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The Future of Immunization Financing in Latin America and the Caribbean

Miguel Betancourt-Cravioto
and Pepe Zhang



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Atlantic Council
1030 15th Street NW, 12th Floor
Washington, DC 20005
For more information, please visit
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Introduction

The Latin America and Caribbean (LAC) region has a long history of effective implementation of national immunization programs (NIPs), which has led to the successful control of infectious diseases such as smallpox, measles, and poliomyelitis, among many others. Yet challenges such as inequity, rising costs, growing population needs, and the fallout of the COVID-19 pandemic have negatively impacted the operation of NIPs in the region. This has led to a significant reduction in vaccine coverage rates (VCRs), putting the population at risk of severe, preventable diseases.

Addressing these and other challenges facing NIPs requires sustained sources of funding that are capable of expansion according to national needs. So far, the region has coped with domestic public resources and the important support of international mechanisms including the Pan American Health Organization's (PAHO) Revolving Fund (RF).

By analyzing existing immunization funding mechanisms in the LAC region and available **innovative financing strategies**, this report provides recommendations for NIPs to promptly recover from the fallout of the COVID-19 pandemic and continue on a path to effectively protect the health and well-being of the individual country populations and the region as a whole.

Innovative financing is particularly useful in today's context of fiscal constraints, as it helps public institutions maintain and enhance immunization programs by supplementing available resources with new sources of funding and/or expanding the impact of existing financing structures. Considering that immunization is a multidimensional endeavor requiring efficient management of demand, supply, delivery, and many other issues, **a holistic, health-system approach** to immunization is essential to stimulating innovative financing and maximizing its benefits.

Immunization In Latin America and the Caribbean

History of Immunization Programs

Vaccines are responsible for improving life-expectancy worldwide, mainly by dramatically reducing sickness and death from vaccine-preventable diseases (VPDs) in children. Thanks to immunization, it is estimated that up to three million deaths are averted each year among children under the age of five globally.¹ Between 2006 and 2011, around 174,000 deaths were prevented through vaccination in the Latin America and Caribbean (LAC) region.²

The LAC region has a long history with vaccination. Over two hundred years ago, Dr. Francisco X. Balmis brought to the western hemisphere the first immunization campaign against smallpox, which two centuries later became the first human disease to be eradicated.³ In the 1970s, following a World Health Organization (WHO) resolution to create the Expanded Programme on Immunization (EPI), the Pan American Health Organization launched the EPI for the region, promoting the implementation of national immunization programs.⁴

The successful implementation of the EPI in the Americas—defined by WHO as North, Central, and South America—led immunization coverage for most vaccines to increase from 50 percent in the 1970s to more than 80 percent in the early 1990s. The region became the first in the world to eliminate poliomyelitis (1994) and successfully eliminated rubella and congenital rubella syndrome (2015), measles (2016), and neonatal tetanus (2017).⁵ In addition, countries in the region were among the first developing countries to introduce new vaccines including rotavirus, human papillomavirus and pneumococcal conjugate vaccines, and to adopt maternal

immunization into their national immunization schedules.⁶ Drivers of success included the **strong political and economic commitment** of national governments and regional organizations, and **effective social mobilization campaigns**.

Regional and National Trends in Immunization Coverage

Despite these and other relevant advances, the LAC region is currently at high risk for the emergence and re-emergence of VPDs. A myriad of factors—including low and uneven economic growth, political turbulence, and service disruptions caused by COVID-19—have weakened routine vaccination programs.⁷ Two concerns stand out in particular: **downward-trending vaccine coverage rates and high degree of inequity across and within countries**.

Vaccine coverage rates (VCRs) measure the proportion of a target population that has received the recommended doses of vaccines according to the age-appropriate immunization schedule for that population. In particular, VCRs of the first and third doses of diphtheria, tetanus, and pertussis-containing vaccines (DTP) are indicators widely used to assess the performance of national immunization programs (NIPs) and overall health systems.⁸ The first dose of DTP (or DTP1) is a proxy indicator of a child's access to immunizations services, while the third dose (or DTP3) reflects continued access to immunization services.⁹

In 2020, countries in the Americas region reported an average DTP3 coverage rate of 81 percent, falling short of

1 "Immunization: Vaccines Are the World's Safest Method to Protect Children from Life-Threatening Diseases," United Nations Children's Fund (UNICEF), website accessed August 20, 2022, <https://www.unicef.org/immunization>.

2 C. F. Etienne, "Expanded Program of Immunization in the Americas: 40 Years," *Revista Panamericana de Salud Pública* [hereafter referred to as *Rev Panam Salud Pública*] 41 (2017): e139, doi: 10.26633/RPSP.2017.139; and Pan American Health Organization (PAHO), "Strengthening Immunization Programs" (Proceedings of the Fiftieth Directing Council of PAHO, Sixty-Second Session of the WHO Regional Committee for the Americas, Washington, DC, September 27-October 1, 2010).

3 C. A. Hurtado Ochoterena and N. A. Matías Juan, "Historia de la vacunación en México," *Revista Mexicana de Puericultura y Pediatría* 13 (2005): 47-52.

4 PAHO, "Expanded Program on Immunization" (Proceedings of the Twenty-Fifth Directing Council of PAHO, Twenty-Ninth Session of the WHO Regional Committee for the Americas, Washington, DC, September 27-October 6, 1977).

5 PAHO, *Pro Salute Novi Mundi: A History of the Pan American Health Organization* (Washington, DC: PAHO, 1992), accessed August 20, 2022, <https://iris.paho.org/handle/10665.2/38239>; "Health in the Americas, 2017: Health Status of the Population," Vaccine-Preventable Diseases (entry), PAHO (website), accessed August 20, 2022, <https://www.paho.org/salud-en-las-americas-2017/ro-vaccine.html>.

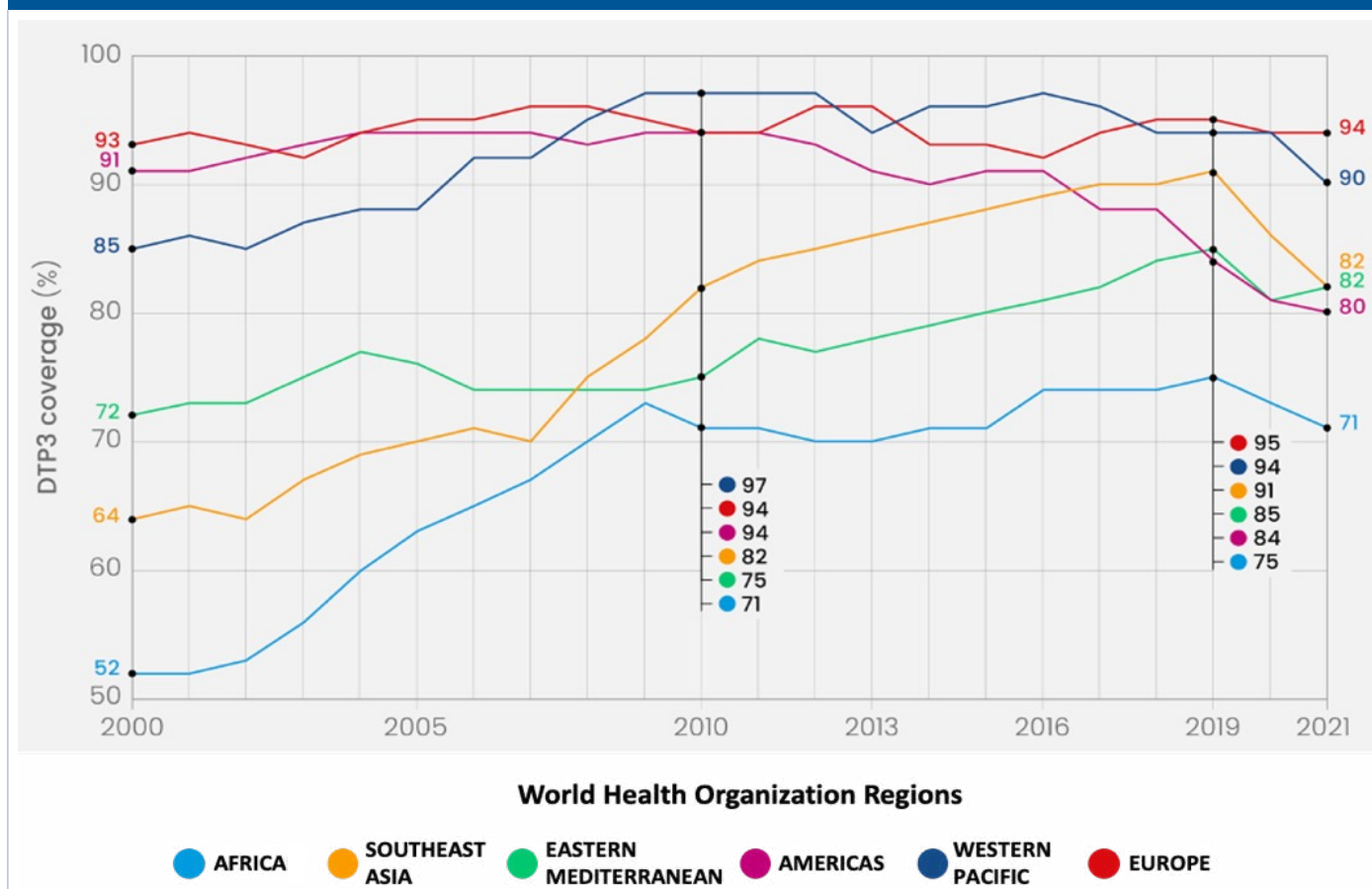
6 A. Guzman-Hols et al., "Barriers to Vaccination in Latin America: A Systematic Literature Review," *Vaccine* 38 (2020): 470-481.

7 World Health Organization/UNICEF, "Immunization Coverage: Are We Losing Ground?," WHO/UNICEF brochure, July 2021.

8 Edward Bos and Amie Batson, *Using Immunization Coverage Rates for Monitoring Health Sector Performance: Measurement and Interpretation Issues*, World Bank, August 2000, <https://openknowledge.worldbank.org/handle/10986/13800>.

9 P. Muhoza et al., "Routine Vaccination Coverage—Worldwide, 2020," *Morbidity and Mortality Weekly Report* 70 (2021): 1495-1500.

Figure 1. DTP3 Coverage by WHO Region, 2000-2021



Source: WHO and United Nations Children’s Fund (UNICEF), Progress and Challenges with Achieving Universal Immunization Coverage: 2021 WHO/UNICEF Estimates of National Immunization Coverage (WUENIC), July 2022, <https://data.unicef.org/resources/immunization-coverage-are-we-losing-ground/>; licensed under Creative Commons Attribution-NonCommercial 3.0 IGO license, <https://creativecommons.org/licenses/by-nc/3.0/igo/>.

WHO’s global target of 90 percent. This means that approximately fifteen of every one hundred LAC children under one year of age have not received the third dose of a DTP-containing vaccine.¹⁰ Additionally, the region (as shown in Figure 1 above) has experienced declining DTP uptake since 2016.¹¹

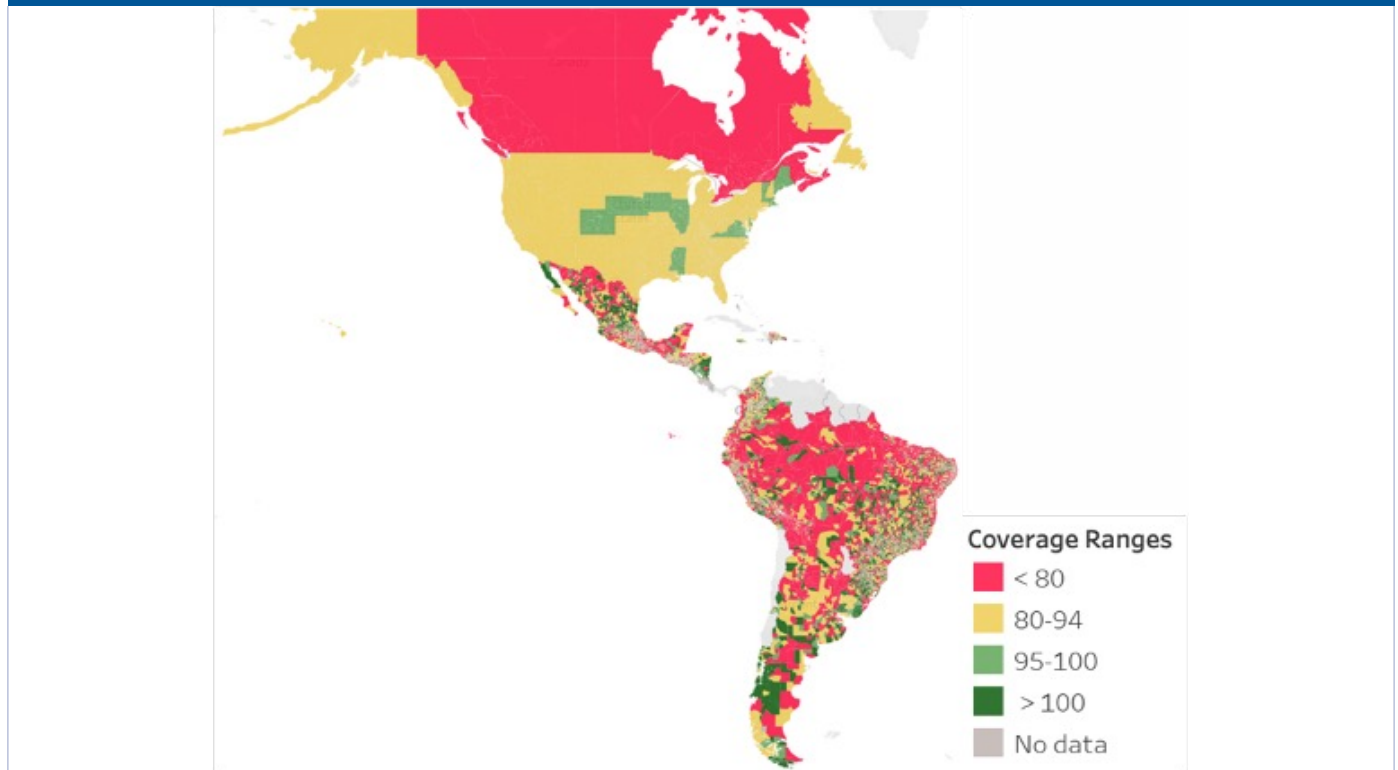
The decline has not been homogeneous across countries. On one hand, eight countries in the region have registered major reductions (ten or more percentage points) since 2010: the Bahamas, Brazil, Bolivia, Haiti, Honduras, Mexico, Suriname, and Venezuela.¹² On the other hand, a small

handful of countries like Costa Rica, Colombia, and Chile have been able to maintain—or even increase—VCRs of DTP3 and other vaccines, even during the COVID-19 pandemic. While there is little recent literature analyzing the specific conditions leading to this success, it is reasonable to attribute it at least partly to these health systems’ stronger capability to guarantee universal access to vaccines in limited-resource settings.

Divergent recent trajectories are but one symptom of overall **immunization disparities** in LAC. DTP3 coverage rates vary drastically **across countries**, from 54 percent reported

10 M. Colomé-Hidalgo et al., “Monitoring Inequality Changes in Full Immunization Coverage in Infants in Latin America and the Caribbean,” *Rev Panam Salud Pública* 44 (2020): e56.
 11 P. Muhoza, “Routine Vaccination Coverage”; Colomé-Hidalgo et al., “Monitoring Inequality Changes”; and “Datos y estadísticas de inmunización,” PAHO, accessed August 20, 2022, <https://www.paho.org/es/temas/inmunizacion/datos-estadisticas-inmunizacion>.
 12 P. Muhoza et al., “Routine Vaccination Coverage.”

Figure 2. DPT3 Coverage Rate by District, Region of the Americas, 2020



Source: PAHO, immunization coverage at the municipality level (with data from country reports), last modified May 2022, accessed August 20, 2022, http://ais.paho.org/imm/IM_ADM2_COVERAGE-MAPS-Américas.asp.

in Venezuela to 97 percent reported in Jamaica in 2021.¹³ Important subnational variation also exists **within countries** (see Figure 2), even in high VCR areas. For example, in Brazil in 2017, 10.4 percent of municipalities in the state of Sao Paulo reported pentavalent vaccine coverage under 50 percent, while 43.3 percent of municipalities reported coverage rates in excess of 95 percent for the same vaccine.¹⁴ These nuanced subnational dynamics, when overlooked, lead to pockets of unprotected populations, increasing the risk that VPDs will be reintroduced.

Regarding vaccines for other age groups, low VCRs and intercountry variability also have been observed in the LAC region. For instance, country-reported data published by PAHO show a range of human papillomavirus vaccine (HPV) coverage rates from 1 percent in adults in Saint Vincent and the Grenadines to 82 percent in Dominica, and a regional average of 34 percent.¹⁵ Several LAC countries

(e.g., Venezuela, and Nicaragua) have yet to introduce the vaccine in their NIPs. Similarly, in 2021, adult VCRs for the pneumococcal vaccine ranged from 43 percent in the Southern Cone (i.e., Argentina, Chile, and Paraguay) to 11 percent in Central America, Mexico, and the Caribbean.¹⁶

Current and Future Challenges

NIPs are considered some of the most important and effective public health interventions in the region and their impact is evident. But disease prevention and control through vaccines is far from a finished job.

Achieving and maintaining high and equitable vaccination coverage remains a central challenge, as indicated above. Compounding this are additional challenges and priorities triggered by current and future immunization needs, **such as**

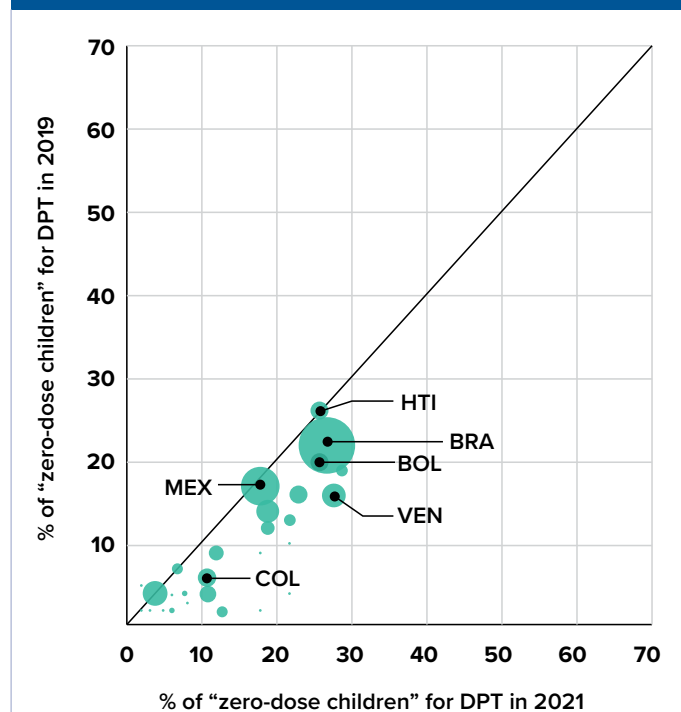
13 Guzman-Hols et al., “Barriers to Vaccination”; WHO/UNICEF, *Immunization Coverage*; and “Sustainable Immunization Financing in Latin America,” ThinkWell Global policy brief (funded by Merck Sharp & Dohme Corp., a unit of Merck & Co.), July 2019, accessed August 20, 2022, <https://thinkwell.global/wp-content/uploads/2020/10/Latin-America-Policy-Brief-116.20.pdf>.

14 “Sustainable Immunization Financing in Latin America,” ThinkWell Global.

15 “Reported Coverage in the Americas,” PAHO, last updated May 8, 2022, http://ais.paho.org/imm/IM_JRF_COVERAGE.asp.

16 Á Sosa Liprandí et al., “Influenza and Pneumococcal Vaccination in Non-Infected Cardiometabolic Patients from the Americas during the COVID-19 Pandemic: A Sub-Analysis of the CorCOVID-LATAM Study,” *Vaccines* 9 (2021): 123, <https://doi.org/10.3390/vaccines9020123>.

Figure 3. Children with No DPT Dose, Region of the Americas: 2019 vs. 2021



Source: WHO/UNICEF, 2021 WHO/UNICEF Estimates of National Immunization Coverage (WUENIC), WHO data, <https://data.unicef.org/resources/immunization-coverage-are-we-losing-ground/><https://creativecommons.org/licenses/by-nc/3.0/igo/>; licensed use per Creative Commons, <https://creativecommons.org/licenses/by-nc/3.0/igo/>.

reversing the disruptive impact of the pandemic on routine vaccination and integrating new vaccines or age groups.

The COVID-19 pandemic has deeply impacted the performance of immunization programs in numerous ways, not only through its direct impact on vaccine and supplies procurement, distribution systems, and the mobility of doctors and patients, but indirectly by overwhelming health systems. Focusing on the pandemic response prompted a necessary redirection of financial and human resources in most LAC countries. This shift, in turn, reduced available public funds and capacity to sustain regular immunization activities, resulting in a decrease of coverage rates and a considerable spike in the number of “zero-dose” children relative to pre-pandemic levels (see Figure 3). **Restoring routine immunization** should be an urgent priority for regional health.

In terms of future needs, countries **should introduce new vaccines** to better protect the region from relevant or

emerging infectious diseases, such as malaria, enterotoxigenic *E. coli*, HIV, norovirus, respiratory syncytial virus, and the notorious COVID-19 coronavirus.¹⁷ This should not come at the expense of the eleven antigens currently covered by most LAC NIPs: whether historic vaccines like polio, measles, rubella, diphtheria, tetanus, pertussis, and BCG or more recent and innovative ones like hepatitis B, *Haemophilus influenzae* type B, pneumococcal conjugate, and rotavirus. Relatedly, some of the new vaccines, such as the vaccine against pneumococcal disease, are more complex and designed to prevent diseases throughout the course of life for a growing and aging population. While a positive development, they require a greater capacity to procure an increasing number of biologicals and administer them properly, posing potential financial and technical challenges for NIPs.

To meet the current and future needs of the population, policymakers need to boost the **quality, equity, and resilience of immunization programs**, using a **holistic health-system approach**. Strong and efficient procurement and supply systems are necessary but not sufficient; **other aspects of immunizations and broader health services** must keep up. This comprises upgrades in logistical infrastructure to support modern, continuous, cold-chain processes (see Box 1), training health-care workers, incorporating digital health information and monitoring systems such as electronic immunization records, and obtaining timely and high-quality epidemiological and health data (as discussed below in the Efficient Mobilization of Domestic Public Resources section), among other things.

Box 1: Cold Chain

A set of rules and procedures that govern the proper storage and distribution of vaccines to health services from the national to the local level. The cold chain is interconnected with refrigeration equipment that allows vaccines to be stored at recommended temperatures to maintain their potency. (See PAHO’s Cold Chain Resource Center for details.) The process represents a major logistical challenge for vaccine distribution in developing countries, especially for mRNA vaccines requiring ultracold temperature storage. Gavi, the Vaccine Alliance disbursed \$1.45 billion between 2016 and 2020 to update the cold chain in beneficiary low-income countries, according to its 2020 annual progress report.

While these strategies contribute to adequate and equitable immunization coverage rates in the LAC region,¹⁸ **they**

17 “Immunization, Vaccines and Biologicals,” WHO, accessed August 20, 2022, <https://www.who.int/teams/immunization-vaccines-and-biologicals/diseases>.
 18 Colomé-Hidalgo et al., “Monitoring Inequality Changes.”

also require more resources.¹⁹ This is a tall order in today's regional economic environment: strained budgets; a stalled economic recovery amid global uncertainties including a war in Ukraine affecting food, fuel, fertilizers, and inflation; and a continuous decrease in the number of LAC countries eligible for external aid. Therefore, governments need to

explore innovative efforts to **secure new funding** for NIPs on one hand, and **optimize the application of new and existing funding** on the other. The following pages offer several concrete recommendations by dissecting current and potential future financing mechanisms for NIPs.

¹⁹ There are no recent studies regarding the level of expenditure in immunizations and their impact in VCR in the LAC region, a data collection problem described later in this paper. In addition, many other factors, such as the setup of the overall health system, may influence the level of coverage in a particular country. However, a 2021 analysis showed that there is an association between the level of investment in vaccines and national VCRs.

Immunization Financing Mechanisms

Successful NIPs depend on the **sustainable availability of budgetary resources for the purchasing, distribution, and delivery of vaccines, supplies, and services**, as shown in a breakdown of a vaccination budget (see Box 2). In most LAC countries, funding for vaccines comes primarily from direct public spending, with additional funding from donors and out-of-pocket spending. The *Global Vaccine Action Plan 2011-20*—which 194 World Health Assembly member states endorsed in May 2012—and the assembly’s Immunization Agenda 2030 (IA2030) have included sustainable finance as essential elements to achieve the long-sought goal of universal coverage for vaccines.²⁰

Box 2: Breakdown of a Vaccination Budget

According to expenditure analyses, over half of immunization spending is dedicated to the **purchase of vaccines for routine immunization and around 30 percent for vaccine delivery, irrespective of funding source. A lesser amount is dedicated to research and development (R&D) and administrative activities.**¹⁹ Figure 4 (on page 8) shows a list of the range of budgetary categories involved in the operation of vaccine delivery programs.

Immunizations are one of the best investments in health due not only to their high cost-effectiveness, with proven individual impact, but also because of the high positive externalities derived from herd immunity, which protects individuals who, for some reason, cannot be vaccinated. The direct and indirect impact of successful immunizations have contributed to the global increase in life expectancy over the past fifty years, and to societal development as a whole. This section summarizes three main mechanisms used to finance NIPs in LAC countries.

Public Resources

Throughout the world, most immunization programs are largely funded by government spending, representing on

average 60 percent to 80 percent of total immunization spending. External financial assistance from multilateral organizations and mechanisms such as Gavi, WHO, UNICEF, development banks, and philanthropic organizations (such as the Bill & Melinda Gates Foundation, among others) represents around 30 percent of total spending. Out-of-pocket spending and prepaid private spending constitute the smallest share of immunization spending.²¹

Considering the importance of public spending for maintaining and operating immunization programs, securing the necessary fiscal space is essential for countries to achieve VPD prevention goals. In general, governments can create and improve fiscal space through efficient tax collection, adequate budgetary management, and as a temporary measure, loans.²² Governments also can explore a number of innovative solutions for immunization financing, which are detailed below in the Additional Innovative Financing Mechanisms section.

Most LAC countries finance their NIPs through government funds and consider different strategies to ensure the availability of such funds, including formal procurement mechanisms and tax incentives for importation of vaccines and vaccine-related goods. Several countries in the region—Bolivia, Brazil, Costa Rica, El Salvador, Ecuador, Guatemala, Honduras, Nicaragua, Panama, Paraguay, Peru, and Venezuela²³—**have dedicated budget lines** for vaccine purchases, while some smaller countries do not have a legally established budget for this process.

Self-reported data from countries published by PAHO show that in 2021, 61 percent of reporting LAC countries (specifically, twenty-three countries) financed routine immunization using exclusively government funds. The contribution of government funds for routine immunization programs in the remaining countries range from 79 percent in Haiti to 99 percent in the Bahamas and Cuba. As for funding vaccine purchasing, 81 percent of twenty-seven countries finance solely with government funds. The remaining countries finance between 91 percent (Guyana) and 98 percent (El Salvador and Cuba) of

20 G. Ikilezi et al., “Estimating Total Spending by Source of Funding on Routine and Supplementary Immunisation Activities in Low-Income and Middle-Income Countries, 2000–17: A Financial Modelling Study,” *Lancet* 398 (2021): 1875–93, [https://doi.org/10.1016/S0140-6736\(21\)01591-9](https://doi.org/10.1016/S0140-6736(21)01591-9); WHO, *Global Vaccine Action Plan 2011-20*, February 21, 2013, <https://www.who.int/publications/i/item/global-vaccine-action-plan-2011-2020>; and see “Immunization Agenda 2030: A Global Strategy to Leave No One Behind,” WHO (website), April 1, 2020, <https://www.who.int/teams/immunization-vaccines-and-biologicals/strategies/ia2030>.

21 Ikilezi et al., “Estimating Total Spending.”

22 H. Saxenian et al., “An Analysis of How the GAVI Alliance and Low- and Middle-Income Countries Can Share Costs of New Vaccines” *Health Affairs* 30 (2011), <https://doi.org/10.1377/hlthaff.2011.0332>.

23 S. P. Trumbo et al., “Vaccination Legislation in Latin America and the Caribbean,” *Journal of Public Health Policy* 34 (2013): 82–99, <https://doi.org/10.1057/jphp.2012.66>.

Figure 4. Budgetary Categories Involved in the Operation of Vaccine Delivery Programs

Categorization	Category name	Details
Budget category	Workforce	Shared and immunization-specific personnel salary and volunteer labor estimated as the market value.
	Vaccines	Vaccines, including wastage and supplies, including syringes, diluent, safety boxes and other supplies used for administration of vaccines.
	Transport	Value of all vehicles and modes of transport, maintaining vehicles and other transport for immunization-related activities and other immunization-related transport, including both facility-based and outreach services.
	Cold chain	All cold chain equipment used to store and transport vaccines, related energy cost and the cost of ice.
	Infrastructure	Building areas, utilities and communication, costs related to building overheads, other equipment, such as computers, printers, furniture, other medical equipment used for immunization-related activities and printing costs, related to immunization-related materials.
	Per diem	Any allowances paid to paid or volunteer workers for immunization-related activities.
Programmatic activity	Facility based services	Time and resources spent on the act of administering vaccines to children within facilities and costs of vaccines delivered through facilities.
	Surveillance	Disease surveillance, following-up post-vaccination events and active cases of diseases that were prevented by vaccination, record keeping, health management information systems, monitoring and evaluation.
	Program management	Program management, training, and supervision.
	Outreach services	Time and resources spent for outreach and costs of vaccines delivered through outreach.
	Social mobilization	Time and resources spent mobilizing the community and households and advocating for vaccination.
	Supply chain	Cold chain equipment used to store and transport vaccines, cold chain energy cost, the cost of ice, and time and resources spent on vaccine collection, distribution and storage.

Adapted from: F. Geng et al., “The Cost Structure of Routine Infant Immunization Services: A Systematic Analysis of Six Countries,” *Health Policy and Planning* 32 (2017): 1174-1184, <https://doi.org/10.1093/heapol/czx067>.

vaccine acquisition with government funds.²⁴

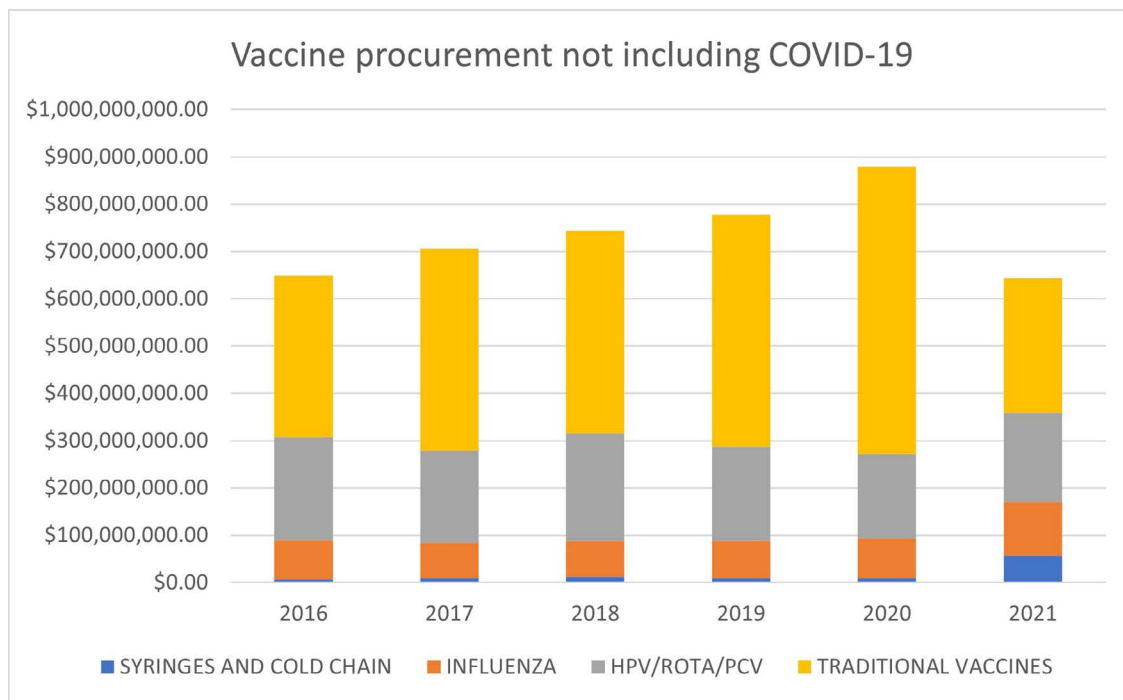
PAHO’s Revolving Fund

The Revolving Fund (RF) is a technical cooperation mechanism established by PAHO in 1979 to promote financial

sustainability of NIPs and ensure affordable access to high-quality WHO-prequalified vaccines, syringes, and related supplies. The RF provides participating countries with a sustainable line of credit, helps forecast and consolidate their national demand, and places combined orders directly with manufacturers. By leveraging economies of scale to improve purchasing power, it secures

24 “Immunization in the Americas: 2021 Summary,” PAHO, accessed August 20, 2022, https://iris.paho.org/bitstream/handle/10665.2/54858/PAHOFPLIM210040_eng.pdf?sequence=5&isAllowed=y; “Immunization in the Americas: 2020 Summary,” PAHO, accessed August 20, 2022, <https://iris.paho.org/handle/10665.2/55560>; “Immunization in the Americas: 2019 Summary,” PAHO, accessed August 20, 2022, https://www3.paho.org/hq/index.php?option=com_docman&view=download&category_slug=brochures-immunization-1581&alias=50553-immunization-in-the-americas-2019-summary&Itemid=270&lang=en; and “Operating Procedures of the PAHO Revolving Fund for the Purchase of Vaccines, Syringes, and Other Related Supplies, 2008,” PAHO, accessed August 20, 2022, <https://www.paho.org/en/documents/operating-procedures-paho-revolving-fund-purchase-vaccines-syringes-and-other-related>.

Figure 5. Yearly Purchase of Vaccines and Supplies through the Revolving Fund, PAHO, 2006-2021



Source: Elaborated and provided by PAHO in 2022.

a continuous and reliable supply for LAC countries at the lowest negotiated price.²⁵

To capitalize the RF, countries pay a 4.25 percent service charge applied to the cost of each order; 3 percentage points of the service charge contribute to the Capital Fund, used to provide short-term credit to countries, and 1.25 percentage points cover administrative and operational costs. The RF also receives contributions from countries and funding partners.²⁶

The RF has an enormous impact on access to immunization in the LAC region: twenty-five million people have received at least one vaccine annually procured through the RF in the region as of 2019.²⁷ In 2021 alone, the procurement

value of the RF exceeded \$1 billion, including over \$600 million in non-COVID procurement (Figure 5).²⁸

This secure, consistent supply of vaccines has contributed to major vaccination efforts and successes in the last thirty years, including the elimination of polio, measles, and rubella as well as the introduction of new vaccines to national immunization programs, such as those against pneumonia, rotavirus, human papillomavirus, and Haemophilus influenzae-containing vaccines.²⁹

Through the RF, countries in the region have had stable access to vaccines, as well as technical assistance for managing vaccine procurement.³⁰ In doing so, the RF supports not only the procurement component of NIPs, but indirectly

25 Trumbo et al., "Vaccination Legislation in Latin America and the Caribbean."

26 PAHO, "Operating Procedures of the PAHO Revolving Fund."

27 A. Porras, "Improving Access to Strategic Health Supplies through Pooled Procurement: PAHO's Revolving Funds," PAHO, 9, accessed August 20, 2022, <https://indico.un.org/event/28787/material/slides/4.pdf>.

28 "PAHO Revolving Fund Brochure 2022," PAHO, accessed August 20, 2022, <https://www.paho.org/en/documents/paho-revolving-fund-brochure-2022>.

29 PAHO, "The PAHO Revolving Fund for Vaccine Procurement: Pillar of the Regional and Comprehensive Approach on Immunization in the Americas" (Presented at the Developing Countries Vaccine Manufacturers Network [DCVMN] Fifteenth Annual Meeting, New Delhi, India, October 28-29, 2014), accessed August 20, 2022, https://www.dcvmn.org/IMG/pdf/the_paho_revolving_fund_2.pdf

30 E. Anthony S. Nelson et al., "Overcoming Perceptions of Financial Barriers to Rotavirus Vaccine Introduction in Asia," *Human Vaccines & Immunotherapeutics* 9, no. 11 (2013): 2418-2426, DOI: 10.4161/hv.26107.

frees up national resources to strengthen other components including immunization program delivery.³¹

Gavi Support for Low-Income Countries

Gavi is a public-private partnership among multilateral organizations (e.g., UNICEF, WHO, the World Bank), donor governments, vaccine manufacturers, research institutions, and philanthropic donors like the Bill & Melinda Gates Foundation. Created in 2000 (and then known as the Global Alliance for Vaccines and Immunization), its objective is to bring to the table the monetary resources and experience needed to support vaccine access in the poorest countries, thereby saving lives by preventing the occurrence of VPDs. Gavi is currently the most important donor-funded support for vaccination in low-income countries.³² During its first twenty years of existence, Gavi has helped to vaccinate almost 900 million children in seventy-seven countries—about 60 percent of the global birth cohort—and increased DPT3 coverage by 19 percentage points.³³

Initially, six LAC countries were eligible, due to their level of national income, for different types of Gavi support: Bolivia, Cuba, Guyana, Haiti, Honduras, and Nicaragua.³⁴

As of 2020, **the only LAC country eligible for Gavi support is Haiti** since the other countries have surpassed the qualifying level of national income. To address this issue, Gavi's fifth strategic period (2021-2025) includes a series of operational changes designed to expand the mechanism's focus on health-system sustainability beyond immunization to also support former participating countries and those who have never been eligible. Through objectives such as "promotion of domestic public resources for immunization and primary health care to improve allocative efficiency" and "preparing and engaging self-financing countries to maintain or increase performance," Gavi hopes to secure long-term predictable funding for vaccination.

In terms of its functioning, Gavi operates similarly to PAHO's RF by leveraging economies of scale and pooling beneficiary country demands. In fact, through the RF, PAHO is Gavi's partner for the LAC region on procurement and delivery aspects for all countries receiving Gavi support.³⁵ Mechanisms like RF and Gavi stimulate vaccine production by creating large, stable, and long-term markets for manufacturers, a positive scenario for ensuring vaccine availability and reducing prices for low- and middle-income countries.

31 Ikilezi et al., "Estimating Total Spending"; and R. Tapia-Conyer et al., "Strengthening Vaccination Policies in Latin America: An Evidence-Based Approach," *Vaccine* 31 (2013): 3826-33, <https://doi.org/10.1016/j.vaccine.2012.12.062>.

32 H. Saxenian et al., "An Analysis of How the GAVI Alliance and Low- And Middle-Income Countries Can Share Costs of New Vaccines," *Health Affairs* 30, no. 6 (2011): 1122-33, <https://tinyurl.com/3rzs828v>; "Annual Progress Report: Year 5 of Our Five-Year Strategy," Gavi, The Vaccine Alliance, accessed August 20, 2022, <https://tinyurl.com/3c7epbev>

33 Gavi, "Annual Progress Report: Year 5."

34 "Countries Approved for Support," Gavi (website), information as of April 30, 2017, accessed August 20, 2022, <https://tinyurl.com/2p864t64>.

35 PAHO, "The PAHO Revolving Fund for Vaccine Procurement."

Innovation For Funding Immunization Programs

To overcome the numerous challenges facing NIPs, including growing budgetary pressures, LAC governments should better marshal available financial resources through existing or new mechanisms. Innovative financing can assist in both cases. This section examines two broad areas of innovative financing, each including three sets of recommendations:

- Innovation for domestic financing
 - *Expansion of fiscal space*
 - *Efficient mobilization of domestic public resources*
 - *Public-private partnerships*
- Additional innovative mechanisms to catalyze immunization financing
 - *Results-based financing*
 - *Impact bonds, advanced market commitment, and credit guarantees*
 - *Gavi, PAHO, and others*

In some contexts, innovative financing refers specifically to mechanisms for adding public and private capital to fund specific projects. For the purpose of this report, innovative financing refers to mechanisms aimed at supplementing available resources by tapping into new sources of funding and/or expanding the impact of existing financing structures. **Through innovative financing, countries can find ways to obtain fresh money or make existing money work harder.**

Innovation for Domestic Financing

Expanding Fiscal Space for Immunization

Domestic public resources are the first and sometimes only line of defense against a myriad of VPD challenges in the region (from decreasing coverage rates to emerging public health threats). As a result, public policies and funding have shaped the current state of play of most NIPs in the region and will remain foundational to their future improvements and innovation.

To ensure the availability of resources for NIPs, **fiscal space for immunizations needs to be legally defined** to protect it from future reductions, particularly in times of economic and budgetary volatilities. Perhaps even more importantly, it should be established with an inherent **capacity to expand** according to the growing needs of immunization programs, including the need to introduce new vaccines or cover new age groups.³⁶

Such progressive expansion can be achieved through the creation of **specific budget lines for all aspects of immunization program management** (see Figure 4 on page 8). These should include, among others, vaccine and supply procurement, strengthening of capacity to distribute vaccines to the point of care, updating cold-chain systems, training healthcare workers, and social outreach strategies.³⁷ This is particularly important in the region: although most LAC countries have created a public immunization budget—among the most difficult steps in strengthening NIP ownership, quality, and independence³⁸—the definition of relevant budget lines tends to be relatively narrow and limited to vaccine procurement.

In addition, **legal frameworks** need to be established or improved to grant immunization programs the required level of priority they deserve, outlining funding sources (e.g., national budgets, local budgets, private- and other nongovernmental-sector contributions, external support through loans), performance goals, and other accountability measures. Relatedly, taking a holistic, health-system approach, complementary efforts to boost potential public revenue for immunization may include well-designed taxation policies, such as earmarked sin taxes on health-damaging products like tobacco and liquor.³⁹

Colombia, for example, in a context of increased health investment derived from general economic growth, has benefited from some of the above measures to make efficient use of existing and newly available resources for immunizations. Moreover, it implemented additional innovation financing mechanisms such as **results-based financing at the municipal level, public-private partnerships,** and

36 “Sustainable Immunization Financing in Latin America” Thinkwell Global.

37 “Sustainable Immunization Financing in Latin America” Thinkwell Global.

38 C. Cid Pedraza et al., “Espacio fiscal para el financiamiento sostenible de los sistemas de salud y la salud universal,” *Rev Panam Salud Pública* 42 (2018): e197, <https://doi.org/10.26633/RPSP.2018.197>.

39 M. McQuestion et al., “Routes Countries Can Take to Achieve Full Ownership of Immunization Programs,” *Health Affairs* 35, no. 2 (2016): 266-71, <https://doi.org/10.1377/hlthaff.2015.1067>.

social impact bonds.⁴⁰

Efficient Mobilization of Domestic Public Resources

After establishing strong legal frameworks and safeguarding the relevant budget lines for NIPs, LAC central governments should pursue innovative strategies to better mobilize domestic public resources, such as **enhanced data analytics** and **collaboration with subnational governments**.

Solid, current data is essential to constructing accurate cost-benefit analyses for NIPs, yet it is sorely lacking in LAC countries at the moment. **Such data enables health authorities to make evidence-based cases for requesting increases in funding to legislative bodies and finance ministries**, thus helping to meet the expanding need for immunization resources. A useful tool for national authorities is *How to Cost Immunization Programs*, a practical guide on how to collect relevant data for costing exercises, by immunizationeconomics.org and the Harvard T. H. Chan School of Public Health.⁴¹ These types of tools produce data, systems, and metrics that can support epidemiological planning and response, and track and demonstrate return on investment while curbing inadequate budgetary practices like incomplete disbursement or misallocation of resources.⁴² This, in turn, facilitates budgetary discussions and cooperation between health and finance ministries and reinforces the negotiation capacity of health authorities.

Another increasingly important instrument to improve immunization data is **digital health information systems** (DHISs) that help countries better forecast vaccine and supply needs, monitor supply chains, and evaluate program impact (see Box 3). In the LAC region, the use of such systems partially contributed to Chile and Costa Rica's successful COVID-19 vaccination campaigns. DHISs make it easier to see how a particular immunization program is operating, improve accountability of all participating organizations at all levels, and help focus actions on where they are most needed to close coverage gaps. The second-order benefits are multifold: they lead to more efficient government spending and generate additional fiscal space; if interoperable, they can be synergized with other health information and services including primary care, thus reducing silos and streamlining the overall health system. **This health-system approach to immunization** is poised to yield additional cost and operational efficiency gains in many LAC countries. In

the future, an integrated DHIS across countries could produce additional benefits, such as helping correctly track and vaccinate populations migrating due to poverty, conflict, and other factors, which has become a mounting humanitarian and health challenge, while ensuring respect for their privacy and adequately protecting their personal data.

Box 3: Success Story of a Digital Health Information System

*Successful implementation of DHISs in other developing regions of the world illustrates their potential usefulness in the LAC region, where their use is still limited. In 2019, Uganda's government, with support from Gavi, WHO, and UNICEF, conducted a large-scale measles, rubella, and polio immunization campaign aimed at over twenty million children. To follow up on such a large endeavor, a digital health management information system was developed, with tools to help policymakers and managers generate real-time analysis and adjustments to program implementation. The platform improved the efficiency of the immunization campaign, maintaining adequate levels of productivity in the field and preventing vaccine shortages and wastage. The paperless system realized important cost savings related to printing and transporting forms.*⁴³

Agreements between national and subnational governments can serve as an innovative avenue to mobilize domestic public resources for NIPs. In such arrangements, the national government carries the budgetary weight of procuring vaccines and supplies, as well as the bulk of setting up personnel training programs and maintaining and updating the cold chain, while subnational governments cofinance the costs for distribution and vaccine delivery. This type of strategy has been implemented in Colombia, where the tax-funded NIP receives financial and technical contributions from the subnational governments responsible for program delivery.

Besides the budgetary expansion, these policies increase local ownership of immunization programs. Additionally, they allow local governments to participate in the decision-making process and leverage their on-the-ground knowledge and presence to ensure vaccines reach the most deprived and difficult-to-access regions and

40 Martha Coe and Yasmin Madan, "Colombia Country Brief: Sustainable Immunization Financing," ThinkWell Global, August 2018, <https://thinkwell.global/wp-content/uploads/2019/02/Colombia-Country-Report-DEC2018-FINAL.pdf>.

41 S. Resch et al., *How to Cost Immunization Programs. A Practical Guide on Primary Data Collection and Analysis* (Cambridge, MA: immunizationeconomics.org and Harvard T.H. Chan School of Public Health, 2020).

42 "Sustainable Immunization Financing in Latin America" Thinkwell Global.

43 *The Use of Digital Technologies and Approaches for Real-Time Monitoring of Supplementary Immunization Activities: Good Practices and Lessons Learned*, UNICEF, 2021, <https://www.unicef.org/media/93781/file/gavi-unicef-digital-technology-immunization-2021.pdf>.

populations.⁴⁴

Finally, while most preventive health services in the LAC region are funded vertically with domestic public resources (usually obtained through general taxation), robust social security mechanisms (with private-sector contributions) could play a role.⁴⁵ Costa Rica, Mexico, and Colombia, for example, have utilized available resources from social security for the provision of curative health services. Applying this mechanism to both curative and preventative services, however, may involve additional administrative complexity and require social security systems to be well-established with solid performance reviews and accountability mechanisms, based on a strong formal sector. This represents a challenge in many LAC countries at the moment.

Public-Private Partnerships

Governments should also consider tapping into **private-sector financing, know-how, and capabilities**. Several proven models of public-private cooperation exist: private-sector purchasing of certain vaccines or supplies—for specific sectors of the population or for particular regions of the country—in exchange for fiscal incentives, the creation of immunization funds with matching public and private contributions, and promoting the participation of local philanthropic institutions to support specific areas of the immunization program. Firms and civil society can also act as watchdogs of NIPs, galvanizing their performance improvement and necessary budgetary expansion. These models have mostly been implemented in Africa and South Asia, and there are currently no examples of them in LAC countries; nevertheless, they could be considered as ways to expand available resources for immunizations in the region.

In a 2019 analysis, ThinkWell Global outlined ways in which public-private partnerships (PPPs) can address specific challenges in immunization financing and innovation (see Figure 6). Depending on country, population, and health system-specific needs, private-sector support may vary and should be “dictated by the public challenge that drives the motivation of the public partner.”⁴⁶

There is a notable recent development in the LAC region in taking public-private collaboration beyond the national level. Two complementary mechanisms to shore up hemispheric health systems were announced during the Ninth Summit of the Americas in June 2022:

- A multisector forum called Americas RISE for Health will engage the private sector and civil society partners with hemispheric governments to strengthen supply chains, enable digital health solutions, improve regulatory processes, and reduce barriers to investment in health. This forum will be convened annually by the US Department of Commerce with the support of the US Department of Health and Human Services.
- The Economy and Health Dialogue of the Americas will promote political will and governmental commitments to foster intergovernmental coordination in pandemic preparedness and response through sustainable budgeting, anti-corruption practices, and policy reforms. These official sector convenings will be initiated by the US State Department and help facilitate the participation of the private sector and civil society in health and economic sectors.

Together, these two mechanisms aim to convene hemispheric governments, private sector, and civil society to “build resilient, inclusive, sustainable, equitable health economies and ecosystems.”⁴⁷

Additional Innovative Financing Mechanisms

To complement the financing options described above, LAC nations can explore a number of innovative mechanisms with the potential of **catalyzing domestic or international immunization funding**. While not all of them are immediately viable in many LAC countries, creating conditions and markets for their future deployment will improve **long-term financial sustainability and operational performance of NIPs**.

Results-Based Financing

Innovative finance mechanisms have been typically associated with international aid or resource mobilization arrangements such as Gavi. **But LAC countries could adapt and incorporate some of their operational principles into national or international PPPs or other funding agreements.**

For example, **results-based financing (RBF)** provides monetary incentives for immunization programs to achieve specific goals under unbiased evaluation. While often used in

44 “Sustainable Immunization Financing in Latin America” ThinkWell Global.

45 “Sustainable Immunization Financing in Latin America” ThinkWell Global.

46 Amey Sutkowski et al., *Public-Private Partnerships (PPPs): Why, What, and How for Sustainable Immunization Financing*, ThinkWell, 2019, https://thinkwell.global/wp-content/uploads/2019/05/PPP-Resource-Guide_053119.pdf.

47 “The United States Establishes Complementary Mechanisms to Bolster Resiliency of the Hemisphere’s Health Economies and Ecosystems,” Fact Sheet, US Department of State (website), June 8, 2022, accessed September 8, 2022, <https://www.state.gov/the-united-states-establishes-complementary-mechanisms-to-bolster-resiliency-of-the-hemispheres-health-economies-and-ecosystems/>.

Figure 6. Immunization Program Challenges and Potential PPP Support Types and Models to Address Them

Examples of Challenges	Category	Model	Example
Low vaccination coverage rates	Systems strengthening	Contracting out	Contract out immunization delivery services to a wider range of accredited providers
		Training/knowledge sharing	Leverage private-sector expertise and capabilities to support underperforming regions in improving coverage rates
Shortfall in government revenue generation or immunization budget allocations to provide program financing sufficient to deliver procured vaccines	Systems strengthening	Training/knowledge sharing	Facilitate learning from other immunization programs and private-sector actors to better inform what resources are needed to deliver immunization programs. This can be based on learning and information from pilot programs launched by manufacturers for specific vaccines.
Pilot/demonstration vaccination programs are not nationally scaled	Policy engagement	Innovative financing	Novel funding mechanisms can tap into or free up new funds outside of existing traditional channels. They may also be successful at making funds more rapidly available. Examples of novel funding mechanisms may include insurance contributions, earmarked takes, or trust funds.
	Cold chain	Policy advocacy	Engage private-sector and civil-society stakeholders to advocate for sustained and protected immunization budgets: i.e., introduction of or change to immunization laws, setting up strong expert advisory groups called NITAGs,* etc.

Adapted from Amey Sutkowski et al., *Public-Private Partnerships (PPPs): Why, What, and How for Sustainable Immunization Financing*, ThinkWell, 2019. *National Immunization Technical Advisory Groups (NITAGs) are multidisciplinary groups of national and international experts who advise policymakers and program managers on immunization and vaccine policy issues.

international aid, the RBF model can be applied domestically to improve the efficacy of publicly funded health programs or subcontractor performance. Federal government agencies may incentivize the improvement of immunization at the subnational level, by providing provincial and local

institutions, organizations, and health service providers with clear coverage and equity goals, progress- and performance-measuring tools, and corresponding monetary rewards. The strengthening of domestic capability and accountability, in turn, may result in operational cost savings

and increase confidence and financial contribution of donors, funders, and other relevant stakeholders, potentially offsetting the initial cost of rewards.⁴⁸

Consistent with our recommendations above for a health-system approach to immunization, **RBFs are most impactful when offered as a package of health services** including but not limited to immunization, e.g., upgrading cold-chain infrastructure, training health-care workers, and developing and implementing digital health information systems. One such RBF is the Salud Mesoamérica Initiative (SMI), a public-private partnership between the Bill & Melinda Gates Foundation, the Carlos Slim Foundation, the Spanish Agency for International Development Cooperation, the Canadian International Cooperation Agency, and the governments of the seven Central American governments and Mexico's government, which improved maternal and child health among the poorest 20 percent of the population of southern Mexico and Central America. As a result of SMI, the share of health facilities in participating regions in Nicaragua that manage cold-chain processes according to regulations increased from a baseline of 28.6 percent to 88.9 percent at the eighteen-month follow-up; effective measles immunization coverage in participating regions in Chiapas, Mexico, increased from 60 percent to 80 percent in that interval.⁴⁹

Impact Bonds, Advanced Market Commitments, and Credit Guarantees

Another set of innovative financing instruments potentially useful for NIPs are **impact bonds, advanced market commitments, and credit guarantee schemes**. These instruments, while powerful, require strong financial commitment from third-party organizations (donors, multilateral banks, etc.), making it difficult for a large number of lower middle-income countries (LMICs) to operate them on their own.

One example of an **impact bond** is the Vaccine Bonds used by the International Finance Facility for Immunization. IFFIm front-loads Gavi with resources obtained through the issuance

of social bonds in capital markets, backed by long-term legally binding commitments from donor governments. This mechanism allows Gavi to have early access to funding at a low cost. Between 2006 and 2019, IFFIm raised \$6.6 billion from investors and disbursed \$2.9 billion to Gavi (20 percent of Gavi's total funding), indirectly benefiting eligible countries in LAC.⁵⁰

Advanced market commitments (AMCs) are another popular mechanism to stimulate the availability of vaccines in low-income markets that may not otherwise seem attractive to vaccine manufacturers.⁵¹ For example, Gavi's pneumococcal AMC incentivizes vaccine makers (through donor commitments) to produce the vaccines at affordable prices that enable developing countries to meet their immunization needs. Thanks to the pneumococcal AMC, it is estimated that close to one million childhood deaths have been averted worldwide.⁵² Specifically in the LAC region, **AMCs might be useful to secure government financial commitments for specific objectives** such as vaccine introductions and coverage expansion of previously introduced vaccines. Examples of this could be the introduction in every country of rotavirus, pneumococcal and human papillomavirus vaccines. However, in this region, price negotiation through PAHO's RF appears to be a more effective mechanism to lower vaccine prices by generating a stable, region-wide vaccine market, taking advantage of economies of scale, and promoting transparent negotiations with manufacturers.

Finally, **credit guarantee schemes (CGSs)** facilitate government access to loans for immunization program funding by reducing risk to the lender through third-party backing. For example, countries may use CGSs to obtain bridge resources to avoid immunization service disruption while national budget resources are transferred. In a recent example, Belize successfully leveraged a CGS from the Inter-American Development Bank to secure funding for purchasing COVID-19 vaccines through the COVAX mechanism.⁵³

Gavi, PAHO, and Other Contributors

As income levels increase over time in the LAC region,

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- 48 There is an ongoing debate on whether RBF is an effective and equitable approach to supporting health system performance in lower middle-income countries (LMICs). As with other external support mechanisms, there are pros and cons that need to be taken into account in order to generate long-term, sustainable improvements.
- 49 A. H. Mokdad et al., "Supply-Side Interventions to Improve Health: Findings from the Salud Mesoamérica Initiative," *PLOS One* 13, no. 4 (2018): e0195292, <https://doi.org/10.1371/journal.pone.0195292>; and "Improving the Health of the Most Underprivileged Women and Children of Central America and Mexico Thanks to the Mesoamerica Health Initiative," Fundación Carlos Slim, November 28, 2018, accessed September 20, 2022, <https://fundacioncarlosslim.org/english/improving-health-underprivileged-women-children-central-america-mexico-thanks-mesoamerica-health-initiative/>.
- 50 S. Hughes-McLure and E. Mawdsley, "Innovative Finance for Development? Vaccine Bonds and the Hidden Costs of Financialization," *Economic Geography* 98, no. 2 (2022): 145-169, <https://doi.org/10.1080/00130095.2021.2020090>.
- 51 M. Kremer et al., *Designing Advance Market Commitments for New Vaccines*, National Bureau of Economic Research, NBER Working Paper 28168, December 2020, https://www.nber.org/system/files/working_papers/w28168/w28168.pdf.
- 52 "About the Pneumococcal AMC," GAVI (website), accessed September 8, 2022, <https://www.gavi.org/investing-gavi/innovative-financing/pneumococcal-amc/about-pneumococcal-amc>.
- 53 "El BID apoya a Belice para garantizar la accesibilidad de la vacuna del COVID-19," Banco Interamericano de Desarrollo, Comunicados de Prensa, March 12, 2021, accessed September 25, 2022, <https://www.iadb.org/es/noticias/el-bid-apoya-belice-para-garantizar-la-accesibilidad-de-la-vacuna-del-covid-19>.

eligibility for and access to Gavi support (and other types of external aid) decreases significantly. Such economic growth has sometimes proven insufficient to pay for social programs like health and education. Often, countries “graduating” from Gavi have neither reached sustained high VCRs—even for some of basic vaccines—nor developed the appropriate fiscal space to support the growing needs of NIPs.⁵⁴

Although graduating countries in LAC continue to have access to Gavi prices for vaccines and supplies for a five-year transition period as well as to PAHO’s RF, additional financial and technical support is needed to **ensure a smooth short-term transition and the long-term sustainability of NIPs**. In particular, such support should be **extended to strengthening overall health systems** (immunization and

beyond), as intended by Gavi’s goals for 2021 to 2025.

Other organizations including the World Bank Group, the Inter-American Development Bank, the Global Fund to Fight AIDS, Tuberculosis and Malaria, and COVAX can also contribute to such efforts in the LAC region. One opportunity going forward is to negotiate a broadening of their significant COVID-19-specific support to include immunization or health-system strengthening. However, since many of these organizations share similar graduation rules as Gavi, a new, alternative mechanism or facility may be needed to better target and serve non-Gavi-eligible middle-income countries (the majority of LAC countries), particularly those that recently graduated from eligibility.

54 A. Glassman, “Gavi 5.0: Five Challenges and Five Ideas for Reform,” Center for Global Development, CDG Note, June 24, 2019, <https://www.cgdev.org/publication/gavi-5-0-five-challenges-and-five-ideas-reform>.

Conclusions

LAC is one of the most advanced regions in the world in terms of the successful implementation of publicly funded NIPs. Despite such success, however, immunization is still a work in progress. There is a long way to go to achieve total control of known VPDs, and there remains the ever-present threat of newly emerging or reemerging diseases, which the world has recently experienced with the outbreaks of coronavirus and monkeypox.

LAC's NIPs also face other current and future challenges. **In the short term, it is of utmost priority to reenergize regular immunization programs.** These programs were significantly affected by the COVID-19 pandemic through the redirection of human, economic, and health resources toward pandemic response, the disruption of global production and distribution, mobility and other restrictions, and the fear of contagion in the population. All of this reinforced an already-worrying regional trend over the past decade of declining immunization coverage, and likely widened preexisting health equity gaps by disproportionately impacting morbidity and mortality in the more vulnerable or deprived sectors of the population. To address these relevant issues, a resolution for Reinvigorating Immunization as a Public Good for Universal Health was launched in September 2021, by the 59th Directing Council of PAHO. Among other strategic elements, the resolution calls for member states to “ensure and protect immunization-specific budgets”.⁵⁵

In the long term, relatedly, LAC nations should make its immunizations systems more resilient and sustainable against future shocks, e.g., continuing routine vaccination while also having surge capacity to deliver pandemic vaccines. In addition, NIPs in the region face other growing and evolving needs such as: upgrading and maintaining cold chains; attaining and sustaining high VCRs homogeneously throughout countries with an emphasis on reaching underserved areas and populations; transitioning from children-centered immunization to life-course immunization with new, ever-more-complex vaccines targeting not only childhood illnesses but diseases of other age and demographic groups (such as adolescents, pregnant women, and the elderly).

To meet these and other ambitious goals, the region needs financing that enables NIPs to expand and improve accordingly. **Innovative financing strategies** can help governments bring in more resources and deploy resources more

efficiently and strategically. Recommendations include:

- **Domestic financing:** Governments can expand the fiscal space for immunization over time through well-defined and legally protected budget lines, better mobilize and deploy public funding through enhanced data analytics and collaboration with subnational governments, and improve specific aspects of vaccination programs through public-private partnerships and private-sector capacity, know-how, and financing.
- **Additional innovative mechanisms:** Results-based financing helps to increase the efficiency and accountability of NIPs, which makes them more attractive for international financiers. Impact bonds, advance market commitments, and credit guarantees leverage third-party backing to increase the financial feasibility of these immunization programs. Mechanisms and support provided by Gavi, PAHO, and other multilateral actors will be particularly critical for low-income countries and could be extended to benefit countries approaching or reaching middle-income status, which ultimately makes them ineligible for Gavi's support.
- **Holistic, health-system strengthening approach to immunization:** LAC policymakers would do well to implement a less-siloed approach to immunization by better integrating it with other areas of public health systems, particularly preventative care, and primary care programs. Stakeholders need to recognize that successful immunization is far more than just vaccine procurement: it requires in-country distribution and supply chains (including cold-chain infrastructure), administration and monitoring, training for health-care workers, social mobilization, patient education campaigns, and much more. For example, investment in the development and/or strengthening of digital health information systems will support evidence-based policy development and decision-making in immunization and fortify health systems in general. For all of the above, continued political and economic commitment from relevant stakeholders (public, private, multilateral, civil society, and other sectors) and multistakeholder dialogues will be indispensable.

55 “Resolution CD59.R13 of the 59th Directing Council: Reinvigorating Immunization as a Public Good for Universal Health” PAHO, accessed August 20, 2022, <https://www.paho.org/en/documents/cd59r13-reinvigorating-immunization-public-good-universal-health>

About the Authors

Miguel Betancourt-Cravioto

Dr. Miguel Betancourt-Cravioto is an international consultant in public health, with over 20 years of experience designing and implementing innovation in the areas of vaccinology, maternal and child health, epidemiological surveillance, and public health emergencies.

Betancourt-Cravioto has served in high level positions in the Federal Ministry of Health of Mexico and in the non-governmental sector. For over a decade, he coordinated international health projects and alliances of the Carlos Slim Foundation, one of the world's largest philanthropic organizations. He has authored scientific papers in peer reviewed journals on topics such as vaccines, emerging and re-emerging diseases, and public health emergencies. He was trained as an MD and pediatrician in Mexico City and holds a master's degree and a doctorate in Public Health from the London School of Hygiene and Tropical Medicine.

Pepe Zhang

Pepe Zhang is an associate director and fellow at the Atlantic Council's Adrienne Arsht Latin America Center. Zhang leads the Center's policy work on regional economic issues including macro-fiscal, international trade and investment, supply chains, productivity, health, and strategic post-COVID growth opportunities. In addition, Zhang manages the Center's China-Latin America portfolio, which provides timely insight on the growing relations through multi-perspective analyses and events. Zhang's multi-lingual commentary on these issues has appeared in US and international outlets including Financial Times, Bloomberg, CNN, New York Times, Project Syndicate, World Economic Forum, Valor Econômico, and O Globo.

Prior to joining the Atlantic Council, Zhang worked at the Inter-American Development Bank, focusing on international trade and investment promotion, entrepreneurship, and technology in Latin America and the Caribbean. Zhang holds a master's degree in international economics from the John Hopkins University's Paul H. Nitze School of Advanced International Studies (SAIS), and a bachelor's degree from Pomona College in Latin American Politics and Spanish. Zhang is fluent in Spanish, English, and Chinese, and has extensive professional and academic experience across Latin America, China, and the United States.

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Pepe Zhang

Associate Director and Fellow
Adrienne Arsht Latin America Center
Atlantic Council

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Stuart E. Eizenstat

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Christian Marrone

Gerardo Mato

Timothy McBride

Erin McGrain

John M. McHugh

Eric D.K. Melby

*Judith A. Miller

Dariusz Mioduski

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Atlantic Council

1030 15th Street, NW, 12th Floor, Washington, DC 20005

(202) 463-7226, www.AtlanticCouncil.org