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# Impact of the COVID-19 Pandemic on Immunization Programs in the Region of the Americas

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## Key messages

1. The pandemic widened vaccination coverage gaps in the Region of the Americas that had been declining progressively for years. In 2019, regional vaccination coverages against DPT1, DPT3, and MMR1 were reported in ranges of 80 to 86% and MMR2 in 63%. These low coverages accumulate susceptible populations for several years increase the risk of the re-emergence of preventable diseases.

2. The pandemic made evident the fragility of health systems, and vaccination programs were no exception. The decrease in coverage before the pandemic speaks of inadequate investment in financial, human resources, logistics, and a lack of necessary conditions for the sustainability of actions.

3. All vaccines in the children's calendar showed reductions at the regional level when comparing 2019 to 2020, in particular BCG (-25%), DPT3 (-17%), Polio 3 (-8%), and third pneumococcal dose (-5%). The measles vaccine, declining for years, with the consequent accumulation of susceptible children, went from 86% in 2019 to 83% in 2020.

4. The most significant reductions in coverage were observed in vaccines administered to schoolchildren, adolescents, and pregnant women. For example, in Argentina, the HPV vaccine dropped in both males and females: HPV1 in females went from 90% to 71%, and HPV2 dropped from 60% to 46%. In Brazil, Tdap vaccination in pregnant women dropped from 63% to 45%.

5. There is concern about what the Peruvian health authorities themselves report regarding low coverage. The information is not well consolidated and is not easily accessible. Cohorts of unvaccinated children are an epidemiological risk and a health risk for thousands of minors.

6. Some countries reported increases in seasonal influenza vaccination coverage in the elderly, chronically ill, and health care personnel.

7. The factors related to the decline in vaccination coverage are multiple and interrelated. They are not only associated with the disruption of the supply of immunization services but also

8. With the impact on the demand of target populations who, for many reasons (fear of contagion, mobility restrictions, and limitations on public transportation established by countries in response to the pandemic, users do not know whether services are available among others), have reduced their attendance at health services.

9. Good practices and lessons learned allowed some Latin America and Caribbean (LAC) countries to reinforce actions to search for and recruit unvaccinated persons and persons with overdue vaccination schedules, implement shortened programs and carry out supplementary outreach activities to identify, inform and recruit unvaccinated persons.

10. The pandemic deepened inequities in a region that, like LAC, shows significant disparities. The slow progress in vaccination against COVID-19, which differentially affects countries with lower incomes and more significant lags in access to health care, is evidence of the lack of solidarity and equitable mechanisms to control the pandemic: "no one is safe unless everyone is safe."

11. To reduce the gaps that the pandemic has widened and reverse the effects that disruption has caused in vaccination services, countries will require additional resources and efforts in a complex context of limited human, financial and logistical resources.

12. The current situation poses more significant challenges for lower-income countries and those that have historically faced more difficulties in achieving

adequate coverages in a sustained manner. In the face of these technical and financial challenges, cooperation from international organizations and donors will be vital in facing the future.

## Executive Summary

Since the declaration of a COVID-19 pandemic in March 2020, the world has faced substantial lifestyle changes to reduce the risk of contagion and maintain the functionality of health services and society. This situation caused disruptions in immunization programs and services, widening gaps in vaccination coverage, increasing the risk of vaccine-preventable diseases (VDPD), and national immunization programs' sustainability.

This document was prepared to propose a framework for discussion on the effect of the pandemic on vaccination coverage at the regional level and among countries of the Americas for vaccines administered to the various target populations of immunization programs.

Factors that may explain the findings were identified and critical interventions and good practices implemented by countries to reduce the impact on vaccination coverage. The study used several data sources: reports of COVID-19 cases and deaths, reported data on vaccines administered, and surveys of key informants from several countries in Latin America and the Caribbean (LAC).

The regions of the Americas and Europe have been the regions with the highest incidence and mortality of COVID19 globally: 39% of cases and 47% of deaths were reported in the Americas. However, the increase in the number of unvaccinated children due to the pandemic was most significant in the Southeast Asia and East-Mediterranean regions.

The effect on coverage when comparing 2019 and 2020 at the regional level was uneven according to vaccine types and target populations:

- BCG dropped from 83% to 68%, DPT3 from 80% to 77%, Polio 3 from 84% to 76% and the third pneumococcal dose from 78% to 73%. The measles vaccine, which had been declining for years, with the consequent accumulation of susceptible children, continued to decline from 86% to 83%.

- Newly introduced vaccines such as PCV3, IPV1, and Rotavirus showed a progressive increase, without reaching the expected level in 2019, decreased in 2020: PCV3 dropped from 78% to 73%, IPV1 decreased from 86% to 82%, and Rotax from 73% to 69%.

- In the school population, HPV vaccine coverage declined, likely due to school closures due to the pandemic. From 2019 to 2020, the programmatic range of 1st dose in females declined from 70% to 65% and 2nd dose from 56% to 44%.

- In contrast, seasonal influenza vaccination coverage in senior adults, health care personnel, and people with chronic diseases increased in 2021. Still, this increase was not observed in pregnant women, who reported a decrease in Tdap coverage, with the risk of contagion by B. Pertussis in the newborn and infant.

- Partial information from the first semester of vaccination coverage in Peru shows that all vaccines are between 40 (Pentavalent) and 19.25% (APO 2) for 2021, while in 2020, BCG had the highest coverage (44.7%) and APO 2 the lowest (17.8%).

The disruption in the supply of vaccination services has been determined by the staff downsizing who have been reassigned to work in response to the pandemic and, to a lesser extent, by problems of vaccine and supplies shortages. However, the main reason countries explain the decline in coverage is the fear of contagion on users, combined with measures to reduce mobilization and limitations on public transport limit visits to vaccination services.

Despite the gradual progress in vaccination against COVID-19 globally, access is unequal among countries since those with higher incomes and development have acquired the vaccines in the required amounts to vaccinate their target populations. However, even in high-income countries, vaccinating reluctance, misinformation through social networks, myths, and misperceptions have created gaps between vaccinated and unvaccinated.

In this complex context, given the need to reduce the risk of contagion and maintain the capacity of services to address the pandemic, with limited human, financial and logistical resources, the most significant challenges are faced by lower-income countries and those that, over time, have shown more significant difficulties in achieving adequate coverage on a sustained basis.

To recover the effect caused by the pandemic on immunization programs, it will be necessary to combine efforts on several fronts. It is essential to assure the user that the risk of contagion has been mitigated and recover the confidence and importance of seeking vaccination services. In addition, immunization programs and vaccination services should implement extramural tactics to attract unvaccinated persons or those with delayed vaccination schemes.

## 1. The context of the pandemic

The pandemic caused by the new coronavirus (SARS-CoV-2) that emerged at the end of 2019 and spread rapidly to all world regions transformed society's ways of life by implementing containment and mitigation measures to reduce the probability of contagion and the risk of hospitalization and death.

The organization implemented changes to maintain the response capacity required to meet the demand for COVID-19 cases and the functioning of health services. In all countries, the fragility of health systems, epidemiological response services, and

the need to divert financial and human resources to deal with the crisis became evident.

The National Immunization Programs (NIPs) were no strangers to this context; given the fragility for the lack of sustained investment in these programs, the pandemic affected their structure and operation due to several factors: Reduction of the NIPs budget because of the reorganization of financial resources to face the pandemic by reallocating budgets and personnel to response actions, thus affecting the implementation of planned vaccination actions in schools and vaccination campaigns, among others. [1]

As vaccination of population is an activity that requires contact between health personnel, the person to be vaccinated, and, in the case of children, their parents, or guardians, the isolation actions are taken in response to the pandemic also affected the demand for services. As countries have identified ways to avoid and reduce the effect of disruptions to routine vaccination services while reducing the risk of transmission, it is necessary to systematically monitor the situation to identify the magnitude of disorders and strategies to decrease their impact.

This paper analyzes the impact that the SARS-CoV2 pandemic has had on vaccination coverage in countries and the various target populations, particularly those most vulnerable groups where the effect may be more significant, and the chances of reversing the results may be more difficult. Of particular interest is determining what strategies and actions countries have implemented to prevent the decline in immunization coverage. The lessons learned and recommendations that emerge from this analysis will be instrumental to reinforcing the achievement of vaccination programs' objectives and identifying efficient strategies to face the challenges of the present and the prospects for the future.

## 2. Raising questions

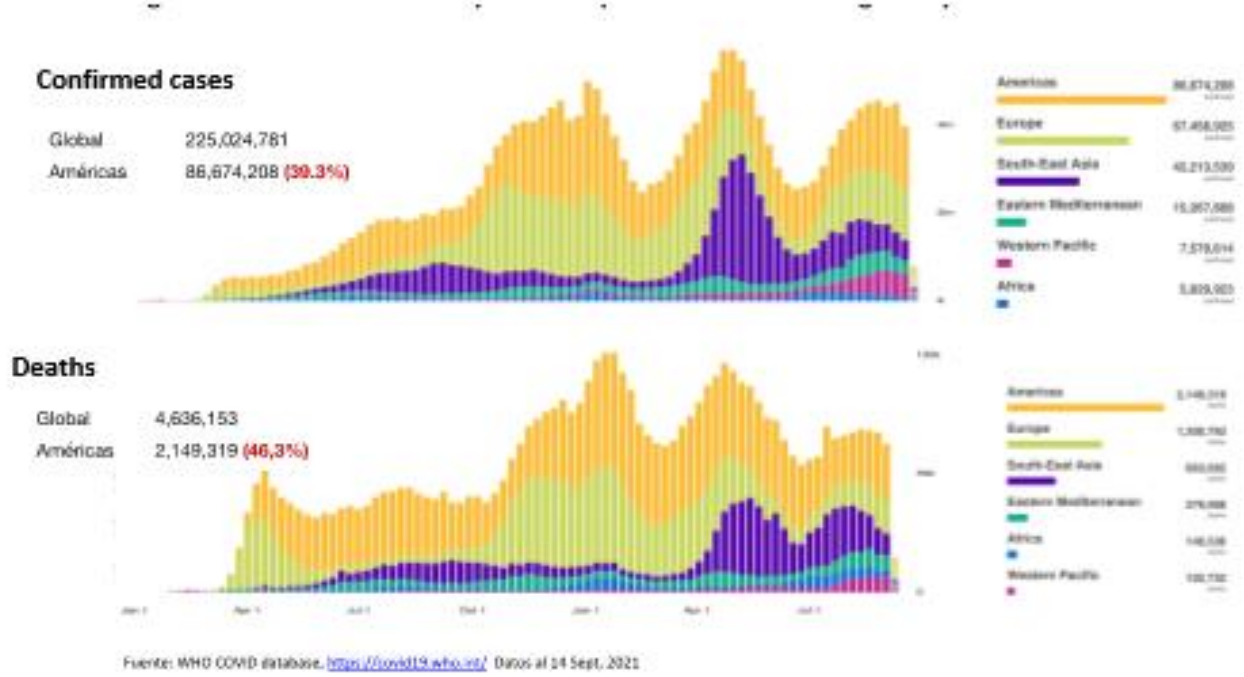
The effect of the disruptions that the coverage reduction will have in the medium and long term, with the risk of resurgence of vaccine-preventable diseases (VDPD) and on the sustainability of national immunization programs, this paper seeks to answer the following questions:

- Has the impact of the pandemic on vaccination coverage been uneven across regions?
- What were the coverage trends in LAC before the pandemic, and how much did the gaps deepen with the pandemic?
- Are there any differences in the disease pattern among countries in the region?
- Are there any differences in the impact among the target populations of the vaccination program?
- What could be the explanatory factors and challenges?
- What good practices and critical interventions are required to reduce coverage gaps?

## 3. Impact of the pandemic at the global level and in the Americas

The Americas has been the region with the highest number of confirmed cases and deaths from COVID-19, followed by Europe. The Americas account for 39.3% of the patients and 46.3% of the deaths recorded globally (figure 1).

**Figure 1. Confirmed cases and deaths due to COVID - 19 globally and in the Americas**




Fuente: WHO COVID database, https://covid19.who.int/ Datos al 14 Sept. 2021

**Source:** WHO COVID database, https://covid19.who.int/ Data as of September 14, 2021

The impact on coverage, when compared to the effect of the pandemic in the Region, shows the relevance of having historically maintained vital programs, as Africa and Asia are the regions that had the most considerable lags before the pandemic, as shown in Figure 2, they are also the ones that offer the highest proportion of children

who have missed doses of vaccination between 2019 and 2020, both for DPT3 and MCV1.

Figure 2 shows that:

- AFR (Africa) concentrates the highest number of unvaccinated children in both years.
- SEAR (Southeast Asia) reported the most significant decrease in vaccinated children.
- AMR (the Americas) raised the number of unvaccinated from 2.4 million to 2.7 million from 2019 to 2020.
- EUR (Europe) remained essentially unchanged.
- Higher wealth countries reported the most negligible impact, and GAVI countries the most significant reductions, accentuating inequities.

**Figure 2. Reduction in coverage and increase in the number of children unvaccinated with DPT1 and MCV1* by World Health Organization region ( WHO).**

- The effect on coverage was uneven by region:
- Southeast Asia and Eastern Mediterranean were the most affected regions.
- In the Americas, the decrease in unvaccinated was 300,000 from 2.4 to 2.7 million from 2019 to 2020.
- Europe showed the slightest variation.
- Africa is the region with the highest number of unvaccinated or under-vaccinated children.


Measles containing vaccine (MCV)

Source : https://www.who.int/publications/i/item/progresses-and-challenges-with-sustaining-and-advancing-immunization-coverage-during-the-covid-19-pandemic

According to the World Health Organization WHO/UNICEF report, in 2020, 23 million children missed doses of vaccines through routine immunization programs. This is the highest number since 2009 and represents 3.7 million more children than in 2019. [2].

- Out of 23 million, an estimated 17 million did not receive any vaccination in 2020.
- These alarming figures demonstrate the disruption of health services due to COVID-19.
- This apparent setback in vaccination leaves children at high risk of devastating but preventable diseases such as **measles, polio, and meningitis.**

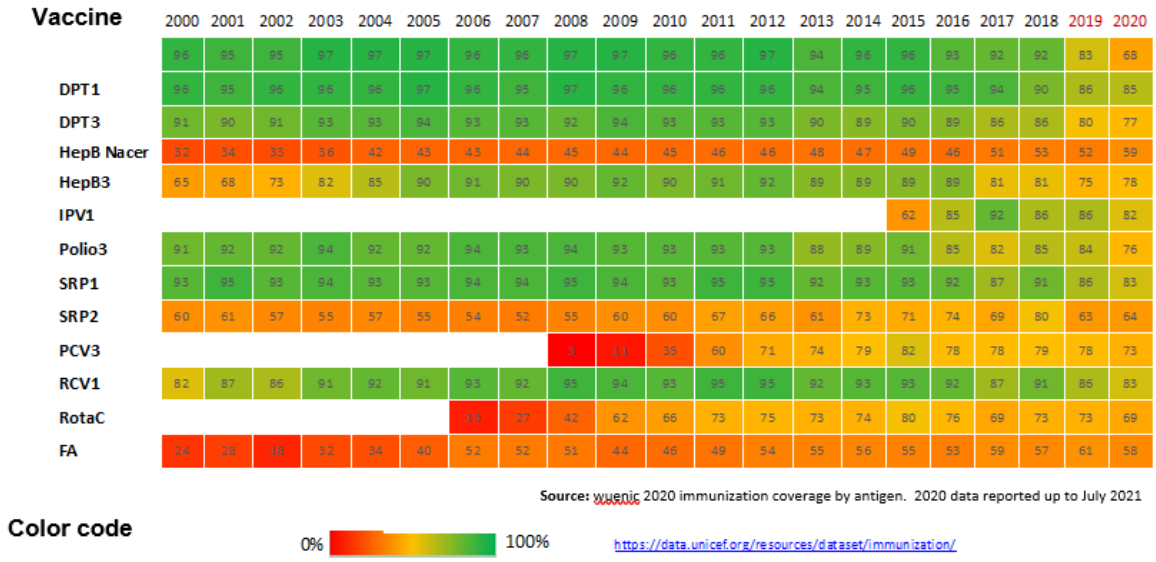
- Compared to 2019, **3.5 million children** did not receive the first dose of diphtheria, tetanus, and pertussis, while another **3 million** did not receive the first dose of measles

In the region of the Americas, coverage continues to decline. Only **82%** of children will be fully vaccinated with DPT in 2020, down from **91%** coverage in 2016.

## 4. Regional vaccination coverage trends

Before the onset of the pandemic in 2020, all childhood schedule vaccination coverage showed a downward trend. BCG vaccination at birth went from 92% in 2018 to 83% in 2019. Diphtheria, pertussis, and tetanus coverages have shown a progressive decline: between 2015 and 2019, DPT1 dropped from 96% to 86%, and DPT3 went from 90% to 80%, as shown in Figure 3. 2020, accelerated that decline in BCG (-25%), DPT3 (-17%), Polio 3 (-8%) and pneumococcal (-5%) vaccines. The measles vaccine, declining for years, with the consequent accumulation of susceptible children, went from 86% in 2019 to 83% in 2020.

**Figure 3. Regional trends in vaccination coverage in LAC, 2000 - 2020**

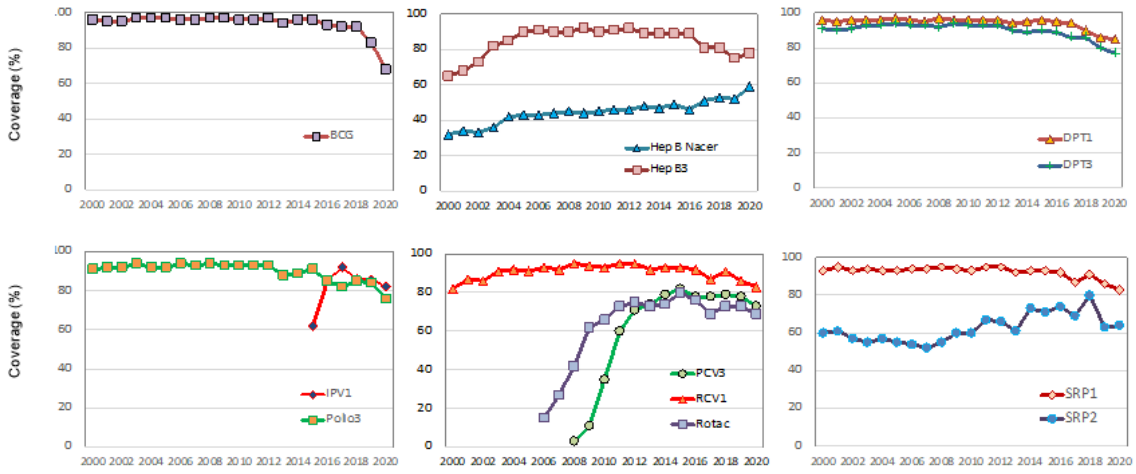


It is important to note that the Americas region has faced measles outbreaks during the last few years. Therefore, it is essential to reduce vaccination gaps since regional coverage of MMR1 declined from 93% in 2015 to 86% in 2018. That decline was more pronounced when analyzing MMR2, consistently reported a range below 80% since 2000.

Moreover, considering that conducting follow-up campaigns with RH is an effective strategy to raise coverages, it is likely that the pandemic contributed to deepening these gaps, as World Health Organization (WHO) reports that as a measure to reduce the risk of SARS-CoV2 transmission, a total of 64 vaccination campaigns (26 in AFR) planned in 45 countries were postponed to the end of 2020.3

The pandemic also had adverse effects on the coverage of recently introduced vaccines, such as PCV3, Rotax, and IPV1 (figure 4), which showed a decrease in the application of the biologicals in the first year of the pandemic.

**Figure 4. Trends in immunization coverage in children in LAC, 2000**




**Source:** wuenic 2020 immunization coverage by antigen. Preliminary data as of July 2020. https://data.unicef.org/resources/dataset/immunization/

## 5. Patterns of coverage affectation in Latin American countries

It is essential to analyze whether the pandemic had a more significant effect in some countries and what factors could explain why some vaccination coverage rates were lower than others, as well as which preventable diseases could potentially have an impact on the re-emergence or increase of VPE in the coming years if ideal coverage rates are not achieved.

Figures 5 to 10 show some relevant aspects:

- Some countries, such as Haiti and Venezuela, have maintained coverage rates below 80% since before the onset of the pandemic.
- Most countries showed decreased vaccine coverage on the childhood immunization schedule.

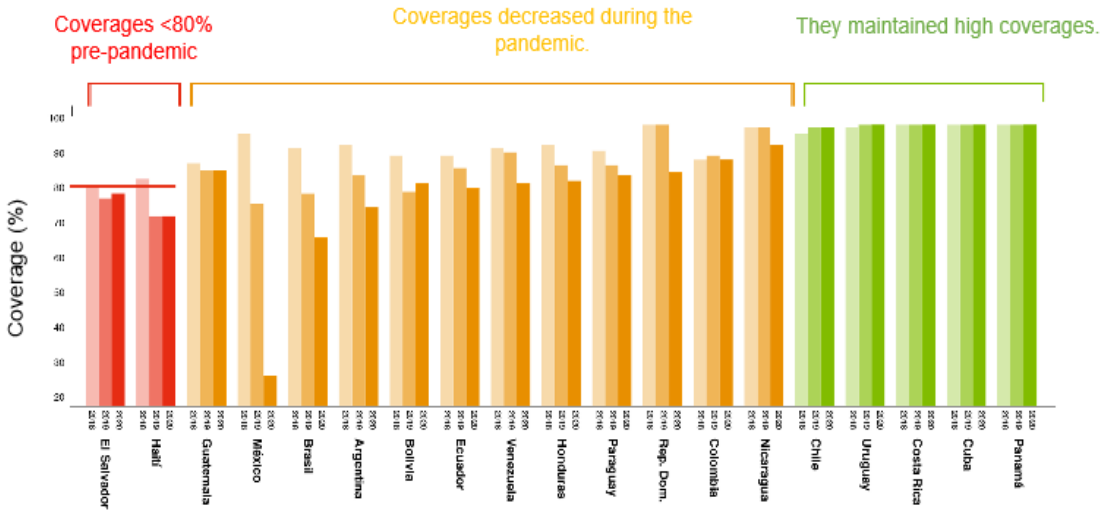
- Some countries, such as Chile, Costa Rica, Cuba, and Uruguay, which reported coverage levels of 95% and above, managed to maintain coverage levels during the pandemic.

- The abrupt drop in BCG application in Mexico is striking, much lower than in El Salvador and Haiti, with coverage levels below 80%. Mexico did not even reach 30% in 2020

- Due to the recent measles outbreaks that have affected the Region of the Americas, it concerns the accumulation of measles susceptible, especially in Brazil, where SRP1 coverage dropped from 93% in 2019 to 79% in 2020.

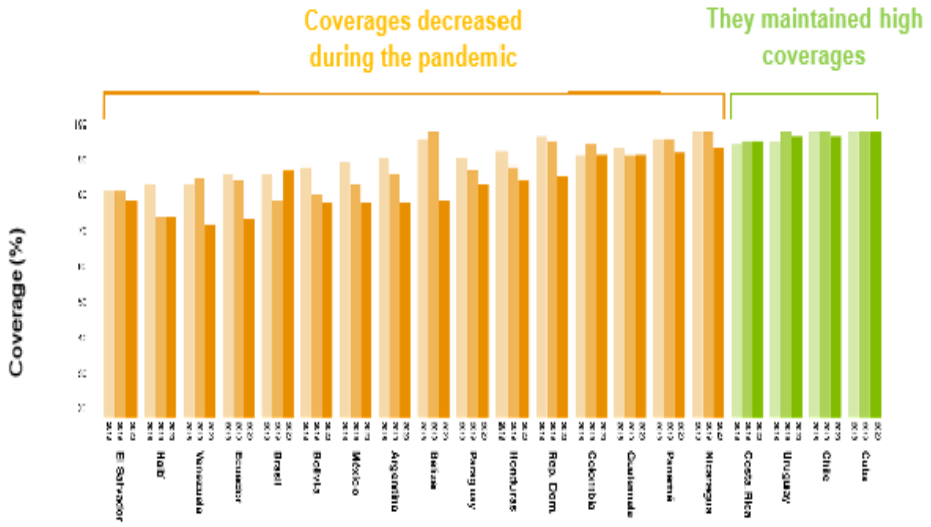
- It is essential to note the marked reduction in MMR2 that is likely related to the suspension of follow-up vaccination campaigns scheduled in 2021, mainly in Brazil, Bolivia, Ecuador, Haiti, and the Dominican Republic.

**Figure 5. Affectation patterns of BCG coverages comparing years 2018 to 2020 in Latin American**



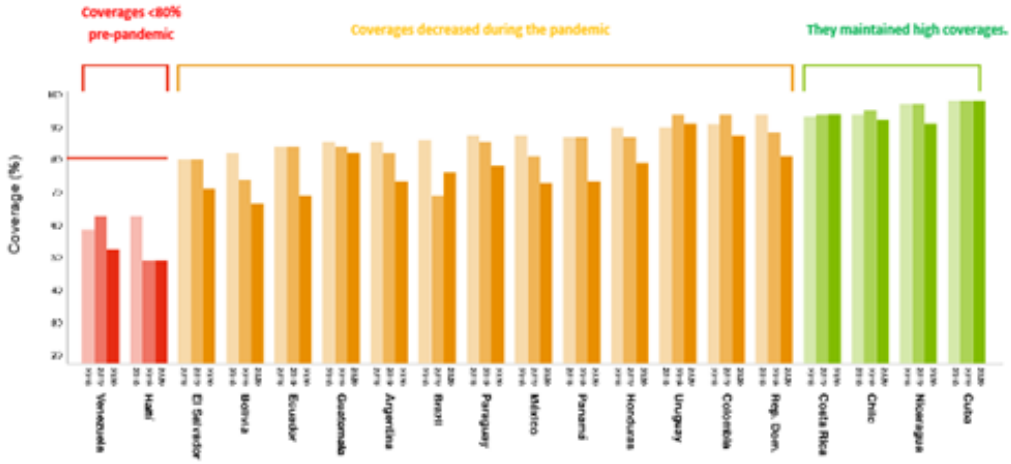

**Source:** wuenic 2020 immunization coverage by antigen. Preliminary data as of July 2021. https://data.unicef/org/resources/dataset/immunization/

Figure 6. Affectation patterns of DPT1 coverage comparing years 2018 to 2020 in Latin American countries.



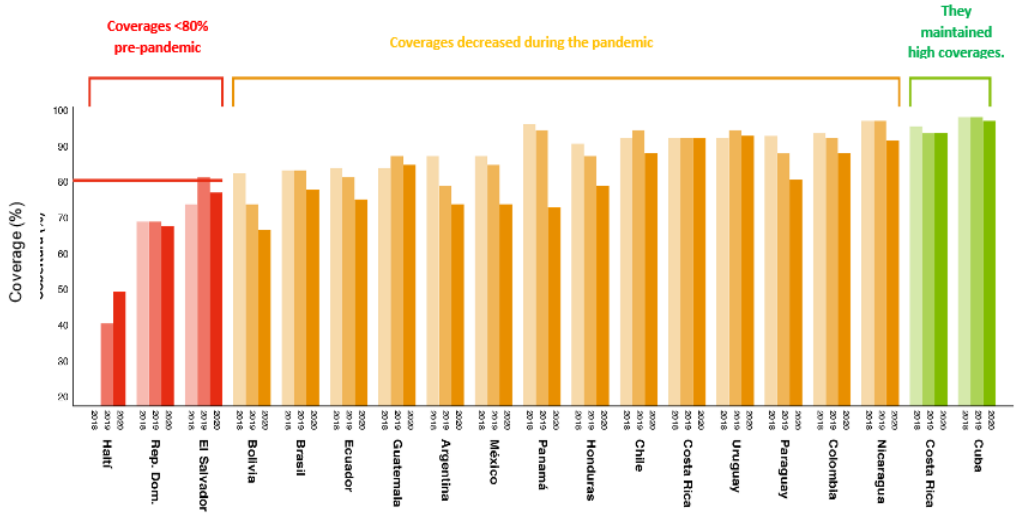

Source: wuenic 2020 immunization coverage by antigen. Preliminary data as of July 2021. https://data.unicef.org/resources/dataset/immunization/

Figure 7. Affectation patterns of DPT3 coverage comparing years 2018 to 2020 in Latin American countries.



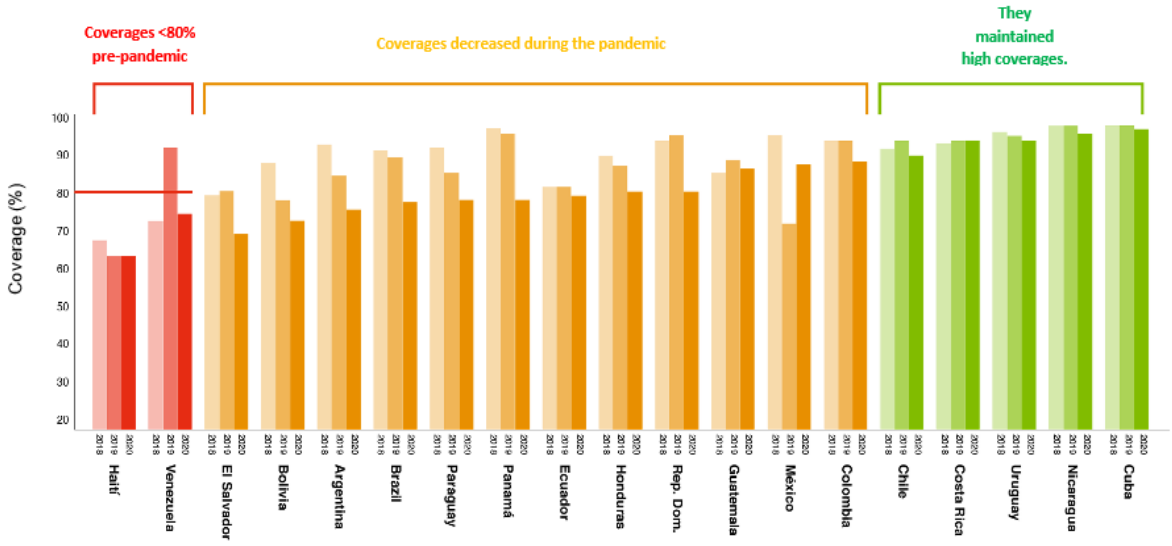

Source: wuenic 2020 immunization coverage by antigen. Preliminary data as of July 2021. https://data.unicef.org/resources/dataset/immunization/

**Figure 8. Affectation patterns of PCV3 coverages comparing years 2018 to 2020 in Latin American**



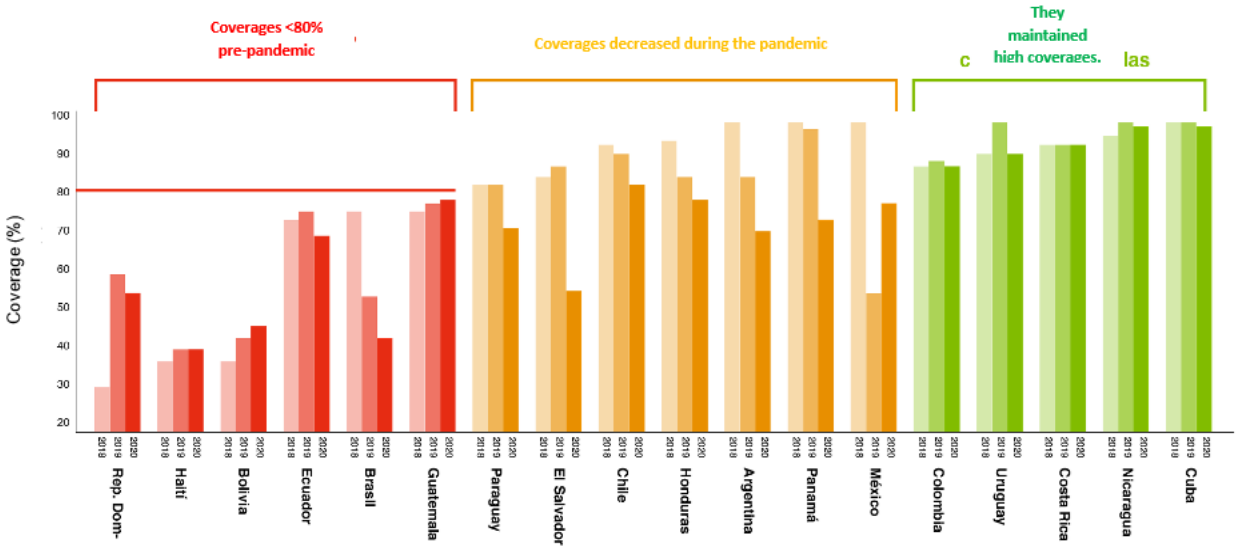

Source: wuenic 2020 immunization coverage by antigen. Preliminary data as of July 2021. https://data.unicef.org/resources/dataset/immunization/

**Figure 9. Affectation patterns of SRP1 coverage comparing years 2018 to 2020 in Latin American countries.**




Source: wuenic 2020 immunization coverage by antigen. Preliminary data as of July 2021. https://data.unicef.org/resources/dataset/immunization/

**Figure 10. affectation patterns of SRP2 coverage comparing years 2018 to 2020 in Latin American countries.**




Source: wuenic 2020 immunization coverage by antigen. Preliminary data as of July 2021. https://data.unicef.org/resources/dataset/immunization/

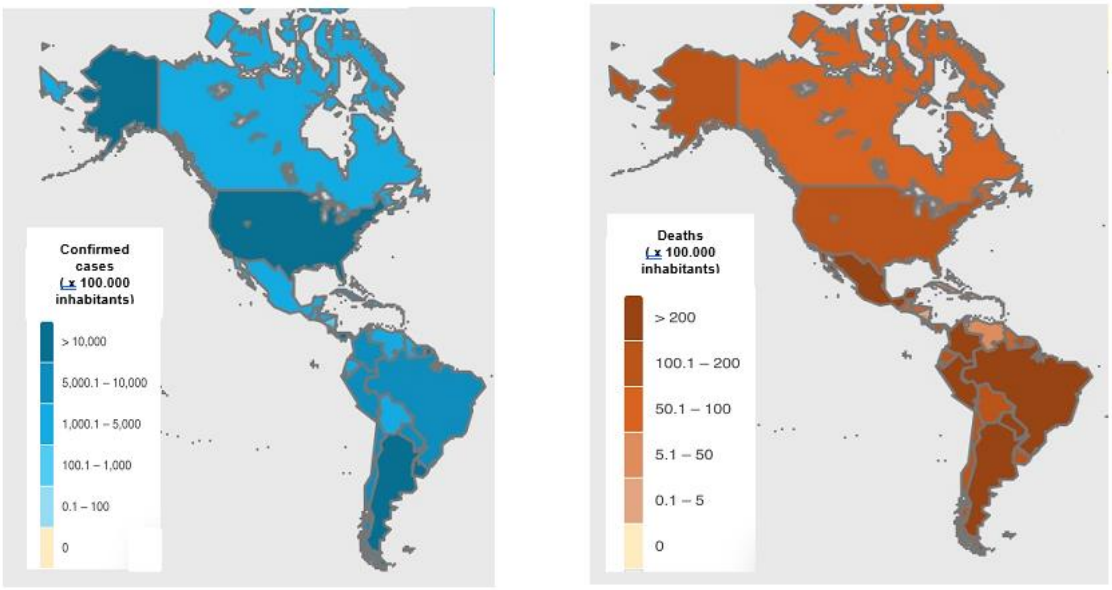
## 6. Disruption and recovery in selected countries

The pandemic showed differences in incidence in the Americas region's various countries, as shown in Figure 11. Argentina, Brazil, Chile, Costa Rica, and Uruguay reported rates of confirmed cases (per 100,000 inhabitants) ranging from 8,577 (Chile) to 11,485 (Argentina). The highest mortality at the regional level was recorded in Peru (601 deaths per 100,000 inhabitants), followed by Brazil (273 x 100,000) and Argentina (247.8 x 100,000 inhabitants), according to reports as of September 1, 2021.

Four countries were selected to analyze the effect of the pandemic and containment measures on vaccination coverage, which showed different levels of impact. WHO uses a composite indicator called the "stringency index" to monitor pandemic mitigation measures. This index estimates the stringency of "blocking style" policies that mainly restrict people's behavior. It is calculated using all ordinal indicators of

containment and lockdown policy, plus an indicator that tracks public information campaigns. [4]

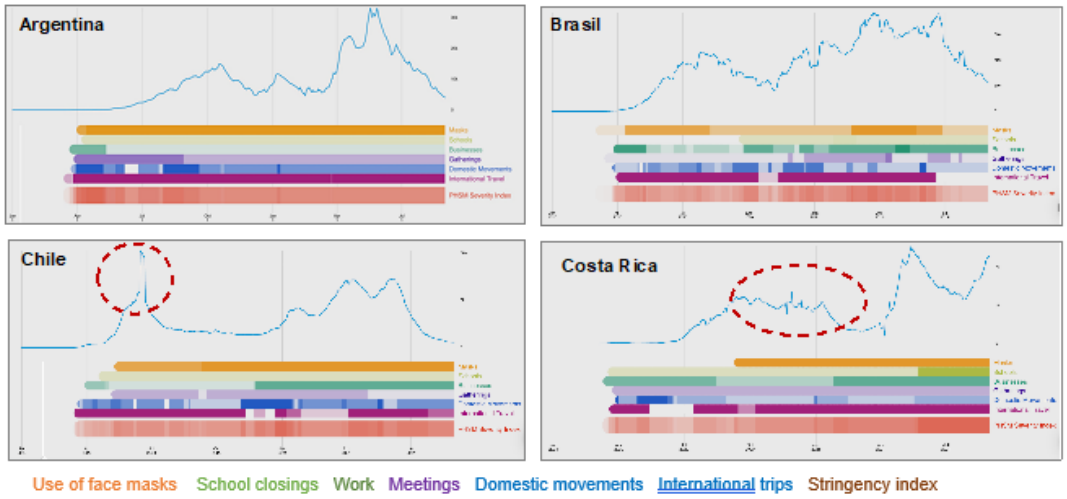
**Figure 11. Confirmed cases and deaths from COVID-19 in countries of the Americas**




Source: WHO COVID database, https://covid19.who.int/. Data as of September 1st of 2021

Figure 12 shows the differences in the curves between the four countries: Chile increased cases earlier than Brazil, and Costa Rica had the last curve since the number of cases began until the end of June 2020. Complementing the evolution of the curve, the mitigation measures implemented over time are schematized, showing the differences in the application of the various restrictions. It is possible to observe an increase in the stringency index as the incidence of cases rises in each country.

**Figure 12: Comparison of mitigation curves and measures implemented in selected countries**




Source: :OMS, https://covid19.who.int/region/amro/country/br/measures

Figures 13, 14, and 15 show different monthly progress of vaccines administered and reported coverage at the end of 2019 and 2020. There are some findings of interest when comparing three countries:

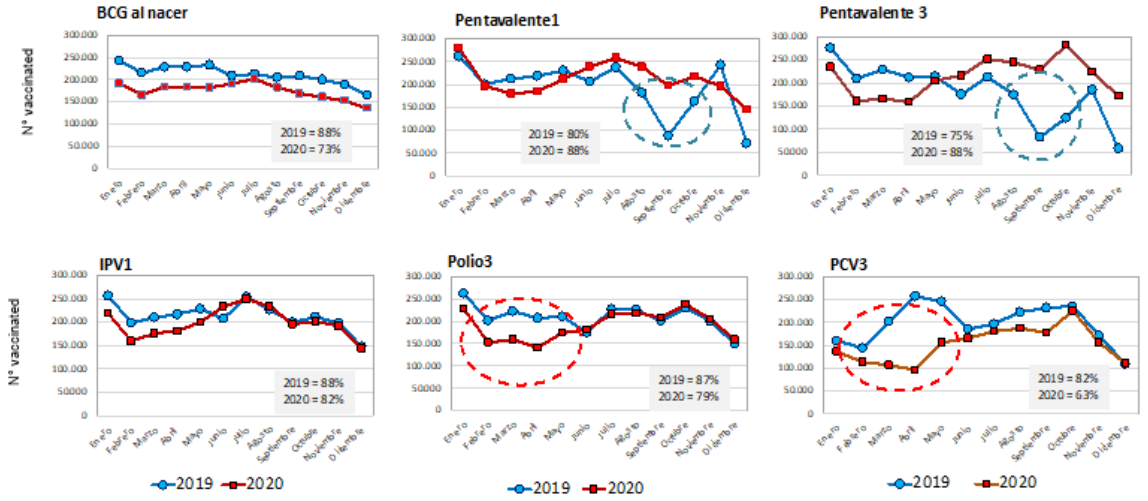
- **Brazil** reduced the number of BCG doses applied in 2020, and coverage decreased by 15%. The pentavalent vaccine showed an opposite behavior since, due to shortages of this vaccine during 2019, the number of doses applied in 2020 was higher. This reflects the importance of considering other factors not associated with the pandemic to explain the declines in coverage. The number of 3rd doses of inactivated polio vaccine and 3rd dose of 10-valent pneumococcal vaccine (PCV) was significantly reduced in the first four months of the pandemic in Brazil, causing a 20% drop in coverage. (Fig. 13)

- **Chile** maintained high coverage in 2020 despite having one of the highest rates of COVID-19 cases in LAC and having established rigorous mitigation strategies. Although for some vaccines, such as PCV3 and SRP1, the number of children vaccinated was reduced from April to June 2020, the country implemented effective strategies that allowed identifying and vaccinating

those children who had been left behind and thus achieving the target coverage at the end of the year (Fig. 14).

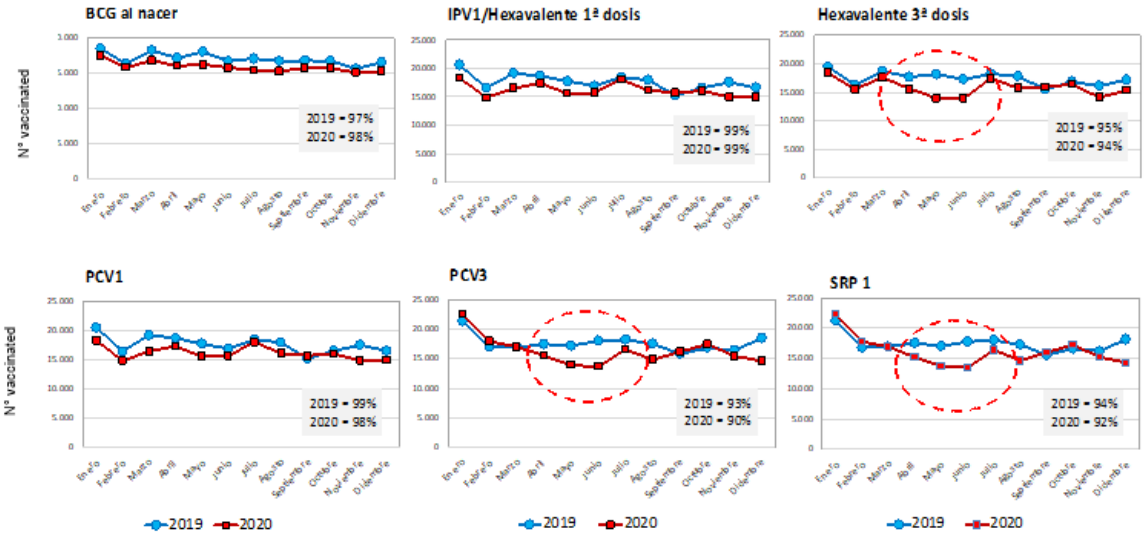
- **Costa Rica** never went into extreme lockdown, which allowed essential programs, such as vaccination, to continue. As shown in Figure 14, coverage was not affected at the end of 2020 since the reductions were momentary and then recovered through communication actions and intensification of the search for unvaccinated and stragglers. (Fig. 15)

**Figure 13. Trends in vaccinated per month and annual immunization coverage of the immunization schedule in Brazil, 2019 and 2020.**



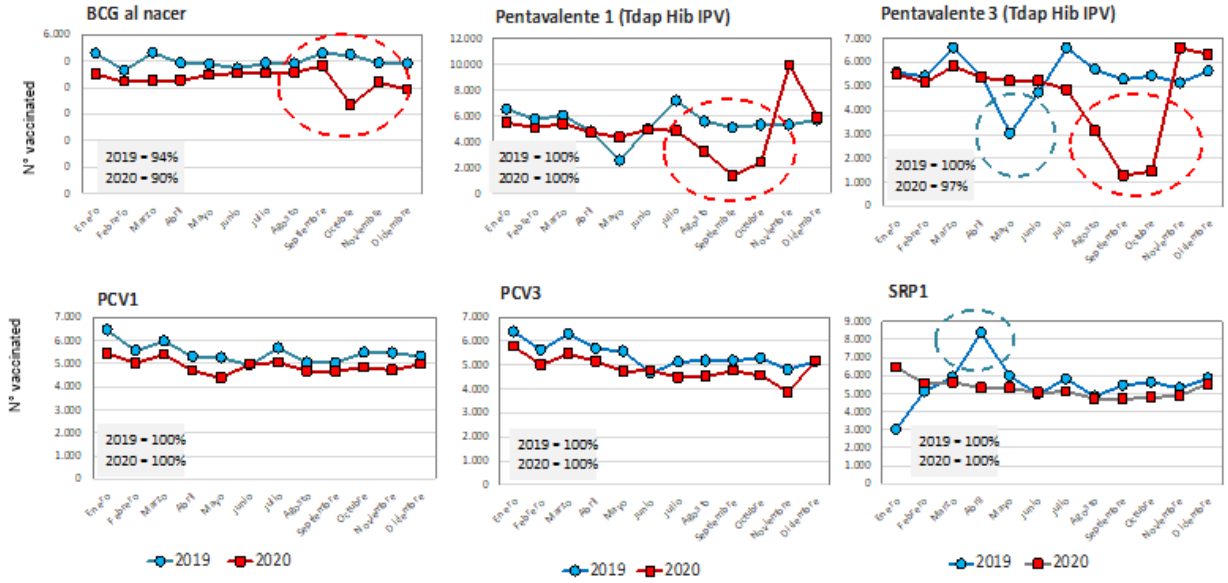

Source: National Immunization Program, Ministry of Health of Brazil.

**Figure 14. Trends in vaccinated per month and annual immunization coverage of the immunization scheme in Chile, 2019 and 2020.**




Source: Chile's National Immunization Registry

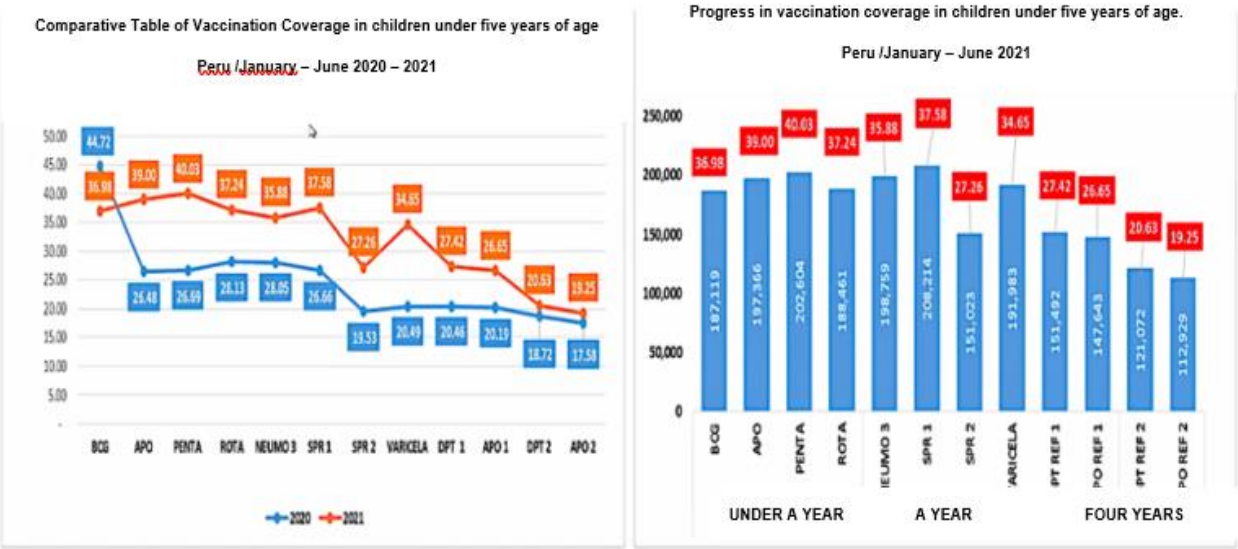
**Figure 15. Trends in vaccinated per month and annual immunization coverage of the immunization scheme in Costa Rica, 2019 and 2020.**




Source: Costa Rica Ministry of Health

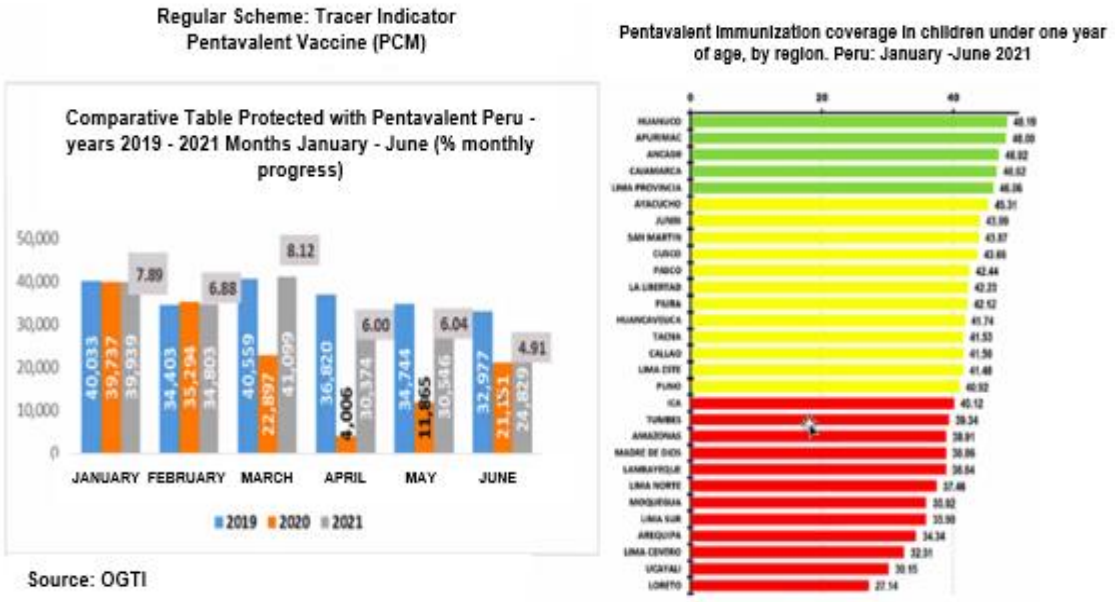
The case of Peru is noteworthy. Data were collected from a presentation made by the Peruvian Ministry of Health. The comparison made during the first half of 2020 and 2021 draws attention to the low national coverages that have been achieved; BCG reached the highest range with 44.72% in 2020 and Pentavalent with 40.03 in 2021. (Figure 15-A)

**Figure 15-A. Vaccination coverage in Peru, regular scheme, comparative January-June 2020 and 2021. Regular scheme: January – June 2021**



With these coverages, Peru faces a severe epidemiological problem, and it is, at the same time, a regional risk for potential VPE events. In the examples presented for Pentavalent vaccine coverage, the region with the highest coverage is 48.19%, and the lowest is 27.14% (Figure 15-B). Vaccination coverage for measles ranges from 49.26% for the highest to 27.19% for the lowest. (Figure 15-C) As for HPV coverage, there is an accumulated to June of 24.2% and 28.9% for first and second doses, respectively.

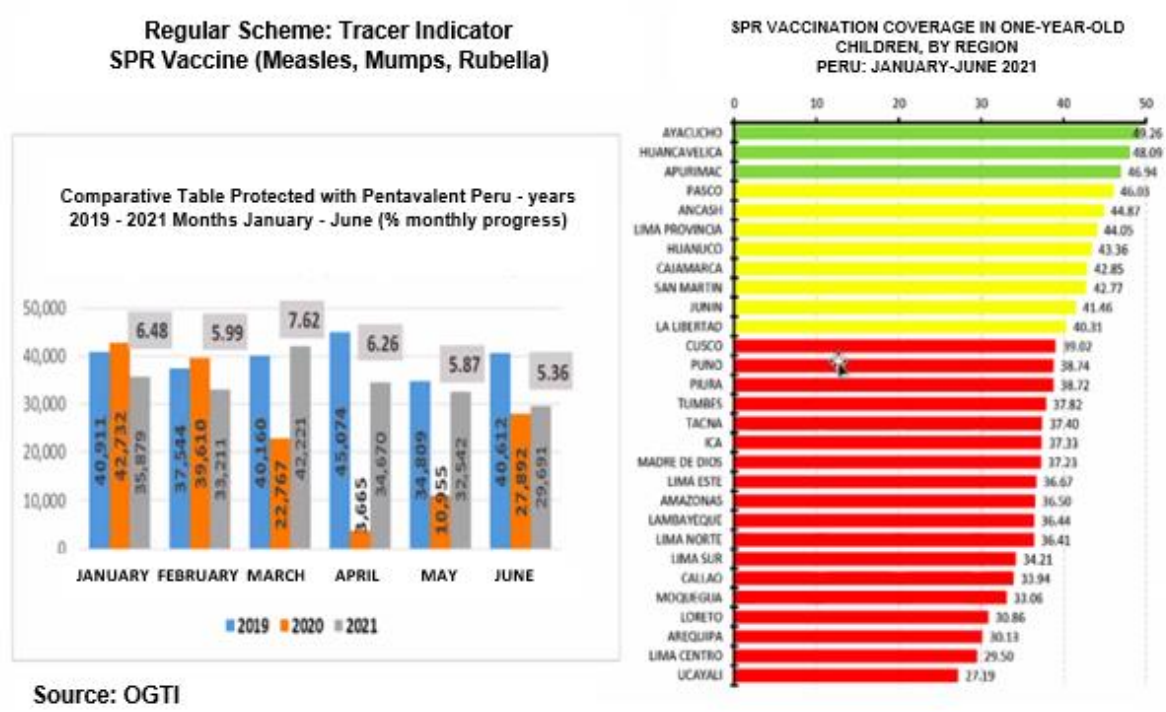
**Figure 15- B. Vaccination coverage with Pentavalent in Peru, regular scheme, comparative January – June: 2019 - 2021**




Source: OGTI

The decrease in coverage from 2019 to 2020 is evident with a recovery trend in 2021. The pandemic's impact on the vaccination program was significant at the beginning of the pandemic, and, as of March 2020, the decline is marked, recovering in June of that year (Figures 15-B and C). Although this is only partial data, it is evident the low coverage is striking.

**Figure 15- C. Vaccination coverage with SPR in Peru, regular scheme, comparative January – June: 2019 - 2021**




Source: OGTI

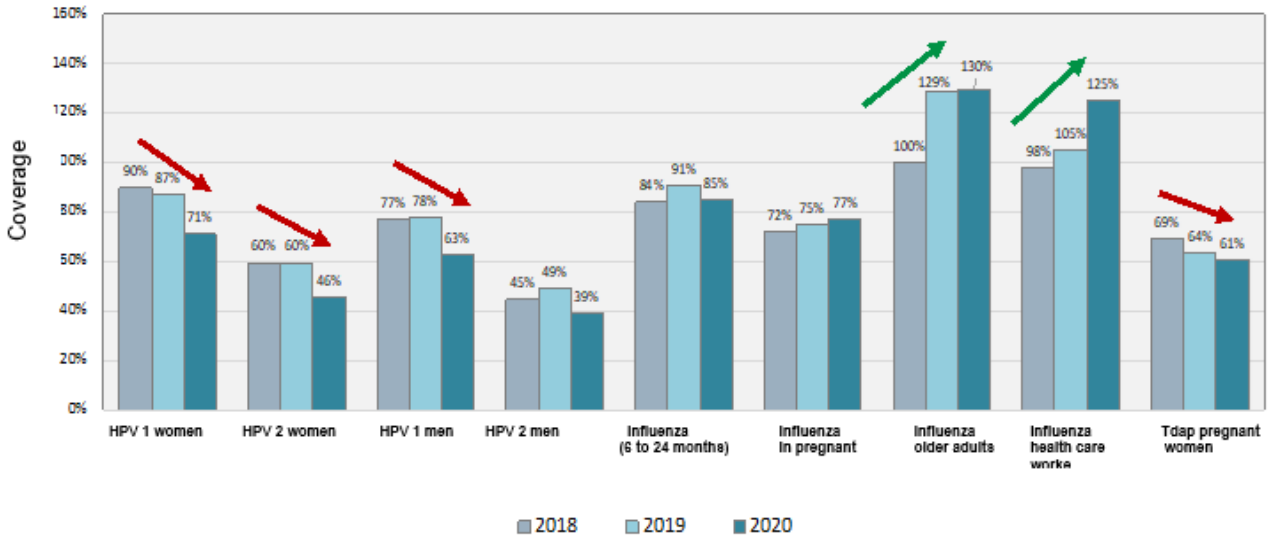
## 7. Effect on coverage of schoolchildren, adolescents, and adults.

Vaccination programs have been expanding their focus towards family protection with a vision of the life cycle of individuals. Therefore, in addition to the vaccines administered to children under five years of age, countries have incorporated new vaccines in their immunization schedules against human papillomavirus (HPV) in schoolchildren and adolescents, the vaccine against tetanus, diphtheria, and acellular pertussis (Tdap) in pregnant women to protect the mother and her future

newborn, and the vaccine against seasonal influenza in children, pregnant women, older adults, people with chronic diseases and health personnel.

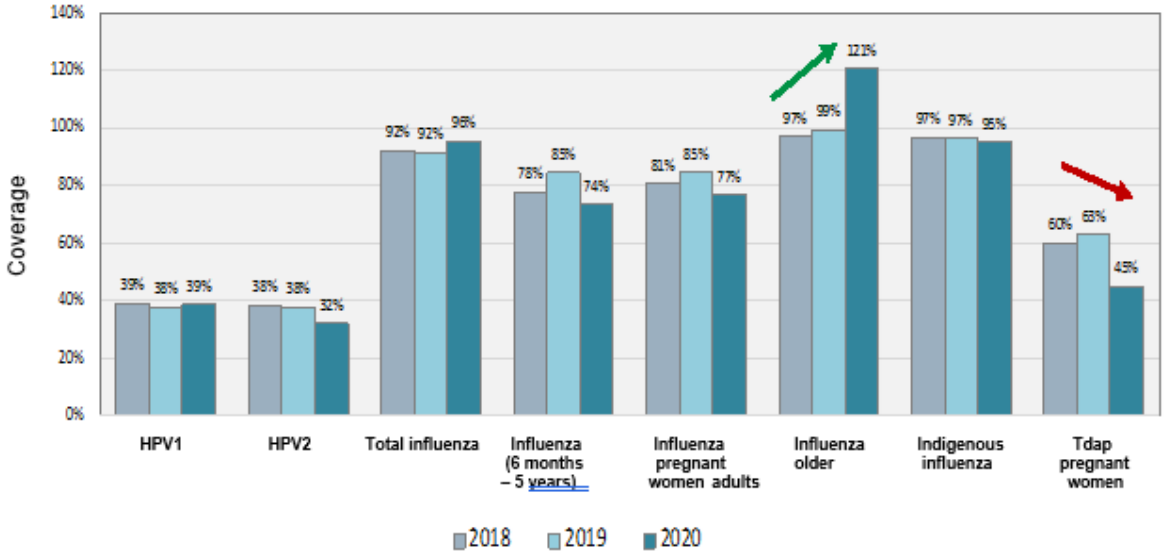
Figures 16 to 18 show the coverage reported by Argentina, Chile, and Brazil in schoolchildren, adolescents, and adults. Regarding HPV vaccination, except Brazil, which reported shallow pre-pandemic coverage (32-38%), HPV1 and HPV2 coverage decreased in Chile and Argentina. In countries like Argentina and Brazil, administering Tdap to pregnant women, coverage dropped from 69% to 16% in the former and 63% to 45% in the latter. In contrast, seasonal influenza vaccine coverage increased in older adults, people with chronic diseases, and health personnel but decreased or remained stable in children and pregnant women.

**Figure 16. HPV 1, HPV2, seasonal influenza, and Tdap coverage in pre-pandemic pregnant women and pandemic year 2020 in Argentina.**



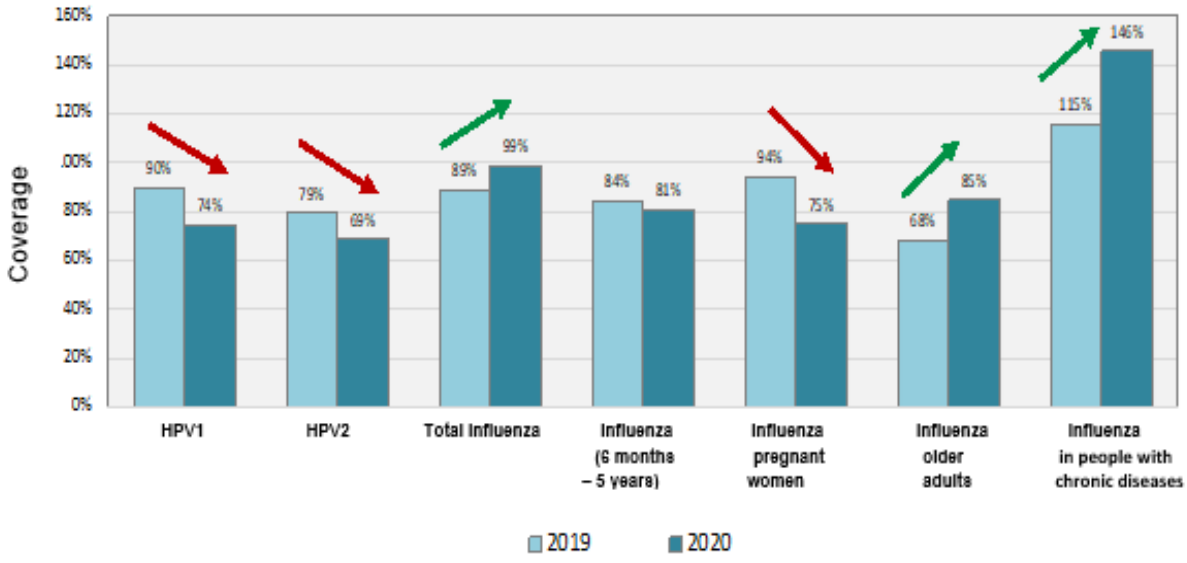

Source: Directorate for the Control of Immunopreventable Diseases, Ministry of Health, Argentina.

**Figure 17. HPV1, HPV2, and seasonal influenza pre-pandemic and pandemic year 2020 vaccine coverage in Brazil**




**Source: National Immunization Program, Ministry of Health, Brazil**

**Figure 18. HPV1, HPV2, and seasonal influenza pre-pandemic and pandemic year 2020 vaccine coverage in Chile**




Source: National Registry of Immunizations of Chile, Ministry of Health

## 8. Factors explaining the impact on coverage

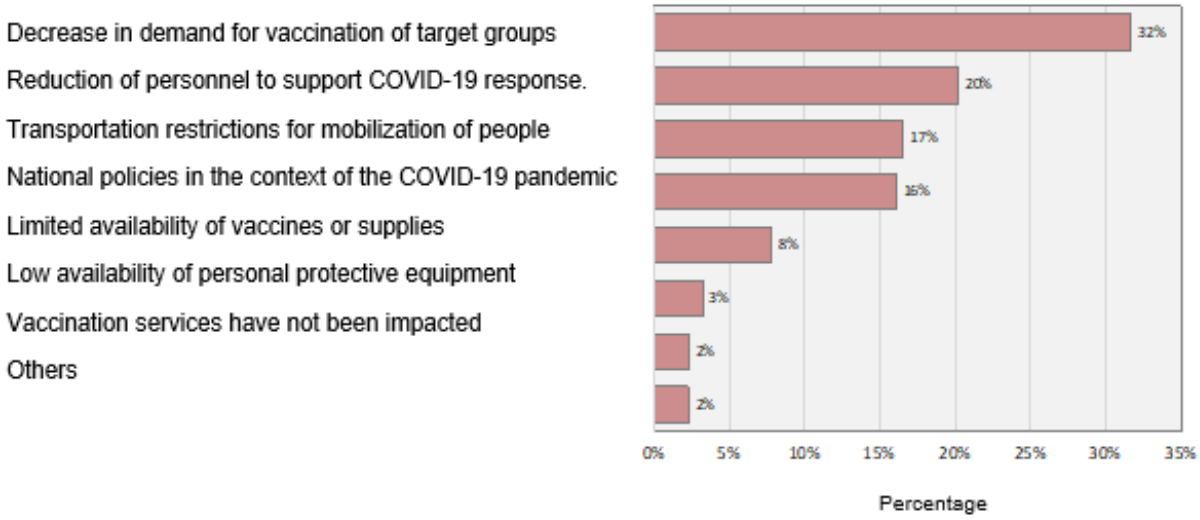
Several factors explain the impact of the pandemic: the demand for vaccination services and access to vaccines decreased due to restrictions on people's mobility and the population's fear of becoming infected when visiting health or vaccination centers. This may have had a differential impact on access to the most vulnerable people because of their poverty or limited geographical access.

To determine possible explanations for the pattern of coverage impact in different countries, the Global Health Consortium of the Robert Stempel School of Public Health at Florida International University (FIU) conducted an online survey in several countries in the Americas from May to July 2021. One hundred forty-seven informants from 16 Latin American countries responded to the study. Participants had the following profiles: responsible for NIPs at the national and subnational levels, from social security institutions, private-sector physicians, immunization advisory committees, and scientific societies. (Figures 19 and 20)

Informants mentioned that the factor that most explains the impact on immunization services had been the reduction in personnel, followed by the availability of vaccines or supplies and the decline in population demand.

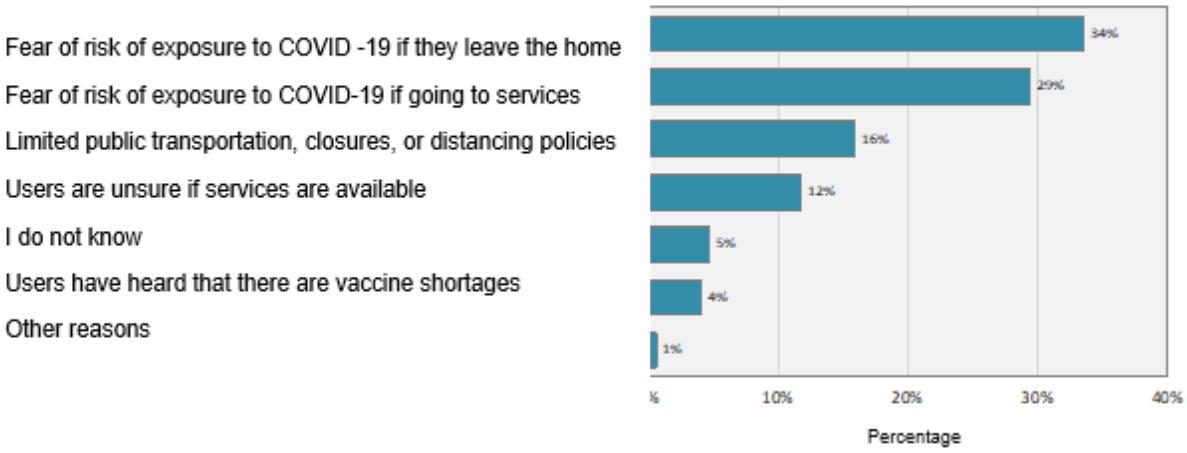
When analyzing the factors related to the reduction in the demand for vaccination services, the reason they considered the most important was the fear of contagion if they leave their homes or health services, conditions related to national policies to contain the transmission, including transportation restrictions for the mobilization of people, but also factors associated with lack of information on the availability of vaccines or vaccination services in their communities.

**Figure 19. Factors related to the impact of immunization services in Latin American Countries (LAC)**




Source: Essential informant survey of LAC countries, July 2021

**Figure 20. Main reasons for the decrease in demand for services by target populations in LAC countries**

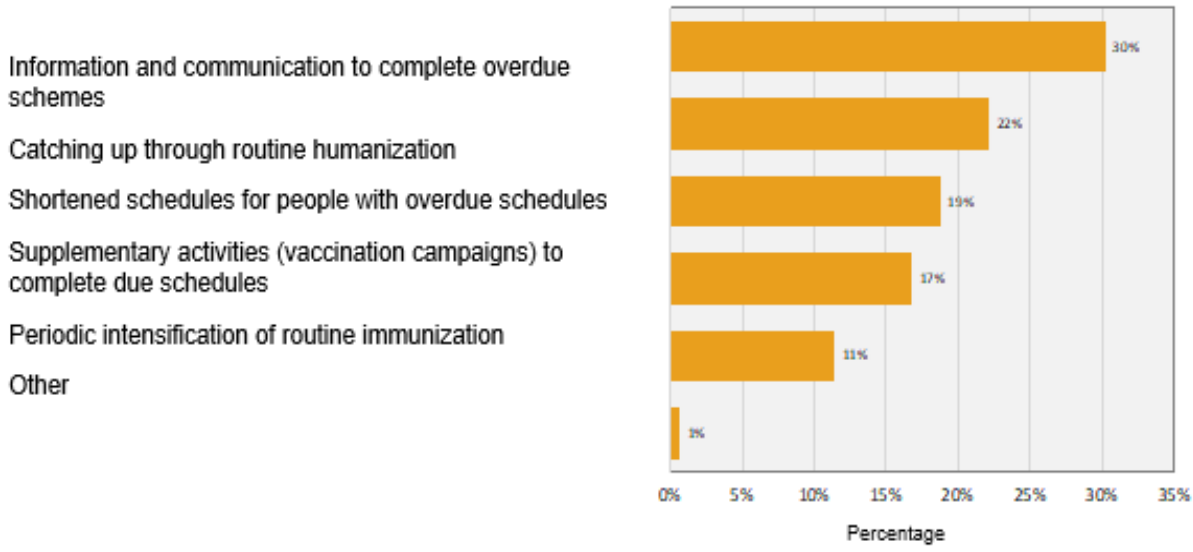



Source: Essential informant survey of LAC countries, July 2021

## 9. Good practices and critical interventions

Given the pandemic situation, there was a perception that countries implemented various strategies to maintain or increase coverage in many target populations. The informants indicated that these interventions stemmed from the good practices that had been previously implemented to reach the target populations, such as the implementation of communication and information strategies, the identification of unvaccinated persons or those with delayed vaccination schedules, the performance of supplementary intensification activities in the communities through extra-mural modalities (Fig. 21).

**Figure 21. Activities planned or implemented to reduce the gap of unvaccinated or overdue vaccination schedules in LAC countries.**




Source: Essential informant survey of LAC countries, July 2021

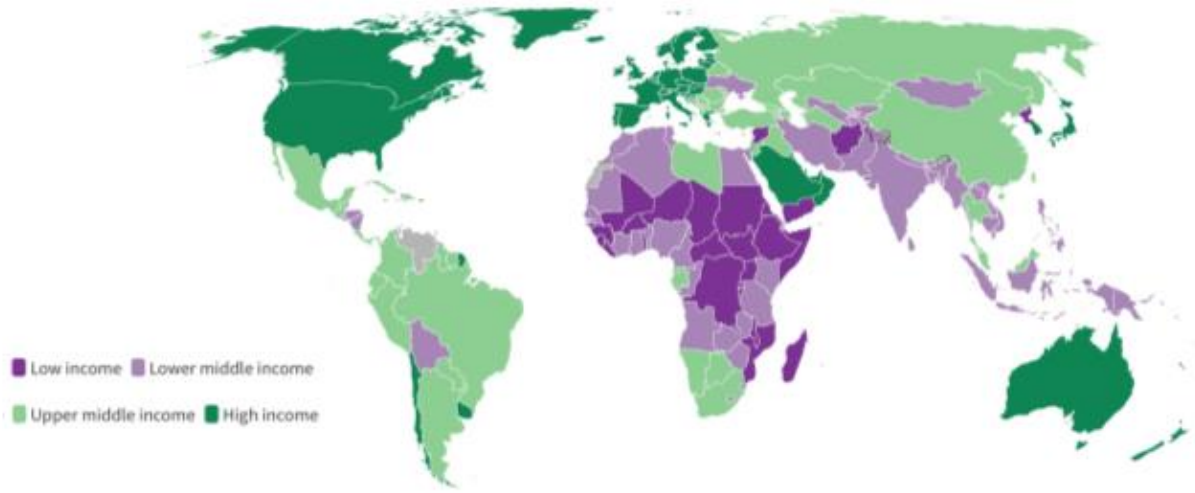
The availability of electronic vaccination records eased the identification of overdue schemes so that, through direct telephone contact with these people, reinforced by communication and information actions, using communication platforms on institutional websites and social networks, the use of mass media, and the implementation of local information strategies with the support of community leaders and organizations.

## 10. Disparities in vaccination against COVID-19

The World Bank classifies countries into four main income groups: low, lower-middle, upper-middle, and high, using per capita income in dollars (US$). At the regional level, there are significant disparities in the income level of countries. Figure 22 shows that most LAC countries are upper-middle-income; Uruguay, Chile, and most Caribbean islands are high-income. Six countries fall into the lower-middle-income category: Belize, Bolivia, Honduras, Haiti, Nicaragua, and El Salvador.

Although inequality is related to the distribution of wealth, health inequities are also determined by social factors that impact populations' health and lead to avoidable and unjust disparities.[5] From this perspective, LAC is one of the unequal regions in the world, given the differences in family income levels and housing conditions, food quality, and other risk factors that impact health.

Figure 22. The world by country income level




Source: World Bank https://datatopics.worldbank.org/world-development-indicators/the-world-by-income-and-region.html

The pandemic highlighted and deepened these health inequities, as it had a more significant impact on the poorest and most vulnerable populations. These effects revealed disparities, first in access to medical care for SARS-CoV2 patients and then to vaccines against COVID-19. High-income countries developed effective and safe vaccines against the new coronavirus with more significant infrastructure and technological innovation capabilities, prioritizing the availability of vaccines for their populations due to combined strategies with the governments where they are located and commercial supply and demand.

Although the COVAX mechanism, co-led by the Gavi Vaccine Alliance, the Coalition for Promoting Epidemic Preparedness Innovations (CEPI), and WHO, has driven strategies and actions to ensure fair and equitable vaccine access in all countries around the world, progress has been slow. As of February 2021, 75% of the vaccines administered in the world were concentrated in 10 countries, while many other countries had not received a single dose.[7]

Therefore, the global distribution of COVID-19 vaccines evidences an unequal and unfair situation, where the more developed countries are making progress in vaccination coverage. At the same time, those with fewer resources face the health consequences of the pandemic and its social and economic effects. WHO reports indicate that 5,534,977,637 doses of vaccine have been administered as of September 13, 2021. However, the rates of people fully vaccinated against COVID-19 (Figure 23) reflect the vast disparities in coverage by country, with low-income countries in LAC, Africa, and Asia lagging in access to vaccination.

**Figure 23. The world, according to the level of coverage of people fully vaccinated against COVID - 19**


Source: World Health Organization. https://covid19.who.int/. Data as of September 14, 2021.

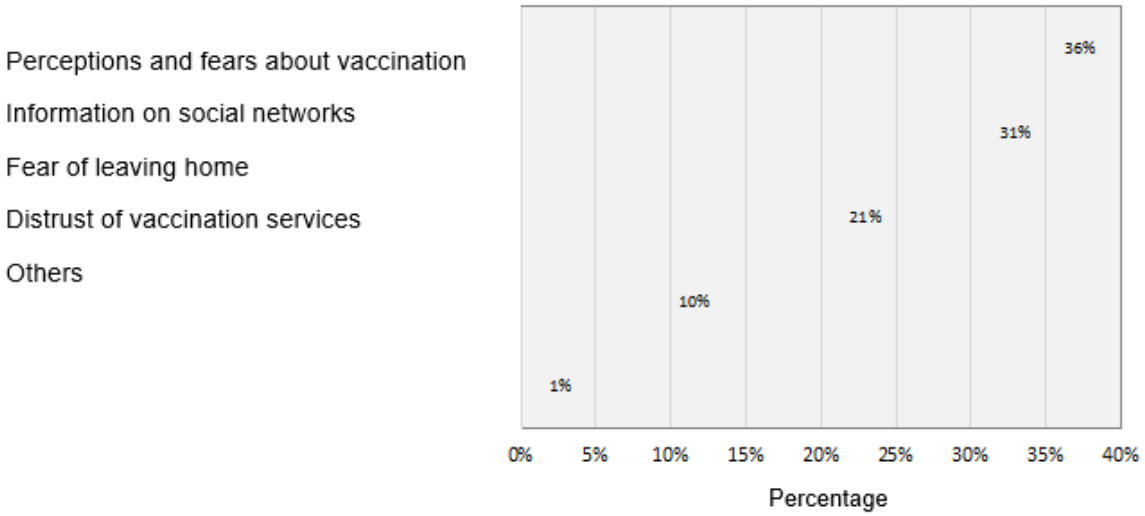
It is important to note that social and cultural factors also determine disparities. In this sense, reluctance to vaccinate is a complex phenomenon that needs to be addressed. It deepens gaps in vaccination coverage—identified "the reluctance or refusal to vaccinate despite the availability of vaccines "as one of the ten threats to global health in 2019.[8]

In initiating a push for third doses or vaccination of children between 12 and 18 years of age in high-income countries, the WHO Director-General called for no progress to make the majority of the global adult population vulnerable due to comorbidities, had at least one dose. The donations offered by rich countries to countries without resources have flowed slowly without having an impact on reducing the vaccination gap between wealthy and low-income countries.

The pandemic has facilitated the dissemination of false information through social networks, generating mistrust towards vaccination services, increasing fears, doubts, and negative perceptions in the population, and the fear of contagion when leaving home and going to vaccination services, as shown in Figure 24.

Therefore, to reduce disparities in vaccination, it is essential to reinforce the dissemination of messages with accurate information and avoid confusing or conflicting messages that affect the population's confidence.
It is also essential to consider that the reluctance to receive the COVID19 vaccine transcends the perception of this particular vaccine and may affect immunization strategies in general.

**Figure 24. Main reasons for reluctance in LAC countries**

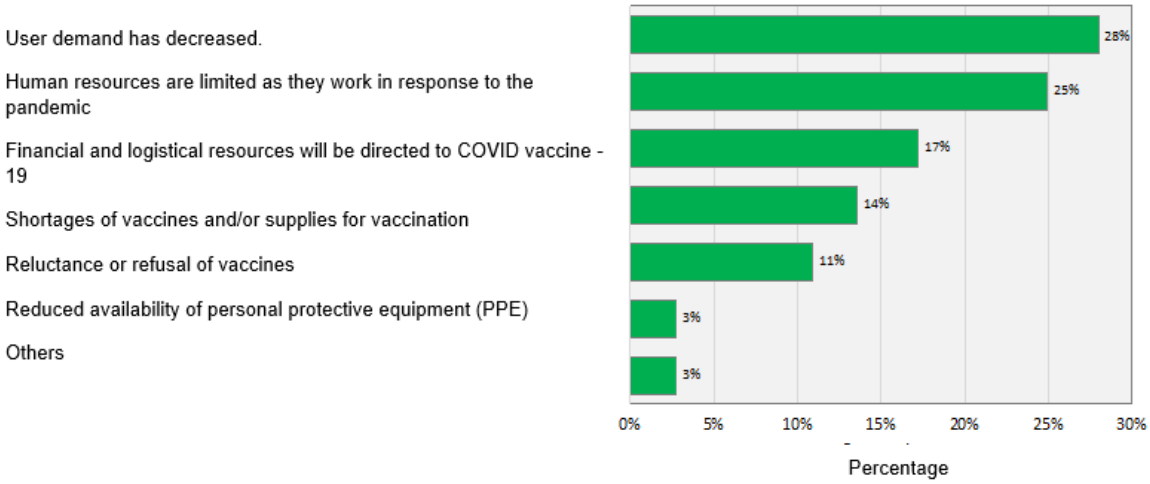



Source: Essential informant survey of LAC countries, July 2021

## 11. Challenges and prospects for the future

There are significant challenges that the region's countries face in the context of the pandemic, as shown in Figure 25. A fundamental challenge is to increase the demand and confidence of users to seek vaccination services. However, the increase in demand must be accompanied by strengthening the response capacity of immunization services, minimizing the risk of SARS-CoV2 infection, both for users and health personnel.

**Figure 25. Challenges for strengthening immunization services in LAC countries.**




Source: Essential informant survey of LAC countries, July 2021

The pandemic also caused disruptions in the surveillance of VSEs. WHO reports indicate that diseases surveillance such as measles was being maintained but noted limitations in laboratory staffing and problems related to the availability of supplies and transport of specimens in the face of the work overload that has been involved in conducting COVID-19 testing. There was also reduced reporting of acute flaccid paralysis (AFP) cases in 2020 compared to 2019 due to the prioritization of COVID-19 issue-reporting over VPEs. [10,11]

The future becomes even more complex as the pandemic emerged in a context where immunization programs showed a progressive reduction in coverage. Although the actions implemented by countries indicate that coverage has been recovering, the gaps in vaccination coverage before the pandemic meant that millions of children were under-vaccinated or unvaccinated against preventable diseases, particularly in lower-income regions. Therefore, more significant efforts are needed to reduce the gaps and achieve the 2030 Agenda for Immunization targets

to prevent threats such as the resurgence of diseases in elimination such as measles, diphtheria, and neonatal tetanus.

It is recognized that deaths averted by maintaining routine childhood immunization outweigh the risk of fatalities from COVID-19, so it is essential to keep vaccination through interventions that reduce the disruptions that the pandemic has caused to vaccination services [13]. The pandemic has shown that our health systems have sought innovative options to deal with crises. In this sense, the good practices developed should strengthen the capacity and sustainability of vaccination programs.

Improving the quality and use of routine immunization data and mobilizing resources and effective communication will be essential to minimize the risk of VPE outbreaks, capture people who missed doses of routine vaccines during the pandemic and accelerate progress toward higher and more equitable vaccination coverage shortly. We should not forget the need to understand the causes of the fragility of vaccination programs in the region's countries.

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