12 provinces in 2025. **Action 28** The vaccine distribution plan has been revised with consideration of the buffer stock and the optimised distribution schedule for provinces. A tool has been developed to review the vaccine orders and decide the approved quantities. The Immunisation Supply Chain working group (NLWG) under the EPI TWG has been in place to update the vaccine stock status at the national and provincial level, and the vaccine distribution status. The monthly NLWG meeting is in place to	**Action 27** NDoH **Action 28** NDoH, UNICEF	**Action 27** December 2027 **Action 28** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		review the stock status across all provinces, to look at the health facilities stock out report, provide feedback and take actions to mitigate and address any stock out situation. **Audit Note - The audit notes the management response, however, at the time of audit, evidence of monthly NLWG meeting was not available. This will be followed up as part of the follow-up of the recommendations of this report.**		
Support supervision arrangements need to improve	Recommendation 24 To strengthen governance and oversight, the NDoH/EPI with support from partners should: • Institutionalise the monitoring and supportive supervision guidelines which includes dedicated sections for immunisation data quality and vaccine stock management. Using these guidelines, the NDoH should conduct supportive supervisions at the PHA level, while PHAs should be responsible for conducting supportive supervision at the health facility (HF) level; • Implement robust feedback mechanisms to ensure that immunisation findings from all supervision visits are formally documented and accessible by the local EPI officers; • Introduce an action tracker system to monitor the implementation status of recommendations from previous supportive supervision visits, as well as a process to ensure that these are regularly followed-up and updated accordingly; and • Ensure that the review of action points from previous supervisory visits is included as a standing, mandatory task for all subsequent supervision visits, so as to reinforce individuals' accountability in implementing previous agreed actions.	**Action 29** NDoH supported by UNICEF developed electronic supervisory monitoring tools for health facilities, cold chain, ACSM, immunisation session that can be used by any of the partners and PHA staff. The checklist was revised in line with WHO IIP guideline with inputs from NDOH (EPI TWG), WHO , UNICEF and partners. WHO supported the conducting of an immunisation data quality assessment in 2023 by adopting tools from the WHO Immunisation Data Quality Assessment toolkit and the NDoH data quality audit tool. This can be institutionalised to regularly check immunisation data quality by the NDoH. **Action 30** All officers are trained in the use of the electronic supervisory tools and have access to enter data and view actions from previous monitoring visits. **Action 31** NDOH has data quality assessment feedbacks tracker for health facilities and the NDOH and PHA revisits the action trackers during follow up visit. In the electronic supportive supervision visit dashboard there is an action tracking for follow up and feedbacks to health facilities by NDOH and PHA. **Action 32** As stated above, the supportive supervision will be enhanced by ensuring the scheduled regular visit to health facilities is conducted by NDoH, PHA, Districts and Partners (WHO, UNICEF, CHAI, AIHSS, etc) and use of the supportive supervision guidelines and tools in place.	**Action 29** NDoH, UNICEF and WHO **Action 30** NDoH, UNICEF **Action 31** NDoH **Action 32** NDoH and all partners	**Action 29** June 2026 **Action 30** December 2025 **Action 31** December 2025 **Action 32** June 2026

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		The findings of the supervisory visits and actions will be tracked to discuss at the PHA EPI review and National level EPI review meetings for corrective actions and follow up.		
Weaknesses in the fund management model should be addressed to improve sustainability	Recommendation 15 To strengthen the AIHSS programme management structures, the NDoH/EPI in conjunction with the Fund Manager should: • Develop technical indicators for monitoring the performance of the ISPs, and monitor their performance on quarterly basis. • Improve coordination mechanisms between EPI, PHA and the ISPs. • Develop suitable supportive supervision mechanisms for monitoring of ISPs, including the follow up of their remediation of issues. • Develop a mechanism for tracking of implementation of activities. • Develop annual work plans to monitor the progress of the activities and achievements as well as to facilitate swift decision making in case of delays and to monitor the performance of the ISPs. • Have an EPI oversight over the transition of PHA from the AIHSS support with the view that the government takes more ownership and agree and establish a roles and responsibility matrix with ISPs. • Work with the AIHSS fund manager to help prepare a comprehensive plan to handover the AIHSS programme activities to the PHAs, including a corresponding transfer of the roles and responsibilities associated. • Establish an accountability framework for the Fund Manager, in discussion with Gavi, which identifies suitable targets and indicators to support further funding through the pooled fund mechanism. Consequences should be defined for non-achievement of targets to ensure that Abt remain accountable to the immunisation programme.	**Action 33** Two AIHSS2 dashboard pages have been created to monitor the timeliness of the key grant deliverables (Reports for: finances, M&E, progress, CAP and others: MOUs, M&E plans, transition plans, financial audits) and the funds spent on each of the EOPOs, ISP costs and overheads to provide better oversight of Grantee performance and how the funds are being spent. These dashboards will be included in the Quarterly AIHSS2 update report to the Senior Management Group (Gavi, MFAT, DFAT, NDoH, DNPM) who meet quarterly. Under discussion is the usefulness of an annual stocktake of ISPs or the development of more indicators. **Audit Note - The response from the fund manager is noted, however, at the time of the audit, there was no evidence of these technical indicators and these will be followed up as part of the follow-up of recommendations for this report.** **Action 34** NDoH are included in the biannual AIHSS2 PHA/ISP meeting updates, the biannual learning and reflection workshops. A SharePoint folder for the Senior Management Group has been established for the AIHSS2 SMG quarterly meeting documents however additional documents (Grantee workplans, progress reports etc.) can be provided for ease of access. **Audit Note - The response from the fund manager is noted, however, at the time of the audit, there was no evidence of these technical indicators and these will be followed up as part of the follow-up of recommendations for this report.** **Action 35** Activity is ongoing: Grant agreements outline actions that can be taken if Grantees are not compliant. Senior Grant Managers monitor and approve delays and save emails and other correspondence in the	**Action 33** NDoH, AIHSS2 **Action 34** NDoH, AIHSS2 **Action 35** NDoH, AIHSS2	**Action 33** December 2025 **Action 34** December 2025 **Action 35** December 2025

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		appropriate folders. If the Grantee needs remediation a Performance Improvement Plan will be developed and monitored. The AIHSS2 is exploring the formulation of an Accountability Framework with KPIs to track the individual performance of the ISPs and PHAs. **Audit Note - The response from the fund manager is noted, however, at the time of the audit, there was no evidence of the mechanisms for monitoring of ISPs and these will be followed up as part of the follow-up of recommendations for this report.** **Action 36** Activity is ongoing: Implementation activities from the Grantee workplans are tracked monthly by the SGMs during the monthly Grantee meetings. A summary of the activities progress will be provided in the 6 month and annual progress reports under the grant management heading. **Audit Note - The response from the fund manager is noted, however, at the time of the audit, there was no evidence of these monthly tracking and these will be followed up as part of the follow-up of recommendations for this report.** **Action 37** The roles and responsibilities (report writing, finances, M&E, CAP, planning) matrix will be developed for ISPs to handover to PHAs to become direct recipients to AIHSS2 and then from AIHSS2 to NDoH. Agreed. AIHSS2 provide funding and technical support to the ISPs and PHAs. The AIHSS2 program activities are mostly related to grant management of donor funds and PFM support. **Action 38** The current accountability framework encompasses all relevant partners. The accountability framework was reviewed and updated with the latest version dated January 2025.	**Action 36** NDoH, AIHSS2 **Action 37** NDoH, AIHSS2 **Action 38** NDoH, AIHSS2	**Action 36** December 2027 **Action 37** December 2027 **Action 38** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		Audit Note - The current accountability framework is applicable for EPI covering all the partners, however, there is no specific framework specifically for Abt Associates. The performance of the Abt Associates will also be monitored against the overall accountability framework to the extent applicable. These will be followed up as part of the follow-up of recommendations for this report.		
Inadequate tracking and monitoring of the performance of partners' targeted country assistance (TCA) and partner led activities	Recommendation 16 The coordination and monitoring of PEF TCA performance should be strengthened, consistent with Gavi's TCA guiding principles (e.g. country ownership, focused on skills transfer, cost effective and with accountability). NDoH/EPI's management and the TCA partners should regularly meet, discuss and share information on the implementation and outcome of TCA activities, by: • Assigning that the EPI TWG meetings, regularly review TCA performance, and assess progress against the approved one TA workplan; • Mandating that the EPI TWG reviews the implementation status and performance of TCA activities, every three months; • Requiring the TCA partners to submit their reports to the EPI TWG on their implementation of TCA priorities. The EPI TWG and partners should jointly review and validate progress on the TCA activities against the PEF TCA milestones. This is in line with the TCA guiding principles which required that the NDoH should have complete insight over reporting and be able to review their partner's performance on a regular basis; • Ensuring that there is no conflict of interest while assigning roles for seconded staff from implementing partners. • Reviewing and validating the completion of each grant activities undertaken by the implementing partners, based on the annual work plan approved by	**Action 39** This is ongoing. Partners in collaboration with NDOH-EPI are currently developing TCA performance review mechanisms. NDOH-EPI will be coordinating with TCA partners to review the TCA performance updates through EPI TWG meetings. Currently, the TCA related activities are aligned with NDOH-EPI workplan and priorities as well as FPP implementation. The regular update on such activities happen at EPI TWG. It will be ensured that there are no conflict of interest for the seconded staff. The standing agenda has been updated to include review and validation of each grant activities completed by the implementing partner based on the annual work plan.	**Action 39** EPI/WHO/UNICEF/CHAI/AIHSS	**Action 39** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	the NDoH. This should be made a standing agenda item within the EPI TWG.			
	Recommendation 17 The NDoH/EPI should clearly delineate, define and communicate to the TCA partners what is its role in a partner-led framework. Subsequently, the Government should serve to enhance ownership of the programme, and its strategy for building greater continuity in national systems, in context of this fragile country.	**Action 40** The role of partners are already defined and the review mechanism is being developed to ensure overall accountability of NDoH.	**Action 40** NDoH	**Action 40** December 2027
Gaps in forecasting and quantifying annual vaccine needs	Recommendation 18 To improve the vaccine forecasting process, NDoH/EPI in collaboration with UNICEF should: • Work with the Ministry of Finance to review and optimise the timing of vaccine co-financing payments. • Review and adjust assumptions and planning calculations (where applicable), to ensure that it procures and holds adequate buffer stocks. • Furthermore, the EPI should retroactively review the accuracy of its annual forecast to reevaluate its process. In future, its forecast projections should be more closely aligned to the actual demand. The accuracy of prior assumptions should be evaluated and recalibrated, if necessary. • Conduct periodic country stock level reviews to ensure that the sub-national stock data is accurate and complete, so that it can be taken into consideration in the annual forecast process. • Design and develop SOPs to enhance EPI capacity and forecasting process ownership.	**Action 41** This NIS is being reviewed and should take into consideration that UNICEF will advocate through Parliamentary Committee for Children and Young People for increased and sustained financing for the vaccines. Through World Bank TA support, NDOH and UNICEF will work closely with Department of Treasury for review of the budget submission, approval and timely release of the funds on procurement of the vaccines including future co-financing requirements. **Action 42** This is done already as part of the SOPs. The national level forecast included 6 months buffer stock to avoid stock out due to the fund transfer delay. These will be reviewed in line with the SOPs to ensure regular review of the assumptions in the case of changes in circumstance or vaccine shortages noted. **Action 43** This is done already as part of the SOPs. The national level forecast included 6 months buffer stock to avoid stock out due to the fund transfer delay. EPI to review annually on the assumptions and forecasts. UNICEF will continue to strengthen the forecasting exercise, regular review of the forecasted projections, assumptions and utilisation of the vaccines. **Action 44** This is an ongoing activity and it will be enhanced through regular NLWG meeting to review the stock level and track utilisation against	**Action 41** NDoH/UNCEF/WB **Action 42** NDoH/UNICEF **Action 43** NDoH/UNICEF **Action 44** NDoH/UNICEF	**Action 41** December 2027 **Action 42** June 2025 **Action 43** December 2027 **Action 44** June 2025

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		the delivered vaccine and vaccinated number of children as well as vaccine stock level. **Action 45** There is a SOPs in place which has rollout to all provinces in 2023 and 2024. The continuous support and on-the-job training will be integrated with the supportive supervision and the upcoming IIP trainings.	**Action 45** NDoH/UNICEF	**Action 45** December 2025
Vaccine storage and distribution processes need to be strengthened to improve traceability	Recommendation 19 To improve vaccine storage and distribution practices, the NDoH/EPI in collaboration with UNICEF should: • Provide annual training and mentoring to the logistics staff – including at the subnational level on: (i) how to operate the logistics management information system; and (ii) apply the vaccine supply chain management SOPs. • Develop and implement suitable archiving and retention periods for all stock records across the supply chain.	**Action 46** • The Immunisation Supply Chain (ISC) SOP has been trained to all PHA vaccines in 2024 and 2025. The immunisation supply chain SOP was also integrated into the national IIP trainings. The ISC SOP tools and job aids were already designed. The printing and distribution of the job aids will be done to reinforce the training quality and capacity of the health workers. The mSupply (Logistics information management system) is currently functional at Provincial and District level. The open mSupply will be deployed to up to level 2 health facilities (selected based on the feasibility and staff availability) in 15 provinces to enhance the LMIS and improve stock visibility and finally the availability. • The NDoH together with UNICEF will explore better ways to manage records by exploring the capabilities of mSupply and the data storage and retention.	**Action 46** NDoH, UNICEF	**Action 46** December 2025
	Recommendation 20 The NDoH/EPI should regularly review, manage and update its contracts with its 3PL contractors. The contractual agreements should include suitable KPIs as well as legal and insurance clauses, to ensure that: • ownership and liability with regards to supplies while under 3PL custody and distribution, is clarified and enhanced. • historic data points on determinant indicators like On-Time-In Full (OTIF), Failed Handovers etc are provided by 3PL and monitored.	**Action 47** • Agree with auditor observation. Current contractual terms to be revisited to include suitable KPIs and clarify ownership and liability. • Agreed with auditor observation. Current contractual terms to be revisited to include suitable KPIs and clarify ownership and liability. These will be monitored in line with the updated SLAs.	**Action 47** NDoH	**Action 47** December 2025
Inefficient inventory management at	Recommendation 21	**Action 48**	**Action 48** NDoH, UNICEF	**Action 48** December 2025

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
national and sub-national levels	To improve vaccine management at all levels, NDoH/EPI in collaboration with UNICEF, should: • Develop and implement buffer and minimum stock level for all vaccine supply chain management related stock records across the different supply chain levels. • Put in place a process to record vaccine incidents. For example by using the vaccine control books/registers to record all vaccine expirations or wastage events, including details on the quantity, type and when it occurred. • Determine human resource needs given the frequent changes within the immunisation program to ensure sustainability and continuity. • Expedite the waste management assessment given it is a planned EVM cIP action, and subsequently develop an SOP and waste management plans. • Enhance accountability of the provincial level through policy guidelines highlighting the roles and responsibilities of the PHAs.	This is done already as part of the SOPs. The national level forecast included 6 months buffer stock to avoid stock out due to the fund transfer delay. Timely fund transfer from National Budget to NDoH as well as to fast-track the fund transfer process within NDoH and the timely fund transfer from Bank of PNG is critical to ensure availability of the supplies to implement the buffer policies. UNICEF will advocate through Parliamentary Committee for Children and Young People for increased and sustained financing for the vaccines. **Action 49** The revised ISC tools includes the process and placeholder to record the vaccine incidents. The ISC tools will be oriented to all PHAs and Health Facilities to improve vaccine logistics information management practices. **Action 50** The organisational structure has been established and endorsed, and its implementation is currently underway within the Ministry. This rollout will be a progressive and ongoing process and will be a phased implementation in 2025 and 2026. **Action 51** Waste management policy, strategic plan and training guideline development is in progress. The consultancy has been announced and the work will be completed by the end of 2025. **Action 52** The tools for vaccine stock monitoring exist (eNHIS, mSupply). The PHAs are provided with the access to eNHIS. The provincial and health facilities vaccine stock out report will be generated and shared with provinces for taking the corrective actions.	**Action 49** NDoH, UNICEF **Action 50** NDoH **Action 51** NDoH, UNICEF **Action 52** NDoH, UNICEF	**Action 49** December 2025 **Action 50** June 2026 **Action 51** December 2025 **Action 52** December 2025
	Recommendation 22 The NDoH/EPI should strengthen its supportive supervision in relation to stock management. Such supportive visits, should be documented including feedback, and there should be a follow up upon the	**Action 53** • The supportive supervision checklist has been developed and rolled out to all provinces. The checklist covers " stock out" and wastage monitoring. The dashboard is designed to capture the findings including action points. The recommended checkpoint " regular physical stock verifications are conducted and	**Action 53** NDoH, UNICEF	**Action 53** December 2025

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	agreed actions. Supportive supervision visits should confirm for example that: • Regular physical stock verifications are conducted and documented in line with NDoH guidelines. • Ensure adequate supervision over the sub-national data collection and management including follow-ups of actions, to address data management gaps arising from supervision visits.	documented in line with NDOH guideline" is in place in the checklist. • The EPI supervision checklist includes the detailed section on the " Data Collection, Reporting , Monitoring & Use" with adequate checkpoint and procedures on use of the tools, completeness of the data, evidence of submission to higher level using the NDoH guidelines.		
Cold chain management practices need strengthening	Recommendation 23 To strengthen cold chain management, NDoH/EPI should: • Reinforce overall cold chain management ownership at national level (Health Facilities Service Branch (HFSB)) and subnational (PHA). • Establish and implement cold chain equipment preventive and corrective maintenance plans, schedules and logs at all levels of the supply chain. • Schedule and conduct temperature mapping across all supply chain levels. • Regularly update its cold chain equipment inventory list to maintain an accurate reflection of the country's CCE status. • Develop and disseminate job aids on cold chain management to all vaccine handing points. • The NDoH should support subnational vaccine handling points to design vaccine contingency plans tailor made to suit their context and train staff on how to implement them.	**Action 54** Agreed. This is a planned activity. The efforts are ongoing to establish a cold chain training centre at national level and to conduct regular training on the cold chain repair and maintenance activities by PHA technician. The TOT master training will be conducted in collaboration with National Vaccine and Cold Chain Management Centre of India. **Action 55** The cold chain equipment inventory is now digitised and rollout to all PHAs. The CCE inventory is updated and there is an cold chain equipment ticketing system to inform to PHA and NDoH (HFSB) about the cold chain issues and to log all the maintenance activities. The capacity of cold chain technicians and biomedical engineers will be reinforced through the cold chain training centre to be established in 2026 with Gavi's support. The costed cold chain maintenance plan will be developed and NDoH /UNICEF will advocate to the PHAs to be included in the annual operational plan (AOP). The HFSB will be supported to lead and coordinate the cold chain management system across all PHAs. **Action 56** The temperature mapping and monitoring study is planned for Q3 2025. **Action 57** This is ongoing and 6 months cold chain inventory update system is in place and all CCE are digitised. **Action 58**	**Action 54** NDoH, UNICEF **Action 55** NDoH//PHA/UNICEF **Action 56** NDoH, UNICEF **Action 57** NDoH, UNICEF **Action 58** NDoH, UNICEF	**Action 54** December 2027 **Action 55** December 2027 **Action 56** December 2025 **Action 57** December 2027 **Action 58** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		Planned activities. Hand aid developed and under field testing with printing and distribution planned for Q4 of 2025. **Action 59** ISC SOP was rolled out and training conducted for all cold chain persons including the contingency plan. The contingency will be updated for all provinces by working with the provinces. Through supportive supervision visits, the contingency plan will be reviewed and reinforced in collaboration with the PHAs and Health Facilities.	**Action 59** NDoH, UNICEF	**Action 59** December 2027
mSupply design and implementation gaps	Recommendation 24 To address the design challenges identified in mSupply, NDoH/EPI - in liaison with the respective partners - should: • Conduct an in-depth review of mSupply to identify any gaps in its security and functionality, data quality and completeness issues, with a view of developing a plan to address these bottlenecks, in line with Gavi's TSS. • Adopt a consolidated, integrated approach in identifying and supporting facilities benefiting from the roll out of mSupply. This includes determining how to collaborate and cost-share with other donor funded mSupply interventions, on components such as trainings, hardware maintenance and replacement, rollout of the system and end user support to facilities • Develop and operationalise a plan to roll out mSupply to the remaining health facilities in PNG by securing national funds. • Update and distribute the programme's SOPs to align these with the latest version of mSupply • Improve the mSupply monitoring dashboard's monitoring and reporting, by incorporating suitable immunisation indicators into it.	**Action 60** • A detailed review of mSupply's security and data quality framework is embedded within the TSS compliance stream of the Open mSupply transition. This includes a structured UAT (User Acceptability Testing) and EQA (External Quality Assurance) training for MSU and PHA teams to systematically test the system's security, performance, and adherence to global eLMIS and TSS standards. In parallel, comprehensive data validation rules are being embedded across modules to detect anomalies, ensure consistency, and flag quality issues early. Continuous learning loops, audits and stakeholder-driven enhancements will ensure system robustness. UNFPA is conducting the assessment of mSupply in PNG in line with the recommended aspect, UNICEF will coordinate with UNFPA to receive the analysis and results and incorporate in the review process as mentioned above. • The rollout of Open mSupply embraces a unified facility-level implementation model known as the 'Main Store' configuration. This approach reduces fragmentation across programs (EPI, TB, HIV, etc.) by housing all program stocks under one digital inventory system per across facility. UNICEF and NDoH are leveraging the MSU under MSPDD to drive donor harmonisation across training, deployments, and infrastructure, minimising duplication of efforts. Upcoming deployments include shared use of UNICEF-procured tablets and SOPs co-developed across partner programs to foster cost-sharing and sustainability. • The MOVEX 3 (Current contract) roadmap targets 480 health sites, representing a blend of migration from mSupply mobile and	**Action 60** NDoH, UNICEF	**Action 60** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	• Implement and retain an audit trail of all user's actions. • Assess the system's operational and maintenance costs, with a view of the feasibility of continuing to maintain it, in consideration of the significant maintenance and licensing costs. Consider reviewing what other eLMIS options exist, with a view to exploring whether the NDoH should consider transitioning to a more cost-effective and rationalised system.	fresh deployments. The scale-up is planned in batches based on provincial readiness, device availability, and site assessments. Funding is being mobilised from national government allocations and donor support from UNICEF, Gavi, etc. Provincial engagement through readiness assessments and capacity building ensures local buy-in and sustainability of installations. A feedback mechanism through the MSU informs each phase, promoting adaptive management and equity. • The current mSupply SOPs are outdated and misaligned with the upgraded Open mSupply interface. TMF, under its institutional contract with UNICEF, is developing updated SOPs that reflect real-time dashboards, new user roles, audit trail functionalities, and mobile device workflows. These SOPs are integrated into both face-to-face and online training modules and will be published in PDF and SCORM formats to ensure accessibility and continuous reference during deployment and use. An online Wiki is also under development which will be updated each time there is a new release of Open mSupply. • The new Open mSupply dashboard is designed with layered access: senior management receives summaries and forecasts; middle management views operational KPIs and trends; and frontline staff access site-specific actions. Immunisation-specific metrics such as stockouts, expired stock, wastage, on-time deliveries, and CCE performance are visualised. Filters, drill-down maps, automated reports, and role-based dashboards enable granular monitoring and faster action. Dashboard development aligns with the MOVEX 3 concept and dashboard design guide. • Open mSupply introduces an audit trail feature to ensure every transaction, data entry, and user action is logged. This function supports ISO/IEC 27002 compliance, reinforces data security protocols, and enhances system accountability. Logs are time stamped and role-attributed, enabling efficient troubleshooting, audit readiness, and retrospective verification of activity. Regular security patching and access reviews are included in the MSU and TMF support cycle. • Open mSupply significantly reduces licensing dependency by leveraging open-source architecture. Compared to the		

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		commercial mSupply system, the new model reduces costs by more than 60% per device over three years. The system also supports modular deployments and customisations without additional licensing fees. The government is planning on conducting comparative assessments on long-term sustainability and interoperability with eNHIS and other HIS platforms, further informing decisions on rationalised system models across the health sector.		
eNHIS' design needs to be improved	Recommendation 25 To address the challenges identified in eNHIS' data management and reporting – NDoH/EPI, in liaison with the respective vendors, should: • Conduct an in-depth review of eNHIS to identify gaps in the system's functionality, data quality and completeness, and subsequently develop a plan to address these issues consistent with Gavi targeted software standards. • Update the eNHIS SOPs so that these are aligned with the current eNHIS system, and then disseminate these to improve the end user understanding and guidance; • Engage with the technology partners responsible, to accelerate the execution of change requests / and missing eNHIS data points i.e., the new reporting forms as per national health plan 2021-2030 and IPV2.	**Action 61** • With the extension of Remote Sensing Centre Ltd.'s contract to manage the eNHIS through 2027, it is essential to begin transition planning as early as possible to ensure that the NDoH is fully prepared to take over responsibility by 1 January 2028. • The government supports the recommendation for a comprehensive review of the eNHIS, recognising its importance - particularly in informing the transition process. However, decisions regarding the scope and methodology of this review should be made by the proposed National Health Information System Management Sub-Committee. This Sub-Committee was requested by the Secretary for Health following the renewal of the management contract. • The Sub-Committee will advise the eHealth Steering Committee, the Secretary for Health, and the National Health Board on matters relating to the maintenance and further development of the National Health Information System. Its role is to ensure that the System aligns with the Department's responsibilities under the National Health Administration Act of 1997 and meets the health information needs of all stakeholders. The Sub-Committee has not yet held its first meeting. • It is proposed that the Sub-Committee consider the recommendation to conduct an in-depth review and, if in agreement, advise the Secretary for Health accordingly, including a suggested methodology. Should the review be approved, the Government will require support to develop terms of reference (TORs), identify suitable experts, and ensure timely implementation of the review.	**Action 61** NDoH	**Action 61** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		• Additionally, the Government seeks clarification on what is meant by "GAVI-targeted software standards." Any review of the eNHIS will be aligned with the National Digital Health Strategy 2025–2030, the Monitoring and Evaluation Strategic Plan for the National Health Plan 2021–2030, and existing guidelines governing routine health information systems in Papua New Guinea. • The Remote Sensing Centre Ltd currently has documentation on metadata for indicators in the eNHIS, as well as documentation on the backend structure. There is also a user guide on how to use the eNHIS. The NDoH also published Standard Operating Procedures for Management of Data from Routine Information Systems in 2023, and orientations have been provided to PHIOs and Medical Records Officers. Trainings are on-going for district health managers and health facility OICs. Scaling to all provinces will take some time. • The Government engages with the eNHIS vendor to process and implement change requests. However, as the eNHIS is a custom-built system, even minor updates typically require modifications to the underlying code, which incur associated costs. Funding to support these changes is not always readily available, resulting in delays in implementation. Furthermore, certain updates, particularly those involving coding changes and configurations for the tablets, require technical inputs and with longer associated timelines. • The Government fully acknowledges the urgency of implementing the changes required for the new forms in the eNHIS. A meeting of the Sub-Committee will be convened shortly to explore funding options and determine how best to source funds and proceed with implementing these changes as soon as possible.		
Sustainability challenges impacting the continuity and	Recommendation 26 To ensure the financial sustainability of mSupply and eNHIS, the NDoH/EPI with support of partners should:	**Action 62** The EPI program is leading the transitioning of open mSupply from the legacy and mobile mSupply. The deployment will be done using the national and provincial teams (MSPDB, ICT, EPI managers, PCCLO, Pharmacy Officers and Family Health Services Coordinator). The	**Action 62** NDoH, UNICEF	**Action 62** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
operation of systems	• Undertake comprehensive cost analyses for the fixed and recurring operational and maintenance expenses related to maintaining both mSupply and eNHIS. These analyses should include each of the national, provincial, and district-level costs, for effective planning and resource allocation. • Use these comprehensive cost analyses as a resource planning tool to mobilise funding, so as to ensure that the resources to sustain the operation for mSupply and eNHIS are secured, budgeted and allocated for and fully financed.	training of the provincial team, and deployment of mSupply to health facilities through the trained PHAs team is a new approach in open mSupply. This approach will be documented with cost analysis to inform the transitioning of mSupply to NDoH with full ownership and sustained allocation of the resources.		
	Recommendation 27 To ensure that NDoH progressively assumes full responsibility for mSupply and eNHIS, and that suitable national staff acquire the necessary skills from third party providers, the following process should be undertaken: • Strengthen the ICT TWG (eHealth TWG) oversight functions of the by including the implementation partners as members of TWG enhancing their responsibility and accountability. • The identification and training of suitable national ICT personnel within NDoH, to manage and support mSupply, eNHIS or equivalent systems, reducing reliance on external vendors. • Developing a robust governance framework with clearly defined NdoH roles and responsibilities for overseeing and managing these systems: including mechanisms to monitor and ensure the accountability of any third-party vendors' activities. • Developing a plan to migrate these systems' backups over to data servers in PNG to ensure compliance with data security, accessibility, and national regulations. • Obtain a clear understanding of the existing licensing and legal terms and agreements for mSupply and eNHIS. Where not defined, ensure that the necessary	**Action 63** WHO, UNICEF, FHI 360, ADB, HSSDP are supporting the eHealth TWG. The membership was revised in May 2025 and the regular meetings are ongoing. In addition, the eLMIS TWG is being revitalised with the support of UNICEF and partners. The upcoming WB support (2025-2027) includes the appointment of 4 TAs embedded within NDOH, MSPDB and ICT to oversee and lead the mSupply deployments to provinces. The TWG will ensure proper governance and coordination of the eLMIS to strengthen the Medical Supply Chain System in PNG. and Provide strategic direction and oversight for the implementation and utilisation of the eLMIS system **Action 64** The National mSupply Support unit including NDOH mSupply team and ICT persons will be trained on the mSupply superuser training. The National TOT Master training on mSupply and the NDOH and PHA mSupply team will lead the deployment of the mSupply to the health facilities. **Action 65** Governance mechanisms are being established to oversee the functioning of the eNHIS and mSupply. In addition, the eHTWG is in place, functional and meeting regularly. From quarter 3 2025, vendors of scaled digital systems, will be required to provide an update to the eHTWG on a quarterly basis on any key issues and changes to the	**Action 63** NDoH and all partners **Action 64** NDoH, UNICEF **Action 65** NDoH	**Action 63** December 2027 **Action 64** December 2027 **Action 65** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	transferable rights for the software are explicitly included in any legal agreement, to ensure that the necessary rights can be carried over during the migration. • Develop an implementation plan for the digital health strategy.	systems for national oversight. There will be enhanced accountability through these governance mechanisms. **Action 66** The EPI program is leading the transitioning of open mSupply from the legacy and mobile mSupply. The deployment will be done using the national and provincial teams (MSPDB, ICT, EPI managers, PCCLO, Pharmacy Officers and Family Health Services Coordinator). The training of the provincial team, and deployment of mSupply to health facilities through the trained PHAs team is a new approach in open mSupply. This approach will be documented with cost analysis to inform the transitioning of mSupply to NDoH with full ownership and sustained allocation of the resources. **Action 67** mSupply will be migrated to open mSupply especially for the EPI under the current FPP support. The features include 1) Transition to a full open-source solution (no license fees), 2) Redesigned with improved navigation and features for a simpler, more modern solution. 3). Migrating all mSupply tools into one solution. The NDoH and PHA will be supported to manage the mSupply independently so that the maintenance of the system will be sustained through NDoH ownership and capability after the transition. **Action 68** The digital health strategy was launched on 10th June 2025. The digital health strategy entailed the costed implementation plan with M&E framework. WHO, UNICEF and partners are supporting the priority implementation of the strategy such as digital literacy, health facility master listing, and interoperability, etc. The FPP support will enable WHO and UNICEF to support NDoH implement some of the key priorities and the continued advocacy to NDOH and donors for implementation is ongoing.	**Action 66** NDoH, UNICEF **Action 67** NDoH, UNICEF **Action 68** NDoH and partners	**Action 66** December 2027 **Action 67** December 2027 **Action 68** December 2026
	Recommendation 28 To improve mSupply and eNHIS' data quality, help eliminate data redundancy, and improve data consistency	**Action 69** • Interoperability is a core pillar of the approved National Digital Health Strategy 2025–2030. The Strategy outlines foundational actions, including the development of data standards, key	**Action 69** NDoH and partners	**Action 69** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	and visibility, NDoH/EPI - with support from partners - should: • Formulate a tailored roadmap focused on interfacing or integrating mSupply and eNHIS, including standardised definitions of data formats, a change management strategy, and suitable mechanisms for mapping across the respective data sources. • Conduct a systems maturity assessment to evaluate the readiness to interface or integrate both systems and address any gaps.	registries, and a Health Information Exchange to support integration across systems. Work led by WHO and UNICEF, under the eHTWG's oversight, is already underway to finalise a Master Health Facility List, which will underpin a national Health Facility Register and support interoperability. • While the Government supports the recommendation to integrate mSupply and eNHIS, it must be approached in a phased manner. Establishing a robust interoperability framework will take time and must align with national priorities and ongoing foundational work. • The Government, with support from WHO, conducted a national digital health maturity assessment in 2023, covering 14 provinces. The findings directly informed the development of the National Digital Health Strategy 2025–2030, which includes a clear roadmap toward achieving interoperability. As such, a separate readiness assessment is not considered necessary at this stage. A follow-up maturity assessment is planned closer to 2030 to evaluate progress against the Strategy.		
Challenges in estimating the immunisation target population	Recommendation 29 To ensure the availability of accurate and reliable immunisation data for decision making, NDoH/EPI management should with the support from the partners: • conduct a comprehensive analysis of the data derived from the census currently ongoing in 2024, to rebase and realign the immunisation coverage targets and NDoH activities. • based on the updated census, determine whether a survey or other processes are required to establish more precise immunisation coverage figures and to better target zero dose children. • work with relevant partners to review data using sample studies, instead of desk-based reviews, to establish a more accurate picture of the country's progress.	**Action 70** Agreed. WHO, UNICEF will support NDOH to review and align the immunisation coverage targets. WHO will support NDoH to review and revise NIS.	**Action 70** NDoH and partners	**Action 70** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
	• develop a policy or guidelines, outlining NDoH's methods for computing, estimating, and revising coverage data, to allow for necessary adjustments and enhance data accuracy.			
Data quality assurance needs to be improved	Recommendation 30 To improve the availability, quality and use of data, the NDoH's Performance, Monitoring, and Research Branch should design and establish suitable data quality improvement plans, based on the DQA's findings, including prioritisation of what actions need to be implemented to improve data quality. These plans should be costed, resourced and financed appropriately.	**Action 71** The NDoH PMRB has been conducting annual data quality checks and has also developed a data quality audit guideline and tool. NDoH needs to continue institutionalising this activity within PHAs, with appropriate budget allocation.	**Action 71** NDOH PMRB and WHO	**Action 71** December 2027
	Recommendation 31 To improve the availability, quality and use of data, NDoH/EPI management should: • Ensure that all primary data collection tools are completed correctly and that their data correlate or is consistent across the various data sources. • Introduce standardised tools for daily reporting at the outreach centres to the health facilities. • Undertake training for field staff on the documentation required to be maintained for reporting immunisation data and develop guidelines for the maintenance of these records. • Undertake regular support supervision to monitor adherence to support supervision guidelines.	**Action 72** • Agreed. The NDoH PMRB needs to roll out the revised and endorsed NHIS tools. • Currently, outreach and mobile vaccination data are submitted under each health facility conducting the activity. The eNHIS only captures data on planned and conducted outreach sessions. If the recommendation is to disaggregate the data by individual outreach session, the current reporting forms are not designed to support this, and there has been no recent revision scheduled in the eNHIS. • The NDOH Data Quality Audit guidelines and Standard Operating Procedures for the Management of Data from Routine Health Information Systems already exist. Trainings are ongoing on the documentation required as per the SOPs • NDoH supported by UNICEF developed electronic supervisory monitoring tools for health facilities, cold chain, ACSM, immunisation session that can be used by any of the partners and PHA staff. The checklist was revised in line with WHO IIP guideline with inputs from NDOH (EPI TWG), WHO, UNICEF and partners. • WHO supported the conducting of an immunisation data quality assessment in 2023 by adopting tools from the WHO	**Action 72** NDoH PMRB and WHO	**Action 72** December 2027

Issues	Audit Recommendations	Management Action	Action Owner	Timelines
		Immunisation Data Quality Assessment toolkit and the NDoH data quality audit tool. This can be institutionalised to regularly check immunisation data quality by the NDoH. **Audit Note - The audit notes the management response and will follow up as part of the follow up of the recommendations in this report.**		