

# UGANDA

Findings from the 2014 Gavi Full Country Evaluation















This brief presents findings for Uganda from the 2014 Gavi Full Country Evaluation (FCE) Annual Dissemination Report. It was prepared by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington in collaboration with members of the Gavi FCE Team: the Infectious Diseases Research Collaboration (IDRC), Uganda; University of Eduardo Mondlane (UEM), Mozambique; Health Alliance International (HAI), Mozambique; International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b); the University of Zambia (UNZA), Zambia; and PATH, USA. This work is intended to inform evidence-based improvements for immunization delivery in Uganda, partner FCE countries, and more broadly, in low-income countries, with a focus on Gavi funding.

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### 2014 evaluation activities

### Assessment of progress, successes, and challenges

- Collected and reviewed documents relevant to Gavi funding, operational plans and budgets, guidelines, planning, and reporting.
- Observed Expanded Program on Immunization (EPI) technical meetings, National Coordinating Committee (NCC) meetings, Gavi coordination committee meeting, pneumococcal conjugate vaccine (PCV) health worker trainings and mentorship in select districts, and meetings between Gavi and country stakeholders (including the Annual Progress Report and joint review).
- Conducted brief interviews to confirm factual information.

### Key informant interviews

- Conducted 24 interviews at the national and subnational levels with government, World Health Organization (WHO), and other partner organizations.
- Conducted nine global-level interviews with the Gavi Secretariat and Vaccine Alliance partners.
- Conducted brief interviews with stakeholders at the NIP, WHO, and UNICEF to confirm factual information.

### Stakeholder network analysis survey

• Conducted 11 stakeholder network analysis surveys on partnership with country-level key informants.

### Analysis of administrative data on vaccine coverage

 Analyzed Uganda National Expanded Programme on Immunisation (UNEPI)/WHO vaccine coverage data.

### Small area analysis

 Compiled and analyzed all available survey and census data sources.

### Inequality analysis

 Compiled and analyzed all available survey data sources of household wealth and vaccination coverage.

### Resource tracking

• Conducted a detailed immunization resource tracking study, using an adaptation of the 2011 system of health accounts (SHA) methodology to estimate the total envelope of resources for immunization activities in fiscal year 2013–2014.

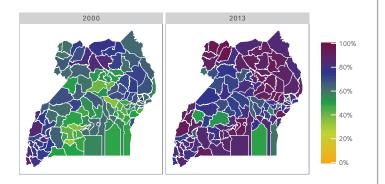
# $ANALYSIS \\ \text{of immunization coverage,}$

### child mortality, and inequality

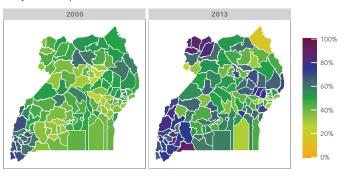
Coverage rates among districts have been highly variable since 2000. The full 2014 Annual Dissemination Report provides district-level maps for 2000 and 2013 for all antigens.

- **Diphtheria, pertussis, tetanus vaccine (DPT3)**. In 2013, approximately one in five districts achieved diphtheria-pertussis-tetanus (DPT) coverage rates over 90%, while coverage was less than 65% in several districts (Figure 1).
- Fully vaccinated child (received Bacillus Calmette-Guérin [BCG] vaccine, three doses of oral polio vaccine [OPV3], three doses of DPT, and measles vaccine). Coverage was even more variable, exceeding 80% in some districts while still below 40% in others. Districts with relatively low full vaccination coverage are spread throughout the country, though there are localized clusters (Figure 2).

Figure 1: District-level DPT3 coverage, using small area analysis techniques



**Figure 2:** District-level fully vaccinated child coverage, using small area analysis techniques

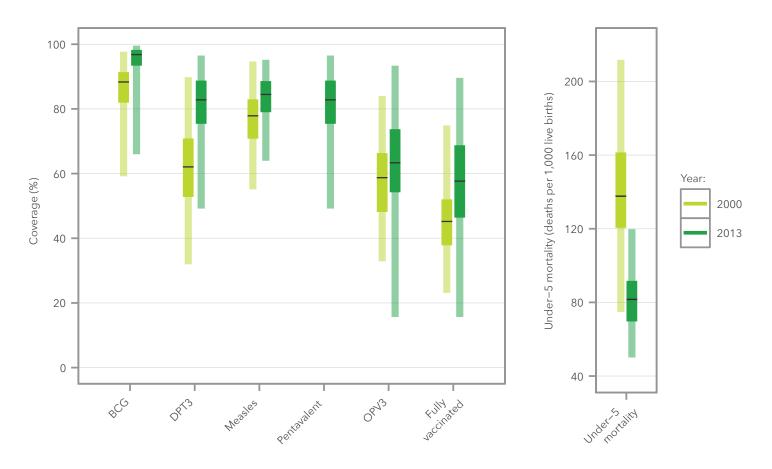


### District-level estimates of vaccine coverage since 2000 across vaccine antigens show general decreases in geographic inequality.

- Between 2000 and 2013, there were increases of median coverage for BCG, DPT3, measles, OPV3, and full vaccination.
- Median under-5 mortality decreased between 2000 and 2013.

Figure 3: Distribution of district-level vaccination coverage and under-5 mortality

The horizontal line represents the median across districts. The thick vertical bar represents the interquartile range, while the thin vertical bar represents the range across districts.

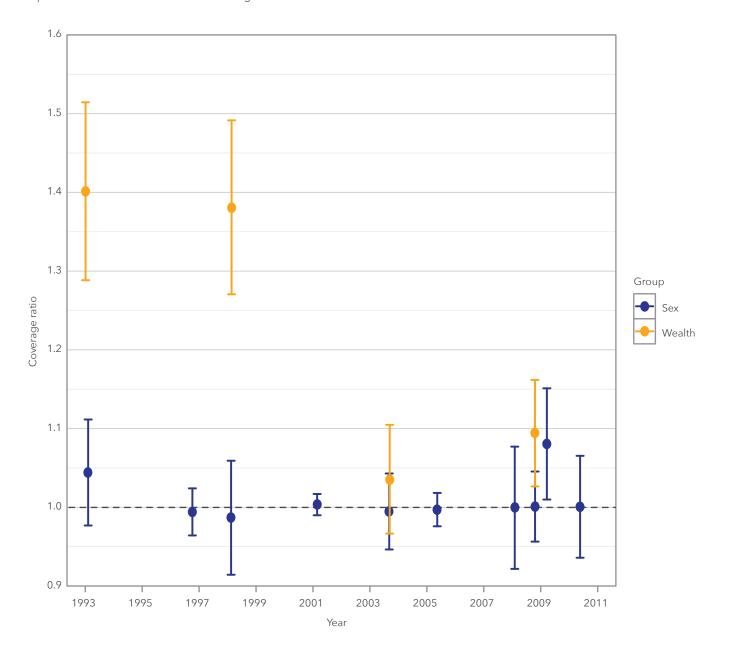


### There is inequality of coverage by level of household wealth despite improvements, but no inequalities by gender.

- Though the ratio of DPT vaccine coverage in the richest income quintile compared to the poorest income quintile has generally decreased over time, recent estimates of ratios greater than 1 indicate that coverage of rich households is greater than that of poor households (Figure 4).
- There is little evidence of inequality in vaccine coverage between male and female children; the ratio of coverage among male children to female children is indistinguishable from 1, indicating that coverage across sexes is approximately the same (Figure 4).

Figure 4: Ratios of DPT3 coverage by sex and wealth

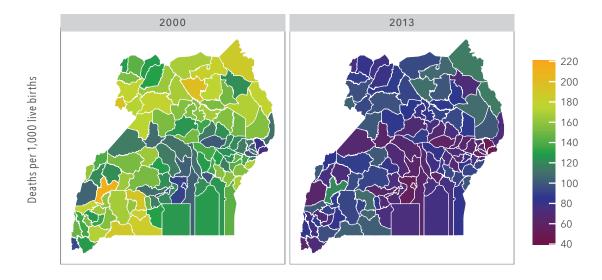
Wealth ratio is the ratio of DPT3 coverage in the richest quintile to coverage in the poorest quintile. Sex ratio is the ratio of DPT3 coverage in males versus females



#### District-level estimates indicate large disparities in under-5 mortality among districts.

- In both 1990 and 2013, children living in districts in the northeast and southwest generally experienced greater risk of under-5 mortality than children living in districts in the central regions near Kampala.
- While under-5 mortality and between-district inequality in under-5 mortality have declined in all districts, considerable disparities remain, with district-level under-5 mortality risk exceeding 100 deaths per 1,000 live births in approximately 12% of districts (Figure 5).

Figure 5: District-level under-5 mortality, using small area analysis techniques



These estimates should be interpreted with caution. In some cases different surveys give disparate results, suggesting data quality issues. Additionally, not all data are identified at the lowest geographic level.

## RESOURCES used for immunization

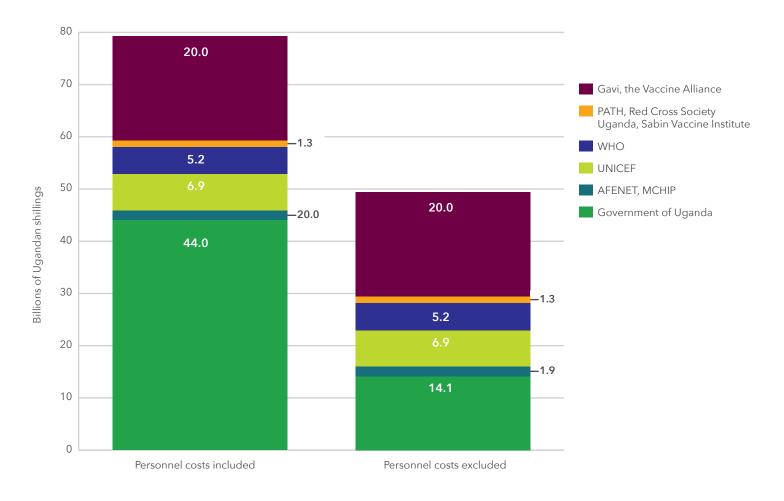
The FCE conducted a detailed resource tracking study in Uganda in 2014 to estimate the total envelope of resources for immunization activities in 2013.

#### Primary sources of funding

The primary funding sources for immunization in Uganda are the government of Uganda and Gavi.

- If personnel costs are included, the total amount of funds to support immunization activities in 2013 was 79.3 billion shillings, with government contributions representing 55% of all spending on immunization and Gavi funds representing 25% (Figure 6).
- If personnel costs are excluded, the total amount of funds supporting immunization activities in 2013 was 49.4 billion shillings, with government spending reduced to 29% (Figure 6).

**Figure 6:** Total sources of financing for immunization in Uganda in 2012 and 2013 in billions of Ugandan shillings, with personnel costs included and excluded



#### Sources of immunization expenditure

- The majority of resources are spent on facility-based routine immunization service delivery, which in this study includes expenditure on immunization outreach due to difficulty in teasing out expenditures specific for outreach-based services.
- The second-largest category was special programs (new vaccine introduction, campaigns, cars to support regional referral hospitals, and computers for EPI at the national level).

### Growth in the immunization resource envelope

• When we incorporate the results from the previous Expanded Program on Immunisation Costing (EPIC) study, the growth in the resource envelope for immunization is notable (Figure 7).

- The government contribution is substantial and has generally grown in line with the overall increase in the funding envelope.
- External support accounts for more than 40% of the envelope; Gavi is the most significant contributor.
- Gavi contributions are likely to increase, as most of the Gavi-supported PCV rollout was concentrated in 2014 and new Gavi support for initiatives like national HPV vaccine introduction is upcoming.
- There is an increasingly diverse body of contributors, which now includes USAID, African Field Epidemiology Network (AFENET), USAID's Maternal and Child Health Integrated Program (MCHIP), UNICEF, WHO, PATH, Red Cross Society Uganda, and Sabin Vaccine Institute.

Figure 7: Sources of immunization expenditure in 2012 and 2013 in billions of Ugandan shillings, including personnel costs



# ANALYSIS of major challenges and successes

We used a Root Cause Analysis (RCA) approach to identify the root causes of observed successes and failures.

- A "root cause" is a key factor in a causal chain of events that, if removed from the sequence, would prevent the final undesirable or desirable event from occurring or recurring.
- The RCA and accompanying diagrams were produced by testing assumptions against multiple data sources and through collective deliberation.

Each finding is accompanied by a ranking that reflects the robustness of evidence. The four-point ranking scale is summarized below:

	Ranking	Rationale
	А	The finding is supported by multiple data sources (good triangulation) which are generally of good quality. Where fewer data sources exist, the supporting evidence is more factual than subjective.
	В	The finding is supported by multiple data sources (good triangulation) of lesser quality. Where fewer data sources of good quality support the finding (limited triangulation), the supporting evidence is perhaps more perception-based than factual.
	С	The finding is supported by few data sources (limited triangulation) and is perception-based, or generally based on data that are considered to be of lesser quality.
	D	The finding is supported by limited evidence (single source) or by incomplete or unreliable evidence. Findings with this ranking may be preliminary or emerging, with active and ongoing data collection to follow.

### HUMAN PAPILLOMAVIRUS

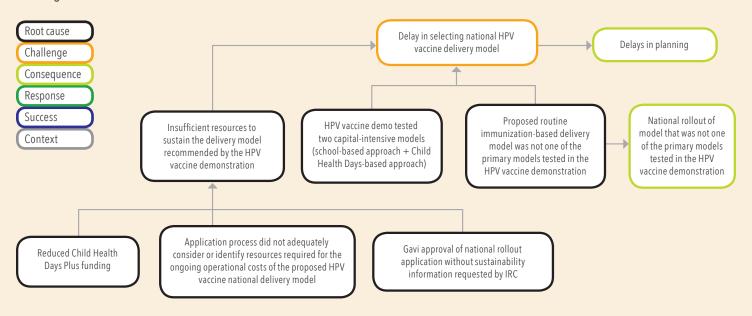
### vaccine demonstration project

Following the successful demonstration project of human papillomavirus (HPV) vaccine delivery in selected districts, the government of Uganda applied for Gavi support in September 2013 to introduce HPV vaccine nationally. The application was approved in March 2014, and the vaccine introduction was postponed to October 2015.

#### FINDING 1

Key steps in the application process failed to account for the feasibility, sustainability, and ongoing financial resources required for the chosen and tested HPV vaccine delivery model (a combination of school-based and campaign-based delivery) for national introduction. These failures include lack of participation in the application development process on the part of key partners who could have provided this financial perspective, and failure of the Independent Review Committee (IRC) review process to ensure that this information was provided prior to approval of the application. This led to a switch to a delivery model based on routine EPI that was not one of the primary models tested as part of the HPV vaccine demonstration project in Uganda.

### Root cause analysis of delays in selecting HPV vaccine delivery model Ranking: B



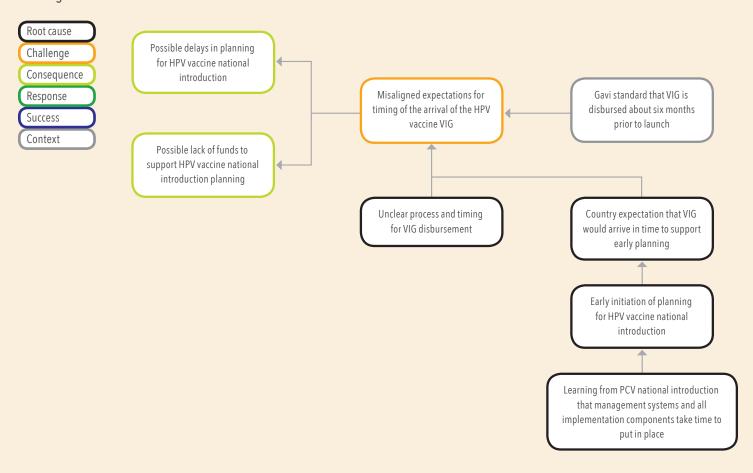
### RECOMMENDATIONS

- 1. Acknowledging that HPV vaccine targets a different age group than other routine vaccines, country governments, partners, and Gavi should more comprehensively consider the costs and plan for sustainability of the chosen national delivery strategy. As this is a specific criterion of Gavi's previous and new application guidelines, it is essential that this be included in the application materials and could be ensured by incorporating a section in the application template dedicated to the costing and planning for ongoing vaccine delivery. This information should be carefully reviewed by the IRC and Gavi Secretariat.
- MOHs, partners, and Gavi should increase efforts to integrate the Ministry of Finance into all immunization-related partnerships and the Ministry of Education for HPV-specific partnerships.
- 3. Country governments and partners when designing HPV vaccine demonstration projects should, where feasible, consider including different delivery models that vary in the resources required to implement them. For example, demonstration projects could test whether a lower-cost option of integrating HPV vaccination as part of the routine EPI delivery system is effective.

### FINDING 2

Lessons learned from the introduction of PCV led to the Uganda National Expanded Programme on Immunisation (UNEPI) and partners initiating the preparatory phase for the national HPV vaccine introduction earlier than past vaccine introductions. However, there was uncertainty among in-country stakeholders as to when the Vaccine Introduction Grant (VIG) funds would arrive in country to cover the costs of the preparatory activities. This is the result of a mismatch in the understanding of the procedures and timeline for the disbursement of the HPV vaccine introduction grant between the Gavi Secretariat, UNEPI, and partners.

### **Root cause analysis of progress in HPV vaccine planning and preparation** Ranking: C



#### RECOMMENDATION

The Gavi Secretariat should establish a formal process for requesting vaccine introduction grants which should include details on the timing of disbursement.

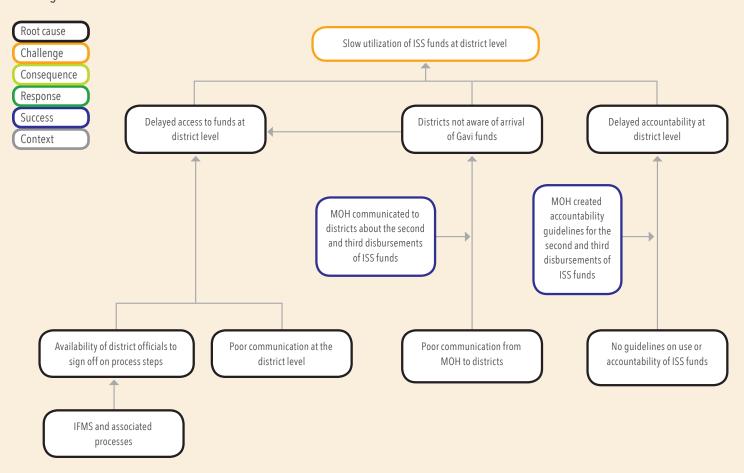
## HEALTH SYSTEM = strengthening

The government of Uganda was approved for Gavi Immunization Services Support (ISS) cash support in 2000 and Health System Strengthening (HSS) cash support in 2007. In 2006, the Gavi Secretariat suspended cash transfers to the Government of Uganda following misuse of the funds. The suspension, though lifted in 2013, resulted in the need to reprogram and resubmit the HSS proposal, which was approved by Gavi in March 2014. In November 2014, a tripartite agreement was signed by Gavi, UNICEF, and the government of Uganda in order to transfer HSS procurement funds from the government to UNICEF.

#### FINDING 1

Challenges with the integrated financial management system (IFMS), poor communication between national and subnational levels, non-integration of ISS into the district planning cycle, and a lack of guidelines for districts on how to spend and account for ISS funds have led to slow utilization of ISS funds in Uganda. Notably, the Ministry of Health (MOH) has addressed these challenges; they sent advance communication to districts to notify them of future ISS disbursements and provided guidelines detailing how these funds were to be utilized and accounted for.

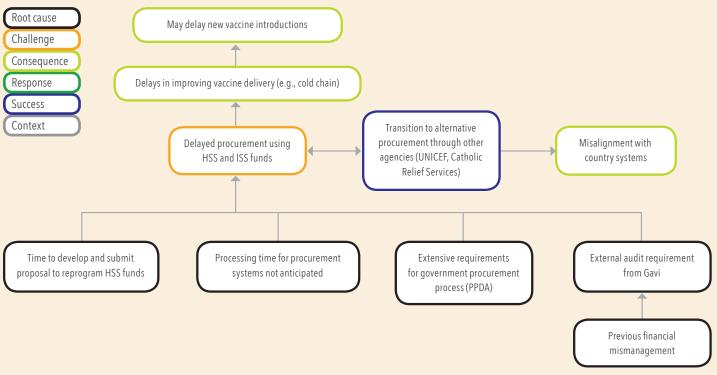
### Root cause analysis for slow utilization of ISS funds at the district level Ranking: A



#### FINDING 2

Both HSS and ISS implementation were delayed by the protracted time period required for procurement of equipment and civil works through the Uganda government system and the subsequent transition of procurement to non-governmental partners. These delays were exacerbated by the concurrent reprogramming of HSS funds. The country did not anticipate the time that the procurement transition would take and did not fully realize the implications it would have on spending all HSS funds within the specified support window.

## Root cause analysis for delayed procurement using HSS and ISS funds Ranking: C



#### RECOMMENDATIONS

- The Uganda MOH should ensure adequate and timely communication to subnational levels about Gavi cash support so that funds are integrated into the district planning process. The MOH should ensure that Gavi cash support is disbursed to the subnational level with accompanying guidelines on use and accountability.
- The application and planning process for HSS (and other new vaccine introductions dependent on HSS funds) should more realistically take into account the time required for government systems (e.g., PPDA, IFMS) and
- the time needed for reprogramming. Gavi should consider the time required for reprogramming when setting specified support windows.
- 3. Country governments, partners, and the Gavi Secretariat should more carefully consider the implications on country alignment and efficiency of deviations from government-based systems of funding and procurement. Decisions to switch to alternate funding channels should further consider the time required to undertake these transitions.

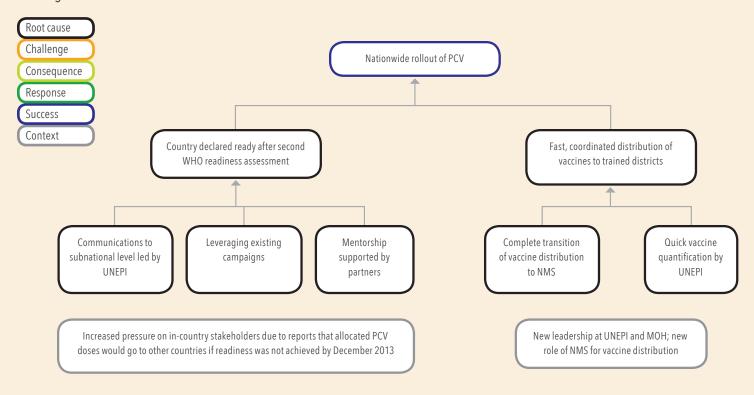
## PNEUMOCOCCAL = conjugate vaccine

Introduction of pneumococcal conjugate vaccine (PCV) in April 2013 was limited to the Iganga district because most districts had not yet held training and were deemed not ready for introduction. After the initial launch, challenges with training quality contributed to a failed WHO readiness assessment in September 2013. The country successfully passed a second readiness assessment in December 2013. All districts were trained and delivering PCV by June 2014.

#### FINDING 1

As documented in the 2013 Gavi FCE report, despite plans to rapidly roll out PCV nationwide after the initial PCV launch in one district in April 2013, a WHO readiness assessment in September 2013 determined that the MOH was not prepared to introduce PCV. In the wake of this assessment, stronger in-country partnerships emerged between UNEPI, National Medical Stores (NMS), and other non-governmental partners to mentor and reorient health workers, achieve readiness, and distribute vaccines to all districts, ultimately leading to nationwide rollout.

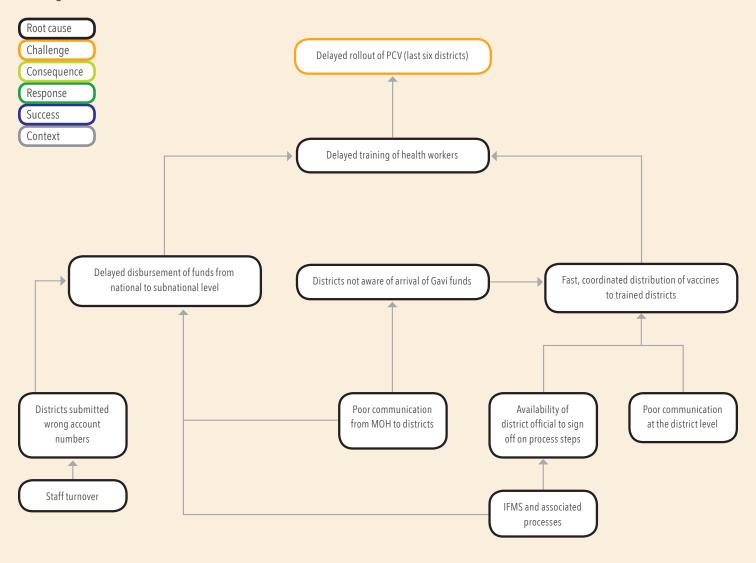
### Root cause analysis for nationwide rollout of PCV Ranking: A



#### FINDING 2

Although the majority of districts received PCV within one month after WHO declared the country ready, a number of districts experienced continued postponements in the introduction of PCV due to delayed training of health workers resulting from delayed access to funds at the district level. The underlying causes of the delays were staff turnover that led to new district staff submitting incorrect account numbers to the national level, the multi-step process of transferring funds from the national to district level through IFMS, and poor communication at various levels.

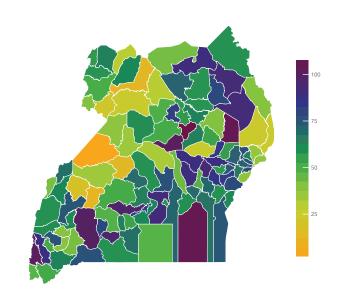
### Root cause analysis for the delayed rollout of PCV in six districts Ranking: A



#### **PCV** coverage

HMIS data indicate that PCV routinization had progressed, but was not complete, by September 2014 (Figure 8). Additionally, data show national coverage of the third dose of PCV reached 61% in September 2014. Coverage estimated by HMIS data is challenging to interpret because of uncertainty related to the denominator (district-level infant population projections) and the unknown completeness of reporting from all facilities. Alternative sources of data are required in the short term, at least in supplement to HMIS, to accurately estimate PCV coverage (Figure 8). The household survey, planned as part of the Gavi FCE, is an important source of information to verify PCV coverage.

Figure 8: PCV coverage (third dose) computed from HMIS, September 2014



## **UPCOMING** areas of evaluation

### Inactivated polio vaccine

In 2014, the government of Uganda applied for Gavi support for IPV with an introduction date set for May 2015. The process of applying for IPV was less time-consuming than other new Gavi vaccine introduction applications and included a more limited set of country-level partners. The FCE team will continue to track developments related to the planning and implementation of IPV, as well as the possible consequences of a smaller and less inclusive partnership on implementation success and country ownership.

# CROSS-STREAM findings for Uganda

### Challenges in planning, but learning from past experience

Failure to align with district-level planning processes hindered the implementation of Gavi funds at the subnational level for both PCV rollout and ISS.

- ISS and PCV funds were disbursed to districts off-cycle and independent of the annual district planning and budgeting process, requiring the submission of supplementary budgets to district councils for approval. ISS and PCV implementation plans did not account for this additional time.
- Plans for procurement of equipment and civil works under HSS and ISS did not account for the time required to follow the PPDA guidelines and subsequent review and sign-off by the technical assistance group (Edes & Associates).

Government and country-level partners are learning from past experience regarding the need to begin the planning and implementation process early.

- A key lesson learned from the PCV introduction process was that planning should begin far in advance of the anticipated launch date, and training of health workers should occur concurrently in all the districts and in close proximity to the launch date.
- Strategies for the national introduction of HPV vaccine, planned for April 2015, take this lesson into account.

### Misalignment with country processes and systems

In general, a common challenge is misalignment of the structure of Gavi support with country processes and systems.

Important examples of misalignment include the following:

- The shift from the government of Uganda (GOU) PPDA to procurement through an alternative system;
- The absence of integration of Gavi ISS funds into the district planning cycle;
- The Gavi requirement that the GOU submit audited financial reports at the beginning of each calendar year, which was inconsistent with the Ugandan financial year; and
- The Gavi request that the GOU generate financial reports using a Gavi-specific template while the Integrated Financial Management System was already programmed to generate generic financial reports.

While each of these factors has a rationale behind it, Gavi and countries should carefully consider the implications on alignment with country processes and systems.

### Central capacity and competing priorities

In general, implementation plans for Gavi support do not account for competing priorities that the EPI program must also manage.

- Implementation of Gavi-supported work is concurrent with the provision of routine immunization services and other immunization initiatives, with UNEPI responsible for carrying out all immunization-related activities.
- Gavi-supported work stalls when competing priorities like periodic mass campaigns require UNEPI's full attention.
   Similar to the PCV introduction, the process of planning for HPV vaccine introduction was overshadowed by the upcoming house-to-house countrywide polio campaign, which was scheduled to start in December 2014.
- The FCE continues to track how the polio campaign affects preparation for HPV vaccine introduction.

### **Emerging partnerships**

There are strong emerging partnerships between the country government and country-level partners that are improving processes and building trust in the context of limitations in central planning capacity.

• Notable examples of well-coordinated partnership include the following:

After the first WHO readiness assessment declared the country not ready for PCV introduction, the MOH appealed to partners to support the country in achieving readiness before the second assessment. In a short time, many country-level partners conducted mentorship sessions for health workers in all regions of the country.

The HPV vaccine application process exhibited a dense and well-organized partnership, involving many more partners with strong ties and trust. As a result, the HPV vaccine application process was smooth.

There was gradual strengthening of partnership through previous experiences with PCV, polio, and measles campaigns, as well as the HPV vaccine demonstration project.

- The Ministries of Finance and Education were not frequently named by respondents as participants in the HPV vaccine application process; this may have led to gaps in budgeting and planning for financial sustainability for HPV vaccine during the application process.
- The IPV application did not leverage this growing partnership; fewer partners participated in the IPV application pro-

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cess, and the level of trust was perceived to be lower. Respondents attributed the different structure and nature of the IPV partnership to the "global push" to introduce IPV, as well as the shorter application period.

Subnational communication challenges

Findings revealed communication challenges between the national level and districts.

- Communication between the national level and districts
  with regard to both PCV VIG and ISS funds was not timely
  or comprehensive. Communication that ISS funds would be
  disbursed to districts in the 2013-2014 financial year was not
  sent to districts. As a result, most districts did not plan or
  budget for these activities.
- When funds were disbursed to districts, the MOH initially did not provide districts with guidelines on how to use and

account for the funds, which led to delays because districts could not utilize the funds immediately.

#### Communication challenges were noted within districts.

- Districts in Uganda operate through a semi-autonomous decentralized system in which all funds pass through one district general account whose signatories are the Chief Administrative Officer (CAO) and the Chief Finance Officer (CFO). The District Health Officer (DHO) must receive approval from both the CAO and CFO to access funds.
- We observed a few instances of miscommunications between departments within the district, in combination with time constraints of district officers that resulted in delays in accessing immunization funds.

## CONCLUSIONS

With support of Gavi, the government of Uganda and country-level partners implemented three Gavi streams of funding in 2014 (HSS, ISS, PCV), with plans to roll out new vaccines (IPV, HPV vaccine) in a phased approach in 2015.

- Complete nationwide rollout of PCV, achieved in the last remaining districts in June 2014, was an important accomplishment.
- The country also successfully applied for and received approval to introduce IPV and HPV vaccine nationwide.

The government is drawing from lessons learned through past experiences implementing Gavi support as government and country-level partners plan to introduce two new vaccines in 2015.

Key lessons learned from the slow PCV introduction process have been adopted into plans for the national introduction of HPV vaccine.

Implementation of Gavi support in Uganda still faces planning challenges, especially regarding planning achievable timelines and competing EPI priorities.

• However, there are instances where the structure of Gavi support is misaligned to country processes and systems.

## POSITIVE AND NEGATIVE

### unintended consequences of Gavi support

### Emergence of a strong and effective partnership of immunization stakeholders

- This is reflected in the support from country-level partners to achieve PCV readiness status and in the HPV vaccine application process. However, there remains room for improvement in the partnership, as evidenced by the inadequate assessment of financial sustainability included in the HPV vaccine national introduction application.
- The increasing role of partners is also reflected in the resource-tracking work, with absolute increases from 2010 to 2013 in the amount of funding for immunization in Uganda contributed by partners.

### Reduced country ownership of IPV introduction

- The perceived "global push," in line with the Global Eradication Strategic Plan, was encouraged by the design of Gavi support with incentives such as the co-financing waiver and a shorter application. While this contributed to a faster and smoother application process, fewer partners participated in the IPV application process, and the level of trust was perceived to be lower.
- We will continue to track these partnerships as a focus of the FCE in 2015.

### Improvement in communication between Gavi Secretariat, Vaccine Alliance partners, and the government of Uganda

• Gavi's decision to hold in-country meetings to discuss concerns about the Annual Performance Report may have contributed to this positive unintended consequence.

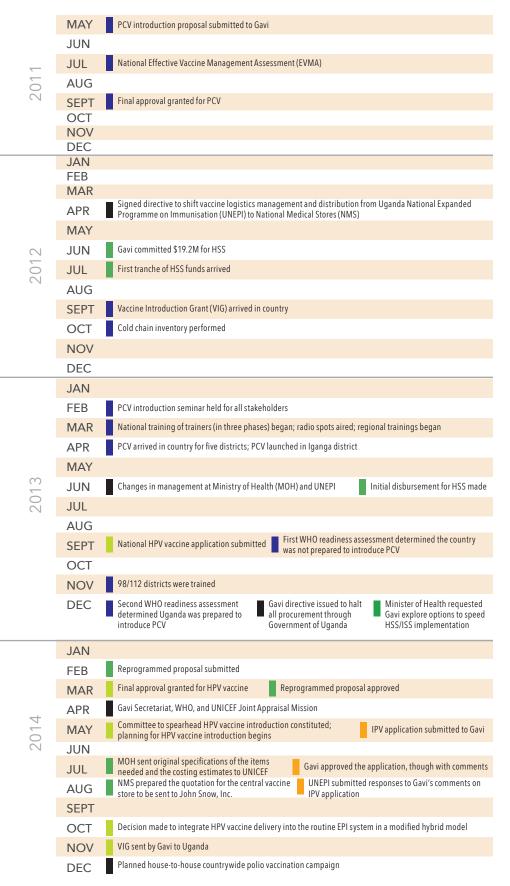
## Unanticipated delays on HSS implementation caused by the decision to transfer procurement of items under HSS from MOH to other agencies

- This transition met several unanticipated challenges, including withdrawal of one of the agencies (John Snow, Inc.) that was requested to construct the central and district vaccine stores. Furthermore, non-governmental agencies will charge a 10% fund management fee that was not originally budgeted for in the HSS reprogrammed proposal.
- This may have negative unintended consequences on the timely introduction of other new vaccines, notably HPV vaccine and IPV in 2015, since the MOH had anticipated leveraging the purchases under the HSS and ISS grants to expand the cold-chain storage space for the new vaccines.

### Possible stimulation of funding from government and other donors

- Both the government of Uganda's and Gavi's total amount of spending on immunization activities in Uganda has grown over the past four years. The total envelope for spending has increased, and Gavi has remained the most significant contributor to the EPI program outside of Uganda.
- Gavi's support is potentially catalyzing funds from the government as well as from other donors.

## TIMELINE of major immunization events in Uganda



#### Streams of support evaluated in 2014

- Implementation of pneumococcal conjugate vaccine (PCV)
- Human papillomavirus (HPV) vaccine demonstration
- Cash-based support through Health System Strengthening (HSS)
- Inactivated polio vaccine (IPV)
- Not vaccine-specific

