IMMUNIZATION SUPPLY CHAIN POLICY ENVIRONMENT IN UGANDA

Landscape Analysis and Advocacy Recommendations

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PATH

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ABBREVIATIONS

CHAI	Clinton Health Access Initiative
cMYP	Comprehensive Multi-Year Plan for Immunization
DVD MT	District Vaccine and Devices Monitoring Tool
DVS	District Vaccine Store
EEFO	Earliest Expiry First Out
EVI	Expanded Program on Immunization
EVM	Effective Vaccine Management
FCE	Full Country Evaluation
GoU	Government of Uganda
GVAP	Global Vaccine Action Plan
HPV	Human Papillomavirus
HSSIP	Health Sector Strategic Investment Plan
IDRC	Infectious Disease Research Collaboration
IRPT	Inventory Replacement and Planning Tool
LMIS	Logistics Management Information System
MoFPED	Ministry of Finance, Planning, and Economic Development
MoH	Ministry of Health
MOU	Memorandum of Understanding
NCC	National Coordination Committee
NDP	National Development Plan
NHP	National Health Policy
NITAG	National Immunization Technical Advisory Group
NMS	National Medical Store
NVS	National Vaccine Store
OPL	Operational Level
PCV	Pneumococcal Conjugate Vaccine
PHC	Primary Health Care
SDD	Solar Direct Drive
SIA	Supplemental Immunization Activities
SMT	Stock Management Tool
SOP	Standard Operating Procedure
UNMHCP	Uganda National Minimum Health Care Package
UNEPI	Uganda National Expanded Program for Immunization
UNICEF	United Nations Children's Fund
VAR	Vaccine Arrival Report
WHO	World Health Organization

EXECUTIVE SUMMARY

Background on policy landscaping analysis

PATH undertook a policy landscaping analysis to better understand the policy environment for immunization in Uganda and identify opportunities where stronger leadership, better coordination, or new policies could result in higher routine immunization coverage, more equitable distribution of immunization services, or better potency of vaccines administered.

We found that Uganda has an overall favorable policy environment for immunization. The country has adopted several new vaccines, including pneumococcal conjugate and human papillomavirus vaccines, and will introduce rotavirus and inactivated polio vaccine in the near future. Uganda has also agreed to support several global declarations, including the Global Vaccine Action Plan, the Abuja Declaration, and the African Plan for Immunization, among others, all of which will contribute to improved immunization access and delivery in Uganda and around the globe.

Recent Effective Vaccine Management (EVM) assessments, however, indicate that access to immunization services in Uganda may be limited by weaknesses in the supply chain. These weaknesses prevent vaccines and immunization supplies from reaching health centers on a regular basis or compromise the quality of vaccines prior to being administered.

The 2014 EVM Improvement Plan identifies specific strategies that can be implemented to improve immunization performance, but there has been no agreed process to ensure that the EVM Improvement Plan is validated and understood among immunization decision-makers and that the plan is funded, implemented, and monitored over time. Further complicating the picture is the 2012 shift in responsibility from Uganda's National Expanded Program on Immunization (UNEPI) to the National Medical Stores (NMS) for vaccine procurement and delivery. While this change has been positive on the whole, it has introduced a new set of stakeholders and policies that must be aligned and coordinated with UNEPI.

Policy recommendations

Based on our assessment of the policy environment for immunization and potential weaknesses in the supply chain affecting immunization services, PATH recommends three policy-related changes:

1. **Uganda National Coordination Committee to formalize a National Supply Chain Working Group** to improve immunization supply chain performance (informed by the EVM assessment as well as other relevant assessments) and monitor key supply chain indicators over time.
2. **NMS and UNEPI to develop roles and responsibilities grid, particularly around cold chain maintenance and repairs, and identify areas where more collaboration is required.**
3. **National Supply Chain Working Group to ensure that key recommendations from the EVM Improvement Plan are fully funded and implemented.**

INTRODUCTION

Uganda recognizes immunization as a key component of the health system. The country's National Health Policy prioritizes health promotion, disease prevention, and early diagnosis and treatment of diseases, all of which form part of the Uganda National Minimum Healthcare Package (UNMHCP).[1]

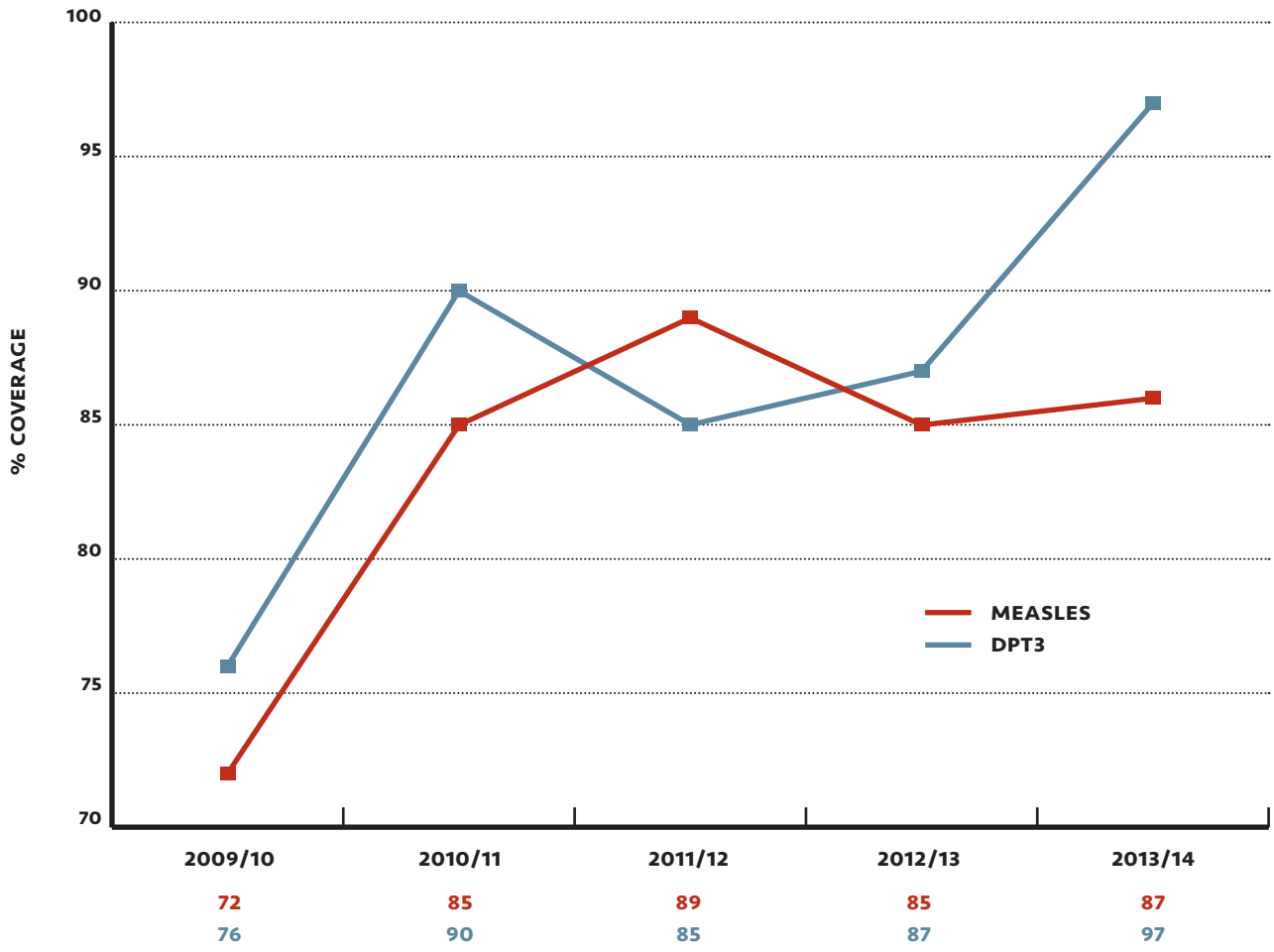
The immunization program in Uganda has undergone rapid growth and change since 2011. Uganda introduced the pneumococcal conjugate vaccine (PCV) into its routine immunization schedule in 2013 and officially launched and rolled out human papillomavirus (HPV) vaccine in November 2015. It is preparing to introduce inactivated polio vaccine and rotavirus vaccine in 2016 and plans to introduce the second dose of measles vaccine by 2018.

These planned vaccine introductions have nearly tripled the cost of the immunization program from US$31,647,517 in 2011 to an estimated $91,436,221 in 2016. Ambitious new vaccine introductions have also resulted in a larger and more complex program, with more doses and visits required from different age groups and in new service delivery points, such as schools. According to the 2014 Effective Vaccine Management (EVM) assessment, vaccine introductions between 2013 and 2016 have tripled the volume of vaccines that must be tracked, properly stored, and delivered.[2]

These changes, however difficult to implement, have great potential to save lives.

Immunization coverage has recently improved after declining slightly between 2010 and 2013. The percentage of children under one year immunized with the third dose of DTP3 vaccine (now part of the pentavalent vaccine) was reported to be 97% in 2013/14 (Figure 1) . Coverage for other vaccines, such as measles, has been more stagnant, with coverage actually decreasing between 2011/12 and 2013/14.

Figure 1. Recent trends in coverage of measles and DPT3 vaccine in Uganda, 2009–2014.[3]



District variability in coverage persists in Uganda, and fewer than the recommended 90% of districts are achieving 90% or greater coverage with DTP3 vaccine (now part of the pentavalent vaccine). Despite impressive investments in immunization program expansion and concentrated efforts to improve coverage and achieve disease control initiatives, Uganda's National Expanded Program on Immunization (UNEPI) continues to face challenges in maintaining high coverage, consistently, in all districts.

Recognizing the strain that new vaccine introduction and disease control initiatives have been placing on immunization supply chains worldwide, immunization partners led by Gavi, the Vaccine Alliance, the World Health Organization (WHO), and UNICEF have developed a global immunization supply chain strategy and increased the amount of resources, tools, and guidance available to countries like Uganda. PATH is supporting this global effort by working in Uganda to build political will to make the necessary and long-term improvements to the supply chain that are needed to support larger and more ambitious immunization programs.

PURPOSE AND OBJECTIVES OF POLICY LANDSCAPING STUDY

The purpose of this landscaping study was to better understand the immunization policy environment in Uganda and identify those policies, pieces of legislation, ministerial orders, directives, or other regulations that guide supply chain management in Uganda.

Our analysis included a desk review of key policies and guidelines related to immunization and supply chain management in Uganda and 14 key informant interviews with representatives from the Ministry of Health (MoH)/ UNEPI at national, district and health facility levels, National Medical Stores (NMS), multilateral agencies, and relevant technical agencies with offices in Uganda.

This report makes recommendations for policy and procedural changes that may improve supply chain performance, leading to better immunization and health outcomes in Uganda.

POLICY ENVIRONMENT FOR IMMUNIZATION

Uganda subscribes to international health commitments including the Sustainable Development Goals, International Health Partnerships and related initiatives (IHP+), and Abuja Declaration, among others. In 2012, it was among the 194 member states to endorse the Global Vaccine Action Plan (GVAP), a framework to prevent millions of deaths by 2020 through more equitable access to existing vaccines for people in all communities. The GVAP aims to strengthen routine immunization to meet vaccination coverage targets; accelerate control of vaccine-preventable diseases; introduce new and improved vaccines; and spur research and development for the next generation of vaccines and technologies.

GAVI HEALTH SYSTEMS STRENGTHENING (HSS) APPLICATION

A new component of the HSS application is the Cold Chain Optimization Platform. The platform aims to improve the effectiveness, efficiency, and sustainability of a country's vaccine supply chain through the development and implementation of the following key planning documents: National Monitoring and Evaluation Plan, Cold Chain Equipment Repair & Maintenance Plan, and Cold Chain Equipment and Rehabilitation Plan.

National policies and plans that are relevant to immunization

In pursuit of these international health commitments, the Government of Uganda maintains several national policies and planning documents that describe immunization priorities and activities (Table 1). Together, these policies and plans reflect a favorable environment for immunization access in Uganda, provided they are funded and implemented according to plan.

Key stakeholders in the immunization program

Different partners and stakeholders play a crucial role in the management of the immunization supply chain in Uganda. Table 2 describes key stakeholders

Table 1. National policies and plans that guide immunization activities in Uganda.

POLICY	CONTENT
National Development Plan (NDP)	The NDP guides the functions of Uganda's health system and provides the structure for the country's comprehensive development framework, which informs the National Health Policy (NHP) 2010/11–2019/20.
National Health Policy (NHP) 2010/11–2019/20	The NHP prioritizes health promotion, disease prevention, and early diagnosis and treatment of diseases, all which form part of the Uganda National Minimum Healthcare Package (UNMHCP).[1]
Health Sector Strategic Plan (HSSP) 2010/11–2014/15	The HSSP is a five-year country plan that sets the medium- and long-term health agenda and operationalizes Uganda's health aspirations and targets as outlined in the NDP.
Comprehensive multi-year plan (cMYP) 2011–2016	The cMYP for immunization is a four-year plan providing strategic direction and focus for immunization activities. It is based on performance related to critical immunization indicators generated from country assessments, such as the EVM assessment, EPI review, and other related reports.
Effective Vaccine Management (EVM) Improvement Plan (2014)	The EVM Improvement Plan outlines specific activities and investments that are required to meet minimum standards set by WHO for immunization supply chain performance.
The Immunization Act of 2016	The Immunization Act of 2016 was signed into law in March 2016. This law makes immunization compulsory for children, women of reproductive age, and other target groups in order to prevent vaccine-preventable diseases. In addition, it establishes an immunization fund.

within the government. Several external partners play important roles in the oversight, management and operational aspects of the immunization program. Table 3 is a non-exhaustive list of some of the larger partners, many of whom are represented in the National Coordination Committee.

THE IMMUNIZATION SUPPLY CHAIN IN UGANDA

System overview

Procurement and estimates of need. Since 2012, NMS has overseen the procurement of vaccines and immunization supplies, using UNICEF as the procurement agent. Procurement is based on a compilation of vaccine needs estimated at the district level. Districts use two methods to estimate vaccine needs: (1) estimates from population figures as provided by the national census and/or (2) estimates from previous consumption of vaccines and related supplies.

National-level storage and distribution. NMS handles customs and arrivals procedures for vaccines and transfers vaccines and supplies to the central vaccine store, located in Entebbe. From here, NMS distributes vaccines and other supplies to the 112 district vaccine stores through a mix of push (direct delivery to districts) and pull (districts collect vaccines from the national store) strategies.

District-level storage and distribution. The District Health Office is responsible for distribution of vaccines and immunization supplies to health facilities. More than 80% of the district vaccine stores are located in appropriate structures overseen by a district cold chain technician or assistant.

Health facility-level collection and use. Approximately 15% of health facilities receive a direct delivery of immunization supplies from the district vaccine store. The remaining health facilities must collect their vaccines from the district vaccine store on a monthly basis. Most health centers keep a four-week supply of stock plus a two-week reserve in a refrigerator used specifically for vaccine storage. Health facilities without refrigerators, or those with

Table 2. Key government stakeholders involved in immunization in Uganda.

ENTITY	ROLE
Parliament of Uganda	Approves immunization policy and budgets and monitors immunization performance.
Health Policy Advisory Committee	Provides overall policy oversight for health activities, plans, budgets, and performance of the health sector. Oversees implementation of the Health Sector Strategic Plan. Reports to the Secretary General for Health.
The National Immunization Technical Advisory Group (NITAG)	Provides technical guidance for immunization programs, including policy guidance and implementation. Also coordinates technical activities such as Gavi applications and immunization-related research and monitoring initiatives.
Ministry of Finance, Planning & Economic Development	Provides general funding support for health services, including immunization (e.g., purchasing traditional vaccines, providing co-funding for new vaccines, covering salaries and other program components).
Ministry of Education and Sports	Coordination and mobilization of school children for immunization with tetanus toxoid and human papillomavirus vaccines.
National Coordination Committee (NCC)	Responsible for monitoring immunization performance against national and international indicators and grants. The NCC, chaired by Uganda's Director General of Health Services, consists of government representatives, donors, and technical partners. Current membership in the Uganda NCC includes PATH, Clinton Health Access Initiative (CHAI), WHO, UNICEF, US Centers for Disease Control and Prevention (CDC), Mulago Hospital, Uganda Police, Rotary International, Lions Club, Infectious Disease Research Collaboration (IDRC), Makerere University, Kampala Capital City Authority, NMS, MoH, Ministry of Education and Sports, National Drug Authority, and many other groups.
Uganda National Expanded Program on Immunization (UNEPI), Ministry of Health	Serves as the operational structure for immunization activities and is responsible for strengthening routine immunization, conducting Supplemental Immunization Activities (SIAs), strengthening vaccine-preventable disease surveillance, and introducing new vaccines. Responsibilities include: • Overall immunization program coordination and management • Policy formulation and implementation • Capacity development for supply chain staff • Cold chain maintenance • Supervision • Information management
National Medical Stores (NMS)	Parastatal organization that manages vaccine procurement (through UNICEF), storage, and distribution of vaccines and immunization supplies down to the district level.
District Vaccine Stores (DVS)	These facilities store vaccines and (in some cases) directly distribute vaccines to health centers according to estimated need. They also aggregate data from the sub-district level to estimate coverage, vaccine needs, and stock levels. They are managed by district cold chain technicians.
Health Facilities	Responsible for, among other things, allocating primary health care (PHC) funds, collecting vaccines from district vaccine stores, estimating vaccine needs, and providing immunization services through both fixed and outreach strategies. In Uganda's decentralized health system, health facilities have a fair amount of autonomy. They are managed by Health Centre In-Charges and report to the District Health Officer.

malfunctioning refrigerators, must collect vaccines from the district vaccine store or health subdistrict on the day of immunization. Most facilities conduct static immunization sessions once a week and provide immunization at outreach posts twice a month.

Recent Effective Vaccine Management assessments

Uganda is one of a handful of countries to have completed two EVM assessments—in July 2011 and October 2014. Table 4 shows the scores for the two assessments. In 2011, most facilities at national, district, and health facility levels failed to meet WHO minimum standards of 80%. In 2014, after shifting responsibility for national-to-district distribution from UNEPI to NMS (a shift that started in 2012), improvements were observed in almost all criteria at the national vaccine store, with the exception of equipment maintenance, which actually declined further.

At the district and health facility level, the scores were mixed, with improvement in some areas and declines in others across various EVM criteria. From the district to health facility level, the 2014 EVM assessment results show no significant improvements when compared with the 2011 results, presumably because improvement recommendations were not implemented. Table 4 summarizes the 2011 recommendations and progress on improvements according to the 2014 EVM assessment.

Table 3. Nongovernmental immunization stakeholders.

ENTITY	RESPONSIBILITIES
United Nations Children's Fund (UNICEF)	Procurement of vaccines, immunization supplies, and vaccine safety equipment. Social mobilization and advocacy for immunization.
World Health Organization	Monitoring, evaluation, and operational research to improve immunization outcomes. Facilitation of training for immunization personnel. Support for new vaccine introduction and accelerated disease control.
Gavi, The Vaccine Alliance	Grant funding for introduction of new vaccines and health systems strengthening.
PATH	Technical assistance and training for cold chain equipment and temperature monitoring systems. Technical support for new vaccine introduction (e.g., HPV vaccine).
Clinton Health Access Initiative (CHAI)	Research and data analysis.
Sabin Vaccine Institute	Advocacy for sustainable immunization financing.
Japan International Cooperation Agency	Financing and training for cold chain capacity strengthening.
USAID (John Snow Inc.)	Support through the Maternal and Child Health Integrated Program (MCHIP) in selected districts.
Uganda Red Cross Society	Immunization training and behavior change.
Lions Club	Advocacy, mobilization support for immunization.

Source: Adapted from Uganda National Academy of Sciences.

KEY BARRIERS TO IMMUNIZATION PROGRAM PERFORMANCE

Interviewed stakeholders underscored several key bottlenecks that may be limiting the performance of the immunization program. Each of these bottlenecks also reveals opportunities where stronger leadership, better coordination, or new policies could result in higher routine immunization coverage.

Incomplete implementation of the EVM Improvement Plan

As noted earlier, the EVM assessment indicates that there are still many areas in which the vaccine supply chain can be improved, particularly at the district and health facility levels. Although the EVM Improvement Plan outlines specific steps to bring the supply chain to minimum standards, it does not clarify the strategic issues that may need to be resolved before the technical issues can be addressed. For example, the lowest scoring criterion in Uganda continues to be in the area of cold chain maintenance. Which entity, NMS or UNEPI, is better suited to manage cold chain maintenance now and in the future? How should the maintenance challenges be addressed? Who manages information related to the cold chain, including equipment inventories, temperature monitoring data, and maintenance schedules?

A 2014 cold chain capacity assessment revealed that 19,643 staff across the country provide immunization services, but only 4,854 (25%) had received operational-level training. What is the most efficient way to provide training to health staff? What specific knowledge do health workers need to avoid costly mistakes?

These strategic issues require more discussion among UNEPI, NMS, and other relevant technical partners before there can be a recommended course of action. At this time, no such discussion forum exists, leaving many supply chain issues incompletely understood and addressed.

Table 3. EVM assessment results, 2011 and 2014.

EVM CRITERION	2011 SCORE			2014 SCORE		
	National	District	HF	National	District	HF
E1: Vaccine arrival	70%			80% ↑		
E2: Temperature	45%	83%	60%	61% ↑	77% ↓	72% ↑
E3: Storage capacity	56%	78%	76%	93% ↑	75% ↓	71% ↓
E4: Buildings, equipment, transport	79%	68%	81%	91% ↑	73% ↑	81%
E5: Maintenance	74%	64%	68%	73% ↓	57% ↓	55% ↓
E6: Stock management	80%	57%	54%	82% ↑	63% ↑	50% ↓
E7: Distribution	54%	63%	66%	67% ↑	57% ↓	66%
E8: Vaccine management	45%	56%	70%	87% ↑	82% ↑	68% ↓
E9: IMS, supportive functions	52%	46%		77% ↑	57% ↑	37%

ABOVE TARGET SCORES BELOW TARGET SCORES ↑ IMPROVEMENT ↓ DECLINE

The standard EVM score is 80%. Red type indicates values below 70% requiring immediate action to address the sharp decline in performance. The blue type indicates values with improved performance indicators. The blue arrow denotes progress made in 2014 in relation to the 2011 baseline scores, and the red arrow represents a decline in performance. Values ranging between 70% and 80% require additional improvements, but targets can be achieved gradually and are not ranked as an immediate priority.

OPPORTUNITY: Government of Uganda to form a supply chain working group made up of representatives from UNEPI, NMS, and key technical partners to discuss and propose solutions to perennial supply chain bottlenecks. The working group should be linked to an existing entity (e.g., the National Coordination Committee) that can hold the working group accountable and help make decisions or institute policy changes. This group could also recommend changes in practices, responsibilities, and procedures at district and health facility levels should NMS take over distribution to the health facility level [see Recommendation 1].

Lack of clarity on operational roles/ responsibilities between NMS and UNEPI

Since 2012, **National Medical Stores (NMS)**, a parastatal organization, has assumed responsibility for vaccine procurement (through UNICEF), storage, and distribution down to the district level. Prior to 2012, these functions were handled by UNEPI.

Operationally, some roles still overlap between UNEPI and NMS, and there is a lack of clarity in certain areas, such as cold chain maintenance. Also, the various partners working to improve the immunization supply chain in Uganda work in isolation with either NMS or UNEPI, creating major communications gaps between the two entities.

NMS is also working with partners to develop a proposal for managing vaccine distribution to the last mile, as is done for medicines. More work is needed to clarify roles and responsibilities between UNEPI and NMS and clearly delineate the division of labor to ensure that necessary support is provided to the districts and health facilities, especially if a larger mandate is given to NMS.

In the meantime, many districts are uncertain about which department (UNEPI or NMS) needs to receive reports on equipment failure, resulting in long periods of refrigerator outage, which leads to vaccine wastage and stockouts. There is a need to clarify these roles and to clearly communicate with peripheral sites on where and how to report and seek technical support for cold chain equipment maintenance.

OPPORTUNITY: Supply chain working group (described previously) to be used to bring technical partners to the same table with both NMS and UNEPI to clarify roles and make recommendations for how to divide responsibilities at the national level. This group could also recommend changes in practices, responsibilities, and procedures at district and health facility levels should NMS take over distribution to the health facility level [see Recommendation 2].

Unreliable vaccine distribution at the last mile

Several bottlenecks impede reliable distribution of vaccines and immunization supplies from the district to the health facility level and beyond. A key financing gap at the district level is the lack of funds to transport vaccines from the district vaccine store to service points at health facilities. Turnover rates are also very high for district cold chain technicians. District officials point to a lack of funds to adequately compensate district cold chain technicians as well as to maintain vehicles and pay per diems for travel.

The only budget available for immunization activities at district and lower levels comes from primary health care (PHC) funds, which are now routed directly to the health facilities. It is not clear, however, how much of this money is meant to cover immunization-related activities because health facilities use it to meet their current needs. In seven districts sampled in the Gavi Full Country Evaluation (FCE) 2014, only 20% of PHC funds on average were allocated to immunization, and the amount varied from zero to 53%.

According to interviewees, many health facility staff lack the tools and accountability mechanisms to appropriately and transparently manage funds. Policy guidance on the importance of securing funding for immunization and the usage of the funds is needed at both the district and health facility levels.

OPPORTUNITY: Government of Uganda to provide oversight and policy guidance to health facilities explaining how PHC funds can be best spent to improve routine immunization coverage [see Recommendation 3].

Insufficient integration of the EVM Improvement Plan and the cMYP

The cMYP development process is technically guided by WHO with the leadership of the MoH and partners such as UNICEF, PATH, CHAI, Sabin Vaccine Institute, and civil society representatives. An annual work plan is formulated based on the cMYP, and this provides the operational guidance for immunization activities by UNEPI.

The cMYP is meant to incorporate several supply chain-related components, including transport (percentage of districts with a sufficient number of supervisory/

EPI field activity vehicles/motorbikes/bicycles in working condition), vaccine supply (stockouts; duration for each antigen), cold chain/logistics (districts with adequate cold chain equipment, updated inventory, and replacement plan), and waste disposal regulations.

However, the development of the cMYP does not always include enough discussion on these components with the concerned stakeholders. For example, the initial cMYP process involves regional country representatives collaborating under the guidance of WHO for an entire week. However, some of the most concerned stakeholders from the MoH or Ministry of Finance, Planning, and Economic Development (MoFPED) do not fully participate in the cMYP development processes.

There is also no clear strategy for prioritizing the many recommended activities in the cMYP and then monitoring and reporting on progress for targets set in the cMYP.

OPPORTUNITY: WHO to expand the consultative process of the cMYP to include key stakeholders from MoFPED and MoH and form stronger linkages between the EVM Improvement Plan and the cMYP. Further, WHO and partners can develop stronger accountability mechanisms to ensure that the activities in the cMYP are funded and properly implemented [see Recommendation 3].

Inadequate funding to address supply chain issues

The Government of Uganda contributes 8.7% of its national budget to health. This percentage falls short of the 9.8% HSSIP target and the 15% target agreed in the Abuja Declaration. Other donors and development partners contribute to the national health budget. The government pools these funds and uses a sector-wide approach (SWAp) and allocates them to public health activities, including immunization.

The Government of Uganda funds slightly more than half (55%) of the total immunization budget (this amount includes personnel costs), and Gavi, the Vaccine Alliance, contributes about 25%. Other key partners that support immunization in Uganda include WHO, UNICEF, Japan International Cooperation Agency, USAID, CDC, PATH, UK Department for International Development, Sabin Vaccine Institute, and Merck Company.

The cost of the immunization program has almost tripled from $31,647,517 in 2011 to an estimated $91,436,221 in 2016. The increasing cost is mainly driven by the introduction of newer vaccines such as pentavalent, pneumococcal conjugate, rotavirus, and HPV vaccines. Prices for newer vaccines were expected to drop over time, but this has not been the case.

Escalating costs pose a serious challenge to match the Gavi co-funding requirement for new vaccines. Although a five-year trend analysis shows a steady total increase in immunization funding, the Government of Uganda's contribution toward immunization decreased by UGX 1.2 billion between 2012/13 and 2013/14, which is a key concern in light of increasing vaccine needs. [4]

There is a 23% funding gap between existing funding and what is needed to fully support the optimal functioning of the immunization program. In 2013/14, funds available for immunization totaled UGX 57.9 billion out of the UGX 61 billion required.

The passage of the Immunization Act in March 2016 provides an opportunity for stakeholders to implement innovative and sustainable immunization financing mechanisms. This immunization bill addresses commitment gaps that have hindered the effective implementation of the cMYP, especially in relation to financial sustainability, strengthening of human and institutional resources, advocacy, and communication.[5]

Inconsistent flow of operational funds. Inadequate national budgets for immunization tend to have the greatest impact at the district and subdistrict levels. Operational funds for UNEPI are supposed to be released on a quarterly basis but are sometimes disbursed partially or irregularly. This has a significant impact on supply chain maintenance and other supply chain activities. Some districts have acknowledged a deterioration of the central-level capacity to support lower-level cold chain maintenance.

OPPORTUNITY: Immunization partners to work to establish a legislators' committee for immunization and provide evidence of the impact of financing on supply chain functions. This will require tracking all sources of funding for immunization supply chain at national, district, and health facility levels, and making this information readily available to help identify and prioritize key areas for funding and support [see Recommendation 3].

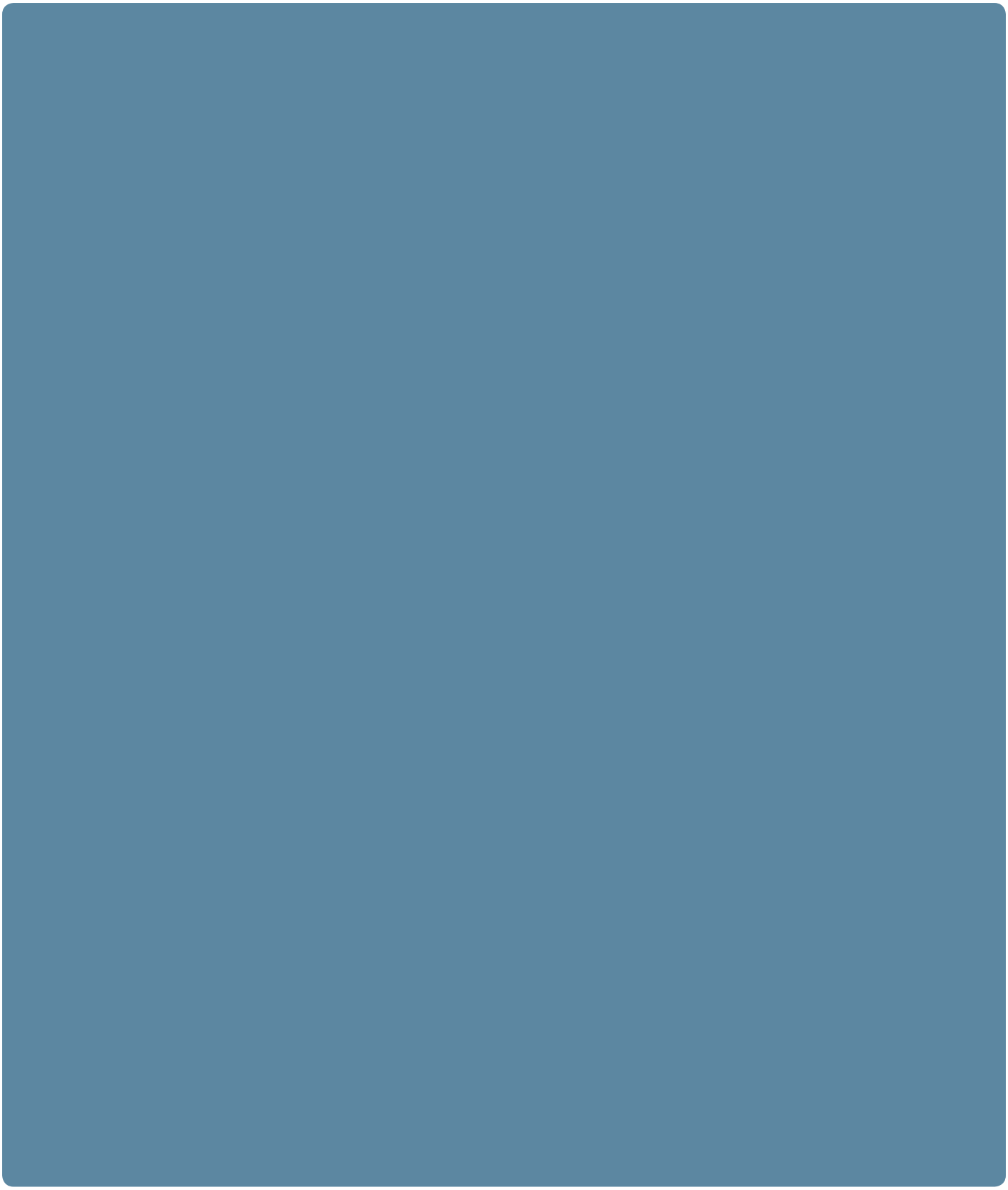
POLICY RECOMMENDATIONS

Based on our assessment of the policy environment for immunization and potential weaknesses in the supply chain affecting immunization services, PATH recommends three policy changes with several sub-activities beneath each one:

1. **Uganda National Coordination Committee to formalize a National Supply Chain Working Group.** Although a number of partners are working to support the immunization supply chain, these efforts are not well coordinated, leading to both duplication and gaps. Partner efforts should be more effectively coordinated under a national-level technical working group to maximize benefits. The working group would be responsible for recommending strategies to improve immunization supply chain performance (informed by the EVM assessment as well as other relevant assessments) and monitoring key supply chain indicators over time. The 2014 EVM Improvement Plan already highlights some of the major supply chain improvements that need to be made, several of which were amplified in our policy interviews:
    a) UNEPI and NMS to agree on a functional logistics management information system that is linked to NMS delivery and procurement functions.
    b) UNEPI to offer operational training to all relevant immunization and logistics staff on a more regular basis.
    c) UNEPI and/or NMS to improve recruitment of, support for, and retention of national and district cold chain technicians.
2. **NMS and UNEPI to clarify and agree on responsibilities, particularly around cold chain maintenance and repairs, and identify areas where more collaboration is required.** The 2012 decision to transfer responsibility for procurement, storage, and distribution from UNEPI to NMS has resulted in a new set of roles and responsibilities for both entities. There is still a need to clarify roles and negotiate certain responsibilities, particularly around cold chain equipment maintenance and information sharing. Until these decisions are made and communicated up and down the chain of command, immunization bottlenecks are likely to persist.
3. **National Supply Chain Working Group to ensure that key recommendations from the EVM Improvement Plan are fully funded and implemented.** Once established, the working group would review the cMYP for immunization and other key health planning documents, and ensure that supply chain improvements are fully funded and implemented within the context of these plans. To achieve this policy goal, several complementary steps may be required:
    a) WHO to expand the consultative process of the cMYP to include the Ministry of Finance, Planning, and Economic Development (MoFPED) as well as members of the National Supply Chain Working Group, particularly NMS and UNEPI.
    b) Parliament to legislate sustainable funding for immunization from the national budget, according to commitments made in the Abuja Declaration. Currently there is a 23% funding gap for immunization between 2012 and 2015. This gap is exacerbated by increasing vaccine costs and Gavi co-financing commitments.
    c) Government of Uganda to provide oversight and policy guidance to health facilities explaining how PHC funds can be best spent to improve routine immunization coverage.
    d) MoFPED to allocate funding according to expected programmatic needs, rather than current quarterly or irregularly disseminated funds.

REFERENCES

1. Uganda Ministry of Health (MoH). The Second National Health Policy; 2010.
2. Uganda EVM Assessment 2014.
3. Uganda MoH. Annual Health Sector Performance Reports 2009-2014.
4. Infectious Disease Research Collaboration. Resource tracking for immunization 2013/14.
5. Uganda MoH. Uganda Immunization policy 2014.



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