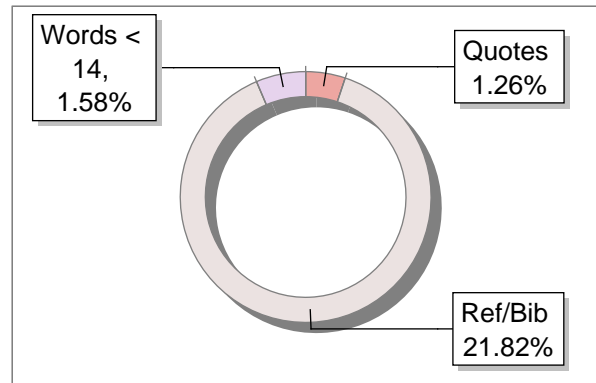
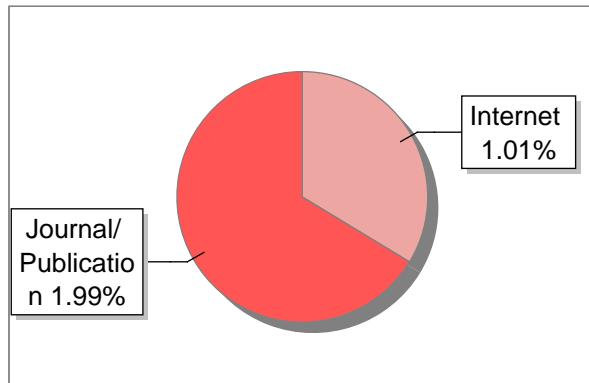
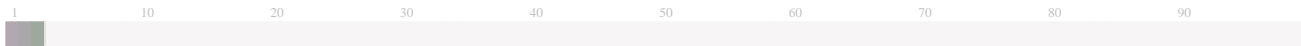


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COVID-19 Vaccine Post-Introduction Evaluation (cPIE)

Indonesia Country Report

September-December 2022
Indonesia



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Executive Summary

The COVID-19 vaccination was introduced in Indonesia in January 2021. The primary dose vaccination coverage exceeded the national target, namely 70%. The coverage for dose 1 is 86% while 74% (data as of 5 June 2023). However, the results of booster vaccination doses 3 and 4 were different, as they had not yet reached half of the total target. On the other hand, the COVID-19 situation remains uncertain in the future, with various possibilities: the virus's virulence will strengthen, weaken, or remain constant, requiring continuous immune protection for all individuals, particularly vulnerable individuals such as the older population.

COVID-19 vaccine post-introduction evaluation (cPIE) aimed to identify responses, challenges, and obstacles since the introduction as a lesson learned and pandemic preparedness. This activity was carried out in six Indonesian provinces and twelve districts to provide input to stakeholders and policies regarding the continuation of COVID-19 vaccination.

Several areas were identified that emphasized the introduction of the COVID-19 vaccine in Indonesia based on field data and the analysis results. It is necessary to increase and maintain the planning and coordination of the various stakeholders involved by emphasizing the readiness of microplanning at the health facility level for the implementation to run smoothly and efficiently and to avoid unused resources such as expired vaccines that are not absorbed. This includes preparing credible health workers who comprehend vaccine handling from transportation to delivery to targets. This is significant because it indicates a readiness for integrating the COVID-19 vaccine into routine services, particularly for vulnerable populations, allowing mobile health workers to provide vaccination services. As a result, COVID-19 vaccinators require a standardized ToT focusing on skills.

Costing and funding must be increased by taking into account all aspects of vaccination service delivery, from the transportation of the COVID-19 vaccine, which requires special handling and infrastructure readiness, to the procurement of the vaccine itself. Funding is also required to support vaccine storage at all levels, such as the presence of a cold room or ULT at the provincial health office, which requires capacity building to meet cold chain standards.

Vaccine demand, advocacy, and communication must be strengthened, beginning with facilities that provide COVID-19 vaccinations but do not engage in demand-generation activities. The current vaccine demand generation, which targets the denial population, must be maintained and expanded.

The current monitoring and evaluation system requires improvement. During the COVID-19 pandemic, online platforms proved a reliable resource; this has proven to be a positive value for adaptation and will be maintained. Real-time online reporting of COVID-19 vaccinations is a strength in monitoring regional achievements and situations. However, some areas still use manual and electronic (double mechanisms), creating a double burden that can interfere with health workers' productivity.

Based on the findings of this cPIE and the current state of COVID-19 vaccination achievements, it is recommended that the Government of Indonesia carry out planning for integrating COVID-19 vaccination into routine services already available in primary health care. The older population are prioritized because they are more likely to become infected with COVID-19 and thus require ongoing protection upgrades. In this regard, POSBINDU for the older population or other integrated services at the Puskesmas or other primary services can serve as a pilot. Various preparations must be made in this context, such as human resources, cold chain, and mitigation, so that current services are not disrupted.

1. Background

1.1. General

Indonesia is situated between mainland Asia and Australia, as well as the Indian and Pacific Oceans, with the South China Sea at the north. Indonesia shares maritime borders with Malaysia, the Philippines, Australia and land borders with Malaysia, East Timor, and Papua New Guinea. Consisting of more than 17,000 islands, around 6,000 inhabited, Indonesia has more than 1,300 recognized ethnic groups and over 700 languages (Figure 1).



Figure 1 The Republic of Indonesia Country Map[1]

Indonesia consists of 38 provinces with about 274 million residents with an age structure dominated by young people. Males are slightly the majority (Figure 2) [2].

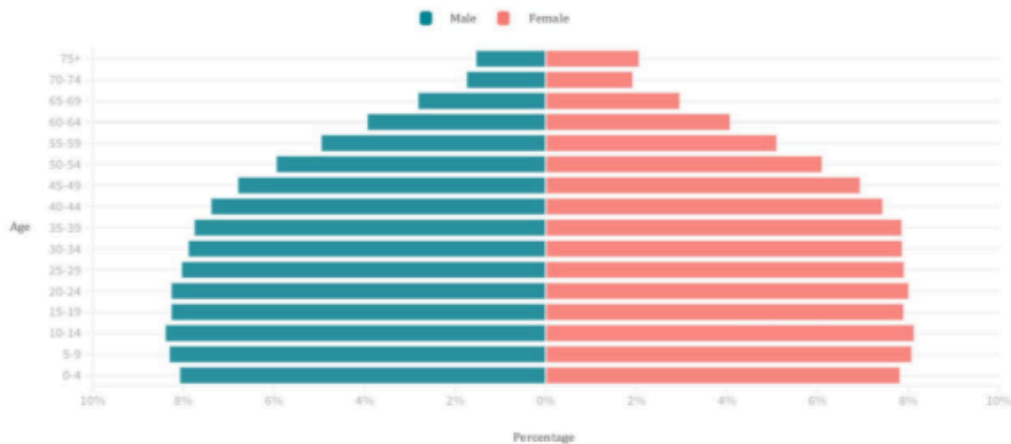


Figure 2 Indonesia's population pyramid in 2022

1.2. Health and Vaccination Systems and Services

In 2001, Indonesia underwent a health system reformation that decentralized decision-making, including program financing, to the district and city levels. This policy transformed from the previous top-down approach where the Ministry of Health (MoH) directly governed the health system through a tiered system of Provincial and then District/City Health Offices. This policy improves several aspects of health services, such as health financing, health services, health education institutions, and health regulations. However, decentralization has a negative impact, such as national data fragmentation [3].

The COVID-19 vaccination policy of Indonesia considered recommendations from the Indonesian Technical Advisory Group on Immunization (ITAGI), the WHO Strategic Advisory Group of Experts on Immunization (SAGE), and the Committee for Covid-19 Handling and Economic Recovery (KPCPEN). Indonesia started the COVID-19 vaccination policy for populations that meet the requirements in January 2021 by providing 2 primary doses (except with the Janssen vaccine). In January 2023, the government provided booster doses to strengthen community immunity. Initially, vaccination targeted the most vulnerable group, such as frontline health workers, older adults, people working in public services, and other vulnerable groups, was prioritized.

COVID-19 vaccination services were provided at Health Service Facilities owned by the Central Government, Provincial Governments, Regency/City Governments, or public/private that meet the requirements, including

- a. had health workers administer COVID-19 vaccinations.
- b. had cold chain facilities following the type of COVID-19 vaccine used or following legal and regulatory requirements; and
- c. had a Health Service Facility operational permit or a Ministerial determination under the provisions of laws and regulations.

Generally, the COVID-19 vaccination was provided in places such as

- a. Puskesmas and other healthcare services
- b. Port health offices
- c. Vaccination posts

COVID-19 vaccination was administered by doctors, nurses, or midwives from Puskesmas and hospitals who have already received training in the vaccination procedure from MoH through their Human Resources for Health Training Centers. The COVID-19 Vaccine Management Training was carried out according to a curriculum designed to ensure the standard training implementation and vaccinators' competence throughout Indonesia [4].

In principle, the COVID-19 vaccination program was part of the government's efforts to overcome the COVID-19 pandemic by developing sufficient immunity to reduce morbidity and mortality rates due to COVID-19 disease. The government is committed to providing the COVID-19 vaccine to the community for free; therefore, COVID-19 vaccine procurement and implementation will be funded through the State Budget (APBN) and regional budget (APBD). In general, the cost/funding for the procurement of COVID-19 vaccines and the implementation of COVID-19 vaccination were included in the economic costs for crisis relief referred to in Law Number 2 of 2020 concerning state financial policy and financial system stability for handling the COVID-19 pandemic and/or to face threats that endanger the National Economy, and/or Financial System Stability [5].

Indonesia National Deployment Vaccination Plan (NDVP) year 2022 states that based on the WHO SAGE roadmap and recommendations from the Indonesian Technical Advisory Group on Immunization (ITAGI), the COVID-19 vaccination was implemented in four stages, as follows:

1. Health workers and supporters in healthcare facilities throughout Indonesia, including contact tracers
2. Older groups, vulnerable communities, including pregnant women, and essential public workers, including humanitarian workers.
3. Geospatially, Socially, and Economically Vulnerable Communities, Adolescents aged 12-17 years old, and children aged 6-11 years old
4. 3rd dose or booster for the population aged ≥ 18 years old and 4th dose or second booster dose for health workers

To increase immunity and extend the protection period, the second booster is given to the general public over the age of 18 years. This was stated in Circular Letter NUMBER HK.02.02/C/380/2023 concerning 2nd booster dosage COVID-19 vaccination for the general community group.

Population and Civil Registry Service automatically generated a population target as the National Identification Number (NIK) provider. This data is integrated and connected to the PeduliLindungi system, which unites and processes all data on vaccination service targets, the PCare system as a vaccination service recording system, the Electronic Logistics Information and Monitoring System (SMILE) as a recording and monitoring system for vaccines and vaccination logistics, and the KPCPEN dashboard as a medium that displays the results of the integration of all these systems in information related to the implementation of the COVID-19 vaccination. Since March 2023, PeduliLindungi, previously managed by KPCPEN, has been transferred to SatuSehat, with full ownership by the MoH.

1.3. COVID-19 Epidemiology

The first positive cases of COVID-19 in Indonesia were detected on March 2, 2020 [6]. Eleven days later, the number of COVID-19 cases was 69 people, 4 of whom died. COVID-19 was declared a pandemic in Indonesia on March 31, 2020, by Presidential Decree Number 11 of 2020, establishing the COVID-19 Public Health Emergency in Indonesia [7]. Indonesia has experienced several waves of the COVID-19 pandemic, beginning with the Alpha variant wave in 2020, followed by the Delta variant wave in 2021, and the spread of the Omicron variant in January 2022. As of March 2, 2022, there had been a total of 5,589,176 confirmed cases of COVID-19 in Indonesia. Meanwhile, the total number of recovered cases was 4,944,237, with 149,036 reported deaths [8]. Several policies were carried out in Indonesia to deal with COVID-19, one of which was the restriction of community activities, which the government initially referred to as large-scale social restrictions (PSBB), effective April 17, 2020.

The government then imposed Community Activity Restrictions Implementation (PPKM). As the number of cases increased, the government established Emergency PPKM, which was later expanded with a new term PPKM based on Levels 4, 3, 2, and 1 in Java-Bali and outside Java-Bali [9]. Other activities for dealing with COVID-19 were carried out

simultaneously with restrictions on community activities, including vaccination. As of March 6, 2023, 86.85% of the population had received dose 1 vaccination, while 74.51% had received dose 2. Meanwhile, the dose 3 or first booster vaccination rate was 29.84%, and the dose 4 or second booster vaccination or second rate was 1.18% [10].

During the COVID-19 pandemic, Indonesia also imposed restrictions on international visitors. However, since September 1, 2022, the health protocol has required no PCR tests for those who have received full vaccination to enter Indonesia. Still, despite a decrease in positivity, foreign tourist visits were increasing, supported by the best service ranging from facilities to health protocol implementation [11].

1.4. COVID-19 Vaccination Roll-out and Coverage

COVID-19 vaccination activities in Indonesia were carried out following the advice and recommendations of the Indonesian Technical Advisory Group on Immunization (ITAGI) and with Emergency Use Authorization (EUA) from the Food and Drug Supervisory Agency (BPOM) [12]. According to the most recent circular letter (SE Number HK.02.02/C/380/2023) concerning the 2nd Booster Dose COVID-19 Vaccination for General Public Groups, the public could begin receiving the 2nd COVID-19 booster vaccination on January 24, 2023, on all nearby health service facilities (Kemenkes RI, 2023). Until 11 November 2022, 11 types of vaccines had received EUA from BPOM RI. Figure 3 describes the important milestones for each stage of the COVID-19 vaccination target in Indonesia.

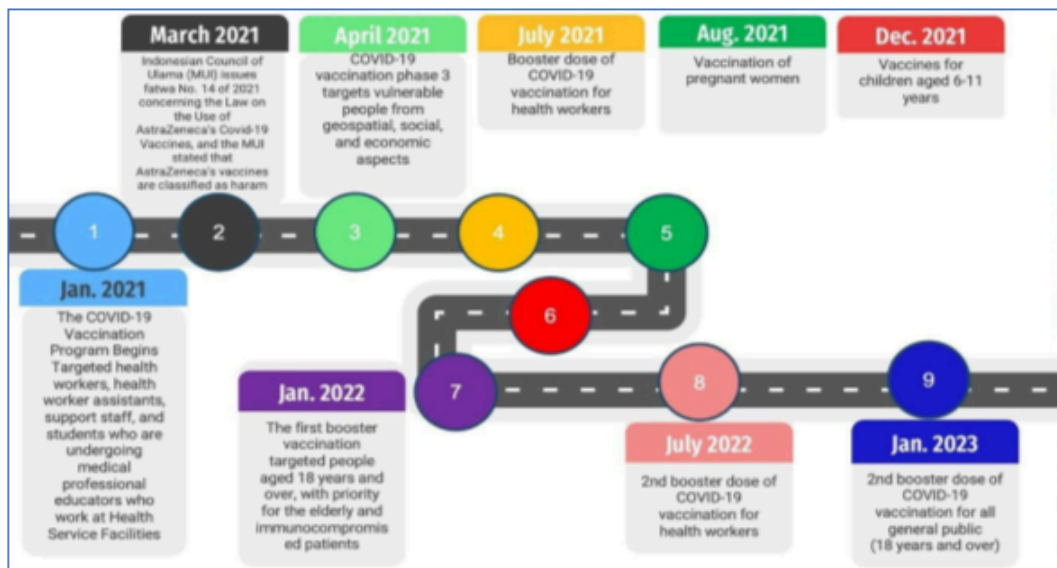


Figure 3 The essential milestone of COVID-19 vaccination in Indonesia until May 2023

Figure 3 shows the achievements of COVID-19 vaccination per province for doses 1 and 2 until November 30, 2022. As many as 24 out of 38 (63%) provinces in Indonesia have reached the national target of 70% of vaccination for the first dose, and only 5/38 (13%) provinces for the second dose. Papua province has the lowest achievement for both doses; this is possible because of the geographical conditions of the location and vaccine

3. Methods

3.1. Preparation

Design of Evaluation

COVID-19 vaccination deployment and implementation were assessed at all levels, including national. The evaluation was carried out in stages, as shown in Figure 5. The assessment started with a desk review to determine the province and areas to visit for the evaluation. The WHO CPIE questionnaire was then translated and adapted for the Indonesian context. Field data were collected at all levels using questionnaires and checklists. At the same time, in-depth interviews or focus group discussions with the older population, as a high-priority group, were conducted (selected Puskesmas and clinics).

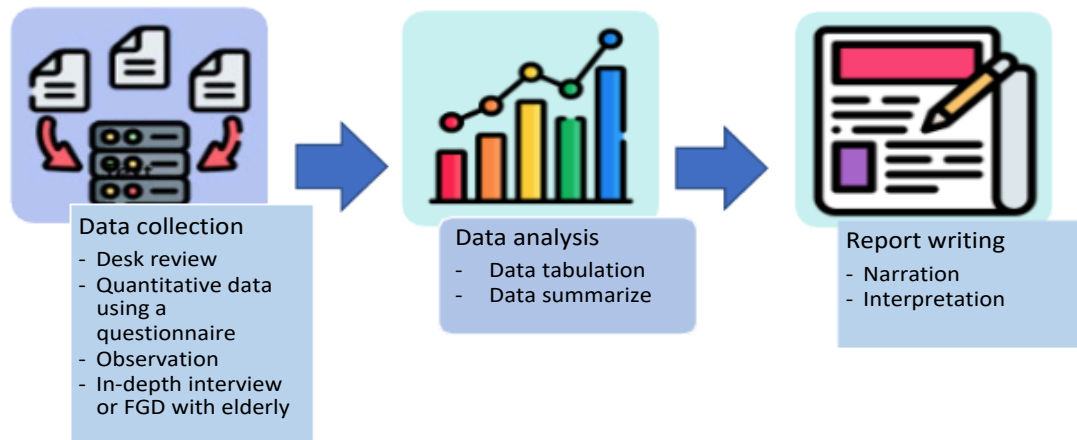


Figure 5 Indonesia COVID-19 Vaccination Post Introduction Evaluation Phase

Planning Team

The University Ahmad Dahlan (UAD) team, the WHO Country Office, and MoH planned the evaluation methodology and team composition. A team was deployed to each province evaluated.

Concept Note

By August 2022, the WHO Country Office approved the five pages of the concept note.

Desk Review

Some documents were available online for the planning team and external experts to observe and overview the background of the cPIE evaluation. These documents were used to understand the evaluation topics and to guide the unit selection.

3.2. Implementation

Evaluation Site and Activities

This evaluation was conducted in the central and six of Indonesia thirty-eight provinces. Province was selected based on their COVID-19 vaccination coverages compared to the national COVID-19 vaccination coverage of 77.44%, achieved as of April 13, 2021. Three provinces each were chosen from above and below this cut-off point. The representation of

geographical location and features was also considered; accordingly, six provinces were selected: Maluku and West Sulawesi represented below-national vaccination coverage, Lampung represented Sumatera Island, North Kalimantan, West Nusa Tenggara, and Yogyakarta were representing above-national vaccination coverage. Two districts/cities were selected in each province, considering accessibility and vaccination coverage, with three health facilities within the district/city were chosen by determining 1) 2 Puskesmas with high and low coverage in that district/city and 2) one non-Puskesmas vaccination sites.

Older adults visiting the health facilities for any reasons were recruited onsite to participate in focus group discussion or in-depth interview. All individuals from the community who were interviewed or photographed during this evaluation provided informed consent. At the end of the data collection, we finished the evaluation in 6 provinces, 12 districts/cities, and 36 health facilities.

The fieldwork was done for two weeks, from November 28, 2022, to December 10, 2022. Each team (5-6 persons) comprised personnel from UAD, MoH, WHO Indonesia, UNICEF Indonesia, CHAI, and international participants (WHO SEARO, MMGH, and CDC).

Along with the desk review, the evaluation was performed in the following activities:

1. administered questionnaires to national and subnational COVID-19 vaccine deployment focal points
2. administered questionnaires to service delivery staff (health care workers who administered COVID-19 vaccines, cold chain managers)
3. observed vaccination sessions and cold chain storage and equipment.
4. conducted focus group discussions with beneficiaries - specifically older adults.

Evaluation Roles and Teams

The roles of the teams involved in this study were

1. The University of Ahmad Dahlan led the evaluation and coordinated with WHO Country Office and MoH on all aspects of the cPIE
2. A national focal point was assigned to coordinate field assessment activities and logistics.
3. An external cPIE evaluator from CHAI, UNICEF Indonesia, WHO Regional Office, MMGH, and/or CDC, were contributed to reviewing the concept note, drafting the timeline of the evaluation, supporting the drafting of training agendas, providing feedback to evaluation questionnaires, conducting a briefing for the UAD staff on implementation of the cPIE including data analysis, along with participation in the field data collection at all levels.

Topics

The evaluation topics were those of the COVID-19 vaccine and new vaccine PIE guidelines and were delineated as follows:

1. Regulatory preparedness
2. Planning and coordination
3. Service delivery
4. Costing and funding
5. Supply chain and waste management
6. Human resources, training, and supervision
7. Vaccine demand, advocacy, and communication
8. Vaccine safety and adverse event(s) following immunization (AEFI) reporting
9. Monitoring and evaluation
10. Surveillance

Tools

Data collection tools (questionnaires) were created to help guide and standardize data collection across field teams. The WHO guidelines for COVID-19 and the new-vaccine PIE provided generic tools tailored to the Indonesian context and priorities. A separate questionnaire was developed for each level observed:

1. Central (MoH) questionnaire
2. Provincial health office questionnaire
3. District or city health office questionnaire
4. Healthcare provider (hospital/Puskesmas) questionnaires
5. Health care officer questionnaire
6. Cold chain storage observation form
7. Vaccination session observation form
8. In-depth interview or FGD for older population

Data collection

To be environmentally friendly and for practical reasons, all questionnaires were developed in electronic versions, using online-based ONA survey support system (<https://ona.io/home/>). Data collection for interviews with health staff and older people was conducted in Indonesian, the national language. All supporting documents were also made available via a link to a shared drive (Figure 6).

A web-based data collection tool was created to help streamline and standardize data collection. This tool's features include the following:

1. Several team members could work on the forms simultaneously; for example, one team member could record observations from the cold store while another interviewed a vaccinator from the same facility.
2. There were categorical and open-ended questions.
3. As long as an internet connection was available, all entries were saved 'live'.
4. The web-based tool is compatible with all devices.
5. Data analysis, dashboard, and data exporting for downloading were all included.

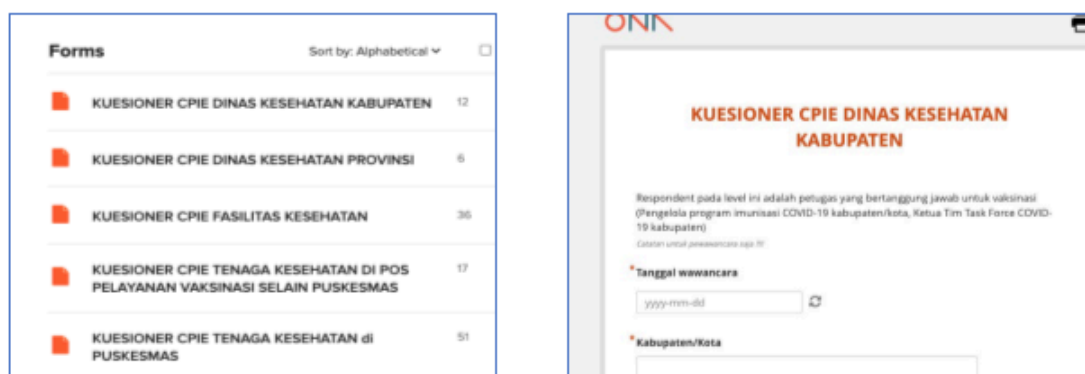


Figure 6. ONA data collection tool menu and questionnaire appearance

Synthesis of findings and debriefing

The steps and timeline for synthesizing field observations are shown in Table 1. Timeline for compilation of the findings of the cPIE.

Table 1. Timeline for compilation of the findings of the cPIE

| When | What | Who | How |
|---------------------|--|---------------------------|--|
| 12-15 December 2022 | Work on field presentations | All evaluators | Use the template on field findings and actions |
| 16 December 2022 | Compile findings | Team lead | Note findings and actions for the designated topic |
| 19 December 2022 | Finish preliminary reports and prepare presentation for debriefing | Principal Investigator | Complete report template |
| 23 December 2022 | Debriefing | Evaluator representatives | Debrief of high-level officials |

Infection prevention and control (IPC) measures for COVID-19 disease prevention

1. All teams were asked to strictly comply with COVID-19 prevention procedures, especially during official field trips and meetings.
2. Facemasks, physical distance, and proper hand and respiratory hygiene were always required.
3. Teams were given the option of changing the local field visit location or using a virtual modality based on the monitoring status of the island/COVID-19 location.

Follow up on the recommendations.

A prioritized action plan and a dashboard displaying the implementation status of each recommendation have been developed and are nearing completion.

4. Findings

The team completed nearly all evaluation plans at each level except when there was no vaccination session during the visit to be observed, and when there is no older adult visiting to be interviewed. Table 2 displays the results of evaluations at the site level.

Table 2 Percentage of planned and completed evaluations on-site

| Evaluation activity (level) | Data collection planned | Percentage of evaluation conducted |
|--|-------------------------|------------------------------------|
| National level | 1 | 1 (100%) |
| National Storage | 1 | 1 (100%) |
| Provincial Health Office (PHO) | 6 | 6 (100%) |
| District Health Office (DHO) | 12 | 12 (100%) |
| Storage observation at PHO | 6 | 6 (100%) |
| Storage observation at DHO | 12 | 11 (92%) |
| Health facility* | 36 | 36 (100%) |
| Storage observation at the health facility | 36 | 34 (94%) |
| Health workers in health facility* | 72 | 68 (94%) |
| FGD with older population | 36 | 33 (92%) |
| Vaccination observation | 36 | 30 (83%) |

¹¹ The evaluation was carried out in 36 health facilities. It was planned that two health workers would be interviewed separately in each of these health facilities, it was intended that 2 health workers would be interviewed separately, but for some reason, several health workers were interviewed simultaneously. So, health workers obtained 68 interviews.

4.1. Regulatory Preparedness

Background

Indonesian Food and Drug Authority (Badan Pengawas Obat dan Makanan/BPOM) regulates the procurement and use of COVID-19 vaccines in Indonesia (BPOM). A vaccine product must first obtain an Emergency Use Authorization (EUA) before it can be used. While issuing this EUA, BPOM researched vaccine safety, efficacy, quality, and expiration dates. These activities are carried out in collaboration with the Indonesian Technical Advisory Group on Immunization (ITAGI) and the associated professional organizations.

General observations and strength

BPOM regulates the vaccine registration before MoH procured the vaccines for Indonesia. There were no significant obstacles in the vaccine procurement regulatory process. Registration of the COVID-19 vaccine by BPOM refers to BPOM regulation No 24/2017 concerning criteria and procedures for drug registration. This regulation ensures the quality of drugs, in this case, domestic and imported vaccines. Specifically, for COVID-19 vaccines, BPOM issued a special EUA addendum related to emergencies, as stated in Regulation No 13/2021 concerning the Third Amendment to the BPOM Regulation no 24/2017.

The stages for assessing a drug registration, in this case the COVID-19 vaccine, are evaluating the quality of the active substance as well as the finished product or formulation. The stages

for assessing a drug registration, in this case the COVID-19 vaccine, are evaluating the quality of the active substance as well as the finished product or formulation. Apart from that, safety efficacy was also assessed from clinical data and non-clinical toxicity by a special committee of drug assessors. For the COVID-19 vaccine, the efficacy assessment refers to WHO provisions as updated on 30 March 2022.

Best practices/lessons learned

The Indonesian government has not experienced any obstacles or delays in issuing the EUA for the COVID-19 vaccine. This is supported by the BPOM timeline of 20 working days for the EUA issuance process.

4.2. Planning and Coordination

Background

In Indonesia, the Directorate of Immunization MoH is responsible for planning COVID-19 vaccination at the national level and formulating and calculating vaccination targets. The Directorate General of Pharmaceuticals and Medical Devices (Farmasi dan Alat Kesehatan/Farmalkes) then handles the vaccination logistics needs based on the estimated target. BPOM also takes part in responsibility for conducting monitoring and assistance post-approval for the use of the COVID-19 Vaccine.

The National Task Force and the National Emergency Operations Center both went into operation in 2020. The COVID-19 NDVP was the primary guiding tool to prepare for the COVID-19 vaccine distribution. Several steps were taken in response to the COVID-19 disease outbreak:

1. The establishment of support desks, a COVID-19 hotline, a dedicated spokesman, and frequent press updates
2. Information, education, and communication materials were created, and distribution was expanded
3. Airport and harbor quarantine was made mandatory
4. Systems for contact tracing and surveillance were designed for COVID-19.

In formulating the COVID-19 vaccination policy, the following priority order is considered:

1. Disease burden
2. ITAGI recommendations
3. Public commitment
4. Budget availability
5. Vaccine availability
6. Results of international consultations or recommendations
7. Recommendations by professional organizations
8. Provision of COVID-19 vaccination by neighboring countries

General observations and strength

At the health facility level, the existence of guidance for microplanning and some of the microplans were observed. In addition, we noted several positive findings in the field, namely:

1. Engagement of the highest level of leadership
2. Good multi-sector coordination and engagement setup at all levels. All of the resorts visited offered COVID-19 vaccinations to the staff.

3. National Deployment and Vaccination Plan for COVID-19 vaccines (NDVP) was available.

Best practices/lessons learned

Before the vaccination implementation, Indonesia conducted preparedness monitoring with the COVID-19 Vaccine Introduction Readiness Assessment Tool (VIRAT) instrument at the national, provincial, and district levels. The readiness assessment results are coordinated with relevant stakeholders and local government for further improvement, planning, and implementation. This activity is a good practice by the Indonesian government when a new vaccine is to be introduced. We also noticed that it is essential to continue coordination with police and military, also local government/community leaders to increase vaccination coverage.

From the COVID-19 pandemic, there are lesson-learned about central and local coordination. Since health decentralization, service policies have relied on local governance (province and district/city) so that in non-emergency situations, coordination is more difficult because of the complex government structure. However, COVID-19 pandemic showed that good central and regional coordination is feasible with activities run relatively well, although weak points could still be found.

Challenges and areas needing strengthening (weaknesses)

Though all micro-plan components are compiled at the central level, it is only sometimes used for implementation at health centers. There are limited links between the national and subnational coordination mechanisms to ensure real-time information flow and follow-up of critical actions for performance. We observed more than 50% can indicate the existence of microplans. Still, many microplans are incomplete and only contain targets and without logistics planning and other preparations (Table 3).

Table 3. The existence of a microplan at the (health facility) health facility level (n = 36)

| Micro plan or implementation plan used at the district/health facility level | |
|---|----------|
| Received | 21 (58%) |
| Reported to exist but not available at the time of the interview | 9 (25%) |
| Unavailable | 6 (17%) |

Recommendations

1. Improve data sharing and two-way communication to ensure needs-matching onsite to reduce the vaccine piling.
2. Review and update microplans regularly at the Puskesmas level (validated/confirmed by the DHO).
3. Understand some barriers to having microplans at the service delivery level and take steps to improve for future pandemic preparedness or carry over to RI microplans.

4.3. Service Delivery

Background

Vaccination was mainly conducted in Puskesmas, hospitals, health clinics, and integrated health posts (Posyandu). Several outreach immunization locations, such as schools or community centers, is designated to provide shots closer to the target with barrier to access.

The vaccination teams included security agent(s) to check the beneficiary's registration status, identity card as authenticator and verifier, trained vaccinator providers, and support staff to manage the crowd, assist the providers, ensure a 15-minute wait time following vaccination, conduct communication, information, and education, etc.

General Observations and Strengths

All levels have complied with the national regulation to prioritize COVID-19 vaccination for specific groups, namely health workers, older adults, and public servants (groups of special job categories, teenagers, and children). In all sessions, eligibility screening was adequate. Most health offices have correctly administered the vaccine. To reach targets with geographical access or mobility difficulties, they also carry out vaccination outreach services to get closer to the target. Another best practice observed is that the government provides transportation for targets who have moving difficulty to get to the vaccination site.

For most vaccine delivery, the staff maintains the vaccine recipients to observe for 15 minutes after vaccination. The target who was interviewed expressed satisfaction with the service delivery. Following up with eligible people through close collaboration with the community, phone calls, and organizing evening and weekend vaccination sessions all increased COVID-19 vaccine uptake.

Vaccination services are carried out by vaccinators, both doctors, nurses, and midwives, who have been trained first. When the vaccination rate is high, the number of vaccinators at some sites may be inadequate, so vaccinators were recruited from other units (Table 4).

Table 4. Percentage of health facilities recruiting additional vaccinators (n =36)

| Did you have to hire additional health workers to conduct vaccination? | |
|--|----------|
| Yes | 9 (25%) |
| No | 27 (75%) |

Challenges and areas needing strengthening

1. The existing Puskesmas staff were overloaded/overburdened during the campaign.
2. The extension of expiry dates for the Pfizer-BioNTech vaccine should have been noted on packages, but it was not done in some cases.
3. Vaccine vials yet to be used were piled up at the district logistics; many vaccines have expired in some areas.
4. Found discrepancies in vaccine storage, such as the absence of temperature monitoring when storing vaccines, not recording temperature during holidays, and using a household refrigerator.
5. The screening form for COVID-19 vaccination is too strict, which has an impact on many people who cannot be vaccinated, mainly in older population

6. People with comorbidities require more treatment before being vaccinated, such as requiring a doctor's examination, which may take several times; this makes survivors reluctant to get a vaccination.

Recommendations

1. Review the managerial system that has been running by making programs and planning through good microplans, so they do their work measurably and well
2. Ensure that service-delivery personnel know the Pfizer-BioNTech vaccine's shelf-life has been extended. Before sending packages to Puskesmas, systematically record the date of thawing/expiry on the package (dynamic labelling).
3. Improve communication and create an adequate microplan
4. Increase the capacity of resources and follow-up on training done by conducting refreshment training
5. It is necessary to simplify the COVID-19 vaccination screening form
6. Make proper notes as lessons learned about eligible persons and steps for pandemic preparedness in the future

4.4. Costing and Funding

Background

The COVID-19 pandemic posed a health threat that impacted the national economy. The President issued Government Regulation called PERPPU Number 1 of 2020 about National Fiscals Policy and Financial System Stability for the Management of the COVID-19 Pandemic and/or Facing Threats Endangering the National Economy and/or Financial System Stability. This PERPPU regulates sources of financing for government spending and economic recovery programs related to COVID-19. One of these funding sources was State Capital Participation (PMN) which was fresh money to cover the budget deficit [14]. The allocation of funds was to mitigate health risks, protect the community, and maintain business activities.

Meanwhile, especially for implementing COVID-19 vaccination, funding was based on the MoH Regulation no. 10/2021 concerning implementing Vaccination in the Framework of Combating the Corona Virus Disease 2019 (COVID-19) Pandemic:

1. Funding for the implementation of the vaccination program. This was charged to the National (APBN) and Local Budget (APBD).
2. Funding for the implementation of private scheme vaccination (Vaksinasi Gotong Royong/VGR). This was charged to legal entities/business entities that carry out vaccinations for their employees or general public.
3. Funding for monitoring and management of adverse events following immunization (AEFI). This was charged to the state budget.
4. Funding for health services for COVID-19 vaccine recipients who experienced health problems due to AEFI. This was charged to the MoH or the National Health Insurance program organized by the Social Security Agency on Health (BPJS Kesehatan) [15].

In addition, there was a Circular Letter from the Ministry of the Finance Republic of Indonesia No. SE-6 / PK / 2021 concerning local funding support to accelerate the implementation of COVID-19 vaccination [16].

General Observations and Strengths

Government funds were the primary sources of COVID-19 vaccination at all levels. The source of funding for the provision of vaccines mainly came from the State Budget, and there was regional funding support to accelerate the implementation of COVID-19 vaccination taken from the Regional Budget. Funding support from local governments was allocated to

- a. operational support in implementing COVID-19 vaccination
- b. monitoring and mitigation of health impacts following COVID-19 vaccination
- c. distribution, security, and providing of storage for COVID-19 vaccines to health facilities
- d. incentives for regional health workers in the context of implementing COVID-19 vaccination.

The regional fund allocation mechanism was carried out with a bailout mechanism. It would be considered in distributing the General Allocation Fund or Dana Alokasi Umum (DAU), Revenue Sharing Funds or Dana Bagi Hasil (DBH).

Challenges and areas needing strengthening

The observation found that all regions faced challenges regarding late disbursement of the health workers incentives. Furthermore, not all provinces took initiatives to allocate funds for health worker training in their regions. Another barrier is the high cost of vaccine distribution for archipelagic and small island region. Sometimes, local budget cannot cover the shipping cost of the vaccine, causing local governments to take debts to the third parties (expeditions) until funds from central allocation are received.

The APBD funds used to support COVID-19 vaccination in the regions could differ depending on the region's capital. Some reported receiving support or CSR from private sectors at the local level - district or city. Several districts did not have transport costs forcing health workers to rely on personal vehicles. Due to a lack of supervision funds, supervision was usually conducted in parallel with other programme's supervision. Health offices cannot provide intensive supportive supervision during vaccination session. Some operational funds, such as office stationery, health socialization/communication media, and mobility vehicles, are covered independently by the Puskesmas. This occurs because the center's allocation of funds is only sufficient for the health workers incentives.

Recommendations

1. Continuing the online supervision regarding the implementation of vaccinations, a mechanism needs to be created even though it is done online but does not reduce its quality.
2. Review funding support for the COVID-19 vaccine and surveillance to support all operations of the vaccination delivery, such as a vaccine, transportation, and incentive needs.

4.5. Supply Chain and Waste Management

Background

The procurement of the COVID-19 vaccine in Indonesia is carried out through two lanes, direct procurement by the government and through Bio Farma as the state-owned enterprise (BUMN) appointed by the government to manage the supply of the COVID-19 vaccine in Indonesia along with other routine vaccines. At Bio Farma, as the primary facility for providing

vaccines at the national level, ¹ the equipment used is Cold Room, ULT, and refrigerator. All cold chain equipment is equipped with temperature monitors. During the observation, the temperature is adjusted with each vaccine type. The distribution of the COVID-19 vaccine to provinces is carried out by Bio Farma through a cold chain monitored for temperature conditions. Meanwhile, at the intermediate or provincial level, the equipment used includes ULT and cold room, although the availability and conditions of the equipments in each province may differ.

Waste Management of COVID-19 in Indonesia is outlined in KMK No. HK.01.07/MENKES/6424/2021 on Technical Implementation Guidelines for Vaccination in the Context of Mitigating the COVID-9 Pandemic. In general, the steps for managing medical waste for vaccination activities are shown in Figure 7. This mechanism follows the waste management of routine immunization already in place.

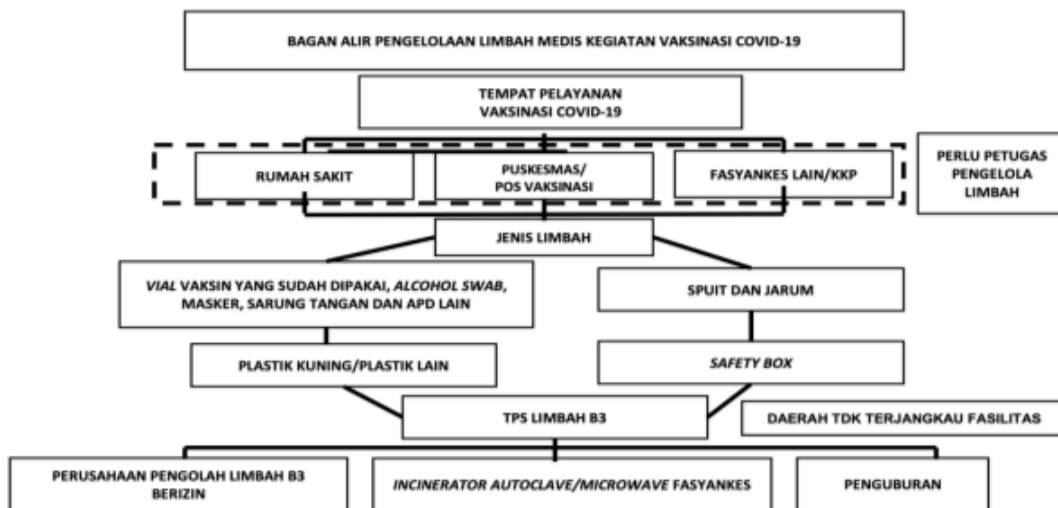


Figure 7. Medical waste management for COVID-19 vaccination activities

(<https://farmalkes.kemkes.go.id/unduh/kepmenkes-no-6424-tahun-2021/>)

In the local level, expired COVID-19 vaccine from health facilities is managed in the provincial level, for easier cataloguing of state's while other logistical waste and routine immunization waste are destroyed in collaboration with third parties or using incinerators at the health facility level.

General observations and strength

In 6 provinces, the cold chain equipment was a vaccine refrigerator, cold room, vaccine carrier, freezer, cold box, and ULT. Concerning vaccine stock management, 5/6 use manual and computerized records, while 1/6 only use manual records. From 34 observations in health facilities, the cold chain equipment: vaccine refrigerators (31/34), vaccine carriers, and cold boxes (18/34).

From 11 observations in 7/11 districts, the sources of cold chain energy were electricity and gensets, and 4/11 reported only electricity. 10/11 stated that there was no interruption to the

energy supply, and the remaining said there was a monthly power cut, but this can be overcome with gensets.

In 3/34 health facilities, it was seen that there was no temperature monitor on the refrigerator. 21/34 use electricity and gensets as a source of cold chain energy at the health facility; the rest only use electricity.

Best practices/lessons learned

5/6 provinces mentioned electricity and gensets as cold chain energy sources, while 1/6 said they only relied on electricity. 5/6 stated there had been no energy interruption in the cold chain so far, and 1/6 stated there had been. During the peak of vaccine dose administered, cities and districts had the initiative to pick up vaccines directly from provincial warehouses to the vaccination session, preventing piling in the cities and districts storage. All health facilities monitor the temperature of the COVID-19 vaccine (36/36).

Challenges and areas needing strengthening

Vaccine distribution in Indonesia is primarily a geographical challenge; not all storage capacity is large, so sometimes warehouses are full. To overcome this, the vaccine rate was increased. Human resources have not been trained for cold chain management of the COVID-19 vaccine.

Regarding the distribution of vaccines from provinces to districts/cities, 3/6 stated that the temperature of COVID-19 vaccines was not monitored during transport. Another challenge is that one province mentioned the incapacity to monitor cold chain management down to the health facility level; there are still health facilities that still store vaccines in household refrigerators, there is no budget available for vaccine distribution in districts/cities, there is a lack of human resources, at the service level not all have vaccine carriers. 5/36 health facilities stated that there was no adequate cold chain equipment. One of the Puskesmas said they did not have a refrigerator, so they were placed at the health office.

North Kalimantan reported that the ULT freezer was broken/not working, and another province said the frost was more than 0.5 cm. Meanwhile, from 11 storage containers in districts, 1 of them was not well maintained, with more than 0.5 cm of frost found. From the observation at districts or cities, 3/34 stated that cold chain equipment did not function properly due to a lack of care for the cleanliness of vaccine carriers after use, so they became dirty, and 1 health facility used a household refrigerator to store vaccines.

According to the observations, no temperature was monitored in the ULT freezer and refrigerator in Lampung province. Based on discussions with storage officers in West Nusa Tenggara (NTB), he did not fully comprehend the Pfizer-BioNTech vaccine storage mechanism and management, including dynamic labeling. During the observation of storage, it was found that the vaccine storage space is inadequate (5/34), and the storage space is not dry (1/34). Regarding stock recording, 8/34 recorded stock manually, and the rest used a mix between manual and computerized (26/34).

Recommendation

1. Increase cold chain capacity in the region. The Ministry of Health has received information regarding this issue, so developing an action plan to meet cold chain standards in the regions is recommended.
2. Improve the ability to manage the cold chain and vaccines in the regions. Currently, the capacity is not evenly distributed, and even human resources tend to be lacking, so it is necessary to have human resources who meet these qualifications.

4.6 Human Resources Management, Training, and Supervision

Background

In carrying out the COVID-19 vaccination service, an operation team was set up with the following functions:

1. registration/verification;
2. screening (anamnesis), physical examination, and provision of education, as well as approval of actions;
3. preparation and administration of the COVID-19 vaccine;
4. conduct post-COVID-19 vaccination observations, mark the completion of COVID-19 vaccination, and provide COVID-19 vaccination certificates;
5. record and input data on COVID-19 vaccination results;
6. carry out medical waste management;
7. manage the flow of COVID-19 vaccination services

The COVID-19 vaccination service implementation team had to follow the provisions of laws and regulations when applying infection prevention and control principles or COVID-19 prevention and control health protocols. The COVID-19 vaccine could only be administered by competent and authorized doctors, midwives, or nurses. Furthermore, midwives or nurses who vaccinate against COVID-19 had to do so under the supervision of a doctor and following applicable laws and regulations [15].

Before carrying out their duties to perform the COVID-19 vaccination deployment, the team had to be trained on COVID-19 vaccination management. The training was provided to health workers who were assigned as vaccinators. The Indonesia MoH Health Human Resources Training Center conducted the training online. The training started in March 2020. The training was co-developed with UNICEF, and WHO approved all content from a technical point of view. The material was translated from "COVID-19 vaccination training for health workers, 2021". COVID-19 Vaccination Management Training was used to increase the capacity of vaccinators (doctors, nurses, and midwives) in Puskesmas and hospitals (COVID-19 Vaccination Management Training) or Pelatihan Tata Laksana Vaksinasi COVID-19. The training goal was to prepare health workers to perform COVID-19 vaccination procedures in schools, hospitals, and other settings. Microplanning and vaccine cold chain management, immunization techniques, recording and screening immunization, monitoring and evaluation, AEFI surveillance, and risk communication were all covered in the training materials [17]. All administrative levels monitored and evaluated the vaccination program before, during, and after deployment. To maintain the quality of the COVID-19 vaccination deployment, activities were observed to:

1. Ensure that actions were carried out following standard procedures

2. Provide timely feedback for repairs when necessary

During the planning process, a monitoring team was formed, assigning roles and responsibilities, and creating monitoring schedules (microplanning). This activity was carried out in its implementation through monitoring and coaching activities, either directly or indirectly; sending feedback to policymakers, vaccination implementers, and all parties involved; and holding regular review/evaluation meetings, both face-to-face and online.

Feedback was provided at each implementation stage (pre-implementation, during implementation, and post-implementation) via official letters submitted in stages, information system technology, or directly during supervision activities [4]. Each administration level monitored vaccination coverage, vaccine distribution and use, and logistics by accessing the electronic immunization logistics monitoring system (Sistem Monitoring Imunisasi Logistik secara Elektronik/SMILE) dashboard.

General Observations and Strengths

Health workers' training was deemed inadequate due to the online training received from the MoH. Many support health workers in health services only get socialization from their training colleagues. At first, the training was only for vaccinators, and not all vaccination support teams received training.

Participants in the national training were health workers selected from a list obtained from the Indonesia MoH's health human resource data, including military health workers (TNI/Polri). The training was carried out according to a pre-planned curriculum. Due to the pandemic, the training was conducted online by the Indonesia MoH's Human Resources Training Center. Most respondents (97%) stated they had attended the training (Table 5).

Table 5. Participation in the COVID-19 vaccination management

| 250. Did you participate in the COVID-19 vaccination management training? (HF=36) | |
|--|----------|
| Yes | 35 (97%) |
| No | 1 (3%) |

At the start of the COVID-19 vaccination, the number of training participants was "limited." The knowledge and information obtained by health workers who did not attend the COVID-19 vaccination management training but were assigned to the COVID-19 vaccination implementation team were disseminated by colleagues who participated in the training. These workers were typically administrative officers or technical support teams rather than essential personnel such as vaccinators or storage officers. More than 75% of respondents said the number of officers on COVID-19 vaccination implementation teams was adequate.

Monitoring and supervision were carried out using predetermined instruments at various national, provincial, and district levels. The center has provided supervision to all regions since the program's inception.

Best practice

Monitoring and supervision of the vaccination implementation are carried out in conjunction with the implementation of other programs, to ensure time, funding, and other resources efficiency, by taking into account the accessibility of different locations for each region.

Challenges and areas needing strengthening

According to the observation, supportive supervision was infrequently and the ONA's supporting supervision instrument is not utilized routinely. Consequently, the process was not sufficiently documented in the central level.

According to local staff, online training was ineffective due to numerous technical issues, such as internet signals, quotas, and insufficient training time. After all, trainees were still performing service at their workplace, so they were less focused on adhering to the training. Some health facilities reported vaccination team members who were added after the vaccination service began did not receive training.

The online training provided at the beginning of COVID-19 was deemed insufficient because more time was required to answer questions raised by participants due to time constraints. Table 6 shows the respondents' responses to several key questions related to the respondent's knowledge after attending the online training. Most respondents answered that their knowledge was on a scale of 3 and 4. However, during the interview, the respondents mentioned constraints in implementation skills, which indicates that knowledge has not been fully transferred to the skills of the officers. In addition, some staff reported a lack of interpersonal and community communication training materials to deal with questions about vaccine-related community concerns.

Recommendations

1. Ensure that people in the field receive adequate training to avoid adverse incidents. In an emergency, adequate data supply is needed to increase the capacity of human resources or training to be held, especially when involving cross-sectors.
2. Need to develop a well-systematic training mechanism, for instance, by holding a standardized Training of Trainer (ToT) targeting the representative of province staff. So, online training can be used to gain knowledge, while sharpening skills is done offline (person to person) by trainers trained at the center. This mechanism is more sustainable if additional personnel is added to the team.

Table 6. Respondent perception after participating in the training

| 256. Following your training and the supportive supervision you have received; do you feel you have adequate knowledge in the listed areas? (Health facility = 36) | | | | | |
|--|---------|---------|-----------|-----------|------------|
| Respond: 34 | | | | | |
| Not respond: 2 | | | | | |
| Answer/Percentage | 1 | 2 | 3 | 4 | Don't Know |
| What is the COVID-19 vaccine implementation program | | | 19 (55.9) | 14 (41.2) | 1 (2.9) |
| Rationale/background for the COVID-19 vaccine phased introduction | | 1 (2.9) | 18 (52.9) | 14 (41.2) | 1 (2.9) |
| Eligibility for COVID-19 vaccination (target population, timing of 2nd dose) | | | 15 (44.1) | 17 (50.0) | 2 (5.9) |
| Contraindications | | 2 (5.9) | 13 (38.2) | 17 (50.0) | 2 (5.9) |
| COVID-19 vaccine characteristics, logistics, and storage conditions | | | 17 (50.0) | 17 (50.0) | |
| Organizing a vaccination | | | 14 (41.2) | 19 (55.9) | 1 (2.9) |
| Administration of the COVID-19 vaccine | | | 9 | 24 | 1 (2.9) |
| Preparing vaccine (using diluent, measuring vaccine dose, etc.) | | 1 (2.9) | 11 | 21 | 1 (2.9) |
| Maintaining COVID-19 measures during vaccination (social distancing, handwashing, use of face masks, etc.) | | 2 (5.9) | 9 (26.5) | 22 (64.7) | 1 (2.9) |
| Communication of critical messages to vaccinees | | 2 (5.9) | 17 (50.0) | 14 (41.2) | 1 (2.9) |
| Observation of vaccinees following immunization | 1 (2.9) | 1 (2.9) | 11 (32.4) | 20 (58.8) | 1 (2.9) |
| Management of mild or moderate AEFI (fever, malaise, sore injection site) | 1 (2.9) | | 15 (44.1) | 16 (47.1) | 2 (5.9) |
| Management of severe AEFI | 1 (2.9) | 2 (5.9) | 16 (47.1) | 13 (38.2) | 2 (5.9) |

4.7. Vaccine Demand, Advocacy, and Communication

Background

The societal demand for vaccines influenced the success of ending the COVID-19 epidemic. Vaccine availability, advocacy, and effective communication to persuade people to vaccinate all impact vaccine demand. Information and communication about COVID-19 and COVID vaccines are essential considerations when planning a vaccine campaign [18].

In September 2020, the Indonesia Ministry of Health conducted a rapid assessment survey on community acceptance of the COVID-19 vaccine to provide vaccination policy development at an early stage. The survey findings were also used to create a public communication strategy to increase public awareness of the importance of COVID-19 vaccination. According to the study, more than 70% of people were aware of the government's plan to implement COVID-19 vaccination. Other studies in Indonesia also supported the findings of this study. Public compliance with the COVID-19 vaccination is also encouraged due to vaccine regulations as a travel requirement. Furthermore, the role of public officers and government leaders in increasing vaccination is significant, namely by being publicly vaccinated.

To increase the acceptance and demand for the COVID-19 vaccine, the Indonesian government took several actions, including

- Behavioural and Social Drivers Survey (BeSD Survey)
- Assessment of Knowledge, Attitudes, and Practice (KAP)
- Risk Communication and Community Engagement Strategy (RCCE)
- Community Engagement Strategy

Various socialization media such as radio, television, newspaper, social media, electronic messaging (e.g., SMS or WhatsApp), village or neighborhood communication, community groups, religious groups, educational organizations, and medical professional bodies are used to increase demand. Then, to raise public awareness, various media such as posters, electronic messaging (e.g., SMS/WhatsApp messaging), brochures, and leaflets are created as socialization materials.

General observations and strength

As a result of observations, there is a peer-to-peer communication drive about the COVID-19 vaccine; for example, vaccinated older population told other older population around them about the COVID-19 vaccination. The older population's demand for vaccines increased because of this action. Promising results were also obtained from health workers' actions in dealing with the problem of fake news about vaccinations circulating in the community. Health workers address this by creating video testimonials and educating the public through military leaders / MOH who is well-respected so that people can be confident in the safety of the COVID-19 vaccine.

Challenges and areas needing strengthening

From the evaluation arose that 17% of the 36 health facilities interviewed said they had no plans for demand generation (Table 7).

Table 7. Plan to increase acceptance and demand for COVID-19 vaccine

| 257. Has this health facility developed a plan to generate acceptance and demand for COVID-19 vaccines? (n=36 health facilities) | |
|--|----------|
| Yes | 30 (83%) |
| No | 6 (17%) |

The issue of halal and haram vaccines for COVID-19 was mentioned by respondents when asked about the challenges that needed to be resolved related to the COVID-19 vaccination as well as rumors that had arisen in the community. This challenge was mentioned by officials in 5 provinces, namely West Nusa Tenggara, DIY, Lampung, Maluku, and North Kalimantan. From interviews with officers in one of the provinces, it was stated that society has faith in community leaders who believe the vaccine was haram and were afraid of the older population with comorbidities receiving it.

Recommendations

1. Need to encourage demand generation to be included in the microplans component so that it can be planned properly - especially for health facilities that do not yet have both micro and demand generation plans
2. Continue using community leader on-demand generation because it has proven effective in attracting people to get the COVID-19 vaccine in several areas.

4.8. Vaccine safety and AEFI Reporting

Background

COVID-19 vaccines reduce the incidence of COVID by 95% for Pfizer-BioNTech-BioNTech, 94% for Moderna-NIH, 90% for Gameleya, 67% for J&J, and 67% for Astrazeneca-Oxford [19]. The COVID-19 vaccine, like other types of immunizations, has side effects, and COVID vaccines caused several minor side effects unrelated to gender [20]. Follow-up needs to be considered because the immunological response of each vaccine recipient was different.

Referring to the Health Ministerial Regulation No 12/2017, AEFI surveillance is under the responsibility of the Directorate of Immunization MoH, BPOM, National Committee on AEFI, and other stakeholders, as presented in Figure 8. Government is partnering with universities to conduct post-authorization study for COVID-19 in 2022. AEFI reporting system in Indonesia is facilitated through the vaccine safety website (<https://keamananvaksin.kemkes.go.id/>). Both serious and non-serious AEFI must be reported through this website.



Figure 8. The flow of AEFI reporting in Indonesia generally applies to all vaccinations (<https://peraturan.bpk.go.id/Home/Details/111977/permenkes-no-12-tahun-2017>)

General observations and strength

Based on the evaluation, the administration of the COVID-19 vaccine by health workers (vaccinators) to recipients has been made correctly in all observations. (100%), such as by administering the vaccine intramuscularly (Table 8).

Table 8. Respond about administered vaccine intramuscularly

| 5. Whether the vaccine is administered intramuscularly by the vaccinator (n = 30) | |
|---|-----------|
| Yes | 30 (100%) |
| No | 0 (0 %) |

Regarding the AEFI, 47% of respondents in the health facility reported that they omitted the AEFI component in developing the microplan. Health workers at these sites have the capacity and confidence to report AEFI (IPI), 75% of sites reported having that capacity (Table 9).

Table 9. Respond about AEFI include the microplan process in the health facility

| Question | Yes | No | Don't Know |
|--|----------|----------|------------|
| 268. Does the microplan/planning process include an AEFI component? | 16 (44%) | 17 (47%) | 3 (8%) |
| 269. Do you think health workers in this facility feel sufficiently trained and confident to report an AEFI? | 27 (75%) | 9 (25%) | - |

Challenges and areas needing strengthening

1. The incorrect procedure for administering vaccines, such as the vaccinator prefilling, re-capping, and touching the syringe and rubber cap when taking and giving the vaccine, is one of the challenges encountered in vaccine safety. The evidence was discovered during the 30-observation vaccine administration (Table 10)

Table 10. The result of vaccination observation (n = 30)

| Question | Yes | No |
|---|-----------|--------|
| Is the vaccinator preparing the injection before the target arrives (prefilling)? | 30 (100%) | 0 (0%) |
| Does the vaccinator touch the needle and rubber cap when taking and giving the vaccine? | 30 (100%) | 0 (0%) |
| Does the vaccinator do re-capping? | 30 (100%) | 0 (0%) |

2. The evaluation found that not all health facilities fill out AEFI reports following the correct procedures; some even do not fill out reports at all; they also do not have vaccine safety accounts, so no report is recorded on the vaccine safety websites. Table 7 shows that there is variation in the reporting of AEFIs. In practice, it was found that mild AEFIs were not reported because they were considered normal. For responses that do not or have never been reported, this was because health workers have not encountered AEFI during the implementation of vaccinations at their health facilities (Tables 11 and 12).

Table 11. Respond about completing the AEFI report (n = 36)

| 277. How and how often are completed AEFI reporting forms transmitted to upper levels (district/province/national)? | | |
|--|-------------|--|
| Once a week | 1 (2.78%) | |
| Once a month | 7 (19.44%) | |
| Other frequency (please specify) | 26 (72.22%) | If there is a case: 9 (34.62%) No/never reported: 10 (38.46%) Every day: 2 (7.69%) 1 day after: 2 (7.69%) Once every 3 months: 1 (3.85%) Once in one year: 1 (3.85%) NA: 1 (3.85%) |
| Don't know | 2 (5.56%) | |

Table 12. Respond about completing the AEFI report last year (n = 36)

| 27. Have you had any reported AEFI for COVID-19 vaccination in the last year or since COVID-19 vaccination began? | |
|--|-------------|
| Yes | 15 (41.67%) |
| No | 21 (58.33%) |

3. During the vaccine's delivery, vaccinators did not switch gloves when handling the next recipient. This observation did not include in the questionnaire, but the observer noted this matter as a potential challenge in the field. The following observation was found in the vaccine carriers not equipped with temperature monitors. The questionnaire results stated that all observation sessions found that all vaccine carriers were equipped with temperature monitors. However, in practice, if a health facility has more than 1 device, not all devices are equipped with temperature monitors. Many vaccinators still do not know that the Pfizer-BioNTech vaccine must be reversed 10 times and injected when the alcohol swab has not dried (Table 13)

Table 13. Result of vaccination service observation (n=30)

| Question | Yes | No |
|---|-------------|-------------|
| Is the vaccine carrier or other vaccine carrier (standard, according to the type of vaccine) equipped with a temperature monitoring device? | 30 (100%) | 0 (0%) |
| The vaccinator slowly turns the vaccine vial 10 times before and after dissolving | 30 (100%) | 0 (0%) |
| Does the vaccinator wait for the alcohol swab to dry before injecting it? | 19 (41.67%) | 11 (58.33%) |

4. An additional challenge found was there are still vaccinators who do not make post-vaccination observations, do not record the completion time of vaccination, or label the vaccine vial in the refrigerator. Vaccinators have yet to receive training in handling serious AEFI, and some vaccinators are given training through online media, so it is less effective for severe AEFI handling. Also, we found there is no communication about risk management plans.

Recommendations

1. Improve the ability of the COVID-19 vaccinator. Several challenges found during the deployment indicated that the understanding and skills of vaccinators are not uniform it was related to the COVID-19 vaccination uses several types of vaccines that have different handling and are even different from routine vaccines.
2. Increase the AEFI management. It should be emphasized that mild AEFIs need to be reported.

4.9. Monitoring and Evaluation

Background

The monitoring and evaluation process of the implementation of the COVID-19 vaccination carried out in Indonesia is divided into 3 stages [21], namely:

1. Monitoring and evaluation before the implementation of COVID-19 vaccination that assessed:
 - a. Whether or not there is a district committee (POKJA) for the introduction of the COVID-19 vaccine with terms of reference, roles, and responsibilities, as well as regular meetings
 - b. Whether there is a committee or working group with workflow: 1) service delivery; 2) vaccines, cold chain, and logistics; 3) demand generation and communication; 4) prioritization, targeting, and surveillance of Covid-19; 5) Evaluation Monitoring
2. Monitoring evaluation during the implementation of COVID-19 vaccination includes
 - a. Monitoring evaluation of COVID-19 vaccination coverage achievement
 - b. Monitoring the quality evaluation of COVID-19 vaccination services
 - c. Rapid assessment of COVID-19 vaccination coverage achievements
 - d. Monitoring of AEFI evaluation
 - e. Biweekly coordination meetings at the center
3. Monitoring evaluation after implementing COVID-19 vaccination involves
 - a. Rapid assessment of COVID-19 vaccination coverage achievements
 - b. Impact evaluation through COVID-19 surveillance
 - c. Post-marketing vaccine surveillance
 - d. Monthly coordination meeting at the center

Monitoring and evaluating vaccination achievements in Indonesia were monitored electronically through the <https://vaksin.kemkes.go.id/#/vaccines> dashboard. Recording and reporting were done through PCare, while individual vaccination cards were obtained through 'PeduliLindungi.' In addition, the system made it possible to track the number of batches/lots received by the target. This COVID-19 vaccination registration system applies nationally by accommodating vaccines managed by private service providers.

COVID-19 vaccination was carried out in stages according to priority targets, namely frontline health workers, older population people, people working in public services, and other vulnerable groups, before being scaled up to the general population, according to NDVP Indonesia Version 3 dated August 2022. Vaccination targets in multidose vaccines receive information about when to return for the next dose via information from health workers when they come for the first dose, electronic messages, community communication media information, and education.

General observations and strengths

Reporting on COVID-19 vaccination in Indonesia is carried out using an electronic and real-time reporting system called P-care. This platform is used for monitoring and evaluating COVID-19 vaccination deployment. P-Care was developed to aid in the vaccination process, beginning with registration, health status screening, vaccination service records, and reporting the outcomes of COVID-19 vaccination services [22]. The system is a component of the COVID-19 vaccination data information system. Indonesia has an AEFI (KIPI) flow and reporting system as well. The AEFI report is created using a vaccine safety system accessible on its own [23].

According to the findings of this evaluation, one health facility (3%) employed paper-based reports, and 50% used mixed electronic and paper (Table 14).

Table 14. The system used for recording and reporting COVID-19 vaccination

| 281. Is the system for COVID-19 vaccine recording and reporting electronic or paper-based? | |
|--|----------|
| Electronic | 17 (47%) |
| Mixed (electronic and paper) | 19 (53%) |

For the sites that said they used electronic reports, 65% reported challenges (Table 16). The following are some of the problems raised by the respondents:

1. An error occurred, or the server was down during system maintenance
2. Electricity off
3. Signal problems or the connection is unstable
4. Gotong royong vaccines cannot be entered; we must wait for the company
5. NIK cannot be traced because Dukcapil data was not updated
6. The recording was poorly organized, so the data was unsuitable for doses 1,2,3
7. The PCare system cannot be edited, especially for the Drop Out vaccine. The vaccine status was out of sync at Pcare and PeduliLindungi, making it difficult for operators to input. When this happens, the target is given a vaccine card/statement that the person has received the vaccine
8. The target has 2 KTPs (NIK) with 2 domiciles, so P-care cannot be registered for the COVID-19 vaccination. The strategy is to report to the Disdukcapil service for NIK verification.

Table 15. The challenge among sites using electronic-based reports (n = 17)

| 285. Have you experienced challenges related to using the electronic recording/reporting system? | |
|--|----------|
| Yes | 11 (65%) |
| No | 6 (35%) |

Challenges and areas needing strengthening

1. More than half (53%) of the health facilities did vaccine and reporting using hybrid systems (manual and electronic). Reporting in these two ways is time-consuming, and the health workers on duty are ineffective. Recording with this dual method also has the potential to make the recorded data in KPCPEN and SMILE inaccurate.
2. The primary data for COVID-19 recipients still does not match the Department of Population and Civil Registration (DUKCAPIL) data. In some regions, it was a problem to calculate vaccination coverage.
3. Regarding implementing the COVID-19 vaccination, 18/36 health facilities stated no impact, while 12/36 stated that it had a negative impact (Table 17). Respondents explained that this negative impact was related to decreased routine immunization coverage, lack of human resources, a vacuum stock for IPV vaccines, and fear of coming to health facilities. They were scared of crowds, which impacted BIAS implementation because people perceived the BIAS vaccine was COVID-19, limited funds, and BIAN coverage was declining.

Table 16. Perceived impact of COVID-19 vaccination on routine vaccinations in health facilities (n = 36)

| 299. Have existing (childhood or adult) immunization programs been affected by the introduction of COVID-19 vaccine? | |
|---|-------------|
| No impact | 18 (50%) |
| Negative impact | 12 (33.33%) |
| Don't know | 5 (13.89%) |
| Positive impact | 1(2.78%) |

Respondents who said COVID-19 had a negative impact on routine immunization said it was because people were reluctant to come to health facilities (fear of crowds) and because false information spread. Furthermore, certain routine vaccines have been in short supply. Another negative impact is a decrease in immunization coverage for school-aged children in the BIAN program as a result of parents refusing to allow their children to be vaccinated.

Recommendations

1. Improve the current reporting system by considering the existing constraints. The reporting system with the saved while offline mode seems quite helpful in the Indonesian setting, considering several constraints such as network, electricity, and server not responding.
2. Develop demand generation that precisely targets people who reject the vaccination. Considering the impact of the COVID-19 vaccination on routine immunization, including decreasing coverage because they think that the routine vaccine given is the COVID-19 vaccine, this indicates rejection of the COVID-19 vaccination.

4.10. COVID-19 Surveillance

Background

Surveillance is essential for disease control through continuous monitoring of the transmission trends and taking appropriate responses. In the COVID-19 surveillance system, the MoH displays epidemiological and surveillance data through a dashboard that can be accessed by the public at: (<https://infeksiemerging.kemkes.go.id/weekly-update/perkembangan-situasi-penyakit-infeksi-emerging-minggu-epidemiologi-ke-11-tahun-2023>). In Indonesia's NDVP document, updated data on COVID-19 surveillance results have also been described.

Indonesia plans to adapt/enhance ongoing COVID-19 surveillance activities to determine the impact of introducing the COVID-19 vaccine through medium and long-term surveillance, aiming to decide long-term immunity, duration of immunity, and need for booster doses.

Indonesia has conducted and is planning to conduct vaccine effectiveness studies or vaccination impact assessments (i.e., studies to assess actual effectiveness or to determine whether COVID-19 Vaccination can reduce disease burden, with the following detail:

- The MoH has carried out 3 antibody serological surveys against the SARS-CoV-2 virus, namely in November-December 2021, March 2022, and June-July 2022, with the result that the Indonesian people already have antibodies as much as 98.5%
- Stage four of the serosurvey was conducted in January 2023 to review the antibody levels of the Indonesian people
- The Serosurvey is also used to develop evidence-based health policies. Several policies come **out of the** serosurvey results. **In addition to the** repeal of PPKM, the serosurvey forms the basis for a complete COVID-19 vaccination policy, an increase in booster vaccination achievements, and a vaccination policy for children.

General observations and strength

Several surveillance efforts have been carried out in Indonesia related to implementing COVID-19 vaccination, namely:

1. The number of COVID-19 cases is regularly published and widely available, with daily updates available to the public.
2. Indonesia has conducted a study on the effectiveness of the vaccine. This is a study of the real-world effectiveness of one or two doses of Covishield in reducing severe COVID-19/COVID-19 transmission.

Challenges and areas needing strengthening

Things that still need to be strengthened are:

1. The COVID-19 case investigation form has not been updated to include vaccination dates and vaccine products used.
2. This data is collected ad hoc, so tracking and documenting infections is a challenge.

Recommendations

1. The Ministry of Health should add vaccination status to the COVID-19 case investigation form.

2. The Ministry of Health should develop SOPs, work aids, and guidelines for collecting, recording, and analyzing this data (including the number of doses, date since the last dose, products used, etc.)
3. The Ministry of Health should study vaccine effectiveness. It was necessary to seek technical support for implementation and make such data available to people providing technical support.
4. Directorate General of Population and Civil Registry, Ministry of Home Affairs should synchronize with real data in the field for vaccine recipients. The name of the vaccine recipient is only issued by one door and is well verified.

5. Recommendations

The future development of COVID-19 is still uncertain due to the virus's evolution, which necessitates the readiness of the existing health system. Considering this, integration with routine vaccination programs in Indonesia must be prepared by considering several points from the cPIE results in anticipation of a future pandemic. This integration requires regulations with various cross-sectors, primarily suggested by optimizing existing infrastructure to reduce the high financial burden. Human resource capacity must be increased regarding planning directed and measurable programs through good microplanning.

Integration into routine programs can target vulnerable and priority groups like the older population. Considering that most COVID-19 vaccination process utilized the existing routine immunization system and wider health system in place, COVID-19 vaccination has been practically integrated to the existing system in the first place. While the overall coverage has been promising, it has casted shadows over the coverage of the older population, which was less than 30% of coverage when the report was made for boosters 1 and 2. This must be emphasized carefully, considering field constraints such as affordability, strict screening forms, and the public's understanding outside of the older population that the program is only an administrative requirement. Additionally, as exposure increases and vaccine protection decreases, certain connections in demand generation and risk communication must be improved.

Acceleration of the COVID-19 vaccination program for the older population can be accomplished through existing routine service activities such as the Integrated Development Post (POSBINDU) for the older population or older population routine services already available at the Puskesmas or other primary services to facilitate affordability. Of course, this requires infrastructure, facilities, and human resources to ensure that these services continue to disrupt existing activities.

By adjusting with specific treatment for particular COVID-19 vaccines, such as Pfizer-BioNTech, supply chains are encouraged to use and integrate with existing tools and systems. Reporting on the cold chain situation is not optimal in several cPIE regions, so procurement must be re-planned to protect the quality of the vaccine cold chain. Furthermore, the management of vaccine storage and preparation by health workers needs to be improved, taking into account the findings of cPIE, that the ability of vaccine staff is not maximized due to the proximity of the training and implementation periods.

References

- [1] Vannisa, "Provinsi di Indonesia," Perpustakaan.id, 2023.
- [2] Badan Pusat Statistik (BPS), "Penduduk Indonesia Didominasi Pria dan Usia Produktif pada 2022," DATA INDONESIA, 2022. <https://dataindonesia.id/varia/detail/penduduk-indonesia-didominasi-pria-dan-usia-produktif-pada-2022> (accessed Jun. 02, 2023).
- [3] WHO, The Republic of Indonesia Health System Review, vol. 7, no. 1. 2017. [Online]. Available: <http://apps.who.int/iris/bitstream/10665/254716/1/9789290225164-eng.pdf>
- [4] Kementerian Kesehatan Republik Indonesia, Keputusan Direktur Jenderal Pencegahan dan Pengendalian Penyakit Nomor HK.02.02/4/1/2021 tentang Petunjuk Teknis Pelaksanaan Vaksinasi dalam Rangka Penanggulangan Pandemi Corona Virus Disease 2019 (COVID-19), vol. 4247608, no. 021. 2021, p. 114.
- [5] Kementrian Keuangan direktorat Jenderal Anggaran, "PENANGGULANGAN PANDEMI COVID-19 MELALUI PROGRAM PENGADAAN VAKSIN DAN PELAKSANAAN VAKSINASI COVID-19," 2022.
- [6] C. Karolina et al., INOVASI DIGITAL KOMUNIKASI. Jakarta: Lembaga Penelitian, Publikasi dan Pengabdian Masyarakat (LP3M) LSPR, 2022.
- [7] Kementerian Kesehatan Republik Indonesia, "Penguatan Sistem Kesehatan dalam Pengendalian COVID-19," Direktorat Jenderal Pencegahan dan Pengendalian Penyakit, Kementerian Kesehatan Republik Indonesia, 2021.
- [8] C. Karolina et al., INOVASI DIGITAL KOMUNIKASI. Jakarta: Lembaga Penelitian, Publikasi dan Pengabdian Masyarakat (LP3M) LSPR, 2022.
- [9] Kemenkeu RI, "Pelaksanaan PPKM dalam Penanganan Kasus COVID-19 dan Evaluasinya," Jakarta : Direktorat Jenderal Pencegahan dan Pengendalian Penyakit, Kementerian Kesehatan Republik Indonesia, Jakarta : Direktorat Jenderal Pencegahan dan Pengendalian Penyakit, Kementerian Kesehatan Republik Indonesia, 2021.
- [10] Kementerian Kesehatan Republik Indonesia, "Vaksinasi COVID-19 Nasional," 2023.
- [11] Kemlu RI, "Protokol Kesehatan COVID-19 Perjalanan Dalam dan Luar Negeri Indonesia Mulai 1 September 2022," Jakarta : Kementerian Luar Negeri Republik Indonesia, Jakarta : Kementerian Luar Negeri Republik Indonesia, 2022.
- [12] Kanwil Kemenag DKI, "Wamenkes : Penyuntikan Covid 19 Sesuai Rekomendasi ITAGI dan Izin BPOM."
- [13] Kementerian Kesehatan Republik Indonesia, "Vaksinasi Dosis 2 Telah Mencapai 70,38% dari Target Sasaran Vaksinasi Nasional," sehatnegeriku, 2022.
- [14] Kemenkeu RI, "Perppu 1 Tahun 2020, Pengalihan Dana PMN Jadi Alternatif Sumber Pembiayaan dan Pemulihan Ekonomi terkait COVID-19," 2020.
- [15] Kementerian Kesehatan Republik Indonesia, Peraturan Menteri Kesehatan No. 10 Tahun 2021 Tentang Pelaksanaan Vaksinasi dalam Rangka Penanggulangan Pandemi Corona Virus Disease 2019 (COVID-19). Indonesian, 2021, p. 33.
- [16] Kemenkeu RI, "SURAT EDARAN NOMOR SE-6/PK/2021 TENTANG DUKUNGAN PENDANAAN DAERAH DALAM RANGKA PERCEPATAN PELAKSANAAN VAKSINASI COVID-19," 2021
- [17] Kemenkes RI, "Pelatihan Tata Laksana Vaksinasi COVID-19," Kementrian Kesehatan Republik Indonesia," Kementerian Kesehatan Republik Indonesia, 2020.
- [18] O. Sarasty, C. E. Carpio, D. Hudson, P. A. Guerrero-ochoa, and I. Borja, "Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID- 19 . The COVID-19 resource centre is

- hosted on Elsevier Connect , the company ' s public news and information," *Vaccine*, vol. 38, no. 51, pp. 8090–8098, 2020.
- [19] B. Arifin and T. Anas, "Lessons learned from COVID-19 vaccination in Indonesia: experiences, challenges, and opportunities," *Human Vaccines and Immunotherapeutics*, vol. 17, no. 11, pp. 3898–3906, 2021, doi: 10.1080/21645515.2021.1975450.
- [20] Supangat, E. N. Sakinah, M. Y. Nugraha, T. S. Qodar, B. W. Mulyono, and A. I. Tohari, "COVID-19 Vaccines Programs: adverse events following immunization (AEFI) among medical Clerkship Student in Jember, Indonesia," *BMC Pharmacology and Toxicology*, vol. 22, no. 1, pp. 1–7, 2021, doi: 10.1186/s40360-021-00528-4.
- [21] Kemenkes RI, "Pelatihan Tata Laksana Vaksinasi COVID-19," Kementerian Kesehatan Republik Indonesia, 2020.
- [22] Widyawati, "Pencatatan Vaksinasi COVID-19 melalui Aplikasi Pcare, Kemenkes Instruksikan Dinkes Segera Input Data," *Sehat Negeriku*, 2021.
- [23] Devina, "Usai Vaksinasi, Segera Laporkan Bila Terjadi KIPI," *Indonesia baik*, 2021.

ANNEX 1

1. Itinerary

Daerah Istimewa Yogyakarta (DIY)

| No | Date/Time | Fieldwork location |
|----|------------------|--|
| 1 | Mon, 28 Nov 2022 | 1. DIY Provincial Health Office 2. Gunungkidul District Health Office |
| 2 | Tue, 29 Nov 2022 | 1. Yogyakarta City Health Office 2. Puskesmas Karangmodjo 1 Gunungkidul |
| 3 | Wed, 30 Nov 2022 | 1. Puskesmas Tegalrejo Kota Yogyakarta 2. Puskesmas Ponjong 2 Gunung Kidul |
| 4 | Thu, 1 Dec 2022 | 1. Puskesmas Umbulharjo 1 Yogyakarta 2. Kodim Wonosari Clinic, Gunung Kidul |
| 5 | Fri, 2 Dec 2022 | 1. Bhayangkara Clinic Yogyakarta Police Station |

North Kalimantan

| No | Date/Time | Fieldwork location |
|----|-----------------|--|
| 1 | Mon, 5 Dec 2022 | 1. North Kalimantan Province Health Office 2. Puskesmas Tanjung Selor 3. Puskesmas Tanjung Palas |
| 2 | Tue, 6 Dec 2022 | 1. Bulungan District Health Office 2. Military Clinic (TNI) |
| 3 | Wed, 7 Dec 2022 | 1. Puskesmas Karangrejo 2. Police Clinic (POLRI) |
| 4 | Thu, 8 Dec 2022 | 1. Tarakan City Health Office 2. Puskesmas Pantai Amal |

West Sulawesi Province

| No | Date | Fieldwork location |
|----|------------------|--|
| 1 | Mon, 28 Nov 2022 | 1. Puskesmas Rangas, Mamuju 2. Puskesmas Binanga, Mamuju |
| 2 | Tue, 29 Nov 2022 | 1. Puskesmas Bambu Mamuju 2. Majene District Health Office 3. Mameje Police Clinic Station |
| 3 | Wed, 30 Nov 2022 | 1. Puskesmas Sendana 1 Majene 2. Puskesmas Tamerodo Majene |
| 4 | Thu, 1 Dec 2022 | 1. West Sulawesi Province Health Office 2. Mamuju District Health Office |

Lampung Province

| No | Date | Fieldwork location |
|----|-----------------|--|
| 1 | Mon, 5 Dec 2022 | 1. Lampung Province Health Office 2. Puskesmas Simpura, Bandar Lampung 3. Puskesmas Permata Sukarame, Bandar Lampung |
| 2 | Tue, 6 Dec 2022 | 1. Bandar Lampung Police Clinic Station 2. Pesawaran District Health Office 3. Puskesmas Kota Dalam, Pesawaran |
| 3 | Wed, 7 Dec 2022 | 1. Puskesmas Gedong Tataan, Pesawaran 2. Police Clinic Station, Pesawaran |
| 4 | Thu, 8 Dec 2022 | 1. Bandar Lampung City Health Office |

West Nusa Tenggara Province

| No | Date | Fieldwork location |
|----|------------------|--|
| 1 | Mon, 28 Nov 2022 | 1. West Nusa Tenggara Province Health Office 2. Kota Mataram Health Office |
| 2 | Tue, 29 Nov 2022 | 1. Puskesmas Ampenan, Mataram 2. Puskesmas Pagesangan, Mataram |
| 3 | Wed, 30 Nov 2022 | 1. Puskesmas Jembatan Kembar, West Lombok 2. Puskesmas Gunung Sari, West Lombok |
| 4 | Thu, 1 Dec 2022 | 1. West Lombok District Health Office 2. Military Hospital Wirabhakti, Mataram |
| 5 | Fri, 2 Dec 2022 | 1. West Lombok Police Clinic Station |

Maluku Province

| No | Date | Fieldwork location |
|----|-----------------|--|
| 1 | Mon, 5 Dec 2022 | 1. Seram Bagian Barat (SBB) District Health Office 2. Waimetal Health Center, Piru 3. Ambon City Health Office |
| 2 | Tue, 6 Dec 2022 | 1. Puskesmas InamosoMale, SBB 2. Christina Martha Tiahahu's, Ambon City 3. Puskesmas Air Besar, Ambon City |
| 3 | Wed, 7 Dec 2022 | 1. Piru Police Clinic Station, SBB 2. Maluku Provincial Health Office |
| 4 | Thu, 8 Dec 2022 | 1. Bhayangkara Hospital Ambon City |

2. Evaluation Team

The composition of the evaluation team

| No | Name | Institution |
|----|--|--|
| 1 | Sulistiyawati, S.Si, MPH., Ph.D. | Faculty of Public Health Ahmad Dahlan University, Indonesia |
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| 22 | Andini Wisdhanorita, S.KM, M.Epid. | |
| 23 | Adityanti Erlindaningrum, SKM. | |
| 24 | Ruth Tabitha, SKM. | |
| 25 | Ratih Oktri Nanda, SKM. | |
| 26 | Arrum Shafa Maulidiazmi Umar, SKL. | |
| 27 | Mariana Eka Rosida, SKM. | |
| 28 | Tasya Faradilla Putri, SKL. | |
| 29 | Victoria Indrawati, SKM., M.Sc. | |
| 30 | dr. Devi Anisiska, MKM | |
| 31 | dr. Novayanti Rumambo Tangirerung | |
| 32 | Yusneri, SKM, MM | |
| 33 | Hashtha Meyta, SST, S.Si, Apt | |
| 34 | Lulu Ariyantheny Dewi, SKM, MIPH | |
| 35 | Sekar Astrika Fardhani, SKM | |
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| 50 | Jane Soepardi, MPH, DSC | CDC Indonesia |
| 51 | Gurpreet Kaur, MD MPH | CDC Atlanta |

3. List of Health Offices and Health Facilities Visited

| No. | Provincial Health Office | District/City Health Office | Health Facility |
|-----|------------------------------|-----------------------------|--|
| 1 | Special Region of Yogyakarta | Yogyakarta City | Klinik Bhayangkara Polresta Yogyakarta |
| 2 | | | Puskesmas Umbulharjo 1 (Pustu Giwangan) |
| 3 | | | Puskesmas Tegalrejo |
| 4 | | Gunungkidul District | Puskesmas Karangmojo I |
| 5 | | | Puskesmas Ponjong 2 |
| 6 | | | Klinik Kartika 0730, Military Clinic Station |
| 7 | North Kalimantan | Bulungan District | Puskesmas Tanjung Selor |
| 8 | | | Poliklinik Kesehatan 06.10.02 Bulungan |
| 9 | | | Puskesmas Tanjung Palas |
| 10 | | Tarakan City | Klinik Polres Tarakan |
| 11 | | | Puskesmas Karang Rejo |
| 12 | | | Puskesmas Pantai Amal |
| 13 | Lampung | Bandar Lampung City | Puskesmas Permata Sukarame |
| 14 | | | Klinik Polres Bandar Lampung |
| 15 | | | Puskesmas Simpur |
| 16 | | Pesawaran District | Klinik Polres Pesawaran |
| 17 | | | Puskesmas Kota Dalam |
| 18 | | | Puskesmas Gedong Tataan |
| 19 | Maluku | Seram Bagian Barat District | Puskesmas Inamosol |
| 20 | | | Puskesmas Kairatu |
| 21 | | | Puskesmas Piru |
| 22 | | Ambon City | Puskesmas Martha Christiana Tiahahu |
| 23 | | | RS. Bhayangkara Tingkat III Ambon City |
| 24 | | | Puskesmas Air Besar |
| 25 | West Nusa Tenggara | West Lombok District | Puskesmas Gunungsari |
| 26 | | | Puskesmas Jembatan Kembar |
| 27 | | | Klinik Prama Polres West Lombok |
| 28 | | Mataram City | Puskesmas Pagesangan |
| 29 | | | Puskesmas Ampenan |
| 30 | | | Rumah Sakit Angkatan Darat Wirabakti |
| 31 | West Sulawesi | Mamuju District | Puskesmas Rangas |
| 32 | | | Puskesmas Binanga |
| 33 | | | Puskesmas Bambu |
| 34 | | Majene District | Puskesmas Tamerodo |
| 35 | | | Poli Klinik Polres Majene |
| 36 | | | Puskesmas Sendana 1 |

4. **Data collection instruments**

All instruments were entered to ONA survey support system with the link below:

| Type of questionnaire | Link |
|--|---|
| Province health office | https://enketo.ona.io/x, 14hNZPwv |
| District/City health office | https://enketo.ona.io/x/CaNzbIH2 |
| Health facility | https://enketo.ona.io/x/LXeyPC2X |
| Health worker in puskesmas | https://enketo.ona.io/x/5MDFbwiF |
| Health worker in non-puskesmas health facility | https://enketo.ona.io/x/tbzMD06u |
| Storage observation | https://enketo.ona.io/x/ka8V1jml |
| Vaccination session observation | https://enketo.ona.io/x, 18Rq3kbb |
| In-depth interview/FGD for older population | https://enketo.ona.io/x/hbGMwXcX |

ANNEX 2

1. Key indicator table

| Q No. | Key Findings | Numerator/ Denominator | % |
|---|--|--|--------------------|
| PLANNING, COORDINATION, AND SERVICE DELIVERY | | | |
| N CPIE = 36 | | | |
| 207 | % of health facilities reporting offering multiple COVID-19 vaccine products | 34/36 | 94% |
| 207 | # health facilities offering 1 COVID-19 vaccine product # health facilities offering 2 COVID-19 vaccine products # health facilities offering ≥3 COVID-19 vaccine products | 1/36 None 35 | 2.8% 0 97.2% |
| 355 | (A.5 Vaccine observation session) Q Describe the infection prevention and control precautions in place for the safe delivery of COVID-19 vaccines – highlighting key ones that are missing. | <p>The site (health facility) does not have a vaccine security account (reports are not entered on the vaccine security website). During the observation we found some to highlighting:</p> <ol style="list-style-type: none"> 1. Not all health facilities fill out AEFI monthly reports even when none of AEFI. 2. Syringe recapping and gloves are used throughout the service delivery; they should be changed per patient. 3. Non-standard carriers are not equipped with temperature monitoring, even if there is a temperature of 12-15. 4. Pfizer-BioNTech storage in the vaccine carrier is not protected (already shaken). 5. The injection session doesn't know that Pfizer-BioNTech has to gently invert the thawed vaccine vial 10 times. 6. The vaccine was not monitored; the vial was even rubbed into the hand, the Pfizer-BioNTech was flicked, and the alcohol swab had not yet dried before being injected. 7. No more observations. 8. Did not record when the dissolution of the vaccine was carried out. 9. There is no dynamic labeling for storing vaccines in the refrigerator. | |
| 377 | (A.5 Vaccine observation session) % of observation sessions where vaccinee received documentation of their vaccination | 30/30 | 100% |
| 223 | Q Major barriers identified for administering COVID-19 vaccine to the different priority groups, and how they were overcome | | |

| | | |
|---------------------------------|---|--|
| | <ol style="list-style-type: none"> Older population families do not allow to be vaccinated for fear of side effects and comorbidities. Anticipated with KIE by doctors The older population cannot go alone, or the hard accessibility of the location. Delivery Solution: family appointment first to the clinic Some health workers refuse because of vaccine haram and fear of AEFI, especially when the Moderna vaccine is. Non-priority groups, people feel they don't need vaccines and don't trust vaccines. For particular groups, such as the TNI, there is a belief that the body is healthy due to exercise, so it does not require the COVID-19 vaccine. For teachers, it is challenging to schedule time because it is during working hours. | |
| COSTING AND FUNDING | | |
| N province: 6 N district: 12 | | |
| 126 | <p>(A.2 Province/District level questionnaire) % subnational areas reporting activities for successful vaccine implementation constrained by financial resources</p> | <p>Province Level → Yes: 3/6 50%</p> <p>District Level → Yes: 2/12 16,7%</p> |
| 126 | <p>(A.2 Province/District level questionnaire) Q Which costs for COVID-19 vaccine deployment have been constrained by funding gaps.</p> | <p>Province level</p> <ol style="list-style-type: none"> The implementation of vaccinations was carried out a mass coordinated by the health office with the request of other parties. Solution by switching vaccination requests to puskesmas Limited funding for training. Solutions with online training, collaborating with third parties in the implementation of Limitations in the implementation of vaccination Solutions by collaborating with third parties in the implementation of vaccination <p>District Level</p> <ol style="list-style-type: none"> Vaccination outreach is challenging to do mobile because of the large area and population. The area of the archipelago, so it is difficult to reach as in the mountains. Solution: If it is challenging to fund activities but an emergency, it is integrated with other programs in other fields. Mobile vaccination team transportation. Supervised the implementation of covid vaccination Solution: Integrate with the out-of-building puskesmas program, such as posyandu, posbindu, and posyandu for the older population—especially in distant areas. For the company, they will bear the transport. BINDA helps in transportation and consumption |

| SUPPLY CHAIN AND WASTE MANAGEMENT | | | |
|--|--|--|------------|
| 230 | % of health facilities observed or reported problems with cold chain (vaccine doses compromised due to temperature excursions or other mishandling during transport or storage) since the new vaccine introduction | 1/36 | 2,8% |
| 235-236 | % of health facilities with vaccine wastage reports on site (Information from documents requested at beginning of the visit to the health facility/site) | 18/36 | 50% |
| 232 | % of facilities reporting inadequate cold chain capacity | n = 34 5/34 | 15% |
| 237 | % of health facilities reporting following the multi-dose vial policy for the COVID-19 vaccine | Simpan di lemari es: 20/36 Lainnya: 16/36 | 56% 44% |
| 241 | Q Description of challenges related to the delivery or collection of vaccines at vaccination facilities/sites. | Yes, 2/36 = 5.5% [non-puskesmas health facilities] The challenges faced include 1. Schedule with health facilities and local health offices; this is stated by non-puskesmas health facilities 2. At a high rate, the obstacle is the fleet used to carry vaccines from provinces to districts. At this time, there are no obstacles. This is stated by non-puskesmas health facilities | |
| 247 | % of health facilities reporting stock outs for COVID-19 vaccine in the last six months Note: Survey was done on Nov-Dec 2022 | 19/36 | 52.8% |
| HUMAN RESOURCE MANAGEMENT AND TRAINING | | | |
| 249 | % health facilities reporting sufficient trained vaccinators to meet the demand for COVID-19 vaccine? | 34/36 | 94.4% |
| 250 | % health facilities reporting at least one individual from the health facility having participated in COVID-19 vaccine training | 36/36 | 100% |
| 253 | % of health facilities reporting one or more supervisory site visits since the introduction COVID-19 vaccine | 35/36 | 97.2% |
| 256 | Q Description of how confident their knowledge of the different area's health workers felt. | On a scale of 1- 4, more than half of respondents claimed to be at number 3 for knowledge of the COVID-19 vaccination program. About the target group and vaccine contradictions, 47% said they were in the value category 4. Generally, they rate all questions in this number with a score of 3 or 4. | |
| VACCINE DEMAND | | | |
| 259 | % of health facilities reporting local COVID-19 vaccine-specific social mobilization activities conducted | 25/36 | 69.4% |

| | | | |
|-----|--|--|------|
| 263 | Q Description of questions or rumors about the COVID-19 vaccine | <ol style="list-style-type: none"> 1. Hoax news about COVID-19 vaccination, thus making the public anti-vaccination 2. Targeting the older population 3. Refusal at the beginning of vaccination 4. Anti-Jesus COVID-19 vaccine 5. HR Limitations 6. Difficult geographical access 7. No need for vaccination because they don't travel | |
| 388 | (A.6. Health worker priority group questionnaire) % health workers in priority group interviews reporting to have wanted the COVID-19 vaccine but were unable to access it. | 1/68 | 1.5% |
| | % health workers in priority group interviews reporting to have declined the COVID-19 vaccine | 2/68 | 3% |
| 265 | Q Main reasons people are refusing COVID-19 vaccination. | <ol style="list-style-type: none"> 1. Fear of vaccine side effects/long-term effects 2. Negative experiences with vaccinations in the past (including fear of syringes) 3. Distrust of institutions/governments 4. COVID cases/deaths are exaggerated, and vaccines are not needed 5. Concerns over fake vaccines | |

| VACCINE SAFETY | | | |
|----------------|---|---|------------|
| 266 | % health facilities with AEFI procedure in place | 34/36 | 94.4% |
| 269 | Q Description of whether health workers are hesitant to report AEFI either due to fear that it will lead to personal consequences, lack of confidence about diagnosis, lack of interest, etc. | Yes 27/36 No 9/36 Yes, because AEFI that occurs is relatively mild, so it is considered a common symptom. | 75% 25% |

| | | | |
|----------------------------------|---|--|---------------------------------|
| | | | |
| 279 | % health facilities that reported an AEFI for COVID-19 vaccination in the last year or since COVID-19 vaccination began | 27/36 | 75% |
| 360 | (A.5 Vaccine observation session) % of observation sessions where vaccinees were observed for the correct period after vaccination | NA | |
| MONITORING AND EVALUATION | | | |
| 281 | % health facilities using electronic recording and reporting system | 1. Electronic: 15/36 2. Mixed electronic and paper: 20/36 3. Paper: 1/36 | 1. 55.5% 2. 41.7% 3. 2.8% |
| 287 | % health facilities able to track more than one vaccine product for the programme | 32/36 | 88.9% |
| | % health facilities able to track more than one vaccine product for a given individual | 30/36 | 83.3% |
| 289 | % health facilities reporting having updated immunization registers, tally books, or other reporting materials for COVID-19 vaccination | NA | |
| 292 | % health facilities reporting tracking defaulters (if 2-dose regimens are being used) | 17/36 | 47.2% |
| 296 | % health facilities with overall uptake data available | 30/36 | 83.3% |
| 296 | Health facility vaccination overall uptake range | Average 83,115 | |
| 296 | % health facilities with uptake data available by priority group | 1. Senior: 27/36 2. People with comorbidities: 8/36 3. Special occupational group: 19/36 | 75% 22.2% 52.8% |
| 298 | Drop-out from 1 st dose to 2 nd dose (Calculated as: (COV1-COV-2)/COV-1), if available by health facility | Most respondents could not identify the number of dropout doses 1 and 2 | |
| 299 | Q Description of whether existing (childhood or adult) immunization programmes been affected by the introduction of COVID-19 vaccine: improvements or disruptions. | 18/36 = 50% reported COVID-19 vaccination has no impact on routine vaccination 12/36 (33%) reported a negative impact | |

2. Field Documentation

1. West Nusa Tenggara



Figure 1. Evaluators, international participants, and staff of the West Lombok District Health Office



Figure 2. Data collection through face-to-face interviews with the staff responsible for storage in PHO



Figure 3. Management and storage of COVID-19 vaccine in their storage



Figure 4. The situation of vaccination place in healthcare facilities



Figure 5. Patient data verification



Figure 6. Cold chain conditions in NTB

2. Maluku



Figure 7. Team of evaluators of the COVID-19 vaccination program at Maluku Health Centre



Figure 8. Vaccination observation process



Figure 9. Documentation of COVID-19 vaccine preparation in the Health Care Centre



Figure 10. Screening the target before the vaccine delivers



Figure 11. Screening of COVID-19 vaccine recipients before the vaccine injected



Figure 12. Cold chain conditions

3. Lampung



Figure 13. Evaluator team for data collection in the City Health Office of Bandar Lampung



Figure 14. In-depth interview with older population



Figure 15. COVID-19 vaccine preparation in Health Care Facilities



Figure 16. The situation of vaccination sites in healthcare services



Figure 17. Distribution of COVID-19 vaccine letter of statement from P-care



Figure 18. Cold chain conditions in one of the health centers in Lampung

4. West Sulawesi



Figure 19. Evaluator team and staff at Binanga Health Center



Figure 20. Interview with the older population in the health center



Figure 21. Cold chain observations in Health Care Facilities



Figure 22. The situation of vaccination sites in healthcare facilities



Figure 23. COVID-19 vaccine delivery



Figure 24. Cold chain conditions in a health center of Lampung

5. D.I. Yogyakarta



Figure 25. Evaluation team in Daerah Istimewa Yogyakarta Health Services

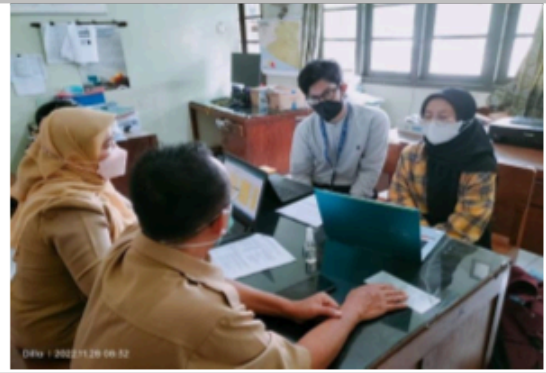


Figure 26. The data collection process for the COVID-19 vaccination programmer



Figure 27. In-depth interview with older population



Figure 28. Vaccination delivering process



Figure 29. COVID-19 vaccination services



Figure 30. Cold box condition in D.I. Yogyakarta

6. North Kalimantan



Figure 31. Evaluation Team and COVID-19 vaccination programmer hat North Kalimantan Health Services



Figure 32. Data collection process



Figure 33. Storage data observation Healthcare Facilities



Figure 34. The situation in vaccination sites



Figure 35. COVID-19 vaccination delivery



Figure 36. Fridge-tag used for maintaining the temperature of the vaccine storage in Yogyakarta