



Zambia

2018

The Gavi Full Country Evaluations (FCE) are mixed-methods, prospective evaluations in Mozambique, Uganda, and Zambia, and funded by Gavi, the Vaccine Alliance. The second phase of the FCE (FCE2), implemented from 2017-2019, aims to identify drivers of vaccine coverage and equity with an emphasis on Gavi's contribution. Evaluation results are intended to support the ongoing learning and improvement of Gavi and national immunisation programs. The implementation of FCE2 is guided by a number of principles to ensure the usefulness, relevance, and quality of FCE2's findings and of the sustainability and transferability of the platform beyond FCE2. In Zambia, the FCE is implemented by the Department of Economics at the University of Zambia.



Photo: PATH

This brief summarizes the findings from the first report of Gavi FCE Phase 2 of Gavi FCE. Full reports are available at <https://www.gavi.org/results/evaluations/full-country-evaluations/>.

METHODS

The Gavi FCE triangulates multiple sources of data to answer predetermined evaluation questions. To generate the evidence and findings presented here, we used:

- **Document review:** National Health Strategic Plan, comprehensive Multi Year Plans, New Vaccine Support applications and decision letters, Programme Capacity Assessments, Sixth and Seventh National Development Plans, Zambia Demographic and Health Survey, Living Conditions Monitoring Survey.
- **Meeting observations:** Inter-Agency Coordinating Committee, technical working groups.
- **Key informant interviews.**
- **Statistical analysis:** DHIS2 monthly data (2013–2017) and government health expenditure.

Key immunisation activities evaluated

- Routine delivery of vaccines, with a focus on coverage and equity.
- Application for the national introduction of HPV vaccine.
- Financial and programmatic sustainability of the gains in coverage secured by Zambia Expanded Programme on Immunisation's efforts.
- The comprehensive Multi-Year Plan process and usage.

SUMMARY OF RECOMMENDATIONS

- 🎯 **Urgent attention:** The immunisation programme needs to expedite learning from initiatives such as ZEIR aimed at improving overall immunisation data quality and expand the same to provide appropriate information to the programme.
- 🔍 **Study further:** The immunisation programme should develop a framework for monitoring budgetary allocations and resource flows to the programme at the national and subnational levels to inform appropriate resource allocation, decision-making, and advocacy for needed investment in the programme.
- 🎯 **Urgent attention:** The government should invest in developing a financial sustainability plan and/or transition plan as soon as possible without waiting for Gavi support to start declining.

Improvements in vaccine coverage

Zambia has continued to broaden the Expanded Programme on Immunisation (EPI) in line with World Health Organization (WHO) recommendations for routine immunisation.

At the beginning of 2013, the programme included all eight of the WHO-recommended antigens; it has since introduced three-dose pneumococcal conjugate vaccine (PCV), two-dose rotavirus vaccine, and a second dose of measles-containing vaccine (MCV) in 2014, and it switched to a measles-rubella combination in 2016.

The 2015 and 2016 FCE reports documented improvements in the vaccine coverage rates across the

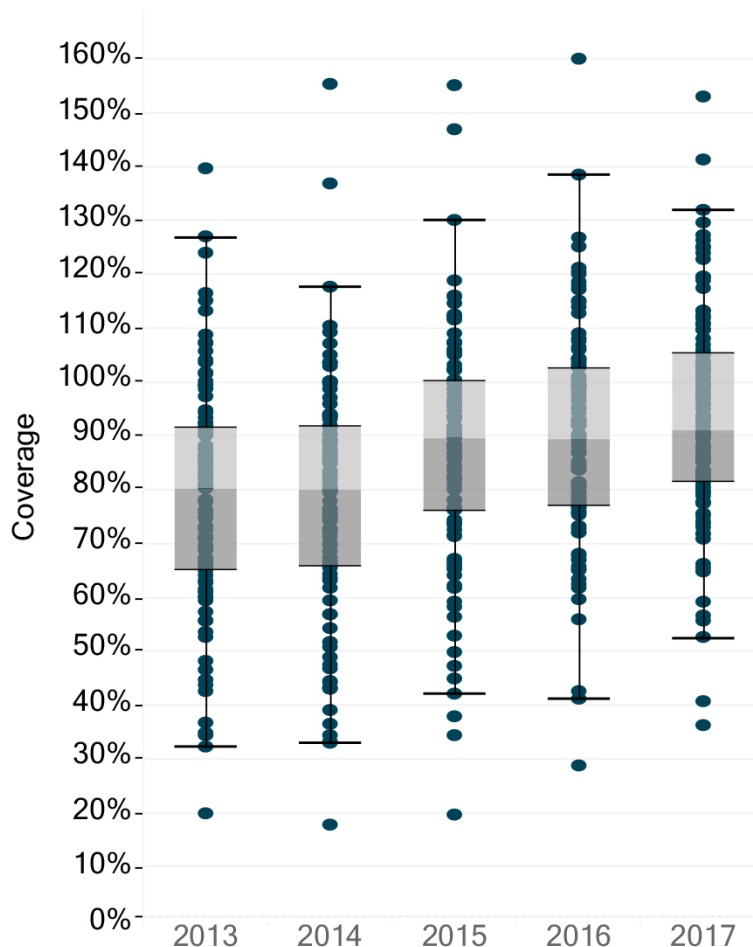
country. There was improvement both at the national and district level. The box plot in Figure 1 shows that fully immunised child under 1 (FIC 1) coverage rates have increased from 2013 to 2017.

The district-level median for FIC 1 increased from 80% coverage in 2013 to over 90% in 2017. The coverage trend is the same for specific vaccines, especially recently introduced ones (PCV and rotavirus).

These improvements in numbers of antigens in the EPI programme and coverage rates have been noteworthy. However, some challenges still remain. These include challenges relating to data quality, vaccine coverage equity, and sustainability of the coverage gains.

Figure 1. Fully Immunised Child Under 1 (FIC 1) National-Level Coverage

Each dot represents one district. The interquartile range, which captures the middle 50% of districts is represented by the shaded box in grey. Median national coverage is represented by the line between light grey and dark grey shading.



Source: Author generated based on DHIS2 data.

Continued data quality issues

There are continued data quality issues with the potential to affect monitoring and evaluation of the EPI programme.

Zambia has been having an unending debate on the accuracy of the population projections done by the Central Statistical Office (CSO). Most districts have claimed that the figures often underestimate the true target population in districts, resulting in over 100% coverage (see Figure 2). The underestimation of target populations also affects planning, leading to undersupply of essential commodities (including vaccines) to subnational levels.

Some data-quality problems are a result of a poor data culture among health workers. Health workers are

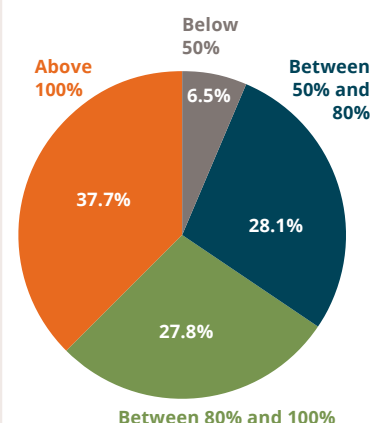
unable to detect data-entry errors at the point of entry. For instance, during the 2016 measles-rubella (MR) Supplemental Immunisation Activity (SIA) campaign, some facilities were reporting having immunised children in excess of the available doses. These problems continue to affect the accuracy of vaccine coverage results, raising concerns about the true performance of the country in vaccine coverage. This is evidence of weaknesses in the data, and coverage data must be understood with that caveat.

As an alternative to official figures, health facilities conduct their own headcounts, which in most cases are higher than the official figures. At the national level, several initiatives have been introduced to improve the quality and timeliness of data (see textbox below). The FCE has observed that these initiatives are yet to be formally evaluated, though plans are under way to scale them up.

Data quality initiatives

Efforts to improve data quality include PATH's Better Immunisation Data (BID) Initiative, which is contributing to the development of the Zambia Electronic Immunisation Registry (ZEIR). Alongside ZEIR is the UNICEF-supported mobile Vaccination (mVacc) tool, a community-based tool to register birth data. On logistics management, the programme has rolled out an electronic supply chain software programme, Logistimo, to help districts and health facilities to better manage vaccine logistics and provide an early signal on stock levels to the national level. In addition, the Zambian EPI is working on building a data-use culture among frontline health workers. As proposed in the draft EPI Optimisation strategy, "teaching basic data analysis skills, such as calculating percentages, enables facility staff to quickly spot errors or inconsistencies in the data and identify potential solutions to address them". The combination of these initiatives will improve the overall quality of data around the EPI programme, albeit in the long run.

Figure 2.
Fully Immunised Child Under 1 (FIC 1)
Vaccine Coverage
Categories in 2017



Source: Author generated based on DHIS2 data.

RECOMMENDATIONS



URGENT ATTENTION

- The immunisation programme needs to expedite learning from initiatives such as ZEIR aimed at improving overall immunisation data quality and expand the same to provide appropriate information to the programme.

Inequalities in coverage remain

Despite a noticeable increase in vaccine coverage, inequalities in coverage remain significantly high.

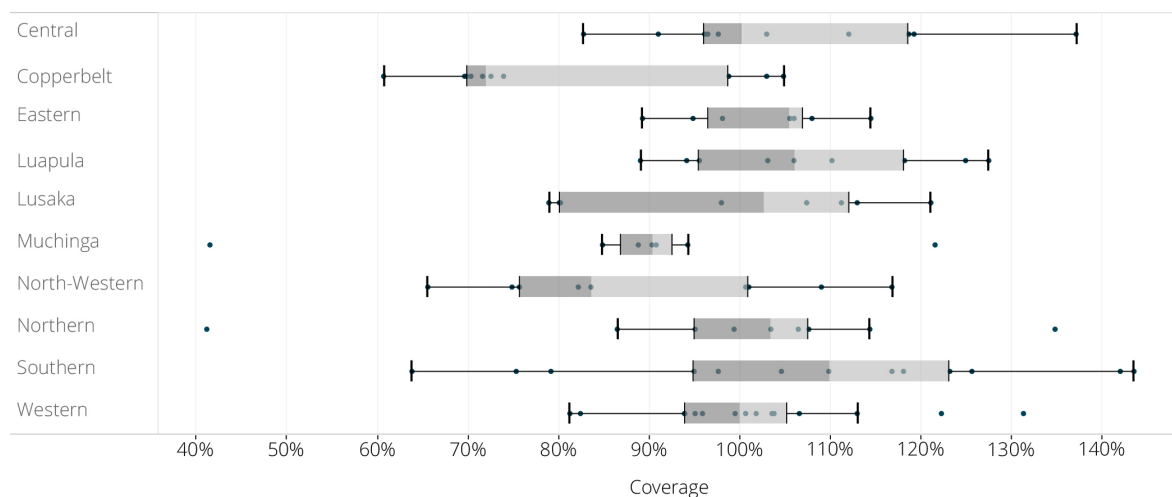
Coverage varies between districts, with not much change in the coverage spread across all districts from 2013 to 2017 as shown in Figure 1 above. The box plot in Figure 1 shows that geographic variations have consistently stayed the same, with an interquartile range of about 25 percentage points. Figure 3 shows huge variations both among provinces as well as within provinces for Pentavalent 3 (Penta 3) coverage, with some provinces recording above 100% median coverage, while others have a median just above 70%.

There is a high level of correlation in the ranking of districts for vaccine coverage between two successive years (average $r=0.68$). The consistency in the ranking over time suggests some districts face persistent barriers to improvement. This is supported by the findings from the 2016 Gavi FCE Annual Report, which showed that geographic equity ratios have hovered just below 2 for the last decade.



Photo: University of Zambia (UNZA)

Figure 3. Box Plot Showing Geographic Variations by Province for Penta 3 Vaccine Coverage in 2017



Source: Author generated based on DHIS2 data.

Strategies for addressing equity

In line with the current Gavi emphasis on equity, Zambia has recently increased its focus on achieving health equity.

To that end, the 2012–2016 comprehensive Multi-Year Plan (cMYP) for Zambia included ensuring that the benefits of immunisation are equitably extended to all people as a key objective.

The cMYP suggested three indicators of equity:

- Percentage gap in Penta 3 coverage between the highest and lowest socioeconomic quintiles.
- Number of districts with Penta 3 coverage of more than 80%.
- Number of high-risk communities identified for an accelerated routine immunisation programme.

Further, initiatives especially targeting needy communities have been introduced in response to

equity needs of the programme. For example, the implementation of the Reach Every Child (REC) initiative in all districts is another country effort to narrow the gaps in district-level coverage performance.

The REC initiative requires a strong outreach programme at facility level as well as supportive supervision. Unfortunately, evidence suggests that inadequate funding to the lower level has inhibited the conduct of outreach activities and microplanning. Supervisory visits also tend to be irregular, due to unavailability of necessary resources. The funding situation is likely to have a bearing on the success of the REC strategy.

The inclusion of equity indicators in the most recent cMYP and the implementation of the REC strategy

are evidence of country attention to the growing importance of vaccine equity. Further, the country is in the process of conducting an Equity for Immunisation assessment with support from UNICEF. The assessment is tailored to conduct an in-depth equity analysis focusing on the underlying factors (structural, cultural, and socioeconomic) of uneven immunisation coverage and will inform on the extent as well as the drivers of coverage variations.



Photo: PATH

Sustainability of gains in coverage

While coverage has increased, sustainability around gains in coverage and other improvements to EPI remain a concern.

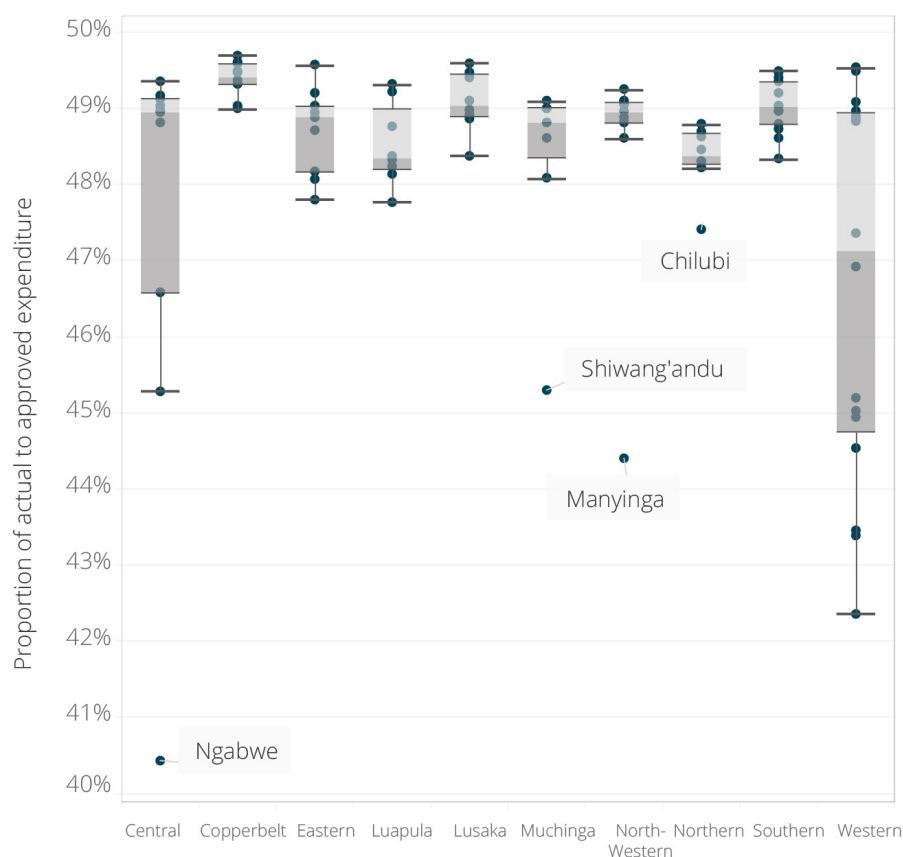
The Zambian EPI has scored many successes in recent years: several new lifesaving vaccines have been introduced and, importantly, coverage of all vaccines has increased in most districts as highlighted earlier. There have also been some improvements in terms of programme management. However, stakeholders have expressed concerns about sustainability of these gains. Zambia's immunisation programme

has expanded its portfolio with support from Gavi and local partners. As these new vaccines are now fully integrated into the routine, the costs of vaccines and delivery will need to be met by increasingly regular, sustainable financing. It is anticipated that government will be required to raise the level of domestic resource mobilisation to meet the projected increase in the funding gap over the next one to five years as external support is not expected to increase

significantly. This need comes against the backdrop of government failure to fund all planned activities, as shown in the ratio of actual to budgeted expenditures within each district in Figure 4. The immunisation programme is going to experience increasing financing challenges because of slow revenue growth from both government and partners and an increasing cost of sustaining high immunisation coverage.

Figure 4. Proportion of Actual vs. Budgeted Recurrent (Non-salary, Non-capital) Expenditure by Province

Most districts (where each district is represented as a blue dot) received less than 50% of their total recurrent budgetary allocations.



Further, a number of immunisation programmes and activities have been initiated with partner support, and there is an assumption that the government would provide ongoing recurrent budgetary support to sustain the associated delivery costs. Major challenges in this regard include:

- Modest economic growth and tight fiscal conditions in Zambia.
- The share of total public spending dedicated to health and immunisation has declined in recent years, indicating limited prospects in the short term for significantly increasing the share of domestic resources for health and immunisation.
- The donor landscape is showing a declining number of partners supporting immunisation, as well as a declining volume of support, implying that donor funding will remain low and unpredictable in the short term.
- Revenue potential from increasing allocative and operational efficiency of current spending on EPI is low.

The social health insurance (SHI) scheme has just been enacted, but we assess the revenue potential of this option to be low. The scheme captures all formal employees in both public and private sectors as contributors. The scheme is expected to generate a new revenue stream for the health sector, including immunisation. However, no estimates on revenue (and costs) are available yet. As a result, its potential to generate fiscal space for immunisation remains limited.



Photo: PATH

"I would say that the number of partners supporting immunization is not the same in the last three years or so. For example, I don't see Care, GSK, Child Fund, etc., anymore. Some of these smaller donors were crucial in providing support in a flexible and easier way than the bigger donors. In many instances, we relied on them to come to our aid when we had shortfalls at short notice. So, their absence will be felt."

—KII

RECOMMENDATIONS



URGENT ATTENTION

- The government should invest in developing a financial sustainability plan and/or transition plan as soon as possible without waiting for Gavi support to start declining.



STUDY FURTHER

- The immunisation programme should develop a framework for monitoring budgetary allocations and resource flows to the programme at the national and subnational levels to inform appropriate resource allocation, decision-making, and advocacy for needed investment in the programme.

Conclusion

Immunisation coverage rates across Zambia continue to increase year over year. The country has taken a number of steps to improve child immunisation, including the introduction of new lifesaving vaccines. However, continued data quality issues are hindering an accurate assessment of the country's performance. In addition, huge inequality in coverage still exist across provinces and districts, pointing to possible equity problems in access to immunisation.

NEXT STEPS

- **Subnational district case studies will be conducted to further investigate district-level coverage and equity trends, challenges and barriers, such as financial management, LMC, and data quality.**
- **The Zambia FCE2 team will implement a subnational expenditure tracking survey, and if possible will partner with the MOH on the HSS baseline survey to measure how costs vary by subgroups and how this aligns with district level expenditures and coverage. Further investigation will be done on the root causes of sub-optimal disbursement of immunisation operational funding from national to sub-national levels.**
- **National resource tracking surveys will be implemented to further understand expenditures and costs at the national level.**

ACKNOWLEDGEMENTS

The Zambian FCE team would like to express its strong appreciation to a number of institutions and individuals who made their evaluation work possible in 2017/8.

First, we convey our sincere gratitude to the Ministry of Health through the office of the Permanent Secretary (Technical). We thank all colleagues in the Ministry of Health who provided time, information and guidance to the work of this evaluation from point of formulating our thematic areas for this year to feedback on the report. We also thank all EPI partners at the country level who in various ways facilitated

the work of this evaluation and provided support and oversight to this evaluation since inception in 2013. Our thanks also go to health staff in the provinces that we visited in gathering data. Our thanks are also due to Gavi, the Vaccine Alliance, for the financial and technical support to this year's work. Particular appreciation to the M&E team, and Senior Country Manager for Zambia, and to the

Evaluation Advisory Committee for helpful comments on the report. All errors in this report do not represent in any way the views of the aforementioned institutions. The authors remain solely responsible for the content of this report.

