



Getty Images

January 2021

## International Finance Institutions' Support to the Deployment of COVID-19 Vaccines in Low- and Middle-Income Countries: **10** Lessons from Evaluation

2020 witnessed unprecedented scientific progress in developing a vaccine to control the coronavirus (COVID-19) pandemic. This has led to the development of a range of effective vaccines spanning from traditional formulations to new ones, such as the novel mRNA or DNA-based vaccines. Many international organizations have committed their support to ensuring that the vaccines are deployed and administered as quickly as possible across the globe.

For instance, international financial institutions (IFIs), like the World Bank and the Asian Development Bank (ADB), have set aside substantial resources to support the deployment of COVID-19 vaccines, including through the use of available purchase mechanisms and the strengthening of health-related systems. In October 2020, the World Bank approved a \$12 billion envelope to finance the acquisition and deployment of COVID-19 vaccines and strengthening of related systems by its client countries.<sup>1</sup> In December 2020, ADB approved the Asia Pacific Vaccine Access Facility (APVAX), to provide a resource

**COVAX:** The COVID-19 Vaccines Global Access (COVAX) Facility was created in April 2020 to provide equitable access to COVID-19 vaccines for all participating members. COVAX offers a self-financing component for high-income countries and an advance market commitment that is open to 92 lower- and middle-income countries, including 29 ADB member countries. COVAX is part of the larger initiative, the Access to COVID-19 Tools Accelerator, to distribute new treatments, therapeutics, and vaccines to fight COVID-19.

envelope of \$9 billion and a framework to support fast, high quality, safe, and equitable vaccine access by its developing member countries (DMCs). ADB also emphasizes the importance of working in congruence with routine vaccination and other related health services.<sup>2</sup>

## CHALLENGES TO VACCINE DEPLOYMENT PROGRAMS

Delivering vaccines is a complex process, comprising many moving parts. Financing is only one part of the challenge of safely vaccinating priority populations. Through the provision of technical assistance and in partnership with specialized technical agencies, IFIs can blend their finance with other services to help countries access crucial knowledge and experience. Countries need to make decisions on vaccine selection and deployment to match their specific cultural, political, and practical realities.

While COVAX has been designed to mitigate the complexity and improve the fairness in the acquisition and distribution of COVID-19 vaccines, countries are complementarily pursuing additional mechanisms to ensure the immunization of their population. Building on the experience of ADB and other development partners, in general, there are four interrelated primary steps that countries and international organizations need to be aware of with respect to the deployment of vaccines. These steps are outlined in Figure 1: planning and coordination; budgeting; selecting; purchasing; and deploying.

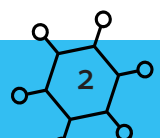
## LESSONS FROM PAST EFFORTS TO SUPPORT VACCINE DELIVERY

Evaluation and research studies of financial and technical responses to past public health crises, such as the 2009 influenza A (H1N1) pandemic and introduction of new vaccines in low- and middle-income countries, can provide important lessons in making the

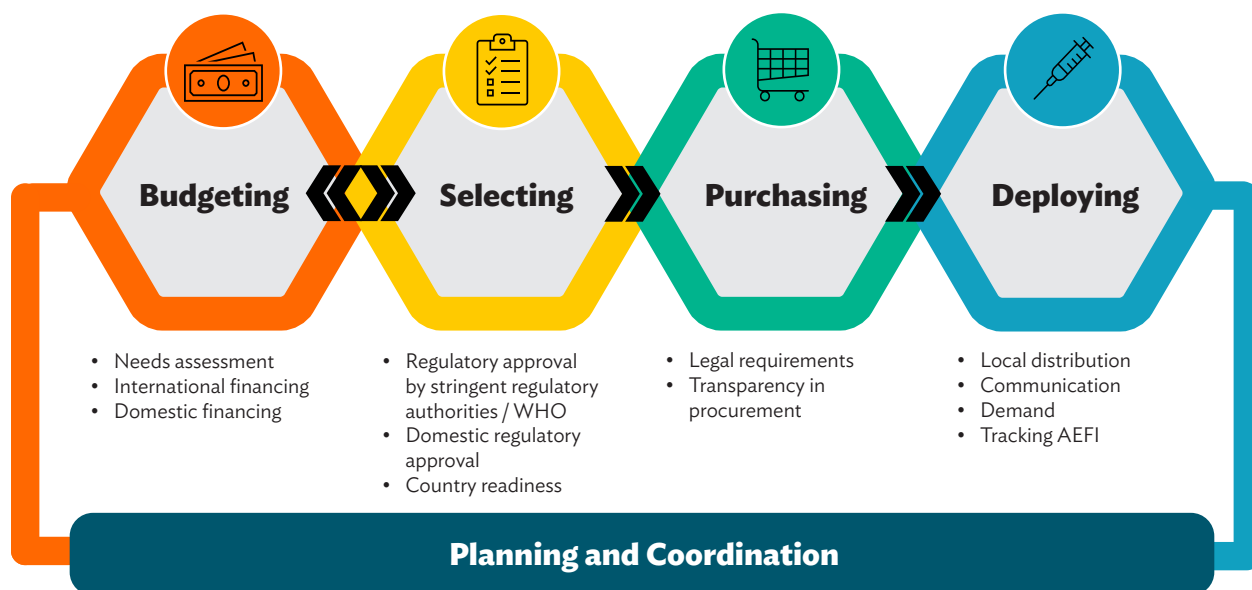
### Unique Challenges with the COVID-19 Vaccine

In many ways, the distribution of a COVID-19 vaccine will be unique in the history of vaccination programs. Some of the unique characteristics of this program include:

- **Multiple vaccine choices.** There are different vaccine choices, requiring different logistical arrangements. Having a large number of vaccine candidates means that countries will be introducing multiple vaccine products with different administration schedules, different shipping/storage/handling requirements and different adverse event profiles against the same pathogen.
- **Need for speed and scale.** Unlike routine vaccination programs, the COVID-19 vaccine must be deployed quickly, ideally to whole populations, to reach the desired level of immunity. The difficulty will be to deliver quickly, and with a clear set of priorities determining who should get the first doses, because the vaccination program will be prolonged. This is different from having adequate doses and conducting a nationwide campaign targeting all ages simultaneously.
- **Demanding cold chain and logistical process.** While the requirements vary by type of vaccine, some involve more than one dose and other special challenges, such as an ultra-cold chain for transportation and a limited shelf life outside the cold chain.
- **Need for close and continuous follow up of adverse events.** The risk of adverse events is high because of the short period for observation since vaccine development. Adverse events may occur shortly after, or months after vaccination, and can be minor or serious, with an impact on vaccine uptake in the long term. The virus itself is prone to mutations that need to be closely monitored.
- **Risk of misinformation transmitted through social media.** Given the universal focus on COVID-19, vaccination campaigns will be uniquely vulnerable to false news and misinformation.



**Figure 1. Simplified Model of a Vaccine Delivery System**



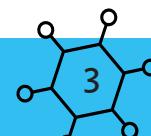
COVID-19 vaccines available to populations around the world. As countries and other specialized international organizations assisting them plot the way forward to ensure the global deployment of COVID-19 vaccines, here are 10 lessons, relevant to each one of the above mentioned primary steps.

### Planning and Coordination

**1 Effective communication with receiving agencies at the country level and clear discussion on the options available for support by IFIs, promote ownership and improve effectiveness.** Evaluations have frequently attributed deficient performance to the lack of stakeholder consultations and poor understanding of expected roles in program design and implementation.<sup>3</sup> Developing complex policies often requires inputs from numerous stakeholders, and it is common to encounter issues of ownership if, for reasons of speed, consultation or coordination is weak. This often leads to confusion regarding responsibility and a lack of understanding of what is expected of each actor. Financing agencies must avoid the assumption that “everybody is on board” and that commitment exists.



**2 Effective coordination of partnerships, capitalizing on the strength of each partner, improves both the national and international systems needed for the deployment of vaccines.** In 2006, ADB provided support to its DMCs for the Prevention and Control of Avian Influenza in Asia and the Pacific Project, working with several international organizations as well as national and international nongovernment organizations. Evaluation shows that the coordination among stakeholders that characterized this program served to strengthen the sustainability of both national and international vaccination systems.<sup>4</sup> A similar lesson was drawn from the World Bank vaccine project designed to support the deployment of vaccines in a conflict-affected population in Yemen. This project showed that the World Bank made extensive use of partnerships on the ground. This required great flexibility on the part of the Bank, and good coordination among the different agencies playing direct roles in both procurement and distribution. It also required a continuous assessment to determine who would be best suited to carry out expected and required functions.<sup>5</sup> In sum, several evaluations point to the fact that projects are less successful when coordination on the



ground is weak and when IFIs rely on technical agencies only for procurement purposes, without capitalizing on the overall comparative advantages of each organization.<sup>6</sup>

## Budgeting



**Understanding of the national public financial management process reduces delays and improves effectiveness.** While COVID-19 represents a major crisis, national budget procedures continue to operate, and governments have to allocate resources through existing mechanisms. Vaccination projects in the past have been delayed or even cancelled due to insufficient understanding of government procedures. For example, in 2009, Mexico found itself at the epicenter of the influenza A (H1N1) pandemic that had the possibility to mutate to a deadly strain. The World Bank provided the government with a \$538 million loan, including \$426 million for the purchase and deployment of vaccine.<sup>7</sup> Using emergency procedures, the project was prepared in less than two months. However, due to the intricacies of the government's budgeting process, the loan was never made effective and was cancelled. Bilateral aid agencies had a similar experience in Ghana, where a lack of understanding of government budgeting procedures led to significant delays in the deployment of childhood vaccines.<sup>8</sup>



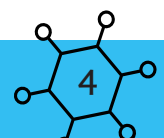
**Providing sufficient resources to cover the full costs of delivering the vaccines to the population and reflecting these costs in the national budgets lead to greater effectiveness.** While resources for purchasing vaccines may be available, many other financing bottlenecks can occur while budgeting their deployment. Data from the introduction of 15 vaccines in 10 countries in Africa and Asia showed that several steps involved in introducing vaccines can lead to significant costs beyond normal country immunization program budgets.<sup>9</sup>

These include expenses to assess pre-introduction, country readiness and supervision to identify and address problems that can negatively affect the immunization program. In these countries, immunization budgets often included expenses for vaccine purchase, cold chain equipment, training of healthcare workers, and updates to the health management information system but overlooked crucial operational costs that are key to successful deployment of a new vaccine, such as fuel for refrigerators and transportation. This problem was more prevalent in countries with decentralized health systems because operational costs were typically funded by local governments and not the national immunization program.<sup>10</sup> These issues are likely to be more pronounced with COVID-19 vaccination programs, due to their large scale and complex and costly logistical arrangements, including sequential vaccination starting with population groups at highest risk.

## Selecting



**In the case of bilateral deals, assessing and considering the complexity of regulatory and legal arrangements among stakeholders on the ground is key to avoiding delays in vaccine selection.** Past experience shows that differences in country and organization regulatory processes and legal requirements can delay the selection and approval of vaccines. During the 2009 influenza A (H1N1) pandemic, differences in national regulatory processes, and the lack of a single legal framework acceptable to all parties led to bottlenecks and delays in the selection and approval of vaccines. In more than half of the recipient countries, World Health Organization (WHO) prequalification of a vaccine was not sufficient to obtain national regulatory approval. Even with prequalification, each country had a unique regulatory process and there was little





harmonization even for emergencies. Only countries that did not require national registration for products donated by the United Nations deemed the WHO prequalification.<sup>11</sup> The situation may be different if countries get vaccines through COVAX, but in the case of bilateral deals, multiple vaccines available for selection each made by a different manufacturer and each requiring a separate approval and procurement process complicate the challenge. Moreover, unlike the H1N1 situation, where country vaccine allocation was made taking into consideration whether there were sufficient doses available from a specific manufacturer, many countries will be simultaneously administering more than one vaccine product in the fight against COVID-19.

## Purchasing



### **A high level of transparency in procurement is necessary to avoid complications and reputational risks.**

Once vaccines are selected, in case of bilateral purchase agreements, procurement is not straightforward. Experience with procurement of vaccines for the pandemic influenza A (H1N1), suggests that bilateral purchase agreements are likely to be complicated and technically demanding. For COVID-19 vaccines, this is compounded by the multiple options, the enormous demands, and the need for detailed legal agreements. Given the volume of funding involved, there can also be concerns about accountability in the use of resources, so a high level of transparency in the procurement process will be essential.<sup>12</sup>

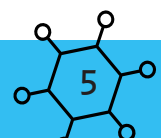


**If using regional pooled procurement arrangements, a careful plan, prepared well in advance together with the participating countries is essential to deliver on time.** The use of pooled procurement of COVID-19 vaccines may be considered, for instance, for



Vaccine delivery will be a global faultline that will run through the first half of this decade, according to Agathe Demarais, of the Economist Intelligence Unit. Key reasons include: securing vaccine ingredients, production constraints, delays in delivery, poor medical infrastructure in some countries and lack of trained health workers to administer injections, among others. *Photo credit: Guillermo Legaria/Getty Images*

several small island nations or others small states. This is similar to the approach that ADB is currently supporting in the Pacific to introduce new vaccines.<sup>13</sup> The Pan American Health Organization's (PAHO) experience with a revolving fund for vaccine procurement as well as the Gulf Cooperation Council's (GCC) group purchasing program for medical products suggests that pooled procurement can lead to cost savings and ensuring adequate supply. However, it is a lengthy process. Both programs started small and learned from experience before expanding. PAHO's revolving fund started in 1979 and now serves more than 40 member countries. It is critical for the immunization program for several small island states in the Caribbean. The GCC's program has been in operation since 1978 and procures a range of medical products. Lessons from these programs suggests two key factors of success when using this approach. First, the design of the programs needs to attract the participation of a sufficient number of countries to make the operations worthwhile and financially viable. Second, the programs need to have transparency and ownership. Governance is important and both programs were backed by strong commitment from member countries, well-defined regulations and procedures, high-quality leadership and



continuity of program staff located in an independent secretariat. Ad hoc or one-off arrangements are unlikely to be effective.<sup>14</sup>

## Deploying



### **Building on the infrastructure and strength of existing immunization programs allows for faster**

#### **deployment of new vaccine programs.**

Nearly all countries have a routine childhood immunization program, and some have seasonal influenza programs. High levels of coverage with routine childhood vaccines is an indicator of a well-functioning system that can deploy new vaccines quickly. Analysis of data from country responses to the 2009 influenza A (H1N1) pandemic indicates that countries that had a seasonal influenza vaccination program were better prepared to receive and use donated or purchased vaccines than those without a program. Countries with seasonal influenza vaccination programs are more familiar with the regular management of vaccines and can quickly deploy new vaccine programs.<sup>15</sup> Enabling factors for successful deployment of the influenza vaccine included existing systems for effective planning, importation, storage and delivery, vaccination, adverse-event monitoring and waste management.<sup>16</sup> Some low-income countries, which benefit from the assistance of GAVI, The Vaccine Alliance and UNICEF, may have well-performing national immunization programs that can provide a foundation upon which COVID-19 vaccine deployment can be built. Countries with weaker routine immunization programs will likely need early-stage and accelerated support to plan in advance of the introduction of COVID-19 vaccines.



### **Providing adequate training to frontline technical staff is key to the success of vaccination**

**programs.** Health workers play a critical and often overlooked part in the distribution chain

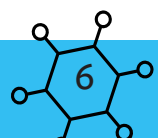


From installing freezers to setting up cold chain equipment, arrangements are being made at a Delhi government hospital for vaccine storage. Adequate and continuous training for frontline health workers is key to successful vaccination programs.  
*Photo credit: Manisha Mondal / ThePrint*

of a successful vaccination program. Indeed, the Centers for Disease Control and Prevention indicate that recruiting and training of providers is one of the most important steps prior to actual distribution of the vaccine.<sup>17</sup> USAID experience shows the importance of bearing on mind that while the physical act of vaccinating an individual is straightforward, there are many protocols that must be followed to ensure vaccine safety and effectiveness.<sup>18</sup> The protocols for newer vaccines tend to be more complex and COVID-19 is likely to pose a major challenge, with different brands requiring different protocols. Vaccine training needs to include: storage, delivery, and waste management; monitoring and reporting (including monitoring of side effects); and communication.<sup>19</sup> This is further complicated by the often low levels of education and high-level of turnover for frontline health workers, necessitating continual training and supervision. This typically requires multi-day training (typically one to four days for new vaccines) as well as a system of cascading training down to the local level.



**Successful vaccination campaigns require proactive communication strategies to inform the population and address vaccine concerns and hesitancy.** Ensuring that vaccines reach



their intended beneficiaries requires outreach and public messaging. There will always be misinformation about ongoing efforts, as has been seen many times throughout the world; for example, during the 1976 US swine flu outbreak and 2009 influenza A(H1N1) in Southeast Asia. More recently, the large 2019 measles outbreak in Samoa is attributed to misinformation about the side effects of vaccines, which led to the vaccination rate plummeting to 31% in the country.<sup>20</sup> While resistance to new public health interventions is not unusual, with COVID-19 this is being amplified by social media transmitting rumors and misinformation at lightning speed. In addition, there is the risk that some adverse effects of the vaccines may be exaggerated, leading to fear and increased vaccine resistance, with serious implications for public health. In the Philippines, for example, public concerns about the dengue vaccine in 2017 led to a dramatic drop in public trust in vaccines overall – from 93% “strongly agreeing” that vaccines are important in 2015 to 32% in 2018. This was combined with a sharp drop in views on vaccine safety from 82% strongly agreeing that vaccines are safe in 2015 to only 21% in 2018. The 2019 measles outbreak in the Philippines was attributed to the drop in vaccine coverage after the dengue vaccine controversy.<sup>21</sup> Communication strategies, media involvement and strategic engagement of stakeholders for new vaccine introduction can play a positive role, as the case of India for the pentavalent and Hib vaccines demonstrates. Messaging from local leaders, celebrities and other credible individuals, can contribute a great deal.

### Accelerating learning by incorporating new lesson in real time

While evaluation lessons from former crises are all useful and relevant, the current situation is unprecedented and calls for extraordinary efforts. As stated in the Second Report Prepared by the Independent Panel

for Pandemic Preparedness and Response for the WHO Executive Board, January 2021,<sup>22</sup> early evidence indicates that the risk of underachievement is high. Delays and inequality in plans for vaccine rollout will likely obstruct the expected impact of the tremendous efforts of countries and IFIs. The protracted nature of this process and the extended support that countries will need to complete the vaccinations have significant implications for IFIs like ADB, from a strategic, operational, and corporate perspective. New lessons will have to be drawn in real-time from this experience to ensure that responses adapt quickly and are up to the challenges posed by the COVID-19 crisis.

**Note:** This paper is distilled from evidence-based evaluation knowledge. See also the policy brief based on [presentations by PATH](#), a global nonprofit organization dedicated to health for all, at the [Policy Actions for COVID-19 Economic Recovery \(PACER\) Dialogues](#) organized by the Asian Development Bank (ADB).

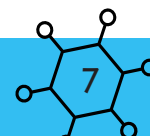
**Acknowledgements:** The production of this note was co-led by Maya Vijayaraghavan ([mvijayaraghavan@adb.org](mailto:mvijayaraghavan@adb.org)), Principal Evaluation Specialist, and Erik Bloom ([ebloom@adb.org](mailto:ebloom@adb.org)), Senior Evaluation Specialist, Independent Evaluation Department (IED), Asian Development Bank<sup>23</sup> The note was prepared under the guidance of IED Director General Marvin Taylor-Dormond and IED Deputy Director General Véronique Salze-Lozac’h.

### ENDNOTES

[1] World Bank. 2020. [Project Paper on a Proposed Additional Financing to the COVID-19 Strategic Preparedness and Response Program Using the Multiphase Programmatic Approach](#). Washington, D.C.: World Bank.

[2] Asian Development Bank. 2020. [ADB’s Support to Enhance COVID-19 Vaccine Access](#). Manila: ADB.

[3, 8,9,10,18] USAID. *Bottlenecks and Breakthroughs:*





*Lessons Learned from New Vaccine Introductions in Low-Resource Countries, 2008 to 2013.* Report prepared by the Maternal and Child Health Integrated Program for the U.S. Agency for International Development.

[4] Independent Evaluation Department. 2014. *Project Completion Validation Report: The Prevention and Control of Avian Influenza in Asia and the Pacific Project.* Manila: ADB.

[5] World Bank. 2019. [Implementation Completion and Results Report: Yemen - Health and Population Project.](#) Washington, D.C.: World Bank.

[6] Independent Evaluation Group. 2014. *The World Bank's Partnership with the GAVI Alliance.* Washington, D.C.: World Bank Group; and Independent Evaluation Group. 2011. *The Global Fund to Fight AIDS, Tuberculosis and Malaria, and the World Bank's Engagement with the Global Fund.* Washington, D.C.: World Bank Group.

[7] Independent Evaluation Group. 2012. [ICR Review. Influenza Prevention and Control.](#) Washington, D.C.: World Bank.

[11, 15] R.M. Porter, S. Goldin, K.E. Lafond, L. Hedman, M. Ungkuldee, J. Kurzum, E. Azziz-Baumgartner, C. Nannei, J.S. Bresee, A. Moen, A. 2020. Does having a Seasonal Influenza Program Facilitate Pandemic Preparedness? An Analysis of Vaccine Deployment During the 2009 Pandemic. *Vaccine*. 38(5). pp. 1152–1159.

[12] CEPA. 2012. *Lessons Learnt from the Accelerated Vaccine Introduction (AVI) Project.* Gavi Alliance. UK: Cambridge Economic Policy Associates.

[13] Asian Development Bank. 2018. [Report and Recommendation of the President to the Board of Directors: Proposed Loan and Grants to the Independent State of Samoa, Kingdom of Tonga, Tuvalu, and Republic of Vanuatu: Systems Strengthening for Effective Coverage of New Vaccines in the Pacific Project.](#) Manila: ADB.

[14] D. DeRoeck, S.A. Bawazir, P. Carrasco, M. Kaddar, A. Brooks, J. Fitzsimmons, and J. Andrus. 2006. Regional Group Purchasing of Vaccines: Review of the Pan American Health Organization EPI Revolving Fund and the Gulf Cooperation Council Group Purchasing Program. *International Journal of Health Planning Management*. 21. pp.23–43.

[16] B.A. Ruscio, and P. Hotez. 2020. Global and National Influenza Vaccine Systems to Match the COVID-19 Pandemic Response. *Vaccine*. 38(50). pp.7880–7882.

[17] Centers for Disease Control and Prevention. 2020. [COVID-19 Vaccination Program Interim Playbook for Jurisdiction Operations.](#) Atlanta: CDC.

[19] See for example the World Health Organization's [COVID-19 vaccination training for health workers.](#)

[20] Adam T Craig, Anita E Heywood, Heather Worth. 2020. Measles epidemic in Samoa and other Pacific islands. *The Lancet Infectious Diseases*: 20(3). pp. 273–275.

[21] H.J. Larson, K. Hartigan-Go, and Alexandre de Figueiredo. 2019. Vaccine Confidence Plummets in the Philippines Following Dengue Vaccine Scare: Why It Matters to Pandemic Preparedness. *Human Vaccines & Immunotherapeutics*. 15:3. pp. 625–627.

[22] Independent Panel for Pandemic Preparedness and Response for the WHO Executive Board. 2021. [Second Report on Progress.](#) Geneva.

[23] A draft version of this note was kindly commented by W. William Schluter, Director of the Global Immunization Division, CDC, and Ulla Kou Griffiths, Senior Advisor Health, Immunization Financing and Systems Strengthening, UNICEF. However, IED is fully responsible for the content of this note.

#### Disclaimer

The views and assessments contained herein do not necessarily reflect the views of the Asian Development Bank (ADB) or its Board of Directors or the governments they represent. ADB does not guarantee the accuracy of the data and accepts no responsibility for any consequence of their use.

*Learning Lessons* is a synthesis of key lessons drawn from evaluations of ADB-supported projects and programs as well as from evaluations published by other international organizations. This synthesis may include contexts derived from literature review. Lessons presented in this brief are not prescriptive, and users are advised to carefully review these lessons in the context of country, sector, and thematic conditions.

#### About the Independent Evaluation at Asian Development Bank

The Independent Evaluation Department evaluates the policies, strategies, operations, and special concerns of the Asian Development Bank relating to organizational and operational effectiveness. It contributes to development effectiveness by providing feedback on performance and through evaluation lessons.

Independent  
Evaluation 