



Progress in reducing inequalities in reproductive, maternal, newborn, and child health in Latin America and the Caribbean: an unfinished agenda

María Clara Restrepo-Méndez,¹ Aluísio J. D. Barros,¹ Jennifer Requejo,²
Pablo Durán,³ Luis Andrés de Francisco Serpa,² Giovanni V. A. França,¹
Fernando C. Wehrmeister,¹ and Cesar G. Victora¹

Suggested citation

Restrepo-Méndez MC, Barros AJD, Requejo J, Durán P, Serpa LAF, França GVA, et al. Progress in reducing inequalities in reproductive, maternal, newborn, and child health in Latin America and the Caribbean: an unfinished agenda. *Rev Panam Salud Publica*. 2015;38(1):9–16.

ABSTRACT

Objective. To expand the “Countdown to 2015” analyses of health inequalities beyond the 75 countries being monitored worldwide to include all countries in Latin America and the Caribbean (LAC) that have adequate data available.

Methods. Demographic and Health Surveys and Multiple Indicator Cluster Surveys were used to monitor progress in health intervention coverage and inequalities in 13 LAC countries, five of which are included in the Countdown (Bolivia, Brazil, Guatemala, Haiti, and Peru) and eight that are not (Belize, Colombia, Costa Rica, Dominican Republic, Guyana, Honduras, Nicaragua, and Suriname). The outcomes included neonatal and under-5 year mortality rates, child stunting prevalence, and the composite coverage index—a weighted average of eight indicators of coverage in reproductive, maternal, newborn, and child health. The slope index of inequality and concentration index were used to assess absolute and relative inequalities.

Results. The composite coverage index showed monotonic patterns over wealth quintiles, with lowest levels in the poorest quintile. Under-5 and neonatal mortality as well as stunting prevalence were highest among the poor. In most countries, intervention coverage increased, while under-5 mortality and stunting prevalence fell most rapidly among the poor, so that inequalities were reduced over time. However, Bolivia, Guatemala, Haiti, Nicaragua, and Peru still show marked inequalities. Brazil has practically eliminated inequalities in stunting.

Conclusions. LAC countries presented substantial progress in terms of reducing inequalities in reproductive, maternal, newborn, and child health interventions, child mortality, and nutrition. However, the poorest 20% of the population in most countries is still lagging behind, and renewed actions are needed to improve equity.

Key words

Maternal and child health; health inequalities; socioeconomic factors; Millennium Development Goals; Latin America; Caribbean Region.

¹ International Center for Equity in Health, Federal University of Pelotas, Pelotas, Brazil. Send correspondence to María Clara Restrepo-Méndez, email: mcm.restrepo@gmail.com

² Partnership for Maternal, Newborn and Child Health, Geneva, Switzerland.

³ Centro Latino Americano de Perinatología, Organización Panamericana de la Salud, Montevideo, Uruguay.

Countries in Latin America and the Caribbean (LAC) are undergoing a rapid transition, becoming more developed, more urban, and gradually, better off. Along with economic development and rising incomes, improvements in health systems and progress towards universal

coverage have contributed to improved health outcomes for women and children (1). Infant mortality in LAC has fallen by half to 27 per 1 000 live births since 1980, and life expectancy at birth has increased by 7 years, from 69 to 76 years in 2010 (2). However, these estimates obscure

differences in progress among and within countries and between population subgroups; for instance, the infant mortality rate varies from 35 per 1 000 live births in Guyana in 2009 to 58 in Bolivia in 2008 to 64 in Haiti in 2012 (2, 3).

The “Countdown to 2015” initiative was conceived in 2003 to track country and global progress towards achievement of Millennium Development Goals (MDGs) IV (reduce child mortality) and V (improve maternal health) in 75 countries where over 95% of all maternal and child deaths occur. Of these, only six are in LAC: Bolivia, Brazil, Guatemala, Haiti, Mexico, and Peru. In order to be included in the Countdown, a country must have either high national maternal or under-5 mortality rates or large absolute numbers of such deaths (3).

Given that many LAC nations present low under-5 and maternal mortality rates compared to other low- and middle-income countries, most do not qualify for the Countdown. Nevertheless, there is ample evidence of important health inequalities among socioeconomic subgroups within many LAC countries (3–8, 9). Even in countries such as Brazil—where poverty has been dramatically reduced and a free universal health system introduced—inequalities in access and outcomes, driven by social determinants, remain a challenge (1, 3, 5).

The purpose of this study was to document socioeconomic inequalities in LAC by expanding the “Countdown to 2015” to include any LAC countries with adequate data available. More specifically, the objectives were: first, to describe socioeconomic inequalities by examining intervention coverage, mortality, and stunting; second, to compare patterns in inequalities; and third, to assess time trends in inequalities in and across LAC countries.

MATERIALS AND METHODS

Study design and data sources

This was an ecological study that facilitated cross-country comparisons and time trend assessments. The analyses relied on data from the Demographic and Health Surveys (DHS; 10) and Multiple Indicator Cluster Surveys (MICS; 11), both of which use standard measurement approaches to allow calculation of global consensus indicators monitored by the Countdown to 2015. Data were used from

MICS phases 3 (2005–2007) and 4 (2009–2011) and DHS phase 3 and later (1993 onward). Of the countries with DHS or MICS surveys, Brazil and Guatemala did not have any surveys more recent than 2000; therefore, the Brazil 2006 *Pesquisa Nacional de Saúde da Criança e da Mulher* (the National Child and Women’s Health Survey; 12) and the Guatemala 2008 Reproductive Health Survey (RHS; 13) were used. Other LAC countries that had only RHS surveys (Ecuador, El Salvador, Jamaica, and Paraguay) were not included in the analyses.

Country selection

LAC countries that had at least one survey available after 1990 were considered for this study. Twenty-one countries met this criterion (see [Supplementary material Annex 1](#)); however, of these, five had only a single recent MICS (Argentina, Barbados, Panama, St. Lucia, and Uruguay) and the data were not yet available for analysis. Also, the surveys from Cuba and Jamaica did not collect information on wealth, and therefore, could not be included. In addition, the latest survey for Trinidad and Tobago (MICS, 2011) had not yet been released and an earlier survey (MICS, 2006) did not provide data on child anthropometric measures, tuberculosis vaccination, or full birth histories. In the end, the study analyses encompassed 13 countries: five Countdown countries (Bolivia, Brazil, Guatemala, Haiti, and Peru) and eight additional countries (Belize, Colombia, Costa Rica, Dominican Republic, Guyana, Honduras, Nicaragua, and Suriname). Of these, Brazil and Suriname did not have complete information to calculate composite coverage index; Belize, Costa Rica, and Suriname did not record full birth histories to estimate child mortality; and Costa Rica did not collect information on child anthropometric measures.

Dependent variables

The Countdown focuses on intervention coverage along the continuum of care, including Reproductive, Maternal, Newborn, and Child (RMNCH) health indicators. The composite coverage index (CCI) is a weighted, average of eight preventive and curative interventions (14, 15) that simplifies the analysis and interpretation of levels and time trends across the 13 LAC countries. It has

been widely used in cross-country comparisons and in equity analyses (16, 17). The CCI gives equal weight to four stages in the continuum of care: family planning, maternal and newborn care, immunization, and case management of sick children (14, 15). It may be calculated for population groups, such as a country or a wealth quintile within a country, using the following formula which considers family planning needs satisfied (FPS), skilled birth attendant (SBA), antenatal care with a skilled provider (ANC), three doses of diphtheria–pertussis–tetanus vaccine (DPT3), measles vaccination (MLS), tuberculosis vaccination (BCG), oral rehydration therapy among children with diarrhea (ORT), and pneumonia care seeking (CPNM) (14, 15):

$$\frac{1}{4} \left(\frac{\text{FPS} + \frac{\text{SBA} + \text{ANC}}{2} + \frac{2\text{DPT3} + \text{MSL} + \text{BCG}}{4}}{\frac{\text{ORT} + \text{CPNM}}{2}} \right)$$

Indicator definitions are those adopted by the Countdown to 2015 (see [Supplementary material Annex 2](#)).

This study also reports on three impact indicators: neonatal mortality, mortality among children under-5 years of age, and stunting prevalence among children under-5. Mortality rates were estimated from the 10 DHS datasets, but not from MICS because it does not record full birth histories. All mortality estimates were based on birth histories and included the 10 years before the survey, rather than just the 5 years used for national estimates; this is a standard procedure when estimates are made for subnational groups for which sample sizes are restricted (18). Stunting was defined as a Z-score of height-for-age below -2 standard deviations, according to the 2006 World Health Organization (WHO) growth standard.

Independent variable

These indicators were disaggregated by household wealth quintiles, which are available in DHS and MICS surveys and are based on asset indices. They are derived from household goods, characteristics of the house, and available infrastructure through principal components analyses (19). The result is a wealth score for each household; then, individuals are ranked according to the total score of the household in which they reside. The sample is then divided into population

quintiles (five groups with the same number of individuals in each). By convention, Q1 refers to the 20% poorest and Q5 to the 20% wealthiest households. Because of differences in fertility, the total number of children tends to be larger in the poorest quintiles of households.

Data analyses

Measures of inequalities. Two inequality indicators that take the whole distribution of wealth into account were also calculated: the slope index of inequality (SII) and the concentration index (CIX). The SII was calculated through a logistic regression model that takes the natural logarithm of the odds of the dependent variable to create a continuous criterion upon which linear regression is conducted. This approach allows the calculation of the difference in percentage points (or in deaths per 1 000 live births of a mortality rate indicator) between the fitted values of the health indicator for the top and the bottom of the wealth distribution (15, 20). The CIX is based on concept similar to the Gini index for income concentration. It expresses how far from total equality a given distribution is. The CIX is expressed on a scale from -100 to +100, with zero representing equal distribution of the attribute across the wealth scale.

Positive CIX values represent a pro-rich distribution, usually observed for health coverage indicators. Negative values represent a pro-poor distribution, being usually observed with outcomes such as mortality or stunting. The SII expresses absolute inequality, whereas the CIX expresses relative inequality (20).

Time-trends. The time-trend analyses of CCI, stunting prevalence, and child mortality rates were conducted for countries with at least two surveys spaced over 3 years – 16 years, from 1990 onward. Because the time intervals between surveys varied from country to country, average annual changes were calculated to enable standardized comparisons. Annual changes were estimated at the national level and for the poorest (Q1) and richest (Q5) quintiles. Absolute changes are expressed in percentage points per year. To express relative or compound changes, the ratio of the final over the initial value of the indicator was estimated, elevated to the power of 1 divided by the time interval in years.

The survey sample design was taken into account when estimating all coverage and impact indicators. When the unweighted number of observations in a

specific subgroup was less than 25, results were omitted. Analyses were carried out in Stata®/MP13 (StataCorp LP, College Station, Texas, United States).

Ethics

All analyses were based on publicly-available data from national surveys. Ethical clearance was the responsibility of the institutions that administered the surveys.

RESULTS

The full list of countries and surveys that were considered for inclusion in this study is shown in the [Supplementary material Annex 1](#). Of 21 potential countries, 13 had adequate data available at the time of the analyses and were included in the study. The surveys ranged from 1995–2012.

Wealth inequalities in health interventions

Figure 1 presents an overview of wealth inequalities in health interventions among LAC countries. It shows the unweighted average coverage of 11 preventive interventions for the 13 countries

FIGURE 1. Mean coverage levels of various reproductive, maternal, neonatal, and child health interventions according to wealth quintiles in recent surveys of 11 countries in Latin America and the Caribbean, 2001–2012

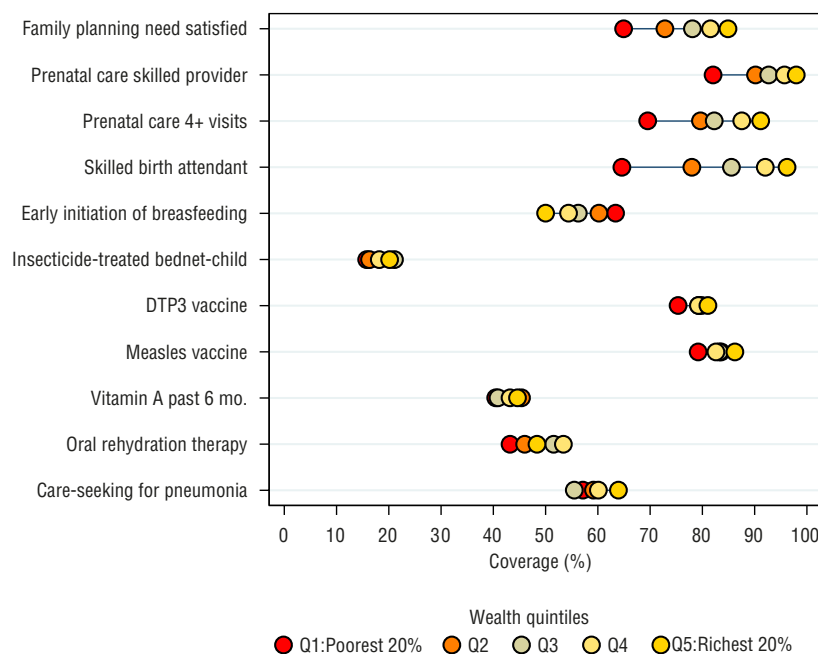
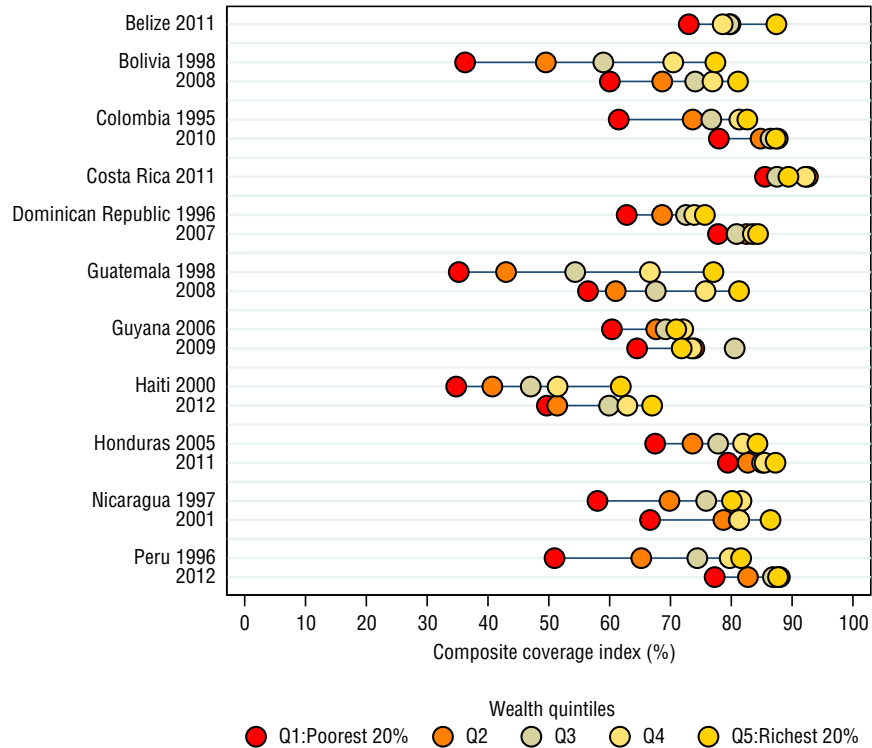


FIGURE 2. National composite coverage index, stratified by wealth quintiles, for 11 countries in Latin America and the Caribbean, by year(s)



Note: Horizontal lines connect the poorest (red circles) to the richest (gold circles). The longer the line between the two groups, the greater the absolute inequality. For quintiles with small sample sizes, estimates are not shown in the graphs.

analyzed, by wealth quintiles. This graph, also known as an equiplot, shows a sequence of dots for each intervention in a line. The farther to the right the sequence of dots is, the higher the coverage. Each dot represents one wealth quintile, from the poorest or Q1 (red dot) to the richest or Q5 (gold dot). These two dots are connected by a line; longer lines represent larger absolute inequalities. In most cases, the five quintiles are ordered from left to right, as coverage is lowest on Q1 and increases with wealth. The exception is early initiation of breastfeeding, where inequalities are reversed.

Reproductive and maternal interventions are more inequitable than those delivered to children. Important inequalities persist for family planning satisfied and antenatal care. Skilled birth attendant presents the largest absolute inequality of all interventions, being nearly universal in the wealthiest quintile, but available to only about 60% of women in the poorest quintile. Some interventions, such as vaccines, present with small inequalities, reaching high coverage levels for all quintiles. Others also present small inequalities—such as insecticide treated nets

(ITN), vitamin A, oral rehydration therapy, and care-seeking for pneumonia—at moderate or low coverage levels.

The following describes findings for intervention coverage, mortality, and stunting across LAC countries, following the order of the study objectives. First, levels of socioeconomic inequalities are described; second, patterns in inequalities are compared; and third, time trends in inequalities are assessed.

Wealth inequalities in CCI

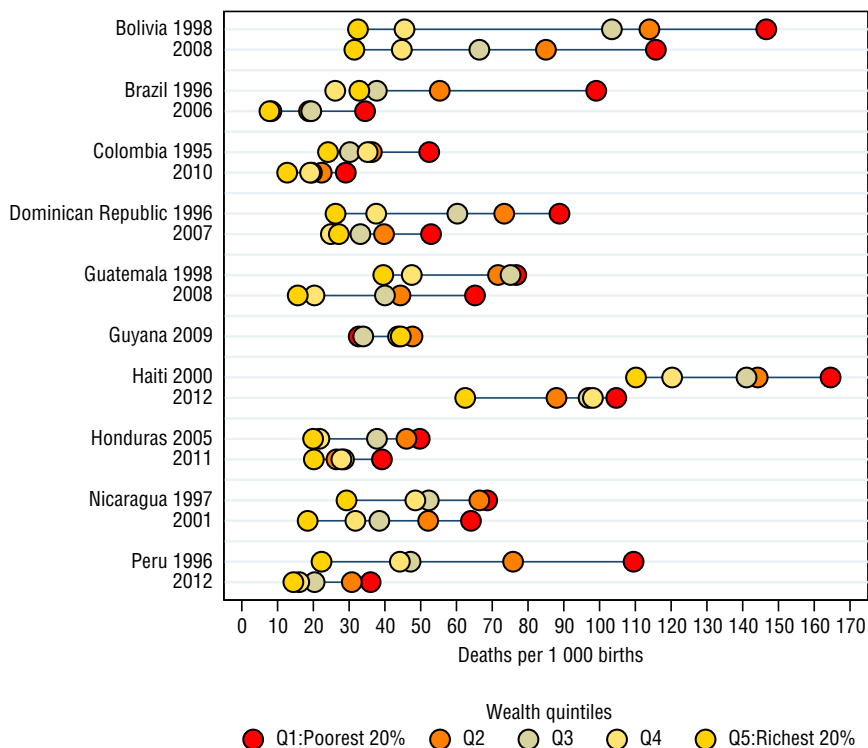
Figure 2 shows the CCI by wealth quintile for 11 countries for which it could be calculated. Estimates are presented for the most recent and the oldest surveys for nine countries where at least two surveys at least 3 years apart were available. In all surveys, the poorest quintiles presented the lowest CCI. Costa Rica and Guyana were the only two countries where the richest presented considerably lower coverage than Q3 or Q4. In every country with more than one survey, there was evidence of an increase in overall CCI over time, while absolute inequalities decreased. Both the SII and

CIX were positive in all surveys assessed, indicating pro-rich inequalities in CCI (Supplementary material Table 1). Annual changes in overall coverage, coverage for poorest (Q1) and richest (Q5), and absolute and relative inequalities over time are shown in Supplementary material Table 2. For all countries, CCI coverage increased, whereas absolute (SII) and relative inequalities (CIX) were reduced because of greater increases in CCI for poor individuals than for rich ones. The annual increase in coverage was particularly marked in Bolivia, Guyana, and Nicaragua, and the annual reduction in both absolute and relative inequalities was greater in Bolivia, Guatemala, Guyana, and Honduras.

Wealth inequalities in neonatal and under-5 mortality

Except for Guyana, under-5 mortality was highest in the poorest quintile (Figure 3). The largest absolute inequalities were in Bolivia, Guatemala, Haiti and Nicaragua. Most countries showed important reductions over time in all quintiles, particularly Brazil, Haiti, and

FIGURE 3. National mortality among children under 5 years of age, stratified according to wealth quintiles, for 10 countries in Latin America and the Caribbean, by year(s)



Note: Horizontal lines connect the poorest (red circles) and richest (gold circles) quintiles. The longer the line between the two groups, the greater the absolute inequality. For quintiles with small sample sizes, estimates are not shown in the graphs.

Peru (Figure 3 and [Supplementary material Table 3](#)). In contrast with these three countries, in Bolivia and Dominican Republic, reduction in mortality was mainly observed among the poorest. Despite the overall decrease in under-5 mortality rates, Guatemala and Nicaragua showed increases in inequalities because of greater reductions among the richest. Similar patterns were observed for neonatal mortality (Figure 4 and [Supplementary material Table 4](#)).

Wealth inequalities in stunting prevalence

Stunting also showed a monotonic pattern over wealth quintiles, with the lowest prevalence in the richest quintile. Bolivia, Guatemala, Nicaragua, and Peru showed large absolute inequalities in the most recent survey. Brazil has almost eliminated inequalities in stunting, and Suriname, Colombia and the Dominican Republic show small absolute inequalities compared to other countries (Figure 5). The largest annual reductions in absolute

and relative inequalities were observed for Brazil and Suriname. On the other hand, Guyana and Nicaragua showed the greatest annual increases in inequalities since the reduction in stunting prevalence among the richest was not followed by a reduction among the poorest ([Supplementary material Table 5](#)).

DISCUSSION

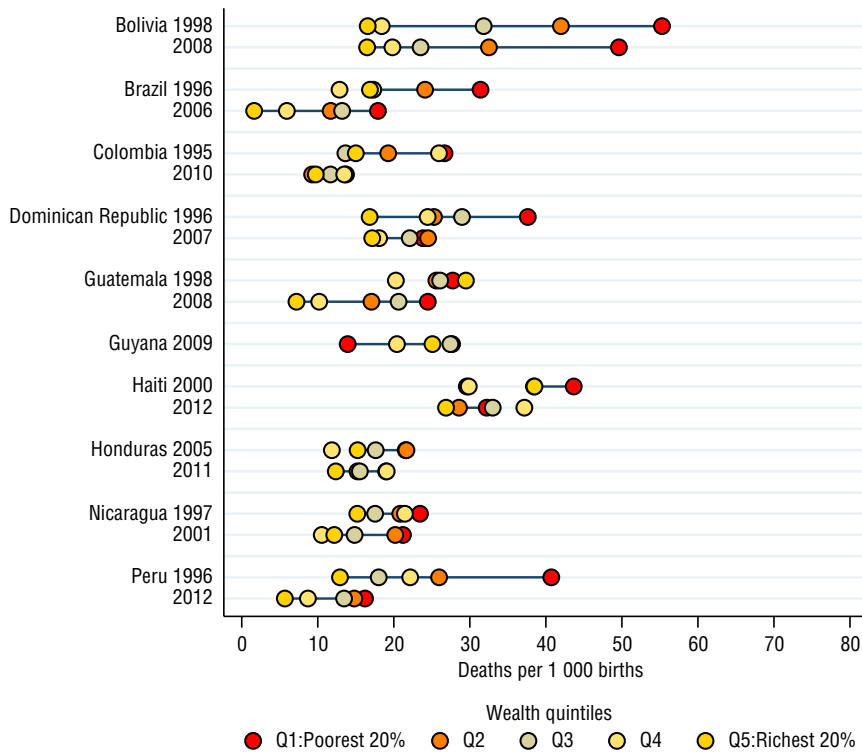
Despite advances in economic growth, LAC is still regarded as one of the most inequitable areas in the world, with 29% of the population living below the poverty line and 40% of the poorest receiving less than 15% of the total income (2). However, a substantial increase in public funding for social programs and the adoption of important policies and strategic health-related initiatives has taken place over the past few decades (1, 5). LAC countries have developed a distinct approach to health-system reforms, combining poverty reduction strategies with the expansion of comprehensive primary health care services. These reforms are aimed at promoting health

equity through greater inclusion, citizen empowerment, the establishment of legal rights to health and health protection, and progressive achievement of universal health coverage (1, 5).

Our findings show that in spite of progress regarding national coverage by RMNCH interventions, sizeable inequalities between rich and poor persist in most LAC countries. The poorest 20% of women and children are lagging behind in several countries and will require special attention if further gains are to be made. One interesting result was in reference to coverage of early breastfeeding: it was the only positive health intervention that was less frequent among the rich. This finding has been previously described in a study using data from 127 surveys of low- to middle-income countries (21).

In terms of health and nutrition outcomes, stunting prevalence and neonatal and under-5 mortality are declining in most countries. However, we found low correlations between the rates of decline in mortality or stunting, and improvement in equity. When rates or prevalence decline over time, a common finding is

FIGURE 4. National neonatal mortality and stratified according to wealth quintiles in 10 countries in Latin America and the Caribbean, by year(s)



Note: Horizontal lines connect the poorest (red circles) and richest (gold circles) quintiles. The longer the line between the two groups, the greater the absolute inequality. For quintiles with small sample sizes, estimates are not shown in the graphs.

that absolute inequalities tend to fall faster than relative inequalities. The best possible combination is when both types of measures of inequality show improvement, which was noticeably the case for Brazil in terms of stunting. To a lesser extent, improvements in both relative and absolute inequalities, against a backdrop of falling mortality rates among children under 5 years, were observed in Colombia, the Dominican Republic, Haiti, Honduras, and Peru. By contrast, although Nicaragua showed improvements in RMNCH coverage, the country's absolute and relative inequalities for mortality and stunting worsened. This might be due to a slower pace of mortality and stunting reductions among the poorest.

Analyses of factors associated with the progress observed among and within the different countries is beyond the scope of the present paper. Nevertheless, we are aware of detailed evaluations that have attempted to explain the substantial progress made in some countries. In Brazil, several factors seem to have played a role in reducing child mortality and

stunting, mostly among the poorest groups: general socioeconomic progress, improvements in female education, lower fertility, urbanization, introduction of conditional cash transfer programs, universal health-care coverage and health interventions, i.e., *Programa Saúde da Família* (22). In Peru, declines in mortality have been observed for a couple of decades, but stunting prevalence dropped only recently. Progress has been attributed to strong political will at all levels, leading to cross-sectoral antipoverty measures with geographical targeting, as well as health sector-specific programs (1, 5, 23).

On the other hand, the widening inequalities observed in some countries may be related to an "inverse equity hypothesis." This hypothesis states that health inequalities get worse over time because new public health interventions/programs initially reach only the higher socioeconomic strata, and later, the poor. Only once the rich have achieved new minimum morbidity and mortality levels, do the poor gain greater access to the interventions (22, 24, 25).

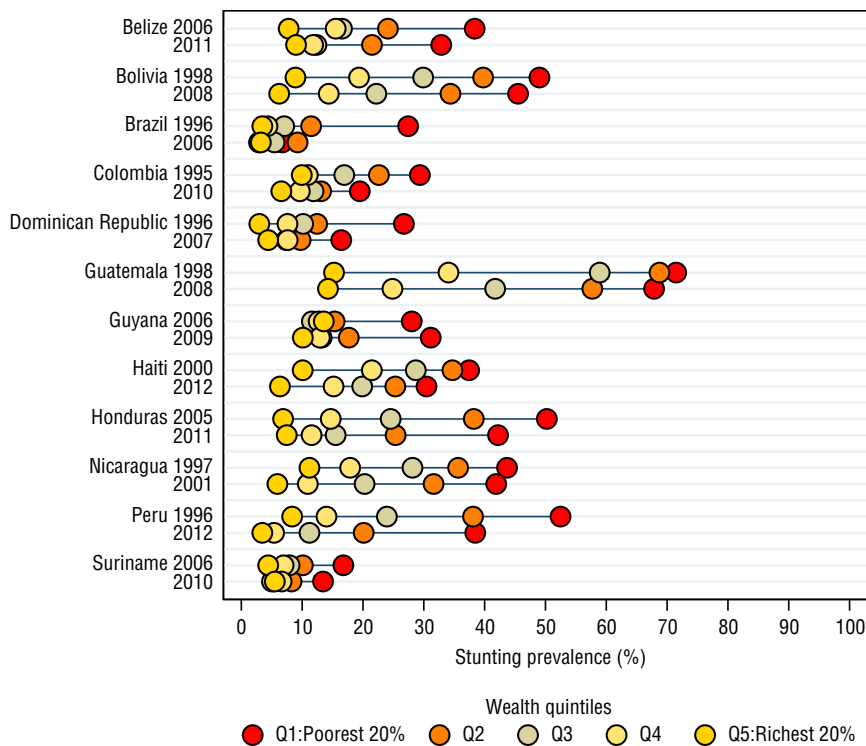
Limitations

One limitation of the study was that intervention coverage and mortality data were solely based on survey information. For coverage of immunizations, vitamin A, and HIV prevention and treatment, estimates produced by international agencies, are generated from a combination of data from surveys and health information systems. Consequently, the coverage levels reported here for these indicators may not necessarily be consistent with those available in official United Nations documents. However, these official estimates cannot be disaggregated by socioeconomic position, which requires survey data that enables the classification of families according to wealth. The inter-agency mortality estimates, which are based on a combination of data sources and modeling strategies, can also not be disaggregated by wealth quintile, and so were not used in this analysis.

Many countries in LAC did not have survey-based data for calculating the indicators used in this review. Others had recent surveys, but the data were not publicly available at the time of the analyses. The most recent surveys available from some countries, e.g., Brazil and Mexico, failed to employ internationally-standardized questionnaires, so it was not possible to estimate key indicators or to make comparisons among countries. It is also worth noting that the last survey in Brazil was in 2006, and therefore, no reliable population-based data on child health and nutrition or on intervention coverage was available for the last 9 years. Finally, countries like Cuba and Jamaica did adopt standardized survey methods, but information on household assets was not collected, making it impossible to stratify the population by wealth. Standardized surveys, carried out every 3–5 years, are essential for monitoring progress and identifying trends in inequalities.

It is worth noting that there are other dimensions of inequalities that are relevant to the coverage of RMNCH interventions, e.g., mothers' schooling, ethnic group, gender, and more, that were not addressed in the present analyses. The interpretation of these dimensions is relative to the context of each country; therefore, we decided to use "wealth index" to allow a general comparison between the poorest and richest of each country. In addition, we decided to use "wealth index" since it can cover

FIGURE 5. National stunting prevalence in children under 5 years of age and stratified according to wealth quintiles in 12 countries in Latin America and the Caribbean, by year



Note: The horizontal lines connect the poorest (red circles) and richest (gold circles) quintiles. The longer the line between the two groups, the greater the absolute inequality. For quintiles with small sample sizes, estimates are not shown in the graphs.

other dimensions of inequalities, such as education and ethnic group, previously reported by other studies (26, 27).

Conclusions

In most countries, intervention coverage increased while mortality among

children under-5 years of age and stunting prevalence fell most rapidly among the poor, reducing inequalities overtime. However, Bolivia, Guatemala, Haiti, Nicaragua, and Peru still showed marked inequalities. These results suggest that several LAC countries have managed to improve maternal and child

health at the national level, as well as reduce the gap between rich and poor in intervention coverage and in key impact measures, but others have not. The countries that have made marked progress can serve as examples for other LAC countries, but further research is required to understand why socioeconomic inequalities persist in some countries while being reduced substantially in others. The next step would be to carry out studies that examine which political, social, economic, and health-related factors account for the persisting inequities. We hope that these findings will inform policy debates on strategies to reduce health inequalities and showcase the importance of tracking progress by regularly collecting data.

Acknowledgements. These analyses were supported by grants from the Partnership for Maternal, Newborn, and Child Health and the Countdown to 2015 Initiative (WHO, Geneva, Switzerland), through the Federal University of Pelotas via the United States Fund for the United Nations Children's Fund; and the Wellcome Trust (London, United Kingdom). The views expressed in this paper are solely those of the authors and not necessarily those of the funding organizations.

Conflicts of interest. None.

Disclaimer. Authors hold sole responsibility for the views expressed in the manuscript, which may not necessarily reflect the opinion or policy of the *RPSP/PAJPH* and/or PAHO.

REFERENCES

- Andrade LOM, Pellegrini Filho A, Solar O, Rigoli F, Salazar LM, Serrate PC-F, et al. Social determinants of health, universal health coverage, and sustainable development: case studies from Latin American countries. *Lancet*. 2014; 385 (9975):1343–51.
- Pan American Health Organization. *Health in the Americas: 2012 Edition. Regional outlook and country profiles*. Washington DC: PAHO; 2012.
- Requejo JH, Bryce J, Victora CG. Countdown to 2015. Fulfilling the health agenda for women and children: the 2014 report. Washington DC: United Nations Children's Fund, World Health Organization; 2014.
- Victora CG, Aquino EM, do Carmo Leal M, Monteiro CA, Barros FC, Szwarzwald CL. Maternal and child health in Brazil: progress and challenges. *Lancet*. 2011; 377(9780):1863–76.
- Atun R, de Andrade LOM, Almeida G, Cotlear D, Dmytraczenko T, Frenz P, et al. Health-system reform and universal health coverage in Latin America. *Lancet*. 2014;385(9974):1230–47.
- Requejo JH, Bryce J, Barros AJ, Berman P, Bhutta Z, Chopra M, et al. Countdown to 2015 and beyond: fulfilling the health agenda for women and children. *Lancet*. 2015;385(9966):466–76.
- Restrepo-Mendez MC, Barros AJ, Black RE, Victora CG. Time trends in socioeconomic inequalities in stunting prevalence: analyses of repeated national surveys. *Public Health Nutr*. 2014;Dec 18:1–8. Available from: www.ncbi.nlm.nih.gov/pubmed/25521530 Accessed on 7 July 2015.
- Gwatkin DR, Rutstein S, Johnson K, Suliman E, Wagstaff A, Amouzou A. Socio-economic differences in health, nutrition, and population (HNP) within developing countries: an overview. Washington, DC: World Bank; 2007.
- Cotlear D, Gómez-Dantés O, Knaul F, Atun R, Barreto ICHC, Cetrángolo O, et al. Overcoming social segregation in health care in Latin America. *Lancet*. 2015;385 (9974):1248–59.
- United States Centers for Disease Control and Prevention. The DHS Program: Demographic and Health Surveys (DHS). Available from: <http://dhsprogram.com/What-We-Do/Survey-Types/DHS.cfm> Accessed on 17 October 2014.
- United Nations Children's Fund. Multiple indicator cluster surveys. Available from

- <http://mics.unicef.org/> Accessed on 17 October 2014.
12. Ministry of Health of Brazil. Pesquisa nacional de demografia e saúde da criança e da mulher, 2006. Available from: http://bvsms.saude.gov.br/bvs/pnds/saude_nutricional.php Accessed on 17 October 2014.
 13. United States Centers for Disease Control and Prevention. Guatemala reproductive health survey 2008-2009. Available from: <http://ghdx.healthdata.org/record/guatemala-reproductive-health-survey-2008-2009> Accessed on 17 October 2014.
 14. Boerma JT, Bryce J, Kinfu Y, Axelson H, Victora CG. Mind the gap: equity and trends in coverage of maternal, newborn, and child health services in 54 Countdown countries. *Lancet*. 2008;371(9620):1259–67.
 15. Barros AJ, Victora CG. Measuring coverage in MNCH: determining and interpreting inequalities in coverage of maternal, newborn, and child health interventions. *PLoS Med*. 2013;10(5):e1001390.
 16. Victora CG, Barros AJ, Axelson H, Bhutta ZA, Chopra M, Franca GV, et al. How changes in coverage affect equity in maternal and child health interventions in 35 Countdown to 2015 countries: an analysis of national surveys. *Lancet*. 2012;380(9848):1149–56.
 17. Barros AJ, Ronsmans C, Axelson H, Loaiza E, Bertoldi AD, Franca GV, et al. Equity in maternal, newborn, and child health interventions in Countdown to 2015: a retrospective review of survey data from 54 countries. *Lancet*. 2012;379(9822):1225–33.
 18. Rutstein SO, Rojas G. Guide to DHS statistics. Calverton, Maryland: ORC Macro; 2006.
 19. Rutstein SO, Johnson K. The DHS wealth index. DHS comparative reports. Calverton, Maryland: ORC Macro; 2004.
 20. Harper S, Lynch J. Methods for measuring cancer disparities: Using data relevant to healthy people 2010: cancer related objectives. Bethesda, Maryland: National Cancer Institute; 2005.
 21. Victora CG, Bahl R, Barros AJD, Franca GV, Horton S, Krasevec J, et al. Breast-feeding in the 21st Century: epidemiology, mechanisms and lifelong impact. *Lancet*. 2015. [In press].
 22. Victora CG, Aquino EM, do Carmo Leal M, Monteiro CA, Barros FC, Szwarcwald CL. Maternal and child health in Brazil: progress and challenges. *Lancet*. 2011;377(9780):1863–76.
 23. Huicho L, Segura E, Huayanay C, Niño de Guzman J, Restrepo-Mendez MC, Tam Y, et al. Placing child health and nutrition at the centre of the antipoverty political agenda: the Peruvian experience, 2000–2013. *Lancet Glob Health*. [Submitted for publication].
 24. Victora CG, Vaughan JP, Barros FC, Silva AC, Tomasi E. Explaining trends in inequities: evidence from Brazilian child health studies. *Lancet*. 2000;356(9235):1093–8.
 25. Victora CG, Wagstaff A, Schellenberg JA, Gwatkin D, Claeson M, Habicht JP. Applying an equity lens to child health and mortality: more of the same is not enough. *Lancet*. 2003;362(9379):233–41.
 26. Galobardes B, Shaw M, Lawlor DA, Lynch JW, Davey Smith G. Indicators of socioeconomic position, part 1. *J Epidemiol Community Health*. 2006;60(1):7–12.
 27. Barros FC, Victora CG, Horta BL. Ethnicity and infant health in Southern Brazil. A birth cohort study. *Int J Epidemiol*. 2001;30(5):1001–8.

Manuscript received on 18 March 2015. Revised version accepted for publication on 10 June 2015.

RESUMEN

Avances en la reducción de las desigualdades en materia de salud reproductiva, materna, neonatal e infantil en América Latina y el Caribe: un programa inacabado

Objetivo. Extender los análisis de la “Cuenta Regresiva para 2015” de las desigualdades en materia de salud más allá de los 75 países sometidos a vigilancia en todo el mundo para incluir a todos los países de América Latina y el Caribe (ALC) que disponen de datos adecuados.

Métodos. Se utilizaron encuestas de demografía y salud y encuestas agrupadas de indicadores múltiples para vigilar el progreso de la cobertura de las intervenciones de salud y de las desigualdades en 13 países de ALC, 5 de ellos incluidos en la Cuenta Regresiva (Bolivia, Brasil, Guatemala, Haití y Perú) y 8 no incluidos (Belice, Colombia, Costa Rica, Guyana, Honduras, Nicaragua, República Dominicana y Suriname). Los resultados incluyeron las tasas de mortalidad neonatal y en menores de 5 años, la prevalencia del retraso del crecimiento en niños y el índice compuesto de cobertura (un promedio ponderado de 8 indicadores de cobertura en materia de salud reproductiva, materna, neonatal e infantil). Para evaluar las desigualdades absolutas y relativas, se emplearon el índice de desigualdad de la pendiente y el índice de concentración.

Resultados. El índice compuesto de cobertura mostró patrones monotónicos en función de los quintiles de riqueza, con los niveles más bajos en el quintil más pobre. La mortalidad neonatal y en menores de 5 años, así como la prevalencia del retraso del crecimiento, fueron más elevadas entre los pobres. En la mayor parte de los países aumentó la cobertura de las intervenciones, mientras que la mortalidad en menores de 5 años y la prevalencia del retraso del crecimiento disminuyeron más rápidamente entre los pobres, de manera que las desigualdades se redujeron con el transcurso del tiempo. Sin embargo, en Bolivia, Guatemala, Haití, Nicaragua y Perú aún se observan marcadas desigualdades. Brasil prácticamente ha eliminado las desigualdades en cuanto a retraso del crecimiento.

Conclusiones. Los países de ALC mostraron avances considerables en la reducción de las desigualdades con respecto a las intervenciones de salud reproductiva, materna, neonatal e infantil, y en materia de mortalidad y nutrición infantil. Sin embargo, el 20% más pobre de la población en la mayor parte de los países sigue quedándose a la zaga, y son necesarias iniciativas renovadas para mejorar la equidad.

Palabras clave

Salud materno-infantil; desigualdades en la salud; factores socioeconómicos; Objetivos de Desarrollo del Milenio; América Latina; Región del Caribe.