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Improving Immunization Programming in Mozambique: Insights from Health Expenditure Analysis

Immunization financing and population coverage improve, but challenges remain



Mozambique has made steady progress in immunization coverage, with DPT3 coverage increasing from around 76 percent in 2011 (MISAU et al. 2013) to 82 percent in 2015 (MISAU et al. 2015). The factors that have contributed to this success include increased political commitment to immunization, increased financial resources from Gavi, the Vaccine Alliance and other partners, and significant improvements in management and planning capacity within Mozambique's Expanded Program on Immunization (EPI). Improvements in cold chain systems for vaccines have led to increased equitable access to immunization services. While an increase in immunization coverage is commendable, additional efforts are needed to reach the Global Vaccine Action Plan (GVAP) target of 90 percent coverage for DPT3 vaccines by 2020.



Analysis of 2015 immunization expenditure data from the Health Accounts (Table 1) provides insight into Mozambique's financing landscape for immunization and its implications for achieving coverage targets. Health Accounts, produced using the internationally-standardized System of Health Accounts 2011, allows a country to track the amount and flows of money through its health sector in one year. Expenditure data derived from Health Accounts inform health policy and programming in countries around the globe.

TABLE 1. KEY IMMUNIZATION EXPENDITURE INDICATORS, 2015

MOZAMBIQUE HEALTH ACCOUNTS ESTIMATES - 2015	
Total spending on immunization	1.4 billion MZN (34,440,829 USD)
Government spending on immunization	295 million MZN (7,384,253 USD)
Sources of immunization spending	78% donors, 21% government, <1% households
Government spending on immunization as % government spending on health	2.5%
Total spending on immunization per live birth	1,304 MZN (33 USD)
Health care providers of immunization services	63% health care centers, 18% hospitals, 16% government health administration agencies, 2% providers of preventive care
Breakdown of immunization spending by goods, services, salaries	63% goods, 19% services, 18% salaries and compensation
Total immunization capital spending	None

Source: Ministry of Health (2018)

Success and challenges to improving immunization coverage in Mozambique

Successes

Spending on immunization matches resource needs as outlined in the 2015-2019 Comprehensive Multi-Year Plan (cMYP) for immunization (Ministry of Health 2014). The 2015 spending on immunization of 34.4 million USD (Figure 1) was close to 90 percent of the estimated 2015 resource requirement of 38.1 million USD. Spending on immunization appears to be sufficient, at least when compared to resource requirements. However, this level of spending is not yet achieving sufficient immunization coverage to reach the GVAP target of 90 percent for DPT3 coverage.

The government is gradually increasing its financial contributions to immunization, but is still heavily reliant on external funding. For the first time, the 2015 Health Accounts estimated the proportion of government's shared costs for immunization. In addition to co-financing direct costs such as vaccines, the government also contributes to the immunization program through payment of government health workers and general facility operating costs that are shared between different priority areas. The inclusion of these shared costs provide a more accurate picture of the government's contribution to immunization. In 2015, the government spent at least MZN 296.2 million (USD 7.4 million; Figure 1) on immunization, of which at least MZN 72 million (USD 1.8 million) was for vaccines. In addition to the government co-financing traditional vaccines such as BCG, measles and tetanus, it is also making a significant contribution to immunization through shared costs.

The government's contribution represents 8.4 percent of total vaccines spending and 21 percent of total immunization spending. The low proportion of vaccine spending by the government is attributable to the introduction of new vaccines, such as pentavalent, which are more expensive and which require a smaller government co-financing in the early years of introduction. Government's direct contribution to vaccines is likely to continue in the short to

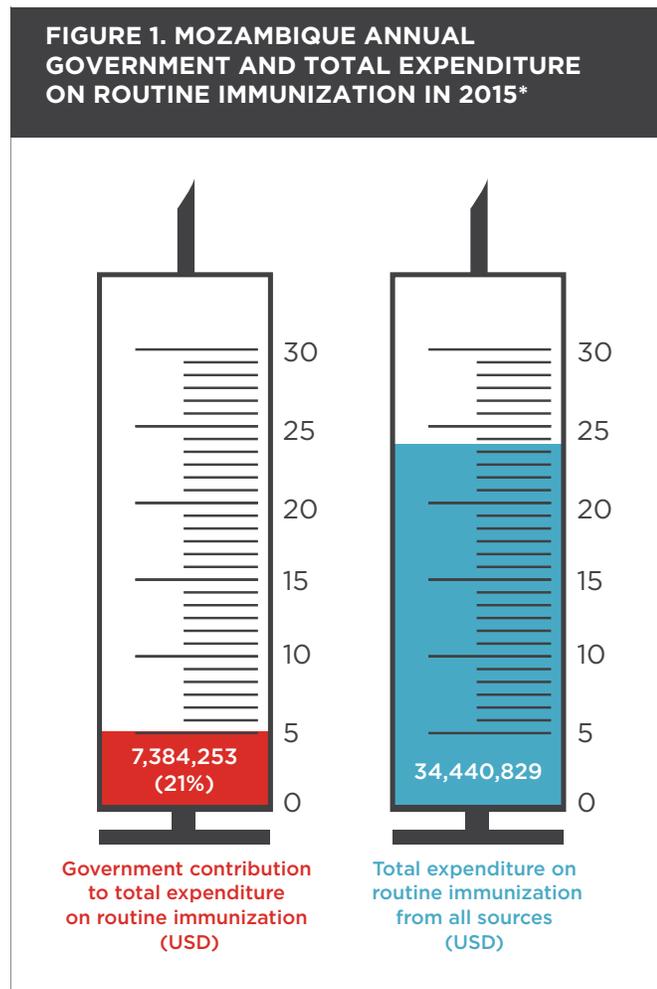
medium term, given Mozambique's low income status.

During the same time period when immunization spending increased, there was a steady increase in immunization coverage, and new vaccines were introduced as scheduled. According to survey estimates, DPT3 coverage has been increasing steadily since 2010, following a decline in the early 2000s. Furthermore, Mozambique's Expanded Program on Immunization successfully introduced the IPV, rotavirus, and measles second dose vaccines in 2015, which were key milestones for the program. While increased spending is contributing to increased immunization coverage rates, the current and next cMYP will need to assess how to achieve the global targets for immunization coverage; this may require a combination of efforts around financing and how key interventions are delivered.

Challenges and opportunities

Challenge: In 2015, 78 percent of immunization spending was from external donors. Though Mozambique is likely to maintain its eligibility for donor funding for the foreseeable future, it is important that the government maintains its contribution via co-financing vaccines as much as possible, supporting shared costs, and system strengthening costs (currently heavily supported by Gavi). Maintaining, if not increasing these contributions, will enable Mozambique to be better prepared in the long run, when it will eventually transition to the next co-financing stage, where increased government contribution will be expected.

Opportunity: Examine efficiency of immunization program further to identify where resources could be better used. With immunization spending in line with current



Source: Ministry of Health (2018)

needs, and with the Ministry of Health facing competing demands from different programs, allocating more government budget to immunization may be difficult in the near term. Improving efficiency in the use of existing resources for immunization will not only make those resources go farther, but demonstrating their efficient use and the results achieved may also help to make a better case for the Ministry of Finance and the Ministry of Health to increase allocations to immunization in the future.

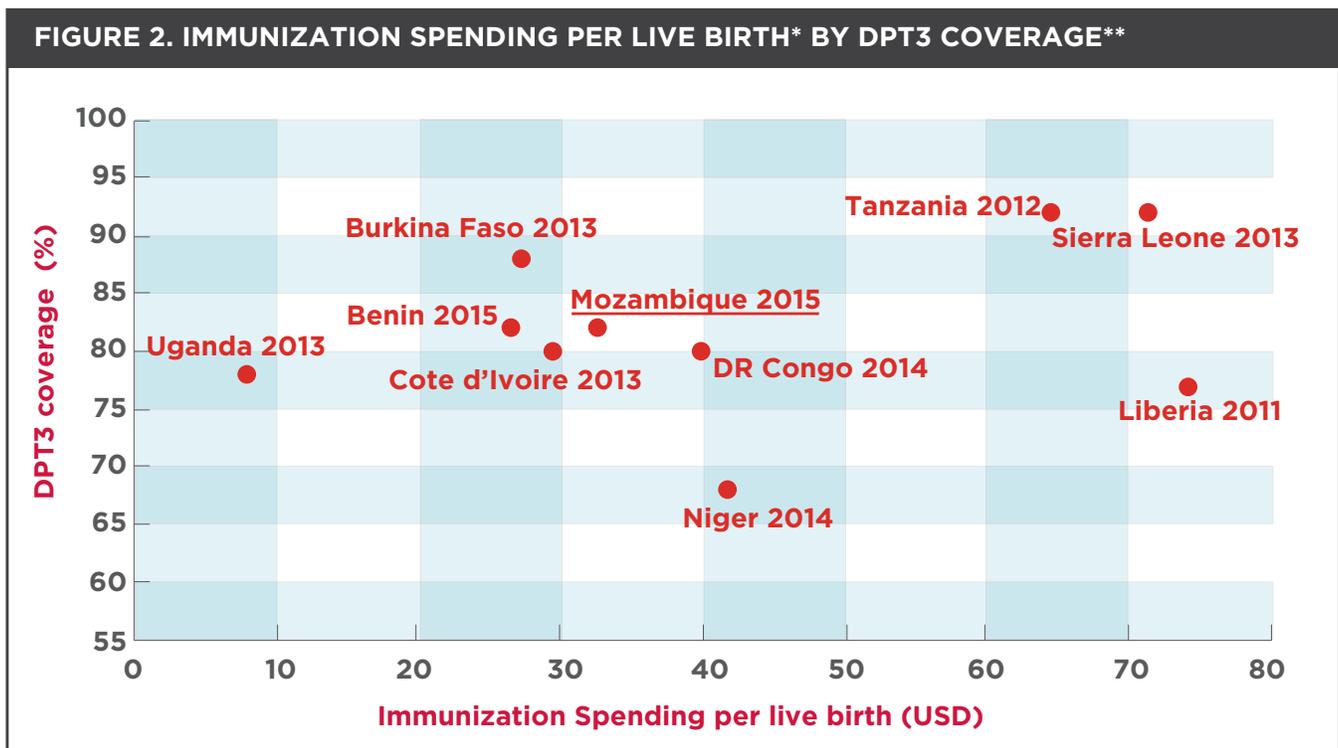
Experience from other countries and benchmarking may provide useful lessons about increasing efficiency of immunization activities. In comparison to other countries with similar DPT3 coverage rates, Mozambique's spending on immunization (per live birth) falls in the middle of the range (Figure 2). Mozambique spends 33 USD per live birth and achieves a DPT3 coverage rate of 82 percent. However, Benin, Burkina Faso, and Uganda have spent less on immunization but achieved similar DPT3 coverage rates. Learning from their experience may provide lessons about organizing and delivering immunization activities.

Recent research suggests that a number of countries see the most room for improving efficiency through addressing (i) human resources management and training, (ii) improved monitoring and supervision capacity and (iii) reducing vaccine wastage e.g. a multi-dose open vial policy (which Mozambique has already been implementing), and increased capacity in logistics/stock/information management (Kamara et al. 2008). The Health Systems Technical Efficiency Guide (HFG 2018) may help the EPI program to assess where its efficiency challenges lie.

Challenge: Mozambique's health financing data do not enable close monitoring of spending on immunization, which is key evidence to inform immunization programming. For example, intervention-based budgeting and expenditure data for immunization lack adequate detail to monitor specific interventions such as improving advocacy and communications, or the Reaching Every District (RED) strategy. During the Health Accounts exercise, the technical team was informed that data on how many, and which, vaccines are distributed to which types of facilities were not compiled at the national level.

Since delivery of immunization services is decentralized in Mozambique, data on immunization is currently compiled at the district level. The EPI may wish to explore mechanisms to compile both service-level and financial data at the central level, to identify and address geographical inequities that would be more easily done with data compiled at the national level.

The most recent Demographic and Health Survey (2011) (MISAU et al. 2013) shows higher DPT3 coverage in certain districts (Maputo, Gaza, and Safala have coverage rates exceeding 85 percent), while the overall national DPT3 coverage rate in 2011 was 76 percent. Expenditure data on geographic vaccine distribution and spending by regions (available through future Health Accounts) will help reveal geographical inequities. For example, these data could reveal whether the causes of lower coverage are related to insufficient spending on inputs such as health workers or vaccines, or whether the problem is related more to outreach or the way service delivery is organized. Analysis of spending by region and by key interventions will require better data reporting and compilation in the future.



*Immunization (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 System of Health Accounts reports, and population and fertility data from U.N. "World Population Prospects 2017" <https://esa.un.org/unpd/wpp/>

** DPT3 coverage: WHO and UNICEF (n.d.) estimate for year matching expenditure data.

Opportunity: Increase efforts by the government and implementing partners to report and compile data more effectively. Information on vaccine distribution by region and by type of provider, as well as expenditure data, will help EPI to have a more in-depth understanding of how immunization resources are being allocated and whether they reflect the country needs and priorities. More detailed tracking and reporting of expenditures will help future Health Accounts exercises to analyze immunization spending in a way that is useful to EPI. This detailed expenditure data will also help EPI to monitor progress against key strategies outlined in the cMYP.

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