Policy successes and policy failures in COVID-19 vaccinations in Latin American countries

Éxitos y fracasos de las políticas en las vacunas contra la COVID-19 en países Latinoamericanos

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SUMMARY

Introduction: *The objective of the paper is to describe the characteristics of the success and failure of COVID-19 vaccination policies in Latin America. The emphasis of the paper is strictly descriptive, as a first step in a line of research that continues with explanatory approaches.*

Methods: *For the comparison of country performance, the following milestones were defined: 1) the start date of the vaccination program, which expresses the institutional capacity for implementation, 2) the number of days required to reach 50 % full coverage, 3) number of days elapsed between 50 % full coverage and 80 % full coverage, and 4) percentage of booster dose coverage. The Our World in Data (2) database of the University of Oxford was used for the analyses.*

Results: *Chile was the only country in the region that achieved 50 % complete coverage in the first semester of 2021. Three countries (Uruguay, Cuba, and Chile) achieved 50 % coverage in less than 200 days after initiating vaccinations. Four countries (Costa Rica, Mexico, Honduras, and Bolivia) took more than 300 days. Only two countries in the region (Chile and Cuba) reached 80 % full coverage by 2021. Four more countries reached it in the first part of 2022. By the end of May 2022, only five countries (Chile, Uruguay, Cuba, Peru, and Argentina) had reached 50 % booster coverage.*

Discussion: *The differences in COVID-19 vaccination policy outcomes are expressions of varying compositions of factors in each of the countries. Detailed analysis of these factor compositions will allow us to identify in more detail the lessons that should be taken into consideration to improve the performance of health systems in the region.*

Conclusions: *The analysis of immunization policies in Latin America indicates that there are countries with substantive successes as well as countries with notable failures. Elucidating the reasons for the successes and failures is of vital importance to deepen the positive aspects and to introduce changes in the restrictions of health policies in the region.*

Keywords: *COVID-19, vaccination policies, policy success, policy failure, Latin America, pandemic.*

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RESUMEN

Introducción: *El objetivo del trabajo es describir las características del éxito y fracaso de las políticas de vacunación contra COVID-19 en América Latina. El énfasis del trabajo es estrictamente descriptivo, como primer paso de una línea de investigación que continue con enfoques explicativos.*

Métodos: *Para la comparación del desempeño de los países se definieron los siguientes hitos: 1) fecha de*

inicio del programa de vacunaciones, lo cual expresa la capacidad institucional de implementación, 2) número de días que se requirió para alcanzar el 50 % de cobertura completa, 3) número de días transcurridos entre la cobertura completa del 50 % y la cobertura completa de 80 %, y 4) porcentaje de cobertura de la dosis de refuerzo. La base de datos Our World in Data (2) de la Universidad de Oxford fue la utilizada para los análisis.

Resultados: *Chile fue el único país de la región que logró 50 % de cobertura completa en el primer semestre de 2021. Tres países (Uruguay, Cuba, y Chile), alcanzaron el 50 % de cobertura en menos de 200 días luego de iniciar las vacunaciones. Cuatro países (Costa Rica, México, Honduras, y Bolivia) tomaron más de 300 días. Solo dos países de la región (Chile y Cuba) alcanzaron el 80 % de cobertura completa en 2021. Cuatro países más la alcanzaron en la primera parte de 2022. Hasta finales de mayo de 2022 solo cinco países (Chile, Uruguay, Cuba, Perú, y Argentina) habían alcanzado el 50 % de cobertura de la dosis de refuerzo.*

Discusión: *Las diferencias de resultados de las políticas de vacunaciones contra COVID-19 son expresiones de variadas composiciones de factores en cada uno de los países. El análisis detallado de estas composiciones de factores permitirá identificar con más detalles las lecciones que deben tomarse en consideración para mejorar el desempeño de los sistemas de salud en la región.*

Conclusiones: *El análisis de las políticas de vacunaciones en América Latina, indica que existen países con éxitos sustantivos, así como países con notables fracasos. Dilucidar las razones de los éxitos y fracasos es de vital importancia para profundizar en los aspectos positivos, y para introducir cambios en las restricciones de las políticas de salud de la región.*

Palabras clave: *COVID-19, políticas de vacunaciones, éxito de políticas, fracaso de políticas, América Latina, pandemia.*

INTRODUCTION

The control of the COVID-19 pandemic has required the implementation of extensive vaccination programs worldwide. By the end of May 2022, six Latin American countries (Chile, Cuba, Uruguay, Argentina, Peru, and Costa Rica) had reached more than 80 % complete coverage of COVID-19 vaccination (Figure 1), a year and a half after the implementation of these programs. However, seven countries in the region had not reached 60 % coverage (the latest figures for Venezuela are as of March 25, 2022).
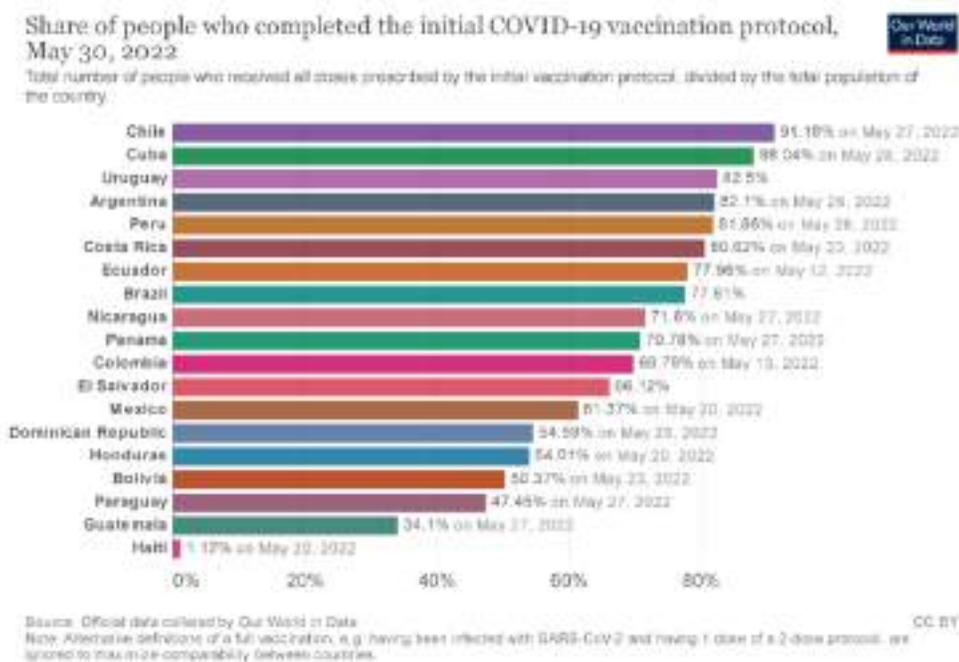

Figure 1. Latin America: percentage of the population fully vaccinated against COVID-19 (initial protocol) May 30th, 2022. Source: (1).

In the European Union, by the same date, five countries (out of a total of 27) had reached 80 % complete coverage of vaccinations against COVID-19: Malta, Portugal, Spain, Denmark, and Ireland (Figure 2). Six EU countries, however, had not reached 60 % COVID-19 vaccination coverage.
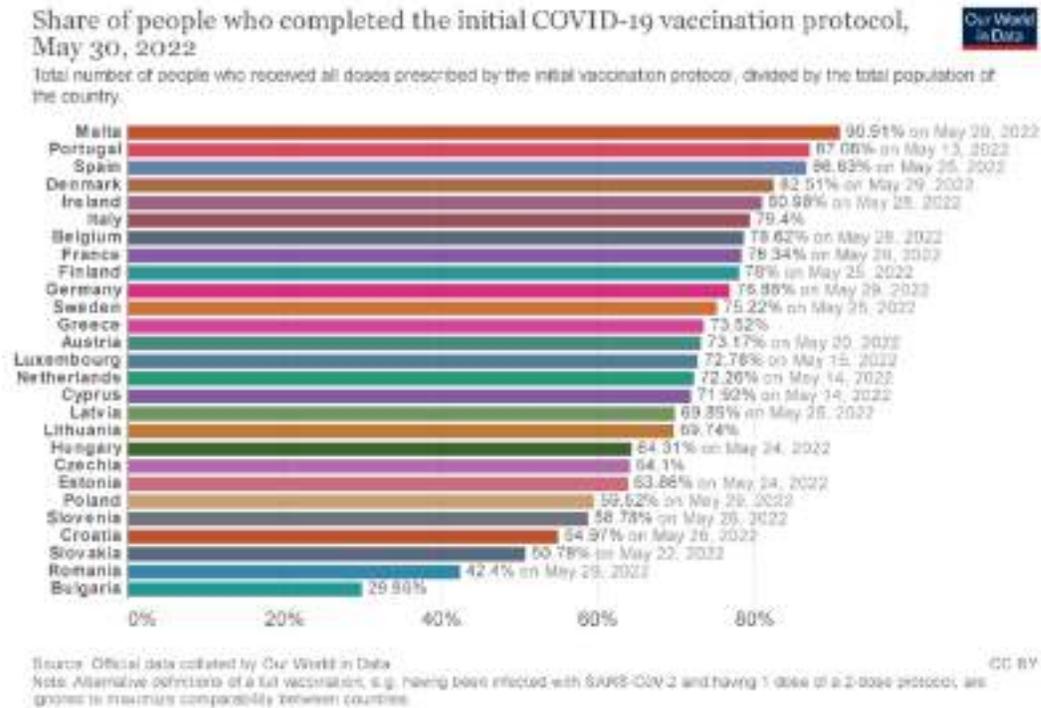

Figure 2. European Union: percentage of the population fully vaccinated against COVID-19 (initial protocol). May 30th, 2022. Source: (1).

Examination of COVID-19 vaccination coverage in contexts as different as Latin America and the European Union indicates that in both areas of the world there have been successes and failures in the management of these policies. Thus, it is possible to postulate that there are specific conditions at the country level that determine that some countries are successful, and others are not. From this, it can also be inferred that there are characteristics of the implementation of these policies that can serve as a learning experience for the countries, both for the management of vaccinations and in other areas.

Policy success and failure have been a topic of recent interest in public policy analysis. It has been pointed out that policy success occurs when the proposed objectives are achieved in a context without significant criticism and/or virtually universal support (2). Likewise, policy failure occurs when the proposed objectives are not achieved and coincide with great opposition and/or non-existent support (2).

Various classifications have been made of the factors that influence the success or failure of policies. Debela (3), for example, has included the following aspects: policy design, actors and their involvement, institutions and context, and implementation strategy. It has also been proposed (4) that the perception of success or failure depends on each actor involved in the different aspects of decision-making: policy-making process, program, politics, and time. From a conceptual point of view, it is possible to identify the following explanatory factors: 1) leadership, 2) policy design, 3) context, 4) management, 5) monitoring, and 6) communication.

In the particular field of health policy, success has been related to the means available and the willingness to implement policies (5). The concept has also been used to analyze intersectoral action (6).

The analysis of COVID-19 vaccination policies has been carried out through case studies of countries: Japan (7), Norway (8), Malawi (9), Pakistan (10), United States (11); Philippines (12); of different groups of countries according to national income (13); on the influence of transmission dynamics (14); characteristics of policy decisions (15); effectiveness of interventions to increase coverage (16); global access factors (17); and of mass vaccinations (18). In Latin America, the analysis of COVID-19 vaccination policies has been identified in the access of vaccines to Venezuelan migrants in different countries of the region (19), willingness to vaccinate in rural populations in Mexico (20), and the use of serological tests in vaccination programs (21).

As indicated, the analysis of the success and failure of vaccination policies has not been very frequent as a research topic. The objective of this paper is to describe the characteristics of the success and failure of vaccination policies against COVID-19 in Latin America. The emphasis of the paper is strictly descriptive, as a first step in a line of research that continues with explanatory approaches.

METHODS

For the analysis, it is assumed that higher vaccination coverage against COVID-19 is the criterion for policy success. Conversely, lower coverage corresponds to worse policy performance or failure.

For the comparison of country performance, the following milestones were defined: (1) the start date of the vaccination program, which expresses the institutional capacity for implementation, (2) the number of days required to reach 50 % full coverage, (3) number of days elapsed between 50 % full coverage and 80 % full coverage, and (4) percentage coverage of the booster dose. The reasons for proposing

these full coverage criteria are as follows. Full coverage of 50 % expresses a target with a significant level of stringency, equivalent to the measures necessary to guarantee vaccination to half of the population. Full coverage of 80 % is even stricter, to the point that at least in Latin America and the European Union only 25 % of the countries have reached it.

The Our World in Data (2) database of the University of Oxford was used for the analyses.

RESULTS

Vaccinations against COVID-19 started at the end of 2020 in four Latin American countries (Table 1). In three of them (Chile, Mexico, and Costa Rica) they started on December 24, and in Argentina on December 29, 2020. The remaining countries in the region began vaccinations in the course of 2021, with Haiti being the last country to start vaccinations in mid-July of that year.

Table 1

Latin America: COVID-19 vaccination start date by country

Country	Start date
Chile	Dec 24 2020
Mexico	Dec 24 2020
Costa Rica	Dec 24 2020
Argentina	Dec 29 2020
Brazil	Jan 17 2021
Ecuador	Jan 20 2021
Panama	Jan 20 2021
Bolivia	Feb 2 2021
Peru	Feb 9 2021
Dominican Republic	Feb 16 2021
El Salvador	Feb 22 2021
Paraguay	Feb 22 2021
Venezuela	Feb 22 2021
Guatemala	Feb 27 2021
Uruguay	Feb 27 2021
Honduras	Feb 28 2021
Colombia	Mar 13 2021
Nicaragua	Apr 14 2021
Cuba	Jul 16 2021
Haiti	Jul 16 2021

Source: (1)

Most countries in the region made their first purchases of the COVID-19 vaccine in the second half of 2020 (Table 2). However, only Chile purchased enough vaccine doses to cover the entire population (exactly 244 %).

Table 2

Latin America: dates of first COVID-19 vaccine purchases and the population covered, by country

Country	Date of first purchase	Population covered (%)
Chile	Nov 9 2020	243,8
Dominican R.	Nov 23 2020	83,3
Brazil	Aug 6 2020	76,3
Mexico	Sep 9 2020	72,0
Panama	Nov 25 2020	58,9
Colombia	Dec 3 2020	55,1
Argentina	Nov 3 2020	53,4
Ecuador	Oct 21 2020	43,2
Costa Rica	Nov 12 2020	39,6
Bolivia	Dec 30 2020	35,2
Venezuela	Nov 13 2020	17,5
El Salvador	Nov 25 2020	15,5

Source: (22). Estimated coverage as of March 23, 2021.

When examining the date by which the countries reached 50 % full coverage (by May 30, 2022), only Chile achieved it in the first half of 2021 (Table 3). Twelve countries achieved it in the second half of 2021. The countries furthest behind in reaching the target were Nicaragua, Bolivia, and Honduras, all of them in the first part of 2022.

When analyzing the number of days required for countries to reach 50 % full coverage after the start of vaccinations, three countries (Uruguay, Cuba, and Chile) took less than 200 days, while four countries (Costa Rica, Mexico, Honduras, and Bolivia) took more than 300 days. This gap illustrates the differences in performance among countries in the region. Countries that required fewer days can be considered more successful. Note that Chile, despite achieving 50 % coverage more quickly, was not the country that took the least time from the start of vaccinations. This country was Uruguay (requiring 126 days vs. 180 days in Chile).

Table 3

Latin America: date on which 50 % full coverage against COVID-19 was achieved, by country

Country	Date on which 50 % Coverage was achieved
Chile	Jun 21 2021
Uruguay	Jul 2 2021
Ecuador	Sep 8 2021
Panama	Sep 19 2021
El Salvador	Sep 22 2021
Argentina	Oct 1 2021
Cuba	Oct 7 2021
Brazil	Oct 20 2021
Costa Rica	Nov 1 2021
Peru	Nov 12 2021
Dominican Republic	Nov 15 2021
Mexico	Dec 5 2021
Colombia	Dec 7 2021
Nicaragua	Jan 26 2022
Bolivia	Apr 30 2022
Honduras	May 6 2022

Source: (1).

Table 4

Latin America: number of days in which 50 % of full coverage against COVID-19 was achieved after the start of vaccinations, by country

Country	Number of days
Uruguay	126
Cuba	149
Chile	180
El Salvador	213
Ecuador	231
Panama	242
Colombia	270
Dominican Republic	273
Brazil	277
Argentina	277
Peru	277
Nicaragua	288
Costa Rica	313
Mexico	347
Honduras	433
Bolivia	453

Source: Own calculations based on (1).

The daily vaccination rate is a measure that reflects the effectiveness of vaccination program management. Countries that achieve a higher daily rate are in a better position to reach the vaccination target. Chile, for example, exceeded 0.8 % daily vaccinations for much of the period to reach 50 % full coverage (Figure 3).
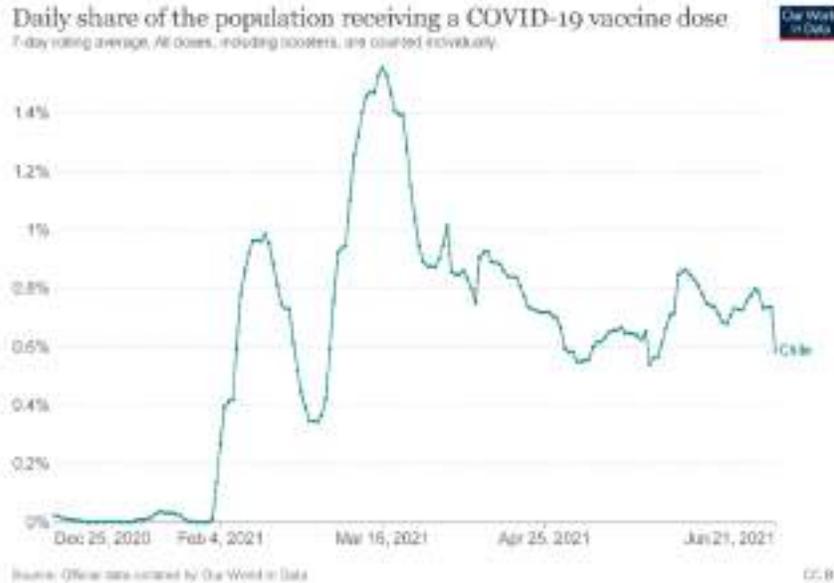

Figure 3. Chile: daily vaccination rate against COVID-19. Source: (1).

The significance of the daily rate is illustrated when comparing three countries that started vaccinations on the same day (December 24, 2020). These countries are Chile, Mexico, and Costa Rica (Figure 4). It can be seen that throughout the period until Chile reached 50 % full coverage, the daily vaccination rate of Mexico and Costa Rica was ostensibly lower than that of Chile.
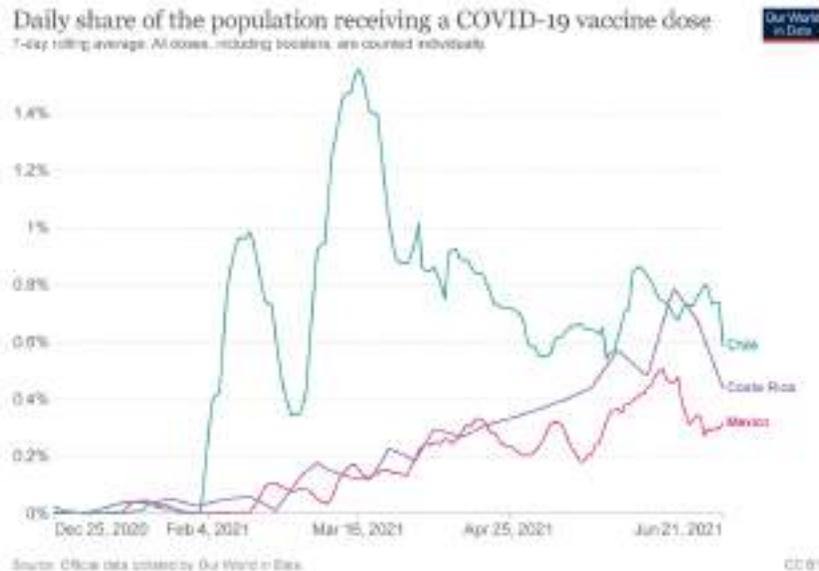

Figure 4. Chile, Mexico, Costa Rica: daily vaccination rate against COVID-19. Source: (1).

The fact that Chile maintained a higher daily coverage rate between December 2020 and June 2021, determined that it reached 50 % full coverage in the period, while Costa Rica and Mexico did not even reach 20 % full coverage (Figure 5).
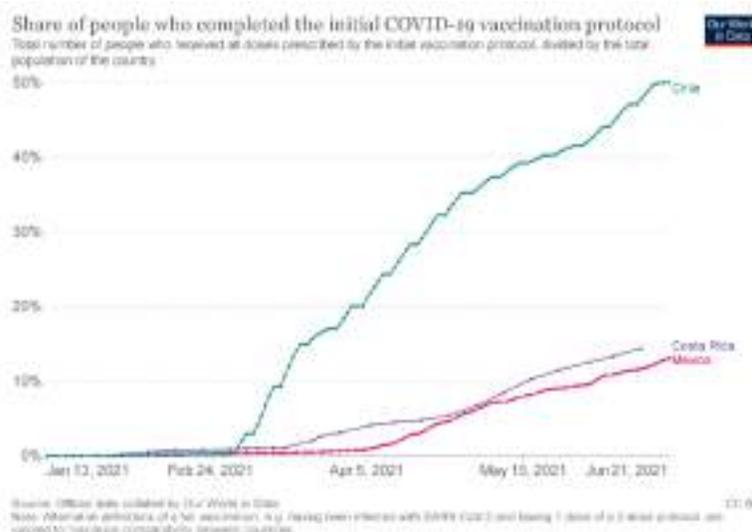

Figure 5. Chile, Mexico, Costa Rica: evolution of full COVID-19 vaccination coverage (December 2020- June 2021). Source: (1).

The significant challenge of mass vaccination against COVID-19 is expressed in the fact that only two countries in the region achieved full coverage of 80 % in 2021 (Table 5). If the countries that achieved coverage in the first part of 2022 are included, only six countries in the region surpassed the 80 % target in the region by the end of May 2022.

The time required for countries to move from 50 % to 80 % of full COVID-19 vaccination coverage illustrates some aspects of interest (Table 6). The first of these is the difference in the number of days between Cuba and the other five countries. Cuba reached 80 % coverage in one-third of the days of Chile (the second country with the second-lowest number of days). It is also noteworthy that Uruguay, after reaching 50 % coverage on the fewest days, reached 80 % coverage on the most days in this group of countries.

Table 5

Latin America: the date on which 80 % full coverage against COVID-19 was achieved, by country

Country	Date on which 80 % coverage was achieved
Chile	Nov 4 2021
Cuba	Nov 21 2021
Argentina	Feb 24 2022
Uruguay	Mar 9 2022
Peru	Apr 18 2022
Costa Rica	May 10 2022

Source: (1).

Table 6

Latin America: number of days in which 80 % of full coverage against COVID-19 was achieved after the start of vaccinations, by country

Country	Number of days
Cuba	46
Chile	137
Argentina	147
Peru	158
Costa Rica	191
Uruguay	251

Source: Own calculations based on (1).

The high daily vaccination rate achieved by Cuba (Figure 6) explains why it took less time to reach full coverage of 80 %. Note that between June and November 2021, Cuba's daily vaccination rate was higher for almost the entire period. In some weeks the daily vaccination rate exceeded 2 %.
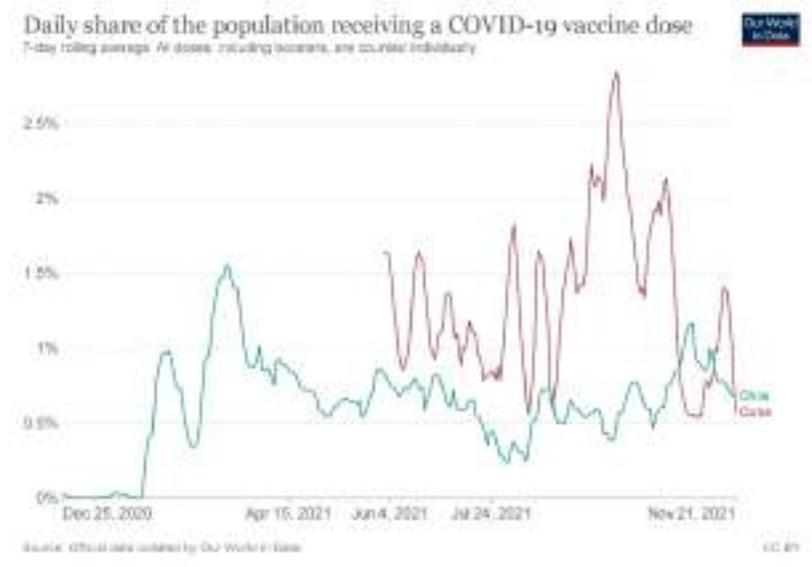

Figure 6. Chile, Cuba: daily vaccination rate against COVID-19. Source: (1).

Cuba's higher daily vaccination rate also explains why the complete vaccination coverage gap with Chile has been closed in just over six months (Figure 7).
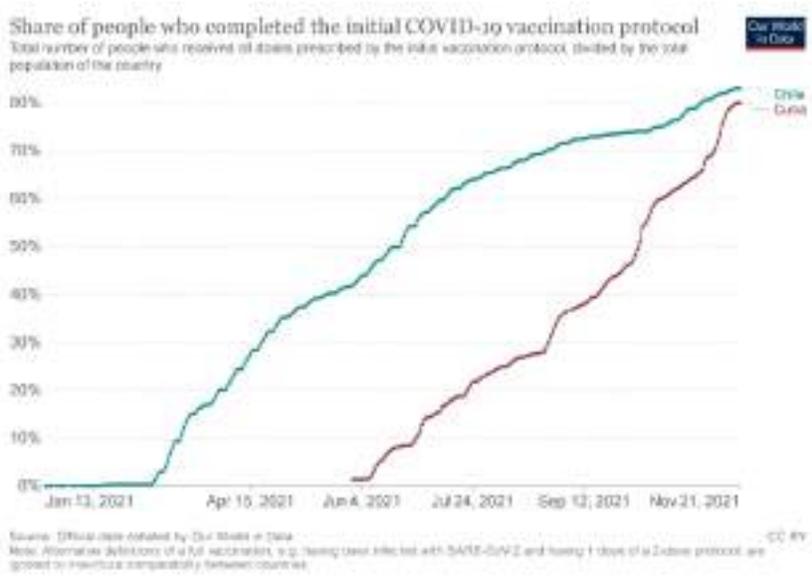

Figure 7. Chile, Cuba: evolution of full COVID-19 vaccination coverage (2021). Source: (1).

Another example of the relevance of the daily vaccination rate is the evolution of this rate in Costa Rica (Figure 8). The evident increase in the daily vaccination rate from June 2021 onwards

explains why Costa Rica has been able to reach full coverage of 80 % in the first part of 2022.

All countries that achieved 80 % complete coverage had to maintain a high daily vaccination rate. The evolution of the daily rate indicates that it peaks and then decreases, although in some countries it remains above 0.5 %. This may indicate that as the unvaccinated population decreases, it becomes more difficult to vaccinate, either for geographic or logistical reasons or because of resistance to vaccination. Ultimately, variations in this daily vaccination rate may reflect the various factors affecting the performance of COVID-19 vaccination programs.
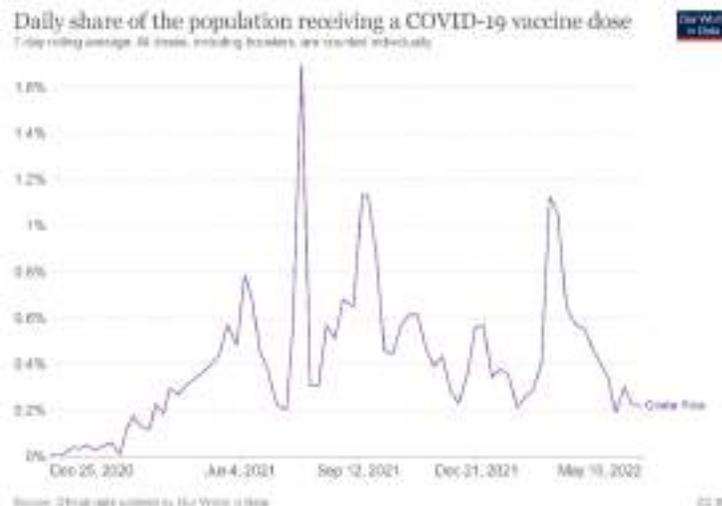

Figure 8. Costa Rica: daily vaccination rate against COVID-19. Source: (1).

COVID-19 booster coverage also shows the difference in performance between countries (Figure 9). As of May 30, 2022, only five countries in the region had reached 50 % coverage of the booster dose (Chile, Uruguay, Cuba, Peru, and Argentina).
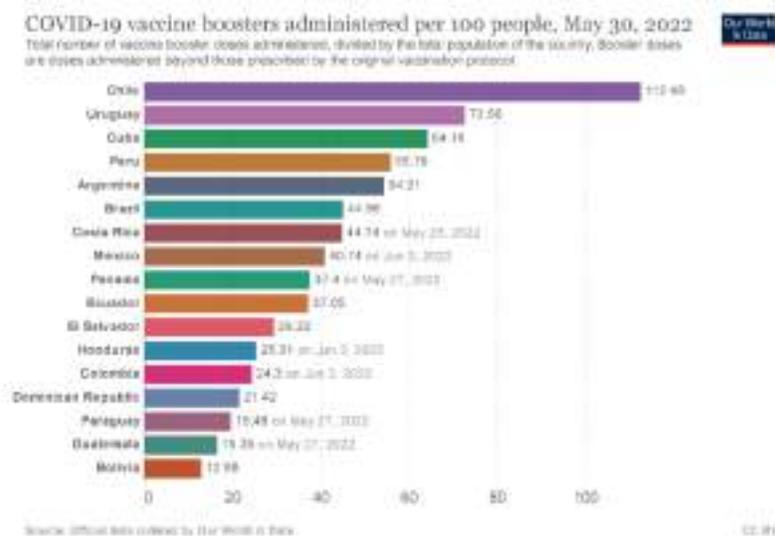

Figure 9. Latin America: booster dose coverage for COVID-19 vaccination. Source: (1).

DISCUSSION

The analysis of the performance of the region's health systems in vaccinations against COVID-19 clearly differentiates between countries that have implemented successful policies and those that have not. If the achievement of complete coverage of at least 80 % (by May 30, 2022) is taken as a criterion, only six countries in the region can be considered successful. These countries are Chile, Cuba, Argentina, Uruguay, Peru, and Costa Rica. However, a more detailed analysis indicates that differences are also found in this group. For example, only two of these countries achieved 80 % full coverage by 2021. First was Chile, on November 4, and then Cuba, on November 21.

It should be noted that Chile, together with Costa Rica and Mexico, was one of the countries that initiated vaccination programs in the region. It was also the first country to reach 50 % full coverage, and the first country to reach 80 % full coverage. Cuba, on the other hand, although it started the vaccination program later, also achieved 80 % full coverage by the end of November 2021.

Among the remaining four countries (which reached 80 % coverage), we can identify cases such as Uruguay, which had the best performance to reach 50 % coverage, and countries such as Argentina, Peru, and Costa Rica, which had to implement significant corrections in the rate of vaccinations to reach the goal.

The differences in the results of COVID-19 vaccination policies are expressions of varying compositions of factors in each of the countries. A detailed analysis of these factor compositions will allow us to identify in more detail the lessons that should be taken into consideration to improve the performance of health systems in the region.

Taking as a reference the success criterion of reaching 80 % full coverage, it is evident that for the vast majority of Latin American countries it has not been possible to reach this goal. It is, therefore, a pending task to establish the factors that explain this low performance and to introduce the necessary corrective measures in the design and implementation of public policies.

CONCLUSIONS

Although Latin America has been the region of the world most affected by the pandemic, the specific characteristics of the countries have conditioned different levels of performance of the health systems. The analysis of vaccination policies indicates that there are countries with substantial successes as well as countries with notable failures. Elucidating the reasons for the successes and failures is of vital importance to deepen the positive aspects, and to introduce changes in the restrictions of health policies in the region.

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