

# Utilizing the WHO's System of Health Account Dimension for Tracking the Financial Flows of Indonesia's COVID-19 Vaccination Program

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- Indonesia's national COVID-19 vaccination program ran from 2021 to 2023.
- National and local governments repurposed existing resources to finance COVID-19 measures, including for vaccination
- Indonesia had reached >70% national target, however vaccination disparities remained across vulnerable groups and geographic
- Limited studies and evaluation assessing the expenditures of the COVID-19 vaccination program at the subnational level in Indonesia

- Objective: track the sources, allocation, and utilization of government expenditure for the COVID-19 vaccination program at the subnational level
- Scope: public COVID-19 vaccine-related expenditure at the provincial and district levels in 2021 and 2022; *routine immunization expenditure data were not collected*
- Data collection period: March 28 to June 30, 2023

- Mixed-methods:
  - Quantitative:
    1. **Expenditure tracking:** COVID-19 vaccination program expenditures in 2021 and 2022 through informant interviews, official reports, and program documentation.
    2. **Micro-costing** to calculate health intervention costs. Expert judgement approach employed due to unavailable data to estimate expenditure of resources, i.e. supplies, personnel, equipment, transport, and others for each service component.

- Qualitative to triangulate and contextualize findings, and explore implementation challenges
  - FGD with 24 key informants from 6 government agencies, 4 provincial health offices (PHOs), 4 District Health Offices (DHOs), and 6 civil society organizations (CSOs)
  - In-depth interviews with 4 PHOs and 4 DHOs,
  - Inclusion criteria: at least six months of work experience in finance, planning, or program departments, with knowledge of COVID-19 vaccination program financing.

# Sampling Criteria

- Provinces: primary dose vaccination coverage over 70%, between 50-70%, and less than 50%, feasibility of data collection and geographical diversity
- District: one district purposively chosen per province to capture intra-provincial variation, demographic, and geographical diversity

*Notes: Initially, two provinces and two districts were selected for each vaccination coverage category; Jakarta and Papua were later excluded due to incomplete expenditure data.*



**Fig 1. Map of Indonesia**

# Framework Analysis

- WHO System Health Account (SHA) 11 framework

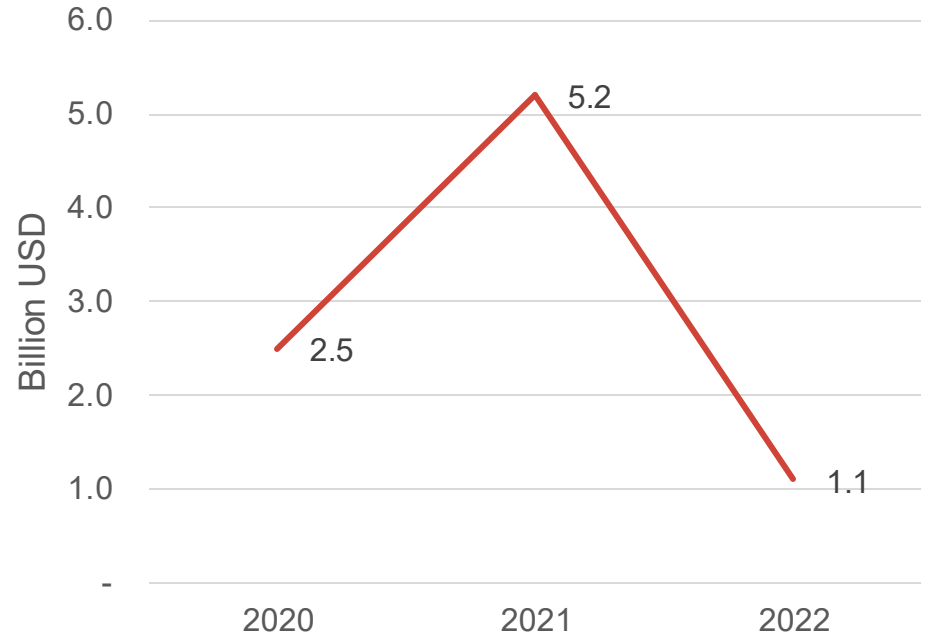
**Table 2. Description of Expenditure Tracking Dimensions**

No	Dimension	Description
1.	Financial Source (FS)	What sources of funds are received by each funding scheme.
2.	Health Care (HC) Function	The goods and services consumed by individuals or populations, i.e. curative, rehabilitative, preventive, long-term, supportive, medical, governance, administration, and financing.
3.	Programme (PR) Type	Whether expenditures are specific to a certain health program (COVID-19 Vaccination) or integrated with other health programs.
4.	Health Input (HI)	The type of input purchased by service/program providers to carry out activities, including operational, maintenance, and investment expenditure.

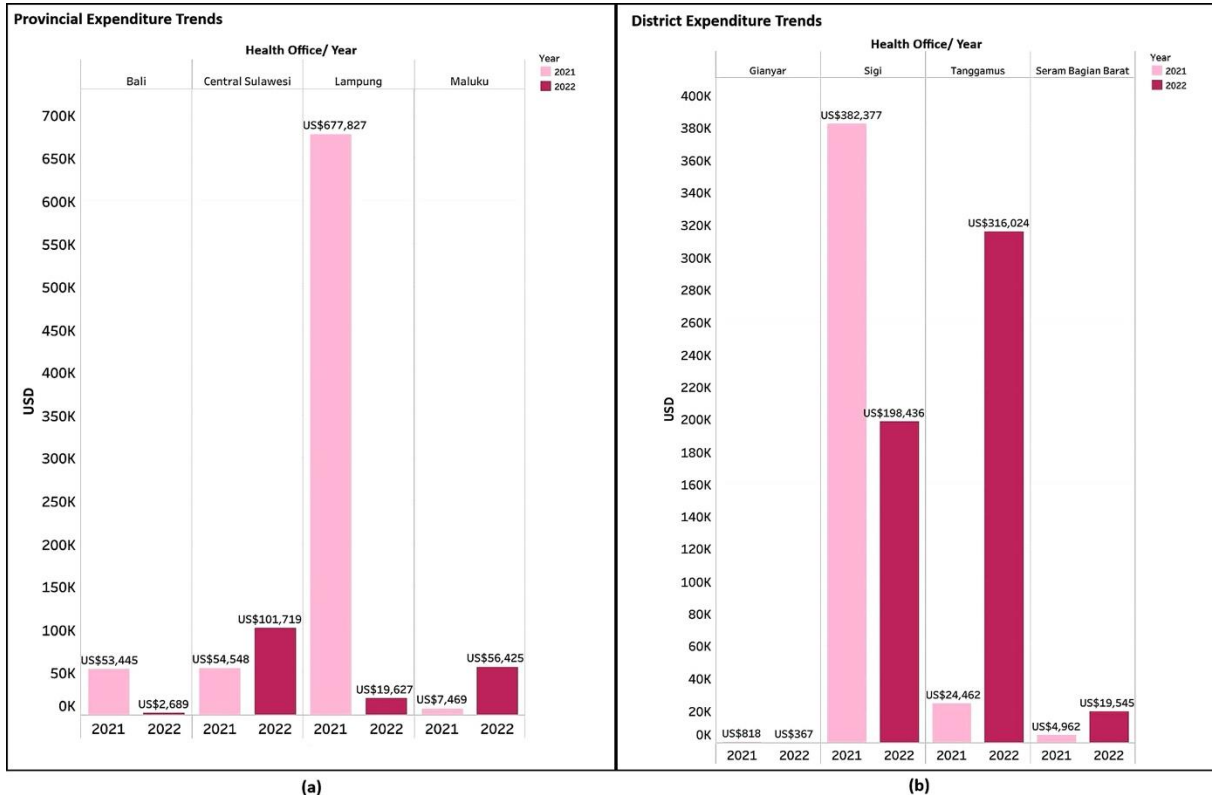
## National Level Trends in COVID-19 Vaccination Budget

### National level

- 2020: US\$2.5 billion was allocated, primarily for vaccine procurement.
- 2021: **The highest allocation**, reaching US\$5.2 billion (82% for vaccine procurement), driven by the national vaccine rollout and peak infection and mortality rates
- 2022: the allocation decreased significantly to US\$1.1 billion, reflecting reduced overall COVID-19 funding amid more controlled transmission and declining public demand for vaccination



# Subnational COVID-19 Vaccination Expenditure



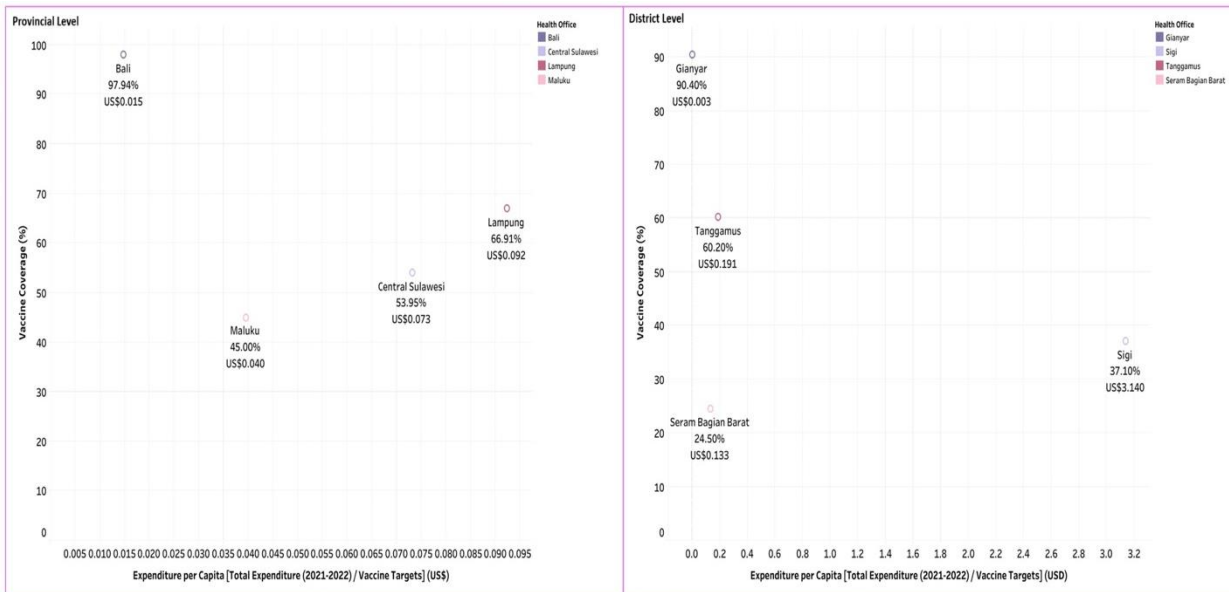
## Provincial level

- There was high variation across provinces, with some increasing or decreasing their budgets from 2021 to 2022, not always following the national trend.
- The highest expenditure made by Lampung PHO in 2021 for medical and cold chain procurement

## District level

- Provincial and district-level expenditures were not always aligned. For example, Central Sulawesi PHO and Sigi DHO
- Sigi DHO spent the highest in 2021, primarily for medical equipment and cold chain infrastructure, Gianyar had the lowest due to support from various stakeholders

# Total Expenditure of COVID-19 Vaccination Program Compared with Vaccination Coverage



(a)

(b)

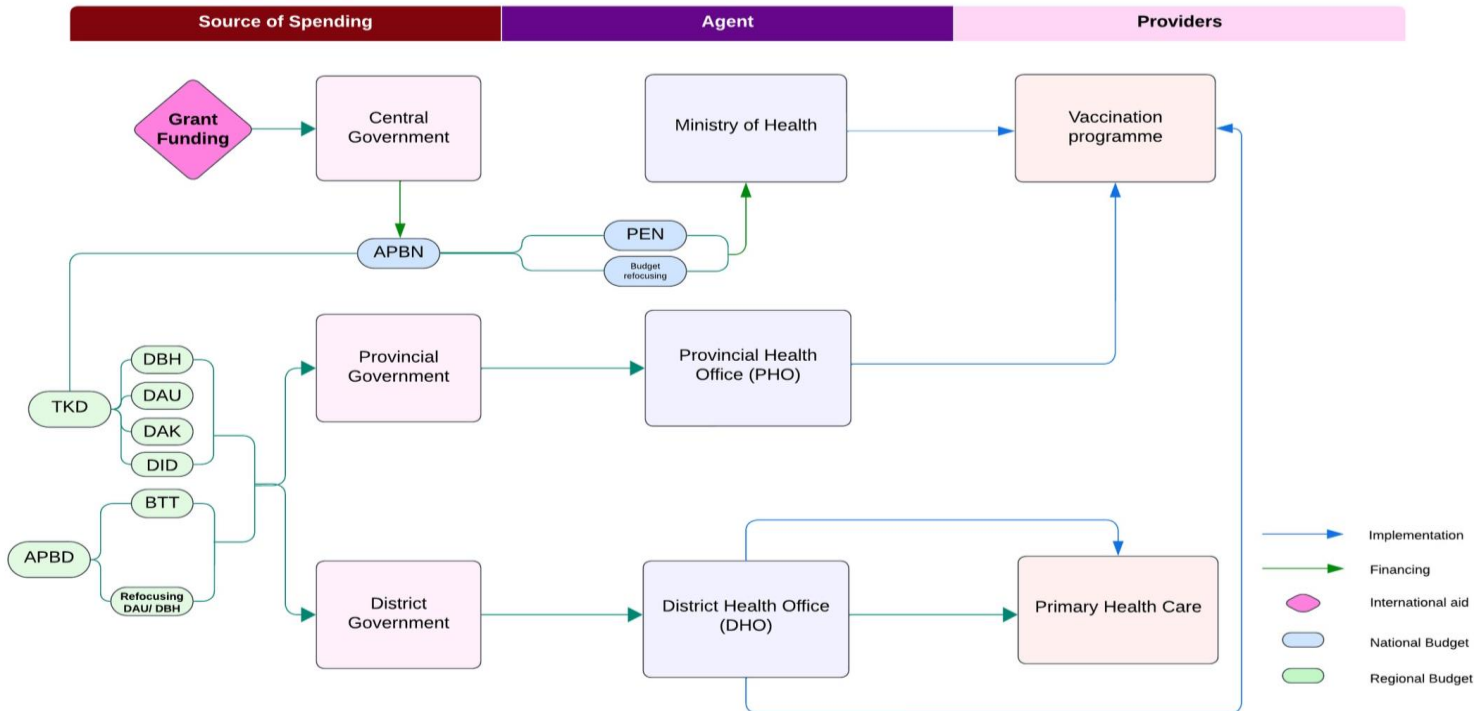
**Notes:**

- total vaccination expenditure per capita: total of 2021 and 2022 expenditures divided by vaccine targets
- coverage rates as of June 2023
- all expenditures are converted to US\$ using the 2021 exchange rate, with US\$ 1 equivalent to Rp 14,308

Bali PHO had the lowest expenditure per capita (US\$0.0148) in 2021–2022 but achieved 97.94% primary dose coverage, the highest among the provinces studied. Extensive private sector support strengthened Bali's mass immunization efforts.

Maluku had the lowest vaccination rate (45.03%) and the second-lowest expenditure per capita (US\$0.0396), followed by Central Sulawesi (53.95%; US\$0.073) and Lampung (66.91%; US\$0.092). The data indicate **a relatively linear relationship** at the provincial level with minimal private sector involvement: **higher per capita expenditure generally corresponds to higher vaccination coverage**.

At the district level, higher expenditure did not consistently lead to higher coverage. E.g. Sigi DHO had the highest per capita expenditure (US\$3.14) but only reached 37.1% coverage, mainly funds were spent on transportation and vaccine storage due to geographic challenges.



**Note**

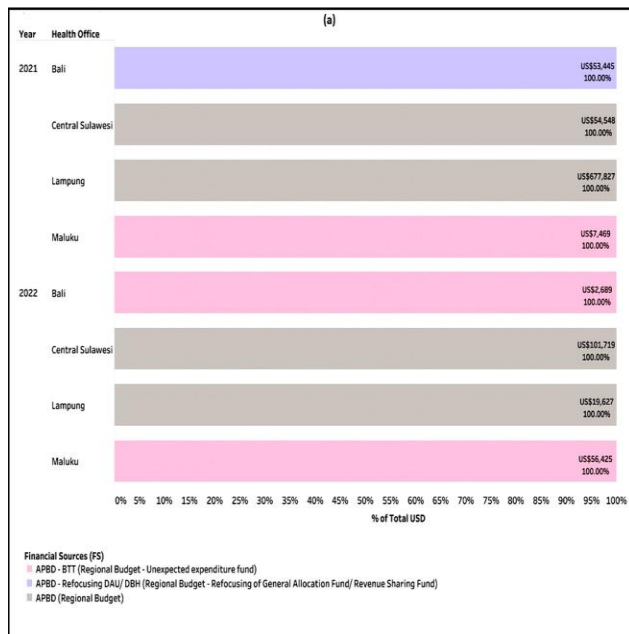
- \*APBD : Anggaran Pendapatan dan Belanja Daerah (Local Government Budget)
- \*APBN : Anggaran Pendapatan dan Belanja Nasional (Central Government Budget)
- \*BTT : Belanja Tidak Terduga (Unexpected Expenditure Funds)
- \*DAK : Dana Alokasi Khusus (Specific Allocation Fund)
- \*DAU : Dana Alokasi Umum (General Allocation Fund)
- \*DBH : Dana Bagi Hasil (Revenue Sharing Fund)

- \*DID : Dana Insentif Daerah (Regional Incentive Funds)
- \*PEN : Program Pemulihan Ekonomi Nasional (National Economic Recovery Program)
- TKD : Transfer ke Daerah (Transfer to Regions)

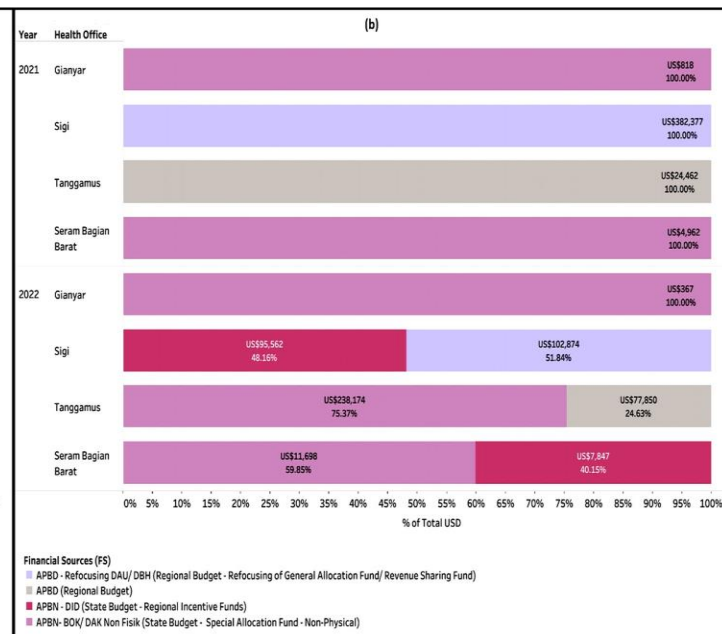
# Financial Source at the Provincial and District in 2021 and 2022

- All PHOs relied on regional budgets from multiple sources
- At the district level, most districts relied heavily on the national budget, particularly APBN-BOK / DAK Non Physical, followed by regional incentive fund (APBN-DID).
- The variation in funding sources in 2022 reflected reduced budget allocations and shifting priorities from COVID-19, where the DHOs had to diversify their funding sources.

## Province



## District

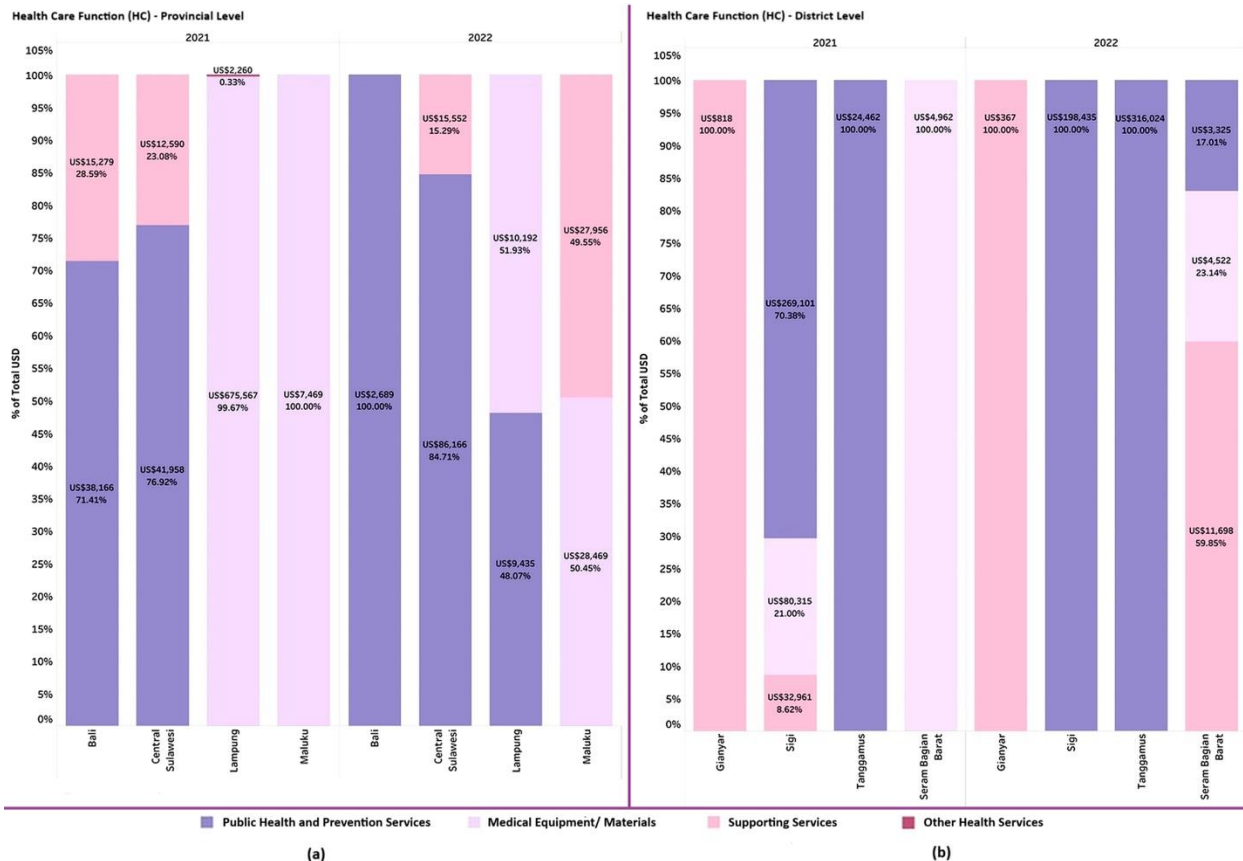




Most PHOs and DHOs allocated a significant portion for **public health and prevention services**, focusing primarily on vaccination program implementation, followed by medical equipment and support services like monitoring and evaluation.

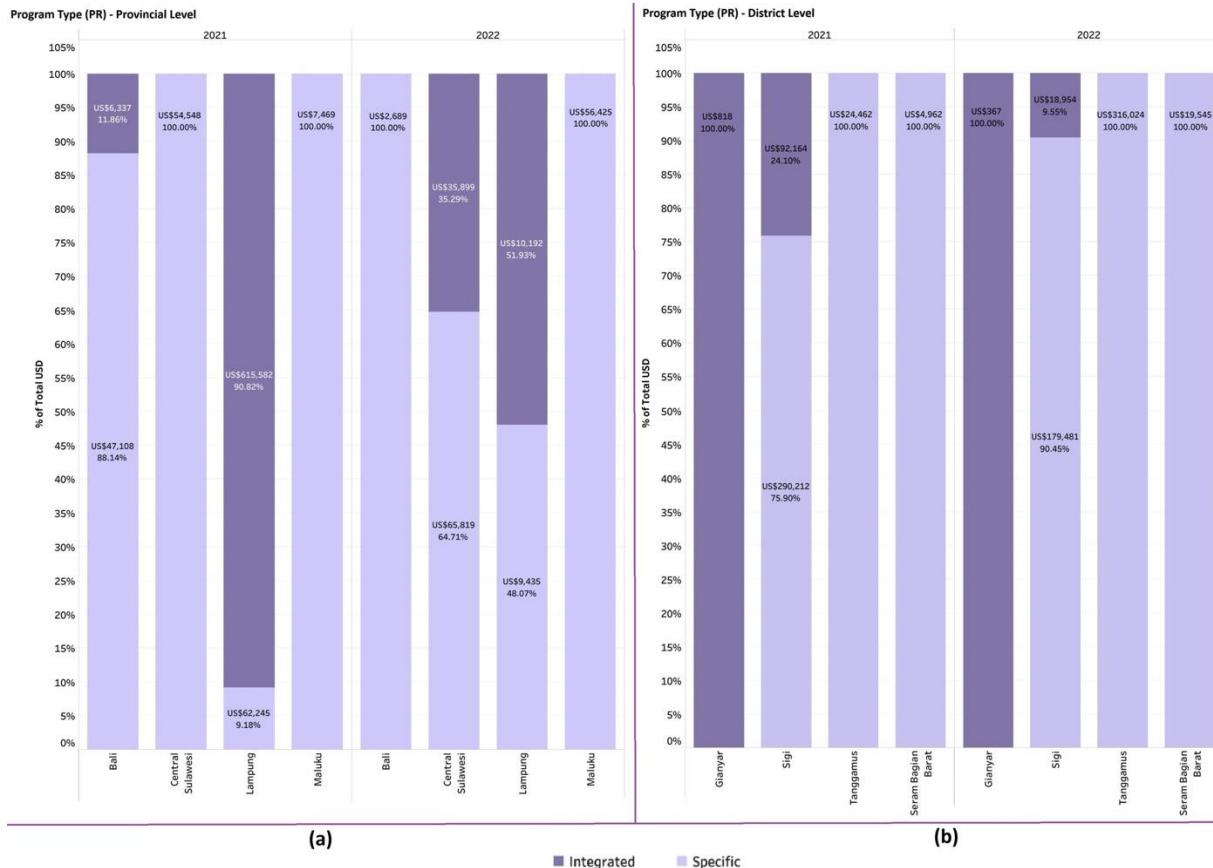
Both in 2021 and 2022, Bali and Central Sulawesi dedicated the largest share of their expenditures to public health and prevention services. In contrast, Lampung and Maluku emphasized cold chain facilities and vaccine distribution due to Maluku's geographical conditions

At the district level, SBB, Sigi, and Tanggamus allocated the largest portions of their budgets to public health and prevention services. In contrast, Gianyar allocated its entire budget to monitoring and evaluation.



Most PHOs and DHOs allocated **dedicated funds for COVID-19 vaccination** in 2021–2022, separate from other programs. However, Lampung PHO allocated a larger portion of its budget to integrated components due to cold chain infrastructure procurement.

As the budget declined in 2022, the balance between integrated and specific funding became more even, driven by investments in cold chain facilities and medical waste management systems that supported other health systems and programs.



(a)

(b)

In 2021 and 2022, three PHOs allocated most of their expenditures to **operational costs**, such as vaccination team incentives, vaccine distribution, and transportation costs. Except for Lampung, focusing more on investment due to cold chain procurement.

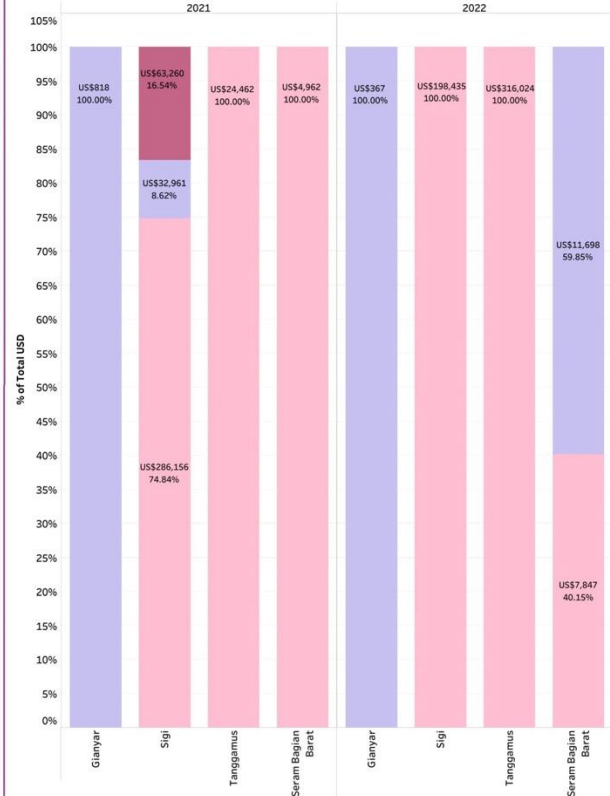
At the district level, in both 2021 and 2022, most expenditures were allocated to operational costs, except for Gianyar DHO, which spent exclusively on monitoring and evaluation.

The allocation of expenditure components for the COVID-19 vaccination program varied based on each region's capabilities and needs, particularly due to funding limitations. For example, not all regions allocated funds specifically for vaccine distribution.

Health Input (HI) - Provincial Level



Health Input (HI) - District Level



■ Investments ■ Maintenance ■ Operational

(a)

(b)

## Conclusion

- At the subnational level in Indonesia, COVID-19 vaccination expenditures **vary widely** by amount, type, and source, influenced by **fiscal capacity, political commitment, priorities, geography, infrastructure, and stakeholder engagement**.
- Although funded by both national and regional budgets, the COVID-19 vaccination program relied mainly on the national budget transfer. Despite regulatory easing, many regions faced **bureaucratic hurdles and limited resources** to support the pandemic response.
- The budget transfer mechanism from central government to subnational levels **had not been sufficient** to bridge disparities in vaccination coverage.
- Regulatory changes for budget refocusing and reallocation in 2021–2022 signaled **declining commitment and shifting priorities away from COVID-19**. As a result, many DHOs had to use routine immunization budgets to fund vaccination efforts.

- At the provincial level, a relatively linear relationship exists: **the higher the total COVID-19 vaccination expenditure per capita, the greater the vaccination coverage**, especially in areas with limited private sector engagement. However, this pattern is less consistent at the district level: **higher expenditures do not always translate to better coverage**.
- Most spending of PHOs and DHOs was on **operational needs** such as honorariums, transportation, vaccine distribution, and cold chain equipment. However, not all regions allocated funds for vaccinators honorarium and vaccine distribution.
- Differences in resource allocation and focus at the subnational level may reflect **limited guidance, varying administrative and planning capacity, and weak accountability mechanisms** like M&E.

# Study Limitations

- Expert judgment approach may carry inherent subjectivity and potential recall bias.
- Lack of standardised detailed financial data on COVID-19 vaccination program
- Lack of publicly available, disaggregated financial data on routine immunization prevented examination of the potential relationship between past investments in routine immunization and COVID-19 vaccine delivery.

# Recommendations

- Variations in budget commitment and spending can be minimised by having **specific guidelines** that prioritize core activities while allowing budget flexibility
- Simplifying **financing and transfer mechanisms** that allow more responsive and timely response during health emergencies
- Improving the mechanism for budget transfers from the central to subnational levels, including **consideration of vulnerabilities and geographical challenges**, is essential to ensure that all regions have equal access to resources during a pandemic.
- A robust **supervision and support mechanisms** are needed from central, provincial, to district/city governments, tailored to their varying planning capacities. This assistance will help subnational governments with more effective prioritization and resource allocation.





# Thank you

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