

VACCINE NEEDS ASSESSMENT

A. Coronavirus Disease Vaccine Readiness Assessment Tool

1. The Department of Health (DOH) initiated coronavirus disease (COVID-19) vaccine introduction readiness assessments in October 2020. The DOH has adopted and employed the Vaccine Introduction Readiness Assessment Tool (VIRAT) of the United Nations Children's Fund (UNICEF) and the World Health Organization (WHO). The VIRAT looks at four core activities: (i) planning and management, (ii) supply and distribution, (iii) program delivery, and (iv) supporting systems and infrastructure.

2. **Vaccine readiness assessment.** The DOH's assessments in October 2020 applied VIRAT to review the status of the required institutional and regulatory framework, administrative structure and protocols, coordination mechanisms, monitoring and safety, and remaining gaps, as well as policy recommendations to ensure effective and efficient vaccine delivery. The VIRAT has informed the preparation of the Philippine COVID-19 Vaccine Roadmap and subsequently the Philippine National Deployment and Vaccination Plan for COVID-19 Vaccines (the deployment plan).¹

3. **Planning and management.** The VIRAT notes that a COVID-19 Vaccine Cluster has been organized, and the Philippine COVID-19 Vaccine Roadmap has been issued. Based on this roadmap, the deployment plan has been prepared by the DOH and approved by the Inter-Agency Task Force for the Management of Emerging Infectious Diseases (IATF) on 26 January 2021.² The roadmap and the deployment plan aim to vaccinate 50 to 70 million people in 2021, with the deployment plan providing concrete implementation steps and clear roles for the national and local government agencies and units. The prioritization plan is consistent with WHO's Strategic Advisory Group of Experts on Immunization allocation and prioritization values framework for COVID-19 vaccines.

4. A financing plan has been prepared, covering costs of the supply and administration of vaccines, and identifying sources of financing. The regulatory framework was assessed to be ready for introducing COVID-19 vaccines. The Philippines' Food and Drug Administration has also granted emergency use authorizations to these vaccines.

5. **Supply and distribution.** The VIRAT reports ongoing data collection on storage capacity, transportation services, and other logistics management assets of the Centers of Health Development or DOH regional offices and other government agencies (Armed Forces of the Philippines, Philippine National Police, Department of Education, others). However, it states that ultra-cold chain storage capacity is not currently available in the DOH and government in general but determined to be available in private logistics companies. The DOH completed terms of reference for a third-party private logistics firm who will complement the government cold chain and logistics capacities. Procurement commenced in April 2021. Logistics arrangements and assessment of vaccine delivery and distribution are described in paras. 15–20.

6. Other gaps identified include: (i) concerns on the security of staff, central and regional storage facilities, and during the transit of vaccines and materials; (ii) inadequate inventory and mapping of logistics capacity; (iii) the need to update systems and protocols for vaccine stock

¹ Country National Vaccination Prioritization and Allocation Plan (accessible from the list of linked documents in Appendix 2 of the report and recommendation of the President).

² Department of Health. 2021. [National Deployment and Vaccination Plan for COVID-19 Vaccines](#). Manila.

management and operating procedures; and (iv) the need to scale up social mobilization and risk communications, and data collection systems. The needed actions to address these gaps have been reflected in the deployment plan (footnote 2).

7. **Program delivery.** VIRAT notes that COVID-19 vaccine delivery follows the multi-level governance structure of the health system and National Immunization Program and routine immunization. The DOH will supply and distribute vaccines, guide and monitor implementation including adverse events, and evaluate the vaccination program. The private sector is helping to meet the cold chain system requirements and logistical arrangements to supply and distribute vaccines nationwide. Local government units (LGUs) will be responsible for on-site pre-implementation, vaccine administration, and post-vaccination procedures.

8. **Supporting systems and infrastructure.** Safety surveillance measures includes the presence of a National Adverse Events Following Immunization Committee with membership from the government and the private sectors being organized by DOH's Epidemiology Bureau and Disease Control and Prevention Bureau. The adverse events following immunization (AEFI) reporting guidelines and training modules specific for COVID-19 vaccines are being finalized. The development of AEFI database specific for COVID-19 vaccine is also ongoing. Orientations on risk management plans with local governments and pharmaceutical manufacturers of COVID-19 vaccines are ongoing. The establishment of compensation schemes should there be unintended health consequences as result of COVID-19 vaccines, including no-fault liability funds, have also been forwarded to the national legislature (Congress) for their possible actions.

B. Lessons Learned from the Implementation of COVID-19 Vaccination

9. In September 2021, the Asian Development Bank (ADB) has further assessed the implementation of the National Vaccination Prioritization and Allocation Plan covering the following areas: (i) vaccine communications, (ii) vaccine information management system and other vaccine information, (iii) vaccine logistics, (iv) vaccine wastage, and (v) private sector involvement. The lessons learned, and additional assessments and findings are as follows.

a. Vaccine Communications

10. A COVID-19 communications campaign has been launched to promote vaccine acceptance, address vaccine hesitancy (e.g., by responding to mis/disinformation) and communicate vaccine-related information, including potential adverse events, vaccine efficacy, and eligibility of target population groups. Audience segmentation is currently carried out according to demographic and programmatic (e.g., prioritization) variables, which in turn informs messaging and production of communication materials. There are two major campaigns in place. The *Ingat Angat Bakuna Lahat* campaign is led by Taskforce T3, a multi-sectoral public-private consortium that works closely with DOH, National Task Force against COVID-19, and IATF to manage COVID-19 situation in the Philippines. The DOH also launched the *Resbakuna* campaign with greater emphasis among lower income groups. To ensure maximum coverage, a combination of above the line (i.e., TV, radio, print, and digital) and below the line (i.e., town halls and community chat groups) communication channels are used. A combination of population level surveys, social listening, regular stakeholder consultations, and specially commissioned research are used to monitor campaign performance.

11. National surveys tracking public sentiment towards COVID-19 vaccination have shown an increasing trend in vaccine acceptance, alongside a declining trend in vaccine hesitancy since the rollout of the government's vaccine campaign. In the latest survey conducted by Pulse Asia

(June 2021), respondents who refuse COVID-19 vaccines (36%) or remain undecided (16%) cited safety as their most common concern. Delays in vaccine delivery, limited allocation, and other supply issues also contribute to vaccine acceptance and hesitancy. In the latest survey conducted by SWS Research (September 2021), respondents who would refuse COVID-19 vaccines (18%) or remain undecided (18%) cited safety as the most common concern.³ Other concerns were on the effectiveness of vaccines and the belief that vaccinations are not needed against COVID-19.

12. Moving forward, DOH has identified the following strategic shifts in its flagship *Resbakuna* campaign: (i) integrating a diffusion of innovation model into its audience segmentation and campaign phasing, (ii) moving away from a top-down (national messaging) towards a more bottom-up approach to communication strategy and messaging (regional integration), and (iii) shifting its operational paradigm from output-centered to impact-driven. To support these strategic shifts, the Task Group on Demand Generation and Communication has established partnerships with development partners (i.e., ADB, the United Nations Development Programme, UNICEF, and United States Agency for International Development), national level line agencies (i.e., Department of the Interior and Local Government and Department of Social Welfare and Development), and civil society (i.e., Catholic Bishops Conference of the Philippines), to provide technical assistance and expand the reach of communication interventions to vulnerable and hard-to-reach populations. These strategic shifts will be key to supporting further rollout of the vaccines, as more segments of the population become eligible, and as the necessary program infrastructure for the 2022 rollout and forthcoming changes in policy that may provide for booster doses and eligibility for 12- to 17-year-olds are established.

b. Vaccine Information Management and Other Vaccine Information Systems

13. IATF Resolution No. 96, series of 2021, provides that the Philippine COVID-19 Vaccine Information Management System (VIMS) shall be the "key process automation and data capture, storage, processing, and analytics system for the immunization administration and supply chain management of the COVID-19 vaccines and its administration to the identified stakeholders." VIMS is an information technology ecosystem that covers masterlisting, vaccine administration, supply chain management, dashboard and reporting, and national digital vaccination certificate (see Annex 1).

Vaccine Information Management System: Functions and Key Features	
Feature	Function
Masterlisting	Stores data on all eligible individual vaccine recipients in the Philippines, which are captured using the Vaccination Operation Reporting System.
Vaccine administration	Captures individual vaccination data including provider information management, automation using either the Department of Information and Communications Technology–Vaccine Administration System (DVAS) or the line list upload tool for data coming from non-DVAS-using vaccination sites.
Supply chain management	Keeps track of inventory of all vaccines, whether donated or procured, that get distributed to each region and each locality using the ReTool platform, for reporting activities.
Dashboard and reporting	Determines resource allocation based on daily vaccine jab rate and days-to-last inventory, as shown during daily vaccine rollout meetings led by the National Task Force against the coronavirus disease (COVID-19).
National digital vaccination certificate	Issues official VaxCertPH, which is a digitally verifiable vaccination certificate that uses public-private key cryptography to ensure security and minimize incidences of forgery. This will ensure compliance with the World Health Organization's guidelines on the Digital Documentation of COVID-19 Certificates.

Source: Asian Development Bank.

³ Social Weather Stations is a private nonprofit social research institution. <https://www.sws.org.ph/>.

14. The Department of Information and Communications Technology (DICT) has been aggregating LGUs' vaccine eligible master lists in the VIMS immunization registry, but its delayed launch resulted in many LGU masterlists still pending for aggregation. The VIMS supply chain tool system has been informing vaccine allocation decisions to LGU vaccine administration sites. Cities and provinces are submitting aggregated and/or individual-level vaccine administration data to the VIMS database either by uploading them or through the DICT vaccine administration system. However, the uploading of individual records need to catch up with the aggregate numbers as only around 83% of individual records have been uploaded in the VIMS database as of 25 October 2021. In order to increase the submission of individual records, technical support is being provided by DICT to LGUs with limited information technology capacity. In addition, the vaccine certificates which can only be generated if the vaccinee is in the VIMS database is being leveraged to improve compliance of LGUs to submit individual level records. As of 25 October 2021, more than 700,000 vaccine certificates have been generated through VaxCertPH.

15. In addition to VIMS, the government uses its current adverse events tracing system, Vigiflow, to track adverse events after immunization of COVID-19 vaccine.⁴

c. Vaccine Logistics

16. **Logistics providers and arrangements.** The COVID-19 vaccines handling and delivery system in the Philippines has been tailored to follow each specific vaccine requirement. The DOH contracted the third-party logistics (3PL) provider, Pharmaserv Express, in a joint venture with Nonpareil International Freight and Cargo Services, Inc. There are nine LGUs who have contracted Zuellig Pharma, while others have hired ORCA and Distriphil for their cold chain storage requirements.⁵ Several private sector entities hired the services of Zuellig Pharma for vaccines procured through a tripartite agreement with the national government and vaccine manufacturer (i.e., AztraZeneca). The World Bank, for Moderna vaccine, contracted Zuellig Pharma to store and distribute the vaccines within the country.

17. The DOH has confirmed that all Centers for Health Development (CHD) have ultra-low temperature (ULT) freezers and can store and handle vaccines with different temperature requirements except for CHD IV-B and certain municipalities (Malolos, Mabalacat, and San Jose Del Monte).⁶ All CHDs have been provided with a separate fund specifically for COVID-19 vaccine logistics. However, transportation arrangements are still needs-based; for instance, some LGUs at times prefer to pick up the vaccines at the CHD warehouse. Zuellig Pharma has confirmed they have cold chain storage facilities able to store all three temperature ranges in Visayas (Cebu) and Mindanao (Davao). To date, ORCA has not published its ULT storage capabilities.

18. **Deployment and reporting.** The National Vaccine Operations Center (NVOC) provides and coordinates the allocation plan to DOH's regional supply officer who then confirms the delivery date. Upon arrival of vaccines into the country, under the coordination of DOH (Supply Chain), they are transported directly to the 3PL cold chain facility in Marikina City (except for Moderna) for receiving, inspection (Commission on Audit certification if required), and warehousing. The vaccines are packed based on the standard intact carton quantity of each manufacturer, to avoid loose vials. The 3PL distributes the vaccine to DOH regional offices (also known as CHDs) and LGUs using thermally-insulated shipping boxes to maintain the temperature requirement for each specific vaccine. In the case of ULT vaccines (−70°C), dry ice is being used

⁴ Vigiflow is a web-based individual case safety report data management system supported by Uppsala Monitoring Center and used by the government for all adverse events from vaccines including those for COVID-19.

⁵ This applies to LGUs that procured vaccines through a tripartite agreement for their own constituents.

⁶ Presentation during 95th National rollout meeting on 30 September 2021.

to maintain the temperature requirement during transportation and then stored in special ULT fridges, as required. The deployment of vaccines to CHDs (regional) and LGUs is determined based on needs and agreement between the CHDs and the LGUs under them. The DOH also transfers vaccines to ORCA, Distriphil, and Zuellig Pharma from its central warehouse.

19. All facilities—3PL, Zuellig Pharma, Distriphil, and ORCA—submit daily distribution reports to NVOC and/or DOH. ORCA and Distriphil also report to LGUs, NVOC, and DICT; and Zuellig Pharma provides daily reports of inventory and delivery to DOH. LGUs are required to submit daily inventory reports in VIMS and Vaccine Administration System. However, actual physical inventory may be different to what is being reported.

20. **Vaccine logistics visibility and control risks.** With the current VIMS visibility tools, there is a need to improve visibility of the inventory and stock movements at the LGU level. Additionally, the NVOC is facing daily challenges in allocating vaccines and rebalancing inventory supply to LGUs that on average have less than 5 days of stock to last, despite having approximately 30+ days of inventory spread across the supply chain. This inventory is not showing supplies available for allocation and is being investigated to validate the reconciliation status. Although procured inventory should be sufficient to allow all LGUs at least 10+ days of inventory, the daily allocation process is acting under the premise that surplus vaccines (wherever they are being stored or already have already been utilized) are not available or delayed due to slow turnaround times.

21. The main challenge facing similar national immunization programs (implemented under time pressure) is loss of control and inventory visibility and an inability to undertake physical reconciliation against procured stock and administered vaccinations.⁷ In short, there is a real and demonstrated risk of leakage (similar to personal protective equipment and ancillary control issues) either through grey channels, non-performing inventory, or subject to a breakdown in end-to-end stock control leading to hoarding, slow turn arounds, and lost or expiring stock. Having a secure end-to-end supply chain and logistics information system can reduce the risks associated with the acquisition, storage, allocation, transportation, and distribution of vaccines, as well as influencing the targeted policy and prioritization of risk groups (both licit and illicit). The most pressing concern is to minimize potential corruption, logistics inefficiency, and waste in the overall supply chain for COVID-19 vaccines. The DOH and DICT supply chain visibility solutions and risk control points being implemented in the Philippines are expected to address these challenges.

d. Vaccine Wastage

22. From 28 February 2021 to 4 September 2021, 28.8 million vials have thus far been delivered to all regions in the country. Majority of these were delivered to the National Capital Region (9.3 million vials), followed by Region IV-A (3.9 million vials), and Region III (2.8 million vials). Of those delivered, only 24.6% or 7.1 million vials have been returned. The DOH has also recorded a vaccine wastage of 4,855 doses during the same period. It accounts for 0.01% of the total doses delivered. In a press statement, the DOH identified factors contributing to vaccine wastage which are (i) improper storage and distribution, and/or (ii) discrepancies between the number of eligible populations captured in the masterlist and the actual number of vaccinees that showed up in the vaccination sites.

⁷ U4 Anti-corruption Resource Center. 2021. [Mitigating corruption risks in COVID-19 vaccine rollout](#). Bergen.

e. Private Sector Involvement

23. Private sector involvement in the Philippine COVID-19 vaccination program cuts across vaccine procurement, deployment, and administration. The private sector plays a key role in vaccine communications, logistics and cold chain management systems, and VIMS development. It will be recalled that the private sector has been allowed by the government to procure COVID-19 vaccines for their employees and their respective designated persons through the DOH-National Task Force against COVID-19 Joint Memorandum Circular 2021-0001 entitled “Procedures on the Procurement and Distribution of COVID-19 Vaccines for Private Entities.” In this manner, their performance contributes to national job accomplishment. Further, members of the private sector have been participating in the daily vaccination rollout meeting overseeing the communication, logistics, and VIMS across all levels of governance. This enables the government to provide streamlined responses to the different gaps and needs facing the national COVID-19 vaccination rollout.

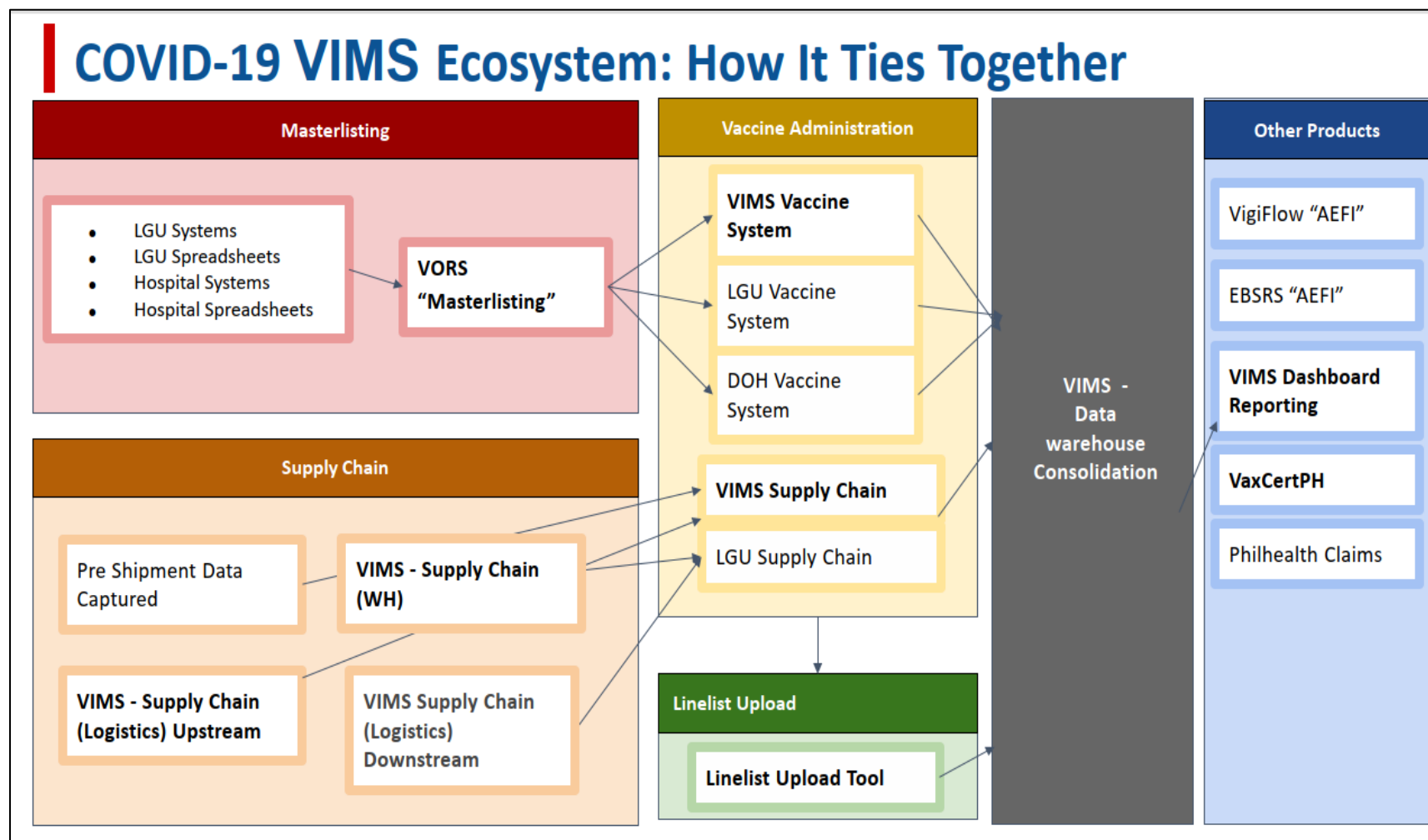
24. Moreover, the DOH expects private sector, nongovernment organizations, and health professionals (private) will continue to expand as the country receives a more stable supply of COVID-19 vaccines. In the planned 3 consecutive national immunization days in the end of November 2021 which aims to increase the over-all national COVID-19 vaccine coverage with focus on increasing coverage of older persons and regions and provinces with low vaccination rates, the private sector are expected to play a key role in achieving the targets of the 3 consecutive national immunization days.

C. Conclusions

25. ADB has previously concluded that VIRAT has provided information on the preparation of the deployment plan and that its use by DOH is appropriate. It has contributed to the country vaccine needs assessment which ADB found acceptable. ADB also noted that this assessment has informed the preparation of the Philippine National Deployment and Vaccination Plan for COVID-19 Vaccines.

26. Lessons learned in the implementation of vaccine communications, logistics, waste management, VIMS, and private sector involvement showed that these parts of the vaccine deployment delivery systems are mostly in place. However, some areas require improvement include: (i) capacity building for human resources in the use of certain vaccines, (ii) priming ongoing supply planning and deployment for rollout, and (iii) improving cold chain logistics and equipment per region to strengthen not only the COVID-19 vaccination program, but also the country’s vaccination programs in the long-term, i.e., perhaps an enhanced national immunization program.

ANNEX 1: COVID-19 VIMS ECOSYSTEM



AEFI = adverse events following immunization, COVID-19 = coronavirus disease, DOH = Department of Health, EBSRS = Evidence Based Systematic Review System, LGU = local government unit, VIMS = vaccine information management system, VORS = vaccination operation reporting system, WH = warehouse.
Source: Asian Development Bank.