

Analysis of Immunisation Spending in Zambia:

Immunisation coverage improves, with government financing a key challenge



Zambia has achieved significant immunisation coverage, with the most recent (2013-14) Demographic and Health Survey (DHS) data showing national pentavalent vaccine (DPT3 + HepB + Hib) coverage rates of 85.8 percent (CSO, MOH and ICF 2014). According to WHO/ UNICEF estimates, DPT3 coverage in Zambia reached 91 percent in 2016 (WHO and UNICEF 2017). These estimates put Zambia closer to the Global Vaccine Action Plan (GVAP) global target of 90 percent for all vaccines by 2020.

Zambia's successful immunisation programme can be credited to a combination of key strategies by the government and partners including the Reach Every District (RED) strategy, organised child health weeks for those not immunised on schedule, increased community information/ education/communication campaigns,

strengthening of vaccine management systems, introducing new vaccines, integrating immunisation programmes, and improving surveillance and monitoring (MOH 2011). In terms of financing, efforts to mobilise domestic resources and to ensure sustainability of financing will allow Zambia to sustain and improve immunisation coverage in coming years.

Analysis of 2013-2016 immunisation expenditure data from the most recent Health Accounts exercise (Table 1) provides some insights into Zambia's immunisation financing landscape and implications for its national immunisation programme. Expenditure data for four consecutive years provide a unique opportunity to examine trends in immunisation spending. Health Accounts, produced using the internationally standardised System of

Health Accounts (SHA) 2011, allows a country to track the amount and flows of money in its health sector in one year. Expenditure data derived from Health Accounts inform health policy and programming in countries around the globe. While this brief uses full immunisation spending as a basis of analysis, the spending tables on routine immunisation per the WHO/ UNICEF Joint Reporting Form (JRF) Indicators for immunisation are available in the Annex.

Successes, challenges and recommendations to improving immunisation coverage in Zambia

Immunisation coverage increases from 2012 onwards

Zambia has more than recovered from a sharp

TABLE 1. KEY IMMUNISATION EXPENDITURE INDICATORS, 2013-2016

	2013	2014	2015	2016
Total spending on immunisation (USD)	21,579,937	26,910,877	33,096,947	34,917,790
Spending on immunisation as % of total spending on health	3.0%	2.4%	3.4%	3.5%
Sources of immunisation spending	Govt (19%) Donors (79%) Households (2%)	Govt (51%) Donors (45%) Households (4%)	Govt (35%) Donors (62%) Households (2%)	Govt (28%) Donors (70%) Households (2%)
Total spending on immunisation per live birth (USD)	37	46	50	53
Health care providers of immunisation services	Hospitals (7%) Health Centres (86%) Pharmacies (2%) Other (5%)	Hospitals (19%) Health Centres (75%) Pharmacies (4%) Other (2%)	Hospitals (12%) Health Centres (79%) Pharmacies (2%) Other (7%)	Hospitals (10%) Health Centres (69%) Pharmacies (2%) Other (19%)

decline in immunisation coverage between 2009 and 2012, which occurred in part due to operational issues, such as a shortage of necessary cold chain equipment and thus limited centres offering immunisation services. Since 2012, WHO/UNICEF estimates reveal a steep rise in DPT3 coverage, from an estimated national low of 78 percent in 2012, up to 91 percent in 2016. However, despite the rise in overall coverage, the 2013-14 DHS survey exposes the 15 percent gap in (pentavalent) vaccine coverage between provinces with the highest (Copperbelt) and lowest (Luapula) coverage, uncovering significant inequity between provinces. Low population density in certain provinces contributes to the difficulty in reaching the population. A key priority of Zambia's Expanded Programme on Immunisation (EPI), as stated in its Comprehensive Multi-Year Plan for Immunisation 2011-15 (cMYP), is the RED strategy to reach rural populations. *Reporting of financial expenditures by province, both by the government and implementing partners, can allow for monitoring of implementation of the RED strategy.*

Compared to other countries in the region and nearby, **Zambia's 2016 spending on immunisation (per live birth) is 53 USD, near the upper end of the range, with DPT3 coverage at 91 percent** (Figure 1). When compared to countries with similar immunisation coverage, in 2016 Zambia spent less per live birth. Zambia's coverage and spending in 2013 shows that in comparison to countries with similar coverage rates, Zambia's spending was on the higher side. Immunisation coverage in Zambia has increased with increased spending between 2013 and 2016. While these data suggest that the most recent immunisation spending in Zambia is efficient relative to other countries, further improvements in efficiency can lead to resource gains for the immunisation programme.

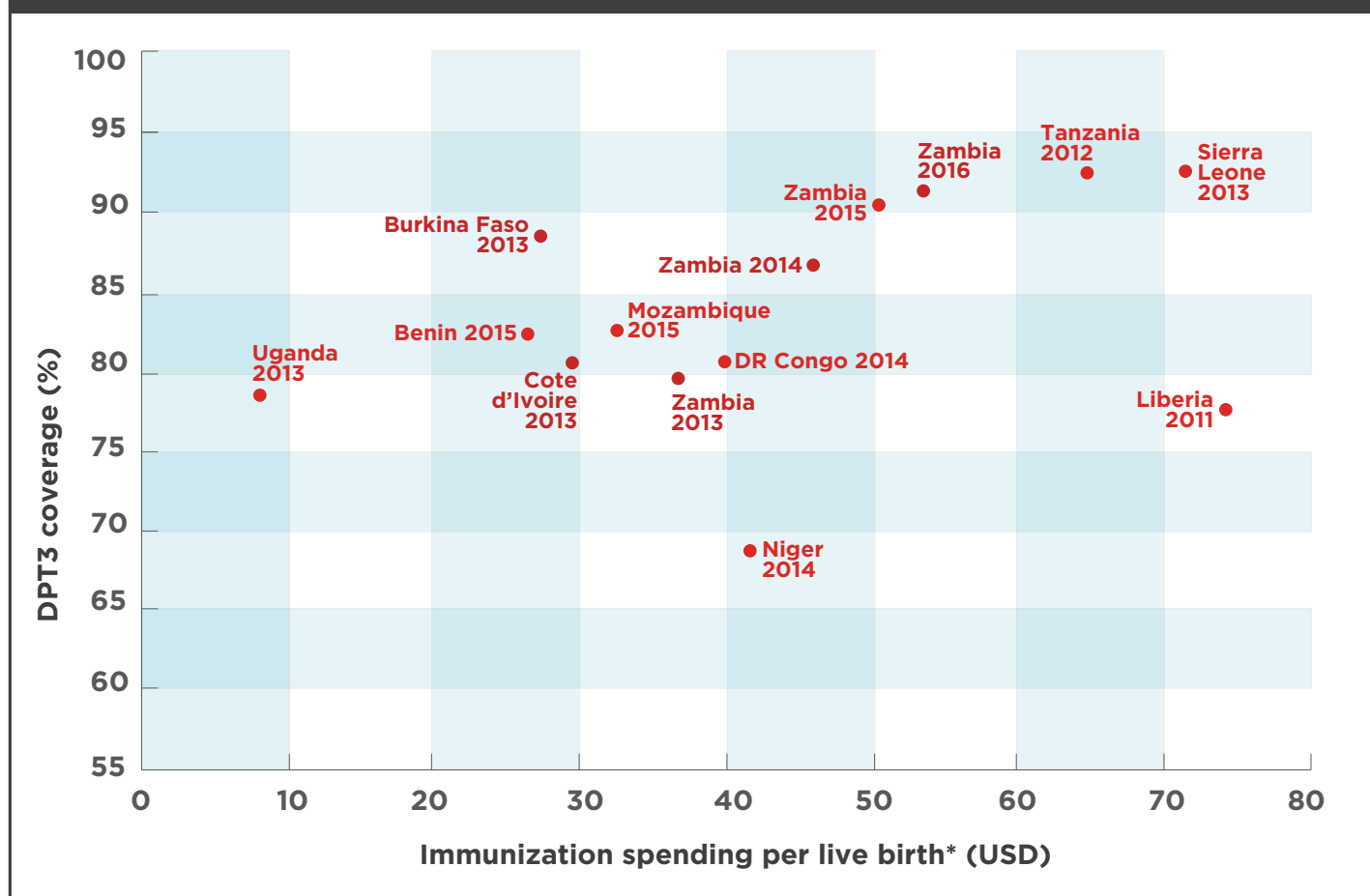
Government contribution to immunisation spending declines from 2014 onwards

The Government of Zambia has not increased its expenditure on immunisation in recent years. Between 2014 and 2016, the government's contribution to immunisation

spending actually declined from 13.7 million USD to 9.7 million USD (Figure 2). According to the 2016 Health Accounts results, over half of government funding for immunisation supported staff costs, while almost 40 percent went towards purchasing vaccines. However, it should be noted that as a proportion of government spending on health, funding of the immunisation programme remained mostly constant, suggesting that absolute decreases in government expenditure on immunisation are not related to a downgrade in priority, but rather to declining fiscal space for health.

Expansion in immunisation coverage over the last few years has been largely due to increases in external and not domestic funding. While this might be related to the introduction of new vaccines, this is a trend that should be examined, especially since Zambia is in the 'preparatory transition' phase of co-financing from Gavi, and is in discussions to be moved to the 'accelerated transition' phase, which comes with increased government contribution to vaccine costs (Gavi FCE Team 2017). The immunisation

FIGURE 1. IMMUNISATION SPENDING PER LIVE BIRTH* BY DPT3 COVERAGE**



*Immunisation (specifically, vaccine preventable diseases or VPD) expenditure per live birth was estimated by converting VPD expenditure per capita to expenditure per annual live births, using data from draft SHA reports, and population and fertility data from U.N. "World Population Prospects 2017". <https://esa.un.org/unpd/wpp/>

programme's ability to sustain and increase coverage relies on the government's ability to increase government funding so that coverage is not jeopardised if/when external funding decreases. Given the declining fiscal space to support health programmes, the Ministry of Health and immunisation programme need well-defined strategies to sustain current funding and to mobilise domestic resources for immunisation.

Furthermore, **spending on immunisation in Zambia has been less than resource needs as outlined in Zambia's cMYP** (MOH 2011). For 2015, resource requirements were outlined as 50.8 million USD in the cMYP. However, total immunisation spending amounted to only 33.1 million USD, leaving a gap of over 17.5 million USD and therefore one-third of the budget (plan) unfunded. Prior years had similar resource shortfalls, the largest of which in recent years amounted to 27 million USD in 2013. While resource requirements outlined in the cMYP are aspirational, efforts to reduce the funding gap are important to sustaining and improving immunisation services. Delayed and inadequate government funding and poor logistics management at the subnational level led to suboptimal immunisation coverage, as in the case of the PCV and rotavirus vaccines (Gavi FCE Team 2017).

The cost of vaccines comprises just over half of immunisation spending in Zambia. Strategies outlined in Zambia's cMYP to ensure sustainable funding for immunisation include integrating new vaccines into the medium-term expenditure framework and into the National Health Strategic Plan and budget. Prioritising immunisation in district budgets and action plans was also emphasised. Implementation of these strategies resulted in the EPI budget being nearly doubled, though the proportion that gets released is considerably lower. In general, the health budget far exceeds the funds spent in any given year, implying challenges with absorption capacity and liquidity.

Strategies to increase programme efficiency can also free up resources for the immunisation programme. Zambia's EPI may consider conducting an analysis of causes of inefficiency, to identify causes and put strategies in place to address them. Tools such as the Process Guide for PFM and Health Financing (WHO et al. 2017) and the new Health Systems Technical Efficiency Guide (HFG 2018) may help the EPI to assess its efficiency challenges.

Household spending on immunisation raises questions

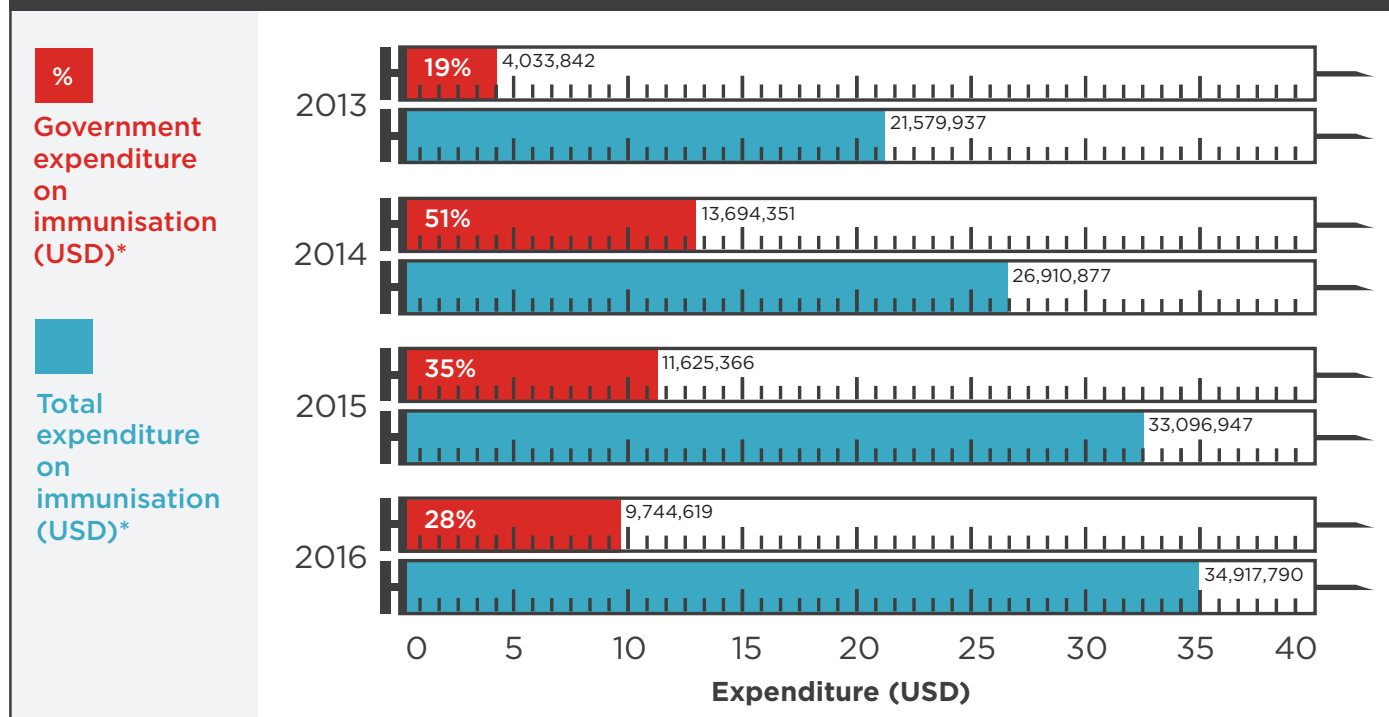
Household spending on immunisation between

2013 and 2016 ranged from 537,000 USD (2% of expenditure) in 2013 to a high of 981,000 (4% of expenditure) in 2014. Out-of-pocket expenditures raise questions about the origins of this spending, and whether strategies are needed to mitigate it. Unfortunately, the household survey, which the Health Accounts relied on for estimating the out-of-pocket payment and reason for the payments, does not provide further details beyond the money being spent on vaccination to explore why these payments occurred. While the share of household spending is only around 2 percent, it is significant and requires a closer look at why households are spending money on a service that should be free of cost.

Quality expenditure tracking data, at regular intervals, are desirable

Quality expenditure tracking data – collected at regular intervals – can serve as an important evidence base for strengthening Zambia's immunisation programme. **The recent Gavi Full Country Evaluation (Gavi FCE Team 2017) recommends regular expenditure tracking** to assist the immunisation programme to monitor expenditures and identify gaps. Spending data also allow for monitoring of spending on priority areas as outlined in the cMYP. The EPI should continue to liaise with the health financing directorate at the

FIGURE 2. ZAMBIA'S TOTAL AND GOVERNMENT EXPENDITURE ON IMMUNISATION, HEALTH ACCOUNTS 2013-2016



*includes expenditure on routine and supplemental immunization
 Source: MOH Zambia (2018)

TABLE 2. JRF IMMUNISATION FINANCING INDICATORS: HEALTH ACCOUNTS AND JRF ESTIMATES, 2013-2016 (USD)

	2013		2014		2015		2016	
	HA	JRF	HA	JRF	HA	JRF	HA	JRF
Total expenditure on routine immunisation	21,579,937	36,651,217	26,910,876	18,580,648	33,096,947	36,387,108	24,977,002	37,171,099
Government expenditure on routine immunisation	4,033,842	25,289,340	13,694,351	18,281,280	11,625,366	11,273,221	9,744,619	7,139,736

Source: WHO (2018)

Ministry of Health to advocate for the regular tracking of immunisation expenditure data.

Challenges to producing quality immunisation spending estimates exist. For example, in the current Health Accounts exercise, spending on immunisation is likely underestimated, as partners' expenditure reporting did not disaggregate spending by disease, which is key to assigning appropriate expenditures to immunisation. Furthermore, Health Accounts estimates for spending on routine immunisation do not match estimates reported in WHO/UNICEF's JRF (Table 2). While the Health Accounts results exhibit a similar yearly trend to the JRF estimates, some values differ significantly, with Health Accounts estimates being lower than JRF estimates in three of the four years. One possible explanation for the difference in 2016 estimates of total expenditure on routine immunisation is that the JRF value incorrectly includes expenditure for supplemental immunisation activities. Explanations for the discrepancies in Health Accounts and JRF data should be explored to ensure accurate reporting in subsequent years.

The EPI team and the team that produces Health Accounts data would benefit from working together to ensure that the government and key immunisation partners provide the necessary detailed expenditure data that would result in increasingly accurate estimates of immunisation spending. Increased detail, by activity, in government spending would also allow for monitoring of spending on priority strategies outlined in the cMYP. Understanding the needs of the EPI can lead to the production of Health Accounts estimates that can be used to inform programming and planning for the immunisation programme.

References

- Central Statistical Office (CSO) [Zambia], Ministry of Health (MOH) [Zambia], and ICF International. 2014. *Zambia Demographic and Health Survey 2013-14*. Rockville, Maryland, USA: CSO, MOH, and ICF International.
- Gavi Full Country Evaluations (FCE) Team. 2017. *Gavi Full Country Evaluations: 2016 Dissemination Report – Zambia*. Seattle, WA: IHME.
- Health Finance and Governance Project. 2018. "Health Systems Technical Efficiency Guide". Rockville, MD: Abt Associates Inc. <https://www.hfgproject.org/technical-efficiency-guide/>. Accessed June 2018.
- Ministry of Health (MOH), Zambia. 2018. *Zambia Health Accounts 2013-2016*. Lusaka, Zambia.
- Ministry of Health (MOH), Zambia. 2011. *Comprehensive Multi-Year Plan (2011-2015): Immunisation Vision & Strategy*.
- United Nations. 2017. "World Population Prospects 2017". <https://esa.un.org/unpd/wpp/>
- World Health Organisation (WHO). 2018. "Immunisation financing indicators from the WHO-UNICEF Joint Reporting Form". WHO. http://www.who.int/immunisation/programmes/systems/financing/data_indicators/en/. Accessed March 2018.
- World Health Organisation (WHO), Organisation for Economic Co-operation and Development (OECD) and Results for Development (R4D). 2018. *Aligning public financial management: a process guide for identifying issues and fostering dialogue*. (Health Financing Guidance Series No. 4). Geneva: WHO, OECD, R4D.
- World Health Organisation (WHO) and United Nations Children's Fund (UNICEF). 2017. "WHO – UNICEF Estimates of DPT3 Coverage". WHO. http://apps.who.int/immunisation_monitoring/globalsummary/timeseries/tswucoveredpt3.html. Accessed April 2018.