

Health Predictions in Latin America

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- In developed countries, during the last century, a great transformation in health matters took place with a progressive decrease in communicable diseases, a reduction in fertility, a decrease in maternal and infant mortality rates, a gradual increase in life expectancy, and an increase in the prevalence of chronic-degenerative diseases. This series of changes make up a process known as epidemiological transition.
- With respect to Latin America and the Caribbean (LAC), it is still possible to observe a great heterogeneity in life expectancy between the different countries and cities of the region. Life expectancy at birth varies between 74 and 83 years in women, and between 63 and 77 years in men. There is also great variability in mortality profiles between and within different countries. Although chronic noncommunicable diseases occupy the first places as a cause of death, as is the case in developed countries, the proportion of deaths for each of the causes varies substantially.¹
- Faced with such a diverse panorama, it is not clear whether Latin American countries are approaching a single mortality regime or whether it is feasible to define a clear regional trend in health, especially considering that the features that define the epidemiological transition are not well defined in the least developed countries and not all countries experience similar changes.²
- Although it is generally considered that all Latin American and Caribbean countries are going through an advanced stage

of epidemiological transition, characterized by a progressive increase in life expectancy, reduction in infectious mortality, and a clear predominance of chronic noncommunicable diseases, it is not possible to ignore the regional divergences and the unprecedented specific particularities experienced by some countries in the region. For example, longevity in Mexico has remained the same due to increased violence and homicide rates, a phenomenon that has been replicated in Honduras, Central America, Venezuela and some Southern Cone countries.³ It has also been pointed out that the countries of the region actually show a model of epidemiological transition different from that observed in developed countries. It is distinguished by a resurgence of infectious diseases that had previously been under control and a lack of resolution of the transition process, so that the countries appear to be caught in a state of mixed morbidity. This peculiar epidemiological polarization, not only between countries, but also in the different geographical areas and between the various social classes of a single country, is called a “prolonged polarized model.”⁴

THE COUNTRIES OF LA AND THE CARIBBEAN SHOW A MODEL OF EPIDEMIOLOGICAL TRANSITION DIFFERENT FROM THAT OF DEVELOPED COUNTRIES, WITH BROAD COEXISTENCE OF NONCOMMUNICABLE DISEASES AND COMMUNICABLE DISEASES (EXTENDED POLARIZED MODEL)

THE COVID-19 PANDEMIC CONTRIBUTED TO
WIDENING THE GAP WITH DEVELOPED
COUNTRIES WITH A LOSS IN LIFE EXPECTANCY
OF 2.9 YEARS FOR BOTH SEXES

- Some other elements have contributed to widening the gap with developed countries. The impact of the recent pandemic in LAC was singularly adverse, with the highest COVID-19 mortality rates in the world.⁵ By July 2022, LAC represented only 8.5% of the world's population, but accumulated 13% of the world's documented cases of COVID-19 and 27% of cumulative deaths from this disease.⁶ LAC lost 2.9 years of life expectancy at birth for both sexes, from 75.1 years in 2019 to 72.2 years in 2021, becoming the region that lost the most years in life expectancy globally, although the reduction between the different countries was not homogeneous, with a more pronounced decrease observed in Central America (3.6 years lost in life expectancy) and the Caribbean.⁷
- Despite our differences with the rest of the world, and the fact that each of the LAC countries faces specific challenges, it is essential to recognize those problems that, due to their high incidence or prevalence or their impact on a population scale, cause special concern for the region in terms of health.

POPULATION AGEING

- Both the population and the absolute number of older people are increasing globally. The number of people aged 65 and over is expected to double from 761 million in 2021 to 1.6 billion in 2050.⁸
- Ageing in Latin America is one of the main demographic phenomena. In 2022 the number of people aged 60 and over

was 88.6 million, representing 13.4% of the total population. The proportion is expected to reach 16.5% in 2030, and 30% of the region's total population in 2060, with a total of 220 million older people. Although of global dimensions, the aging process in Latin America and the Caribbean occurs at a faster pace than in other regions of the world. Thus, the aging process that took two centuries in Europe has occurred in only half a century in Latin America.⁹

- It has been estimated that the Region of the Americas will reach more people aged 60 years and older than children under 15 years of age, 25 years earlier than the world average.¹⁰
- The aging process in Latin America is not like that observed in other regions, as it will occur in a much shorter period of time and in a more unfavorable socioeconomic context, with high levels of poverty and inequality.¹¹
- The Latin American Population Aging Index provides important clues about the pressures that population aging will exert on Latin American health systems. This indicator compares the number or proportion of people aged 60 and over with the number under 15. The number of people aged 60 and over in the region is expected to exceed the number of people under 15 by 2040.¹²
- The ageing of the population will be accompanied by a substantial increase in the burden of chronic non-communicable diseases (such as high blood pressure, cardiovascular disease, cancer, diabetes mellitus, chronic lung diseases and neurodegenerative diseases), especially noticeable in developing countries. In Latin America, noncommunicable diseases are the most common cause of death, accounting for 77% of all deaths. Cardiovascular disease is the leading cause, with 218 deaths per 100,000 inhabitants, 61% more than the OECD average.¹³
- An additional way to assess the impact of population ageing is through the dependency ratio of the elderly (population > 64 years/

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population aged 15 to 64 years). Latin American countries have begun to emerge from their demographic bonus, characterized by low dependency ratios, to enter a new era of rapid aging. Between 2020 and 2100 the increase in the dependent population, estimated to be 35.5%, will be unprecedented. By 2100, Latin America will have an elderly population share of 32%, higher than for developed economies.¹⁴

- Aging in Latin America and the Caribbean will lead to a notable increase in multimorbidity, that is, in the coexistence of two or more chronic disorders at the same time. Due to its negative consequences, which include high mortality rates, increased utilization of health services, impaired functionality and quality of life, and increased health care costs, multimorbidity will exert great pressures throughout the region.¹⁵ The prevalence of multimorbidity in Latin America and the Caribbean is 43%.¹⁶

CLIMATE CHANGE

- Human activities have conditioned an unprecedented increase in the emission of greenhouse gases that trap heat in the lower layers of the atmosphere. The last 8 years have been the hottest on record and on 31 August 2023 the average ocean surface temperature set a new record of 25.19°C.¹⁷
- Like cold, high temperatures can condition an increase in mortality, so that the curve that relates mortality to environmental

temperature is nonlinear in nature and takes a “J” or “U” shape.¹⁸

- Extreme elevated temperatures also participate in the genesis of different cardiovascular diseases, since they produce dehydration, hemoconcentration, hypercoagulability, activation of the sympathetic nervous system and production of inflammatory mediators. Hypercoagulability favors thrombus formation with an increase in the frequency of acute coronary events and stroke. Electrolyte disorders can in turn trigger different types of arrhythmias. Dehydration can activate a sympathetic response, which increases heart rate and contractility, with an increase in myocardial oxygen demands. Such changes can generate an imbalance between supply and demand in subjects with underlying coronary disease, which favors ischemic events and even the rupture of atheromatous plaques leading to stroke or myocardial infarction.¹⁹
- Climate change also has a clear relationship with respiratory health. The increase in temperature leads to a longer duration and severity of the pollen season, air pollution, forest fires, droughts and heavy rainfall and floods. All these elements can significantly

LAC WILL BECOME BY THE END OF THIS CENTURY THE REGION WITH THE HIGHEST PROPORTION OF ELDERLY POPULATION IN THE WORLD. AGEING HAS MARKEDLY INCREASED MULTIMORBIDITY AND DEPENDENCY RATIO

THE INCREASE IN TEMPERATURE RESULTING FROM CLIMATE CHANGE WILL NEGATIVELY IMPACT THE INCIDENCE OF SOME OF THE LEADING CAUSES OF DEATH IN THE REGION

increase the risk of respiratory diseases such as asthma, respiratory infections, rhinosinusitis, and chronic obstructive pulmonary disease.^{20,21} It is a fact that the impact will be more noticeable in regions that, like Latin America, have less developed health services, higher rates of poverty and inequality, and a higher degree of deforestation.²²

EMERGING AND RE-EMERGING DISEASES

- Current evidence suggests that the risk of pandemic events has increased markedly over the past century. The spread of pathogens from animals to humans is estimated to have tripled and new zoonotic diseases affecting humans have quadrupled.^{23,24}
- Almost all the pandemics that have struck humanity have a zoonotic origin. At least 75% of new emerging diseases correspond to zoonoses, according to data provided by the WHO.²⁵
- A report by the IPBES workshop on biodiversity and pandemics²⁶ has noted that there are about 1.7 million undiscovered viruses in mammals and birds, and that between 631,000 and 827,000 may be capable of infecting humans.
- The probability of an event as severe as Covid-19 occurring in the future for any given year has been estimated to range from 2.5 to 3.3%, translating the probability of another global pandemic of similar scale to COVID-19 from 22 to 28% in the next 10 years, and from 47-57% in the following 25 years.²⁷
- Several factors place Latin America as a high-risk region for the transmission of

THE HEALTH IMPACT OF CLIMATE CHANGE WILL BE GREATER IN LATIN AMERICA BECAUSE IT HAS LESS DEVELOPED HEALTH SERVICES and higher RATES OF POVERTY AND INEQUITY

zoonotic diseases and as a hotspot for the emergence of new epidemics. There is evidence that pandemics tend to originate more frequently in areas that, like Latin America, have suffered a decline in their ecological assets. The decline in biodiversity reduces the phenomenon of “dilution” of pathogens, which increases the risk of zoonotic transmission.²⁸

- The tropical areas of Latin America have been conducive to the spread of zoonotic diseases for decades, which show endemic behavior and an increase in their frequency in the region because of climate change.²⁹
- Unfortunately, most countries in Latin America are not prepared to face a pandemic, as shown by the Global Health Security Index (GSHI) that evaluates the degree of preparedness for epidemics and pandemics based on 6 indicators (prevention, detection, speed of response, health infrastructure, standards and risks). In 2022, the average for Latin America and the Caribbean was 37.7 points out of 100 possible, which places us below the world average of 38.9 points.³⁰

THE RISK OF A NEW COVID-19 PANDEMIC VARIES BETWEEN 2.5 AND 3.3% FOR ANY GIVEN YEAR, MEANING A RISK OF 57% OVER THE NEXT 25 YEARS. SEVERAL FACTORS PLACE LAC AS A HIGH-RISK REGION FOR EPIDEMIC EMERGENCE

IN LAC THE ADULT OBESITY RATE IS MUCH HIGHER THAN THE WORLD AVERAGE AND CHILDHOOD OBESITY HAS BECOME A TRUE EPIDEMIC AT THE REGIONAL LEVEL. OBESITY WILL TAKE ITS TOLL WITH A PERCENTAGE CHANGE IN THE PREVALENCE OF DIABETES BETWEEN 2021 AND 2050 OF 67.9% (ONE OF THE HIGHEST GLOBALLY)

DOUBLE EPIDEMIC OF OBESITY AND DIABETES

- In Latin America, obesity and overweight are one of the main and most complex health challenges and their rate is increasing faster than in any other region on the planet.³¹
- According to the latest available data from the Pan American Health Organization, obesity in adults aged 18 years and older affects 24.2% of the population of Latin America and the Caribbean (equivalent to 106 million adults), a rate much higher than the world average (13.1%).³²
- Being overweight is not only a serious problem in the adult population. Child overweight in the region affects 4.2 million children under 5 years of age and 49 million children and adolescents between 15 and 19 years of age. The problem seems to be increasing, since the rates of overweight in children under 5 years of age went from 6.8% in 2000 to 8.6% in 2022. For its part, the rate in children and adolescents aged 5 to 19 years went from 21.5 percent in 2000 to 30.6% in 2016.³³
- Obesity has been recognized as one of the main risk factors for major noncommunicable diseases such as diabetes, cancer, and cardiovascular diseases, including high blood pressure, coronary heart disease and cerebrovascular disease, which represent the leading causes of death in the region.
- The increase in obesity and overweight rates has led to a significant increase in diabetes rates at the regional level. In 2021, the prevalence of diabetes mellitus in Latin America and the Caribbean was 6,745.2 per 100,000 inhabitants (representing a total of 43 million people affected). A percentage change in prevalence rates between 2021 and 2050 of 67.9% is expected, one of the highest globally. This will translate to 121 million people being affected by type 2 diabetes mellitus in the region by 2050.³⁴

INEQUITIES IN HEALTH SYSTEMS

- Health systems in Latin America are particularly vulnerable due to their physical and social environment, lack of infrastructure, and significant social and health inequalities.³⁵
- According to OECD data,³⁶ health spending in Latin America and the Caribbean represented only 6.9% on average in 2019, compared to 8.5% on average in OECD countries.³⁶ Underfinancing in health can lead to under-supply shortages and poor infrastructure.³⁶
- The coverage index of essential health services (based on interventions such as reproductive health, maternal, newborn and child health, infectious diseases, non-communicable diseases, service capacity and access to health), is measured on a scale of 0 (worst health condition) to 100 (best health condition). In Latin America and the Caribbean, the service coverage index reached 76 points in 2021. Although the indicator shows improvement compared to the score of the year 2000 (58 points), we are still far from high-income countries (with a score in 2021 of 85).³⁷
- In 2021 and in urban areas of Latin America, the total number of people without health coverage stood at 40.2% in the first income quintile, with a decrease to 16.9% in the fifth quintile. In rural areas the situation was similar, with a percentage of the population

LAC HAS BEEN CHARACTERIZED BY UNDERFINANCING IN HEALTH THAT GENERATES SHORTAGES OF INPUTS AND DEFICIENT HEALTH INFRASTRUCTURE. SOCIO-ECONOMIC INEQUALITIES LEAD TO A SIGNIFICANT DECLINE IN HEALTH COVERAGE, ESPECIALLY IN RURAL AREAS AND IN THE LOWEST INCOME QUINTILES

without coverage in the first quintile of 42.8%, and 34.1% in the highest income quintile.³⁸ The higher percentage of people without the right to health care in the lowest income quintiles and in rural areas evidences the inequalities that exist in the region depending on their place of residence and socioeconomic status.³⁸

MIGRATORY MOVEMENTS

- Compared to previous years, 2022 witnessed a considerable increase in large migratory movements in the Americas. The Covid-19 pandemic and its adverse economic effects led to a notable increase in migration flows. Other aggravating conditions include food insecurity, regional violence, political instability, adverse climatic conditions, and environmental catastrophes.³⁹
- Because of their magnitude and often their sudden nature, migration flows put enormous pressure on the health systems of receiving countries. On the other hand, migrants are exposed to numerous health risks due to several factors: food insecurity, economic precariousness, lack of sanitation measures, limited access to water, unstable jobs, lack of shelter, lack of vaccination, and exposure to human trafficking.⁴⁰
- Discrimination, language barriers, and lack of information can further deepen the gap in the quality of health care between the migrant and native populations.

CONCLUSIONS

- Although there is great heterogeneity in mortality profiles between and within the different countries of the region, it is possible to distinguish in Latin America a set of more or less common factors, although with variable penetration and expressiveness from one country to another depending on their specific health, social, economic and environmental conditions. The process of accelerated aging of the region's population will put great pressure on its health systems due to an increase in morbidity rates from chronic diseases, greater multimorbidity, a more fragile and disability-prone population, higher spending on health care and a significant increase in the demand for health services. The health effects of climate change will include not only those directly related to catastrophic events (deaths from natural disasters such as floods, tropical cyclones, or fires), but also those related to an increase in morbidity and mortality from cardiovascular and pulmonary diseases, changes in vector-borne disease patterns, waterborne diseases, malnutrition, or other nutrition-related diseases.
- Like other regions in the world, infectious diseases of epidemic dimensions are a serious, real problem in Latin America and the Caribbean. Climate change, environmental destruction, reduced biodiversity, lack of prevention preparedness, wildlife trafficking, increased poverty rates, increased population density in large urban centers increasing migration and the clearing of forests and jungles, make our region particularly vulnerable to the emergence of new diseases, especially of zoonotic origin and the re-emergence of already known diseases.
- Urbanization, economic growth, the growing integration of the region into international markets and the average increase in income, have marked a trend towards the abandonment of traditional food, which has been accompanied by an increase in the use of

processed foods, a greater caloric consumption of high carbohydrates and a reduction in physical activity levels. The result has been an alarming increase in obesity and overweight rates in children and adults, with the burden of diabetes, cardiovascular disease, and cancer that this trend entails.

- Finally, the great inequalities that characterize the region and the growing migratory flows will exert an additional adverse effect on health.

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