



Sustainable Immunization Financing in Jordan

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Abbreviations

BCG	Bacille Calmette Guérin	OPV	Oral poliovirus vaccine
CHE	Current health expenditure	PCV	Pneumococcal conjugate vaccine
cMYP	Comprehensive Multiyear Plan	PHC	Primary health care
DTP	Diphtheria, tetanus, and pertussis	SIAs	Supplemental immunization activities
GFMIS	Government Finance Management Information System	SIF	Sustainable immunization financing
GDP	Gross domestic product	Td	Tetanus toxoid and diphtheria
GPD	Government Procurement Department	TT	Tetanus toxoid
Hib	Hemophilus influenza type B	UNICEF	United Nations International Children's Emergency Fund
IPV	Inactivated poliovirus	UNHCR	United Nations High Commissioner for Refugees
JFDA	Jordanian Food and Drug Administration	UNRWA	United Nations Relief and Works Agency
JRMS	Jordanian Royal Medical Services	USAID	United States Agency for International Development
MENA	Middle East and North Africa	VCR	Vaccination coverage rate
MMR	Measles, mumps, and rubella	VPD	Vaccine-preventable disease
MOF	Ministry of Finance	WHO	World Health Organization
MOH	Ministry of Health		
NCDs	Noncommunicable diseases		
NGOs	Non-governmental organizations		
NIP	National Immunization Program		
NITAG	National Immunization Technical Advisory Group		

Executive Summary

Immunization is a highly cost-effective public health intervention that provides protection against vaccine-preventable diseases (VPDs) for individuals of all ages.¹ Yet, global immunization coverage has remained stagnant or even decreased, with the COVID-19 pandemic exacerbating this trend.² In Jordan, childhood vaccination coverage rates (VCRs) have consistently exceeded 90% for several vaccines, including those that protect against measles, polio, diphtheria, tetanus, and pertussis.³ Nevertheless, in 2020, VCRs suffered a decline and are currently in the process of recovery.³

Over the past two years, Jordan's economic performance has been significantly influenced by the global economic downturn and ongoing regional instability. The outbreak of the COVID-19 pandemic in 2020 caused a decline in the country's gross domestic product (GDP); however, since the initial contraction, economic growth has rebounded, presenting a favorable opportunity to invest in the National Immunization Program (NIP).⁴ It is important to note that economic growth is closely tied to funding for public health services, typically obtained from a combination of taxes levied on individuals and businesses by the government.

In recent decades, Jordan has served as a sanctuary for many refugees from neighboring countries, including Syria. According to population projections, as of 2021, the total population of Jordan was estimated to be 11.1 million, with 3 million individuals characterized as non-Jordanian.⁵ The growing refugee population has placed strain on the nation's health care system and has led to the re-emergence of some previously controlled communicable diseases, underscoring the significance of refugee-inclusive immunization policies in Jordan.⁶

The government primarily funds the immunization program through tax revenue. Budgeting and planning for the NIP occur annually and begin when the Ministry of Health (MOH) submits a budget request to the

Parliament and the Ministry of Finance (MOF) with evidence-based justifications.⁷ Once parliament approves the budget request, the MOF commits funding through a formal letter.⁷ The MOF then allocates commitments through the Government Finance Management Information System and releases funds to the MOH from the general central budget, funded by national taxes and general revenue.⁷ Within the MOH's budget, vaccine procurement has its own line item that provides increased visibility into funding allocations.⁷ In contrast, non-vaccine-related NIP costs are shared across other health programs.⁷

The analysis of historical NIP expenditure reveals consistent annual spending patterns in Jordan, ranging from US\$28 million to US\$35 million in the last couple of years.⁸ At the same time, funding allocations for the NIP are relatively limited compared to other health services, with expenditure accounting for approximately 1% of the country's total health expenditure.^{8,9} It is also important to note that the country's vaccine procurement expenditure has consistently been lower than the initially committed budget due to budgetary shortcomings except during the COVID-19 pandemic when the MOF released almost all committed funding to the MOH between 2019 and 2022.⁷ Starting in 2023, requested budgets are expected to exceed previous expenditures, but it is yet to be determined if these requests will be approved and fully committed by the MOF.⁷

Before the pandemic, introducing and scaling pneumococcal and varicella vaccines alone would have resulted in a funding requirement surpassing 50% of the current immunization expenditure.¹⁰ These introductions were deferred due to the emergence of COVID-19, and the budget for immunization has remained unchanged at approximately US\$30 million per year from 2015 to 2019.¹⁰ Furthermore, additional financial difficulties arise from the need to vaccinate

Jordan's substantial refugee population, which, while essential for maintaining herd immunity and overall public health, poses an additional economic challenge.

Additional funding will be necessary to restore pre-pandemic VCRs and incorporate new vaccines into the NIP; however, the MOH may face multiple challenges, such as constrained budgets and competing health priorities. The immunization budget is limited, and additional revenue sources have yet to be identified.¹⁰ Currently, revenue channeling and ring-fencing are not implemented within Jordan's tax system.⁷ The COVID-19 pandemic has likely further stressed the health budget, and the MOH may have needed to redirect some immunization funding toward the pandemic response.¹¹ Furthermore, donor funding for immunization in Jordan is limited due to the country's middle-income status and often comes with unfavorable conditionalities.¹²

Five potential options are available to the Government of Jordan to improve immunization financing:

1. Improve Procurement and Supply Management Efficiency: This approach involves optimizing sourcing, acquisition, storage, and delivery of vaccines. It focuses on refining Jordan's forecasting and procurement practices, ensuring vaccine availability, and increasing NIP efficiency. Increased efficiency would allow savings to be redirected towards NIP expansion and increasing vaccination coverage rates.

2. Reframe Immunization as an Investment: Data-driven advocacy is used to convey immunization as an investment, emphasizing its economic, societal, and fiscal benefits. This strategy aims to secure increased funding by demonstrating returns such as reduced health care costs, increased productivity, and boosted tax revenues. It also articulates the quantification of the societal value of immunization.

3. Harmonize Allocation and Disbursement Processes: This strategy advocates for enhancing Jordan's budget

allocation and disbursement processes, which currently impedes financial planning for the NIP. The aim is to establish a more efficient and reliable funding process to prevent vaccine procurement issues, maintain vendor confidence, and thus ensure consistent vaccine supply.

4. Create a Protected Immunization Fund: Establishing a dedicated fund for immunization-related expenditures can provide financial security. Key steps in setting up such a fund include securing legislative approval, stakeholder engagement, establishing governance structures, securing initial funding, and implementing monitoring and evaluation systems.

5. Leverage Jordan's Diaspora Community: Recognizing the economic contribution of Jordan's substantial diaspora community, this strategy aims to engage them in directly funding the NIP. Modeled on other successful programs, it advocates for strategic initiatives that foster diaspora partnerships, ensure transparency in donations, and incentivize contributions through matching funds.

Introduction

Sustainable Immunization Financing Initiative

Despite their status as a core public health function, immunization programs often face the challenge of securing sufficient resources from public budgets. The limited funding hinders their ability to effectively reach communities, implement new vaccines quickly, and improve their delivery process. In many ways, immunization programs are a victim of their success. Policymakers may place a high value on immunization and public health, yet budgets remain flat, as prevention is far less visible than clinical and curative innovations. Variable vaccination coverage rates (VCRs) and relatively slow adoption of new vaccines indicate that immunization programs need to receive optimal prioritization and financing.

To this end, ThinkWell’s Sustainable Immunization Financing (SIF) initiative is committed to increasing access to immunization for all and ensuring that immunization programs are prioritized, financed sustainably, and responsive to new and emerging health challenges. Recognizing that vaccines are a crucial tool for protecting public health, we work to increase resources and partnerships that will contribute to more resilient immunization systems—and in turn, healthier communities—worldwide. Since 2016, we have partnered with Merck Sharp & Dohme LLC. (MSD), a subsidiary of Merck & Co., Inc., Rahway, NJ, USA, to study, document, and advocate for policies that prioritize SIF across countries.

SIF in Jordan

Immunization is a highly cost-effective public health strategy, and it has the potential to protect individuals of all ages from vaccine-preventable diseases (VPDs).^{13,14} Yet, across countries, global VCRs have fallen flat or declined; COVID-19 has compounded this

trend.^{1,2} In Jordan, VCRs have followed similar trends, characterized by a rapid decline in 2020.³ Budgetary constraints have been cited as a critical challenge to improving coverage and expanding Jordan’s National Immunization Program (NIP).^{7,12} Given anecdotal reports of finance-related bottlenecks, there is a need to understand these challenges and their causes.

In 2022, MSD launched a multi-phase project in Jordan to support the government’s goals of expanding the NIP and improving VCRs. The project incorporated a comprehensive landscaping process to assess the status of the NIP. This process involved a thorough desk review and key informant interviews with representatives from the Ministry of Health (MOH). The aim was to gain a deeper understanding of the financial challenges faced by the NIP and to identify potential avenues for improvement.

Objectives

The overarching objective of this assessment was to create a comprehensive understanding of how Jordan’s NIP is financed and uncover financing-related challenges that affect the NIP’s composition and performance. To this end, the landscape assessment did the following:

1. Outlined and analyzed demographic, economic, and political factors influencing SIF
2. Developed an understanding of the health sector and immunization ecosystem
3. Assessed health and immunization financing in Jordan

The landscape assessment not only identified obstacles but also uncovered opportunities for the expansion of the NIP, particularly in relation to funding and

associated political economy issues. The project undertook a collaborative process with local stakeholders to develop solutions and ensure that solutions were contextually relevant and aligned with the Government of Jordan's future vision for the NIP. The finding from this comprehensive evaluation will bolster efforts to pinpoint policy and financing strategies that have the potential to positively influence the breadth and effectiveness of the NIP.

Context

Demographics

Jordan is an upper-middle-income country located in the Middle East with a total population of approximately 11.1 million people.⁴ Jordan's population is characterized as aging, with a fertility rate of 2.9 births per woman.⁴ Population estimates indicate that approximately two-thirds of the population resides in urban areas, including major cities such as Amman (4,652,768), Zarka (1,570,232), and Irbid (2,050,300).¹⁵ Table 1 provides an overview of Jordan's population and economic statistics.

Table 1. Key Health and Demographic Statistics

Description	Indicator
Population (2021)	11.1 million ⁴
Life expectancy at birth (women/men) (2020)	78/73 years ⁴
Under-five mortality rate (per 1,000 live births) (2015)	17.9 ¹⁶
Diphtheria tetanus pertussis containing vaccine, 3 rd dose (DTP3) (2020)	77.3% ³
Gross domestic product (GDP) per capita (2021)	US\$4,103 ⁴
Current health expenditure (CHE) as % of GDP (2019)	7.6% ⁴
CHE per capita (2019)	US\$334.04 ⁴

Jordan is currently undergoing a demographic transition marked by a growing population of individuals 65 years and older.¹⁷ By 2050, 10.3% of the population is projected to be over 65 years old, indicating that a significant proportion of individuals will live longer.¹⁷ As a result, the health care system must adapt and shift towards a life-course immunization approach to ensure that all age cohorts are protected against VPDs.

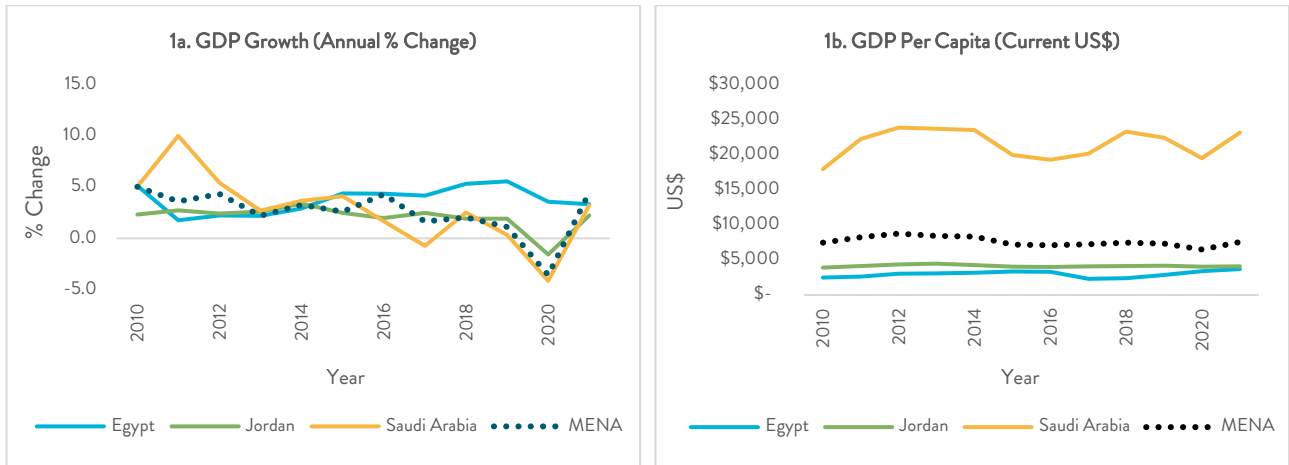
Over the past several decades, the nation has served as a home for many refugees from neighboring countries, including a notable influx from Syria in recent years. Demographic projections indicate that the proportion of non-Jordanian individuals residing in Jordan is estimated to be 3 million, including 1.3 million Syrians and 672,952 officially registered Syrian refugees.⁵ The increasing number of refugees has created additional challenges and strained the existing health care system, particularly with the resurgence of previously controlled communicable diseases.⁶

Macroeconomic Situation

Jordan's GDP has exhibited consistent growth, increasing from roughly US\$38.5 billion in 2015 to US\$44.7 billion in 2021.⁴ In comparison to its neighboring countries in the Middle East and North Africa region, changes in Jordan's GDP growth in terms of percent annual change have remained steady (Figure 1a).⁴ Jordan's GDP per capita has also remained stable in the past decade, between US\$4,003 to US\$4,206 per capita (Figure 1b).⁴

The global economic downturn and ongoing regional instability have impacted Jordan's economy in the past two years. Furthermore, the onset of the COVID-19 pandemic in 2020 resulted in a decline in the country's GDP.⁴ Despite the initial pandemic-related contraction, the economy has since rebounded, creating a favorable opportunity to invest in the NIP (Figure 1a).⁴ It is worth noting that funding for public health services is closely linked to economic performance.

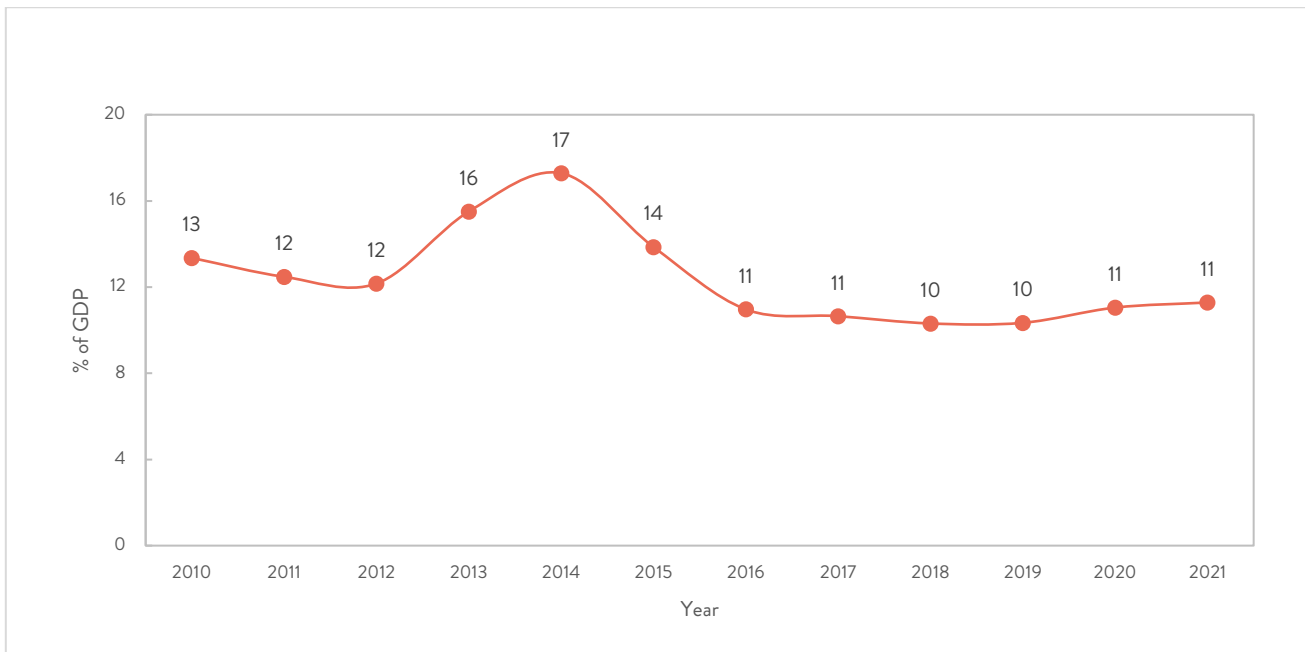
Figure 1. Jordan's Macroeconomic Indicators⁴



Jordan has a large diaspora community, roughly equivalent to 10-11% of Jordan's population, and remittance payments are a substantial source of income for many Jordanian families.¹⁸ Many Jordanian migrants live and work in the Gulf States, especially in Saudi Arabia. The Jordanian diaspora sends a large proportion

of their earnings back to Jordan in the form of remittances.¹⁸ In 2021, remittances totaled approximately US\$623.8 million, or 11% of GDP (Figure 2).⁴ Approximately two thirds of Jordanians living abroad regularly send money home.¹⁸

Figure 2. Personal Remittances Received as a % of GDP, Jordan⁴



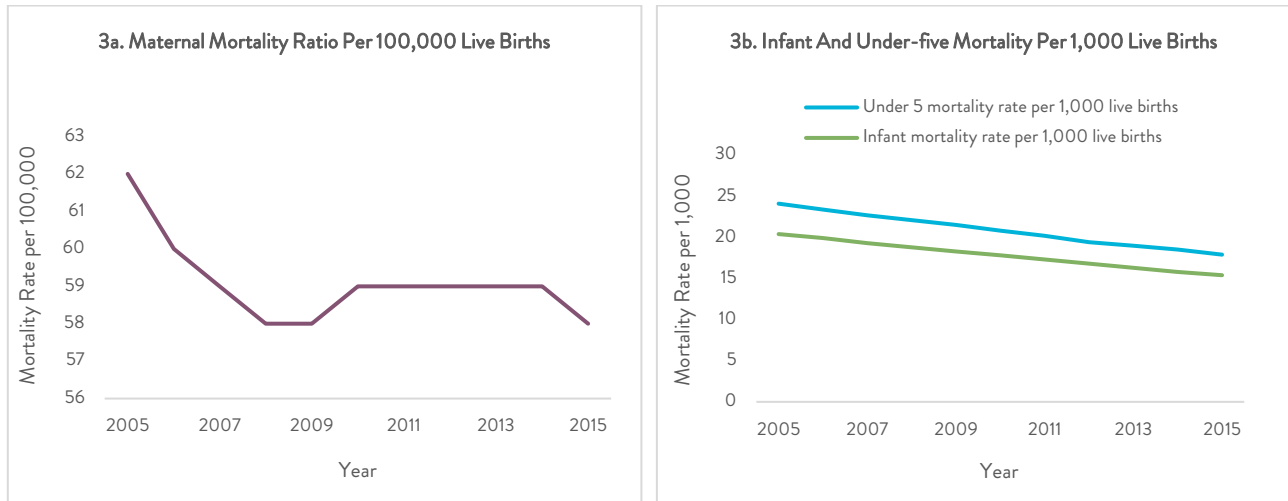
Health Sector Overview

Current Health Trends

Jordan's health indicators have improved over the last three decades: in 2017, infant and under-five mortality dropped to 17 and 19 per 1,000 live births, respectively (Figure 3b).¹⁹ Additionally, many child-age diseases in Jordan, such as polio, tetanus, diphtheria, pertussis, and measles, have been eradicated or minimized.¹⁶ However, there is an increasing prevalence of noncommunicable diseases (NCDs), such as high blood pressure, diabetes, and heart disease, among adult Jordanian population groups, making them more susceptible to VPDs.

According to a national survey from 2019, 22% of Jordanians had hypertension, 14% had high blood sugar, and 18% had elevated cholesterol.²⁰ Furthermore, 41% of adult Jordanians and Syrians used tobacco products, the highest percentage in the region, and 61% of respondents were overweight or obese.²¹ Adults with NCDs are more vulnerable to VPDs, and have higher risk of requiring treatment and hospitalization, increasing health costs.²² As such, it is crucial to integrate a life-course immunization approach.

Figure 3. Maternal, Infant, and Child Mortality¹⁹

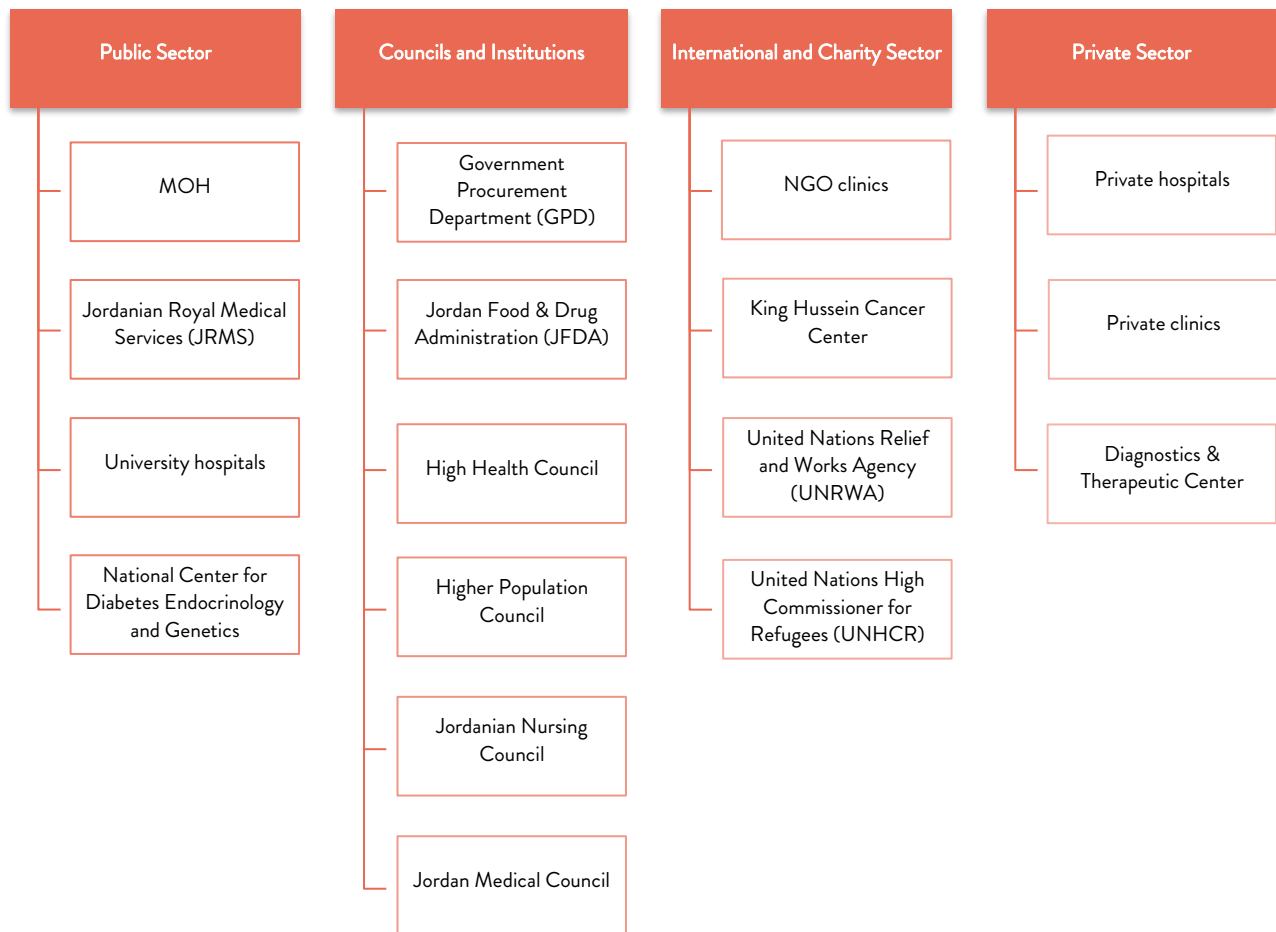


Overview of Jordan's Health System

Health care provision is carried out through three major sectors: the public, private or for-profit healthcare institutions, and international and nongovernmental organizations (NGOs). Figure 4 provides an overview of Jordan's health sector composition and key actors.¹⁶ The MOH is the leading provider of health services in the public sector through its extensive network of primary health care (PHC) centers and hospitals. The Jordanian

Royal Medical Services (JRMS) and two teaching hospitals also offer health services in the public sector.¹⁶ The private and for-profit sector is highly active, operating multiple hospitals, clinics, pharmacies, and labs.¹⁶ The international and non-profit sectors, including UNRWA, UNHCR, and various Jordanian and international NGOs, provide primary and secondary health care.¹⁶

Figure 4. Health Sector Composition and Key Actors¹⁶



A diverse mix of groups and actors have authority and influence over health sector decision-making. The MOH is the primary steward of the national health system and oversees its management. Each health sector has its own financing and delivery system that directly reflects service implementation among these sectors.¹⁶ Councils and institutions play a significant role in health policy and management. The Jordanian MOH

also relies on multiple donors such as the World Health Organization (WHO), United Nations Development Program, United Nations International Children’s Emergency Fund (UNICEF), United States Agency for International Development (USAID), and World Bank.¹⁶ These donors provide a mix of technical assistance and funding to support the health care system.¹⁶

Jordan's National Immunization Program

Program Composition and Trends

The Government of Jordan provides free immunization services to all Jordanians and non-Jordanians in the public sector as part of the Universal Health Coverage Global Compact.¹⁶ The NIP was established in 1979, initially targeting infants with five vaccines but has since expanded to include 11 vaccines (Table 2).^{10,16} Jordan's

MOH recognizes immunization as a critical component of its health strategy, which aims to provide high-quality, equitable primary care and prevent VPDs.¹⁰ The health strategy also outlines plans to expand the NIP to include new vaccines that protect against hepatitis A, pneumococcal disease, and varicella.¹⁰

Table 2. Publicly Available Vaccines and Schedule^{3,10}

Vaccine	Abbreviation	Schedule
Bacille Calmette Guérin	BCG	Birth
Diphtheria, tetanus, pertussis, polio, Hemophilus influenza type B, and hepatitis B	DTaP-Hib-HepB-IPV	Months 3, 4, 5
Hepatitis B	HepB (pediatric)	Months 3, 4, 5
Hemophilus influenza type B	Hib	Months 3, 4, 5
Inactivated poliovirus	IPV	Months 3, 4, 5
Measles	N/A	Month 9
Measles, mumps, rubella	MMR	Months 12, 18
Oral poliovirus vaccine	OPV	Months 4, 5, 9, 18; 6 years
Rotavirus	ROTA	Months 3, 4, 5
Tetanus-diphtheria	Td	Years 6, 16
Tetanus toxoid	TT	Pregnant women

Eligibility for receiving immunization services as part of the NIP is expansive for children and well defined. The most recent 2018-2022 Comprehensive Multiyear Plan (cMYP) for the NIP was developed jointly by WHO, UNICEF, and MOH to set the national immunization agenda.¹⁰ The plan defines key priorities and develops cost assumptions for the NIP.¹⁰ All children in Jordan are eligible for free immunization regardless of their citizenship status, including those

living in refugee camps.¹⁰ Immunization is compulsory for children, and immunization cards are required for school entry.¹⁰

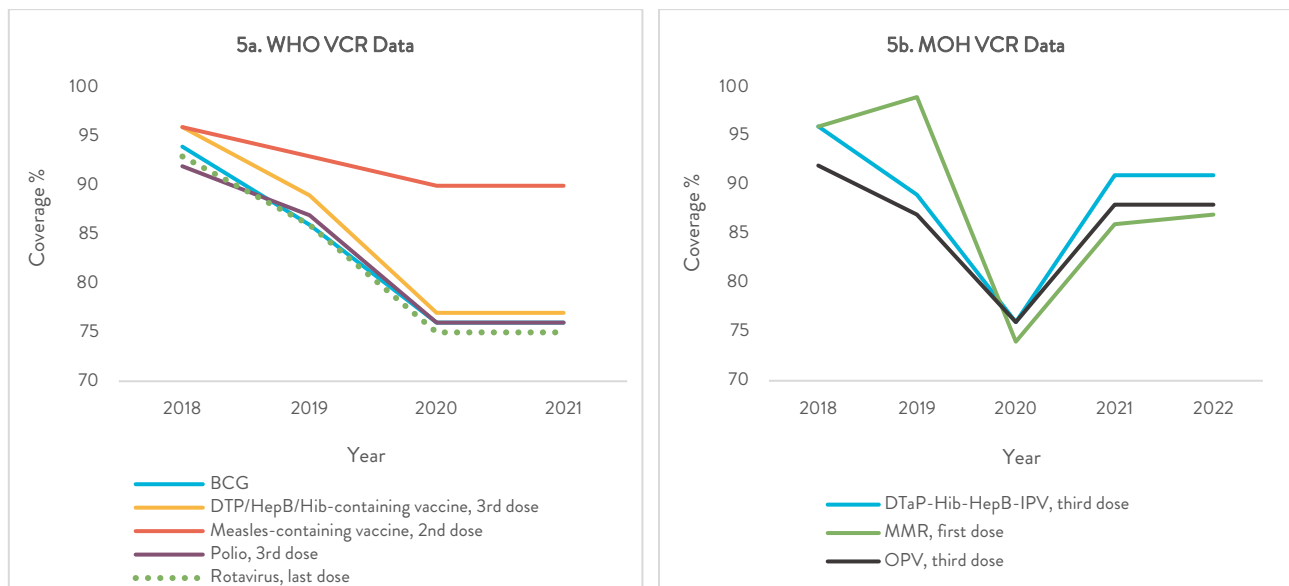
While the NIP has made significant strides in protecting children against VPDs, vaccine offerings for adolescents and adults are limited. The NIP has made efforts to protect adults against VPDs as demonstrated by the inclusion of the wild poliovirus vaccine since 1992. Furthermore, there have been substantial reductions in

measles and rubella. There is an opportunity to expand protection against VPDs and adopt a life-course approach to immunization. Currently, only the tetanus toxoid vaccine is offered to non-pediatric cohorts, and while the COVID-19 vaccine targets adults, it is not yet part of the NIP.^{3,10}

The decline in VCRs that began in 2018 was exacerbated by COVID-19, emphasizing the need for targeted programming and increased investment.³ Jordan has achieved substantial progress in

immunization coverage, such as meeting the 2020 International Global Vaccine Action Plan targets for DTP3 and measles vaccine coverage; however, the country's national VCRs for select vaccines reveal significant coverage drops starting in 2018.³ The MOH attributes this trend to changes in how VCRs are calculated.⁷ Before 2018, the government relied on the Department of Statistics data to estimate the annual population growth rate. After the change, civil registry records for births were used instead, altering how VCRs are presented, as illustrated in Figures 5a and 5b.^{3,23}

Figure 5. VCRs for Select Vaccines^{3,23}



COVID-19 Challenges

The impact of the COVID-19 pandemic on immunization has been significant in Jordan, as demonstrated by a study that analyzed the MOH's electronic records between 2018 and 2020 (Figure 5b).²⁴ The study revealed a notable decrease of 14-16% in vaccines recommended for infants under 12 months of age and an additional reduction of 6-7% in vaccines recommended for children aged 1-2 years.²⁴

The COVID-19 pandemic has also significantly impacted Jordan's socioeconomic welfare. In 2020, the

country experienced negative GDP growth, which may have affected funding availability for the public health sector, including the NIP.⁴ The implementation of lockdowns resulted in substantial disruptions to access and availability of PHC services.²⁴ For example, numerous PHCs were closed to the public for non-emergency services, curfews were imposed, and patients were hesitant to seek health services due to concerns about contracting COVID-19.²⁴ During this period, VPDs reemerged, and the MOH delayed NIP expansion due to competing budgetary needs.^{3,7}

Key Immunization Decision-Makers

Several stakeholder groups, both within and outside the MOH, influence immunization-related decisions, including those pertaining to new vaccine introduction and funding levels for the NIP. Table 3 provides a summary overview of these key stakeholders.

Table 3. Key Immunization Stakeholders^{7,10,16}

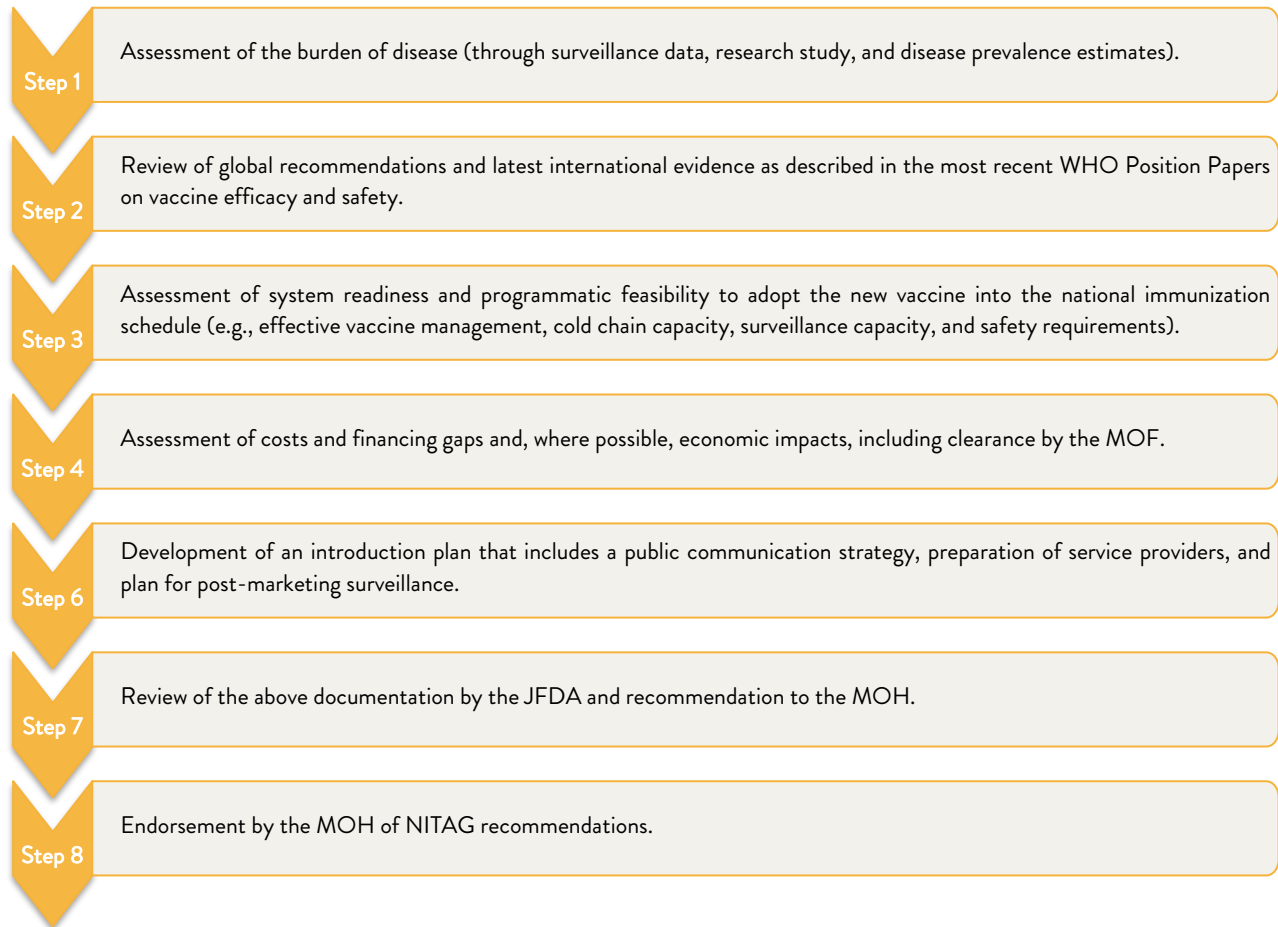
Department	Primary Responsibility
MOH	The MOH is the primary decision-maker vis-à-vis Jordan's immunization strategy. The MOH frequently engages with experts from other government ministries and departments, such as the Ministry of Finance (MOF), and from extra-governmental organizations, including academia, medical professional associations, donors, private sector pharmaceutical distributors, and other national experts.
National Immunization Technical Advisory Group (NITAG)	Established in 2010, Jordan's NITAG plays a crucial role in determining which vaccines are offered as part of Jordan's public sector NIP. The NITAG is an independent, high-level advisory body representing actors across sectors that makes evidence-based recommendations to the MOH on vaccine introduction, schedule, and clinical practice. While the NITAG can make recommendations, the MOH has the ultimate authority to endorse recommendations and decide which vaccines are part of the NIP.
JFDA	The JFDA is responsible for vaccine registration and regulation to ensure vaccine effectiveness, quality, and safety.
Government Procurement Department (GPD)	The MOH GPD makes decisions related to the procurement of vaccines, such as bidding, tendering, and awarding. Key oversight areas and responsibilities include placing orders, storage, transportation, and managing supplier performance.
Procurement and Supply Directorate	The MOH Procurement and Supply Directorate pays the vendors once vaccines are received. They also provide monthly payments once the MOF allocates funding for vaccine procurement.
MOF	The MOF approves the MOH budget for immunization and is responsible for funding allocation and disbursement.

Vaccine Introduction

Recent strategies have placed a significant emphasis on expanding the NIP, but the MOH must continue to reconcile the needs of the existing program with the decision-making requirements of vaccine introduction. Jordan has an established protocol for evaluating and

recommending vaccines for inclusion in the NIP. The NITAG plays a crucial role in leading the evaluation process (Figure 6), but ultimately, the MOH must endorse the recommendations and execute the introduction activities.¹⁰

Figure 6. The Evaluation Process for New Vaccine Introduction¹⁰



The Government of Jordan has been introducing new vaccines at a moderate pace, but there are still challenges to further expansion of the NIP schedule. The country introduced several vaccines, including HepB, Hib, IPV, ROTA, and hepatitis A, between 2001 and 2020.³ The NITAG has recommended expanding the NIP to include pneumococcal and varicella vaccines since 2012; however, due to the large influx of refugees

and the emergence of COVID-19, the government has prioritized using NIP funds to ensure that existing vaccines reach the entire Jordanian population, including refugees, rather than introducing new vaccines.²⁵ Recently, the MOH confirmed that the pneumococcal conjugate vaccine (PCV) would be introduced in 2023, followed by the varicella vaccine in 2024.⁷

Health Financing Overview

The proportion of Jordan's GDP allocated to health expenditure has remained consistent, fluctuating between 7% and 8% annually since 2010.⁹ Similarly, the proportion of general government expenditure as a

percentage of GDP has remained stable over the same period, varying between 33% in 2015 and 31% in 2020.⁹ Table 4 highlights additional key health financing statistics.

Table 4. Key Health Financing Statistics²⁶

Key Indicator	2005	2010	2015	2020
CHE US\$ per capita	196	320	303	299
Government health spending % of CHE	51.7%	66.7%	53.5%	49.7%
Out-of-pocket spending % CHE	40.1%	21.9%	29.4%	30.2%
Priority to health, shown by government health spending % of general government spending	11.8%	17.0%	12.2%	11.9%

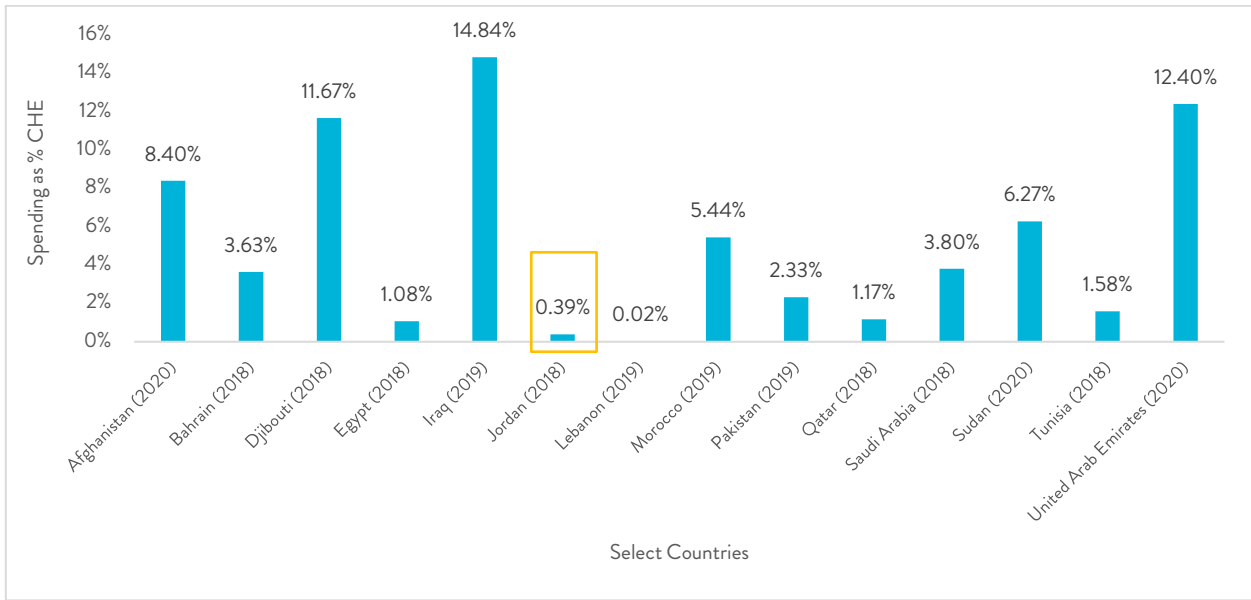
The Government of Jordan demonstrates a strong commitment to health care, as evidenced by its high domestic general government health expenditure as a proportion of general government expenditure at 12%.⁹ Jordan ranks third regionally, following Iran (22%) and Lebanon (13%).⁹ This investment reflects the Government's dedication to providing quality medical services, investing in robust health care infrastructure, and addressing public health challenges proactively.

Upon regional comparison, it becomes clear that Jordan dedicates a disproportionately low share of its current health expenditure to preventive measures. In 2018, the nation allocated only 0.4% of its total health expenditure to this crucial aspect (Figure 7).⁹ This relatively low investment in preventive health care could result in increased long-term health care costs, as it might lead to a higher prevalence of preventable diseases and conditions. Comparing Jordan's preventive

health care expenditure with neighboring countries can provide insight into differing regional priorities and strategies, thereby identifying potential areas for improvement. Moreover, analyzing the specific areas of preventive health care that receive funding, such as vaccination programs, health education, or screening services, can reveal opportunities for optimizing resource distribution.

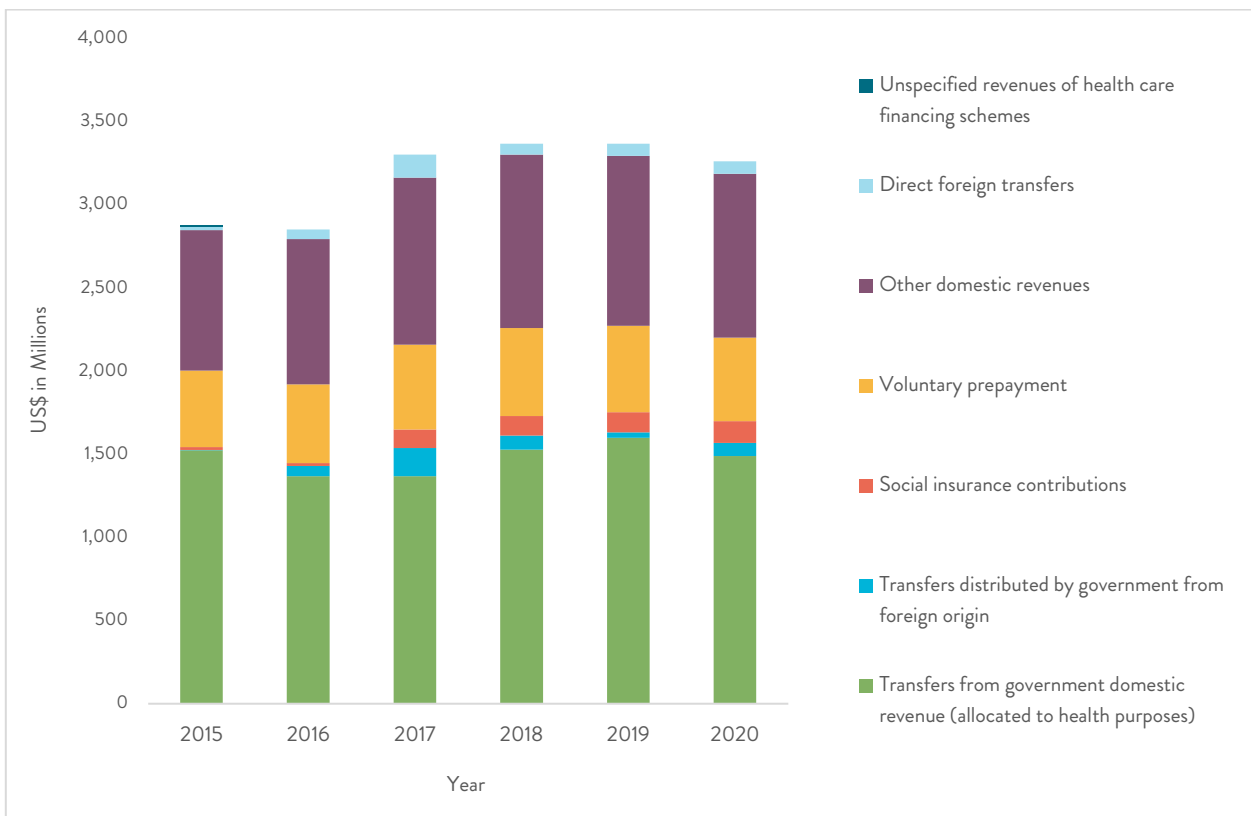
Direct transfers from domestic government revenue are the leading contributor to health expenditure in Jordan (Figure 8).⁹ While foreign aid does contribute to health care spending in Jordan, domestic funding sources such as government revenue, prepayment, and insurance are more significant. Different public health insurance contributions also exist, including contributions from employees, employers, self-employed individuals, and other insurance contributions.⁹

Figure 7. Preventative Spending as % of CHE⁹



Note: Latest data available used and noted by year in parentheses. Data unavailable for Yemen.

Figure 8. CHE by Health Care Financing Schemes (US\$), 2015-2020⁹



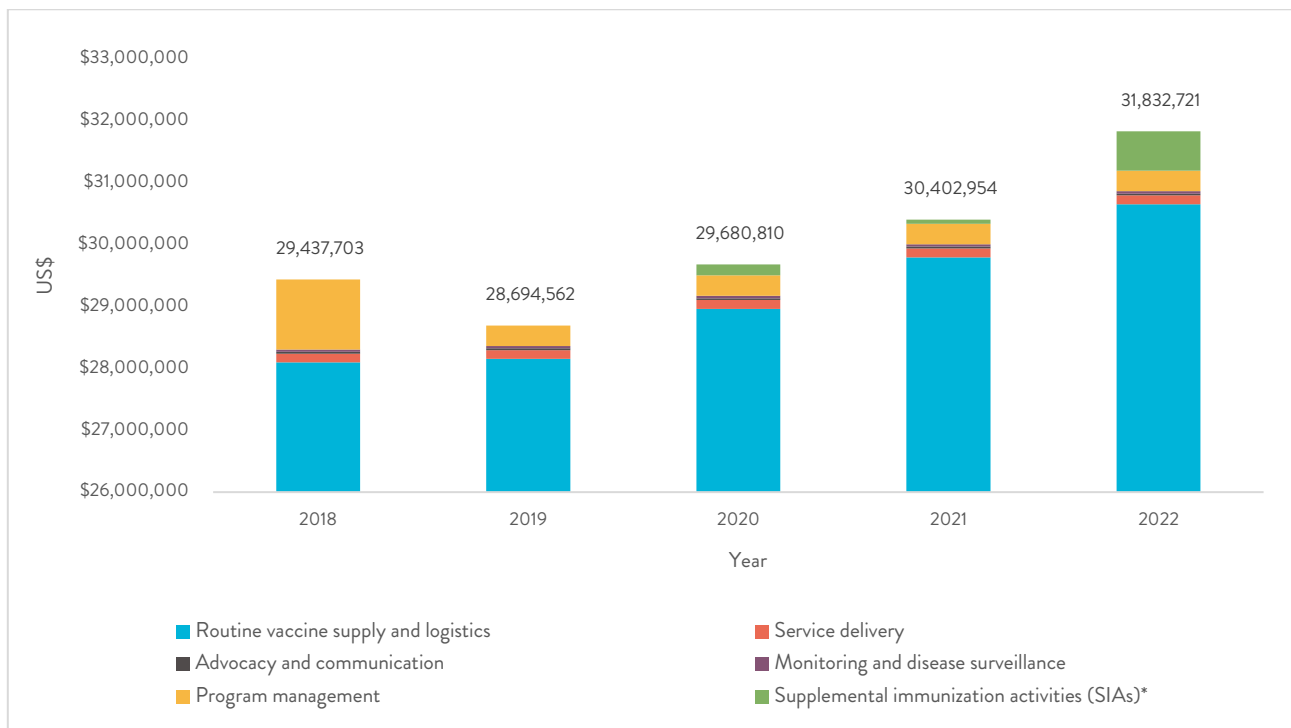
Immunization Financing

Past and Projected Immunization Expenditure

The MOH conducted a five-year immunization strategic planning process, which depicted cost projections between 2018-2022.¹⁰ Figure 9 shows a steady increase in projected expenditure for which the NIP is responsible.¹⁰ NIP shared health systems costs were projected between US\$3.6 million and US\$3.8 million, totaling US\$18.5 million over five years.¹⁰ The most significant proportion of spending is on vaccines and associated supply and logistics, including storage

and transportation.¹⁰ Notably the projections do not account for the scale-up of new vaccines. Service delivery and other support costs comprise a smaller proportion of overall immunization expenditure.¹⁰ For projected costs, the government is the primary source of financing for Jordan’s NIP, contributing a total of US\$146.1 million; this constituted 99.7% of total program funding during this period, with minor contributions from WHO and UNICEF.¹⁰

Figure 9. NIP Expenditure Projections by Cost Type (Excluding Shared Health Systems Costs and Scale-Up of New Vaccines), 2018-2022¹⁰



*Note: SIA activities noted in Figure 9 typically comprise vaccination campaigns. For the 2018-2022 period, the MOH planned to conduct three major campaign activities, including implementing a subnational polio campaign, an MMR catch-up campaign, and a national polio campaign.

Historical data on immunization expenditure shows a consistent level of spending, ranging from approximately US\$28 million to more than US\$35 million from 2015-2019.⁸ When compared to projected

costs, past expenditure closely aligns; however, due to increases in the population, largely due to growing refugee populations, immunization expenditure per capita has decreased over time (Figure 10).

Figure 10. Historical Immunization Expenditure Per Capita, 2015-2019⁹

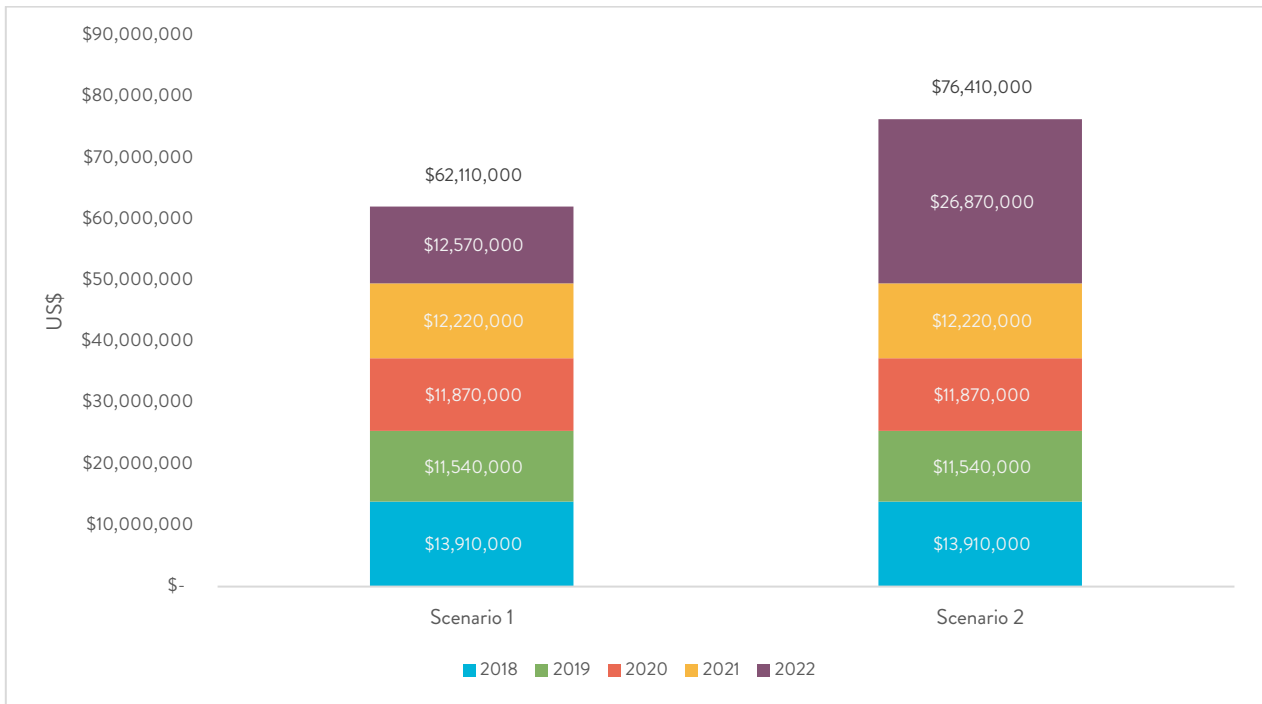


Vaccine Introduction Cost Projections

In addition to NIP cost projections, the strategic plan includes estimates for two introduction scenarios. Scenario 1 assumes the introduction of PCV in 2018, while Scenario 2 includes the introduction of PCV and the varicella vaccine in 2018 and 2022, respectively.¹⁰

Figure 11 depicts the additional funding that is required for the two scenarios to be implemented.¹⁰ Scenario 2 represents a roughly 50% increase over baseline estimates, most of which is associated with additional vaccine supply costs.¹⁰

Figure 11. Additional Costs of Introducing PCV (2018) and the Varicella Vaccine (2022)¹⁰

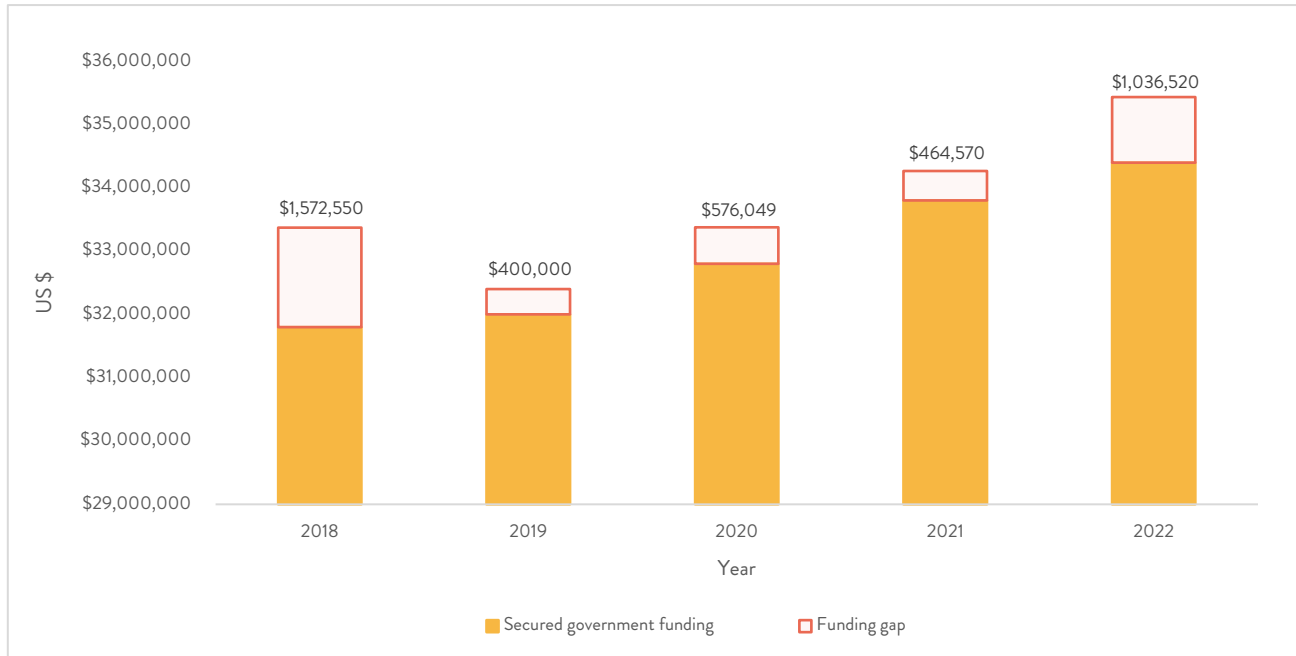


Projected Immunization Funding Gap

At the time of the 2016 cost analysis, there was a projected funding gap of approximately US\$4 million (Figure 12).¹⁰ Notably, secured government funding

does not consider probable incoming funds. If these funds are considered, the gap decreases to approximately US\$3.5 million.¹⁰

Figure 12. Secured Immunization Funding and Gap¹⁰



It is important to note that the cMYP cost projections and gap analysis for the NIP were conducted prior to the outbreak of the COVID-19 pandemic. Therefore, the projected gaps do not consider the possible reallocation of funds to address the pandemic. Across many countries, public health planners were forced to redirect funding toward the COVID-19 response, further reducing budget allocations toward public health

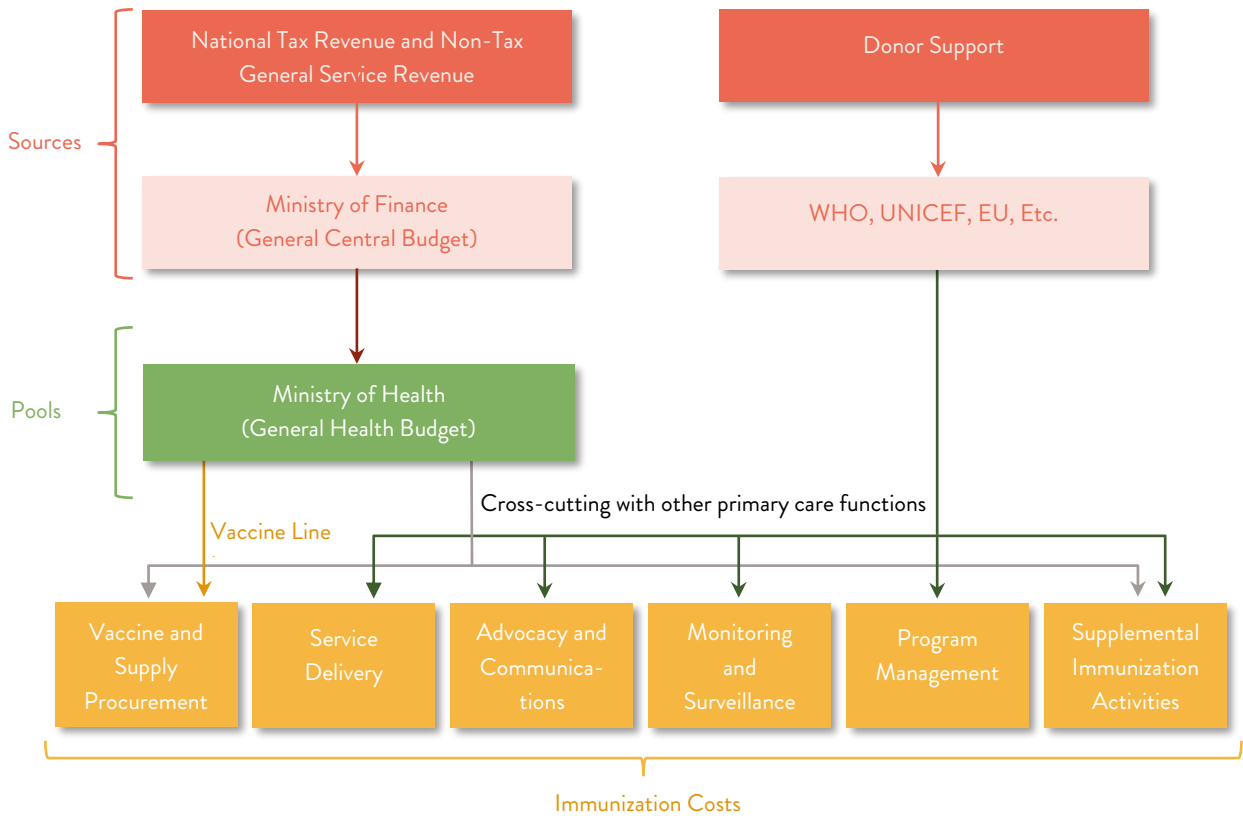
programs, including immunization.^{27,28} As a result, governments have had to fund substantial catch-up campaigns to restore VCRs to pre-pandemic levels, as routine immunization services were not fully utilized during the pandemic.²⁴ Given the decline in VCRs in Jordan between 2020 and 2021, the country is likely facing similar challenges that will put pressure on the already limited funding for routine immunization.³

Immunization Fund Flow

The Jordanian government is the primary funder of the NIP, with limited support from donor agencies (Figure 13). The NIP is funded through various sources, including national tax revenue and non-tax general service revenue, such as contributions made through public insurance schemes and tourism.⁷ The MOF allocates funding from the general central budget to the MOH's general health budget, which funds different aspects of the NIP.⁷ Vaccine procurement has a dedicated budget line within the general health budget, providing increased visibility into funding allocations.⁷

Non-vaccine-related NIP costs are considered cross-cutting, meaning their funding is shared with other health programs.⁷ Donor support for the NIP is primarily focused on technical assistance, such as training and the operationalization of mobile clinics, although it can also include in-kind vaccine contributions; however, donor funding is not a predictable source of immunization financing in Jordan and is excluded from the MOH's vaccine budget.⁷ As such, the government's funding sources are crucial to ensuring the sustainability of the NIP.

Figure 13. Jordan's Public Sector Immunization Fund Flow



Jordan's private sector accounts for around 30% of the country's total health expenditure, primarily funded by households.²⁹ This funding mainly comes from premiums paid for private health insurance and out-of-pocket expenses.¹⁶ Generally, individuals who can enroll

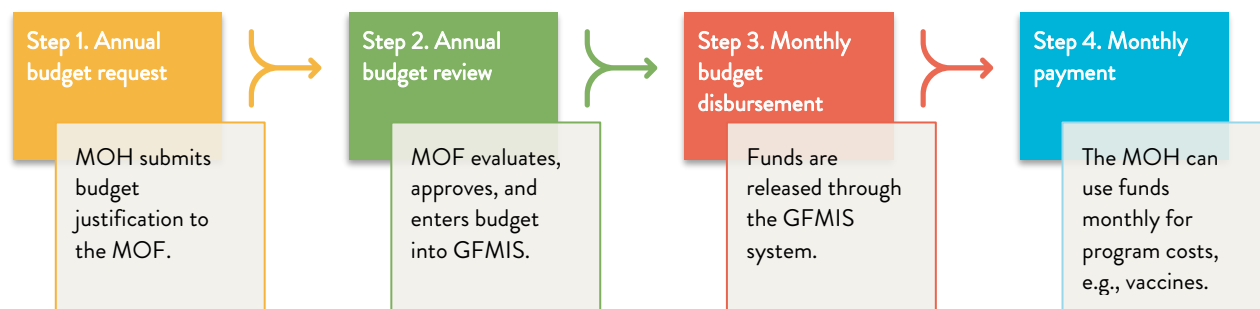
in private insurance through their employers prefer it over public insurance.⁷ If their insurance covers immunization services, they will vaccinate their children in the private sector.⁷ Otherwise, they will go to the public sector, where vaccines are free.⁷

NIP Budgeting, Procurement, and Cash Management

Budget preparation for the NIP occurs annually and involves multiple stakeholders from the MOH, MOF, and parliament. The budgeting process begins in May, with the MOH's technical team submitting a budget request that includes evidence-based justifications.⁷ This budget justification includes data to support vaccine introduction, such as disease burden, feasibility, health systems-related benefits, and prices.⁷ The budget request is then discussed with the MOF and presented to parliament. Once parliament reviews and approves the budget, the MOF signs a commitment letter, formally pledging funding for the procurement of vaccines and implementation of the NIP.⁷

The commitment letter usually does not include the total requested budget due to limited budgetary availability.⁷ The committed funding is allocated in the centralized Government Finance Management Information System (GFMS); however, the MOH can only use these allocations once the MOF releases the funds.⁷ Funding allocations are released monthly, which could make it difficult for the MOH to pay their vendors for the vaccines and supplies as upfront payments cannot be provided.⁷ If the MOH does not spend the funds by the end of the year, they are transferred back to the treasury.⁷ The full budget allocation process is outlined in Figure 14.

Figure 14. Summary of Budget and Allocation Cycle⁷



Historically, the government has protected the budget for immunization because of its importance to public health. The MOH prioritizes the NIP and reserves its budget immediately after receiving its annual funding; however, the actual expenditure is often lower than the budgeted amount because the MOF only released some committed funding—except between 2019 and 2022, when the MOF released almost all committed funding because a portion of the vaccine budget was used to fund COVID-19 vaccination efforts—due to budgetary shortcomings.⁷ In the future, requested budgets are expected to exceed previous expenditures, but it is yet to be determined if these requests will be approved and fully committed by the MOF.⁷

Budgeting, allocation of funds, and cash management have a direct impact on the ability to procure vaccines. Currently, the GPD is responsible for procuring vaccines for the NIP, while MOH's Procurement and Supply Directorate pays for the procurement.³⁰ The GPD was established to facilitate bulk purchases for the MOH, JRMS, Jordan University Hospital, and King Abdullah University Hospital to assure product quality and reduce prices. The GPD is responsible for bidding and awarding contracts to vendors.⁷ Before 2021, the GPD led both procurement and payment of vaccines and related supplies; however, payment responsibility has now been transferred to the Procurement and Supply Directorate within the MOH.⁷

Procurement for vaccines is a complex, multistep, multilayered process. The annual pharmaceutical procurement process in Jordan involves five major public sector entities submitting their estimated annual needs for medicines, vaccines, and supplies, in accordance with Jordan's medicines formulary and essential medicines list.⁷ A multisectoral technical committee, including the NITAG, reviews these requests based on scientific merit, equity, and cost-effectiveness. Upon their review, the NITAG provide

their recommendations to the GPD.⁷ Another technical committee within the GPD reviews the recommendations, and negotiations occur before reaching an agreement.⁷ Upon approval from the Minister of Health and the Prime Minister, the GPD issues the tender and selects the vendor based on various criteria. The MOH's Procurement and Supply Directorate then handles payments to vendors, with the potential for additional mark-ups if the MOH cannot fully cover an invoice.⁷

Recommendations

In Jordan, ensuring adequate budget headroom for immunization financing is of paramount importance, as it enables the country to provide comprehensive vaccination programs to protect its population against preventable diseases. By increasing budget headroom, the government can invest in the necessary infrastructure, human resources, and vaccine supplies, leading to improved health outcomes and reduced disease burden. Moreover, investing in immunization has been shown to yield significant long-term economic benefits by reducing healthcare expenses, increasing

productivity benefits and promoting overall social development. Therefore, exploring innovative strategies to increase budget headroom for immunization in Jordan is not only vital for safeguarding public health but also for fostering the country's sustainable growth and development.

The assessment yielded five recommended options that can be employed concurrently to improve immunization financing in Jordan. Table 5 provides a summary overview of each option with additional detail following.

Table 5. Financing Options Overview

	Description	Challenges Addressed
Option 1	Improve immunization-related procurement and supply management efficiency	Procurement inefficiencies and associated costs; limited budget envelope
Option 2	Reframe immunization as an investment rather than a cost to appeal to financing decision-makers	Suboptimal budget allocation from the MOF; limited budget envelope
Option 3	Harmonize Jordan's budget allocation and disbursement processes	Suboptimal budget allocation, procurement inefficiency, and resulting price mark-ups
Option 4	Create a protected fund for immunization programming	Limited budget envelope; lack of immunization budget protection
Option 5	Leverage Jordan's diaspora community to raise additional funding for immunization	Limited budget envelope; need for new revenue sources

Option 1. Improve Procurement and Supply Management Efficiency

Procurement and supply management improvements enhance sourcing, acquisition, storage, and delivery of vaccines, optimizing value through cost minimization. Despite strengths in inventory management and distribution, Jordan has the potential to refine its forecasting and procurement practices. By improving these practices, the MOH can maintain consistent vaccine availability and improve efficiency of the NIP.

Increased efficiency can yield program savings, which may be redirected towards expanding the NIP and boosting vaccination coverage. Strategies for enhancing procurement and supply management efficiency are under consideration, such as streamlining vaccine procurement through updated procedures, adopting multiyear contractual arrangements, and utilizing global best practices from successful vaccine procurement.³⁰

Option 2. Reframe Immunization as an Investment

This strategy reframes immunization from a cost to an investment when communicating with financial decision-makers, such as the MOF. By employing data-driven advocacy, the MOH can highlight the economic, societal, and fiscal benefits of immunization programs. Using data to showcase the return on investment—reduced health care costs, increased productivity, and boosted tax revenues—this approach aims to rally support and secure increased funding for immunization initiatives among key budgetary decision-makers.

The core message of this strategy is that immunization provides a substantial return on investment by manifesting tangible societal and fiscal advantages. First, immunization significantly curbs health care needs by lowering hospitalization rates and costs related to in-patient stays.³¹ This leads to a healthier, more resilient population, improving societal welfare and stimulating economic productivity and growth.³² Further, immunization reduces the risk of households facing high health expenditures due to VPDs, alleviating financial hardship and promoting equity among the populace.³³

The following steps can be used as a guide to estimate the full societal value of immunization:

1. Identify benefits: List all the positive impacts of immunization, such as fewer health care needs and productivity gains.
2. Quantify benefits: Measure these impacts; for example, calculate the reduced hospitalization rates due to immunization.
3. Value benefits: Assign a value to each impact; for example, consider the cost of in-patient stays as the value of reduced hospitalization.
4. Calculate total value: Multiply the quantity of each benefit by its assigned value to estimate the total societal value of that benefit.

Option 3. Harmonize Allocation and Disbursement Processes

Enhancing Jordan's budget allocation and disbursement processes is necessary to enable more effective planning for the NIP. Stable funding is critical in maintaining high VCRs and avoiding the recurrence of VPDs; however, current budget procedures in Jordan do not adequately provide reliable and sufficient funding for the MOH. The MOH's financial planning is often impeded by complex processes surrounding the setting and disbursement of its annual budget. The MOF reviews and approves the MOH's budget proposal, including planned immunization activities, but often revises it downwards. Moreover, the MOH typically receives its budget monthly and not always in its entirety.

This budgeting, planning, and cash release process obstructs efficient vaccine procurement, limiting opportunities for volume pricing benefits and disrupting the vaccine supply chain. These disruptions may result in vaccine shortages and erode vendor confidence in receiving timely payments, undermining the effectiveness of the country's immunization program. Vendor confidence in obtaining timely payments in full can result in better pricing conditions, leading to cost savings for the MOH. These savings could be redirected towards enhancing the immunization program or improving other aspects of the health care system.

Option 4. Create a Protected Immunization Fund

Creating a dedicated, protected immunization fund can provide strategic financial security. This fund, solely designated for immunization-related expenditures, ensures these resources are used for their intended purpose only. Such a fund could be a regular fund, which accumulates contributions from various sources within the existing financial framework, or a trust fund, which is a legal entity with its own specific rules and appointed trustees ensuring appropriate use of funds.³⁴ Examples

of successful protected immunization funds include Taiwan's National Vaccine Fund and Bhutan's Health Trust Fund, which ring-fence funds for immunization, enable diversified funding sources, and generate additional revenue, ensuring consistent and secure funding for their immunization programs.^{34,35}

Setting up a protected immunization fund in Jordan involves legislative approval for legal frameworks, engagement with key stakeholders, and a well-defined governance structure. Securing initial funding sources, such as government or donor contributions, is crucial. After the fund's establishment, developing an investment strategy can bolster asset management, while precise disbursement procedures ensure its effective operation. Lastly, implementing a robust monitoring and evaluation system to assess financial returns and immunization outcomes, alongside measures for transparency and accountability, is key to maintaining trust and integrity.

Option 5. Leverage Jordan's Diaspora Community

With a substantial diaspora community making up roughly 10-11% of its population, Jordan has the potential to secure additional funding for its NIP.¹⁸ This community already contributes significantly to the Jordanian economy through remittances, accounting for 11% of the country's GDP in 2021.³⁶

Drawing inspiration from successful programs like Mexico's 3x1 Program, Jordan can develop strategic initiatives to engage its diaspora community more directly in health funding. The 3x1 Program allowed Mexican migrants living abroad to contribute to development projects in their home communities, including health-focused initiatives.³⁷ For each US\$1 donated by a migrant, the Mexican government, alongside local and state authorities, contributed US\$3 to projects, thereby amplifying the impact of each contribution.³⁷

Building on this model, Jordan can establish a similar program, encouraging diaspora members to directly fund immunization efforts. By initiating partnerships with diaspora organizations and offering transparent channels for making contributions, Jordan can ensure accountability and ease of donation. A matching fund system like Mexico's could also incentivize individual donations by demonstrating the tangible impact of each contribution. Through such an approach, Jordan can leverage its diaspora's financial resources, expertise, and extensive networks to fortify the NIP, ensuring broader coverage and enhanced health outcomes for its population.

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