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Catastrophic health expenditure as a proxy for financial protection in Latin America: Data and policy gaps

Gasto catastrófico en salud como indicador de la protección financiera en América Latina: brechas de datos y políticas

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SUMMARY

Introduction: *This paper aims to analyze the available information on health financial protection coverage, specifically the proportion of the population in catastrophic health expenditure situations in Latin American countries.* **Methods:** *Information was obtained from two databases: (1) Health Equity and Financial Protection Indicators (HEFPI) of the World Bank, and (2) SDG Monitoring developed between WHO and the World Bank. In each database, the household sample surveys available for estimating catastrophic health expenditure at the threshold of 10 % of monthly income were identified and the dates on which they were carried out.* **Results:** *Estimates from 42 surveys are available in the HEFPI database, while estimates from 80 surveys were identified in the SDG Monitoring database. Only three countries in the region (Bolivia, Mexico, and Peru) have estimates of catastrophic health expenditure in this decade. In 12 countries (out of 20 in the region), the most recent estimate of catastrophic health expenditure is based on surveys conducted five or more years ago. In the three countries with the most recent measurements, catastrophic health expenditure is higher than the target set for 2030.* **Discussion:** *The absence of regular information from household sample surveys is a significant constraint to the quality of health policies to guarantee Universal Health Coverage in Latin America. The notable gap between information availability and decision-making significantly affects the possibilities of incorporating changes that have a net impact on financial protection coverage.* **Conclusions:** *The objectives of Universal Health Coverage in Latin America imply substantive improvement in the quality of health policies. The evidence indicates the magnitude of the information gap and its consequent policy gap.*

Keywords: *Latin America, financial protection, catastrophic health expenditure, Universal Health Coverage, Sustainable Development Goals (SDGs)*

RESUMEN

Introducción: *El objetivo de este trabajo es analizar la información disponible sobre la cobertura de protección financiera de salud, específicamente la proporción de población en situación de gasto catastrófico en salud, en los países de América Latina.* **Métodos:** *Se obtuvo la información de dos bases de datos: (1) Health Equity and Financial Protection Indicators (HEFPI) del Banco Mundial, y (2) SDG Monitoring elaborada entre WHO y World Bank. En cada base de datos se identificaron las encuestas de hogares por muestro disponibles para la estimación del*

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gasto catastrófico al tope de 10 % del ingreso mensual, así como las fechas de realización. **Resultados:** *En la base de datos HEFPI están disponibles estimaciones de 42 encuestas, mientras que en la base de datos SDG Monitoring se identificaron estimaciones de 80 encuestas. Solo tres países de la región (Bolivia, México, y Perú) tienen estimaciones de gasto catastrófico en esta década. En 12 países (sobre un total de 20 en la región) la más reciente estimación del gasto catastrófico está basada en encuestas realizadas hace cinco años o más. En los tres países con mediciones más recientes, el gasto catastrófico es superior a la meta fijada para el año 2030.* **Discusión***: La ausencia de información regular, proveniente de encuestas de hogares por muestreo, es una significativa restricción para la calidad de las políticas de salud para garantizar la Cobertura Universal de Salud en América Latina. La notable brecha entre la disponibilidad de información y la toma decisiones afecta significativamente las posibilidades incorporar cambios que tengan impacto neto en la cobertura de la protección financiera.* **Conclusiones:** *Los objetivos de Cobertura Universal de la Salud en América Latina suponen el mejoramiento sustantivo de la calidad de las políticas de salud. Las evidencias señaladas indican la magnitud de la brecha de información, y su consiguiente brecha de políticas.*

Palabras clave: *América Latina, protección financiera, gasto catastrófico en salud, Cobertura Universal de Salud, Objetivos de Desarrollo Sostenible (ODS).*

INTRODUCTION

The latest report on the status of Universal Health Coverage, published by the World Health Organization (WHO) and the World Bank (WB) in September 2023 (1), broadly highlights that progress on a global scale has come to a halt since 2015. Universal Health Coverage, incorporated within the Sustainable Development Goals (SDGs) for 2030, includes financial protection and health services coverage. By 2030, the SDGs state that universal coverage should be achieved in both aspects in all countries of the world.

Financial protection, as operationalized in the SDGs (2), is expressed through catastrophic health expenditure (CHE), i.e., the proportion of the population that must use more than 10 % of monthly income to cover the costs of services. This catastrophic health expenditure, therefore, is not prepaid by individuals but directly affects net monthly income. Another way of expressing it is that a person is in a catastrophic health expenditure situation when their out-of-pocket health expenditure exceeds 10 % of their monthly income. Obtaining this data requires conducting national sample household surveys.

According to the SDGs, by 2030, all people in the world should have less than 10 % of their out-of-pocket spending on health services, i.e., no one would be in a situation of catastrophic health expenditure. In other words, universal coverage of financial protection in health would be achieved. The other aspect of Universal Health Coverage is access to services.

The latest WHO-WB report (1) indicates that the global population under catastrophic health expenditure has increased (taking 2019 as the newest information year). This report also shows that since 2000, only 42 of 138 countries with available data have experienced improvements in service coverage and reductions in catastrophic health expenditure. Significantly, it highlights that most countries (108 out of 194) have experienced deterioration or little change in service coverage since adopting the SDGs in 2015.

Of relevance, according to the report, is the fact that low-income and lower-middle-income countries recorded the most significant increases in the proportion of the population in catastrophic health expenditure situations. According to the same source, by 2018, the total population under catastrophic health expenditure reached 1 billion people. This means that the total proportion under catastrophic health expenditure increased from 9.6 % in 2000 to 12.6 % in 2015 and 13.6 % in 2019, continuing the trend observed since 2000 (3). This increase in catastrophic health expenditure is more prevalent in households with people over 60 years of age. The report also highlights that the available evidence indicates that during the COVID-19 pandemic, there was a deterioration in the coverage of services and financial protection.

The report (1) also points out that the lack of progress in Universal Health Coverage varies according to the region and that analyzing the specific regional contexts is necessary. In this study, we will focus on the evidence of the evolution of financial protection in health in the 20 Latin American countries, specifically on the available comparative studies.

The first comparative study of catastrophic health expenditure in 12 Latin American countries, available by searching PubMed, Web of Science, and Scopus, was published in 2011 (4). The following countries were included in this study: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Mexico, Nicaragua, and Peru. The national surveys analyzed were conducted between 2002 and 2008. The catastrophic health expenditure threshold was 30 % of monthly income (*vs*. 10 % defined in the SDGs). The country with the highest proportion of households with catastrophic health expenditure was Chile (15.4 % in a 2005 household survey), and the country with the lowest proportion was Costa Rica (0.4 % of households in a 2004 survey).

The second comparative study was published in 2015 (5). In this study, the catastrophic health expenditure threshold selected was 25 %. Catastrophic health expenditure measurements were analyzed in 15 Latin American countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Rep., Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, and Peru. However, country-specific measurements are not reported in the publication. The aggregate analysis (only conducted for 14 countries in the group) indicated that catastrophic health expenditure decreased from 3.5 % in 1992 to 2.5 % in 2012. It was estimated that 16 million people were under catastrophic health expenditure in the 14 countries analyzed in the year of the most recent survey in each country.

In the third publication (6), 12 countries were compared: Costa Rica, Ecuador, Haiti, El Salvador, Guatemala, Nicaragua, Paraguay, Bolivia, Chile, Colombia, Mexico, and Peru. In this study, the catastrophic health expenditure threshold is 10 %, as described in the operationalization of the SDGs (2).

Two recent papers compare fewer countries than the three publications cited above. One of them (7) includes catastrophic health expenditure data for four countries in the region (Argentina, Brazil, Colombia, and Mexico), with a threshold of 25 %. Still, the years and sources of these measurements are not available. The second paper (8) included data from two countries (Mexico and Peru) corresponding to 2020.

This study aims to analyze the information available on financial protection coverage, specifically the proportion of the population with catastrophic health expenditures in Latin American countries. This analysis is relevant to exploring both the timeliness of the available information and its usefulness for designing policy alternatives that contribute to achieving Universal Health Coverage in the region.

METHODS

Two international databases were reviewed in detail to examine the availability of information on financial protection coverage in Latin American countries.

The first database is the Health Equity and Financial Protection Indicators (HEFPI), organized by the World Bank and available online since 2018 (9). Pioneering studies on Universal Health Coverage have been conducted using the information from household surveys available in this database (3,10). Open access to this database (11) also allows the elaboration and use of graphs to disseminate the available information.

The World Health Organization and the World Bank organized a second SDG monitoring database. This database is available through three channels. The first is the written report prepared in 2023 with the latest information available in the database at that time (1). The second route is the WHO Global Health Observatory database (12). The newest information available in this database corresponds to June 20, 2023. The third channel is the database available on the respective websites of the World Bank (13). The latest information available in the latter database corresponds to August 21, 2023.

In each of these databases, the number and year of the household surveys through which the proportion of the population with catastrophic health expenditure in the 20 Latin American countries was verified are listed. The proportion of the population with catastrophic health expenditure was also obtained from the latest available survey, estimated at the threshold of 10 % of monthly income, as established to fulfill SDG Objective 3.8.2.

RESULTS

The results are described in the order of the databases analyzed. A comparison between the two databases is also presented.

Health Equity and Financial Protection Indicators (HEFPI)

Table 1 presents the information available in the World Bank's Health Equity and Financial Protection Indicators Database (HEFPI) as of September 1, 2024. Two countries (Cuba and Venezuela) have no survey available in this database. The total number of surveys used to calculate the proportion of the population in catastrophic health expenditures is 40 for the countries in the region.

In seven countries (Argentina, Colombia, Dominican Republic, Ecuador, El Salvador, Honduras, and Mexico), only one household survey is available to estimate the proportion of the population with catastrophic health expenditure. The household surveys for Argentina and Honduras were conducted in 2004. Ecuador (2013) and El Salvador (2014) are the countries in this group that have had more recent surveys.

Five countries (Bolivia, Costa Rica, Guatemala, Haiti, and Uruguay) have two household surveys available in the database. In this group, Bolivia has the oldest survey (2000). The countries with the most recent surveys are Costa Rica (2018) and Uruguay (2016).

Six countries compose the group with three or more household surveys available in this database: Brazil, Chile, Nicaragua, Panama, Paraguay, and Peru. Brazil has the most recent survey (2017). Nicaragua has the oldest survey in this group (and in all countries as a whole) (1993). Peru has the largest number of surveys (8), five between 2011 and 2015.

Table 1. Latin America: Household surveys available by country for estimating catastrophic health expenditure (CHE) in the World Bank's Health Equity and Financial Protection Indicators (HEFPI) Database.

Country	Number of household surveys	Years of previous surveys	Year of last household survey
Argentina	1		2004
Bolivia	2	1999	2000
Brazil	3	1996, 2008	2017
Chile	3	1996, 2011	2016
Colombia	1		2008
Costa Rica	2	2004	2018
Cuba	0		na
Dominican Rep.	1		2007
Ecuador	1		2013
El Salvador	1		2014
Guatemala	2	2000	2011
Haiti	2	2012	2013
Honduras	1		2004
Mexico	1		2008
Nicaragua	5	1993, 1998, 2001, 2009	2014
Panama	3	1997,2003	2008
Paraguay	3	2000, 2013	2014
Peru	8	2006, 2008, 2009, 2011, 2012, 2013, 2014	2015
Uruguay	2	2005	2016
Venezuela	0		na
Total	42		

Source: (13). Note: Information available as of September 1, 2024. na: not available.

Figure 1 shows the values of the proportion of the population with catastrophic health expenditure in the countries with a single survey in the HEFPI database. Note that the country with the highest proportion of population with catastrophic health expenditure was recorded in this group of countries in Colombia in 2008 (20 %). The lowest proportion was observed in Honduras in 2004 (1 %).

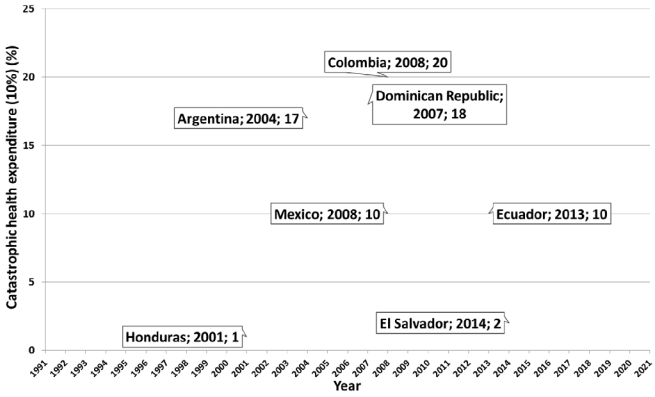

Figure 1. Latin America: Countries with one household survey available by country for estimating catastrophic health expenditure (CHE) in the World Bank's Health Equity and Financial Protection Indicators (HEFPI) Database
Source: (11) Note: Information available as of September 1, 2024. The country, the year of the survey, and the value of the CHE are indicated in each box of the figure.

The variations in the proportion of the population with catastrophic health expenditure in countries with two household surveys in the HEFPI database are shown in Figure 2. However, in the case of Bolivia, the latest figure is for the year 2000. In Uruguay, a catastrophic expenditure proportion of 2 % was recorded in 2016, corresponding to one-third in 2005 (6 %). The two available surveys in the other three countries (Costa Rica, Guatemala, and Haiti) recorded population increases in catastrophic health expenditure. There was an increase in Costa Rica from 4 % in 2000 to 7 % in 2018 (the year of the latest available survey).

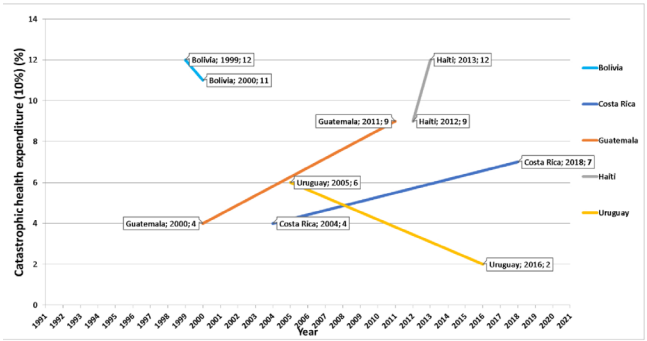

Figure 2. Latin America: Countries with two household surveys available by country for estimating catastrophic health expenditure (CHE) in the World Bank's Health Equity and Financial Protection Indicators (HEFPI) Database
Source: (11)
Note: Information available as of September 1, 2024. The year of both surveys and the value of CHE are indicated for each country.

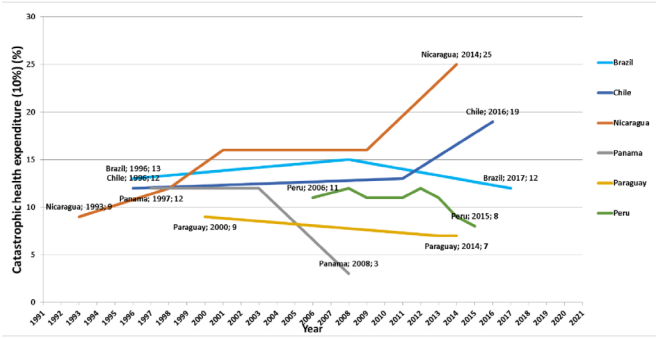

Figure 3. Latin America: Countries with three or more household surveys available by country for estimating catastrophic health expenditure (CHE) in the World Bank's Health Equity and Financial Protection Indicators (HEFPI) Database.
Source: (11).
Note: Information is available as of September 1, 2024. For each country, the year of the first and last survey and the respective CHE value are indicated.
SDG Monitoring Database (WHO-World Bank).

The usefulness of having a larger number of household surveys is shown in Figure 3. In the six countries included, there are three or more household surveys in the HEFPI database. The most significant increase in the proportion of the population in catastrophic health expenditure is recorded in Nicaragua, from 9 % in 1993 to 25 % in 2014. Chile also significantly increased from 12 % in 1996 to 19 % in 2016. Peru, with the largest number of surveys available (8), records a decrease in the population in catastrophic health expenditure between 2012 and 2015, from 12 % to 8 % in the period. Panama also recorded a significant reduction between 2003 and 2008, from 12 % to 3 %; however, no recent surveys exist. Brazil also shows a reduction (from 15 % in 2008 to 12 % in 2017).

SDG Monitoring Database (WHO-World Bank)

Table 2 presents the information available in the SDG Monitoring Database, which WHO and the World Bank implemented to monitor the achievement of SDG Target 3.8.2. The information presented comes from the latest version of this database, which was updated on August 21, 2023 (13).

The number of surveys used to calculate the proportion of the population involved in catastrophic health expenditures almost doubles (from 42 to 80) compared to the surveys reported in the HEFPI database. Cuba and Venezuela remain the only countries with no surveys available in the region.

The number of countries with only one survey is significantly reduced from that reported for the HEFPI database (from seven countries to one, Honduras). Three countries (Dominican Republic, Ecuador, and Haiti) have two annual surveys. Eleven countries (Argentina, Brazil, Chile, Colombia, Costa Rica, El Salvador, Guatemala, Nicaragua, Panama, Paraguay, and Uruguay) have data from three to six annual surveys. Only three countries (Bolivia, Mexico, and Peru) have data from seven or more yearly surveys. Peru has the region's largest annual surveys for calculating catastrophic health expenditure (16), with no interruptions between 2008 and 2020.

Comparison of HEFPI and SDG Monitoring databases

Table 3 presents the most recent information on the population proportion in catastrophic health expenditure from the two databases described above (HEFPI and SDG Monitoring).

Table 2. Latin America: Household surveys available by country for estimating catastrophic health expenditure (CHE) in the WHO-World Bank's
SDG Monitoring Database

Country	Number of household surveys	Years of previous surveys	Year of last household survey
Argentina	3	1996, 2004	2017
Bolivia	9	2000, 2001, 2002, 2013, 2014, 2015, 2018, 2019	2021
Brazil	3	1996, 2008	2017
Chile	3	2006, 2011	2016
Colombia	3	1997, 2008	2016
Costa Rica	4	1992, 2004, 2012	2018
Cuba	0		na
Dominican Rep.	2	2007	2018
Ecuador	2	2011	2013
El Salvador	6	2014, 2015, 2016, 2017, 2018	2019
Guatemala	3	2000, 2011	2014
Haiti	2	2012	2013
Honduras	1		2004
Mexico	7	2003, 2010, 2012, 2014, 2016, 2018	2020
Nicaragua	5	1993, 1998, 2001, 2009	2014
Panama	5	1997,2003, 2007, 2008	2017
Paraguay	3	1997, 2000	2011
Peru	16	2000, 2006, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020	2021
Uruguay	3	1995, 2005	2016
Venezuela	0		na
Total	80		

Note: Information available as of August 21, 2023 (13). na: not available *Comparison of HEFPI and SDG Monitoring databases*.

First, the information is similar in some countries (Costa Rica, Ecuador, Haiti, Honduras, Nicaragua, and Uruguay). Countries such as Argentina, Bolivia, Colombia, Dominican Republic, El Salvador, Mexico, Panama, and Peru have much more recent survey data in the SDG Monitoring database than in HEFPI. Paraguay is the only country with more recent data on HEFPI than SDG Monitoring.

The last column of Table 3 estimates the ideal availability of information. For this purpose, it is assumed that with the current conditions for the elaboration and analysis of national sample surveys, it is possible to have the results within no more than one year from when the survey was carried out. Therefore, based on the latest information available in SDG Monitoring (as of August 21, 2023), it is estimated that information on the proportion of the population in catastrophic health expenditure could be available for all countries in the region by 2022. In other words, the most recent information for all countries should be for 2022. The last column of Table 3 shows the number of years of delay concerning this ideal situation.

The countries with the shortest delay (one year) are Bolivia and Peru. Only three countries (Bolivia, Peru, and Mexico) have data from surveys conducted during this decade. In 12 countries of the region (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Haiti, Honduras, Nicaragua, Panama, Paraguay, and Uruguay), the most recent information on the population in catastrophic health expenditure comes from surveys conducted five years ago or more. In the case of Honduras, it is 18 years, and in Paraguay, it is 11 years.

In the three countries with information from surveys conducted in this decade (Bolivia, Mexico, and Peru), the proportion of the population in catastrophic health expenditure is

Table 3. Latin America: Comparison of catastrophic health expenditure (CHE) and survey availability by country in the HEFPI (WB) and SDG Monitoring (WHO-WB) databases

Country	HEFPI (WB) Year of last survey (11)	CHE (10%)	SDG Monitoring (WHO-WB) Year of last survey (13)	CHE (10%)	Years behind ideal availability date (2022)
Argentina	2004	17	2017	9.57	5
Bolivia	2000	11	2021	5.69	1
Brasil	2017	12	2017	11.81	5
Chile	2016	19	2016	14.6 *	6
Colombia	2008	20	2016	8.19	6
Costa Rica	2018	7	2018	7.41	4
Cuba	na	na	na	na	na
Dominican Rep.	2007	18	2018	8.17	4
Ecuador	2013	10	2013	10.31	9
El Salvador	2014	2	2019	4.06	3
Guatemala	2011	9	2014	11.45	8
Haiti	2013	12	2013	11.54	9
Honduras	2004	1	2004	1.14	18
Mexico	2008	10	2020	4.44	2
Nicaragua	2014	25	2014	24.73	8
Panama	2008	3	2017	6.2 *	5
Paraguay	2014	7	2011	10.54	11
Peru	2015	8	2021	12.59	1
Uruguay	2016	2	2016	2.11	6
Venezuela	na	na	na	na	na

*This table is taken from (1) because the figure in (13) probably reflects a miscalculation. na: not available (11,13).

far from universal financial protection coverage, i.e., 0 % in 2030. In Peru, it is over 12 % (2021); in Bolivia, 5.69 % (2021); and in Mexico, 4.44 % (2020). In the rest of the countries, the available figures are unlikely to reflect the current situation, especially after the effects of the COVID-19 pandemic.

DISCUSSION

Achieving universal coverage of financial protection is a fundamental challenge for health systems on a global scale. This requires detailed knowledge of the evolution of the proportion of the population with catastrophic health expenditure. This indicator for monitoring policies can consider the proportion of the population in catastrophic health expenditure (that with more than 10 % out-of-pocket expenditure concerning monthly income) and the intensity, i.e., the magnitude of the difference with respect to the 10 % (14). Calculating catastrophic health expenditure after deducting basic needs has also been proposed (15).

Countries need to conduct national sample surveys regularly to measure catastrophic health expenditures. Unlike the situation described for Latin American countries, in Europe, the analysis of surveys conducted in 40 countries in recent years (all of them between 2015 and 2019) has been reported (16).

The present study presents the information available for all countries in the region concerning catastrophic health expenditure, with the 10 % threshold established for the fulfillment of SDG Target 3.8.2. This information is based on the latest update of the SDG Monitoring database (WHO-WB). Despite the increase in the number of surveys that allow the estimation of catastrophic health expenditure, only three countries in the region (Bolivia, Mexico, and Peru) have data available from surveys conducted since 2020, which indicates the gap concerning the 2030 targets. This scarcity of recent data may explain the results of analyses for the region where

a decrease in catastrophic health expenditure is reported (17).

Under these conditions of severe information restrictions, the quality of the policy design process is greatly affected. It is impossible to articulate adequate policies with information from years ago (for some countries, five years or more). At present, it is possible to measure national catastrophic health expenditures monthly. For this purpose, a monitoring system must be in place in the responsible offices of the national governments to provide results with this periodicity (monthly tracking). Otherwise, it will not be possible to follow the effects of policies and, more importantly, to anticipate future policies.

Although there is already solid evidence on the importance of pre-allocated public financing to guarantee universal health coverage (1) and thus reduce catastrophic health expenditures (3), these policy options require concrete knowledge of country situations. To this end, it is essential to implement monitoring systems.

Increasing knowledge of the relationship between health policies and the effect on reducing catastrophic expenditure involves at least two lines of action. The first is to promote monitoring systems within each country, and the second is to rigorously use the evidence available in the region or other regions of the world to identify possible alternatives that will contribute to achieving universal coverage more peremptorily than the current pace.

CONCLUSIONS

The objectives of Universal Health Coverage in Latin America imply a substantive improvement in the quality of health policies. This change must be based on strengthening the institutional capacity to generate helpful information for decision-making. From this perspective, the evidence indicates the magnitude of the information gap and the consequent policy gap. These are sufficient arguments to build an innovative agenda that systematically promotes the guarantee of universal coverage benefits in all regional countries.

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REFERENCES

1. World Health Organization (WHO). The World Bank. Tracking universal health coverage: 2023 global monitoring report. 2023. https://www.who.int/publications/ i/item/9789240080379
2. United Nations Statistics Division. SDG indicator metadata. Indicator 3.8.2. Chromeextension://efaidnbmnnnibpcajpcglclefindmkaj/https://unstats.un.org/sdgs/metadata/files/Metadata-03-08-02.pdf

   Chromeextension://efaidnbmnnnibpcajpcglclefindmkaj/https://unstats.un.org/sdgs/metadata/files/Metadata-03-08-02.pdf
3. Wagstaff A, Flores G, Hsu J, Smitz M-F, Chepynoga K, Buisman LR, et al. Progress on catastrophic health spending in 133 countries: a retrospective observational study. Lancet Global Health. 2018;6(2): e169-e179.
4. Knaul FM, Wong R, Arreola-Ornelas H, Méndez O; Network on Health Financing and Social Protection in Latin America and the Caribbean (LANET). Household catastrophic health expenditures: a comparative analysis of twelve Latin American and Caribbean Countries. Salud Publica Mex. 2011;53 Suppl 2:s85-95.
5. Wagstaff A, Dmytraczenko T, Almeida G, Buisman L, Hoang-Vu Eozenou P, et al. Assessing Latin America's Progress Toward Achieving Universal Health Coverage. Health Aff (Millwood). 2015;34(10):1704-1712.
6. Cid C, Flores G, Del Riego A, Fitzgerald J. Objetivos de Desarrollo Sostenible: impacto de la falta de protección financiera en salud en países de América Latina y el Caribe. Rev Panam Salud Publica. 2021;45:e95.
7. Gilardino RE, Valanzasca P, Rifkin SB. Has Latin America achieved universal health coverage yet? Lessons from four countries. Arch Public Health. 2022;80(1):38.
8. Haakenstad A, Bintz C, Knight M, Bienhoff K, Chacon-Torrico H, Curioso WH, et al. Catastrophic health expenditure during the COVID-19 pandemic in five countries: a time-series analysis. Lancet Glob Health. 2023;11(10):e1629-e1639.
9. Wagstaff A, Eozenou P, Neelsen S, Smitz M-F. We are introducing the World Bank's 2018 Health Equity and Financial Protection Indicators database. 2019. The Lancet Global Health. 2019;7(1): e22-e23.

10. Wagstaff A, Neelsen S. A comprehensive assessment of universal health coverage in 111 countries: A retrospective observational study. Lancet Global Health. 2020;8(1): e39-e49.

11. The World Bank. Health equity and financial protection indicators. http://datatopics.worldbank.org/health-equity-and-financial-protection/

12. SDG 3.8.2 Catastrophic health spending (and related indicators) [online database]. Global Health Observatory. Geneva: World Health Organization; 2024. https://www.who.int/ data/gho/data/themes/ topics/financial-protection

13. Universal health coverage data [online database]. Washington DC: World Bank; 2024 https://datatopics.worldbank.org/universal-health-coverage/

14. Koo JH, Jung HW. Which indicator should be used? A comparison between the incidence and intensity of catastrophic health expenditure: using difference-in-difference analysis. Health Econ Rev. 2022;12(1):58.

15. Nguyen HA, Ahmed S, Turner HC. Overview of the main methods used for estimating catastrophic health expenditure. Cost Eff Resour Alloc. 2023;21(1):50.

16. Thomson S, Cylus J, Al Tayara L, Martínez MG, García-Ramírez JA, Gregori MS, et al. Monitoring progress towards universal health coverage in Europe: a descriptive analysis of financial protection in 40 countries. Lancet Reg Health Eur. 2023;37:100826.

17. Rahman MM, Jung J, Islam MR, Rahman MM,7Nakamura R, Akter S, et al. Global, regional, and national progress in financial risk protection towards universal health coverage, 2000-2030. Soc Sci Med. 2022;312:115367.