Health at a Glance: Latin America and the Caribbean 2020

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Foreword

Health at a Glance: Latin America and the Caribbean 2020 compares key indicators for population health and health systems across the 33 LAC countries. It builds on the format used in other editions of *Health at a Glance*, including the versions for the OECD member and partner countries, and the regional editions for Asia-Pacific and Europe. It presents comparable data on health status and its determinants, health care resources and activities, health expenditure and financing, and health care quality, along with selected health inequality indicators.

This is the first LAC regional edition of *Health at a Glance* and was prepared jointly by the OECD Health Division in the Directorate for Employment, Labour and Social Affairs and the World Bank, led by Cristian A. Herrera from the OECD Health Division and Tomás Plaza-Reneses from the World Bank, with close collaboration from Gabriel Di Paolantonio from the OECD Health Division.

The production of *Health at a Glance: Latin America and the Caribbean 2020* would not have been possible without the contribution from LAC countries that either provided data directly to the OECD or the World Bank, or supplied the data contained in this publication to other international organisations, such as the Pan American Health Organisation or the World Health Organization. After a revision round of the publication's draft with LAC countries, we acknowledge the responses and comments received from Belize, Colombia, Costa Rica and Mexico.

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Table of contents

Editorial . . . 9

Executive summary . . . 15

Reader's guide . . . 19

Chapter 1. **Universal health coverage and country dashboards** . . . 23
- Introduction . . . 24
- Universal Health Coverage . . . 24
- Population health . . . 25
- Coverage and services . . . 27
- Financial protection . . . 29
- Quality of care . . . 30
- Health inequality . . . 31

Chapter 2. **Identifying and tackling wasteful spending in Latin American and Caribbean health systems** . . . 33
- Introduction . . . 34
- Clinical care waste . . . 37
- Operational waste . . . 41
- Governance waste . . . 48
- Conclusion . . . 54

Chapter 3. **Health status** . . . 59
- Life expectancy at birth . . . 60
- Infant mortality . . . 62
- Under age 5 mortality . . . 64
- Mortality from all causes . . . 66
- Mortality from cardiovascular diseases . . . 68
- Mortality from cancer . . . 70
- Mortality from injuries . . . 72
- Maternal mortality . . . 74
- Tuberculosis . . . 76
- HIV/AIDS . . . 78
- Mosquito borne diseases . . . 80
- Diabetes . . . 82
- Ageing . . . 84

Chapter 4. **Determinants of health** . . . 87
- Family planning . . . 88
- Preterm birth and low birth weight . . . 90
- Infant and young child feeding . . . 92
- Child malnutrition . . . 94
- Adolescent health . . . 96

Overweight and obese adults. 98
Water and sanitation. 100
Tobacco. 102
Alcohol. 104
Road safety. 106
Physical activity. 108
Diet. 110
Drug use. 112

Chapter 5. **Health care resources and activities**. 115
Doctors and nurses. 116
Consultations with doctors. 118
Medical technologies. 120
Hospital care. 122
Pregnancy and birth. 124
Infant and child health care. 126
Mental health care. 128
Blood glucose and blood pressure. 130

Chapter 6. **Health expenditure and financing**. 133
Health expenditure per capita and in relation to GDP. 134
Financing of health care from government and compulsory health insurance schemes. 136
Financing of health care from households' out-of-pocket payments, voluntary payment schemes and external resources. 138
Financial protection. 140

Chapter 7. **Quality of care**. 143
Childhood vaccination programmes. 144
In-hospital mortality following acute myocardial infarction and stroke. 146
Cancer survival. 148
Avoidable hospital admissions. 150

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Editorial

Addressing the COVID-19 pandemic in Latin America and the Caribbean

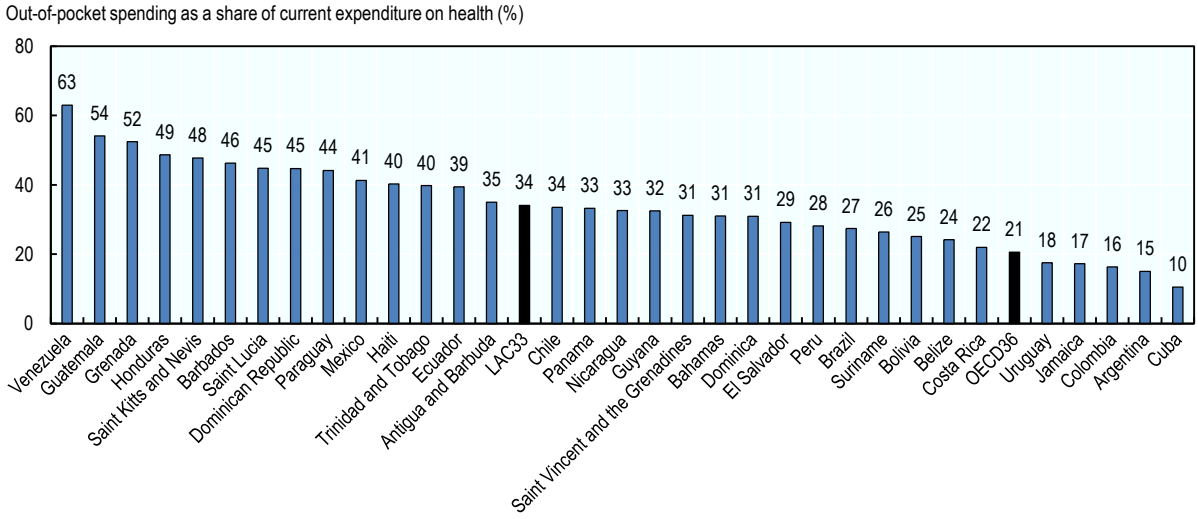
While writing the first edition of *Health at a Glance: Latin America and the Caribbean*, very few of us could have imagined that a pandemic would have exposed the world to the worst health emergency in a century, with massive human, economic and social costs. The Latin America and the Caribbean (LAC) region was hit by the epidemic a few weeks later than Europe, with the first cases of COVID-19 registered in Brazil by the end of February 2020. Since then, it has spread to all countries in the region, with the highest number of cases reported in Brazil, Peru, Mexico and Chile at the moment of writing.

The complete account of the human, social, and economic costs of the COVID-19 crisis in LAC will have to wait, but we already know that its impacts are profound. The high levels of inequality and informality in the region make the situation potentially more catastrophic than in other parts of the world. Those who do not have access to social protection have no choice but to continue to work to make a living, limiting their capability to follow social distancing measures and thus protect themselves and their relatives. Those who do not have health coverage face barriers for accessing health when needed. Furthermore, nearly 8% of people are aged 65 or older, over 80% of the population are urban, and 21% of the urban population live in slums, informal settlements or inadequate housing where basic services are not available. This combination exacerbates the epidemic's risks among the most vulnerable groups.

A critical task for health systems confronted with the spread of COVID-19 is to protect the health of all citizens. This requires that both diagnostic testing and appropriate care should be readily available, affordable and provided in a safe environment, and that other hygiene and protective measures to prevent infections are adopted. A main barrier for accessing such health services arise from out-of-pocket health expenditures, which in LAC represent on average 34% of total health spending, well above the 21% average in OECD countries. The high level of out-of-pocket expenditures in LAC are an indication of weaker health systems, lower levels of health services coverage and, overall, a worse baseline scenario to confront this pandemic when compared to most OECD countries (Figure 1).

Health inequalities also loom as a critical aspect that is affecting LAC health systems' response and outcomes throughout the pandemic. In ten LAC countries, on average, under age-5 mortality rate for the lowest income quintile exceeds that of the highest income quintile by 21 deaths per 1 000 live births, showing large, persisting inequalities in population health outcomes. Moreover, in 12 LAC countries, children aged 15-23 months in low-income households have 11% lower full immunisation coverage than those in high-income households, which indicates the difficulties that countries might have in making a future COVID-19 vaccine available in an equitable way. Such inequalities delineates a landscape where vulnerable populations are likely to be disproportionally affected by the pandemic.

Figure 1. **Out-of-pocket spending as a share of current expenditure on health in 33 LAC countries, 2017**

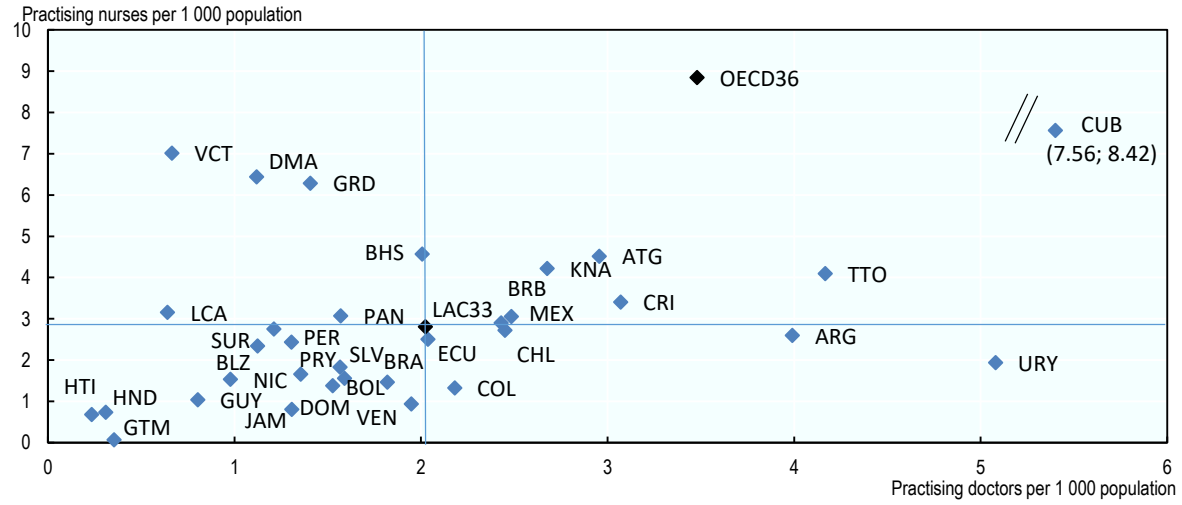


Source: WHO Global Health Expenditure Database 2020; OECD Health Statistics 2019. See Chapter 6.

Health system resources to face the demand surge from COVID-19

Health workforces are key to a timely and effective response to COVID-19. Not only do doctors and nurses need to treat cases of COVID-19, but they also need to maintain continuity of services in all other health care needs. On average, the LAC region has two doctors per 1 000 population, but a number of countries stand well below the OECD average of 3.5, with only Cuba, Argentina and Uruguay being above this number (Figure 2). In particular, Haiti, Honduras and Guatemala have the lowest number at or below 0.3 per 1 000 population. The gap in the availability of nurses is even more pronounced: the average number of nurses per 1 000 population is one third of the average of OECD countries (3 versus 9). The number of nurses per population is highest in Cuba, Saint Vincent and the Grenadines and Dominica, and the lowest in Venezuela, Jamaica, Haiti, Honduras and Guatemala, where there are less than one nurse per 1 000 population.

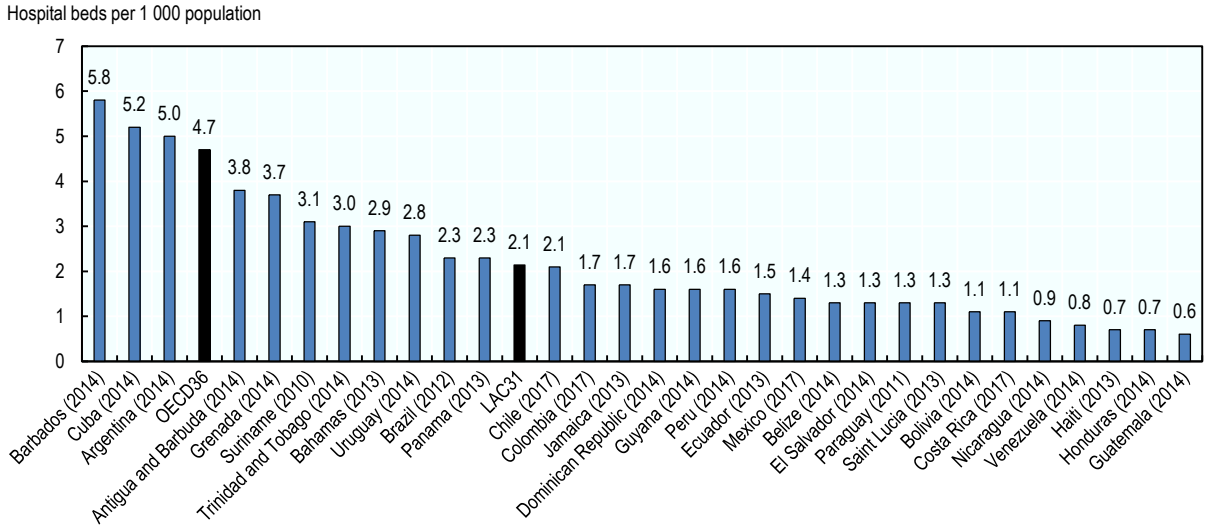
Figure 2. **Number of doctors and nurses in 33 LAC countries, 2017 or latest year available**



Source: OECD Health Statistics 2019; WHO Global Health Observatory Data Repository. See Chapter 5.

The number of beds is another key marker of how well-prepared health systems are for tackling the increased demand for hospital services due to the COVID19 pandemic. In LAC, the average number of hospital beds is 2.1 per 1 000 population, less than half of the OECD average of 4.7 (Figure 3). Barbados, Cuba and Argentina stand above the OECD average, whereas the stock is below one bed per 1 000 population in Guatemala, Honduras, Haiti, Venezuela and Nicaragua.

Figure 3. **Number of hospital beds in LAC countries and OECD average, latest year available**



Source: OECD Health Statistics 2019; World Bank World Development Indicators 2019. See Chapter 5.

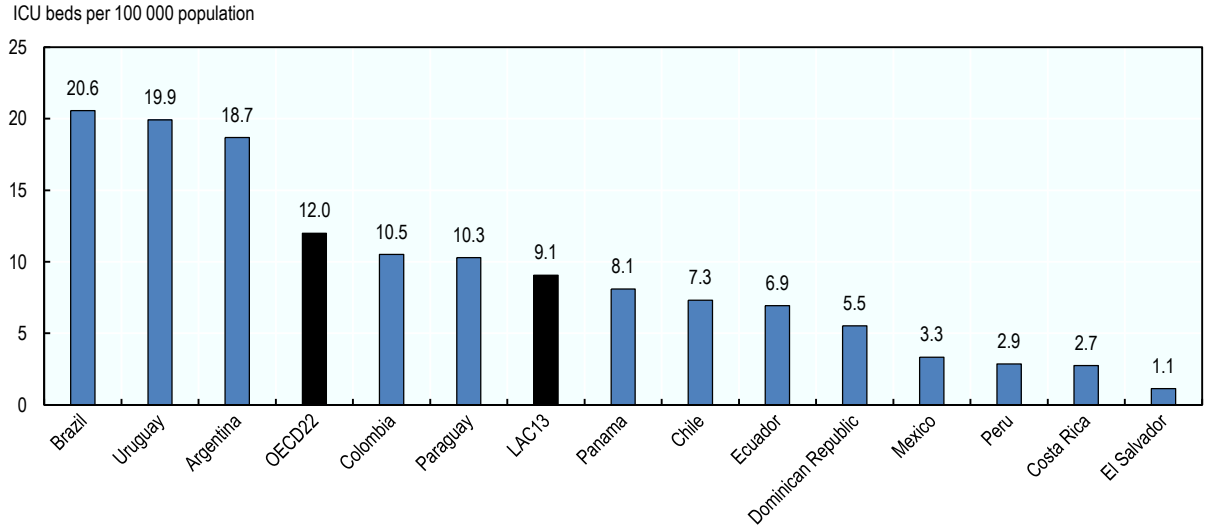
Even more central for coping with the increased demand of COVID-19 patients with severe respiratory illness is the critical care capacity, such as intensive care unit (ICU) beds, which typically are equipped with ventilators. According to data gathered just before the pandemic, the average of ICU beds in 13 LAC countries is 9.1 per 100 000 population, lower than the average of 22 OECD countries of 12. Brazil, Uruguay and Argentina are above the regional average, while the lowest rates are observed in El Salvador, Costa Rica and Peru (Figure 4). Nevertheless, due to the fragmented nature of most health systems in LAC, not all of these beds may be readily available to patients covered by public schemes. Most privately owned beds are geographically concentrated in larger and wealthier urban areas, and are often unaffordable or not accessible to a vast part of the population. In Brazil, for example, only 40.6% of total ICU beds are managed by the *Sistema Único de Saúde* (SUS), the publicly funded health care system. Similarly, in Ecuador and Paraguay 53.2% and 41.4% of ICU beds, respectively, are present in the public sector of health systems.

In LAC countries, spending better on health is as important as spending more

The current pandemic is placing a huge burden on people and the economy around the world, to which governments have responded with unprecedented public support packages. This presents an opportunity for a needed expansion in public expenditure on health in the LAC region, which is low at 3.8% of GDP compared to OECD countries at 6.6% of GDP. Moreover, the share of total health expenditure covered by government and compulsory insurance is much lower in LAC compared to the OECD (54.3% versus 73.6%). A switch to a greater emphasis on public spending, rather than private, may help increase the equity and efficiency of health spending.

An expansion in expenditure levels must also come with a reduction in wasteful spending – that is spending that does not deliver any improvement in health outcomes. Such wasteful spending means

Figure 4. **Capacity of intensive care beds in selected LAC countries and OECD average, 2020 (or nearest year)**



Note: There may be differences in the notion of intensive care affecting the comparability of the data. Data refers to adults ICU beds only in Peru. Data include only public ICU beds in Costa Rica, Dominican Republic, Peru, El Salvador and Uruguay, and both public and private in other LAC countries. Information was collected to reflect the situation of ICU beds before the emergency measures due to the COVID19 pandemic.

Source: REPS-Nation's Attorney General Colombia 2020; Ministry of Health of Argentina 2020; RUSNIS-Ministry of Health of Peru 2020; DATASUS Brazil 2020; Chilean Society of Internal Medicine 2020; Ministry of Health of Mexico 2020; La Nación reported by Leticia Pintos, Division of Therapies at the Ministry of Health of Paraguay 2020; Ministry of Health of Uruguay 2018; Diario Delfino reported by Costa Rica's Social Security Institute (CCSS) 2020; Ministry of Health of Ecuador 2018; Diario El Salvador reported by Milton Brizuela, President of the Medical College of El Salvador 2020; Diario Acento reported by National Health Service (SNS) – Ministry of Health of the Dominican Republic 2020; National Institute of Statistics and Census of Panama 2018.

that the LAC region is achieving sub-optimal results – in terms of quality of people's lives, safety and effectiveness of care – given the resources it devotes to health systems.

As highlighted in Chapter 2 of this publication, there are several areas and activities where wasteful spending could be tackled in LAC health systems. Despite being widely performed, activities such as tonsillectomies in children and hysterectomies or prostatectomies in benign conditions do not have demonstrated effects in improving health and well-being of most patients and may even be a source of harm. They may represent a source of public resources waste. In addition, governance of health systems may well lead to waste as 42% of the people across 12 LAC countries considers the health sector to be corrupt (higher than the 34% in 28 OECD countries); and bribery rates in public health centres reaches 11% across 18 LAC countries.

At a structural level, the fragmented nature of health systems in LAC is likely to affect the response to the epidemic. It is key to ensure that all resources can be channelled to address the emergency. For example, unused capacity in private laboratories and hospitals can coexist with shortages in public ones, creating health inequities and representing a significant source of waste. The crisis provides an opportunity to consider longer-term reforms to build stronger, more integrated systems in the path towards high-quality universal health coverage.

Building capacity to tackle the current and future epidemics

The current epidemic is putting health systems in the LAC region to a severe test. In the coming months, along with containment and mitigation policies to limit the spread of COVID-19, the main challenges for LAC health systems will be:

1. ensuring access of vulnerable populations to diagnostics and treatment, both to test people, track patients and trace contacts, and to provide care for patients with various symptoms at different levels of the health system. Particularly important will be to consider existing health and social

inequalities to assure the most equitable distribution of resources and actions within countries and across the region;

2. strengthening public health capacity and particularly infectious disease surveillance, so that populations -especially the most vulnerable- are not afflicted by other infectious disease outbreaks. Disruptions in vector surveillance and control, immunisation and other basic public health services could put vulnerable populations at risk for diseases such as dengue fever, and pathogens such as diphtheria, pertussis or others. Moving forward, investing in, and building up, higher performing public health systems should be a major priority for countries, not only to control COVID-19, but also pandemic influenza, antimicrobial resistance and other potential public health risks exposing the health of populations and economies at large;
3. reinforcing and optimising health system capacity, through mobilising staff (to diagnose and treat patients), supplies of required equipment (to diagnose people safely, and provide them with acute treatment when needed), and space (to diagnose people quickly and safely, to isolate suspected and confirmed cases, and to treat patients in hospital or in their home);
4. leveraging digital solutions and data to better detect, prevent, respond to, and recover from COVID-19, while managing the risks of diversion of resources to potentially ineffective digital tools, exacerbation of inequalities, and violation of privacy, both during and after the outbreak;
5. generating the best possible health and social intelligence by closely coordinating with other sectors, such as finance, education, transport, among others, to improve decision making around the crisis; while promoting transparency and accountability about how decisions are made; and
6. fostering international cooperation within the region and globally to boost and accelerate R&D, while assuring that coordinated efforts will guarantee an equitable access to new diagnostics, treatments and vaccines in the near future.

The COVID-19 pandemic is the biggest test that national health systems and global health institutions have had to face in generations. In the long run, this pandemic can offer an opportunity to prioritise health as a good investment for countries and reinforce health systems as a whole. Whilst more resources need to be allocated to health, the identification and reduction of wasteful spending would also help to better allocate additional resource to the health sector, while improving quality of care and outcomes for the population.

We hope that the data and analysis reported in this publication will help policy makers and other key stakeholders make further progress towards universal health coverage through more equitable, high quality and people-centred health systems across the LAC region.

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Executive summary

Health at a Glance: Latin America and the Caribbean 2020 presents key indicators, collected before the onset of COVID-19 crisis, on health and health systems in 33 Latin America and the Caribbean (LAC) countries, including on equity, health status, determinants of health, health care resources and utilisation, health expenditure and financing, and quality of care.

Overall population health status has improved, but progress remains unequal across and within countries

- Life expectancy in LAC increased by almost four years between 2000 and 2017. Given these trends, the share of the population above 65 and 80 years old is expected to reach over 18% and 5%, respectively, by 2050.
- Infant mortality fell by 35% and under age 5 mortality has declined by 46% between 2000 and 2017. However, countries such as Venezuela and Grenada experienced increases in both indicators.
- Maternal mortality has been reduced by 26% between 2000 and 2017, a lower reduction than the 40% in the OECD. In five countries, maternal mortality has increased in the same period (Saint Lucia, Dominican Republic, Haiti, Venenzuela and Jamaica).

Improvements in non-communicable diseases outcomes have been slower in LAC than in OECD countries, while communicable diseases and injuries persist as relevant health issues

- Cardiovascular diseases and cancers were responsible for over 82% of all deaths, while 10% was due to communicable diseases, maternal and perinatal illness, and 8% due to injuries. Interpersonal violence was the type of injury with the largest growth, having increased by 33% between 1990 and 2017.
- Deaths attributable to high blood glucose between 2010 and 2019 increased by 8% in LAC while it decreased by 14% in the OECD, although still with higher rates in the latter. The prevalence of both diabetes and mortality attributable to high blood glucose are higher than the LAC average in Antigua and Barbuda, Barbados, Belize, Brazil, Guyana, Jamaica, Saint Lucia, Saint Vincent and the Grenadines, Suriname and Trinidad and Tobago.
- Tuberculosis incidence has been reduced by 10% between 2000 and 2018; nevertheless, in 12 out of 33 countries it has either maintained or increased in the period. The largest increase was observed in Grenada and El Salvador (over 100%) followed by Suriname and Uruguay (over 50%).
- Between 2010 and 2018, HIV incidence has increased in five countries in the region: Chile, Brazil, Costa Rica, Bolivia and Uruguay, but they remain below the regional HIV prevalence average. The

region stands at 55% of antiretroviral coverage among people living with HIV, substantially below the goal of 90%.

Smoking, alcohol drinking and especially overweight are critical risk factors for poor health in LAC

- Overweight is one of the most relevant risk factors for health in LAC, representing a high burden in the present and for the future. Overweight is present in almost 8% of children under age 5, 28% of adolescents, and in over 53% of adult men and more than 61% of adult women.
- Regarding unhealthy behaviours, 35% of the adult population do not engage in enough physical activity; daily consumption of fruit and vegetables is under the recommended 400 grammes per person per day in all countries; and sugar consumption is much higher than the recommended 50-grammes per person per day, which is surpassed simply by considering the intake of sweetened beverages.
- Nearly one in four men and close to one out of ten women aged 15 and above smoke daily, both slightly lower than the OECD average. Among adolescents aged between 13 and 15 years old, tobacco use prevalence for men was 15% and almost 12% for women.
- Although average alcohol consumption in LAC is lower than in the OECD, it has increased by 3% between 2010 and 2016. Among people who drink, one in two men and one in five women declared to have had a heavy drinking episode in the last 30 days. Almost 35% and 22% of road traffic accidents among men and women, respectively, are attributable to alcohol.
- In 2017, on average one out of four people living in rural areas and one out of eight people living in urban areas lacked access to basic sanitation. However, rural and urban basic sanitation can be lower than 50% in some countries.

Quality of care is the missing link in the unrealised promise of universal health coverage in LAC

- Twelve out of the 33 LAC countries fall short of attaining the minimum immunisation levels recommended by the WHO to prevent the spread of diphteria, tetanus and pertussis (90%) and 21 out of 33 fail to meet this target for measles (95%).
- In terms of acute care in hospitals, according to data from six LAC countries, the case-fatality rate for acute myocardial infarction was 54% higher than in the OECD, while for ischemic stroke was 50% higher.
- Survival rates for cancer reflect quality of preventive and curative care. Among six LAC countries with data, women with early diagnosis for breast cancer had a 78% probability of surviving at least five years, while for colon cancer it was 52% and for rectum cancer it was 46%, all lower than the 85%, 62% and 61% survival respectively in OECD countries. Cervical cancer survival in LAC was 60%.

While health expenditure has grown in LAC, it remains well below that of OECD countries and it is more dependent on private spending

- Between 2010 and 2017, health expenditures per person have outpaced economic growth in LAC. On average, health spending grew 3.6% per year, while gross domestic product (GDP) grew 3% per year. However, spending on health was about USD 1 000 per person in LAC, one fourth of what was spent in OECD countries (adjusted for purchasing power). As a share of GDP, this accounted for 6.6% of in LAC in 2017 and 8.8% in OECD countries in 2018.

- Government and compulsory health insurance represented an average of 54.3% of current expenditure on health in LAC in 2017, lower than 73.6% in the OECD in 2018. The remaining are covered by voluntary private insurance and out-of-pocket expenditures by households.
- In the LAC region, 34% of all health spending is paid out-of-pocket, well above the OECD average of 21%, and progress in reducing it has been slow, only by 1.5 percentage points between 2010 and 2017.
- Nearly 8% of the population in 16 LAC countries spend more than 10% of their household consumption or income in health. Furthermore, 1.7% of the population of 15 LAC countries is pushed below the poverty line due to out-of-pocket health care expenditures compared to 1.2% in OECD countries.

Poor allocation of health spending is slowing down if not halting the path towards universal health coverage in LAC

- The average of caesarean section rates among 27 LAC countries is 32 per 100 live births, above the OECD average of 28, and twice as high as WHO's recommendation of no more than 15.
- Antibiotics are often used inappropriately in LAC countries, which does not add benefits to many patients and causes harm in the form of antimicrobial resistance. Brazil, Bolivia and Paraguay consume more antibiotics per capita than the OECD average.
- Health technology assessment is a tool that ensures that public financing is prioritised and made available for those drugs, devices and procedures that have demonstrated effect in improving health and other outcomes. However, only 5 out of 21 LAC countries report to use it systematically to make coverage decisions and none report to use it for reimbursement purposes.
- Health systems fragmentation in LAC is a key source of waste, given that most countries have subsystems with duplicate functions of governance, financing and services provision.
- Weak health information systems contribute to a lower understanding of public expenditure and the results that are being obtained. Across 22 LAC countries, an average of 10% of all deaths are never reported in public mortality databases.
- Forty two percent of the people across 12 LAC countries considers the health sector to be corrupt, higher than the 34% in 28 OECD countries. Moreover, bribery rates in public health centres reaches 11% across 18 LAC countries.

Bottlenecks of human and physical resources prevent an effective response to people's health care needs

- LAC has an average of two doctors per 1 000 population, and most countries stand below the OECD average of 3.5. The region has less than three nurses per 1 000 population, three times lower than the OECD average of almost nine.
- The average number of hospital beds in LAC is 2.1 per 1 000 population. In LAC, only Argentina, Barbados, and Cuba have more hospital beds than the OECD average of 4.7.
- The LAC region has a much lower availability of medical technologies than the OECD: more than three times less of computed tomography scanners; more than five times less of MRI units; almost half less of mammography units; and more than five times less of radiotherapy units.
- Resources for mental health care are scarce. The availability of psychiatrists is almost five times lower than in the OECD, while the availability of nurses and beds for mental health care are around three times lower.

Reader's guide

Structure of the publication

Health at a Glance: Latin America and the Caribbean 2020 is divided into seven chapters:

Chapter 1 ***Country dashboards*** takes Universal Health Coverage as a basis and shows a set of key indicators to compare performance across countries in each of the following dimensions: population health (health status and determinants of health); coverage and services; financial protection; and quality of care. Furthermore, a fifth dimension on health inequalities covers selected indicators of the other dimensions. For each dimension, a set of 3 to 6 indicators are presented in the form of country dashboards. The indicators are selected based on their policy relevance, but also on data availability and interpretability. In order to assess comparative performance across countries, each country is classified for every indicator based on how they compare against the median of the LAC countries with available data.

Chapter 2 on ***Wasteful spending in LAC health systems*** focuses on the importance of waste identification and reduction, particularly in the areas of clinical care, operational and governance waste. It explores different sources of waste and provides data and policy analysis around them, stating that there is enough potential for both savings and improved outcomes.

Chapter 3 on ***Health status*** highlights the variations across countries in life expectancy, infant and childhood mortality and major causes of mortality and morbidity, including both communicable and non-communicable diseases.

Chapter 4 on ***Determinants of health*** focuses on non-medical determinants of health. It features the health of mothers and babies, through family planning issues, low birthweight and breastfeeding. It also includes lifestyle and behavioural indicators such as smoking and alcohol drinking, unhealthy diets, underweight and overweight, and drugs use, as well as water and sanitation. It also includes an indicator on road safety.

Chapter 5 on ***Health care resources and activities*** reviews some of the inputs, outputs and outcomes of health care systems. This includes the supply of doctors and nurses and hospital beds, as well as the provision of primary and secondary health care services, such as doctor consultations and hospital discharges, as well as a range of services surrounding pregnancy, childbirth and infancy.

Chapter 6 on ***Health expenditure and financing*** examines trends in health spending across LAC countries. It looks at how health services and goods are paid for, and the different mix between public funding, private health insurance, direct out-of-pocket payments by households and external resources. It also looks at financial protection measures such as impoverishment due to health care out-of-pocket payments.

Chapter 7 on ***Quality of care*** builds on the indicators used in the OECD's Health Care Quality Indicator programme to examine trends in health care quality improvement across LAC countries.

Latin America and the Caribbean countries

For this first edition of *Health at a Glance: Latin America and the Caribbean 2020*, 33 regional countries were included as seen in Table 1. Countries were selected based on their geographical location to either Latin America or the Caribbean, and if they are sovereign states.

Table 1. **Latin American and Caribbean countries included and their ISO codes**

Country	ISO Code	Country	ISO Code
Antigua and Barbuda	ATG	Guyana	GUY
Argentina	ARG	Haiti	HTI
Bahamas	BHS	Honduras	HND
Barbados	BRB	Jamaica	JAM
Belize	BLZ	Mexico	MEX
Bolivia	BOL	Nicaragua	NIC
Brazil	BRA	Panama	PAN
Chile	CHL	Paraguay	PRY
Colombia	COL	Peru	PER
Costa Rica	CRI	Saint Kitts and Nevis	KNA
Cuba	CUB	Saint Lucia	LCA
Dominica	DMA	Saint Vincent and the Grenadines	VCT
Dominican Republic	DOM	Suriname	SUR
Ecuador	ECU	Trinidad and Tobago	TTO
El Salvador	SLV	Uruguay	URY
Grenada	GRD	Venezuela	VEN
Guatemala	GTM		

Selection and presentation of indicators

The indicators have been selected on the basis of being relevant to monitoring health systems performance, taking into account the availability and comparability of existing data in the LAC region. The publication takes advantage of the routine administrative and programme data collected by the World Health Organization, the World Bank Group and the OECD, as well as special country population surveys collecting demographic and health information.

The indicators are presented in the form of easy-to-read figures and explanatory text. Each of the topics covered in this publication is presented over two pages. The first page defines the indicator, provides brief commentary highlighting the key findings conveyed by the data, and provides a few key references. On the facing page is a set of figures. These typically show current levels of the indicator and, where possible, trends over time. In some cases, an additional figure relating the indicator to another variable is included. Where an OECD average is included in a figure, it is the unweighted average of the OECD countries presented, unless otherwise specified.

Limitations in data comparability are indicated both in the text (in the box related to "Definition and comparability") as well as in footnotes to figures.

Health and health system's situation can evolve rapidly, arguably even more so in low and middle-income countries than in high-income ones. Therefore, it is important to note that some indicators might not reflect the latest situation for some countries. The authors have collected the latest available data so the landscape depicted in each chapter and section of the publication shows the most updated scenario as possible.

Indicators from LAC countries that are OECD member or partner countries

Three LAC countries are OECD member states: Chile, Colombia and Mexico. The OECD average includes Chile and Mexico. Colombia was not an OECD Member at the time of preparation of this publication. Accordingly, Colombia does not appear in the list of OECD Members and is not included in the zone aggregates.

On 15 May 2020, the OECD Council invited Costa Rica to become a Member. However, Costa Rica is not included in the OECD zone aggregates in this publication because, at the time of its preparation, the deposit of Costa Rica's instrument of accession to the OECD Convention was pending.

Argentina, Brazil and Peru are partner countries to the OECD.

For these seven LAC countries, some figures in this publication considered the data that has been reported directly to the OECD, instead of using international sources. This is to maintain consistency among what it is informed in other OECD publications (e.g. *Health at a Glance 2019*) and what is available in the online database OECD Health Statistics on OECD.Stat at *https://oe.cd/ds/health-statistics*. These differences are noted in the footnotes of correspondent figures throughout the chapters.

Note on COVID-19 pandemic

All the data presented in this report was collected prior to the COVID-19 pandemic that began early 2020. The only exception corresponds to the data about intensive care unit beds in LAC and in OECD countries that was included in the Editorial.

Health at a Glance: Latin America and the Caribbean 2020
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Chapter 1

Universal health coverage and country dashboards

This chapter uses Universal Health Coverage as the basis to analyse a core set of indicators on health, health systems and inequalities in the Latin American and Caribbean (LAC) region. Country dashboards shed light on how LAC countries compare amongst themselves and with the OECD, across five dimensions: population health, coverage and services, financial protection, quality of care, and health inequalities. This overview provides a first glimpse on the overall situation of LAC countries and establishes linkages and dependencies between the indicators that the full report contains.

Introduction

The aim of this chapter is to present a set of key indicators related to population health and Universal Health Coverage (UHC) that informs the organisation of the report and establish linkages and dependencies between the indicators it contains. Table 1.1 shows a summary of these selected indicators.

Table 1.1. **Population health and universal health coverage: summary indicators**

Dimension	Indicator
Population health (Chapters 3 and 4)	*Health status* Life expectancy at birth for females and males (2017) Survival to age 65 for females and males (2017) Under age 5 mortality rate (2017)
	Determinants of health Smoking among persons aged 15 and above (2016) Alcohol consumption in litres per capita among persons aged 15 and above (2016), Prevalence of overweight among adults (2016) Access to basic drinking water (2017) Access to basic sanitation (2017)
Coverage and services (Chapter 5)	Number of hospital beds per 1 000 population (latest year available) Doctors per 1 000 population (latest year available) Nurses per 1 000 population (latest year available) Psychiatrists per 100 000 population (latest year available) Mothers receiving at least four antenatal visits during pregnancy (latest year available)
Financial protection (Chapter 6)	Total health spending per capita (2016) Proportion of total health spending attributed to out of pocket payments (2016) Proportion of population that are overspending in health (latest year available) Proportion of population being pushed into the poverty line by health expenditures (latest year available)
Quality of care (Chapter 7)	Diphtheria, tetanus toxoid and pertussis vaccination coverage (2017) Measles vaccination coverage (2017) Breast cancer five-year net survival indicators (2010-14) Cervical cancer five-year net survival indicators (2010-14) Colon cancer five-year net survival indicators (2010-14)
Health inequality (throughout the publication)	Difference between poorest and wealthiest quintile of the population (latest year available) for: Mortality rate, under-5 (per 1 000) (lowest) Contraceptive prevalence, modern methods (% of females ages 15-49) Births attended by skilled health staff (% of total) Pregnant women receiving prenatal care of at least four visits (% of pregnant women) Diarrhoea treatment (% of children under 5 who received ORS) Immunisation, full (% of children ages 15-23 months)

For each dimension, a set of indicators is presented in the form of country dashboards. The indicators are selected based on their policy relevance, but also on data availability and interpretability. Indicators where coverage is highest are therefore prioritised.

Universal Health Coverage

Universal health coverage (UHC) is achieved when all people, communities and social groups have access to health services they need, that these services have a high degree of quality, and that

Methodology, interpretation and use

Country dashboards

In order to allow for cross-country comparisons of performance, the central tendency measures presented for all indicators are medians. The classification of countries being close to, better or worse than the LAC countries average is based on an indicator's standard deviation (a common statistical measure of dispersion). This method is preferred to using a fixed percentage or fixed number of countries per category, since it reflects the degree of variation, i.e. how far a country is from the LAC countries average. Countries are classified as "close to the LAC average" (blue) whenever the value for an indicator is within half of a standard deviation from the LAC average for the latest year. For a typical indicator, and assuming a standard normal distribution of the data, about 38.2% of the countries (12-13 countries) will be close to the OECD average, with the remaining 61.8% performing significantly better (green) or worse (red).

This classification applies to all indicators, with a caveat for the dashboard on coverage and services: given the nature of the indicators presented, high levels cannot be classified as being clearly better or worse performance, the symbols simply imply that the values are significantly higher or lower than the median. When the number of countries that are close to the LAC average is higher (or lower), it means that cross-country variation is relatively low (or high) for that indicator.

users are not vulnerable to financial hardship through the use of health services (WHO and World Bank, 2017[1]).

Despite recent progress, in 2019, at least half of the world's population still did not have full coverage of essential health services. Lack of financial protection pushes about 100 million people into poverty worldwide as a result of health care related payments, and nearly a billion spend more than 10% of the household's budgets in health-related expenses. UN member states have agreed to achieve UHC by 2030, as part of the Sustainable Development Goals (SDGs) (WHO and World Bank, 2017[1]).

The definition of UHC includes three related dimensions:

- Access to health services – all people in need of health services should be able to receive care, independent of socio-economic characteristics, location, wealth or any other vulnerability.
- Financial protection – all people should be safe from financial risk when incurring health care expenses, therefore service affordability and mechanisms that facilitate access to care should be prioritised.
- The quality of health services should be at a standard where it is effective in providing care and improving outcomes, while it is also cost effective and sustainable. Access without quality can be considered an empty universal health coverage promise (OECD/WHO/World Bank Group, 2018[2]).

This chapter also considers an important factor that must be included in every discussion on UHC: inequalities. There are gaps in population health in all three of these UHC dimensions across different socio-economic groups.

The 200+ indicators included in this publication offer the reader a comprehensive sense of LAC health systems, and how countries compare.

Population health

UHC has as its ultimate goal the improvement of health status and the reduction of risk factors across all population groups. Ensuring access to services, quality and financial protection are key contributors to better population health, but several other societal factors determine final health status. The following two dashboards offer an overview of health status and risk factors for health using a partial list of the indicators discussed in Chapter 3 (Health Status) and Chapter 4 (Determinants of Health).

Health Status

The five indicators presented in this dashboard offer a general view of health status based on mortality indicators. This includes life expectancy at birth for females and males (2017), survival to age 65 for females and males (2017) and under age 5 mortality rate (2017). They provide an overview of where countries stand in terms of lowering mortality (see Table 1.2).

Table 1.2. **Dashboard on health status**

Country	Life expectancy at birth (F)	Life expectancy at birth (M)	Survival to age 65 (F)	Survival to age 65 (M)	Under age 5 mortality rate
	In years	In years	%	%	Per 1 000 live births
LAC31	**77.4**	**71.6**	**83.2**	**73.8**	**18.6**
OECD36	**83.4**	**78.1**	**90.9**	**84.1**	**4.5**
Antigua and Barbuda	78.9 ◉	74.0 ☑	85.1 ◉	78.6 ☑	7.0 ☑
Argentina	80.4 ☑	73.0 ◉	87.8 ☑	76.8 ◉	10.4 ☑
Bahamas	78.8 ◉	72.7 ◉	83.7 ◉	73.7 ◉	7.2 ☑
Barbados	78.4 ◉	73.6 ☑	88.0 ☑	79.9 ☑	12.4 ◉
Belize	73.6 ☒	67.9 ☒	80.3 ☒	67.6 ☒	14.2 ◉
Bolivia	72.1 ☒	67.0 ☒	74.3 ☒	66.6 ☒	34.9 ☒
Brazil	79.3 ☑	72.1 ◉	85.2 ◉	73.4 ◉	14.8 ◉
Chile	83.1 ☑	77.4 ☑	89.0 ☑	83.5 ☑	7.4 ☑
Colombia	78.2 ◉	71.0 ◉	85.0 ◉	73.3 ◉	14.7 ◉
Costa Rica	82.9 ☑	77.8 ☑	90.1 ☑	83.6 ☑	9.0 ☑
Cuba	81.9 ☑	78.0 ☑	88.7 ☑	83.8 ☑	5.4 ☑
Dominican Republic	77.3 ◉	71.0 ◉	81.5 ◉	71.1 ◉	29.9 ☒
Ecuador	79.3 ☑	73.9 ☑	85.9 ☑	77.4 ☑	14.5 ◉
El Salvador	78.1 ◉	69.1 ☒	84.3 ◉	67.1 ☒	14.5 ◉
Grenada	76.3 ◉	71.4 ◉	84.2 ◉	72.6 ◉	16.7 ◉
Guatemala	76.8 ◉	70.4 ◉	82.1 ◉	71.1 ◉	27.6 ☒
Guyana	69.2 ☒	64.5 ☒	72.1 ☒	62.3 ☒	31.3 ☒
Haiti	65.8 ☒	61.4 ☒	67.1 ☒	59.0 ☒	71.7 ☒
Honduras	76.3 ◉	71.2 ◉	81.2 ◉	73.7 ◉	18.2 ◉
Jamaica	78.5 ◉	73.7 ☑	85.0 ◉	77.4 ☑	15.2 ◉
Mexico	77.9 ◉	72.9 ◉	86.4 ☑	78.8 ☑	13.4 ◉
Nicaragua	78.6 ◉	72.6 ◉	83.6 ◉	73.9 ◉	17.2 ◉
Panama	81.3 ☑	75.3 ☑	87.3 ☑	78.6 ☑	16.1 ◉
Paraguay	75.5 ☒	71.1 ◉	80.2 ☒	73.8 ◉	21.0 ◉
Peru	77.9 ◉	72.6 ◉	84.6 ◉	76.3 ◉	15.0 ◉
Saint Lucia	78.4 ◉	73.0 ◉	83.7 ◉	75.1 ◉	16.6 ◉
Saint Vincent and the Grenadines	75.6 ◉	71.2 ◉	80.8 ◉	74.1 ◉	16.0 ◉
Suriname	74.9 ☒	68.4 ☒	80.7 ☒	67.6 ☒	20.0 ◉
Trinidad and Tobago	74.4 ☒	67.4 ☒	79.8 ☒	66.9 ☒	26.0 ☒
Uruguay	81.0 ☑	74.0 ☑	87.4 ☑	79.0 ☑	8.0 ☑
Venezuela	78.9 ◉	70.8 ◉	84.9 ◉	72.6 ◉	31.0 ☒

Determinants of Health

Health status depends not only on the provision of health care, but also on the behaviour of people and the environment in which they live. The five indicators presented in this dashboard offer an overview of the prevalence of risk factors or behaviours (smoking among persons aged 15 and above – 2016, alcohol consumption in litres per capita among persons aged 15 and above – 2016, and

prevalence of overweight among adults – 2016) and of environmental factors that affect health (access to basic drinking water – 2017 and access to basic sanitation – 2017) (see Table 1.3).

Table 1.3. **Dashboard on determinants of health**

☑ Better than ◉ Close to ☒ Worse than LAC countries average

Country	Sanitation	Access to drinking water	Smoking	Alcohol consumption	Overweight adults	
	% of the population	% of the population	% of daily smokers	Litres per capita	% of male population	% of female population
LAC33	**86**	**95**	16	6	**36**	**32**
OECD36	**99**	**100**	18	9	**41**	**29**
Antigua and Barbuda	88 ◉	97 ◉	..	7 ◉	29 ☑	30 ☑
Argentina	96 ☑	100 ☑	22 ☒	10 ☒	39 ☒	30 ☑
Bahamas	95 ☑	99 ☑	12 ◉	4 ☑	36 ◉	30 ☑
Barbados	97 ☑	98 ◉	8 ☑	10 ☒	30 ☑	29 ☑
Belize	88 ◉	98 ◉	..	7 ◉	32 ☑	30 ☑
Bolivia	61 ☒	93 ◉	..	5 ☑	38 ◉	34 ☒
Brazil	88 ◉	98 ◉	10 ◉	7 ◉	39 ☒	30 ☑
Chile	100 ☑	100 ☑	25 ☒	8 ☒	49 ☒	44 ☒
Colombia	90 ◉	97 ◉	13 ◉	5 ☑	39 ☒	35 ☒
Costa Rica	98 ☑	100 ☑	5 ☑	4 ☑	39 ☒	33 ◉
Cuba	93 ☑	95 ◉	35 ☒	6 ◉	36 ◉	32 ◉
Dominica	..	..	..	..	35 ◉	30 ☑
Dominican Republic	84 ◉	97 ◉	14 ◉	7 ◉	36 ◉	31 ◉
Ecuador	88 ◉	94 ◉	7 ☑	4 ☑	38 ◉	35 ☒
El Salvador	87 ◉	97 ◉	11 ◉	4 ☑	38 ☒	33 ◉
Grenada	91 ◉	96 ◉	..	9 ☒	30 ☑	30 ☑
Guatemala	65 ☒	94 ◉	..	3 ☑	36 ◉	34 ◉
Guyana	86 ◉	96 ◉	..	6 ◉	29 ☑	30 ☑
Haiti	35 ☒	65 ☒	13 ◉	6 ◉	33 ◉	31 ◉
Honduras	81 ◉	95 ◉	..	4 ☑	36 ◉	33 ◉
Jamaica	87 ◉	95 ◉	17 ◉	4 ☑	32 ☑	30 ☑
Mexico	91 ◉	99 ☑	8 ☑	4 ☑	45 ☒	43 ☒
Nicaragua	74 ☒	82 ☒	..	5 ☑	37 ◉	32 ◉
Panama	83 ◉	96 ◉	6 ☑	8 ☒	38 ☒	34 ◉
Paraguay	90 ◉	100 ☑	13 ◉	7 ◉	37 ◉	30 ☑
Peru	74 ☒	91 ☒	..	6 ◉	40 ☒	36 ☒
Saint Kitts and Nevis	88 ◉	98 ◉	..	9 ☒	30 ☑	29 ☑
Saint Lucia	87 ◉	95 ◉	..	10 ☒	27 ☑	29 ☑
Saint Vincent and the Grenadines	..	..	..	..	32 ☑	30 ☑
Suriname	84 ◉	95 ◉	25 ☒	5 ☑	35 ◉	31 ◉
Trinidad and Tobago	93 ☑	98 ◉	..	8 ☒	26 ☑	29 ☑
Uruguay	97 ☑	99 ☑	17 ◉	11 ☒	40 ☒	30 ☑
Venezuela	94 ☑	96 ◉	..	6 ◉	41 ☒	35 ☒

Coverage and services

Access to health care depends firstly on whether there are enough resources available to provide the necessary care. The dashboard illustrating progress in the coverage and services dimension uses one indicator of medical infrastructure availability (number of hospital beds per 1 000 population – latest year available), three indicators of human resources availability (doctors per 1 000 population –

latest year available, nurses per 1 000 population – latest year available and psychiatrists per 100 000 population – latest year available) and one indicator of coverage for maternal and child health services (mothers receiving at least four antenatal visits during pregnancy – latest year available) (see Table 1.4).

Table 1.4. **Dashboard on coverage and services**

☑ Better than ◉ Close to ☒ Worse than LAC countries average

Country	Hospital beds	Doctors	Nurses	Psychiatrists	Antenatal care
	Per 1 000 population	Per 1 000 population	Per 1 000 population	Per 100 000 population	% of women attending at least four antenatal visits during pregnancy
LAC33	**2.1**	**2.0**	**2.8**	**3.4**	**87**
OECD36	**4.7**	**3.5**	**8.8**	**16.8**	..
Antigua and Barbuda	3.8 ☑	3.0 ☑	4.5 ☑	1.0 ☒	83 ◉
Argentina	5.0 ☑	4.0 ☑	2.6 ☒	21.7 ☑	90 ◉
Bahamas	2.9 ☑	2.0 ◉	4.6 ☑	1.4 ☒	83 ◉
Barbados	5.8 ☑	2.5 ◉	3.1 ☑	..	98 ☑
Belize	1.3 ☒	1.1 ☒	2.3 ☒	..	93 ☑
Bolivia	1.1 ☒	1.6 ◉	1.6 ☒	1.1 ☒	85 ◉
Brazil	2.3 ◉	1.8 ◉	1.5 ☒	3.2 ◉	91 ◉
Chile	2.1 ◉	2.5 ◉	2.7 ◉	7.0 ☑	..
Colombia	1.7 ◉	2.2 ◉	1.3 ☒	1.8 ☒	90 ◉
Costa Rica	1.1 ☒	3.1 ☑	3.4 ☑	3.9 ☑	98 ☑
Cuba	5.2 ☒	8.4 ☑	7.6 ☑	9.1 ☑	98 ☑
Dominica	..	1.1 ☒	6.4 ☑	..	85 ◉
Dominican Republic	1.6 ◉	1.5 ◉	1.4 ☒	2.3 ☒	95 ☑
Ecuador	1.5 ◉	2.0 ◉	2.5 ☒	0.5 ☒	80 ☒
El Salvador	1.3 ☒	1.6 ◉	1.8 ☒	0.9 ☒	82 ☒
Grenada	3.7 ☑	1.4 ◉	6.3 ☑	1.9 ☒	67 ☒
Guatemala	0.6 ☒	0.4 ☒	0.1 ☒	0.5 ☒	86 ◉
Guyana	1.6 ◉	0.8 ☒	1.0 ☒	0.9 ☒	87 ◉
Haiti	0.7 ☒	0.2 ☒	0.7 ☒	0.1 ☒	67 ☒
Honduras	0.7 ☒	0.3 ☒	0.7 ☒	0.7 ☒	89 ◉
Jamaica	1.7 ◉	1.3 ◉	0.8 ☒	1.1 ☒	86 ◉
Mexico	1.4 ☒	2.4 ◉	2.9 ◉	0.2 ☒	94 ☑
Nicaragua	0.9 ☒	1.0 ☒	1.5 ☒	0.7 ☒	88 ◉
Panama	2.3 ◉	1.6 ◉	3.1 ☑	4.0 ☑	99 ☑
Paraguay	1.3 ☒	1.4 ◉	1.7 ☒	..	78 ☒
Peru	1.6 ◉	1.3 ◉	2.4 ☒	2.9 ☒	94 ☑
Saint Kitts and Nevis	..	2.7 ◉	4.2 ☑	5.5 ☑	..
Saint Lucia	1.3 ☒	0.6 ☒	3.2 ☑	0.6 ☒	90 ◉
Saint Vincent and the Grenadines	..	0.7 ☒	7.0 ☑	..	73 ☒
Suriname	3.1 ☑	1.2 ☒	2.8 ◉	1.3 ☒	67 ☒
Trinidad and Tobago	3.0 ☑	4.2 ☑	4.1 ☑	..	100 ☑
Uruguay	2.8 ◉	5.1 ☑	1.9 ☒	14.1 ☑	97 ☑
Venezuela	0.8 ☒	1.9 ◉	0.9 ☒	..	84 ◉

Financial protection

Access to health also depends on whether people can afford care. The indicators included here provide an overview of the expenditure level of the countries of the region (shown as overall health spending per capita – 2016 and the proportion of total health spending which is out of pocket payments – 2016) and the prevalence of financial vulnerability that exists in countries (shown as the proportion of population that are overspending in health – latest year available and the proportion of population being pushed by health expenditures into the poverty line, defined as the higher of the USD 1.90 (USD PPP 2011) poverty line and a 50% of the median consumption poverty line – latest year available) (see Table 1.5).

Table 1.5. **Dashboard on financial protection**

☑ Better than ◉ Close to ☒ Worse than LAC countries average

Country	Health spending per capita	Out-of-pocket expenditure on health	Population spending more than 10% budget on OOP health care expenditure	Population pushed by OOP health care expenditure below the societal poverty line
	USD PPP, per capita	Share of health spending	%	%
LAC33	**1026**	**34**	**7.8**	**1.7**
OECD36	**3994**	**21**	**6.0**	**1.2**
Antigua and Barbuda	1071 ◉	35 ◉	..	..
Argentina	1907 ☑	15 ☑	..	..
Bahamas	1746 ☑	31 ◉	2.7 ☑	0.1 ☑
Barbados	1317 ◉	46 ☒	16.4 ☒	1.4 ◉
Belize	473 ☒	24 ☑	..	..
Bolivia	480 ☒	25 ☑	6.0 ◉	1.7 ◉
Brazil	1280 ◉	27 ☑	..	..
Chile	2182 ☑	34 ◉	14.6 ☒	2.6 ☒
Colombia	960 ◉	16 ☑	8.2 ◉	1.8 ◉
Costa Rica	1285 ◉	22 ☑	9.8 ◉	1.2 ◉
Cuba	2484 ☑	10 ☑	..	..
Dominica	636 ☒	31 ◉	..	..
Dominican Republic	978 ◉	45 ☒	..	..
Ecuador	954 ◉	39 ◉	10.3 ☒	2.4 ☒
El Salvador	582 ☒	29 ◉	1.7 ☑	0.4 ☑
Grenada	714 ◉	52 ☒	..	..
Guatemala	470 ☒	54 ☒	1.4 ☑	0.4 ☑
Guyana	385 ☒	32 ◉	..	..
Haiti	83 ☒	40 ◉	11.5 ☒	3.3 ☒
Honduras	373 ☒	49 ☒	..	..
Jamaica	532 ☒	17 ☑	..	..
Mexico	1138 ◉	41 ☒	1.6 ☑	0.8 ☑
Nicaragua	468 ☒	33 ◉	14.8 ☒	5.2 ☒
Panama	1786 ☑	33 ◉	..	..
Paraguay	864 ◉	44 ☒	7.1 ◉	1.4 ◉
Peru	680 ☒	28 ◉	9.2 ◉	1.4 ◉
Saint Kitts and Nevis	1442 ☑	48 ☒	..	..
Saint Lucia	661 ☒	45 ☒	..	..
Saint Vincent and the Grenadines	522 ☒	31 ◉	..	..
Suriname	944 ◉	26 ☑	4.9 ☒	..
Trinidad and Tobago	2206 ☑	40 ◉	3.9 ☑	1.0 ☑
Uruguay	2102 ☑	18 ☑	..	..
Venezuela	141 ☒	63 ☒	..	..

Quality of care

Health care which is of low quality can harm patients and waste resources. The quality of care dashboard includes two vaccination coverage indicators (diphtheria tetanus toxoid and pertussis – 2017 and measles – 2017) and three five-year cancer net survival indicators (breast – 2010-14, cervical – 2010-14 and colon – 2010-14). Gaps in data availability for these and other quality indicators remain substantial in the region (see Table 1.6).

Table 1.6. **Dashboard on quality of care**

☑ Better than ◉ Close to ☒ Worse than LAC countries average

Country	DTP3 immunisation coverage	MCV1 immunisation coverage	Breast cancer	Cervical cancer	Colon cancer
	% of population aged around 1	% of population aged around 1	Five-year survival rate	Five-year survival rate	Five-year survival rate
LAC33	**90**	**90**	**78**	**60**	**52**
OECD36	**95**	**95**	**84**	**66**	**62**
Antigua and Barbuda	95 ☑	96 ☑	..	..	..
Argentina	86 ◉	94 ◉	84 ☑	53 ☒	54 ◉
Bahamas	90 ◉	89 ◉	..	..	..
Barbados	95 ☑	85 ☒	..	..	..
Belize	96 ☑	97 ☑	..	..	..
Bolivia	83 ☒	89 ◉	..	..	..
Brazil	83 ☒	84 ☒	75 ☒	60 ◉	48 ◉
Chile	95 ☑	93 ◉	76 ☒	57 ◉	44 ☒
Colombia	92 ◉	93 ◉	72 ☒	49 ☒	35 ☒
Costa Rica	94 ◉	94 ◉	87 ☑	78 ☑	60 ☑
Cuba	99 ☑	99 ☑	75 ☒	73 ☑	64 ☑
Dominica	94 ◉	84 ☒	..	..	..
Dominican Republic	94 ◉	95 ☑	..	..	..
Ecuador	85 ☒	83 ☒	76 ☒	52 ☒	48 ◉
El Salvador	81 ☒	81 ☒	..	..	..
Grenada	96 ☑	84 ☒	..	..	..
Guatemala	86 ◉	87 ◉	..	..	..
Guyana	95 ☑	98 ☑	..	..	..
Haiti	64 ☒	69 ☒	..	..	..
Honduras	90 ◉	89 ◉	..	..	..
Jamaica	97 ☑	89 ◉	..	..	..
Mexico	88 ◉	97 ☑	..	..	..
Nicaragua	98 ☑	99 ☑	..	..	..
Panama	88 ◉	98 ☑	..	..	..
Paraguay	88 ◉	93 ◉	..	..	..
Peru	84 ☒	85 ☒	82 ☑	57 ◉	59 ☑
Saint Kitts and Nevis	97 ☑	96 ☑	..	..	..
Saint Lucia	95 ☑	86 ☒	..	..	..
Saint Vincent and the Grenadines	97 ☑	99 ☑	..	..	..
Suriname	95 ☑	98 ☑	..	..	..
Trinidad and Tobago	99 ☑	90 ◉	..	..	..
Uruguay	91 ◉	97 ☑	..	57 ◉	54 ◉
Venezuela	60 ☒	74 ☒	..	..	..

Health inequality

Finally, this dashboard illustrates another important consideration necessary to measure a country's progress towards UHC: the level of inequality experienced by population groups in their health status and health determinants, as well as their access to, affordability of, and coverage of health services. This dashboard displays the average difference between the poorest and the wealthiest income quintile for each indicator in each LAC country and compares them with the regional average. If the difference is larger than the average, a red icon is displayed, while a green one is shown when the difference is smaller than the average. The available international comparable data for this dashboard was taken from the Health Equity and Financial Protection Indicators database (World Bank, 2019[3]).

Table 1.7. **Dashboard on health inequalities**

☑ Better than ◉ Close to ☒ Worse than LAC countries average

Country	Under-5 mortality rate	Contraceptive prevalence, modern methods (% of females aged 15-49)	Births attended by skilled health staff (% of total)	Pregnant women receiving prenatal care of at least four visits (% of pregnant women)	Diarrhoea treatment (% of children under-5 who received ORS*)	Immunisation, full (% of children aged 15-23 mont hs
	Difference between lowest and highest income quintiles, expressed in deaths per 1 000 live births	Difference between lowest and highest income quintiles, expressed in %	Difference between lowest and highest income quintiles, expressed in %	Difference between lowest and highest income quintiles, expressed in %	Difference between lowest and highest income quintiles, expressed in %	Difference between lowest and highest income quintiles, expressed in %
LAC (available countries)	**21.3**	**9.4**	**15.6**	**12.2**	**8.7**	**11.0**
Barbados	..	9.9 (2012) ◉	..	..	..	..
Belize	17.7 (2016) ◉	15.8 (2015) ☒	6.8 (2012) ◉	2.7 (2015) ☑	..	13.1 (2015) ◉
Colombia	20.3 (2016) ◉	3.5 (2015) ☑	10.8 (2015) ◉	167.0 (2015) ☒	..	.. ◉
Dominican Republic	7.9 (2015) ☑	0.1 (2014) ☑	1.5 (2014) ☑	4.3 (2014) ☑	13.4 (2014) ☒	11.3 (2014) ◉
El Salvador	17.5 (2015) ◉	4.7 (2014) ☑	5.5 (2014) ◉	12.5 (2014) ◉	3.1 (2014) ☑	11.7 (2014) ◉
Guatemala	36.0 (2015) ☒	29.7 (2014) ☒	56.8 (2014) ☒	14.2 (2014) ◉	5.9 (2014) ◉	16.0 (2014) ◉
Guyana	8.7 (2015) ☑	4.3 (2014) ☑	20.2 (2014) ◉	8.3 (2014) ◉	..	6.1 (2014) ◉
Haiti	41.6 (2013) ☒	..	68.9 (2014) ☒	35.8 (2016) ☒	12.1 (2016) ☒	39.9 (2016) ☒
Honduras	18.7 (2012) ◉	12.2 (2011) ◉	7.1 (2016) ◉	16.3 (2011) ◉	9.9 (2011) ◉	2.0 (2011) ◉
Jamaica	..	..	3.5 (2010) ◉	13.3 (2011) ◉	..	20.0 (2011) ☒
Mexico	..	10.2 (2015) ◉	5.7 (2010) ◉	9.9 (2015) ◉	0.9 (2015) ☑	0.3 (2012) ☑
Panama	..	16.1 (2013) ☒	27.9 (2015) ☒	22.6 (2013) ☒	4.5 (2013) ☑	3.4 (2013) ◉
Paraguay	25.0 (2016) ◉	8.4 (2016) ◉	12.1 (2013) ◉	13.0 (2016) ◉	9.2 (2016) ◉	3.7 (2016) ◉
Peru	19.3 (2016) ◉	12.2 (2016) ◉	14.2 (2016) ◉	8.4 (2016) ◉	19.4 (2016) ☒	3.9 (2016) ◉
Saint Lucia	..	5.2 (2012) ☑	..	..	..	..
Suriname	..	23.2 (2010) ☒	11.8 (2016) ◉	9.6 (2010) ◉	..	..
Trinidad and Tobago	..	2.7 (2011) ☑	1.6 (2010) ◉	2.4 (2011) ☑	..	..
Uruguay	..	..	1.1 (2011) ☑	4.3 (2012) ☑	..	..

* ORS: oral rehydration solution.

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Chapter 2

Identifying and tackling wasteful spending in Latin American and Caribbean health systems

Mobilising additional resources for health financing in Latin America and the Caribbean (LAC) is necessary to achieve high-quality universal health coverage. However, LAC countries must balance investments in their health systems with other needs in a context of limited public funding and competing priorities. This chapter focuses on the importance of reducing wasteful expenditures particularly in the areas of clinical care, operational and governance waste, as a way to accelerate the path towards universal health coverage. Addressing waste in health systems entails reviewing structures, regulations, services and processes that are either harmful or do not deliver expected benefits, as well as costs that could be avoided by substituting cheaper alternatives with comparable or superior benefits. Policy-makers and managers in LAC should consider such waste-reduction initiatives as tools at their disposal to build higher quality and more sustainable health systems. In the LAC region, spending better on health is as important as spending more. Without cutting budgets and even in a scenario of increasing government health expenditure, being more efficient and achieving better results for more people can be a self-reinforcing strategy, if properly designed so as to be synergic.

Introduction

Understanding wasteful health spending: experience in Latin America and the Caribbean

While health expenditure has grown in LAC, it is remains well below that of OECD countries and it is more dependent on private spending. The path to high-quality universal health coverage requires expansion of government health expenditures in most countries. However, spending better on health is as important as spending more. Increasing efficiency and reducing waste in health systems should be high on the agenda for all countries, regardless of differences in economic and epidemiological outlooks. The bottom line is that health systems should offer the best possible value to people, which includes not only the best possible care to address patients' needs and preferences, but also the least possible cost. In LAC, this coincides with a moment where there is a growing middle-class, which has raised the expectations of people in terms of both coverage and quality of health services (OECD et al., 2019[1]), putting more pressure on health budgets.

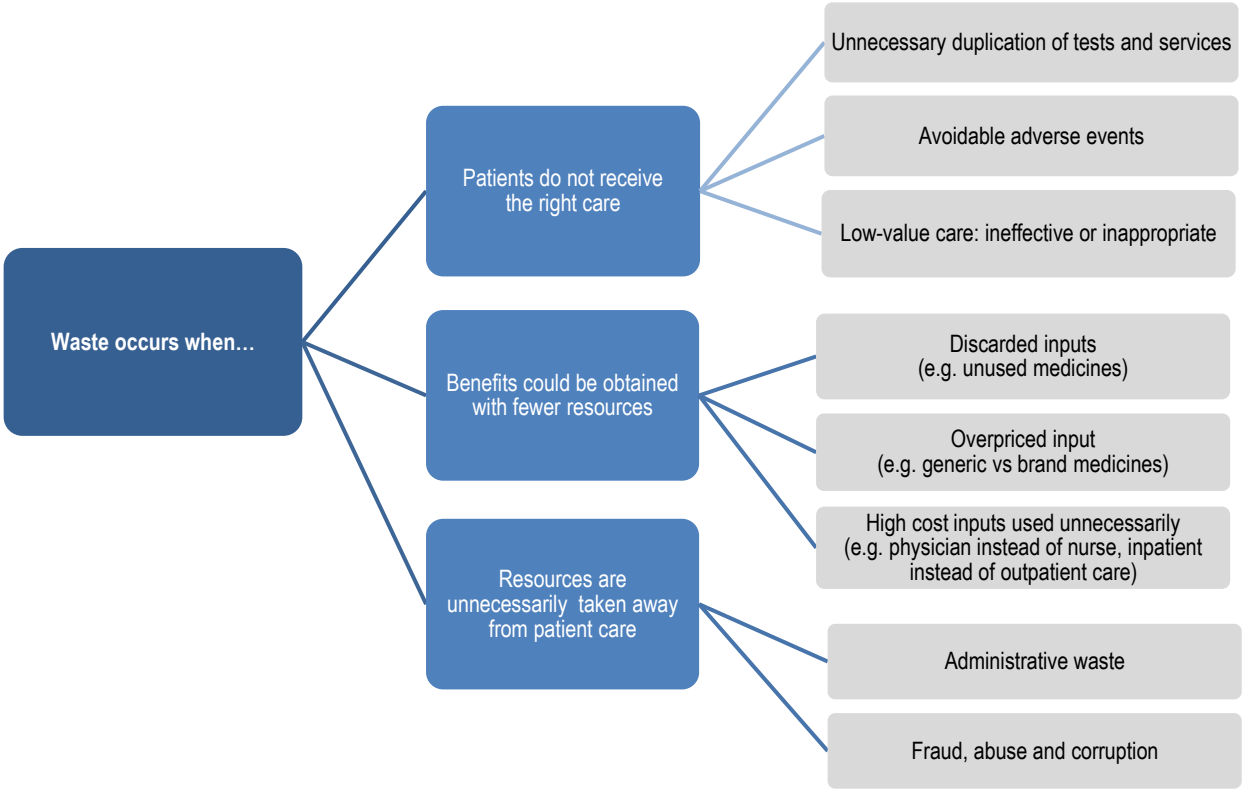
Wasteful health spending can be understood as the resources destined to: i) services and processes that are either harmful or do not deliver benefits; and ii) costs that could be avoided by substituting cheaper alternatives with identical or better benefits (OECD, 2017[2]). In no case, this should be misunderstood as reducing or making cuts on health expenditure. In fact, wasteful spending can and should be tackled in both expansive and austere health budgeting times, as a way to mobilise the necessary amount of resources to obtain the best health outcomes.

Limiting waste means that health systems are able to mobilise sufficient resources and spend them with the highest possible value to improve the population's health, in a context of growing expectation for better services, increasingly stringent fiscal limitations, and continuous cost pressures from technological development and an ageing population. In the short run, reducing waste frees up existing resources in the system and increases societal willingness to mobilise additional resources for health. In the long run, it ensures sustainability and resilience against current or future lack of public funding or emerging issues and shocks to the health system.

It is estimated that around 20-30% of all health sector resources are wasted even in highly developed countries with advanced medical care and significant legislative/media/academia oversight of care, costs, and outcomes (OECD, 2017[2]). Hence, there is a strong likelihood that such problems occur in less developed countries/systems, even if data constraints limit the ability to precisely document their status. Indeed, data limitations have hindered such analyses in LAC, but available evidence suggests that a very significant proportion of resources is wasted. For instance, in 2009, 19% of all hospitalisations were estimated to be avoidable, accounting for a potential saving of 1.5% of total health expenditure related to this specific dimension of waste alone (Guanais, Gómez-Suárez and Pinzón, 2012[3]). Most LAC countries are still in the process of improving care access and coverage, and still rely primarily on curative, specialist, and hospital care, rather than less expensive, more efficacious preventive care (Pinto et al., 2018[4]), underscoring the simultaneous potential for savings *and* improved outcomes.

Figure 2.1 illustrates the three dimensions of waste reflecting low value and high cost, leading to concrete examples of inefficiency (OECD, 2017[2]). First, patients may receive unnecessary or low-value care that makes little or no difference to their health outcomes and in some cases may even

Figure 2.1. **A pragmatic approach to identifying and categorising wasteful spending on health**



Note: Adapted from OECD (2017[2]), *Tackling Wasteful Spending on Health, https://dx.doi.org/10.1787/9789264266414-en*.

prove inherently detrimental (for example, when hospitals are vectors of infection). This type of waste occurs at the clinical level and has the largest impact on health, since low-value care hinders recovery and wellbeing of patients. Second, comparable outcomes can often be achieved with fewer resources. For example, some health systems have low utilisation of generic medicines; others provide care in resource-intensive places such as hospitals, when it could be provided in primary care. Third, administrative processes may add no medical value, and associated funds may be lost to fraud and corruption – which typically flourish more (and are harder to detect and address) in complex, multi-process organisational structures. This type of waste occurs outside the clinical level, produced by flawed processes originally in place to contribute to the smooth running of the health system. The impact associated with this type of waste grows larger the more of it takes place. The larger the corruption and fraud, the more challenging they become to tackle.

It is important to understand that waste often derives or at least is supported by institutions or flawed processes that are generated by dependent, inefficient instances at different levels of a health system. Such a structure will produce more of these arrangements and will perpetuate unbalanced practices and institutions. Even highly transparent, advanced, and thoroughly monitored health systems will fall short of perfection. Building an efficient health system is less about investing substantial resources to eliminate waste, than it is about implementing mechanisms to identify waste more promptly and building capacity to address it. A truly efficient system is dynamic and flexible, and it allows for adjustments for the benefits of patients and its own sustainability (OECD, 2017[2]).

Wasteful spending has begun to be addressed in LAC mainly as part of financial sustainability policies, but it remains to be thoroughly evaluated

To tackle waste effectively in all its components and levels, health sector stakeholders and policy-makers must incorporate waste as a priority focus within the agenda encompassing the entire system. It is likely that policy-makers, health professionals, and patients in all LAC countries are already concerned about efficiency in different degrees, but evidence suggests that most countries do not use all the available tools at their disposal to implement waste-tackling measures.

The LAC Health System Characteristic Survey (Lorenzoni et al., 2019[5]) records the health system administrative arrangements put in place by countries. One of the elements explored by the survey is the existence of mechanisms designed to contain public health spending. Fourteen countries set ceilings for public health spending across several health system actors (levels of government, insurance funds, etc.). The budgetary ceilings are set by the central budgetary authority (usually the Ministry of Finance) and must be approved through the national legislature. Thirteen of these countries have an early warning system that signals when expenditures might exceed the ceilings.

There are several measures to respond to budgets exceeding initial ceilings. Most countries, except Brazil, Costa Rica, and Panama, make supplemental budget appropriations. Other measures include deficit increases by subnational levels of government and providers. Cuts in the procurement of medicines is a widely used cost containment tool (Lorenzoni et al., 2019[5]). It is critical that countries establish mechanisms to further control expenditure and ensure institutional accountability, in addition to reacting to budget overspendings.

As health budgets confront increasing pressures, some LAC countries have faced rising debts accrued by different actors in the system, for instance, with hospitals and entities providing goods and services to hospitals or primary care centres (e.g. pharmaceutical companies, laboratory or radiological services). Examples of recent debt-related waste-reduction measures in Chile and Colombia are provided in Box 2.1.

Box 2.1. **Recent waste-related measures developed in LAC that still remain to be evaluated**

'Acuerdo de Punto Final' in Colombia

The *'Acuerdo de Punto Final'* (Full-Stop Agreement) in Colombia is focused on reducing the accumulated public hospital debt owed by the central government through the country's private health insurers (*Entidades Promotoras de Salud, EPS*). The plan began with the payment of more than USD 0.5 billion to providers, which will enable them to improve their human resources, infrastructure, and technologies and thus enhance quality and efficiency over the long term.

The agreement also describes measures to reduce waste to avoid further debt accumulation. These include updating the Health Benefit Plan (*Plan de Beneficios de Salud,* PBS), control of drug prices, centralised purchasing of medical goods, and other administrative and organisational adjustment to streamline processes and mechanisms.

Hospital debt reduction in Chile

Chile has implemented initiatives to reduce the debt owed to entities that provide goods and services to public institutions, such as hospitals, which have accumulated in the present decade. In 2019, the public insurer (FONASA) paid special attention to ensuring that both base and supplemental-yearly funds were used to reduce payment arrears/ delays to providers rather than to cover other needs.

Efforts to reduce existing debt include building capacity to operate at higher efficiency. These measures have been agreed upon with providers and payment mechanisms will now take the efficiency produced by hospitals into account. Other measures include the reduction of hospital activities outside of regular working hours, increasing centralisation of

Box 2.1. **Recent waste-related measures developed in LAC that still remain to be evaluated** *(cont.)*

medicine purchases through the National Procurement Agency *(CENABAST),* and technical support from the central level to less efficient hospitals.

These plans and policies remain to be assessed, both in the short and long term, from an economic perspective pertaining the public budgets and from the impact on service provision, equity, quality, and patient outcomes.

Clinical care waste

Measuring differences in health care utilisation and quality

Detecting and understanding differences in utilisation and quality is a prerequisite to addressing waste. Varying circumstances between in-country regions or facilities will factor into such differences, but differences will also reflect different degrees of waste. Evidence from several countries shows that clinical and administrative practices account for a greater degree of variation than differences in illness or patient preference (Wennberg, 2011[6]). While benchmarking waste against a global or regional standard provides a useful guide/spur for countries, it is more important for them to understand the extent, how, and where resources are wasted domestically (since it is these that enable them to better serve their citizens, and in doing so rise within the global/regional ranks). Variations across geographic areas can be as high or higher than cross-country ones, and naturally tend to fall under the control capacity of national governments to a greater extent than international variations. Public reporting of geographic variations potential over- and under-use of resources, including through visual displays of 'atlases'/maps, can be a key step toward addressing domestic variations in an easily comparable and comprehensive way that implicitly raise questions about why these variations exist (OECD, 2014[7]).

Colombia, for example, has invested in developing an atlas of variations in recent years (Kim, 2014[8]). The atlas (see Box 2.2 and Figure 2.2) was developed from a pilot study financed by the World Bank Group in 2015 and focuses on the utilisation of acute care services and the differences in caesarean utilisation (two main potential sources of waste discussed later in this chapter).

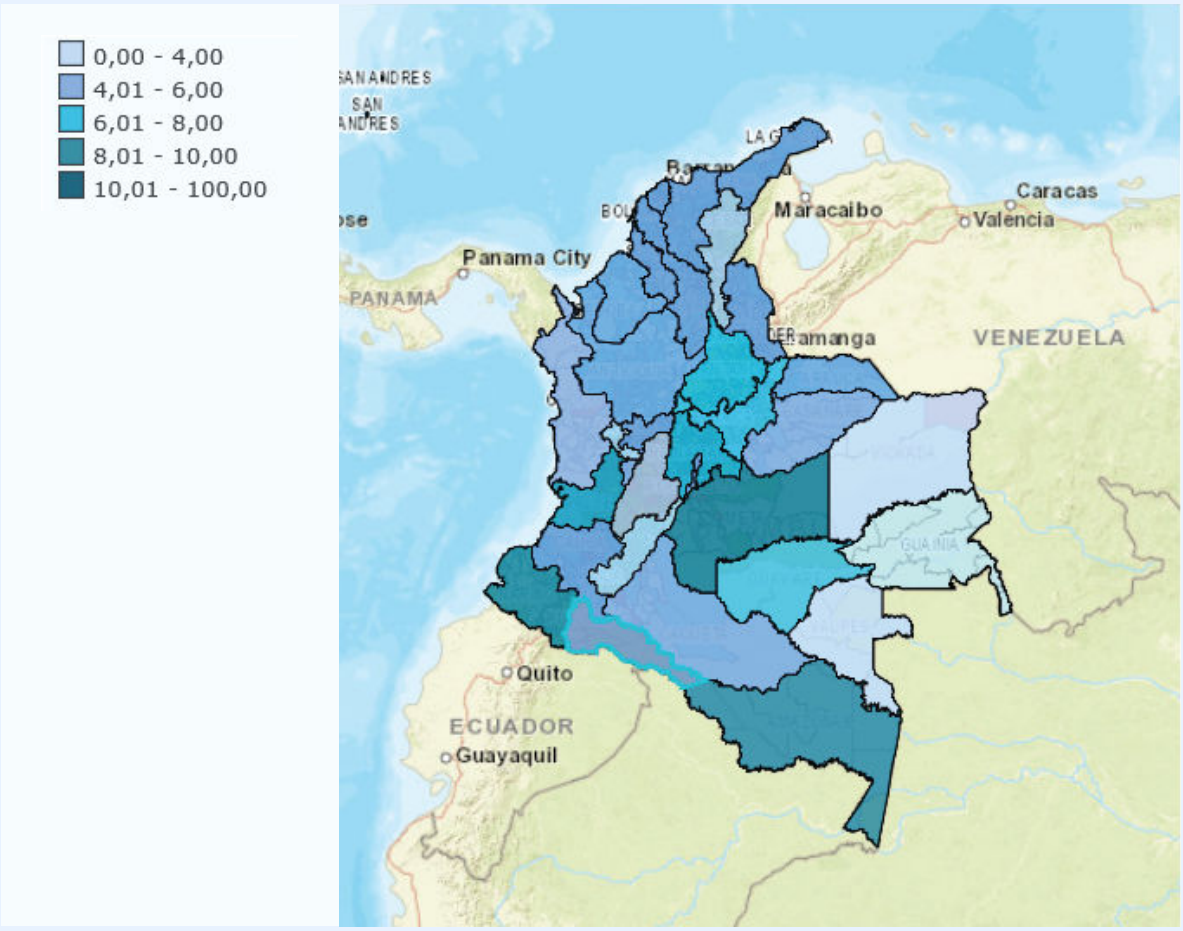
Using atlases to track variations allows for regionally specific targets to be set, although it is important to recognise that they do not directly indicate what factors led to the variation. In some cases, services are under- or over-provided, which reflects in differing outcomes or performance indicators. However, it is a useful method to detect systemic waste around several services, which is often correlated in affected areas. Once variations are identified, further analysis is needed to determine the underlying factors behind instances of overuse and underuse. Regional target setting can then be combined with other interventions to address specific challenges.

Measuring the compliance with clinical practice guidelines (CPGs) is another useful tool for improving patient outcomes and avoiding unnecessary costs. An analysis of compliance with CPGs for 324 000 diabetic patients in Colombia affiliated with private insurers (EPS) of the contributory regime revealed that only 15% of the diabetic population was provided all recommended tests, including yearly blood glucose, cholesterol, and kidney function tests. The variation in compliance was substantial across regions and between EPS providers. For example, complete testing compliance varies from 27% for the best EPS provider to nearly zero for the worst. In addition, the study estimated that complete blood glucose (HbA1c) monitoring lowers the average annual total per patient by USD 430, representing 15% of total costs. Thus, efficiency is not only about the average level of prevention, but also about homogeneous provision across regions and providers (Izquierdo, Pessino and Vuletin, 2018[10]).

Box 2.2. **Atlas of Geographical Variations – Colombia**

The Colombian Atlas of Geographical Variations covers a variety of indicators related to health status, activities, quality, and use of resources. Such a tool helps identify waste by highlighting outliers in the geographical data. Thus, for example, the map below displays the varying rates of surgical cancellations (a wasteful practice) observed in Colombian departments in 2018.

Figure 2.2. **Rates of surgical cancellations per 100 programmed surgeries in Colombian Departments, 2015**



Source: MINSALUD (2019[9]), Colombian Atlas of Geographical Variation, *https://sig.sispro.gov.co/sigmsp/index.html*.

Reducing unnecessary procedures

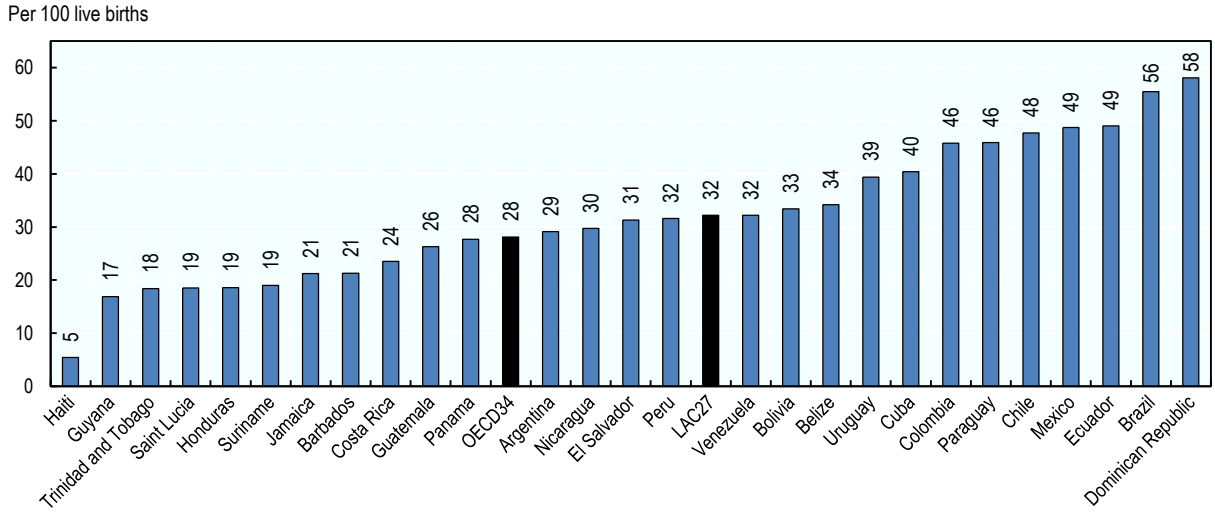
Wasteful clinical care refers to situations when patients do not receive the right care, but also when they receive ineffective and inappropriate care. The latter category is sometimes known as low-value care, and in several countries efforts have been put in place to reduce it. Despite being widely performed, activities such as tonsillectomies in children and hysterectomies or prostatectomies in benign conditions do not have demonstrated effects in improving health and well-being of most patients, and may even be a source of harm, representing a potential source of waste when used excessively or unnecessarily.

C-sections are a classic example of a surgical procedure that can be lifesaving when clinically necessary, but for which the benefits of its wide use are disputed. C-section carries an increased risk of infections for mothers and respiratory distress for new-borns, as well as precluding the benefits

associated with passing through the birth canal. C-sections have been linked to several health risks during infancy, such as Type 1 diabetes, celiac disease, allergies and asthma, and obesity (Magne et al., 2017[11]).

Evidence indicates that a rate of C-sections above 15% is not associated with further reductions in maternal, neonatal or infant mortality (Stordeur et al., 2016[12]). Some estimates for LAC show that more than half of all new-borns are delivered by C-section (Magne et al., 2017[11]). C-section rates have been climbing up worldwide despite WHO recommendations, from 6.7% in 1990 to 19.1% in 2014. South America has been the region with the highest rates since the 1990s, with Brazil in particular having very high rates in public sector facilities (40-50%) and even higher rates in private sector (80-95%) (Magne et al., 2017[11]). In 27 LAC countries, 32% of all births are performed through C-section, higher than the 28% in 34 OECD countries. The highest rates are observed in the Dominican Republic and Brazil, and the lowest in Haiti, Guyana, and Trinidad and Tobago (see Figure 2.3).

Figure 2.3. **Caesarean section rates in 27 Latin American and Caribbean countries, 2016 or latest year available**



Source: WHO (2019[13]), Global Health Observatory data, *https://www.who.int/gho/en/*. OECD Health Statistics (2019[14]) for Chile and Mexico, *https://doi.org/10.1787/health-data-en*.

StatLink https://stat.link/nkgptu

The first intervention to be revised to reduce overuse of C-section surgeries should be elective C-sections among low-risk women. Other interventions can include promoting behaviour change through dedicated tools, feedback, and audits; financial incentives to discourage providers from delivering C-sections when unwarranted; and producing and publishing information on overuse, to raise awareness and enable providers to benchmark against their peers (OECD, 2017[2]).

As with other drivers of waste, the region still must also cover gaps in coverage. LAC countries must continue working to ensure that all women in need of a C-section can access one, as well as driving down cases where there is overuse. Tools such as the Robson classification, promoted by WHO as a way of identifying high-risk women in need of a C-section, enable providers to direct resources to the women most in need of them, functioning well in combination with measures that are specifically designed to drive down C-section rates (WHO, 2015[15]).

Internationally, Choosing Wisely® is a health educational campaign aimed at improving patient-doctor relationships and reducing unnecessary health care by pulling evidence-based medicine into

the public domain (ABIM Foundation, 2020[15]). For instance, clinical guidelines exist in several OECD countries to promote a more rational use of costly MRI and CT exams, when these are unnecessary. Similar tools exist in virtually every medical area of specialisation.

Promoting a rational use of antibiotics and preventing antimicrobial resistance

Rational use of antimicrobial medicines is key not only in terms of monetary savings and broader health system efficiency, but also to preserve their clinical effectiveness. However, PAHO estimates that around 50% of antibiotic use is inappropriate, which hurts sustainability and health outcomes (PAHO and FIU, 2018[17]).

Misuse of antimicrobials causes allergic and adverse drug reactions, morbidity and mortality, increased duration of hospital stays, infections from antibiotic-resistant pathogens, microbiota changes, and overall increased health care costs. It medicalizes certain conditions for which other treatments are more effective and it puts patients at risk of adverse effects (and the increased costs associated with treating them). The majority of antibiotic prescribing occurs at the primary care level, most of them for respiratory tract infections.

Table 2.1 illustrates the volumes of antibiotics consumed in five reporting LAC countries. Consumption is lowest in Peru and highest in Brazil. The low figure for Peru might be explained because the data does not include all institutions in the health sector but only shows the best approximation to antibiotic use. The average estimated daily defined dose (DDD) consumption of 17.2 DDDs per 1 000 inhabitants per day in the five LAC countries is higher than in other countries such as Canada (17.05), Germany (11.49), Netherlands (9.78) and Sweden (13.23), and close to the Ibero-American countries of Portugal (17.72) and Spain (17.96). In the OECD, the average for 31 countries with data is 18.

Table 2.1. **Total consumption of antibiotics, DDD per 1 000 inhabitants per day, 2016**

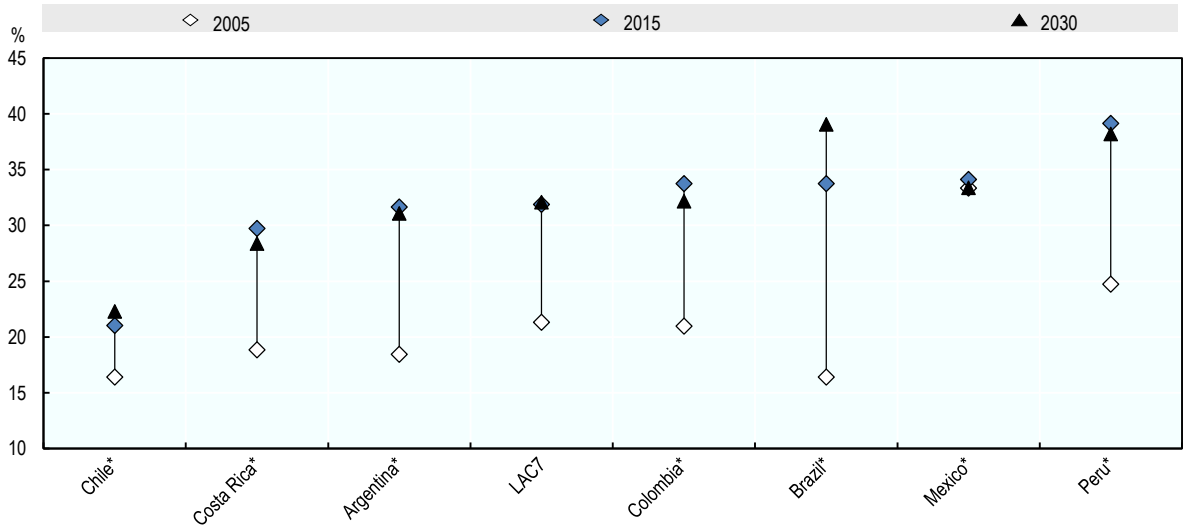
	DDD/1 000 inhabitants per day
Brazil	22.8
Bolivia	19.6
Paraguay	19.4
OECD31	18.0
LAC5	17.2
Costa Rica	14.2
Peru	10.3

Note: DDD, daily defined doses.
Source: WHO (2018[18]) WHO Report on Surveillance of Antibiotic Consumption: 2016 - 2018 Early implementation and OECD (2019[14]), OECD Health Statistics, *https://doi.org/10.1787/health-data-en*.

The relatively high levels of antibiotic usage can lead to antimicrobial resistance, which has been declared as one of the most critical emergent public health challenges of our times. In seven LAC countries, average resistance proportions across eight antibiotic-bacterium combinations are estimated to have increased from 21.3% (range: 16-33%) in 2005 to 31.9% (range: 21-39%) in 2015, and may go up further to 32.1% (range: 22.3-39%) by 2030 if current trends in resistance, and correlates of resistance, continue into the future and no policy actions are taken (see Figure 2.4). However, the trend toward 2030 is not the same in all countries: only Chile and Brazil are expected to substantially increase antimicrobial resistance, while the other five countries remains similar to the situation in 2015.

The WHO report on surveillance of antibiotic consumption (WHO, 2018[18]) noted which LAC countries have implemented systems to control or monitor the use of antimicrobials. As of 2016,

Figure 2.4. **Average proportion of infections (including 2030 projections) caused by bacteria resistant to antimicrobial treatment for eight antibiotic-bacterium combinations in 2005, 2015, and 2030**



Note: All seven countries are missing more than 50% of observations, across all eight antibiotic-bacterium pairs, between 2005 and 2015.
Source: OECD (2018[19]), *Stemming the Superbug Tide: Just A Few Dollars More*, *https://dx.doi.org/10.1787/9789264307599-en*.

StatLink https://stat.link/k5q2vz

13 countries did not have a national plan or system in place to monitor antimicrobial use. Brazil, Chile, and Colombia have implemented Antimicrobial Stewardship Programs (ASPs), with the objective of tackling misuse, with the specific goals of reducing or stabilising antimicrobial resistance, reducing prescriptions, and improving clinical outcomes. These three countries and Mexico also introduced legislation to reduce antibiotic consumption by establishing mandatory prescriptions of antibiotics, to reduce self-medication.

Effective ASPs can reduce adverse events associated with antibiotic use while keeping the treatment of infection optimal, and can accomplish these goals while saving costs. Evidence from Colombia (Hernández-Gómez et al., 2016[20]) found that the implementation of ASPs in three hospitals resulted in a 52.3% reduction of antibiotic consumption, with an average monetary saving of more than USD 15 000 per hospital. The average cost of implementing the ASP program was USD 4 300 per month.

To tackle antimicrobial misuse, it is important for countries to accurately and promptly measure pharmaceutical consumption – for which an integrated and timely information system and response mechanism are needed to identify problem areas and tackled them rapidly. Interventions such as improving hand hygiene in health care facilities, implementing stewardship programmes to increase awareness and rationalising prescription practices, deploying rapid diagnostic tests to confirm the need of antimicrobial treatment before, delayed antimicrobial prescribing, and promoting mass media campaigns, have proven to be cost-effective (OECD, 2018[19]).

Operational waste

Using Health Technology Assessment to improve coverage prioritisation processes

Health Technology Assessment (HTA) is a fundamental tool to foster better clinical and financing decisions, and thus reduce waste in health systems. HTA enables policy-makers to know what methods or goods are most effective to accomplish positive health outcomes. They are a comparative, multi-disciplinary process used to evaluate the added benefit or impact of health technologies, and they can inform decision-makers' assessment of the opportunity cost of replacing an existing standard

of care with an alternative. In this way, selection and coverage decisions can avoid displacing high-value products with ones of lesser value to the health system. HTAs can also be used to review the value for money offered by existing technologies, and to adjust prices to reflect a desired level of cost-effectiveness or willingness to pay.

The HSC survey results (Lorenzoni et al., 2019[5]) show that 13 of the responding countries conduct HTA, mainly in the public sector, but only a handful use HTA systematically to determine coverage decisions. No country reported using HTA to determine reimbursement levels (e.g. prices). Most countries that reported employing HTAs did so through the main purchaser at the central level; while only four did so through an independent body, whereas an increasing number of OECD countries use HTAs to provide evidence related to new medical technologies for decision-making. In LAC, only 10 countries report to use HTAs to inform coverage for all technologies, either systematically or under certain circumstances (see Table 2.2).

Table 2.2. **Countries using HTA systematically or occasionally to make coverage decisions or set reimbursement levels**

Type of technology	Use of HTA to make decisions	Countries
Medical procedures	Systematically used to make coverage decisions	Brazil, Trinidad and Tobago, Uruguay
	Used in some circumstances to make coverage decisions	Argentina, Belize, Chile, Colombia, Guyana, Mexico, Paraguay
	Used to determine reimbursement level	-
Pharmaceuticals	Systematically used to make coverage decisions	Belize, Jamaica, Mexico, Paraguay, Uruguay
	Used in some circumstances to make coverage decisions	Argentina, Brazil, Chile, Costa Rica, El Salvador, Guyana, Peru
	Used to determine reimbursement level	-
Implantable medical devices	Systematically used to make coverage decisions	Brazil, Trinidad and Tobago, Uruguay
	Used in some circumstances to make coverage decisions	Argentina, Chile, Colombia, Costa Rica, Mexico, Paraguay
	Used to determine reimbursement level	-

Source: Reproduced from Lorenzoni, et al (2019[5]) "Health systems characteristics: A survey of 21 Latin American and Caribbean countries", *https://doi.org/10.1787/0e8da4bd-en*.

There is also variation in the circumstances in which HTAs are used in LAC. One-third of LAC countries use HTAs to establish practice guidelines, whereas only Argentina and Peru reported their use to determine the objectives of pay-for-performance schemes. Around half of the countries use HTA to support the design of public health policies (see Table 2.3).

Table 2.3. **Circumstances in which Health Technology Assessments are used**

Circumstances	Countries
To establish practice guidelines for health professionals	Argentina, Belize, Brazil, Chile, Mexico, Paraguay, Peru, Uruguay
To determine objectives for pay-for-performance schemes	Argentina, Peru
To support the design of public health policies	Argentina, Belize, Brazil, Colombia, El Salvador, Mexico, Paraguay, Peru, Trinidad and Tobago, Uruguay

Source: Reproduced from Lorenzoni et al. (2019[5]). "Health systems characteristics: A survey of 21 Latin American and Caribbean countries", *https://doi.org/10.1787/0e8da4bd-en*.

International collaboration can be also fostered, as HTAs can be used by different countries in different contexts. This means that the knowledge obtained through HTAs can be shared among decision-makers, which (if acted upon) reduces costs and facilitates coherent approaches regardless of geographical location. Through international cooperation, countries with more limited resources can seek assistance from foreign HTA agencies, be informed of available new technologies, and contribute to the production of common tools and knowledge. This is the case of the Regional Database of Health Technology Assessment Reports in the Americas (BRISA), which shares the HTA reports produced by member organizations of the Health Technology Assessments Network for the Americas (RedETSA) (PAHO, 2019[21]).

Reducing potentially avoidable hospital admissions

A number of conditions can be effectively treated at the primary-care level, such as asthma, chronic obstructive pulmonary disease, and congestive heart failure. A strong primary care system can provide effective services for patients in need of preventive care and treatment for these conditions, saving costly hospital resources. Primary care services can also tackle these conditions sooner and more effectively than a hospital setting would.

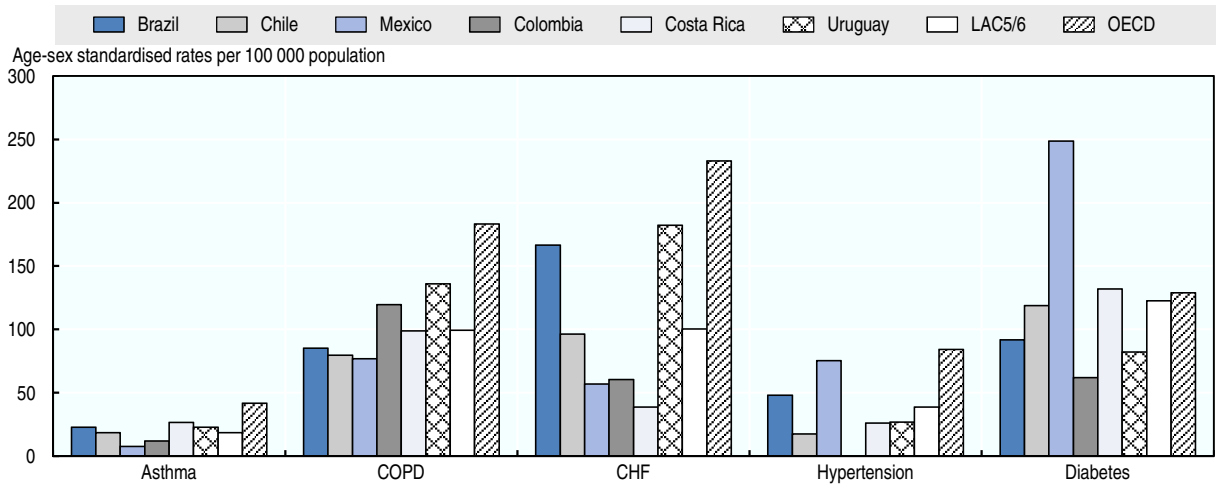
The inability of the primary care system to deal with these patients results in overutilisation of hospital resources, which is a significant source of inefficiency and waste and may expose patients to additional risks such as hospital-acquired infections. Estimates from six LAC countries have suggested that between 8.1 and 10 million hospitalisations in 2012 were preventable, representing as high as 2.5% of the reported total health expenditure in 2009 (Guanais, Gómez-Suárez and Pinzón, 2012[3]).

Figure 2.5 reflects the available data on avoidable hospitalisations in LAC countries with available data. There is variation among LAC countries, although their rates are generally lower than the OECD average. This could indicate success in the implementation of effective primary care systems. However, in the context of the LAC region it is important to mention that access remains relatively unequal, and that a certain degree of underutilisation of hospital resources might be taking place. Finding an adequate balance to ensure the least wasteful level of hospital utilisation, while ensuring adequate access across the entire population should be the ultimate goal. Another factor to consider is that the NCD burden is relatively lower in LAC than in OECD countries, given the respective demographic and epidemiological profiles. However, variation across these LAC countries suggests that Costa Rica might be having issues regarding the ambulatory management of asthma, Uruguay and Colombia for chronic obstructive pulmonary disease, Uruguay and Brazil for congestive heart failure, and Mexico for hypertension and, especially, diabetes.

As LAC countries advance in the demographic and epidemiological transitions, the burden placed by NCDs on hospital use and on the health system as a whole is likely to increase even further. Scaling up primary care systems is the key for tackling this growing burden, and potentially contribute to significant financial savings. Strong and integrated primary care services would not only be less costly but they would also improve health outcomes by detecting conditions earlier and addressing them before emergency hospital care is necessary. A well-integrated system would allow for agile referral of patients that do need to make use of hospital resources as well, to ensure the best possible clinical outcomes.

Several countries have introduced mechanisms to screen patients at the primary level to avoid overutilization of specialized care. Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guyana, Jamaica, Mexico, Panama, Suriname, and Trinidad and Tobago have established gatekeeping mechanisms by driving patients to seek a referral from a primary health care physician except in emergencies. However, registration with a primary care physician is only mandatory in

Figure 2.5. **Avoidable hospital admissions in adults for selected conditions in five LAC countries and the OECD average, 2017 or latest year available**



Note: COPD = chronic obstructive pulmonary disease; CHF = congestive heart failure.
Source: OECD Health Statistics (2019[14]) for Chile, Colombia, Costa Rica, and Mexico, *https://doi.org/10.1787/health-data-en*. Data for Brazil and Uruguay provided by their respective health ministries

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Brazil, Chile, and Suriname; it is incentivised in Argentina, El Salvador, and Panama (Lorenzoni et al., 2019[5]).

It is important to acknowledge that overuse of hospital resources is a more significant challenge in some countries in the region, while others are still mostly concerned with a lack of access to said services. However, the importance of strong primary care services remains valid for all, as PHC can also benefit underserved areas, and a rational approach to hospital use is beneficial even when scaling up hospital services in underserved areas.

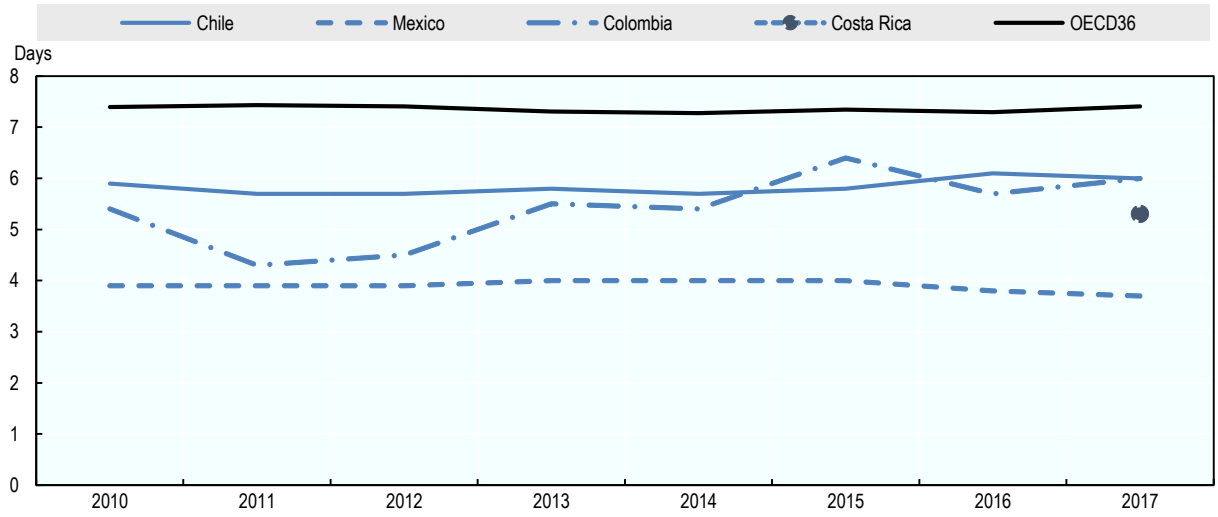
Innovative provision arrangements, such as e-health delivery, one-stop shop facilities, community-level interventions, can complement the implementation of primary care centres to further reduce the burden on hospital resources. They can also be effective ways of reaching populations that are vulnerable to exclusion from traditional service delivery mechanisms.

Reaching a good balance between access and length of stay in hospital care

Average length of stay (ALOS) it is a useful measure related not only to the use of hospital resources but also to other health system units in place. Longer-than-ideal ALOS may arise from clinical reasons, but also from lack of coordination within the hospital or between health facilities, home-care services, or other post-discharge care settings. A recent review suggests that extra bed-days could account for up to 30.7% of total hospitalisation costs, and cause cancellations of elective operations, treatment delay, and repercussions for subsequent services, especially for elderly patients (Rojas-García et al., 2017[22]). Delayed discharges also contribute to higher costs through their adverse effects on patients' health. Longer hospital stays increase the risk of infections and lead to more rapid health decline and worse outcomes, especially for older patients.

Figure 2.6 shows the trend in ALOS for hospital acute care in four LAC countries with comparable data: Chile, Colombia, Costa Rica, and Mexico. All four countries rank below the OECD average, which has maintained relatively stable the ALOS between 2010 and 2016. In contrast, Colombia has increased hospital ALOS, while Chile and Mexico have maintained it relatively stable in the period.

Figure 2.6. **Average length of hospital stay, 2010 to 2016**



Source: OECD Health Statistics (2019[14]), *https://doi.org/10.1787/health-data-en*.

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To tackle hospital overstays, countries can move to prospective payment methods, often based on diagnosis-related groups (DRGs), to set payments based on the estimated cost of hospital care in advance of service provision. These payment methods encourage providers to reduce the cost of each episode of care; for example, by reducing the duration of hospital stays. (In LAC, however, DRG-based payments are rare, particularly among public hospitals (Lorenzoni et al., 2019[5]). In addition, policies must ensure adequate integration between levels of care and providers, so that patients can be transferred or given specialized care as quickly as possible. This goal can be fostered by payment mechanisms that encourage better coordination and follow-up of patients, as well as by more robust processes that ensure the timely transfer of patients. As with other interventions suggested in this chapter, this type of incentive seeks to establish a behavioural shift among providers to inhibit default into more costly, already established approaches.

Countries can also invest in non-hospital care settings to provide long-term or intermediate care to patients. In LAC, efforts to strengthen home-based care and follow-ups in places with limited access to health facilities can foster more rapid and safe discharge of patients. Day surgery is another alternative to reduce hospital stay times, provided hospitals have the technical capacities and a proper follow-up can be established for patients.

Readmission rates are another issue to consider when looking for the proper balance between access to hospital care and ALOS. Early hospital readmissions (following premature discharge) have been recognised as a common and costly source of waste, particularly among elderly and high-risk patients. Reviews have found that effective interventions to reduce unnecessary readmissions are often complex and depend upon enhanced patient capacity to access post-discharge care reliably including, for instance, risk-prioritised telephone follow-up, specialised pharmaco-therapeutic counselling, self-management education programmes, individualised care plans at discharge, among others (Leppin et al., 2014[23]; Renaudin et al., 2016[24]).

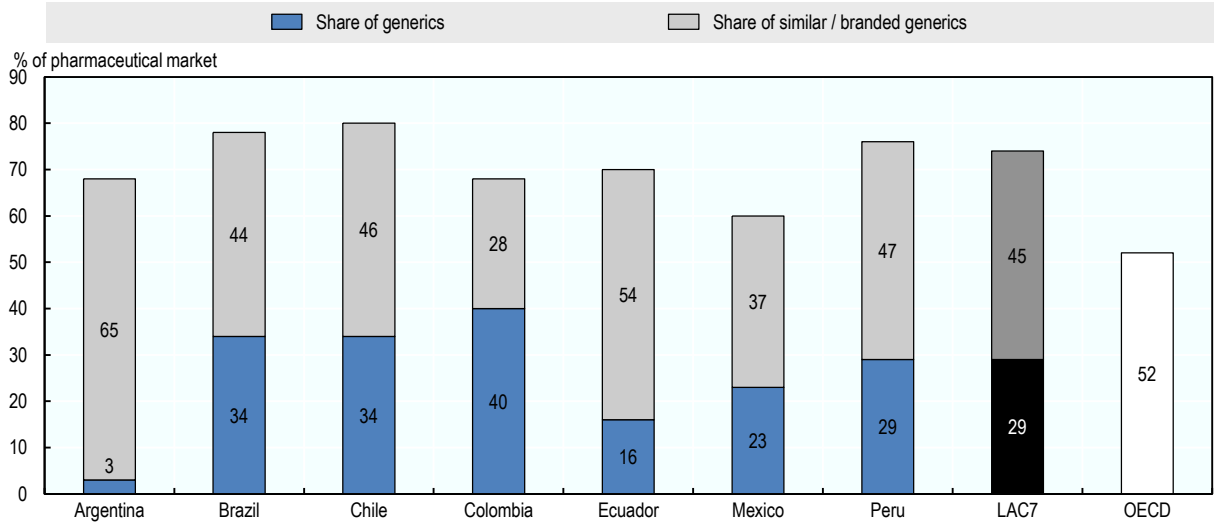
Data on ALOS and hospital readmissions in LAC is limited, in part because of decentralisation and lack of integration among providers. It is important that countries monitor ALOS, delayed discharges, and readmissions more closely; this will open the door for further options to tackle these challenges.

Increasing value in the pharmaceutical market by expanding the use of generics

The pharmaceutical sector is one of the largest sources of health expenditure in LAC (see Chapter 6). As medicines are a substantial financial burden for both governments and people, several areas are subject of policy concerns. In this context, the development of generic markets stands out as an opportunity to increase efficiency in pharmaceutical spending; but many countries do not fully exploit this potential. Underutilisation of generic drugs is a substantial source of waste. Although generics *usually* have comparable therapeutic effects as branded alternatives, typically they are significantly less expensive.

In seven LAC countries with data, the introduction of generics has been a challenge, for varying reasons. Figure 2.7 shows that on average, LAC countries have a larger proportion of generics in their markets (79%) compared to the OECD average (52%). However, it is important to note that the majority of these generics are branded generics (52%). Branded generics (or *similares)*, like unbranded ones, are copies of off-patent products that are sold to the public using a trade name instead of, or in addition to, the name of the molecule. Their prices are usually higher than those of non-branded generics. In contrast, in OECD countries, branded or unbranded generics do not make a major cost difference, mainly because health systems provide coverage for them irrespective of this classification. In addition, in several LAC countries, not all generics are mandated to demonstrate therapeutic equivalence, and some regulatory agencies still need to be strengthened, which poses a quality challenge in the pharmaceutical markets of the region.

Figure 2.7. **Volume share of generics in the retail pharmaceutical market in seven LAC countries, April 2019**



Note: OECD average is calculated with data for 2017 or nearest year.
Source: Adapted from IQVIA (2019[25]), *Precio de los Medicamentos en América Latina, Análisis Comparativo*. OECD data from OECD Health Statistics (2019[14]), *https://doi.org/10.1787/health-data-en*.

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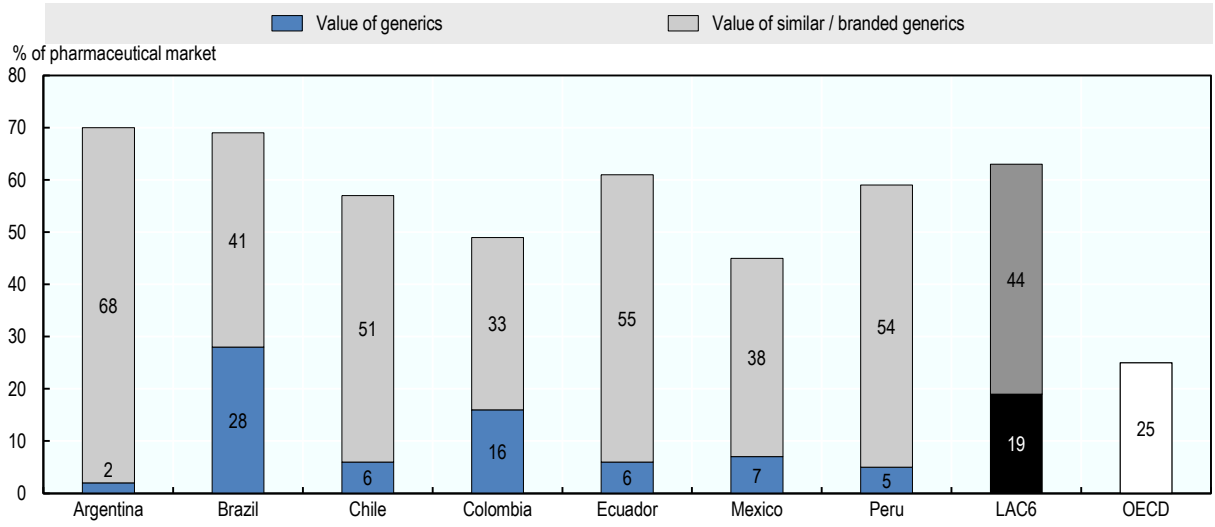
In complement to the volume of generics in LAC markets, Figure 2.8 displays the value share of generic markets, which may be expressed, depending on the country, in terms of the turnover of pharmaceutical companies or the amount paid for pharmaceuticals by consumers. The value of generics as percentage of the total retail pharmaceutical market is higher in LAC countries than in the OECD (64% versus 25%), chiefly because of common use of branded generics (or *similares),* which typically have higher prices than unbranded generics. In general, this means that difference in prices

between originator and generic medicines is smaller in LAC than in OECD countries. In line with these findings, a recent study by the Chilean National Economic Prosecutor found that profit margins obtained by pharmaceutical companies in Chile are higher for branded generics than for non-branded generics, which may be another reason for the larger presence of branded generics in LAC pharmaceutical markets. In addition, the study found that the population has a low trust in generics, meaning that this is another area to address from a policy point of view (FNE, 2019[26]).

Figure 2.8. **Value share of generics in the retail pharmaceutical market in seven LAC countries, April 2019**



Note: OECD average is calculated with data for 2017 or nearest year.
Source: Adapted from IQVIA (2019[25]), *Precio de los Medicamentos en América Latina, Análisis Comparativo*. OECD data from OECD Health Statistics (2019[14]), *https://doi.org/10.1787/health-data-en*.

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Some LAC countries have already implemented incentives to promote the production or registration of generics. Colombia applies lower tariffs, Mexico awards tax exemptions, Ecuador eases bureaucratic processes, and El Salvador supports small and medium-size pharmaceutical producers working on generics.

In addition to targeting registration, distribution, and production of generics, countries could invest in information campaigns, designed to educate the population on the advantages of using generics as well promoting their use at doctors' offices and pharmacies. Examples include promoting mass media campaigns to educate patients about the safety and quality of generics; making it mandatory for pharmacists to remind patients whenever there is a generic alternative to the prescription they are receiving; and encouraging pharmacies to sell more generics through performance-based payment mechanisms.

Evidence from Argentina (Maceira and Palacios, 2016[27]) suggests that consumer and pharmacists' attitudes must be taken into account when regulating and promoting the use of generics. Consumers will often express interest in spending less when purchasing drugs but often they are not willing to pick the cheapest generic alternative, even when the pharmacist suggests alternatives at the point of sales. A study of the Chilean experience between 2002 and 2017 of the effect of the entry of branded generic medications (Alvarez, Gonzalez and Fernandez, 2019[28]), found that sales of these

drugs sold rose by 148.1% after four years – an increase driven by their lower cost (on average 33%) than their branded non-generic counterparts.

Governance waste

Health system fragmentation is a key source of waste in LAC

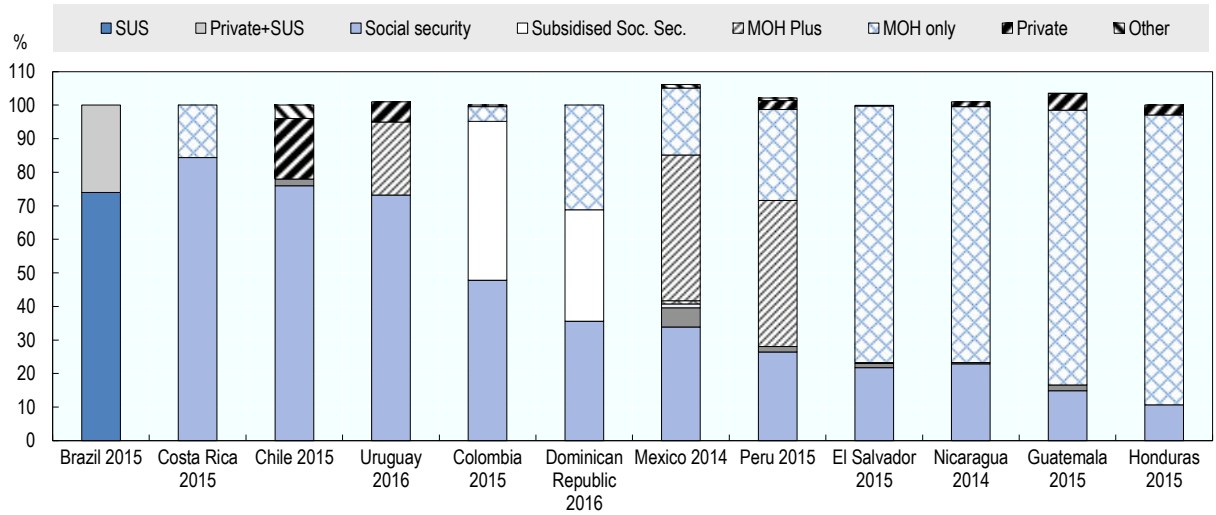
Most health systems in LAC are organised as several parallel subsystems. Usually, these subsystems represent a public component (e.g. managed by the Ministry of Health and funded by general taxes); a social security sector (e.g. public and/or private insurers funded through social contributions and, in some cases, partly by general taxes); and a private sector (e.g. funded directly by users, pre-paid or out-of-pocket). The mix of these three subsystems varies, but they are present in almost all countries, especially since the 1990s, when government-financed insurance schemes and health-service provision to cover poor people and informal workers were introduced or expanded, reinforcing the vertically articulated subsystems with fragmentation of financing and service delivery. This has led to segregation of population segments according to employment and socio-economic status and, often, left the poorest segments without effective coverage in many countries (Atun et al., 2015[29]).

Figure 2.9 provides a comparative picture of selected LAC countries where institutional fragmentation leads to duplication of financing and delivery functions (Vermeersch and Mohpal, 2017[30]). In one group, Brazil shows one of the lowest national level of fragmentation, by covering all its citizens with a national health system (SUS); however, around 26% of the population purchases supplementary private insurance. In a second group, Costa Rica, Chile, Colombia, the Dominican Republic, and Uruguay have close to or more than 70% of their population covered by contributory and/or subsidised social security schemes. In a third group, Mexico and Peru have more than 40% of their population affiliated to institutions dependent on the Ministry of Health *(Seguro Popular* and *Seguro Integral de Salud,* respectively), along with others covered by social insurance, private insurance, or directly by the ministry. In a fourth group, El Salvador, Nicaragua, Guatemala, Honduras, and Nicaragua have more than 75% of their population served directly by the Ministry of Health, with social insurance covering most of the remainder of the population.

From a governance point of view, the sources of waste mainly derive from the stewardship and management of resources and services, and the health-financing functions (OECD, 2017[2]). Table 2.4 provides an overview of the governance functions where waste can be identified in relation to fragmentation, along with examples from selected LAC countries.

In practice, the existence of multiple subsystems and actors leads to duplication of tasks, such as enrolment, collection of contributions, claims processing, benefits management, sales and marketing, purchasing and contracting, and compliance with government and non-government regulations. Findings from analyses in OECD countries (OECD, 2017[2]) specifically related to the consequences of fragmentation in administrative spending within health systems provide key insights that can be useful for LAC. First, little difference arises in governments' administrative costs between tax-based systems with residence-based entitlement and single-payer, insurance-based systems. In LAC, this would be the case when comparing Brazil with Costa Rica and Uruguay. Second, single-payer systems have lower administrative costs than multi-payer systems. In LAC, this could be applied when comparing a single-payer system in Costa Rica and Uruguay with countries having multi-payer schemes, such as Argentina, Chile, Colombia, Mexico, and Peru. Third, multi-payer systems with free choice of insurer tend to have higher administrative costs than multi-payer systems with automatic affiliation. This can be applied to compare multi-insurer countries with automatic affiliation, such as Bolivia, Dominican Republic, Mexico, Panama, and Peru with countries implementing multi-insurer schemes with choice of insurer, such as Argentina, Chile, Colombia, Guatemala, and Surinam. Fourth, private insurance schemes have much higher administrative costs than public schemes. This

Figure 2.9. **Fragmentation leading to duplication of financing and provision functions in selected Latin American and Caribbean health systems, 2015**



Note: Countries can appear to have more than 100% of the population covered because of double or even triple health service affiliations. SUS – National Health System in Brazil; Private+SUS – double coverage of SUS plus a private insurance in Brazil; Social Security – Costa Rica (Caja del Seguro Social), Chile (FONASA), Uruguay (FONASA), Colombia (Regimen Contributivo), and Dominican Republic (Regimen Contributivo); Subsidised Social Security – Regimen Subsidiado in Colombia and Dominican Republic; MoH Plus – Mexico (Seguro Popular), Peru (Seguro Integral de Salud), Uruguay (free affiliation to AUSSA); MoH only – Ministry of Health.
Source: Vermeersch and Mohpal (2017[30]), Latin America and the Caribbean: A Narrative for the Health Sector.

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finding implicates almost all LAC countries, since private insurance has been established with different characteristics and regulations. For instance, private insurance in Brazil is complementary or supplementary to the coverage provided by the national health system (SUS), while in Chile private insurers (ISAPREs) can receive and manage the mandatory health contribution from their affiliates, but regulation still allows them to 'cherry-pick' low-risk and higher-income segments of the population, and gives plenty of freedom to define premiums, benefits, and coverage for a large component of their services.

Fragmentation in health care coverage creates silos of the population, in most cases dividing them by social conditions, and undermines efforts aimed at reducing inequalities and achieving efficient health systems. Although some LAC countries have introduced reforms and organisational changes that emphasise the intrinsic value of health for citizens, they have not been able to eliminate the inequities in access, financial protection, and outcomes produced by fragmentation – this remains one of the key challenges in LAC.

Measuring expenditure to identify the most efficient disaggregation by function and level of care

Data on functional expenditure indicates the share of spending by health systems' functions and type of care. This can illustrate potential sources of waste. For example, an efficient health system offers an optimal mix of curative care (generally less cost-effective, treats patients as they become sick) and preventative care (generally more cost-effective, targets patients before they become sick). Efficient systems should also aim to reach the appropriate administrative expenditure, avoiding duplications and unnecessary or low-value governance actions.

Collecting this data is an effective way to identify administrative and allocative inefficiencies, which account for a significant share of waste in all health systems. Current data availability is limited, with only eight LAC countries reporting this information as of 2019. As data for more countries

Table 2.4. **Examples of fragmentation-induced waste in the governance structure of selected LAC health systems.**

Governance area	Governance functions	Examples of waste sources in selected LAC countries
Differences in stewardship and management of resources	Planning and benefit basket design	In El Salvador, insurers can freely determine benefits and level of coverage, meaning that services for the population and their co-payments are not the same between the Salvadorian Institute of Social Security (ISSS), the Salvadorian Institute of Magisterial Welfare (ISBM), the Armed Forces Social Prevision Institute, and the Ministry of Health (which covers around 77% of the population) (Lorenzoni et al., 2019[5]).
	Human resources	Chile has several laws regulating the management of human resources in the public sector: one for health workers in primary care administered by municipalities; three laws for doctors, dentists, and pharmacists working in secondary care and hospitals; and one for all other health workers of secondary care and hospitals. In addition, the general Labour Code is applied to some health workers in the public sector and to all in the private sector (Sugg, Galleguillos and Caravantes, 2018[31]).
	Health information and ICT development	Paraguay collects health information separately from the three subsystems of the health sector, each with its own rules and infrastructure. The Ministry of Health collects information by different programmes directly from its providers (e.g. family health units); the Social Security Institute (IPS) gathers data from its providers network; and the Superintendence of Health assembles information from private providers (OECD, 2018[32]).
	Executive management, regulation and monitoring	In Peru, each of the Institutions for the Administration of Health Insurance Funds (EAFAS) and the Ministry of Health has its own executive management and oversight structure and machinery. Therefore, managerial functions such as planning, control and enforcement in the Social Health Insurance (EsSalud), the Integral Health Insurance (SIS), the Police and Armed Forces Insurances, and the private sector run mostly in parallel (OECD, 2017[33]).
	Resource mobilisation	The Dominican Republic collects funds separately for four subsystems having their own accounting and managerial arrangements: the MoH and the National Health Service through general taxes; social contributions from employers and employees for the Contributory Regime of the social security fund; general taxes for the Subsidised Regime of the social security fund; and direct pre-paid premiums for private insurers (Rathe, 2018[34]).
Duplication of health financing functions and costs	Pool funds	Argentina has more than 500 private health care insurers, national social insurance organisations, and provincial health insurance organisations; each of them can be considered as a single pooling fund. Only for the insurers of social security ('Obras Sociales'), which cover 60% of the population, there is a Solidary Redistribution Fund, where currently only 15 to 20% of social contributions can be distributed across insurers aiming to equalise some of the risks and cover some specific services (Cetrángolo and Goldschmit, 2018[35]).
	Purchasing	Mexican operating institutions – Seguro Popular and State Health Services, social security institutes (IMSS, ISSSTE, PEMEX, SEDENA, and SEMAR), the private sector, as well as the Ministry of Health in a few cases – own and administer their facilities, integrating the functions of purchasing and delivering services and pharmaceuticals mostly within their own networks. Duplication occurs for functions such as setting priorities regarding infrastructure needs and services offered, hiring workers, procurement of goods (e.g. pharmaceuticals), and defining payment mechanisms (OECD, 2016[36]).

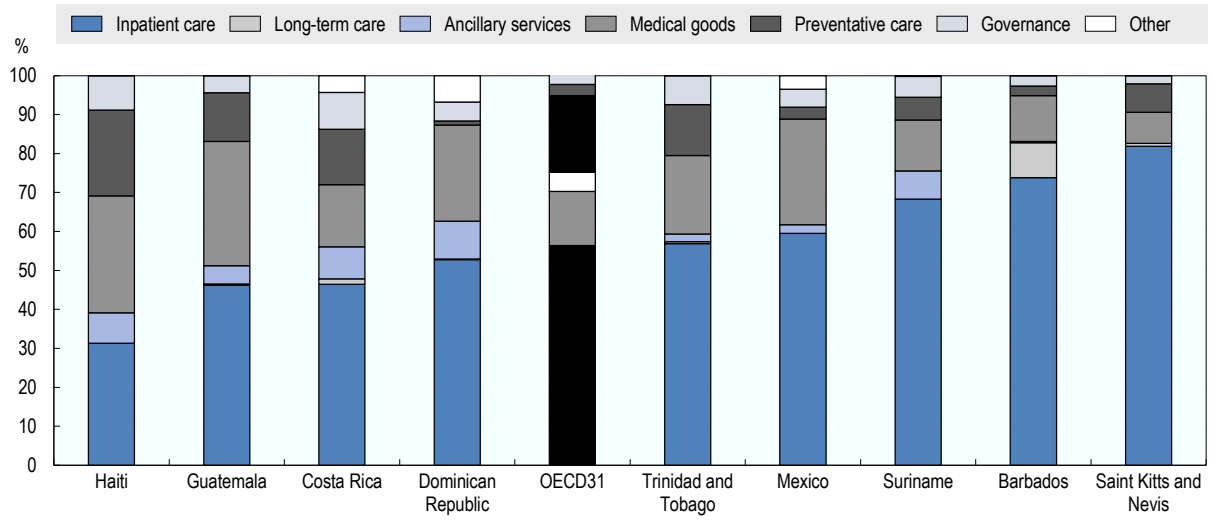
Source: Author's review and adapted from OECD (2017[2]), *Tackling Wasteful Spending on Health*, *https://dx.doi.org/10.1787/9789264266414-en*.

becomes available, a more precise optimal mix of functional expenditure can be identified to further guide countries to minimise waste.

Figure 2.10 shows that the disaggregation of current health expenditure (CHE) by function varies substantially across LAC. Spending on curative care is the largest share in all countries, although it is relatively smaller in Haiti (conversely, Haiti spends a disproportionate amount on medical goods), while the Dominican Republic spends very little on preventive care.

The available data suggest that some LAC countries (particularly Costa Rica, Haiti, and Trinidad and Tobago) spend a higher share of CHE on preventative care than OECD countries. OECD countries expenditure on prevention most often falls between 1% and 6%. Although an optimal share of prevention spending has not been established, prevention interventions have been defined as highly cost-effective, which suggests that OECD countries' limited prevention share leads them to miss opportunities to capitalise on such investments. However, evidence from OECD countries also suggests that a large proportion of prevention spending is used for less cost-effective interventions,

Figure 2.10. **Current health expenditure by health care function**



Source: WHO (2019), Global Health Expenditure Database.

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such as check-ups. Activities such as vaccinations and screening campaigns have been proved to be more cost-effective, suggesting that all countries should examine the composition of their prevention spending to minimise waste. The budget constraints posed by recessions also tend to particularly affect prevention activities, which are often the first function to be scaled down. Maintaining adequate spending in a context of limited funds is a challenge for all countries, but it is critical that cost-effectiveness is considered when making budget reduction decisions.

Improving health information systems to reduce waste

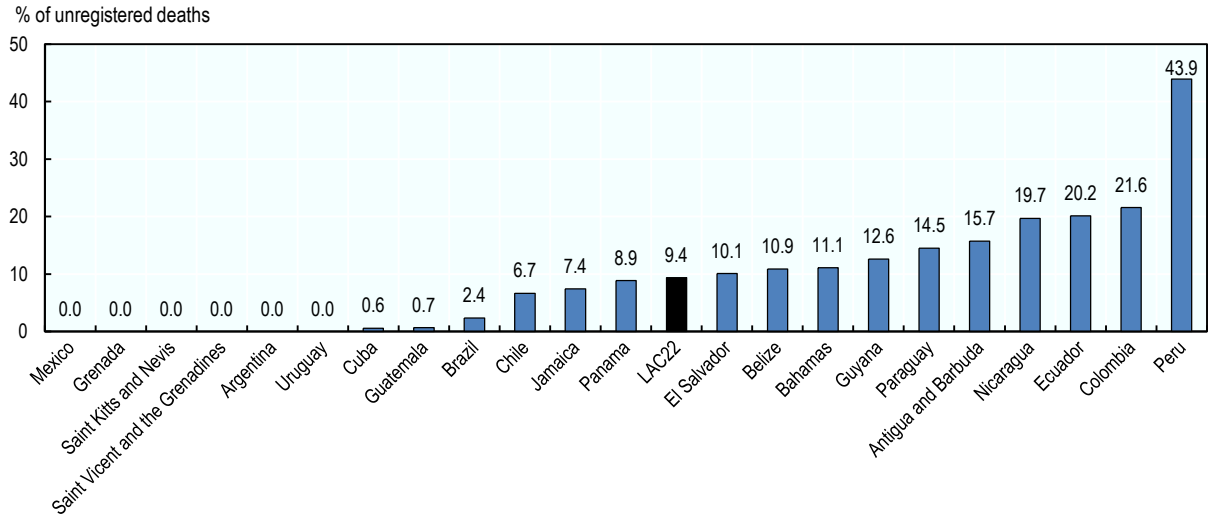
Good quality data on inputs, outputs, outcomes, processes, and feedback mechanisms are needed to identify sources of inefficiency and areas of potential improvement. In parallel to the necessary data for efficiency-specific interventions, countries should invest in health infrastructure and IT systems that inform policy and clinical processes in an agile and useful way.

Figure 2.11 displays the current gap in reporting of vital statistics of mortality data in LAC, the challenge in many countries of adequately tracking life events and clinical information throughout the life of a patient, and his or her interactions with the health system. Unregistered deaths are exceptionally common in Peru, while also high (in descending order, from above 21% to above 15%) in Colombia, Ecuador, Nicaragua, and Antigua and Barbuda.

Information technologies can be used both directly and indirectly to reduce waste. Firstly, efficient process in all areas of the health system are dependent on effective information systems. This includes systems to adequately refer patients between facilities and levels of care, to share information in real time to inform decisions at the operational and governance levels, amongst other uses. Secondly, they are fundamental in detecting wasteful practices and unwarranted variations, which can then be addressed more rapidly and precisely.

Fragmentation across providers, regions, and levels of care and a divide between policy-makers and health workers on the ground are particularly significant challenges for health information systems in LAC. For example, Peru has invested in an information system capable of producing large amounts of information; however, limited interoperability among different providers and regions challenges the quality, utility, and comprehensiveness of this data. In addition, health information collection is often a

Figure 2.11. **Under-reporting of deaths in 22 Latin American and Caribbean countries, 2016 (or latest year available)**



Source: PAHO (2019[37]), *Core Indicators 2019: Health Trends in the Americas*, *http://www.paho.org/data/index.php/en/indicators.html*.

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burden for front-line health workers, particularly in contexts with limited infrastructure (use of paper records or irregular connectivity). This can lead to reducing both the quality of information and of care provision. In some cases, even when information is adequately collected at the point of care and shared with institutions responsible for its processing, it is often not used in a meaningful way to make evidence-based decisions or to provide feedback to providers (OECD, 2017[38]). The collection of information that has no real purpose or value for the improvement of the system represents a clear example of waste that countries should address as a priority.

Another priority for countries looking to build information systems that help reduce waste is developing capacity to track and inform decisions on quality of care. The data collection exercise implemented by the World Bank and OECD in the context of this publication found that very few LAC countries collect quality indicators at the national level, rendering it impossible to perform a comparable and comprehensive assessment of quality of care. Since quality is a key dimension of UHC, countries should aim to better measure it in order to drive its development, parallel to efforts to improve access and financial protection.

Improving governance and institutions in LAC health systems

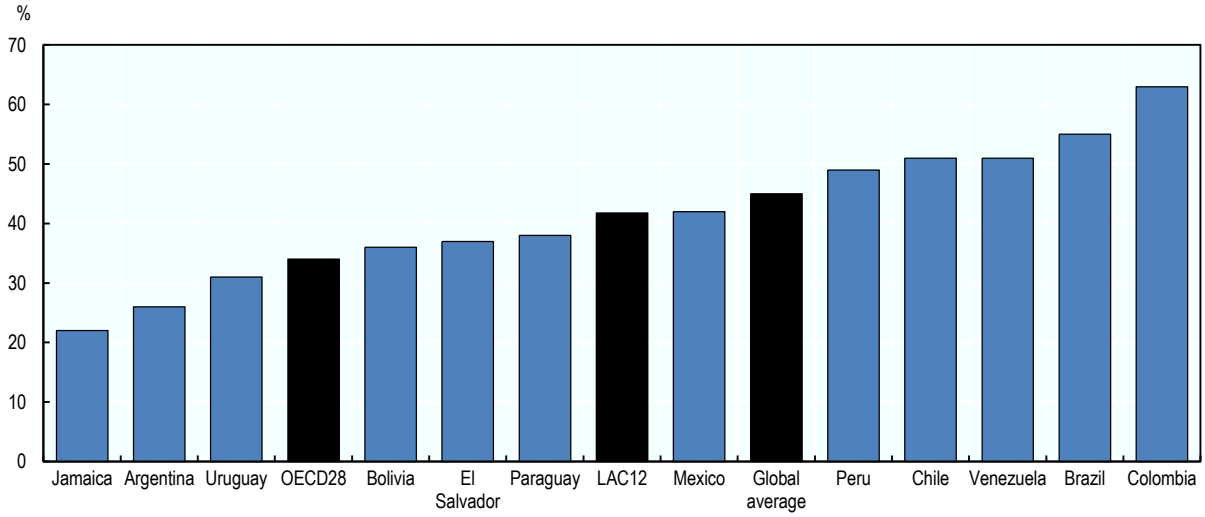
Ineffective governance and institutions are an important driver of inefficiency. In some cases, miscarried governance processes take the form of corruption, where actors deliberately divert resources from the health care system in their own self-interest or in the interest of a group they support. These integrity violations prevail in all countries around the world and can take place in the context of a vast array of transactions involving providers of health services, payers of these services, and/or recipients/consumers. In addition, they can occur in the procurement and distribution of medical goods and services, and the promotion of corporate/industrial interests in the health sector (OECD, 2017[2]).

Corruption in health can affect the financial arena, with waste developing in direct (money is diverted from the system) and indirect ways (the risk of corruption requires additional investments in prevention or detection activities). Furthermore, integrity violations can impact the quality of goods and services (e.g. provision of substandard quality of medicines or equipment or of unnecessary

service), access to care and equity (e.g. informal payments can discourage access), allocative efficiency across sectors (e.g. spending less on health), and public trust and welfare (OECD, 2017[2]).

Integrity violations in health are difficult to measure, including because the understanding of what may constitute fraud, abuse, and corruption is not uniform. However, surveys to assess people's perceptions of such incidences are at least suggestive as proxies and allow cross-country comparisons. Figure 2.12 displays the percentage of the population that believes the health sector to be corrupt or very corrupt for 12 LAC countries with available data, the OECD average for 28 countries, and the global average for 103 countries. The level of perceived corruption in health within LAC countries varies between 63% in Colombia and 22% in Jamaica, with an average of 42%, higher than the OECD28 average of 34% and lower than the global average of 45%.

Figure 2.12. **Percentage of the population that considers the health sector to be corrupt or very corrupt in LAC countries with data**



Note: The global average includes 103 countries. The OECD and LAC average includes 28 and 12 countries, respectively.
Source: Transparency International (2013[39]), Global Corruption Barometer 2013, *https://www.transparency.org/gcb2013/report*.

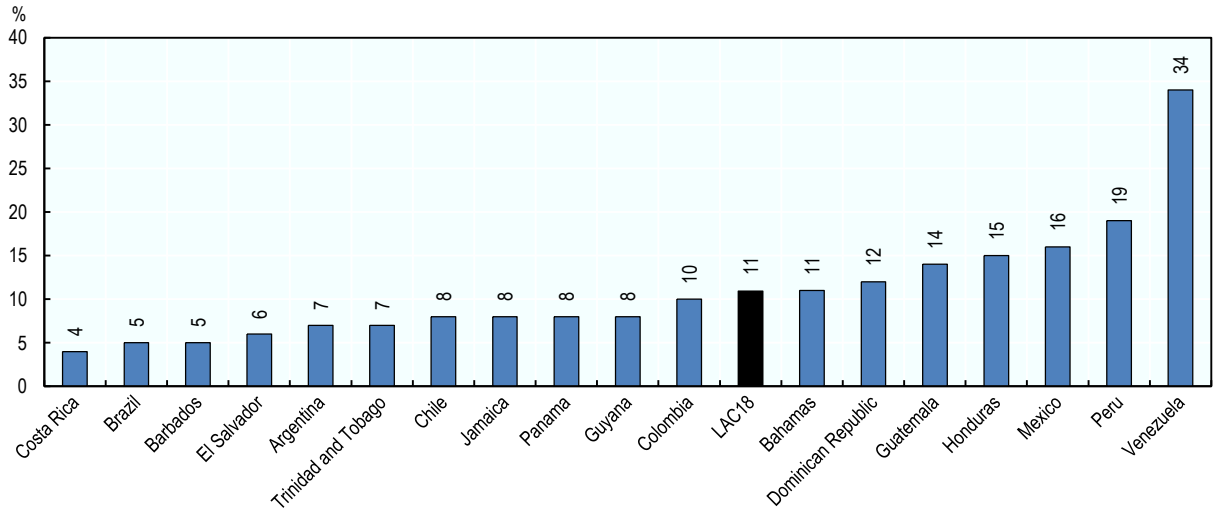
StatLink https://stat.link/if2xvk

Figure 2.13 shows the rates of people who stated that they had given bribes in their encounters with public clinics and health centres in 18 LAC countries. Venezuela stands out, with 34% of people declaring to given bribes, followed by Peru (19%), Mexico (16%), and Honduras (15%). At the other end of the spectrum, less than 5% of the populations of Costa Rica, Brazil, and Barbados stated that they had given bribes to health institutions.

The main stakeholders to be addressed by policies and actions to tackle corruption-related waste include providers of medical goods and services, suppliers or manufacturers of medical goods and services, payers of such goods and services, the regulatory sector, and individuals. All of these actors can either resist/respond or be the victim of corruption. Integrity violations by these stakeholders can occur in health service delivery, payment, and coverage decisions; in procurement and distribution; and through inappropriate business practices (Transparency International, 2006[41]).

Some OECD countries have developed policies related to the active detection of integrity violations in service delivery and financing, using data mining and review campaigns. In addition, other countries have regulated the relationship between public and private actors, mainly by increasing transparency, for instance, mandating the disclosure of financial relationships and

Figure 2.13. **Bribery rates in public clinics and health centres based on people who used these public services in the previous 12 months, 2019**



Source: Transparency International (2019[40]), Global Corruption Barometer, Latin America & the Caribbean 2019. Citizens' views and experiences of corruption, *https://www.transparency.org/files/content/pages/2019_GCB_LatinAmerica_Caribbean_Full_Report.pdf*.

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transfers of value (e.g. Sunshine Acts). In particular with respect to the pharmaceutical sector, codes of conduct have been developed and implemented, mostly as self-regulation initiatives (OECD, 2017[2]). These actions align with policy recommendations, such as ensuring people can safely report corruption, guaranteeing that punishments are fairly given, enabling NGOs to operate freely, and empowering citizens to hold governments to account (Transparency International, 2019[40]).

In LAC, several countries have put in place regulations to control corruption. For instance, with the exception of Bolivia, Costa Rica, Cuba, and Venezuela, most countries in the region have laws that guarantee access to official information, including from the health sector (UNESCO, 2017[42]).

Conclusion

This chapter has discussed the importance of identifying and reducing wasteful health spending for countries in LAC, in a context of a necessary expansion of health financing and a shift toward less reliance on private health expenditures as paths to high-quality universal health coverage. As countries face recurrent limitation of public funds, technological innovation, and changing epidemiological and demographic profiles, they should invest in their capacity to keep waste at minimum levels in all dimensions and areas of health systems. This will help free up existing resources and increase the willingness of key stakeholders for the mobilisation of additional resources for health. Furthermore, it will contribute to ensure the long-term sustainability of health systems and its resilience against current or future lack of funds or emerging challenges.

The chapter has identified specific areas of waste and has recognised tools that LAC countries can use to reduce it in three areas of the health system:

- Clinical-level care: Waste at the clinical level can be tackled by first investing in the capacity to identify unwarranted variations, which helps decision-makers understand where waste is more prevalent and what factors are influencing it. Clinical-level waste can also be addressed by reducing procedures that add little or no value to the system and the patient and in some cases may even increase harm to them. In addition, promoting rational use of medicines through incentives to only prescribe and consume antibiotics when necessary helps curtail expenditure and the threat posed by antimicrobial resistance.

- Operational waste: Countries should develop their prioritisation mechanisms further, such as the capacity to establish what technologies bring the best value through Health Technology Assessments and the use of such findings for decision-making. They can tackle the overuse of hospital resources by reducing admissions for conditions that can be more efficiently treated at the primary-care level and by ensuring that patients can be discharged as quickly (but not prematurely) and safely as possible. The use of generics should be incentivised to ensure that resources are not wasted in more expensive branded alternatives.
- Governance waste: Waste can also be addressed at the governance dimension. First, the fragmented structure of the majority of LAC health systems is a major source of waste, which will require further revision and reforms. Moreover, establishing an efficient balance in a country's functional expenditure is key to reduce wasteful resources in a functional category while underfunding another one. Countries should ensure that their information systems are able to track performance and produce useful data, while investing in their capacity to analyse such information and use it to inform decisions at all levels. Finally, there is evidence that LAC health systems are not free of intentional efforts to take financial advantage of institutional weaknesses for personal profit – highlighting the need to enhance system integrity in both the public and private components of the health sector.

Any successful effort to reduce waste must proceed in a comprehensive and holistic manner. It must also be based on the engagement of all health system actors and on effective communication and transparency. Ensuring that both patients and providers are well-informed and understand how their choices play a role in the larger picture of the health system is key. Evidence shows that several LAC countries have been undertaking well-targeted efforts to reduce waste but additional improvements are within reach for all health systems in the region. Without cutting health budgets and even considering the needs to increase government health expenditure, being more efficient and achieving better results for people who need it the most are not mutually exclusive. When policies are properly designed and implemented, these objectives can be synergic.

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Chapter 3

Health status

Life expectancy at birth continues to rise in the Latin American and Caribbean (LAC) region, driven by the steady reduction of mortality at all ages, and particularly of infant and child mortality in all countries (see indicators "Infant mortality" and "Under age 5 mortality"). These gains in longevity can be attributed to a number of factors, including rising living standards, better nutrition and improved drinking water and sanitation facilities (see indicator "Water and sanitation" in Chapter 4). Improved lifestyles, increased education and greater access to quality health services also play an important role (Raleigh, 2019[1]).

Life expectancy at birth for the whole population across the LAC31 region reached 74.5 years on average in 2017, a gain of almost 4 years since 2000. In comparison, OECD countries gained 3.6 years during the same period (Figure 3.1, left panel). However, a large regional divide persists in life expectancy at birth. The countries with the longest life expectancy in 2017 were Costa Rica and Chile just over 80 years old, closely followed by Cuba just below that number. In contrast, three countries in the LAC region had total life expectancies of less than 70 years (Haiti, Guyana and Bolivia). In Haiti, a child born in 2017 can expect to live an average of less than 64 years.

Women live longer than men do (Figure 3.1, right panel), but the degree of disparity also varies across countries. The gender gap in life expectancy stood at 5.7 years on average across LAC31 countries in 2017, higher than the OECD countries average of 5.3 years. The gender difference was particularly large in Venezuela and El Salvador with more than eight and more than nine years gap, respectively. Women also have greater rates of survival to age 65 (Figure 3.2), regardless of the economic status of the country. On average across LAC countries, 83.2% of a cohort of new-born infant women would live to age 65, while only 73.8% of males would live to age 65. Only in Costa Rica more than 90% of new-born infant women are expected to live to age 65, still below the OECD average of 90.9%.

Higher national income – as measured by GDP per capita – is generally associated with higher life expectancy at birth (Figure 3.3). There were, however, some notable differences in life expectancy between countries with similar income per capita. For instance, Costa Rica had higher, and Trinidad and Tobago had lower life expectancies than predicted by their GDP per capita alone.

Regarding gender-based differences in life expectancy, it can be explained by changes occurred in the past century such as reductions in maternal mortality as well as the decrease in the total fertility rate, increased smoking by men, and the reduction of infectious diseases that disproportionately benefited women (Goldin and Lleras-Muney, 2018[2]). In addition, in LAC the gender gap can also be understood because of the prevalence of violence in many countries that affects more men than women (see section on "Mortality from injuries").

Socioeconomic status and education play an important role in life expectancy as seen in the case of a diverse range of LAC countries such as Colombia, Dominican Republic, Guatemala and Haiti, where the higher educational background of mothers and household wealth are associated with better infant and child survival (see indicators "Infant mortality" and "Under age 5 mortality").

Definition and comparability

Life expectancy at birth is the best-known measure of population health status and is often used to gauge a country's health development. It measures how long, on average, a new-born infant can expect to live if current death rates do not change. Since the factors affecting life expectancy often change slowly, variations are best assessed over long periods of time. Age-specific mortality rates are used to construct life tables from which life expectancies are derived. The methodologies that countries use to calculate life expectancy can vary somewhat, and these can lead to differences of fractions of a year. Some countries base their life expectancies on estimates derived from censuses and surveys, and not on accurate registration of deaths. Survival to age 65 refers to the percentage of a cohort of new-born infants that would survive to age 65, if subject to current age-specific mortality rates.

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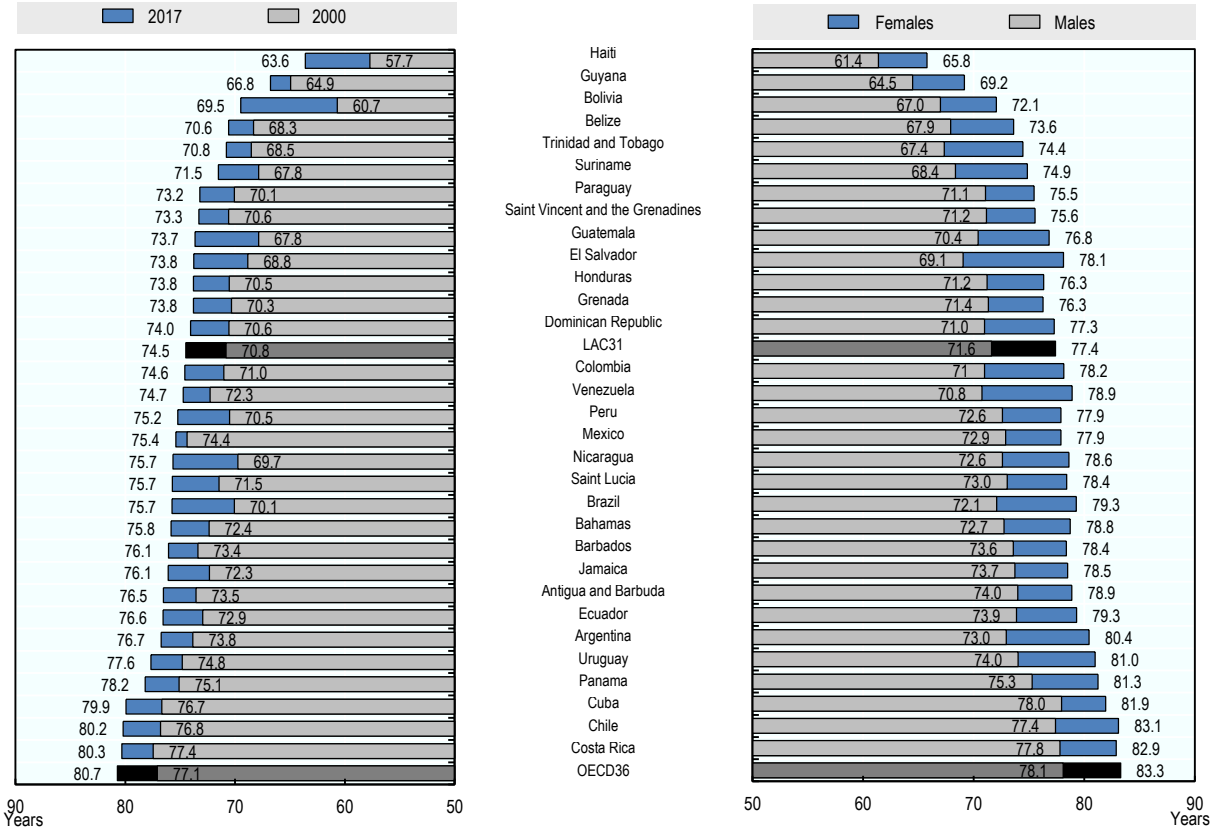
Figure 3.1. **Life expectancy at birth, by sex, 2000 and 2017 (or nearest year)**



Source: The World Bank World Development Indicators Online 2019, Ministry of Health for Costa Rica.

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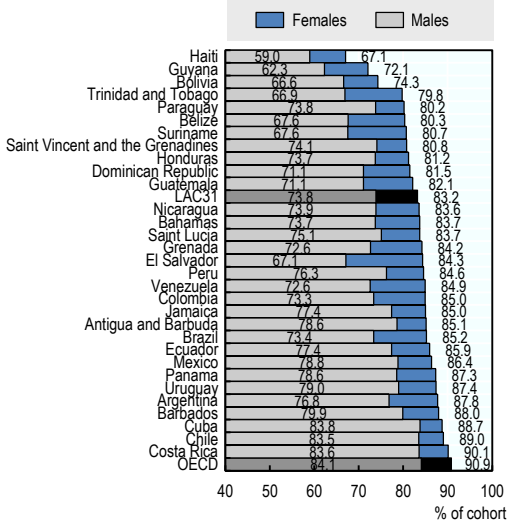
Figure 3.2. **Survival rate to age 65, 2017 (or nearest year)**



Source: The World Bank World Development Indicators Online 2019.

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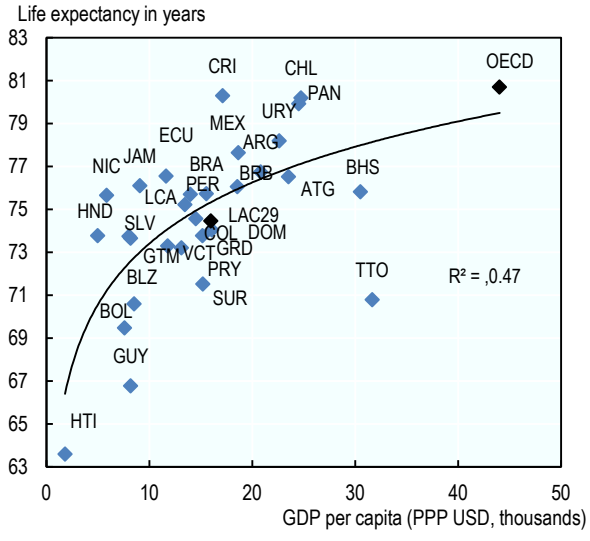
Figure 3.3. **Life expectancy at birth and GDP per capita, 2017 (or nearest year)**



Source: The World Bank World Development Indicators Online 2019, Ministry of Health for Costa Rica.

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Infant mortality, deaths in children aged less than one year, reflects the effect of economic, social and environmental conditions on the health of mothers and infants, as well as the effectiveness of health systems. Factors such as the education of the mother, quality of antenatal and childbirth care, preterm birth and birth weight, immediate new-born care and infant feeding practices are important determinants of infant mortality (see sections "Preterm birth and low birthweight" and "Pregnancy and birth" in Chapter 4). Diarrhoea, pneumonia, infection and undernutrition continue to be among the leading causes of death in both mothers and infants see sections "Child malnutrition (including undernutrition and overweight)" and "Overweight or obese adults" in Chapter 4]. In the LAC region, around one third of the deaths in the first year of life occur during the neonatal period (i.e. during the first four weeks of life or days 0-27) (Black et al., 2016[3]).

In 2017, the infant mortality average in LAC was 15.7 deaths per 1 000 live births. Infant mortality was lower in countries such as Cuba, Antigua and Barbuda, The Bahamas and Chile (under 7 deaths per 1 000 live births), while higher in Guyana, Bolivia and particularly Haiti (26, 28 and 54 per 1 000 live births, respectively) (Figure 3.4). Between 2000 and 2017, the average infant mortality rate has fallen by 35% in the LAC region, with the majority of countries experiencing declines between 25% and 45% (Figure 3.4). Antigua and Barbuda, Bahamas, Brazil and Peru saw declines of over 55%. Both Grenada and Venezuela experienced increases in infant mortality rate, particularly the latter, with a nearly 40% increase.

Across countries, important determinants of infant mortality rates are income status and mother education. For instance, in Colombia, infant mortality is more than four times higher in the poorest quintile compared to the richest quintile, and almost five times higher when mothers have low education than higher (no education or primary vs secondary or tertiary). Geographical location (urban or rural) is another determinant of infant mortality in the region, though relatively less important in comparison to income or mother's education. For example, infant mortality rate in rural areas of Peru reaches 25 deaths per 1 000 live births, compared to 16 deaths per 1 000 live births in urban areas (Figure 3.5).

Infant mortality can be reduced through cost-effective and appropriate interventions. These include immediate skin-to-skin contact between mothers and new-borns after delivery, early and exclusive breastfeeding for the first six months of life, and kangaroo mother care for babies weighing 2 000g or less. Postnatal care for mothers and new-borns within 48 hours of birth, delayed bathing until after 24 hours of childbirth and dry cord care are important to reducing infant deaths. Management and treatment of neonatal infections, pneumonia, diarrhoea and malaria is also critical. Oral rehydration therapy is a cheap and effective means to offset the debilitating effects of diarrhoea, and countries could also implement relatively inexpensive public health interventions including immunisation, and provide clean water and sanitation (see indicator "Water and sanitation" in Chapter 4 and "Childhood vaccination programmes" in Chapter 7). Reductions in infant mortality will require not only the aforementioned strategies, but also ensuring that all segments of the population benefit from these improvements (Gordillo-Tobar, Quinlan-Davidson and Mills, 2017[4]).

Definition and comparability

Infant mortality rate is defined as the number of children who die before reaching their first birthday in a given year, expressed per 1 000 live births. Some countries base their infant mortality rates on estimates derived from censuses, surveys and sample registration systems, and not on accurate and complete registration of births and deaths. Differences among countries in registering practices for premature infants may also add slightly to international variations in rates. Infant mortality rates are generated by either applying a statistical model or transforming under age 5 mortality rates based on model life tables.

Data on mortality by socio-economic conditions is from DHS surveys and MICS. These surveys allow for the disaggregation of household data by education level (no education and primary vs secondary and tertiary), income (lowest and highest quintiles of income) and rural and urban residency.

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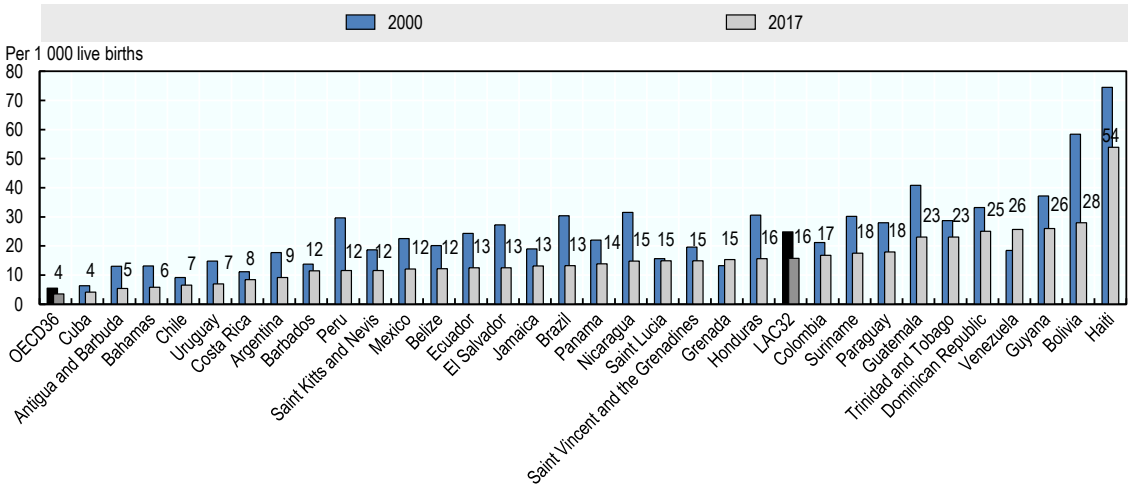
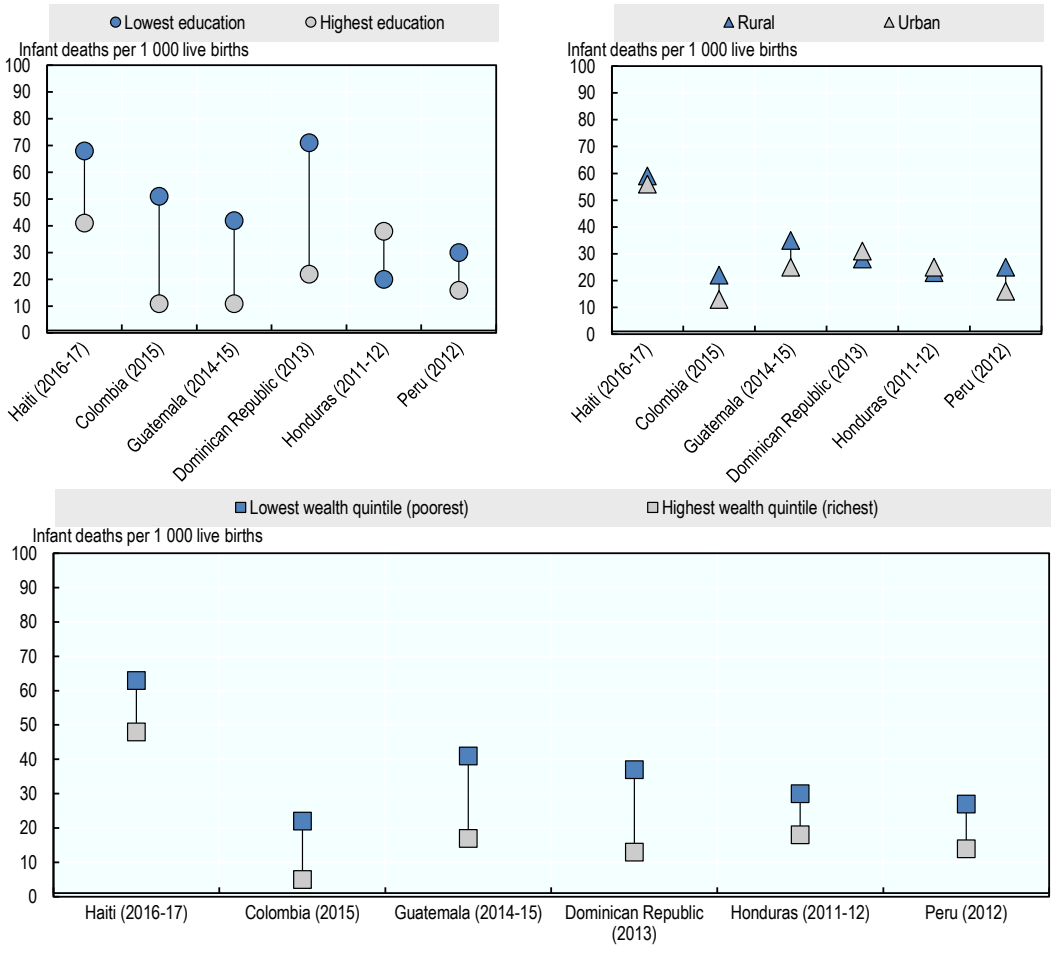
Figure 3.4. **Infant mortality rates, 2000 and 2017 (or nearest year)**



Source: The World Bank World Development Indicators Online 2019, Ministry of Health for Costa Rica.

StatLink https://stat.link/k4gt81

Figure 3.5. **Infant mortality rate ratios by socio-economic and geographic factor, selected countries and latest year available**



Source: Demographic and Health Survey (DHS) and Multiple Indicator Cluster Survey (MICS) 2005-14.

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The under age 5 mortality rate is an indicator of child health as well as the overall development and well-being of a population. In 2017, 5.4 million children died worldwide before their fifth birthday and 3.5% of these deaths (188 000) occurred in the LAC region (UNICEF et al., 2018[5]). As part of their Sustainable Development Goals (SDG), the United Nations has set a target of reducing under age 5 mortality to at least as low as 25 per 1 000 live births by 2030. The main causes of death among children under five include preterm birth complications (18%), pneumonia (12%), intrapartum-related complications (8%) and sepsis (7%). Undernutrition, suboptimal breastfeeding and zinc deficiency are overlapping risk factors of childhood diarrhoea and pneumonia – the leading infectious causes of childhood morbidity and mortality (PAHO, 2017[6]). In this context, the UN General Assembly has also proclaimed the UN Decade of Action on Nutrition (2016-25).

The global under-five mortality rate was estimated by the World Bank at 39 per 1 000 live births, while the average under-five mortality rate across LAC33 countries was 19 deaths per 1 000 live births (Figure 3.6). Cuba, Bahamas, Antigua and Barbuda, Chile, Uruguay and Costa Rica achieved rates of less than 10 deaths per 1 000 live births. Mortality rates in Bolivia, Dominica, Guyana and Venezuela were high, between 31 and 35 deaths per 1 000 live births, while rates in Haiti were very high, reaching 71.7 deaths per 1 000 live births. These countries also had the highest infant mortality in the region as seen in the previous section.

Whilst under age 5 mortality has declined by an average of 46% in LAC countries between 2000 and 2017, progress varies significantly among countries. Countries such as Bolivia, El Salvador, Peru and Brazil reported a drop of over 55%, while in Dominica increased by 121%, in Venezuela by 42%, and in Grenada by 6%. Haiti saw a reduction of 31% in the period, which is still below the improvement in the region.

As is the case for infant mortality (see indicator “Infant mortality” in Chapter 3), inequalities in under age 5 mortality rates also exist within countries. Across countries, under age 5 mortality rates consistently vary based on household income and mother’s education, and to a certain extent by geographical location. For example, in Haiti under age 5 mortality was around three times higher among children whose mother had no o little education compared to those whose mother had more than secondary education. Inequality by education level was also large in Guyana and Peru. In Peru, Honduras and Haiti, disparities in under age 5 mortality according to income were also large with children in the poorest 20% of the population above or around two times more likely to die before their fifth birthday than those in the richest 20%. Inequalities in mortality rates based on geographic locations were relatively small (Figure 3.7).

In order to achieve the SDG target, countries can accelerate their efforts, for example by scaling effective preventive and curative interventions including early essential new-born care, vitamin A supplementation, vaccines for rotavirus and measles, safe water and improved sanitation, breastfeeding and adequate complementary food, hand-washing with soap, and improved case management. An integrated approach targeting the main causes of post-neonatal deaths, namely pneumonia, diarrhoea, malaria and undernutrition, and reaching the most vulnerable new-born babies and children, could produce a 14% reduction in the under-5 mortality rate (PAHO, 2017[6]). The benefits would be two-fold: a decrease in the short-term mortality rates, and healthier survivors with better outcomes in the long-run.

Definition and comparability

Under age 5 mortality is defined as the probability of a child born in a given year dying before reaching their fifth birthday, and is expressed per 1 000 live births. Since under age 5 mortality is derived from a life table, it is, strictly speaking, not a rate but a probability of death. Age-specific mortality rates are used to construct life tables from which under age 5 mortality is derived. Some countries base their estimates on censuses, surveys and sample registration systems, and not on accurate and complete registration of deaths. See indicator “Infant mortality” for definition of rate ratios.

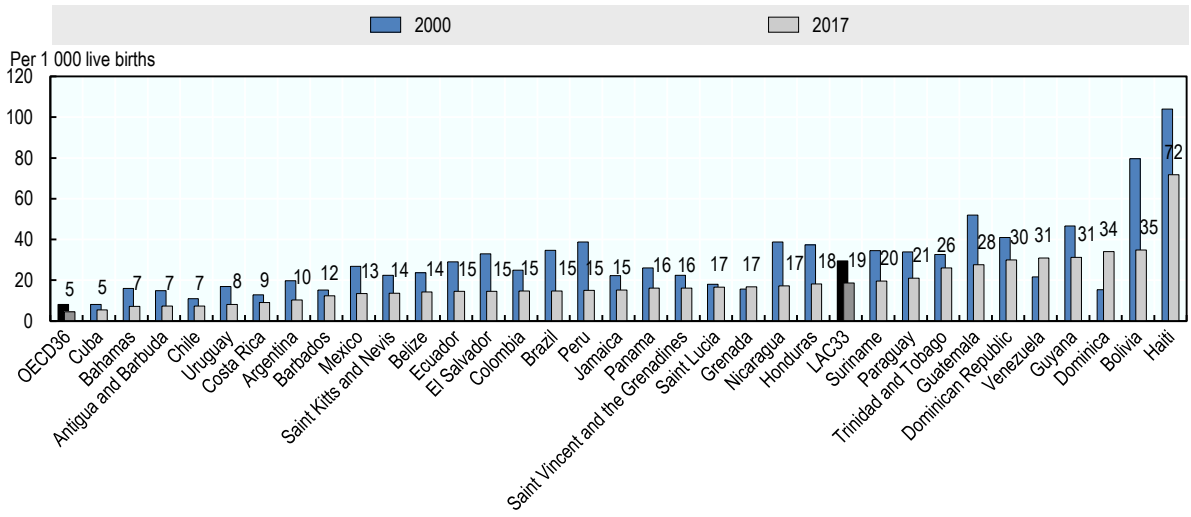
Data on mortality by socio-economic conditions is from DHS surveys and MICS. These surveys allow for the disaggregation of household data by education level (no education and primary vs secondary and tertiary), income (lowest and highest quintiles of income) and rural and urban residency.

References

[6] PAHO (2017), *Health in the Americas+, 2017 Edition. Summary: Regional Outlook and Country Profiles*, Pan American Health Organization, Washington, D.C., *https://www.paho.org/salud-en-las-americas-2017/wp-content/uploads/2017/09/Print-Version-English.pdf*.

[5] UNICEF et al. (2018), *Levels and Trends in Child Mortality Report 2018*, UNICEF Publications, *https://www.unicef.org/publications/index_103264.html*.

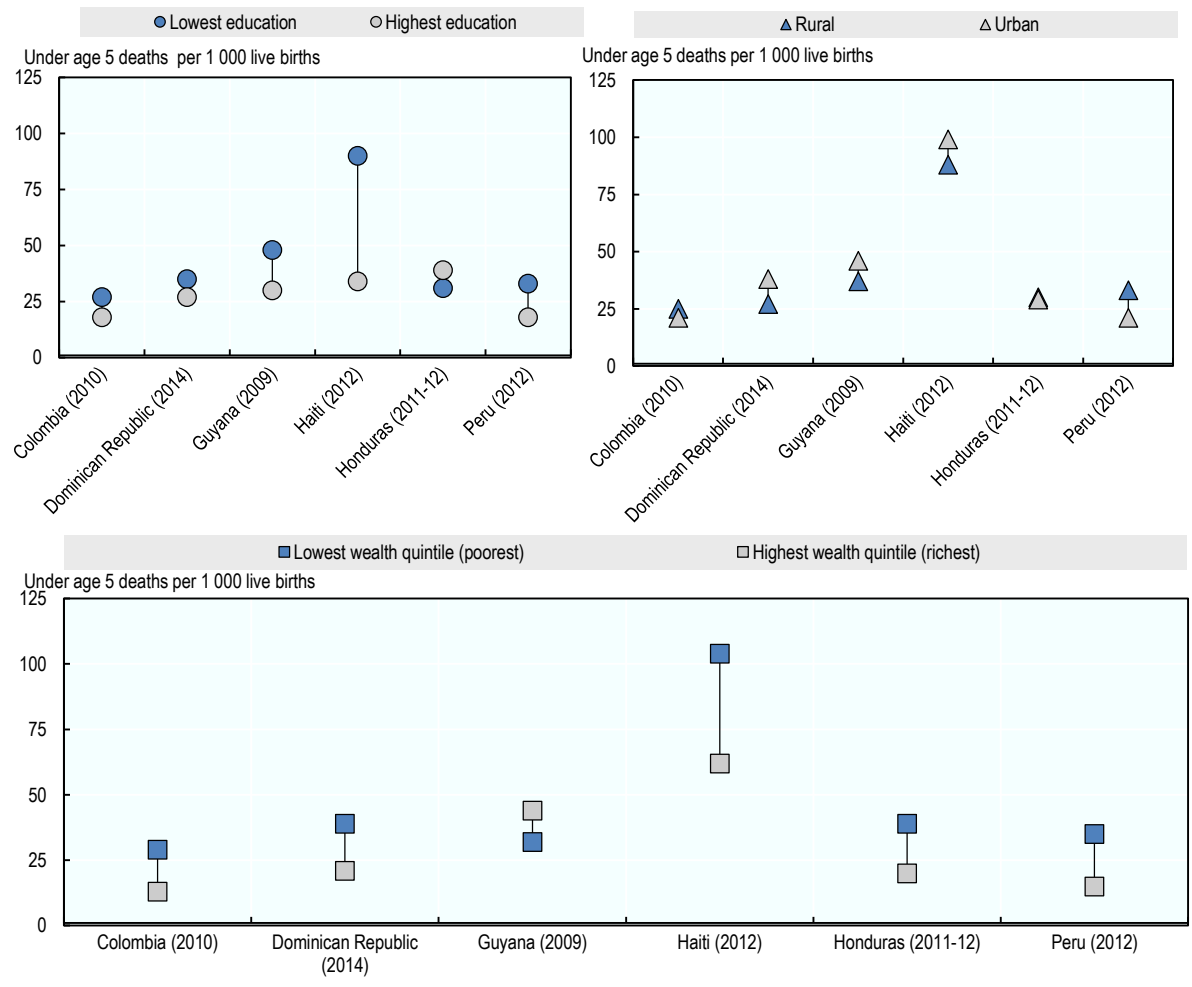
Figure 3.6. **Under age 5 mortality rates, 2000 and 2017 (or nearest year)**



Source: UN IGME 2019.

StatLink https://stat.link/04ub2r

Figure 3.7. **Under age 5 mortality rate ratios by socio-economic and geographic factor, selected countries and years**



Source: Demographic and Health Survey (DHS) and Multiple Indicator Cluster Survey (MICS) 2005-14.

StatLink https://stat.link/p01qr2

Cumulative development in countries is bringing an "epidemiological transition", whereby early deaths are replaced by late deaths, and communicable diseases are substituted by non-communicable diseases (Omran, 2005[7]). This is also the case in LAC, where the burden from non-communicable diseases among adults – the most economically productive age group – is rapidly increasing.

There are wide disparities in adult mortality in the LAC region. For men in 2016, the probability of dying between ages 15 and 60 ranged from a low of 114 per 100 000 population in Chile to 311 per 100 000 in Guyana (Figure 3.8). It also exceeded 260 per 100 000 population in Haiti and El Salvador. Among women, the probability ranged from 60 per 100 000 population in Chile to 211 in Haiti. Mortality was higher among men than women across all countries, and the ratio was higher in countries with overall lower mortality rates. Mortality rates for men were two times the rates for women or higher in most countries. Across LAC31, the average probability of dying was 184 per 100 000 population for adult men and 108 per 100 000 population for adult women, still much higher than the average adult mortality in OECD countries (104 per 100 000 population for men and 53 per 1 000 population for women).

All-cause mortality for the entire population ranged from less than 700 per 100 000 population in The Bahamas, Chile and Barbados, to over 1 000 in Honduras and Haiti (Figure 3.9). The average all-cause mortality rate in the LAC region was nearly double the average among OECD-countries. Nonetheless, mortality for the entire population declined by an average of 13% in the LAC region between 2000 and 2017. The largest declines were in Guatemala, Honduras, El Salvador, Nicaragua, Chile and Dominican Republic (over 15% decrease). Overall mortality for all populations is highly related with adult mortality across countries in the region; Haiti having the highest adult mortality for both men and women, as well as the highest all-cause mortality.

The share of deaths due to non-communicable diseases is increasing in LAC countries. Non-communicable diseases such as cardiovascular diseases and cancers were the most common causes of death, being responsible for over 82% of all deaths, on average, across 32 LAC countries (Figure 3.10; see also section "Mortality from cardiovascular diseases" and section "Mortality from cancer" in Chapter 3). In OECD countries, the average was higher at 85% and the share was also increasing. However, communicable diseases such as respiratory infections, diarrhoeal diseases and tuberculosis, along with maternal and perinatal conditions, also remained major causes of death among many countries in the LAC region, accounting for 10% of deaths in 2017. The remaining 8% of deaths are attributed to injuries and violence.

The level of all-cause mortality and the causes of death are important for identifying the country's public health priorities and assessing the effectiveness of a country's health system. This can be complemented with multiple data to understand the relationships with other factors and also forecast future health scenarios, which can guide decision making about funding and actions in health systems (Foreman et al., 2018[8]).

Definition and comparability

Mortality rates are calculated by dividing annual numbers of deaths by mid-year population estimates. Rates have been age-standardised to the UN World Population Prospects to remove variations arising from differences in age structures across countries. Complete vital registration systems do not exist in many developing countries, and about one-third of countries in the region do not have recent data. Misclassification of causes of death is also an issue. The WHO Global Health Estimates (GHE) project draws on a wide range of data sources to quantify global and regional effects of diseases, injuries and risk factors on population health. WHO has also developed life tables for all member states, based on a systematic review of all available evidence on mortality levels and trends. The probability of dying between 15 and 60 years of age (adult mortality rate) derive from these life tables.

References

[8] Foreman, K. et al. (2018), "Forecasting life expectancy, years of life lost, and all-cause and cause-specific mortality for 250 causes of death: reference and alternative scenarios for 2016-40 for 195 countries and territories.", *Lancet (London, England)*, Vol. 392/10159, pp. 2052-2090, *http://dx.doi.org/10.1016/S0140-6736(18)31694-5*.

[7] Omran, A. (2005), "The epidemiologic transition: a theory of the epidemiology of population change", *The Milbank quarterly*, Vol. 83/4, pp. 731-57, *http://dx.doi.org/10.1111/j.1468-0009.2005.00398.x*.

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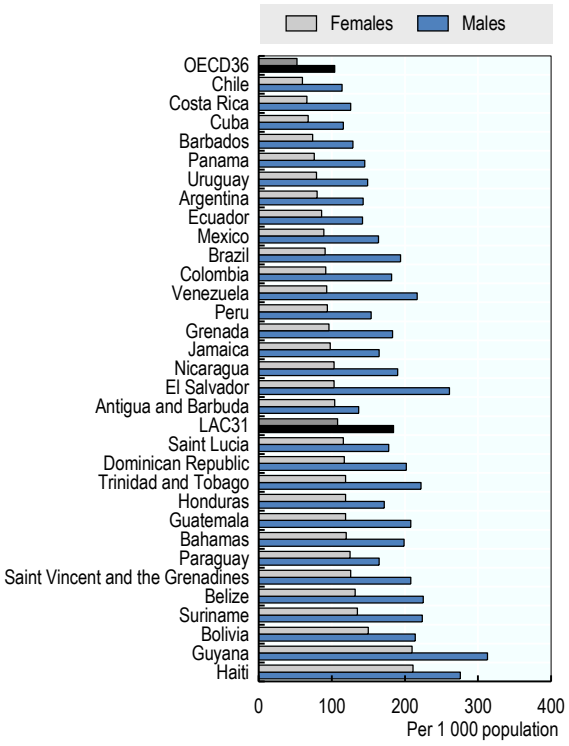
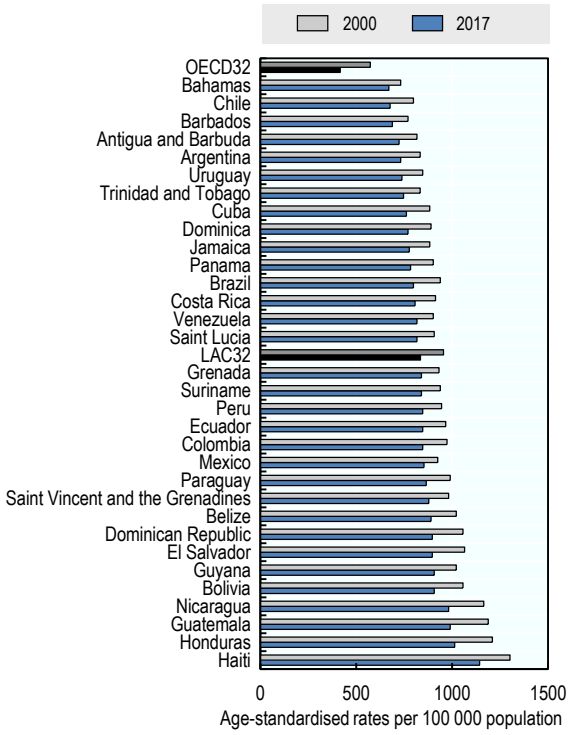
Figure 3.8. **Adult mortality rate (probability of dying between 15 and 60 years per 1 000 population), 2016**



Source: WHO GHO 2018.

StatLink https://stat.link/bkuzwt

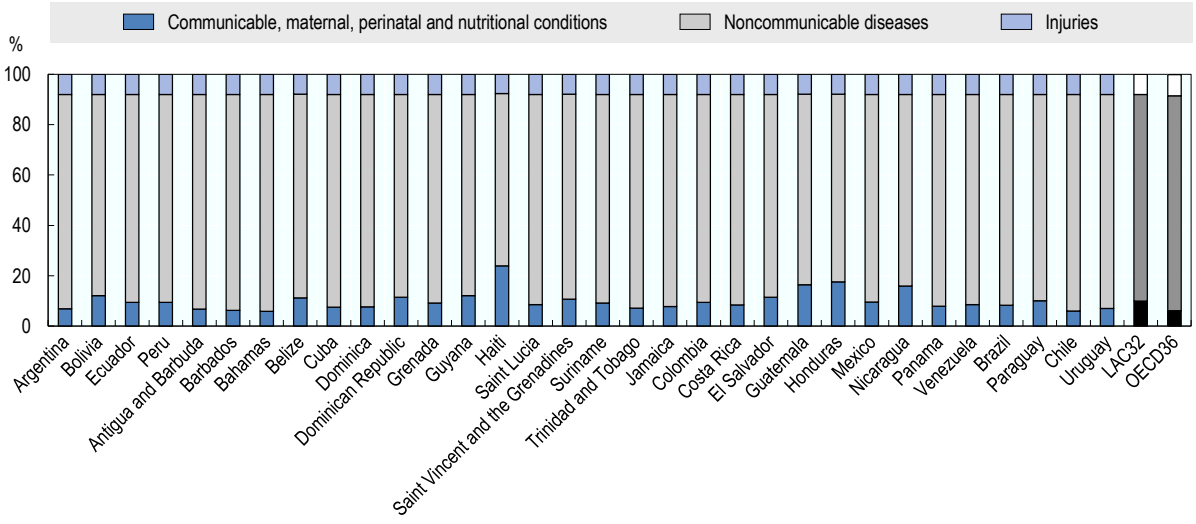
Figure 3.9. **All cause-mortality rates for all populations, 2000 and 2017 (or nearest year)**



Source: Global Burden of Disease (2019), IHME.

StatLink https://stat.link/yeku1g

Figure 3.10. **Proportions of all cause deaths, 2015 (or nearest year)**



Source: Global Burden of Disease (2019), IHME.

StatLink https://stat.link/wto79j

Cardiovascular diseases (CVD) are the number one cause of death globally and were estimated to have caused 1.8 million annual deaths in the WHO Region of the Americas (PAHO, 2017[6]). CVD covers a range of diseases related to the circulatory system, including ischaemic heart disease (IHD) and cerebrovascular disease. Ischemic heart disease is caused by the accumulation of an atherosclerotic plaque in the inner wall of a coronary artery, restricting blood flow to the heart. Cerebrovascular diseases refer to a group of diseases that relate to problems with the blood vessels that supply the brain. Common types of cerebrovascular disease include ischemic stroke, which develops when the brain's blood supply is blocked or interrupted, and haemorrhagic stroke which occurs when blood leaks from blood vessels onto the subarachnoid space (subarachnoid haemorrhage) or within the brain (intracerebral haemorrhage).

The majority of CVD is caused by risk factors that can be controlled, treated or modified, such as high blood pressure, high blood glucose (see section "Blood glucose and high blood pressure" in Chapter 5), high blood cholesterol, obesity (see section "Overweight or obese adults" in Chapter 4), lack of physical activity (see section "Physical activity" in Chapter 4), tobacco use (see section "Tobacco" in Chapter 4) and excessive alcohol consumption (see section "Alcohol" in Chapter 4).

CVD is the leading cause of death in the LAC region (see section on "Mortality from all causes"). Average mortality from CVD decreased both in LAC and OECD between 2000 and 2017, although the reduction was considerably smaller in LAC (-18% versus -35%) (Figure 3.11). Countries like Peru, Belize and Colombia have experienced the largest decreases in CVD mortality rates of over -35% in the period, being the only LAC countries above the OECD average reduction. Notably, Dominican Republic is the only country that has increased CVD mortality from 211 to 267 deaths per 100 000 population in the period.

Mortality from CVD exceeded 300 deaths per 100 000 population among men in Suriname, Dominican Republic, Haiti and Guyana in 2017 (Figure 3.12). Peru, Nicaragua, Colombia, Panama, Chile and Ecuador were the countries below the OECD average of 162 male deaths per 100 000 population. For women, the highest rates were observed in Haiti and Guyana, with 473 and 340 deaths per 100 000 population, respectively. In contrast, Peru had the lowest figures for women in the region, with 78 deaths per 100 000 population being the only country below the OECD average of 103.

Together, IHD and stroke comprise 78% of all CVD deaths in all LAC countries combined, very similar to the 77% in OECD countries, but hypertensive deaths in LAC are almost double than in the OECD (8% versus 5%) (Figure 3.13). IHD deaths represent over 60% of all CVD deaths in El Salvador, Honduras and Mexico, while less than 35% in Saint Lucia, Jamaica and Dominica. In Jamaica, stroke deaths take 45% of all CVD deaths while is less than 23% in El Salvador, Costa Rica, Mexico and Argentina.

Success of reducing the mortality rates from CVD in OECD countries owes to a decline in smoking rates, expanded health system's capacity to control high cholesterol and blood pressure, and greater access to effective care in the event of an acute episode such as a stroke or heart attack (see indicator "In-hospital mortality following acute myocardial infarction and stroke" in Chapter 7) (OECD, 2015[9]). As the proportion of older people increases in the LAC region (see section "Ageing" in Chapter 3), demand for health care will increase and the complexity and type of care that CVD patients require will change, for instance, due mounting multi-morbidity. Increases in total cholesterol and blood pressure, along with smoking, overweight/obesity and high blood glucose highlight the need for management of risk factors to prevent further development of CVD. In addition to efforts to improve lifestyles, primary care needs to be strengthened and quality of acute care also needs to improve through better emergency care and improved professional skills and training capacity (OECD, 2015[9]).

Definition and comparability

See indicator "Mortality from all causes" in Chapter 1 for definition, source and methodology underlying mortality rates.

References

[9] OECD (2015), *Cardiovascular Disease and Diabetes: Policies for Better Health and Quality of Care*, OECD Health Policy Studies, OECD Publishing, Paris, *https://dx.doi.org/10.1787/9789264233010-en*.

[6] PAHO (2017), *Health in the Americas+, 2017 Edition. Summary: Regional Outlook and Country Profiles*, Pan American Health Organization, Washington, D.C., *https://www.paho.org/salud-en-las-americas-2017/wp-content/uploads/2017/09/Print-Version-English.pdf*.

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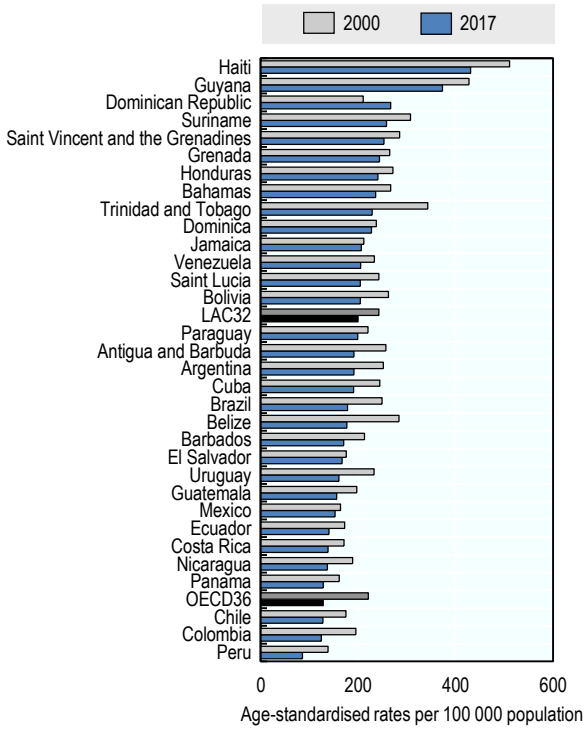
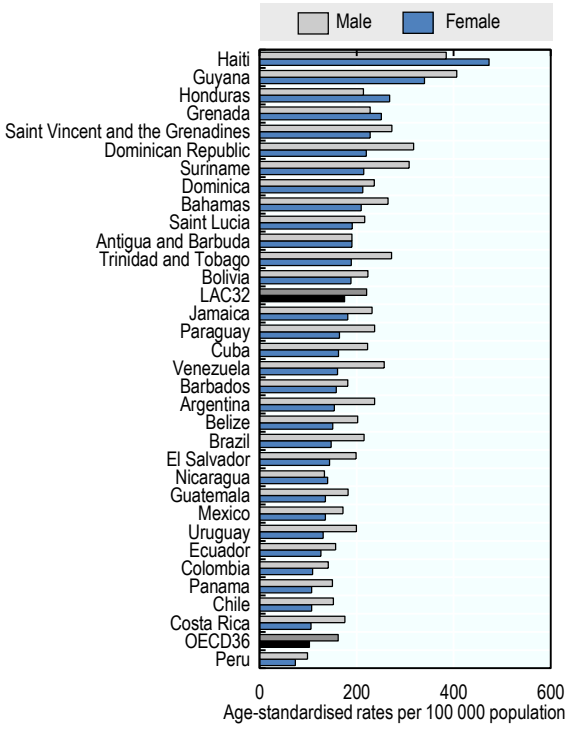
Figure 3.11. **Cardiovascular disease, estimated mortality rates, 2000 and 2017 (or nearest year)**



Source: Global Burden of Disease (2019), IHME.

StatLink https://stat.link/9nxvgk

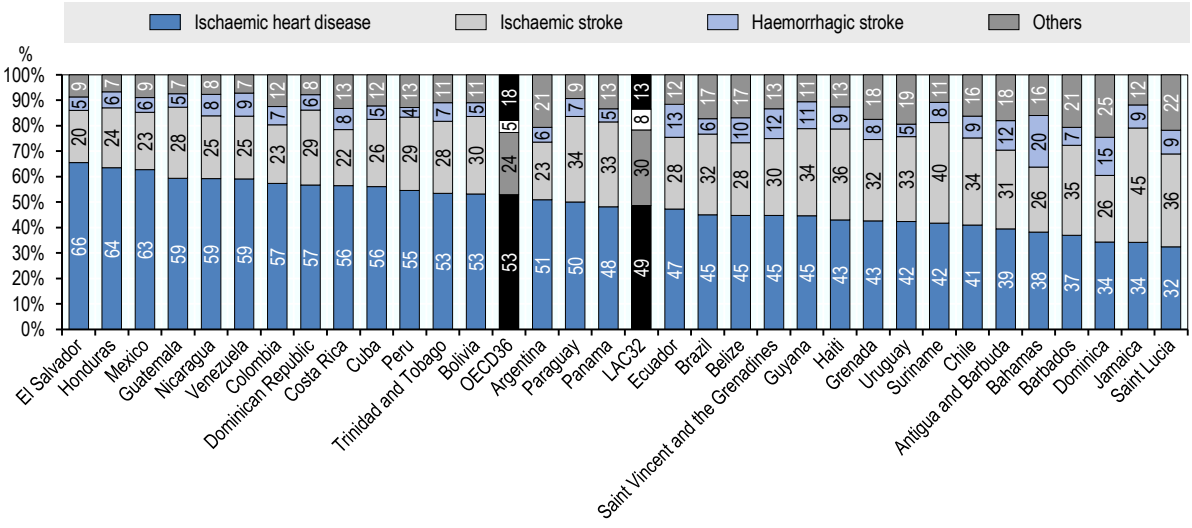
Figure 3.12. **Cardiovascular disease, estimated mortality rates, by sex, 2017 (or nearest year)**



Source: Global Burden of Disease (2019), IHME.

StatLink https://stat.link/4dhot5

Figure 3.13. **Proportions of deaths per type of cardiovascular disease, 2017 (or nearest year)**



Source: Global Burden of Disease (2019), IHME.

StatLink https://stat.link/oxk94a

Cancer is the second leading cause of death after CVD among LAC countries, producing over 670 000 deaths in 2018 in the region (Bray et al., 2018[10]). Cancer occurs when abnormal cells divide without control and are able to invade other tissues. There are more than 100 different types of cancers, with most named after the organ in which they start. Only about 5% to 10% of all cancers are inherited, meaning that modifiable risk factors such as smoking, obesity, exercise, and excess sun exposure, as well as environmental exposures, explain as much as 90-95% of all cancer cases (Whiteman and Wilson, 2016[11]). Prevention, early detection and treatment remain at the forefront of the tools to reduce the burden of cancer.

The regional average cancer mortality rate in LAC32 was 120 per 100 000 population in 2017, less than the average among OECD countries of 125 (Figure 3.14). Cancer deaths were less common in Nicaragua, Mexico, Colombia, Panama and Honduras with rates of less than 90 deaths per 100 000, and the highest in Uruguay, Dominica and Haiti being over 150 deaths per 100 000 population. Cancer mortality has decreased overall in the LAC region by 4.45% since 2000, although well below the reduction of 17% observed in OECD countries. However, ten countries increased its cancer mortality rate between 2000 and 2017, with Dominican Republic and Grenada showing the largest increases with 18% and 13%, respectively. On the other hand, Colombia and Peru experienced the largest decrease in the region of 20%, over the OECD average reduction.

Cancer mortality rate was higher in men than in women in almost all LAC countries, with the exception of Honduras and Nicaragua (Figure 3.15). Dominica and Uruguay are the only LAC countries with a higher male/female ratio of cancer than OECD countries. Men's higher cancer mortality rates can be explained by sex hormones differences and genes on the X chromosome that can affect the function of the immune system; better health literacy or awareness of cancer symptoms by women and greater willingness to uptake screening or seek medical help; and a higher historical exposure to risk factors, such as smoking and alcohol use (Afshar et al., 2018[12]).

Respiratory system (trachea, bronchus and lung), stomach and colorectal cancer were the three most common cancer mortality sites in the LAC region in 2017, accounting for 10.6%, 9.4% and 9.35% of cancer deaths, respectively (Figure 3.16). This is different from OECD countries, where respiratory system, colorectal and breast are three most common cancer death sites with 22.1%, 11.6% and 6.8%, respectively. Respiratory system cancer was responsible for more than 15% of cancer deaths in Cuba, Uruguay, Venezuela and Argentina. Low-income countries tend to show a lower share of respiratory system cancer deaths, below 10%. Stomach cancer deaths have higher shares in Guatemala, Bolivia, Ecuador and Peru (over 15% of all cancer deaths) and the lowest in Cuba and Trinidad and Tobago (below 5%). Colorectal cancer is more prominent in some higher income countries such as Barbados, Argentina and Uruguay, although variations within the region are not as significant. Breast cancer represents a higher proportion of deaths in Bahamas, Barbados, Trinidad and Tobago, and Antigua y Barbuda, all with more than 10%, and a lower share in Guatemala, Belize, Ecuador, Bolivia, Chile and Peru (below 6%). Finally, cervical cancer is responsible for over 8% of cancer deaths in Nicaragua and Honduras, significantly higher that the LAC32 average of 4.5%. This might be contributing to the overall higher cancer death rates amongst women in both countries. Cervical cancer is attributed a much smaller share of cancer mortality in OECD (1.4%).

As with cardiovascular disease, the ageing of the population will lead to many more cases of cancer in coming decades, taxing underprepared health systems. Since resources needed to treat cancer are large (e.g. skilled health workforce, expensive medicines and technologies), cancer control planning in the LAC region will be more effective and efficient by targeting risk factors such as smoking, physical activity and overweight/obesity. Early diagnosis is also a key to reducing mortality, so access to cancer diagnosis and care needs to be promoted through public health interventions and wider health coverage (OECD, 2013[13]).

Definition and comparability

See indicator "Mortality from all causes" in Chapter 1 for definition, source and methodology underlying mortality rates.

References

[12] Afshar, N. et al. (2018), "Differences in cancer survival by sex: a population-based study using cancer registry data", *Cancer Causes & Control*, Vol. 29/11, pp. 1059-1069, *http://dx.doi.org/10.1007/s10552-018-1079-z*.

[10] Bray, F. et al. (2018), "Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries", *CA: A Cancer Journal for Clinicians*, Vol. 68/6, pp. 394-424, *http://dx.doi.org/10.3322/caac.21492*.

[13] OECD (2013), *Cancer Care: Assuring Quality to Improve Survival*, OECD Health Policy Studies, OECD Publishing, Paris, *https://dx.doi.org/10.1787/9789264181052-en*.

[11] Whiteman, D. and L. Wilson (2016), "The fractions of cancer attributable to modifiable factors: A global review", *Cancer Epidemiology*, Vol. 44, pp. 203-221, *http://dx.doi.org/10.1016/j.canep.2016.06.013*.

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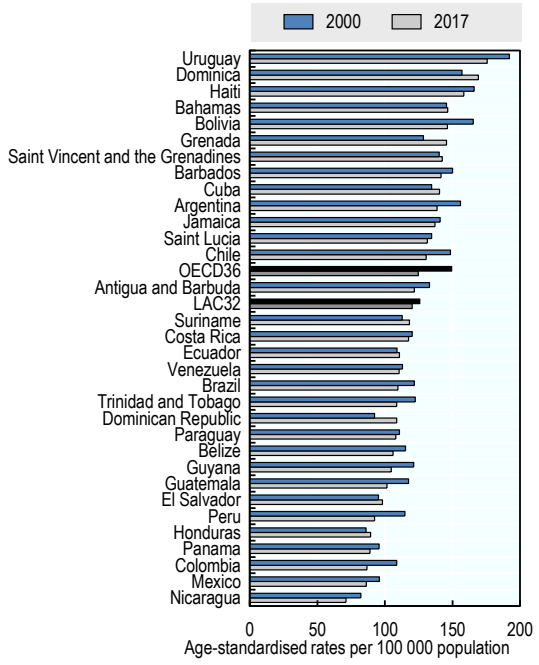
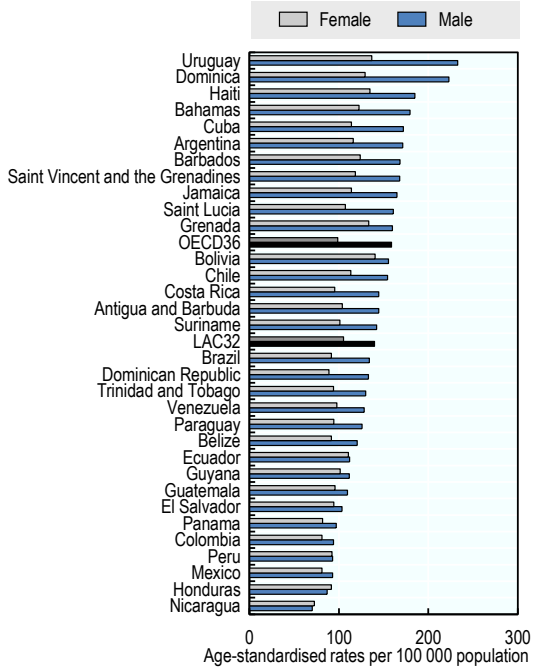
Figure 3.14. **All cancers, estimated mortality rates, 2000 and 2017 (or nearest year)**



Source: Global Burden of Disease (2019), IHME.

StatLink https://stat.link/1olhtu

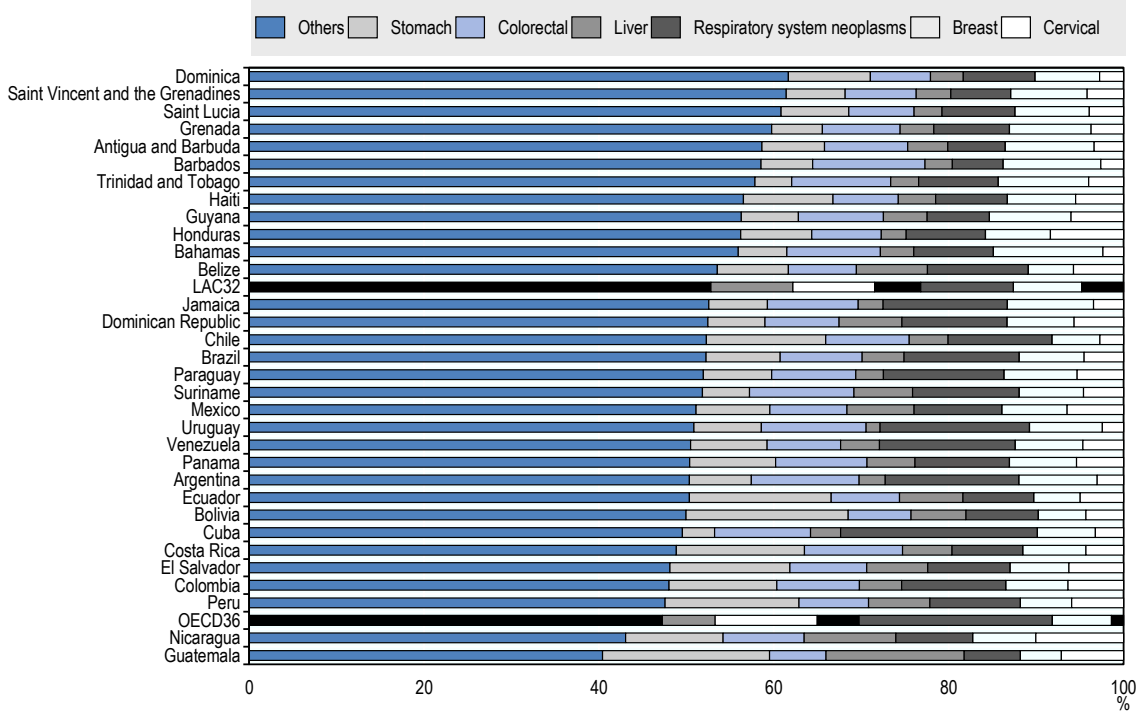
Figure 3.15. **All cancers, estimated mortality rates, by sex, 2017 (or nearest year)**



Source: Global Burden of Disease (2019), IHME.

StatLink https://stat.link/fm02jb

Figure 3.16. **Proportions of cancer deaths, 2017 (or nearest year)**



Source: Global Burden of Disease (2019), IHME.

StatLink https://stat.link/z20dkn

Injuries are a leading cause of death and disability for all age groups and took over 635 000 lives in 2015 in the WHO Region of the Americas, accounting for 9.7% of all deaths. Injuries can result from traffic collisions, drowning, poisoning, falls, burns, violence from assault, self-inflicted or acts of war, exposure to mechanical forces, as well as natural disasters. The magnitude of the problem varies considerably across countries by cause, age, sex, and income group, but injury deaths, both intentional and unintentional, are largely preventable events.

Men had far higher mortality rates than women in the LAC region in 2017, with 104 deaths per 100 000 for men and 28 deaths per 100 000 for women, compared to 58 and 20 deaths per 100 000 respectively among OECD countries (Figure 3.17). Venezuela shows the largest gender difference with an injuries mortality almost six and a half times higher among men compared to women, followed by El Salvador and Colombia with rates more than five times higher. Conversely, Cuba and Bolivia show the lowest gender differences with injuries death gender ratios of 2.2 and 2.5, respectively.

Violent deaths were the most common cause of death due to injuries in the LAC region in 2017 and accounted in average for 27% of injury deaths, followed by road traffic deaths with 25% and self-inflicted injuries with 13% (Figure 3.18). A different trend was observed in OECD countries where 28% of injury deaths were self-inflicted, 22% were due to road traffic crashes and violent deaths represented 15%. However, the figure should be considered in the context of a corresponding global increase in the number of registered vehicles, suggesting that interventions to improve global road safety have mitigated the expected rise in the number of deaths (WHO, 2018[14]). Over half of all injury deaths could be attributed to interpersonal violence in Honduras, Jamaica and El Salvador, and the lowest proportion was observed in Peru, Uruguay, Bolivia and Chile, all below 11% of all injury deaths. In Haiti, Paraguay, Ecuador and Dominican Republic, road traffic accidents represented over 37% of injury deaths and below 17% in Saint Vincent and the Grenadines, Guyana, Jamaica and Cuba. In Suriname, Uruguay, Guyana and Chile, self-inflicted deaths were over 25% of all injury deaths, and below 6% in Honduras and The Bahamas.

Mortality from injuries due to violence shows an increase of 33% in LAC between 1990 and 2017, lower than the 50% increase in the OECD (Figure 3.19). The highest growth was observed in Venezuela, Jamaica and Belize of more than 150%, while the largest decrease occurred in Colombia (-62%), Bolivia (-48%) and Nicaragua (-43%). Mortality due to self-harm injuries in the period also increased in LAC by 5%, opposed to the reduction of 9% in the OECD. Jamaica shows the largest increase by 132% and Chile exhibits the most pronounced decrease of -56%. Road traffic injuries deaths in LAC and the OECD experienced a decrease of 22% and 38% between 1990 and 2017, respectively. Only Jamaica, Dominican Republic, Paraguay and Argentina saw an increase, while the largest reduction was observed in Cuba, Bolivia and Nicaragua (over -50%).

OECD countries improved a safe systems approach to road safety, which includes education and prevention campaigns as well as vehicle design and safety, and also adopted new laws and regulations and the enforcement of these laws to improve compliance with drink-driving regulation, speed limits and the wearing of seat belts and motorcycle helmets (ITF, 2017[15]). On 11 May 2011, the first ever Decade of Action for Road Safety 2011-20 was launched across the world. Mandated by the United Nations General Assembly, the Decade represents an historic opportunity for countries to stop and reverse the trend which – without action – would lead to the loss of around 1.9 million lives on the roads each year by 2020.

Definition and comparability

See indicator “Mortality from all causes” in Chapter 1 for definition, source and methodology underlying mortality rates.

Injury deaths where the intent is not determined are distributed proportionately to all causes below the group level for injuries.

Estimates for road injury deaths drew on death registration data, reported road traffic deaths from official road traffic surveillance systems and revised regression model for countries without usable death registration data (WHO, 2014[16]).

References

[15] ITF (2017), *Road Safety Annual Report 2017*, OECD Publishing, Paris, *https://dx.doi.org/10.1787/irtad-2017-en*.

[14] WHO (2018), *Global status report on road safety 2018*, World Health Organization, Geneva, *https://apps.who.int/iris/bitstream/handle/10665/277370/WHO-NMH-NVI-18.20-eng.pdf?ua=1*.

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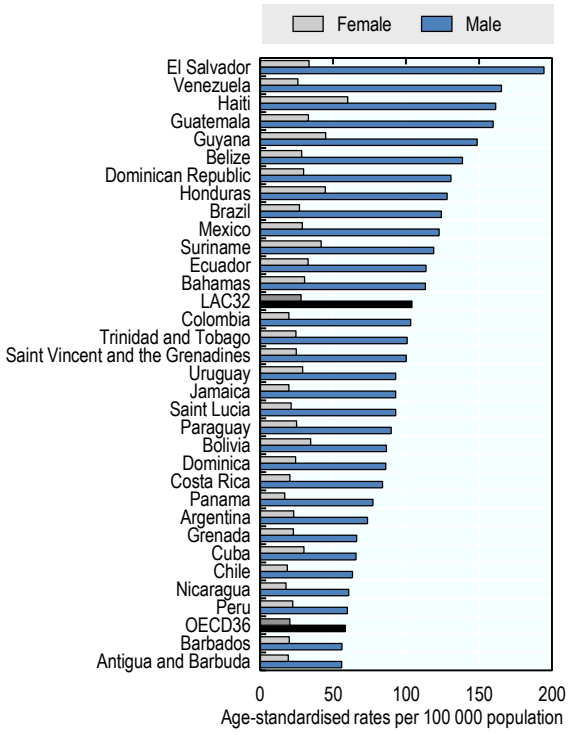
Figure 3.17. **Injuries, mortality rates, male and female, 2017 (or nearest year)**



Source: Global Burden of Disease (2019), IHME.

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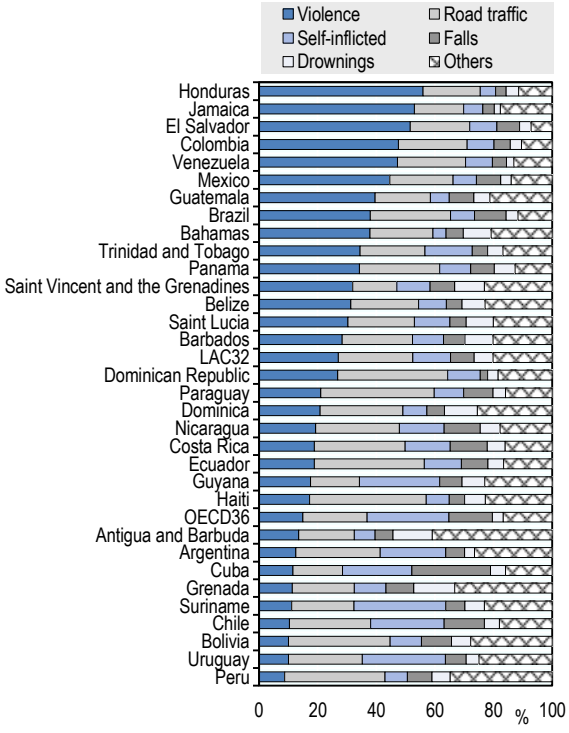
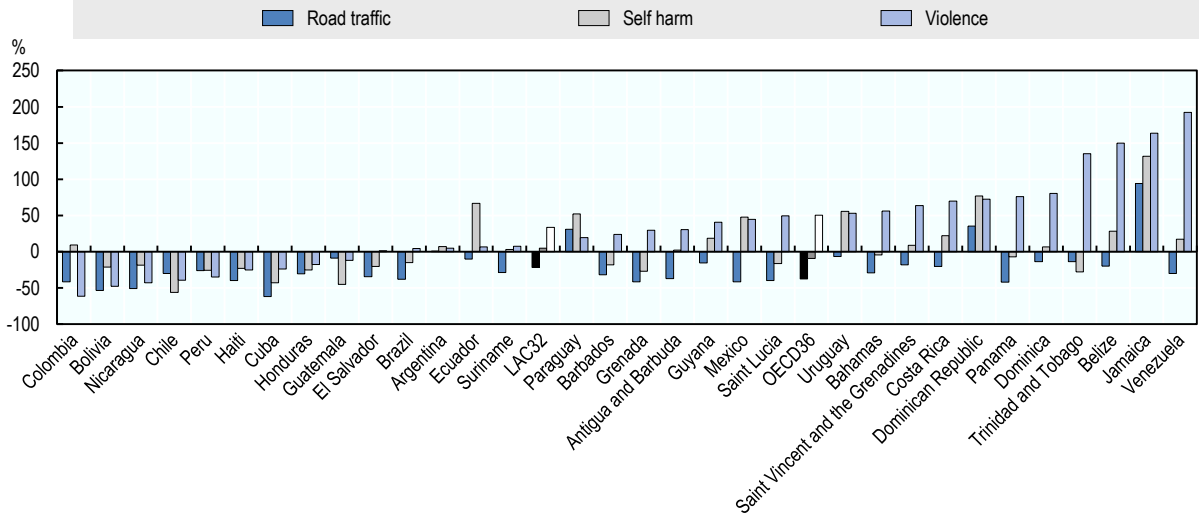
Figure 3.18. **Proportions of injury deaths, 2017 (or nearest year)**



Source: Global Burden of Disease (2019), IHME.

StatLink https://stat.link/pot5d4

Figure 3.19. **Growth rates of road traffic accidents, self-harm and violence mortality, 1990-2017 (or nearest year)**



Source: Global Burden of Disease (2019), IHME.

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Maternal mortality – the death of a woman during pregnancy, childbirth, or within 42 days of the termination of pregnancy – is an important indicator of a woman's health status and also to assess health system's performance. The Sustainable Development Goals set a target of reducing the global maternal mortality ratio to less than 70 per 100 000 live births by 2030. In LAC, around 7 600 maternal deaths occurred in 2015, most of them preventable. The main causes of maternal death were haemorrhage after birth and gestational hypertension, and were concentrated in countries with higher fertility rates, more poverty and less access to high-quality health care services (GTR, 2017[17]).

In 31 LAC countries, maternal mortality ratio (MMR) averaged 83 deaths per 100 000 live births in 2017, substantially higher than the 8 deaths per 100 000 live births in OECD countries (Figure 3.20). Estimates show Chile and Uruguay with low MMRs of less than 17, but others such as Haiti have 480, followed by Guyana and Bolivia with 169 and 155, respectively.

Despite high rates in certain countries, a reduction of 26% in maternal mortality have been achieved in the LAC region between 2000 and 2017, however below the reduction in OECD countries of -40% in the same period. Belize, Chile, Bolivia and Ecuador decreased MMR by over 50%. Nevertheless, during the same period MMR increased in five countries: Saint Lucia (36%), Dominican Republic (19%), Haiti (10%), Venezuela (5%) and Jamaica (4%).

Across 16 LAC countries, maternal mortality is inversely related to the coverage of skilled births attendance (Figure 3.21). Although most countries (11) had more than 95% of births attended by skilled health professionals, the country with the highest MMR, Haiti, was also the country with the lowest proportion of births attended by a skilled health professional (42%). On the other side, countries like Guyana, Venezuela and Suriname show high skilled birth attendance coverage (96% or more) but relatively high MMR (all over 120), probably evidencing quality of care problems.

Higher coverage of antenatal care (at least four times) is associated with lower MMR, indicating the effectiveness of antenatal care across countries (Figure 3.22). Grenada moves away from the trend by having a low coverage of antenatal care (only 67% of pregnant women receives at least four visits) but a relatively low MMR of 25. Oppositely, Bolivia and Guyana show antenatal care coverage above 85% but MMR over 150 deaths per 100 000 live births, which might be linked with lower rates of skilled birth attendance but also with quality of care issues.

Risk of maternal death can be reduced through family planning, better access to high-quality antenatal care, and delivery and postnatal care by skilled health professionals. Addressing disparities in the provision of these essential reproductive health services to underserved populations must be included in any strategy. Furthermore, the broad health systems strengthening and universal health coverage agenda, along with multisectoral action (e.g. women's education, tackling violence) are collaborative efforts that are crucial to reduce maternal deaths in the LAC region (WHO et al., 2018[18]).

Definition and comparability

Maternal mortality is defined as the death of a woman while pregnant or during childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from unintentional or incidental causes. This includes direct deaths from obstetric complications of pregnancy, interventions, omissions or incorrect treatment. It also includes indirect deaths due to previously existing diseases, or diseases that developed during pregnancy, where these were aggravated by the effects of pregnancy. Maternal mortality is here measured using the maternal mortality ratio (MMR). It is the number of maternal deaths during a given time period per 100 000 live births during the same time period. There are difficulties in identifying maternal deaths precisely. Many countries in the region do not have accurate or complete vital registration systems, and so the MMR is derived from other sources including censuses, household surveys, sibling histories, verbal autopsies and statistical studies. Because of this, estimates should be treated cautiously.

References

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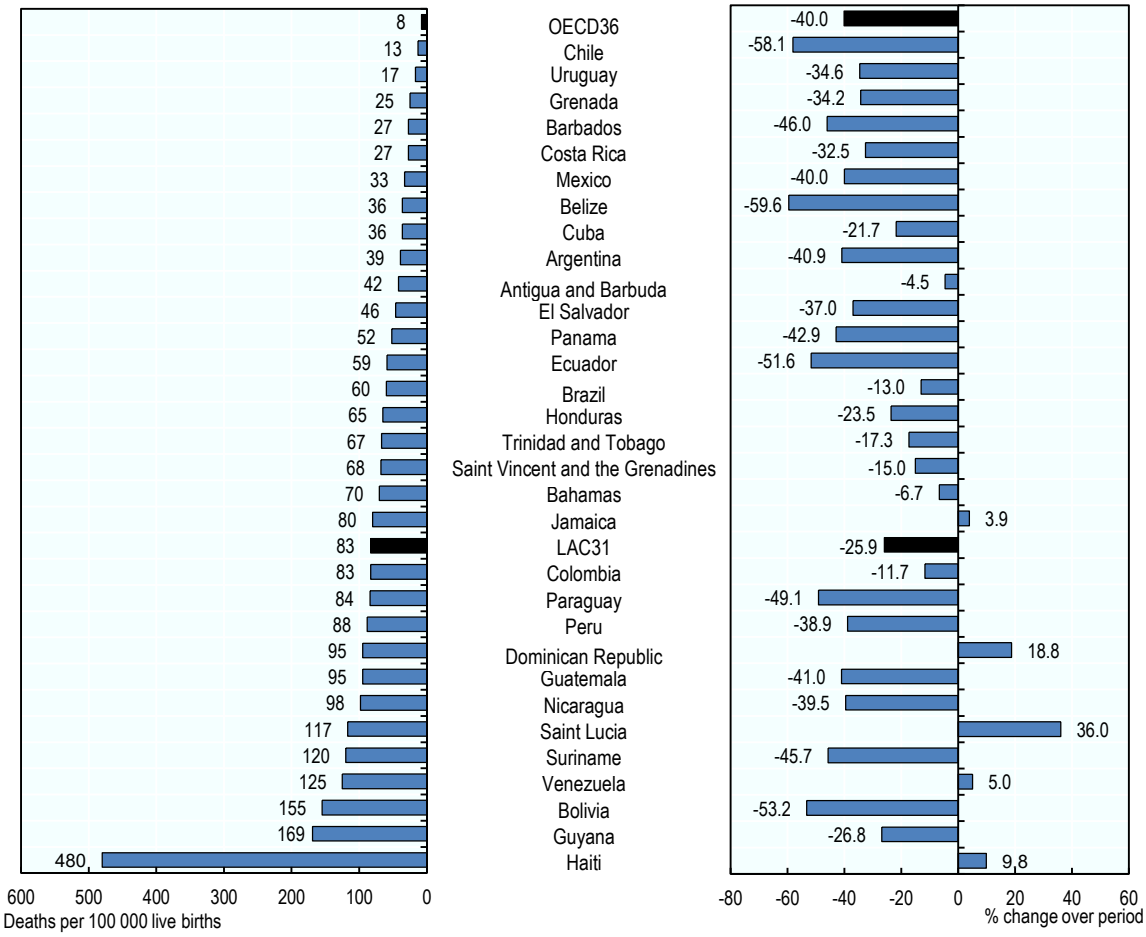
[18] WHO et al. (2018), *Survive, Thrive, Transform. Global Strategy for Women's, Children's and Adolescents' Health: 2018 report on progress towards 2030 targets*, World Health Organization, Geneva, *https://www.everywomaneverychild.org/wp-content/uploads/2018/05/EWECGSMonitoringReport2018.pdf*.

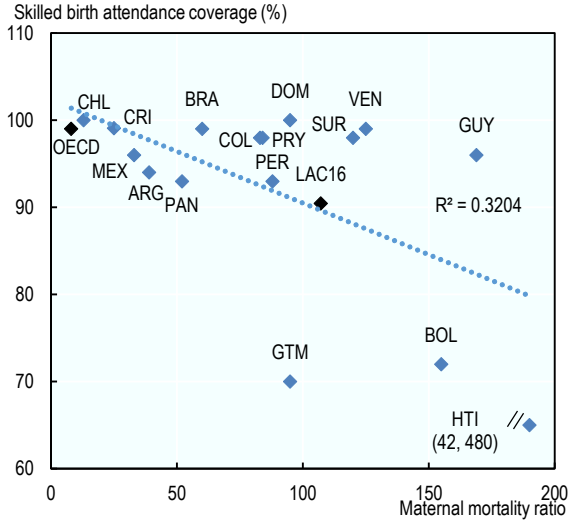
Figure 3.20. **Estimated maternal mortality ratio, 2017, and percentage change since 2000**



Source: WHO GHO 2019.

StatLink https://stat.link/t01xry

Figure 3.21. **Skilled birth attendant coverage and estimated maternal mortality ratios, latest year available**



Source: WHO GHO 2019, Ministry of Health for Costa Rica.

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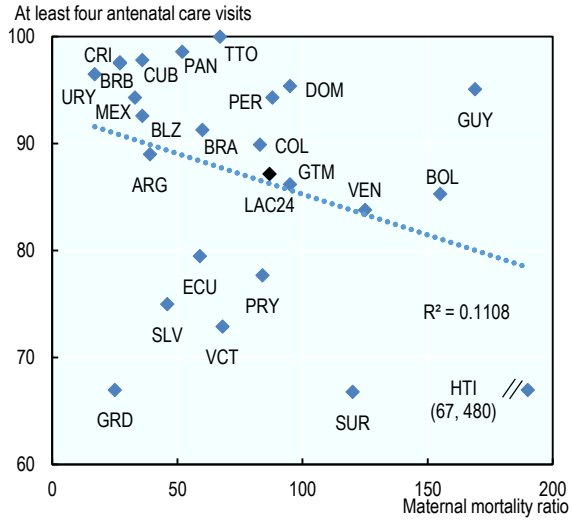
Figure 3.22. **Antenatal care coverage and maternal mortality, latest year available**



Source: WHO GHO 2019.

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Globally in 2016, the total number of new cases of tuberculosis (TB) was estimated at 10.42 million, of which over 160 000 are observed in LAC. The number of TB deaths was estimated at 1.45 million, of which more than 15 000 occurred in LAC. Most of these TB cases and deaths occur disproportionately among men, except in the first 15 years of life were the situation is similar to both genders (GBD Tuberculosis Collaborators et al., 2018[19]). Most cases of TB are preventable if diagnosed and the right treatment is provided. TB was declared a global health emergency by WHO in 1993 and the WHO-coordinated Stop TB Partnership set targets of halving TB prevalence and deaths by 2015, compared with a baseline of 1990. The Sustainable Development Goals foresee the end of the epidemic of tuberculosis by 2030.

The highest incidence rate was seen in Haiti, Peru and Bolivia, with 176, 123 and 108 cases per 100 000 population in 2018, respectively (Figure 3.23). Low incidence rates, below 5 cases per 100 000 population, were reported in Barbados, Grenada, Jamaica and Saint Lucia. Saint Kitts and Nevis reported zero new cases in 2018.

The highest mortality rates due to TB (excluding HIV) were found in Guyana and Bolivia with 15 and 11 deaths per 100 000 population in 2018. The lowest mortality rates are observed in Jamaica, Cuba, Costa Rica and Barbados, all below 1 death per 100 000 population (Figure 3.23).

Although the average TB detection rate in the region is generally high (83% of detection of all cases in 2016), there were a large number of undetected cases in Bolivia and Haiti, where detection rates were 62% and 75%, respectively, the only two countries below 80% (Figure 3.24). High-quality TB services have expanded in LAC countries and many cases are treated, reaching excellent treatment success rates in Grenada, Dominica and Barbados. In contrast, treatment success rate is the lowest in Jamaica with 23% followed by Argentina with 54%, well below the LAC33 average of 76%.

In general, the LAC region is rising to the challenges presented by TB, with incidence and mortality declining steadily since 1990, although regional disparities exist. The average reduction of incidence in the LAC region between 2000 and 2018 was 10%. The strongest decline in this period was observed in Honduras, Barbados and Saint Vincent and the Grenadines with more than 60% reduction, while in Grenada incidence increased by 282%, however, the baseline was low at 0.7 cases per 100 000 population (Figure 3.25).

The LAC region still faces important challenges in TB control, including providing services to those in greatest need, especially the poor and vulnerable. The most relevant strategies to develop in LAC countries include the implementation and expansion of early diagnosis with new rapid molecular tests, the epidemiological study of contacts, the use of shortened multi-drug resistance TB treatment regimens, the reduction of funding gaps and the need for greater technical expertise (PAHO, 2018[20]).

Definition and comparability

Tuberculosis (TB) is a contagious disease, caused by the *Mycobacterium tuberculosis* bacteria. Tuberculosis usually attacks the lungs but can also affect other parts of the body. It is spread through the air, when people who have the disease cough, sneeze, talk or spit. Most infections in humans are latent and without symptoms, with about one in ten latent infections eventually progressing to active disease. If left untreated, active TB kills between 20% and 70% of its victims within ten years depending on severity.

The TB incidence rate is the number of new cases of the disease estimated to occur in a year, per 100 000 population. The TB prevalence rate is the total number of persons with the disease at a particular time, per 100 000 population. TB mortality does not include TB/HIV as per ICD-10.

References

[19] GBD Tuberculosis Collaborators, H. et al. (2018), "Global, regional, and national burden of tuberculosis, 1990-2016: results from the Global Burden of Diseases, Injuries, and Risk Factors 2016 Study.", *The Lancet. Infectious diseases*, Vol. 18/12, pp. 1329-1349, *http://dx.doi.org/10.1016/S1473-3099(18)30625-X*.

[20] PAHO (2018), *Tuberculosis in the Americas 2018*, *http://iris.paho.org/xmlui/handle/10665.2/49510*.

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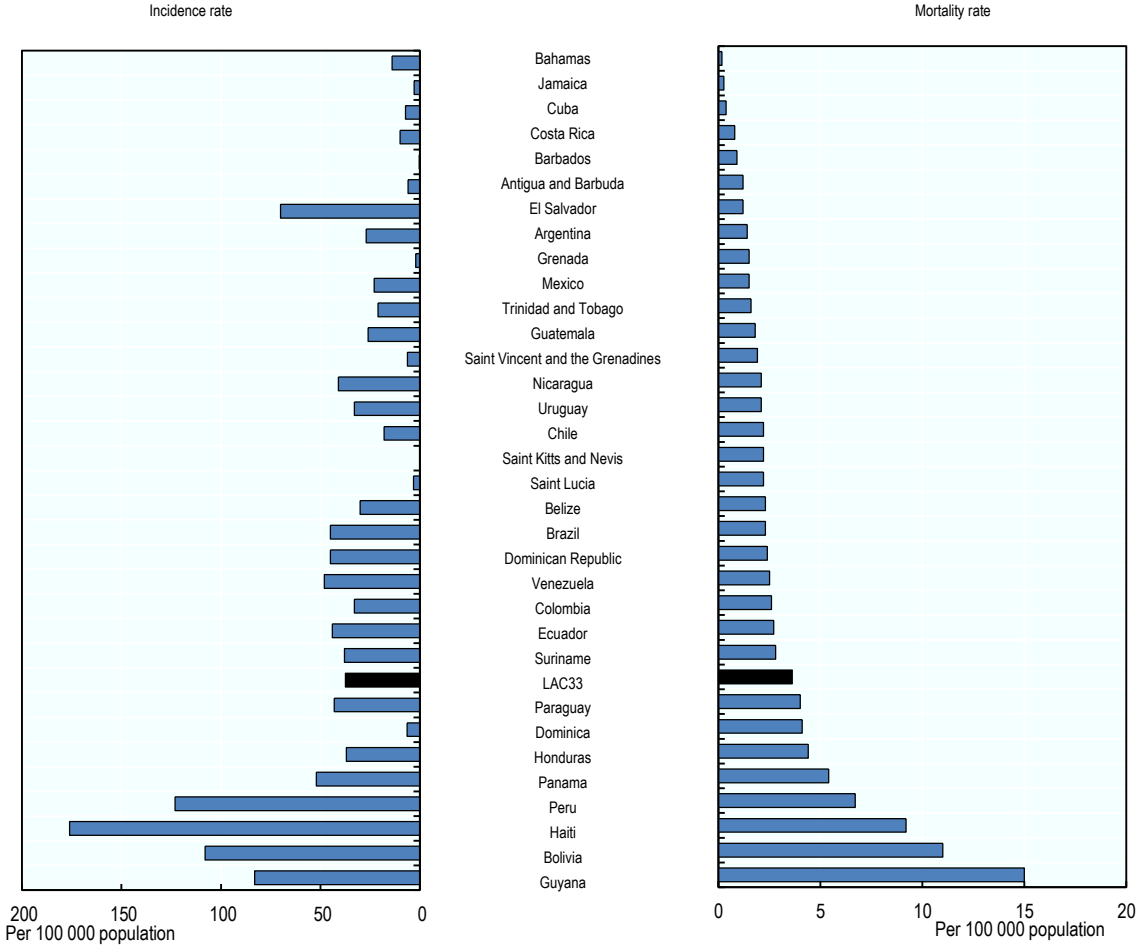
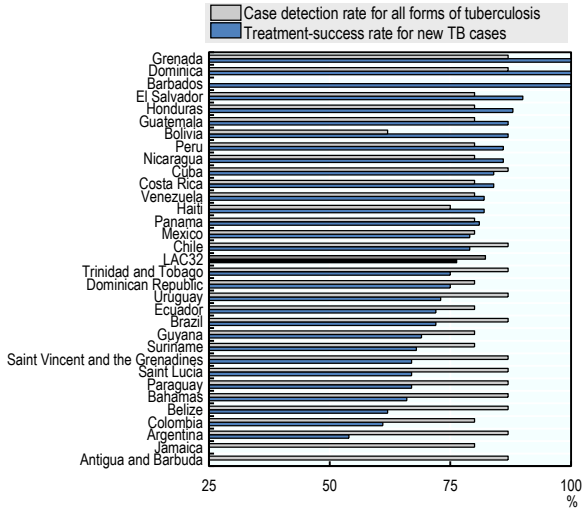
Figure 3.23. **Estimate of the burden of disease caused by tuberculosis, 2018**



Source: WHO GHO 2019.

StatLink https://stat.link/h0j4uz

Figure 3.24. **Tuberculosis treatment success for new TB cases and case detection, 2017 (or nearest year)**



Source: WHO GHO 2019.

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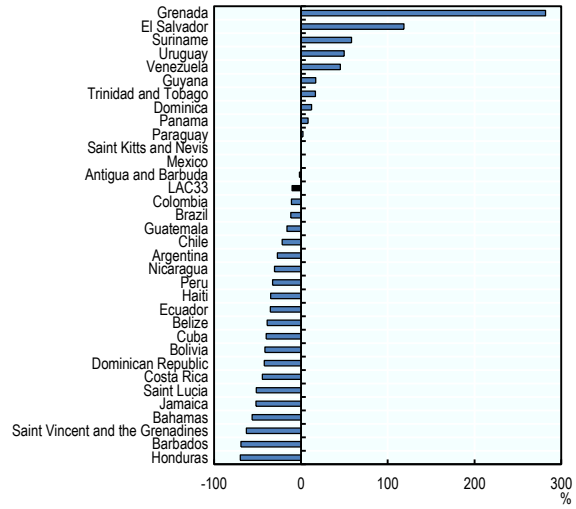
Figure 3.25. **Change in tuberculosis incidence rate, 2000-18 (or nearest year)**



Source: WHO GHO 2019.

StatLink https://stat.link/nazbfi

HIV/AIDS reached the LAC region in the early 80s and spread heterogeneously. The Caribbean has been and continues to be the one of the most affected regions in terms of prevalence, second only to some African regions (UNAIDS, 2019[21]). The UN has set the goal of eliminating the epidemic of AIDS as a public threat as an SDG for 2030, which has been defined as reducing the number of new HIV infections and AIDS-related deaths by 90% relative to 2010 (UNAIDS, 2014[22]).

In LAC27, the prevalence in adults between 14 and 49 years old ranges from 0.2% in Mexico and Nicaragua to 2% in Haiti in 2018 (Figure 3.26, left panel). Although overall prevalence in the region is not very high, the number of people living with HIV is over 2 million in reporting countries, most of which live in Brazil with more than 900 000 people, followed by Mexico with 230 000 and Colombia and Haiti with 160 000 each.

Expanded access to antiretroviral therapy has increased the survival rates of people living with HIV, but about half of the people eligible for HIV treatment do not receive it worldwide. In LAC26, the estimated coverage was particularly low (<40%) in Belize and Jamaica while it is over 70% in Peru, Colombia, Cuba and Mexico (Figure 3.27). This indicates that some countries with high prevalence (e.g. Mexico) are addressing the issue of treatment coverage, but the region remains substantially far from the goal of treating 90% of people living with HIV/AIDS.

The trend is positive in recent years however, with most LAC countries reducing incidence rates. Between 2010 and 2018, El Salvador, Bahamas and Nicaragua reduced incidence rates by 50%, 33% and 30%, respectively, followed by Colombia, Haiti and Cuba that have all reduced the number of new cases of HIV infection by more than 25% (Figure 3.28). Among the five countries that show an increase, Chile has the largest HIV incidence growth of 23%, followed by Brazil with 13% and Costa Rica with 11%, but these three countries remain below the LAC average for HIV prevalence.

Strengthening the agenda on HIV prevention and treatment could further tackle the AIDS public health threat in the region. The UNAIDS 90-90-90 approach is central, stating that by 2020, 90% of all people living with HIV will know their HIV status, 90% of people with an HIV diagnosis will receive ART, and 90% of people receiving ART will achieve viral suppression. The rapid scale-up antiretroviral therapy in LAC provides unprecedented opportunity to successfully implement not only antiretroviral-based interventions for prevention and treatment, but also to integrate with other key services related to sexual and reproductive health and rights, hepatitis C virus, tuberculosis, provision of clean needles and syringes, medication-assisted therapy and non-communicable diseases. The benefits of antiretroviral therapy and integrated services can be fully realised only if people living with HIV are diagnosed and successfully linked to care. This will require targets efforts and removing barriers especially among key affected populations, for instance, sex workers, their clients, men who have sex with men, transgender persons and injection drug users, along with active stakeholder's collaboration, including civil society in each country (Bekker et al., 2018[23]).

Definition and comparability

Human immunodeficiency virus (HIV) is a retrovirus that destroys or impairs the cells of the immune system. As HIV infection progresses, a person becomes more susceptible to infections. The most advanced stage of HIV infection is acquired immunodeficiency syndrome (AIDS). It can take 10-15 years for an HIV-infected person to develop AIDS, although antiretroviral drugs can slow down the process.

The HIV prevalence among adults aged 15 to 49 is the number of persons aged 15-49 estimated to be living with HIV divided by the total number of persons aged 15-49 at a particular time.

References

[23] Bekker, L. et al. (2018), "Advancing global health and strengthening the HIV response in the era of the Sustainable Development Goals: the International AIDS Society-Lancet Commission.", *Lancet (London, England)*, Vol. 392/10144, pp. 312-358, *http://dx.doi.org/10.1016/S0140-6736(18)31070-5*.

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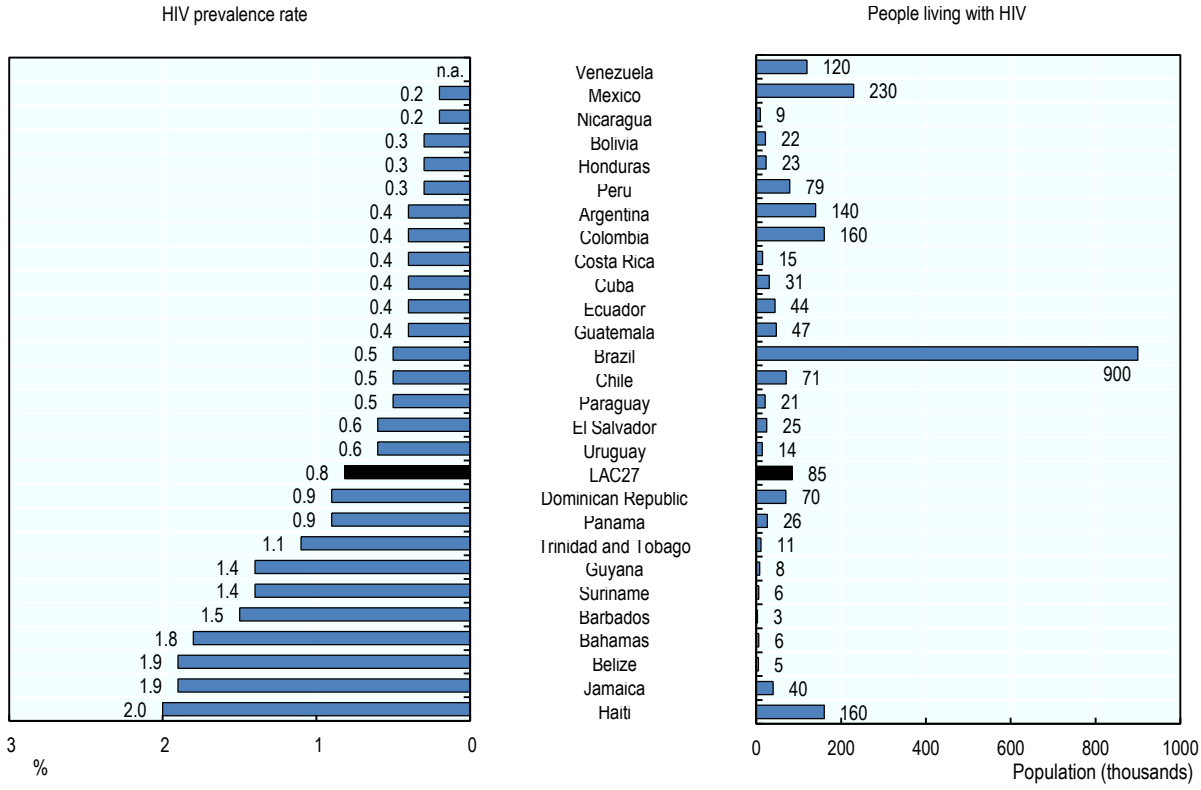
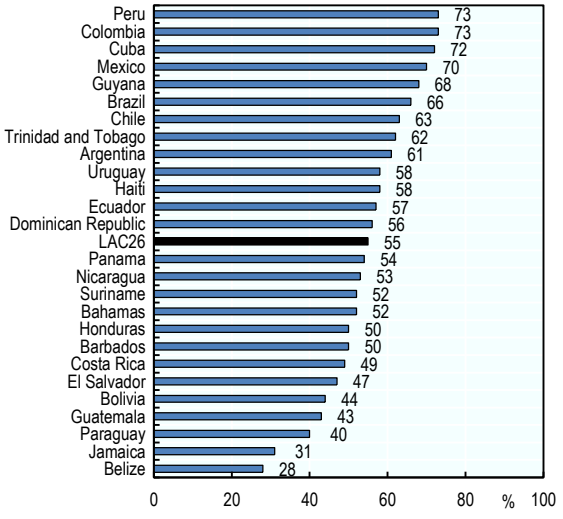
Figure 3.26. **HIV Prevalence rate, % of adults aged 15-49, and people living with HIV, absolute number, 2018 (or nearest year)**



Source: WHO 2019.

StatLink https://stat.link/dl26jo

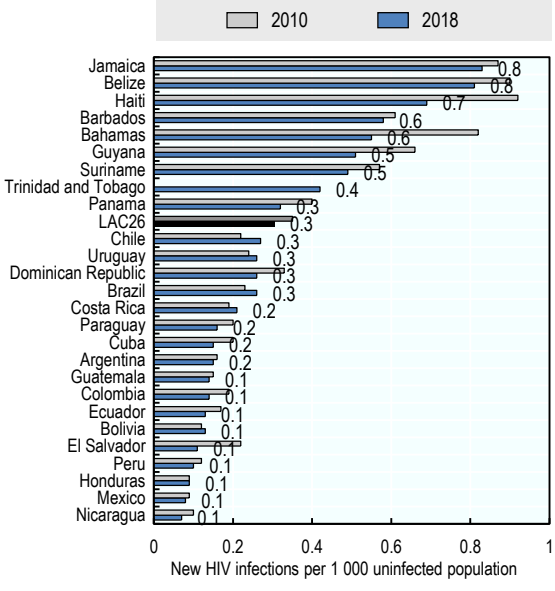
Figure 3.27. **Antiretroviral therapy coverage among people living with HIV, 2018 (or nearest year)**



Source: WHO 2019.

StatLink https://stat.link/ofijz4

Figure 3.28. **New HIV infections per 1 000 uninfected population, 2010 and 2018 (or nearest year)**



Source: UNAIDS 2019.

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Malaria, dengue and Zika are three diseases that are transmittable by the bites of infected mosquitoes. They are present in LAC with varying degrees of incidence. Malaria is a tropical disease caused by a parasite transmitted by the female Anopheles mosquitoes. After a period spent in the liver, malaria parasites multiply within red blood cells, causing symptoms such as fever, headache and vomiting. As part of the SDG targets, the UN set a goal to end the epidemic of malaria by 2030. Between 2000 and 2017, there has been a global reduction of 60% in malaria deaths, making it one of the biggest public health successes of the 21st century (The Global Fund, n.d.[24]).

In the LAC region, country efforts have greatly reduced new cases of malaria to the point where it has been nearly or completely eradicated in Argentina, Belize, Costa Rica, Belize, El Salvador and Paraguay, plus several countries no longer report incidence data. However, the region remains vulnerable to outbreaks. The biggest incidence in the region can be found in Venezuela with 48 cases per 1 000 risk population in 2017, nearly tripled in the last three years, after having been almost eradicated (Figure 3.29, left panel). Moreover, Venezuela also shows the largest number of estimated malaria deaths with 456 people dying in the country, followed by Haiti, Guyana and Brazil with 81, 33 and 30 deaths, respectively.

Dengue is a viral infection caused by the mosquito Aedes aegypti and remains a public health problem in the Americas despite the efforts countries to stop and mitigate it. Dengue causes a severe flu-like illness (e.g. high fever, headache, pain behind the eyes, nausea, vomiting, swollen glands, muscle and joint pains, rash) and, sometimes can cause a potentially lethal complication called severe dengue. Once infected, humans become the main carriers and multipliers of the virus, serving as a source of the virus for uninfected mosquitoes. There is no specific treatment for dengue fever (WHO, 2019[25]).

Incidence of dengue in the region is heterogeneous, and is particularly high in Nicaragua with 934 cases per 100 000 population in 2018, followed by Belize with 564, Paraguay with 469 and Granada with 428 (Figure 3.30). Lethality of the disease also varies, reaching a percentage of over 1% of cases resulting in deaths only in Jamaica. The diseases did not cause any deaths during 2018 in the majority of countries in the region.

Zika fever is a viral disease caused by Zika virus transmitted by the mosquito Aedes aegypti, consisting of mild fever, rash, headaches, arthralgia, myalgia, asthenia, and non-purulent conjunctivitis. One out of four people may develop symptoms, but in those who are affected the disease is usually mild with symptoms that can last between two and seven days. There is no specific treatment for Zika virus disease (PAHO, 2019[26]).

Incidence of Zika is very high in Panama with 66 cases per 100 000 population in 2018. Belize, Guatemala and Bolivia follow with 33, 16 and 13 cases per 100 00 population. There were no reported Zika deaths in 2018 (Figure 3.31).

Mosquito borne diseases disproportionally affect economically disadvantaged communities, which lack adequate prevention methods and modern sanitation and infrastructure. It is key that countries ensure good quality access and coverage among these communities to protect them from transmittable diseases like malaria, dengue and zika. Outbreaks preparedness and control is crucial for a proper prevention and response, for which countries should develop their capacities and resources. For instance, the use of insecticide-treated nets and indoor residual spraying with insecticides are important preventive measures for at-risk populations to avoid mosquito bites.

Definition and comparability

Underreporting of mosquito borne diseases cases and deaths remain a major challenge in countries with inadequate and limited access to health services and weak surveillance systems. The number of mosquito borne diseases caused deaths were estimated by adjusting the number of reported cases for completeness of reporting, the likelihood that cases are parasite positive, and the extent of health service use.

References

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[25] WHO (2019), *Dengue and severe dengue*, World Health Organization, *https://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue*.

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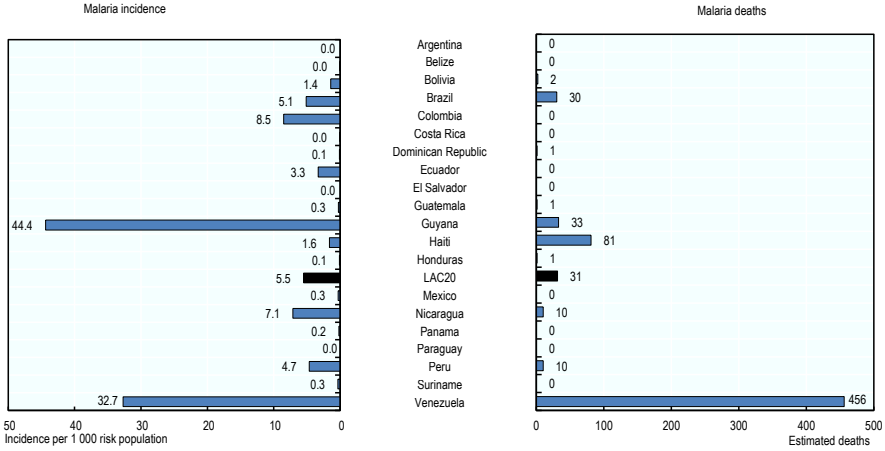
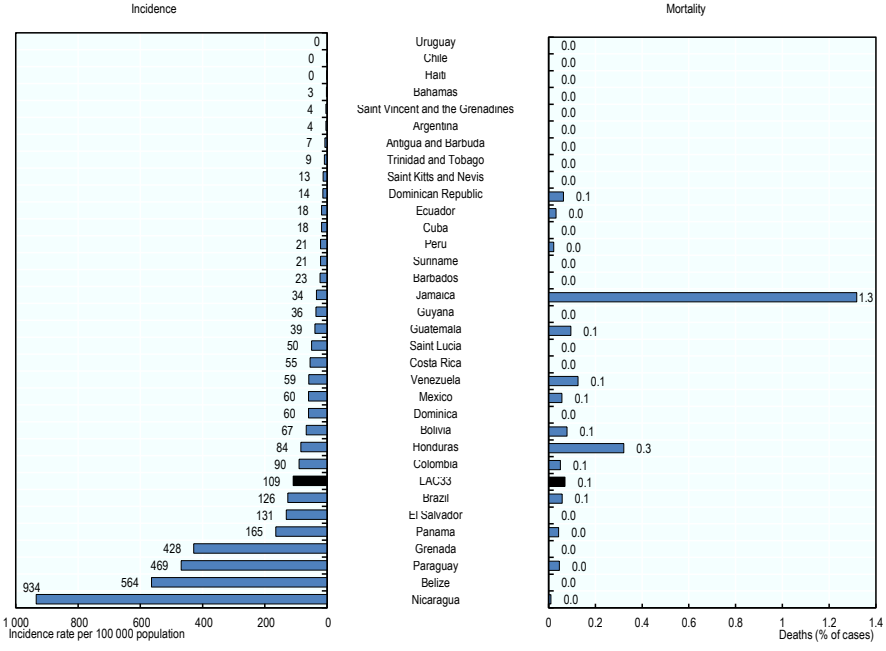
Figure 3.29. **Confirmed malaria cases and estimated deaths, 2018 (or nearest year)**



Source: WHO GHO 2019.

StatLink https://stat.link/qiyvf5

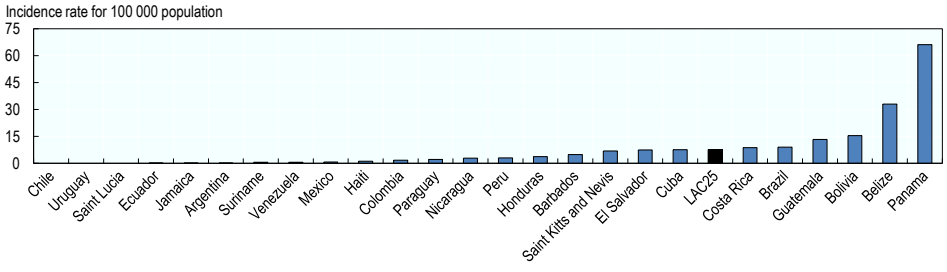
Figure 3.30. **Dengue incidence and mortality, 2018 (or nearest year)**



Source: PAHO 2019.

StatLink https://stat.link/tn1hs4

Figure 3.31. **Zika incidence, 2018 (or nearest year)**



Source: PAHO 2019.

StatLink https://stat.link/d8guia

Diabetes is a chronic metabolic disease, characterised by high levels of glucose in the blood. It occurs either because the pancreas stops producing the hormone insulin (type 1 diabetes, insulting dependent diabetes, genetic predisposition), which regulates blood sugar, or through a reduced ability to produce insulin (type 2 diabetes, non-insulin dependent in most cases, lifestyle related), or through reduced ability to respond to insulin (insulin resistance). People with diabetes are at a greater risk of developing cardiovascular diseases such as heart attack and stroke. They also have elevated risks for vision loss, foot and leg amputation due to damage to nerves and blood vessels, and renal failure requiring dialysis or transplantation. Globally, an estimated 422 million adults were living with diabetes in 2014, compared to 108 million in 1980. The global prevalence of diabetes has nearly doubled since 1980, rising from 4.7% to 8.5% in the adult population, and caused 1.5 million deaths in 2012, with an additional 2.2 million deaths due to higher-than-optimal blood glucose (WHO, 2016[27]). In LAC, about 41 million adults (over 20 years old) live with diabetes and about half of them are undiagnosed and unaware of developing long-term complications.

Among LAC countries, the prevalence of diabetes in adults in 2019 ranged from under 6% in Ecuador and Argentina to 17% in Belize (Figure 3.32). On average, prevalence in LAC countries was 9.7%, an increase from 7.4% in 2010. Belize is the country that has experienced the largest increase, 10 percentage points, while prevalence in both Venezuela and Uruguay has decreased around 6 percentage points in the 2010-19 period.

In the 2010-19 period, mortality attributable to high blood glucose in the 20 to 79 years age group increased in countries such as Paraguay (+72%), Antigua and Barbuda (+65%), and Saint Lucia (+55%). In average, it increased in LAC by 8%, in opposition to the OECD average reduction of 14% (Figure 3.33). Several countries experienced significant decreases, such as Honduras (-47%), Haiti (-37%), and Guyana (-30%). In 2019, the country with the highest mortality was Guyana with 188 deaths per 100 000 population, followed by Suriname and Saint Vincent and the Grenadines, with 155 and 153, respectively. These three countries are the only ones above the OECD average of 151 deaths per 100 000 population.

Policy initiatives can be directed towards both reducing diabetes prevalence and mortality. Strengthening the integral response to NCDs, including diabetes, particularly at primary-care level is a key action. In general, countries with strong primary care systems obtain better diabetes results (e.g. Costa Rica, Cuba). For diabetes, this includes the implementation of guidelines and protocols to improve diagnosis and management, ensuring equitable access to essential technologies for all population groups (e.g. insulin). Most of countries in LAC have programmes devoted to diabetes, which is a relevant step toward its control (WHO, 2016[27]). Prevalence must be addressed by targeting risky behaviours (e.g. unhealthy diet and sedentarism are the main ones, as well as alcohol and tobacco consumption).

Definition and comparability

Diabetes prevalence refers to the percentage of people ages 20-79 who have type 1 or type 2 diabetes. Accurate diabetes estimates at the national and global levels rely heavily on the quality and availability of data sources. Data sources were searched and selected according to established criteria, and the standardised, age-specific prevalence of both diabetes and impaired glucose tolerance (IGT) were estimated. For countries where data sources were not available, prevalence was extrapolated based on data sources from similar countries. Mortality rates per 100 000 population were calculated based on data on number of deaths attributable to high blood glucose in the 20-79 age group from the International Diabetes Federation, and total population in the 20-79 age group from the United Nations Population Prospects.

References

[27] WHO (2016), *Global report on diabetes*, World Health Organization, *https://apps.who.int/iris/handle/10665/204871*.

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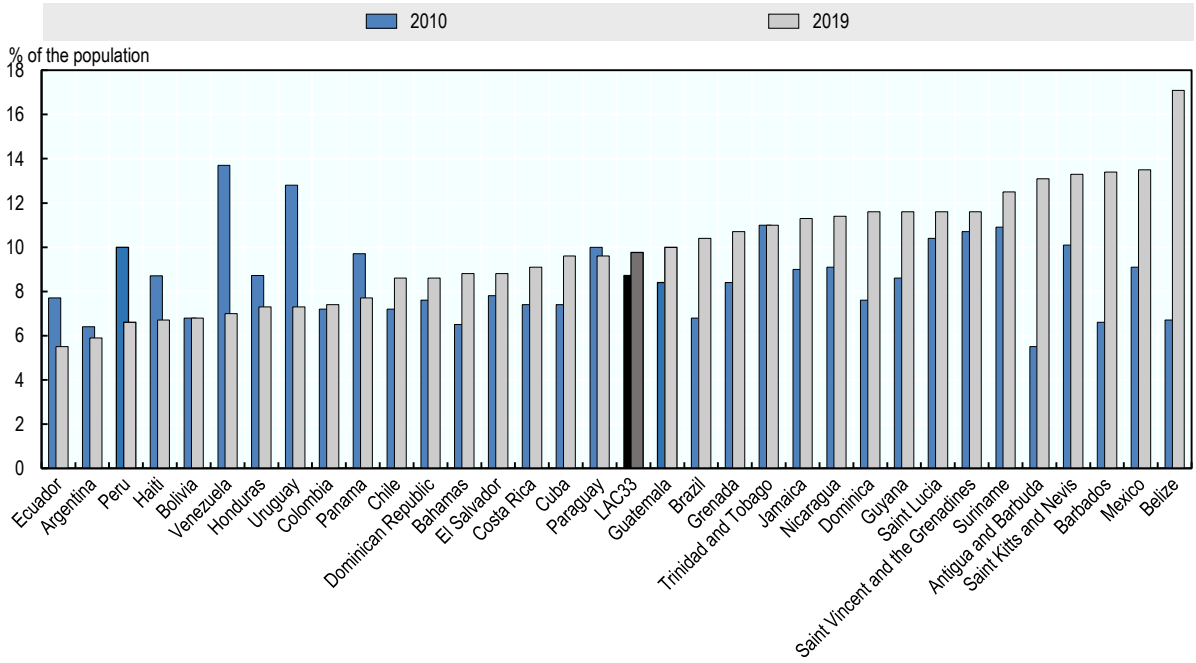
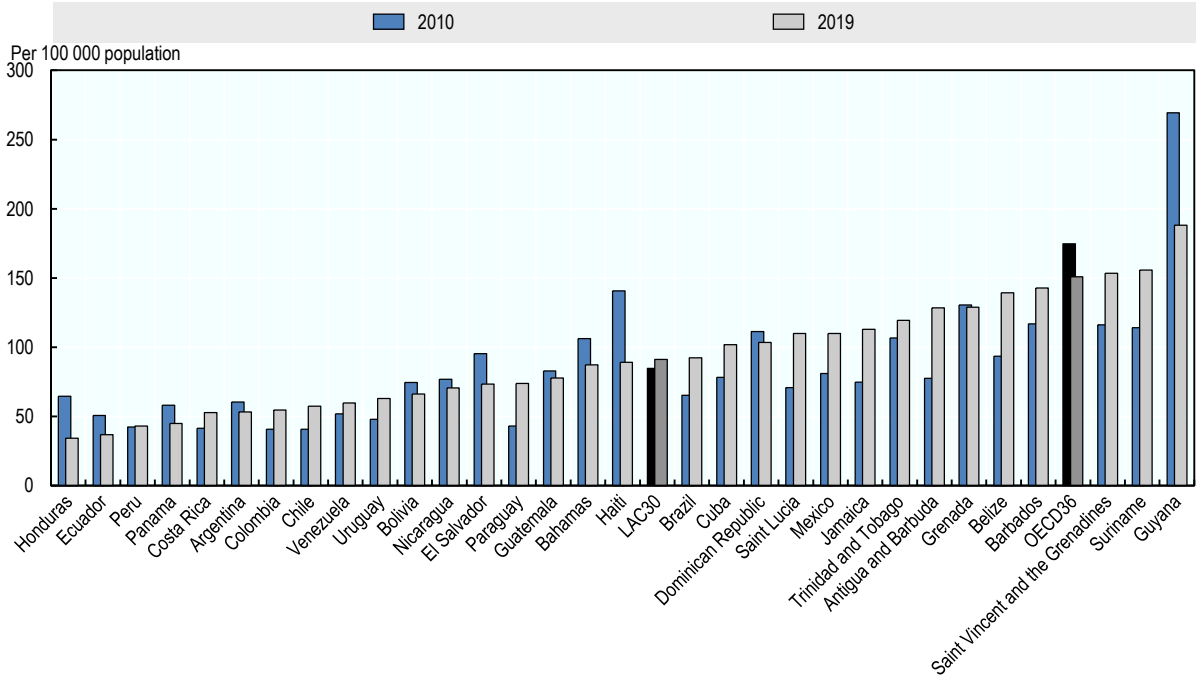
Figure 3.32. **Diabetes among adults aged 20-79 years, age-adjusted prevalence, 2010 and 2019**



Source: International Diabetes Federation. Diabetes Atlas 2020.

StatLink https://stat.link/ucgm73

Figure 3.33. **Deaths attributable to high blood glucose for adults aged 20-69 years per 100 000 population, by country, 2010 and 2019**



Source: International Diabetes Federation. Diabetes Atlas 2020.

StatLink https://stat.link/kefnxj

Population ageing naturally occurs when life expectancy extends (see indicator "Life expectancy at birth" in Chapter 1) and fertility declines. In LAC, life expectancy has increased around 4 years since 2000 (see section "Life expectancy at birth") and fertility has decreased from 2.6 to 2 births per woman, below the replacement rate of 2.1, necessary to maintaining the current population number. The latter has occurred due to better and more widespread access to reproductive health, primarily to different contraceptive methods (see indicator "Reproductive health" in Chapter 4), and more access to the labor market. Population ageing is a consequence of successful health and development policies over last decades, but it is not exempt from placing challenges of its own (ECLAC, 2019[28]).

The share of the population above 65 years old is expected to more than double by 2050, reaching over 18% in LAC31 (Figure 3.34, left panel). This will still be lower than the 27% expected among OECD countries, which are deeper in the population ageing process. In LAC, the share of older people will be particularly large in Barbados and Cuba, both above 25%. In the lower end, Belize will have less than 10% of its population aged over 65 years old. Women tend to live longer than men do and therefore the proportion of elderly women will likely be even higher. The speed to which this process is already occurring will be unprecedented and will have significant consequences. The share of the population over 65 will increase by three-fold in Nicaragua, a country that was still relatively young in 2015.

The growth of the share of population over 80 years will be even more drastic (Figure 3.34, right panel). On average, the share of this population is expected to triple by 2050 in LAC31, reaching an average of 5.2%. The largest rise will be in Guyana, Bahamas, Brazil, Antigua and Barbuda and Cuba, countries that will more than quadruple their population over 80 years old.

Another important consideration is the fact that population ageing implies a decrease in the share of working age population (aged 15-64). The ratio of working age population to people over 65 will be four times in 2050 compared to nine times in 2015 (Figure 3.35). The situation will be particularly severe in Uruguay, Cuba, Barbados and Chile where there will only be two working age adults per each person over 65 by 2050.

Such demographic changes will challenge the financial sustainability of not only health systems but also social protection systems and the economy as a whole. Moreover, older age often exacerbates pre-existing inequities based on income, education, gender and urban/rural residence, highlighting the importance of equity-focuses policy-making in future (OECD, 2017[29]). Many LAC countries who are arriving at the demographic transition in fast pace are facing much shorter timeframes to prepare before reaching very high shares of elderly populations. Population ageing calls for an equity-focused, gender-responsive and human rights-based action across several sectors, and will likely lead to greater demand for labour-intensive long-term care. Therefore, countries in LAC could think forward to plan ahead the vast arrange of policies that other OECD countries have already put in place, for instance, in the areas of long-term care workforce, financial coverage and social protection systems (Muir, 2017[30]).

Definition and comparability

Population projections are based on the most recent "medium-variant" projections from the United Nations, World Population Prospects – 2019 revision.

References

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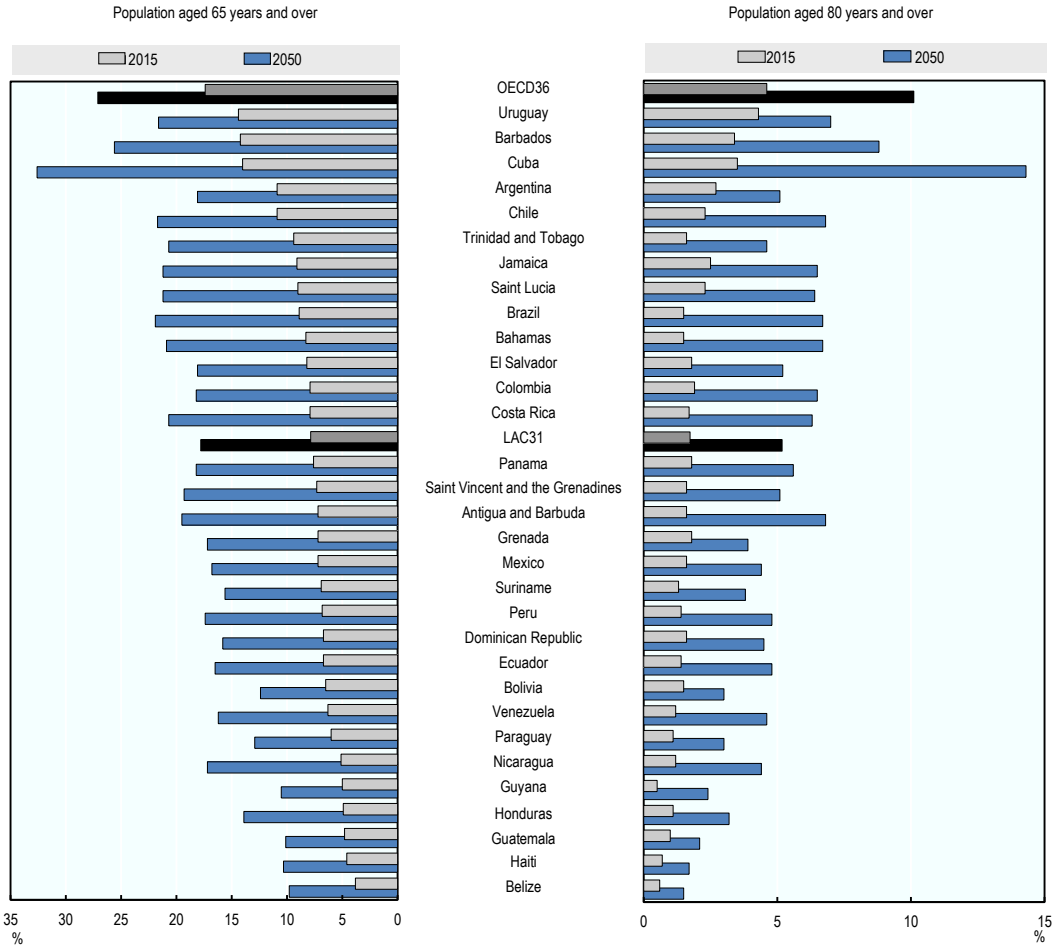
Figure 3.34. **Share of the population aged over 65 and 80 years, 2015 and 2050**



Source: UN World Population Prospects 2019.

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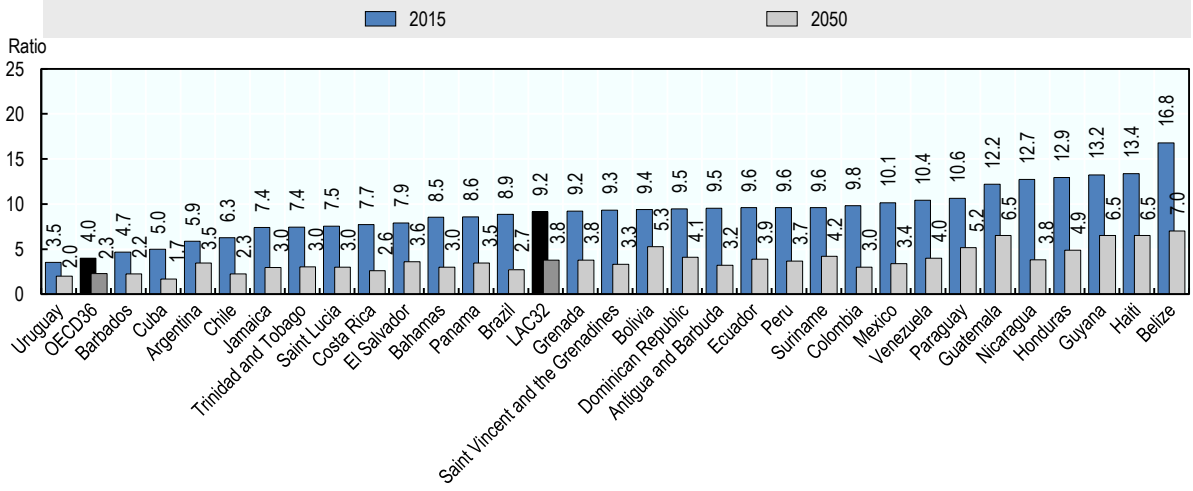
Figure 3.35. **Ratio of people aged 15-64 to people aged over 65 years, 2015 and 2050**



Source: UN World Population Prospects 2019.

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Chapter 4

Determinants of health

The WHO estimates that 214 million women of reproductive age in developing countries who want to avoid pregnancy are not using a modern contraceptive method (WHO, 2018[1]). The SDG targeting reproductive health care services aims to provide universal access by 2030, and to integrate reproductive and sexual health into national agendas, strategies and programs. The global agenda for sexual and reproductive health and rights is linked to gender equality and women's wellbeing, affecting newborn, child, adolescent and maternal health, and their roles in shaping future economic development and environmental sustainability (Starrs et al., 2018[2]). Family planning is a key component of any essential package of reproductive and sexual health services, and it is one of the most cost-effective public health interventions, contributing to significant reductions in child and maternal mortality and morbidity (UNFPA, 2018[3]).

Reproductive health involves having a responsible, satisfying and safe sexual life, along with the freedom to make decisions about reproduction. This includes accessing methods of fertility regulation and appropriate health care through pregnancy and childbirth, providing parents with the best chance of having a healthy, happy and prosperous baby when they are ready to start or extend their family. Women who have access to contraception can protect themselves from unwanted pregnancy and some methods double as protection against sexually transmitted diseases as well (e.g. condoms). Spacing births can also have positive benefits on both the reproductive health of the mother and the overall health and well-being of the child, well beyond the pregnancy period and birth.

The prevalence of contraceptive use varies widely in the LAC region. In Costa Rica, Colombia, Nicaragua and Brazil, over three quarters of married or in union women of reproductive age report using any contraceptive method (Figure 4.1). However, both Haiti and Guyana report that less than 35% of married women or in union of reproductive age use any contraceptive methods. Regarding modern methods of contraception, less than 50% of women are using them in Haiti, Guyana, Trinidad and Tobago, Bolivia, Suriname, Belize and Guatemala.

In eight LAC countries with data, demand for family planning is generally satisfied at higher rates among women living in urban areas, with higher income and education levels (Figure 4.2). These differences are particularly stark in Haiti and Guatemala, between six to more than 20% lower access in the least advantaged groups. Some countries such as Paraguay report less significant differences with similar access in the three categories. In most cases where both least and more socially advantaged women report high access to family planning (over 80-85%), the rates tends to be similar between both groups. This supports the fact that providing wide availability to family planning services contributes not only to more access but also to reduced social inequalities in the utilisation of these services.

LAC countries can continue improving the information and services related to sexual and reproductive health, which should be accessible and affordable to all individuals. Modern family planning interventions can be further incorporated in the essential services package to provide universal coverage, paying special attention to the poorest and most vulnerable people. In addition, countries must also take actions beyond the health sector to change social norms, laws, and policies to uphold human rights and promote gender equality (Starrs et al., 2018[2]; WHO, 2018[1]).

Definition and comparability

Contraceptive prevalence is the percentage of women who are currently using, or whose sexual partner is currently using, at least one method of contraception, regardless of the method used. It is usually reported as a percentage of married or in union women aged 15-49. Modern methods of contraception include combined oral contraceptives ("the pill"), progestogen-only pills ("the minipill"), implants, injectables, patches, vaginal ring, intrauterine device (cooper and levonorgestrel), male and female condoms, vasectomy, tubal ligation, lactational amenorrhea method, emergency contraception pills, standard days method, basal body temperature method, two-day method and symptom-thermal method. Traditional methods considers the calendar or rhythm method, and the withdrawal or coitus interruptus.

Women with a demand for family planning satisfied are those who are fecund and sexually active, are using a method of contraception, and report wanting more children. It is also reported as a percentage of married or in union women aged 15-49. Information on contraceptive use and unmet need for family planning is generally collected through nationally representative household surveys. The most commonly used survey formats are the Demographic and Health Surveys (DHS) and the Multiple Indicator Cluster Surveys (MICS).

References

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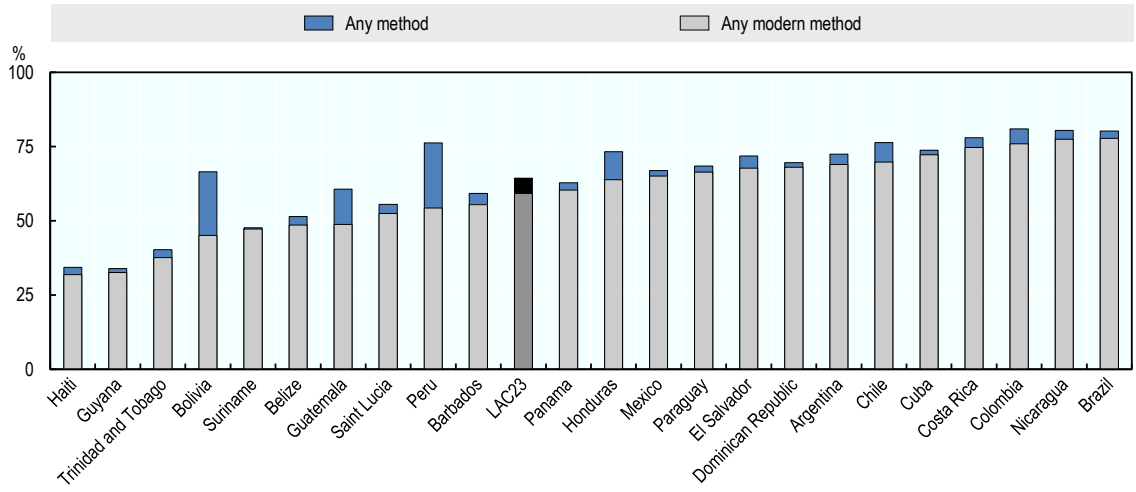
Figure 4.1. **Contraceptive prevalence, married or in-union women, 2015 or latest available estimate**



Note: Data for Haiti is 2016 and for Surinam is 2010.
Source: World Contraceptive use 2019, UNDP. Ministry of Health for Costa Rica.

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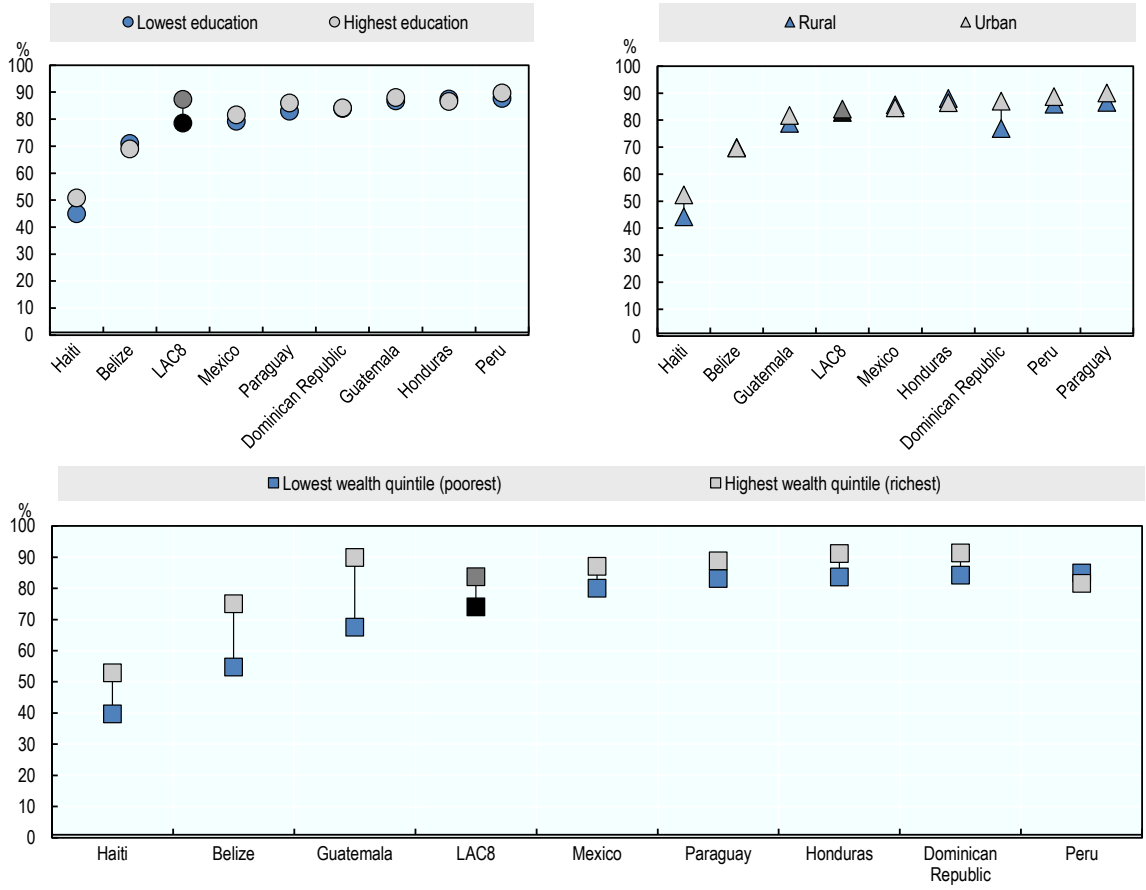
Figure 4.2. **Demand for family planning satisfied by socio-economic characteristics, any method, selected countries, latest available estimate**



Source: DHS and MICS surveys, various years.

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Globally, preterm birth (i.e. birth before 37 completed weeks of gestation) is the leading cause of death in children under 5 years of age, responsible for approximately 1 million deaths in 2015 (see indicator "Under age 5 mortality" in Chapter 3). In almost all countries with reliable data, preterm birth rates are increasing. Many survivors of preterm births also face a lifetime of disability, including learning disabilities and visual and hearing problems as well as long-term development (WHO, 2018[4]).

In LAC, most countries are near the regional average of 9.5% of births being preterm. Colombia is the only country significantly above average with near 15% of preterm births, followed by Brazil with 11%. The lowest rates were observed in Cuba (6%) and Mexico (7%) (Figure 4.3, left panel). Most LAC countries rates are lower than the global rate, but there are opportunities for further improvements through interventions such as a national focus on improved obstetric and neonatal care, and the systematic establishment of referral systems with higher capacity of neonatal care units and staff and equipment (Howson, Kinney and Lawn, 2012[5]). On average, 10 new-borns out of 100 had low weight at birth across LAC countries (Figure 4.3, right panel). There are very significant differences between countries in the region, ranging from a low 5% in Cuba and 6% in Chile, to the highest rate of 23% in Haiti, followed by Guyana with 16%.

Low birth weight has decreased an average of 0.4 percentage points in LAC26 countries in the 2000-15 period, suggesting that, overall, the region still has room for improvement in regards to this indicator. Chile, Brazil, Venezuela and Costa Rica are the only LAC countries to have increased low birth weight new-borns, while the largest reduction happened in Surinam, Guatemala and Honduras with more than 1 percentage point of decrease between 2000 and 2015 (Figure 4.4).

Antenatal care can help women prepare for delivery and understand warning signs during pregnancy and childbirth. Higher coverage of antenatal care is associated with higher birth weight in LAC countries, suggesting the significance of antenatal care over infant health status across countries (Figure 4.5). However, the correlation does not apply equally in all countries. For instance, Trinidad and Tobago and Barbados report to have 100% and 98% of at least four antenatal care visits, but their low birth weight prevalence is 12%, over the LAC average of 10%. This might be explained partly by a low quality of care in their antenatal care visits. On the other hand, countries like Grenada, Paraguay and Bolivia show an antenatal care coverage below the LAC24 average of 87%, but also a low birth weight prevalence of 7-9%. Some of the differences between countries can be attributed to cultural practices and preferences, such as different approaches to privacy or perceptions about what antenatal and postnatal care entail.

Preterm birth can be largely prevented. Effective interventions to reduce preterm births include smoking cessation, progesterone supplementation, cervical cerclage, preterm surveillance clinics and screening, diagnosis and preparation, corticosteroids, magnesium sulphate, and tocolysis (Osman, Manikam and Watters, 2018[6]). Most of these exist in several LAC countries and could be further developed. In addition, three-quarters of deaths associated with preterm birth can be saved even without intensive care facilities. Current cost-effective interventions include kangaroo mother care (continuous skin-to-skin contact initiated within the first minute of birth), early initiation and exclusive breastfeeding (initiated within the first hour of birth) and basic care for infections and breathing difficulties (WHO, 2018[4]), all of which can also be scaled up in LAC countries.

Definition and comparability

Preterm birth is defined as babies born alive before 37 weeks of pregnancy are completed. There are sub-categories of preterm birth based on gestational age: extremely preterm (less than 28 weeks); very preterm (28-32 weeks); moderate to late preterm (32-37 weeks). Low birthweight is defined by the World Health Organization as the weight of an infant at birth of less than 2 500 grammes (5.5 pounds) irrespective of the gestational age of the infant. This figure is based on epidemiological observations regarding the increased risk of death to the infant and serves for international comparative health statistics. In developed countries, the main information sources are national birth registers. For developing countries, low birthweight estimates are primarily derived from mothers participating in national household surveys, as well as routine reporting systems (WHO and UNICEF, 2004[7]).

Antenatal care (ANC) is defined as the care provided by skilled health-care professionals to pregnant women and adolescent girls in order to ensure the best health conditions for both mother and baby during pregnancy. The recommendation is to provide at least four visits during pregnancy (WHO, 2016[8]).

References

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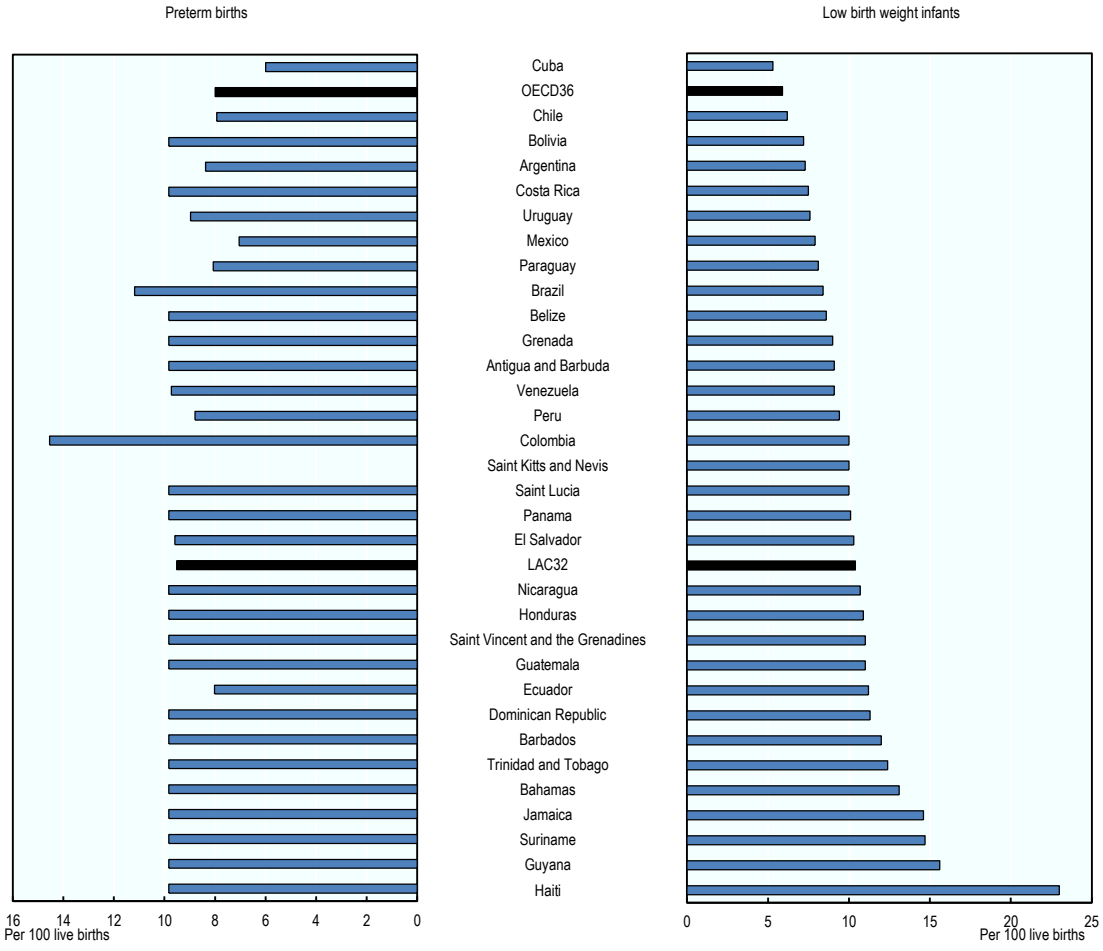
[4] WHO (2018), *Preterm birth*, World Health Organization, *https://www.who.int/news-room/fact-sheets/detail/preterm-birth*.

Figure 4.3. **Preterm birth and low birth weight infant rates, 2015 (or latest year available)**



Source: UNICEF, 2019.

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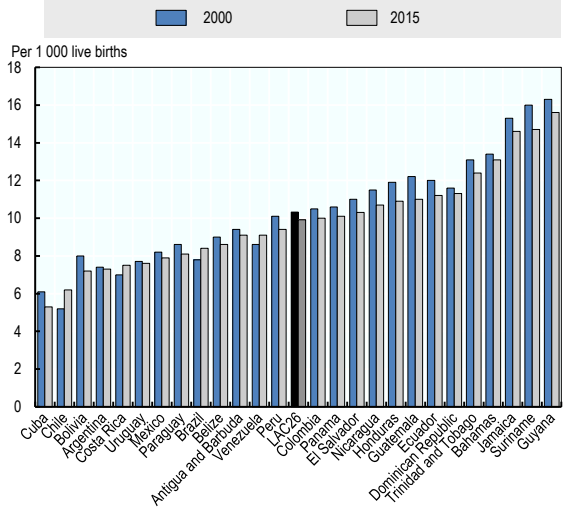
Figure 4.4. **Low birth weight increase or decrease, 2000-15 (or nearest year)**



Source: UNICEF-WHO Low birthweight estimates, 2019.

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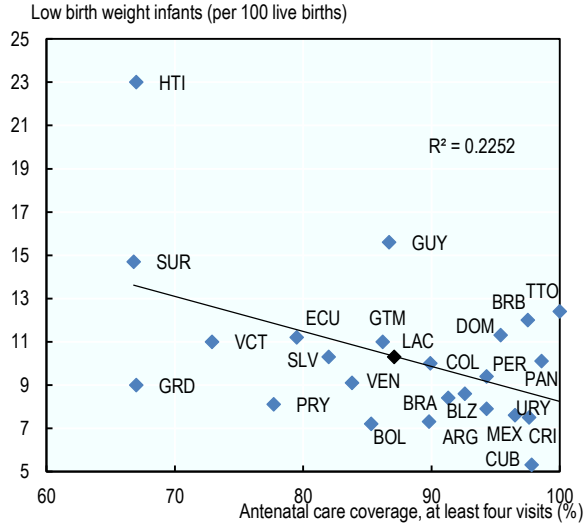
Figure 4.5. **Antenatal care coverage and low birth weight, 2016 or latest year available**



Source: WHO GHO 2018.

StatLink https://stat.link/w0iuyz

Feeding practices of infants and young children heavily influence their chances of short-term survival and their capacity to realise their long-term potential. They contribute to healthy growth, decrease rates of stunting and obesity and lead to higher intellectual development (Victora et al., 2016[9]). Starting at the beginning of a woman's pregnancy to the second birthday of her child, the first 1 000 days represent a key opportunity to ensure wellness and create the foundations of a productive and healthy life. Breastfeeding is often the best way to provide nutrition for infants. Breast milk provides infants with nutrients they need for healthy development, including the antibodies that help protect them from common childhood illnesses such as diarrhoea and pneumonia, the two primary causes of child mortality worldwide (see Chapter 3. Child mortality). Breastfeeding is also linked with better health outcomes as children grow older (Rollins et al., 2016[10]). Adults who were breastfed as babies often have lower blood pressure and lower cholesterol, as well as lower rates of overweight, obesity and type 2 diabetes. Breastfeeding also improves IW, school attendance and is linked to higher income levels in adult life. More than 800 000 deaths among children under five could be saved every year globally, if all children 0-23 months were optimally breasted (Victora et al., 2016[9]). Breastfeeding also benefits mothers through its effect in fertility control, reducing the risk of breast and ovarian cancer later in life and lowering rates of obesity.

In LAC19, most of the countries reporting data have exclusive breastfeeding lower than the WHO goal with an average of 35% of children exclusively breastfed in the first 6 months of life (Figure 4.6). Over half of infants are exclusively breastfed in Peru, Bolivia and Guatemala, while the rate is lower than one in five in Barbados and less the one in ten in Dominican Republic.

After the first six months of life, an infant needs additional nutritionally adequate and safe complementary foods, while continuing breastfeeding. In 24 LAC countries with data, 83% of children receive any solid, semi-solid and soft foods in their diet, with Jamaica and Ecuador below 75%, and Argentina, Brazil, Cuba and El Salvador above 90%. Moreover, in average, 43% of children in LAC continued breastfeeding until having 2 years old, a rate below 30% in Saint Lucia and Brazil, and above 60% in Peru, El Salvador and Guatemala (Figure 4.7).

Exclusive breastfeeding is more common in lower and lower-middle income countries rather than higher income in LAC, as well as among poorer rural women with lower education than richer women with higher education living in cities (Figure 4.8). However, in countries such as Costa Rica, Dominican Republic, Jamaica and Paraguay, women living in urban areas breastfeed exclusively more than women in rural areas. Argentina is the only country with data where more educated and wealthier women show higher rates of exclusivity in LAC.

Key factors that can lead to inadequate breastfeeding rates are broad and encompass several dimensions of society. They include unsupportive hospital and health care practices and policies, lack of adequate skilled support for breastfeeding, specifically in health facilities and the community, aggressive marketing of breast milk substitutes and inadequate maternity and paternity leave legislation and unsupportive workplace policies. In conclusion, considering persisting high levels of children malnutrition, infant and young child feeding practices must be further improved to tackle current and forthcoming challenges (Rollins et al., 2016[10]).

Definition and comparability

Exclusive breastfeeding is defined as no other food or drink, not even water, other than breast milk (including milk expressed or from a wet nurse) for the first six months of life, with the exception of oral rehydration salts, drops and syrups (vitamins, minerals and medicines). Thereafter, to meet their evolving nutritional requirements, infants should receive adequate and safe complementary foods while continued breastfeeding up to two years of age or beyond.

The usual sources of information on the infant and young child feeding practices are household surveys. They also measure other indicators of infant and young child feeding practices such as minimal meal frequency, minimal diet diversity and minimum acceptable diet. The most commonly used survey formats are the Demographic and Health Surveys (DHS) and the Multiple Indicator Cluster Surveys (MICS).

References

[10] Rollins, N. et al. (2016), "Why invest, and what it will take to improve breastfeeding practices?", *The Lancet*, Vol. 387/10017, pp. 491-504, *http://dx.doi.org/10.1016/s0140-6736(15)01044-2*.

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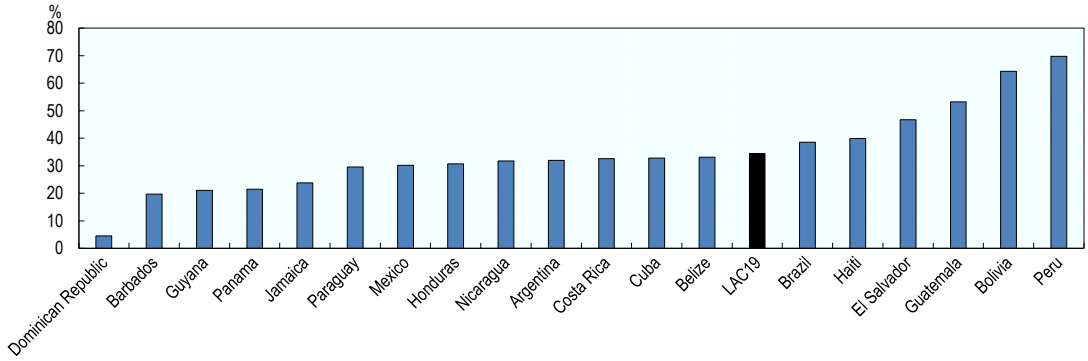
Figure 4.6. **Infants exclusively breastfed – first 6 months of life, 2016 or nearest year**



Source: UNICEF World Children Report 2017.

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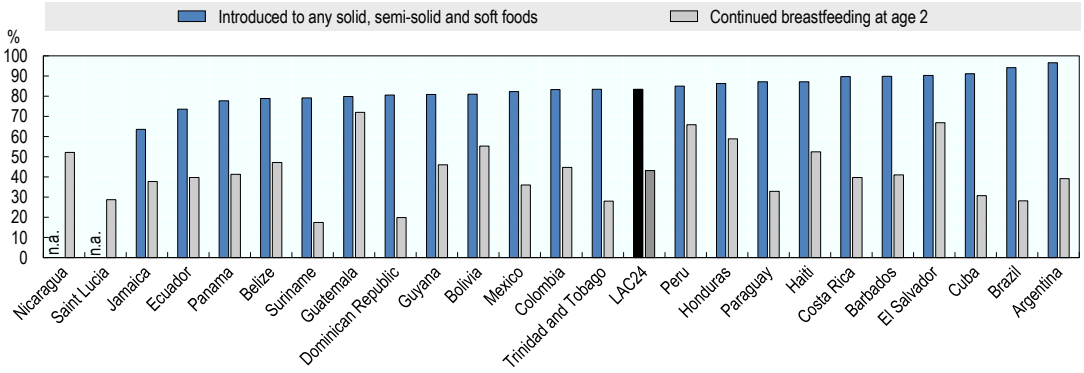
Figure 4.7. **Feeding practices after six months of age, selected countries (2006-17)**



Source: DHS and MICS surveys 2006-17; UNICEF Infant and young child feeding.

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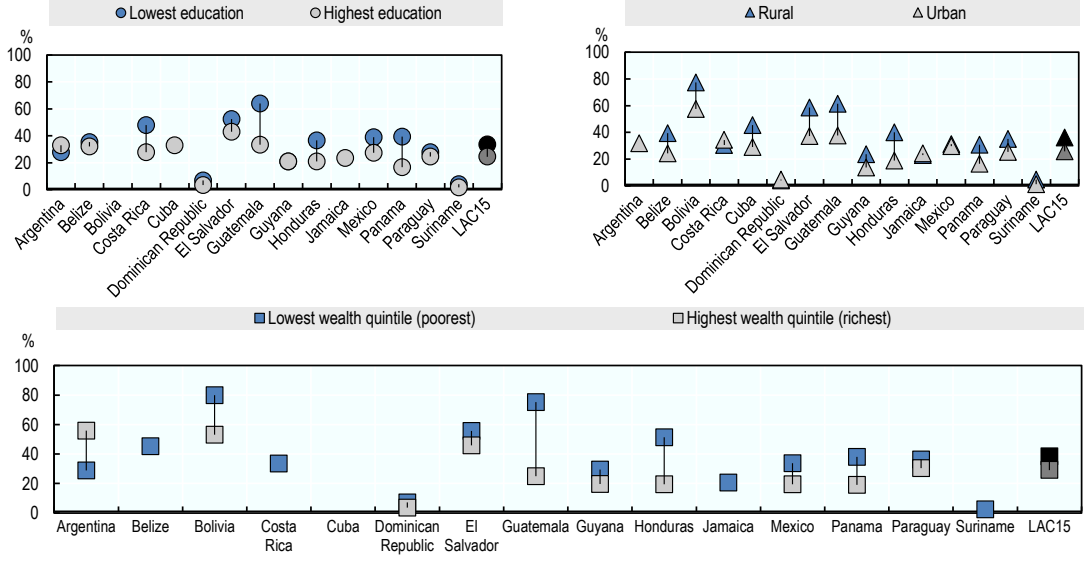
Figure 4.8. **Infants exclusively breastfed in the first six months of life, by select socio-economic and geographic factors**



Source: DHS and MICS surveys 2006-17; UNICEF Infant and young child feeding.

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A key component of human capital is healthy and well-nourished people throughout their lives, but many children are not able to access sufficient, safe nutritious food and a balanced diet that meets their needs for optimal growth and development, to enable an active and healthy life. Globally, it is estimated that 150.8 million children are stunted, 50.5 million are wasted, and 38.3 million are overweight (Development Initiatives, 2018[11]). Hence, many countries are facing a double burden of malnutrition – characterised by the coexistence of undernutrition along with overweight, obesity or diet related NCDs – a health challenge on the rise in many LAC countries. Child malnutrition also contributes to poorer cognitive and educational outcomes in later childhood and adolescence, which in turn affect lifelong potential and heavily determines the socio-economic status of the individual.

The UN SDG target 2.2 sets that by 2030 end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under five years of age, and also includes an indicator on childhood overweight. Subsequently, in April 2016, the United Nations General Assembly proclaimed 2016-2025 the UN Decade of Action on Nutrition to eradicate hunger, and malnutrition in all its forms (undernutrition, micronutrient deficiencies, overweight or obesity) and reduce the burden of diet-related NCDs in all age groups (UN, 2019[12]).

Stunting rates in LAC are generally lower than in other world regions but it is still a significant problem in several countries. In average, 13% of children below five years of age are stunted in LAC27 (Figure 4.9). The rate is nearly 47% in Guatemala and over 20% in Haiti, Ecuador and Honduras, while is lowest in Chile and Saint Lucia below 3%. Wasting rates are also lower than in other regions with an average of 2.5% among children below five years of age, but Barbados, Guyana and Uruguay have significantly higher rates than average being over 6%. The lowest rates are observed in Chile, Peru, Guatemala and Colombia, all below 1%.

Countries with higher stunting prevalence tend to have higher than average under-5 mortality, reflecting the fact that about half of all deaths before the age of 5 can be attributed to malnutrition (Figure 4.10). Guatemala deviates significantly from the trend by having a stunting rate almost four times the LAC average and an under-5 mortality rate eight points over the LAC average. This is mainly due to the high poverty rate and large inequality in the country, which causes that half the population cannot afford the cost of the basic food basket. This adds to the effects of natural disasters and climate change that damages food production (WFP, 2019[13]).

Childhood overweight and obesity is shaping up to be one of the most significant challenges of the century. In LAC26, the average prevalence of overweight among children under age 5 is almost 8% (Figure 4.11). The highest rates are observed in Paraguay and Barbados having over 12%, followed by Trinidad and Tobago, Bolivia, Panama and Argentina, where more than one child out of 10 is overweight. In turn, rates are lower than 5% in Haiti, Suriname and Guatemala.

The identification, promotion and implementation of actions that simultaneously and synergistically address undernutrition as well as overweight, obesity and diet related NCDs are important opportunities and immediate priorities. They include: food systems for healthy, sustainable diets, aligned health systems providing universal coverage of essential nutrition actions, social protection and nutrition related education, trade and investment for improved nutrition, safe and supportive environments for nutrition at all ages, and strengthening and promotion of nutrition governance and accountability (WHO, 2017[14]).

Definition and comparability

The WHO definition of children overweight is weight for height greater than 2 standard deviations above WHO child growth standard median. The WHO definition of children obesity is weight for height greater than 3 standard deviations above the WHO Child Growth Standard median.

Stunted growth (low height for age) reflects failure to reach linear growth potential as a result of long-term suboptimal health and/or nutritional conditions.

Wasting usually indicates recent and severe weight loss, because a person has not had enough food to eats and or they have had an infectious disease such as diarrhea which as cause d them to lose weight.

References

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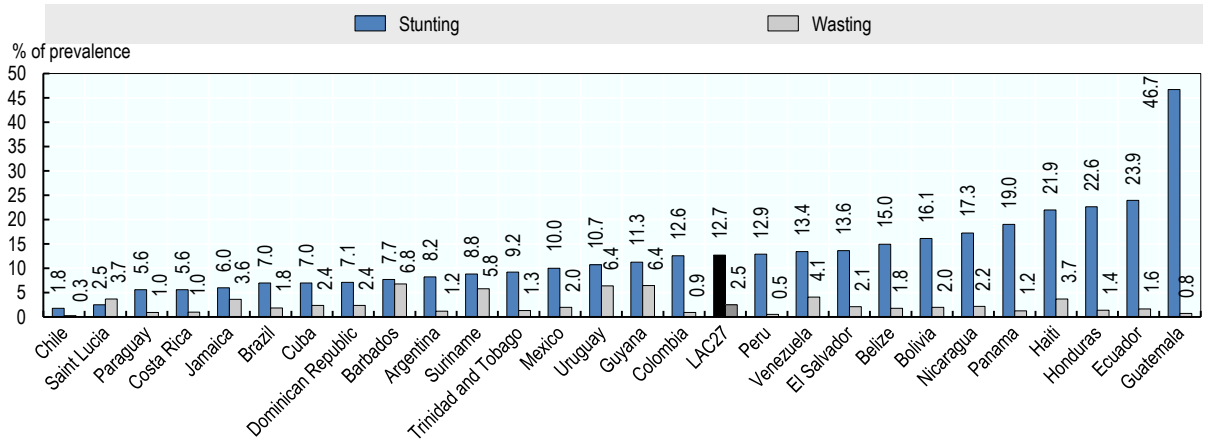
[14] WHO (2017), *The double burden of malnutrition*, World Health Organization, *https://www.who.int/nutrition/publications/doubleburdenmalnutrition-policybrief/en/*.

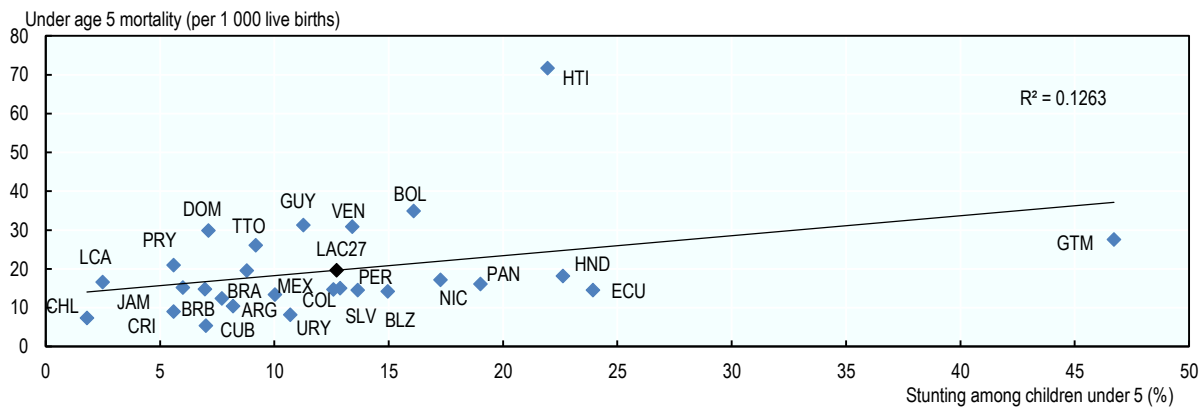
Figure 4.9. **Prevalence of stunting and wasting among children under age 5, latest year available**



Source: WHO GHO 2018.

StatLink https://stat.link/m9u12g

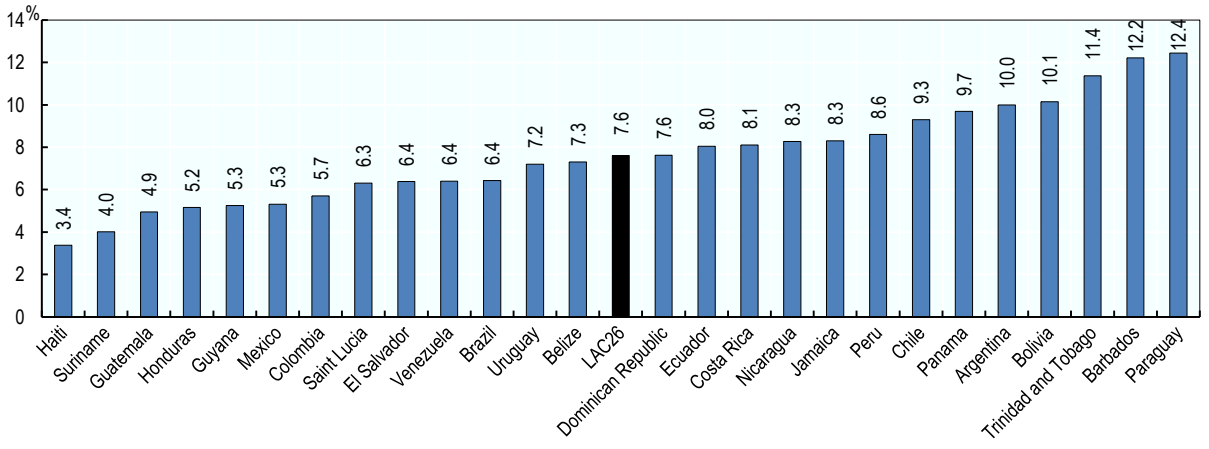
Figure 4.10. **Under age 5 mortality and stunting prevalence, latest year available**



Source: WHO GHO 2018.

StatLink https://stat.link/y6mxlk

Figure 4.11. **Prevalence of overweight among children under age 5, latest year available**



Source: WHO GHO 2018.

StatLink https://stat.link/irfc27

Adolescence is a fundamental transitional phase in human development as it represents a change from childhood to physical, psychological and social maturity. During this period, adolescents learn and develop knowledge and skills to deal with critical aspects of their health and development while their bodies mature. Adolescent girls, especially younger girls, are particularly vulnerable because they face the risks of premature pregnancy and childbirth (UNICEF, 2017[15]). In the present, there are two clear transitions regarding adolescent population: demographic transition, with an increase in the number of adolescents (aged 10-24 years) from 1.53 billion in 1990 to 1.8 billion in 2016; and epidemiological transition, which has seen a decrease in the number of countries classified as multi-burden moving to be classified as NCDs predominant (Weiss and Ferrand, 2019[16]).

Risk factors for NCDs, the leading cause of premature adult deaths, are often acquired in adolescence. Overweight and obesity are one these key risk factors. In LAC, over 38% of both male and female adolescents were overweight or obese in 2016 (Figure 4.12). Among male adolescents, Argentina and Chile led the group with more than half of their adolescent population living with overweight or obesity, while Colombia and Saint Lucia were at the other end with less than 29%. Among female adolescents, Bahamas, Mexico and Venezuela stand over 45% of overweight and obesity, while Haiti is the only country in the region with less than 30%.

Between 2010 and 2016, obesity in the LAC region increased in all countries, with an average of more than 34% growth among male adolescents and almost 30% among female adolescents (Figure 4.13). The largest increase among male adolescents occurred in Trinidad and Tobago, Haiti, Saint Lucia and Guyana with more than 50% increase, whereas in Venezuela, Mexico, Argentina, Uruguay and Bahamas the surge was below 20%. Similarly, the highest increase among female adolescents happened in Trinidad and Tobago with 57%, followed by Saint Lucia, Haiti and Guyana just over 45%. The lowest increases in Uruguay and Bahamas, both below 15% growth.

Another key issue for adolescents worldwide is the high prevalence of pregnancies during youth. In LAC25, the average adolescent birth rate is 62 births per 1 000 adolescent women, which is almost the triple as in OECD countries that stand in 21 births per 1 000 adolescent women (Figure 4.14). Notably, all LAC countries are situated above the OECD average. The highest adolescent birth rate is found in Honduras with 101 births per 1 000 adolescent women (1 out of 10 teenage girls will give birth), followed by Nicaragua and Guatemala with 92 births. On the other hand, Bahamas and Trinidad and Tobago have the lowest adolescent birth rates in the region with 32 and 38, respectively.

The Global Strategy for Women's, Children's and Adolescent's Health 2016-2030 fosters a world in which "every woman, child and adolescent in every setting realizes their rights to physical and mental health and well-being, has social and economic opportunities, and is able to participate fully in shaping prosperous and sustainable societies". Aiming to end preventable deaths, ensure health and well-being, and expand enabling environment, it calls for action in several areas: country leadership, financing for health, health system resilience, individual potential, community engagement, multisector action, humanitarian and fragile states, research and innovation, and accountability (United Nations, 2015[17]). LAC countries are taking this agenda in many ways and adapting it to their national context, with the opportunity to gather the international momentum to take a big step in improving adolescent health from a multifaceted perspective.

Definition and comparability

The WHO definition of adolescent overweight is a body mass index greater than 1 standard deviation above the median, according to the WHO child growth standards.

The WHO definition of adolescent obesity is a body mass index greater than 2 standard deviation above the median, according to the WHO Child Growth Standards.

Adolescent birth rate is defined as the annual number of births to women aged 15-19 years per 1 000 women in that age group. It is also referred to as the age specific fertility rate for women aged 15-19 years.

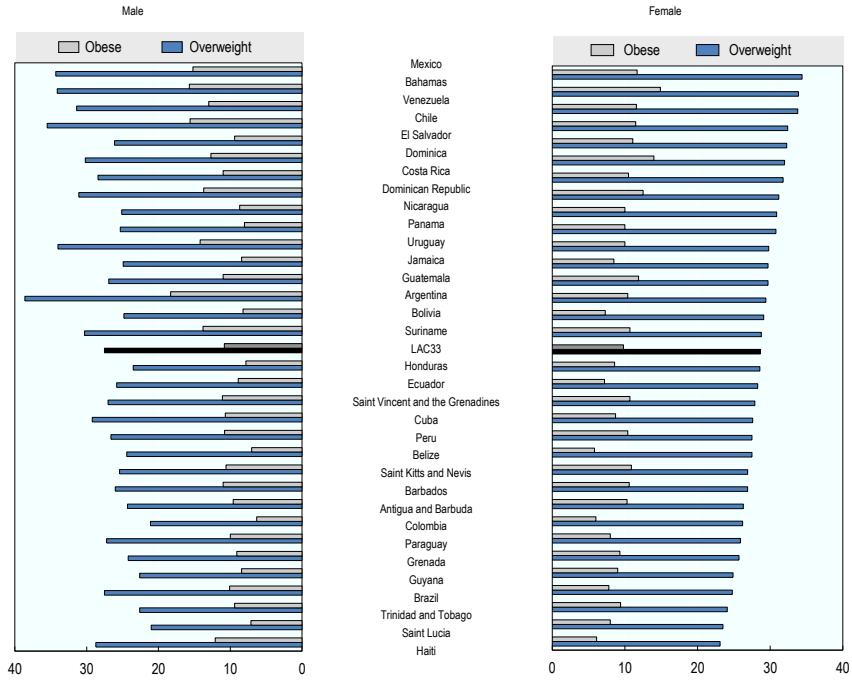
References

[15] UNICEF (2017), *Adolescent Health*, *http://data.unicef.org/topic/maternal-health/adolescent-health/*.

[17] United Nations (2015), *The Global Strategy for Women's, Children's and Adolescents' Health, 2016-2030*, Every Woman Every Child, Geneva, *https://www.who.int/life-course/partners/global-strategy/en/*.

[16] Weiss, H. and R. Ferrand (2019), *Improving adolescent health: an evidence-based call to action*, Lancet Publishing Group, *http://dx.doi.org/10.1016/S0140-6736(18)32996-9*.

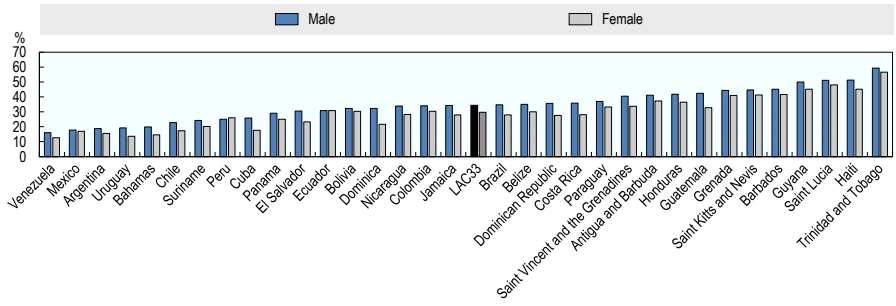
Figure 4.12. **Adolescents who are overweight or obese, 2016**



Source: WHO GHO 2019.

StatLink https://stat.link/24yjcb

Figure 4.13. **Change in obesity prevalence, 2010-16**



Source: WHO GHO 2019.

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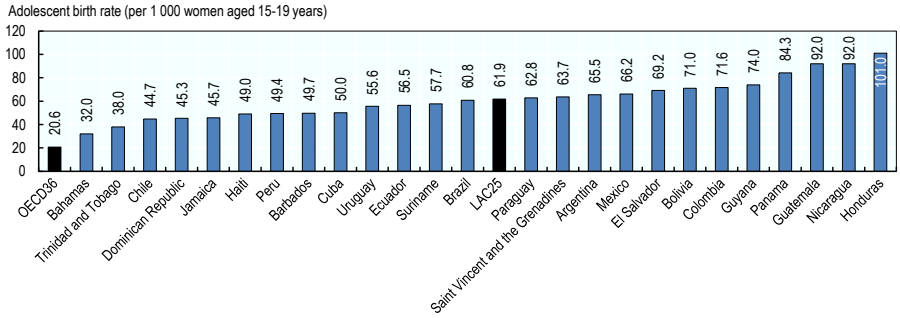
Figure 4.14. **Adolescent birth rate, latest year available**



Source: WHO GHO 2019.

StatLink https://stat.link/ybgfup

Overweight and obesity are major public health concerns as the global epidemic has far-reaching consequences for individuals, society and the economy. Obesity is an established risk factor for numerous health conditions, including hypertension, high cholesterol, diabetes, cardiovascular disease, respiratory problems, skeletal diseases and some forms of cancer, and mortality also increases progressively once the overweight threshold is crossed. Therefore, obesity and overweight reduces life expectancy, increases health care costs, decreases workers' productivity and lowers countries' GDP (OECD, 2019[18]). Worldwide, 39% of men and 39% of women in 2016 were overweight, and 11% of men and 15% of women were obese. Thus, nearly 2 billion adults worldwide were overweight and, of these, more than half a billion were obese. Forty-one million children under the age of five were overweight or obese in 2016; while over 340 million children and adolescents aged 5-19 were overweight or obese. Both overweight and obesity have shown a marked increase over the las four decades (WHO, 2018[19]).

In OECD countries, 63% of men and 52% of women are overweight (pre-obesity + obesity). In LAC countries, 61% of women are overweight (Figure 4.15). In Mexico and Chile over 75% of their female population is overweight, while the lowest rates are observed in Paraguay and Trinidad and Tobago with less than 55%. Similarly, 53% of men in LAC countries are overweight. Chile leads the region with 74% of its male population being overweight followed by Mexico (70%) and Argentina (66%). Saint Lucia and Trinidad and Tobago are below 40% with the lowest rate in the region.

Women's overweight population increased in all LAC countries between 2010 and 2016 but the average growth rate was more than half below the average increase in OECD countries (6% vs 13%). Haiti and Trinidad and Tobago show the largest increases of 10% each (Figure 4.16), while the lowest growth was registered in Venezuela (3%) followed by Chile, Uruguay and Bahamas (4%). Among men, the LAC region increased by 9% while in the OECD was close to 16%. The largest increase happened in Haiti (17%) followed by Dominica (13%), Jamaica (12%) and Guyana (12%), whereas Venezuela and Argentina have the lowest rate of increase below 6%.

In LAC countries, obesity is higher among women (29%) than men (18%) (Figure 4.15). Among women, Bahamas and Dominica have over 35% of obese female population, while Paraguay, Peru and Ecuador are below 25%. The largest increase in women's obesity between 2010 and 2016 occurred in Haiti (22%) and Trinidad and Tobago (20%), whereas the smallest growth was in Venezuela and Bahamas (8%) (Figure 4.17). Among men, Argentina has the highest obesity rate (27%) followed by Chile and Uruguay (25%), while Trinidad and Tobago (11%), Antigua and Barbuda (12%) and Saint Lucia (12%) stands in the other end (Figure 4.15). Haiti again leads growth the increase with 39% increase followed by Dominican Republic and Guyana (30%). Venezuela and Argentina show the lowest increase of 13% (Figure 4.17).

Social determinants of health such as poverty, inadequate water and sanitation, and inequitable access to education and health services underlie malnutrition. A key driver of the increasing obesity epidemic is a changing food environment, in which nutrient poor and energy dense processed foods are aggressively marketed, readily available and often cheaper than healthier alternatives. Countries such as Mexico, Chile, Peru, Uruguay and Ecuador, have managed to develop some policies related to taxing sugar sweetened beverages and front-of-package labelling, along with regulating food advertising to children. These efforts can be complemented with policies such as menu labelling, workplace anti-sedentary interventions and mass media campaigns, as not only they are effective but also have a positive return on investment (OECD, 2019[18]).

Definition and comparability

The most frequently used measure of underweight, overweight and obesity for adults is the Body Mass Index (BMI). This is a single number that evaluates an individual's weight in relation to height, and is defined as weight in kilograms divided by the square of height in metres.

Based on the WHO classification, adults with a BMI below 18.5 are considered to be underweight/thinness and 25 or over are overweight. Adults who have BMI between 20 and 30 are considered to have pre-obesity. A BMI 30 or over are defined as obese.

In many countries, self-reported estimates of height and weight are collected through population-based health surveys while other countries actually take measurements amongst the population. These differences limit data comparability. BMI estimates from health examinations are more reliable, and generally result in higher values than those from self-reported surveys.

References

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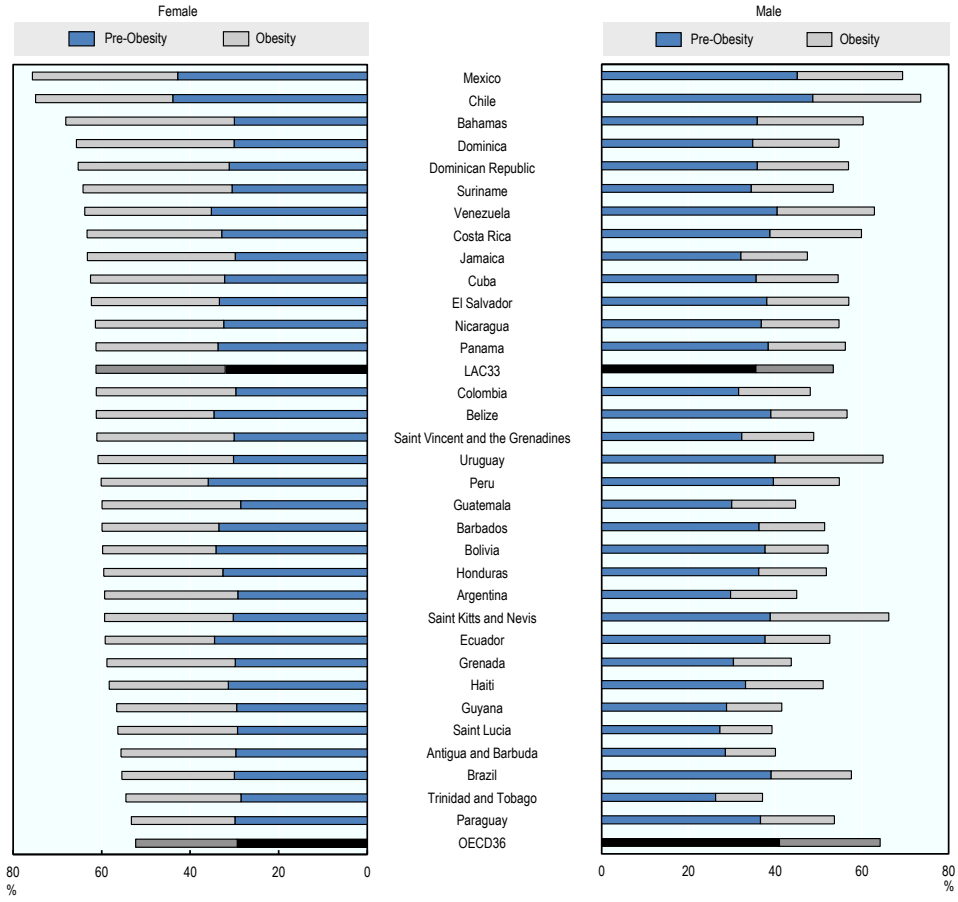
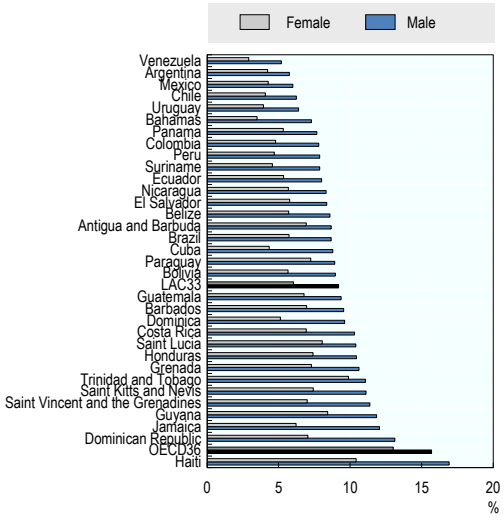
Figure 4.15. **Adults who are overweight or obese, 2016**



Note: OECD and LAC average includes both measured and self-reported data.
Source: WHO GHO, 2018; OECD Health Statistics 2019 for Mexico, Chile, Colombia, Brazil and Costa Rica.

StatLink https://stat.link/672l8z

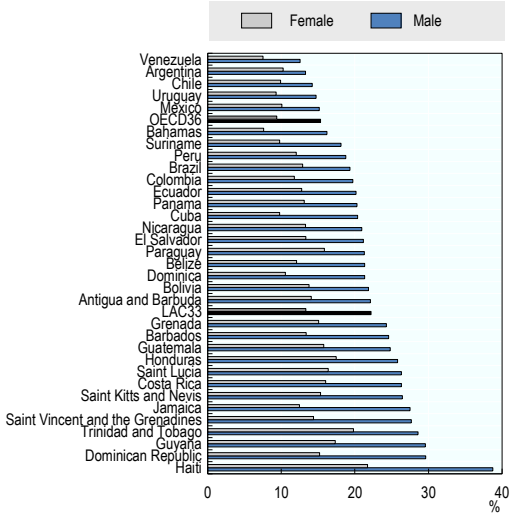
Figure 4.16. **Change in overweight prevalence, 2010-16**



Note: OECD and LAC average includes both measured and self-reported data.
Source: WHO GHO, 2018; OECD Health Statistics 2019 for Mexico, Chile, Colombia, Brazil and Costa Rica.

StatLink https://stat.link/suljdm

Figure 4.17. **Change in obesity prevalence, 2010-16**



Note: OECD and LAC average includes both measured and self-reported data.
Source: WHO GHO, 2018; OECD Health Statistics 2019 for Mexico, Chile, Colombia, Brazil and Costa Rica.

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Exposure to inadequate drinking water, sanitation and hygiene behaviours (WASH) are vital to individual health, livelihood and well-being. Diarrhoea, respiratory infections, malnutrition, schistosomiasis, malaria, soil-transmitted helminth infections and trachoma are some of the diseases associated to inadequate WASH. In 132 low and middle-income countries, an estimated 829 000 WASH-attributable deaths and 49.8 million DALYs occurred from diarrhoeal diseases in 2016, equivalent to 60% of all diarrhoeal deaths (Prüss-Ustün et al., 2019[20]). Over half a million children under the age of five die every year due to diarrhoeal disease. The estimation is that 88% of that burden is attributable to WASH and is mostly concentrated on children in developing countries. Better access to water and sanitation is fundamental to better health but it also contributes to social and economic progress, one of the many links to human capital described in this publication. It helps drive higher educational enrolment rates, improves the standard of living and lower health care costs necessary to maintain a productive workforce (UNICEF and WHO, 2017[21]).

Access to basic sanitary facilities has grown in LAC over recent years (Figure 4.18, left panel). In 2017, almost three out of four people living in rural areas and almost seven out of eight people living in urban areas in LAC countries have access to basic sanitation. However, in Haiti and Bolivia only around 24% and 36% of people living in rural areas have access to basic sanitation for adequate excreta disposal, respectively, meaning that open defecation is still common. Urban basic sanitation in these two countries increases to 44% and 72%, respectively, but still substantially below the LAC average. Progress has been particularly rapid in Paraguay and Chile, with an increase of more than 30 percentage points in the proportion of the population living in rural areas with access to basic sanitation between 2010-17. Bolivia and Panama reported the largest increases of 25 and 21 percentage points in the population living in urban areas with access to basic sanitation during the same period. Guatemala and Saint Lucia were the only countries in LAC reporting a decrease in the percentage of the population having access to basic sanitation in urban areas from 2010-17.

Between 2010 and 2017, most countries in LAC improved access to basic drinking water (Figure 4.19, right panel). Only Antigua and Barbuda, Barbados and Venezuela experienced small decreases. On average, nearly nine in ten persons in rural areas and nearly all persons in urban areas have access to improved water sources in LAC. Only Nicaragua, Peru and Haiti lagged behind with three-quarters or less of the population living in rural areas having access to basic water sources. In Haiti, the rate was 40%, meaning that less than half of the rural population had access to drinking water. Access was significantly improved in Bolivia, Chile, El Salvador and specially Paraguay reported an increase in the population living in rural areas having access to basic drinking water of more than 25 percentage points between 2010-17 (Figure 4.19, left panel).

The United Nations set a target of achieving universal and equitable access to safe and affordable drinking water for all, as well as achieving access to adequate and equitable sanitation and hygiene for all and end open defecation by 2030. Furthermore, UNICEF strategy for WASH seeks to ensure that every child lives in a clean and safe environment, gains access to basic sanitation and safe drinking water in early childhood development centres, school, health centres and in humanitarian situations. Tax-based public subsidies, well-designed water tariffs and strategic use of aid flows to the water sector can assist in ensuring that poor and vulnerable groups have access to sustainable and affordable water services (WHO, 2012[22]).

Definition and comparability

People that use improved sources of drinking water that required no more than 30 minutes per trip to collect water are classified as having at least basic drinking water services. An improved drinking-water source is constructed so that is protected from outside contact, especially from fecal matter, improved sources include piped water, public taps, boreholes, and protected dug wells or springs (UNICEF and WHO, 2017[21]).

People that use an improved sanitation facility that was not shared with other households are classified as having at least basic sanitation services. Improved sanitation facilities hygienically separate excreta from human contact, through the use of flushing to piped sewer systems, septic tanks or pit latrines, along with improved pit latrines or composting toilets (UNICEF and WHO, 2017[21]).

The WHO/UNICEF Joint Monitoring Program for Water Supply and Sanitation (JMP) database includes nationally representative household surveys and censuses that ask questions on water and sanitation, mostly conducted in developing countries. Generally, developed countries supply administrative data.

Countries showing 100% not included in figure.

References

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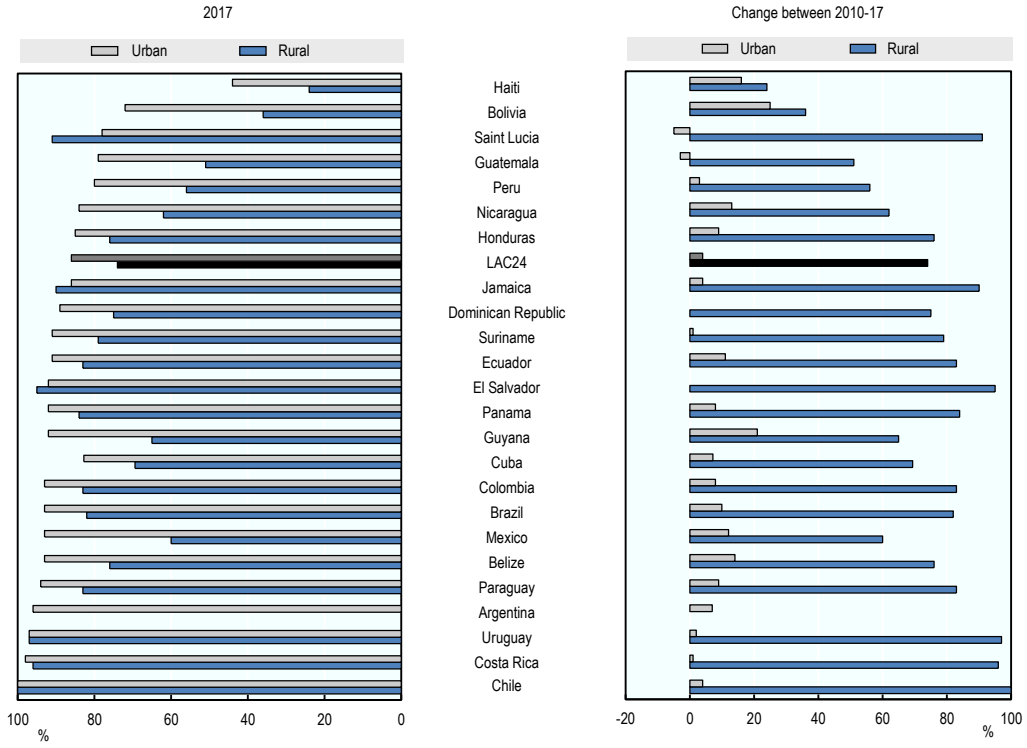
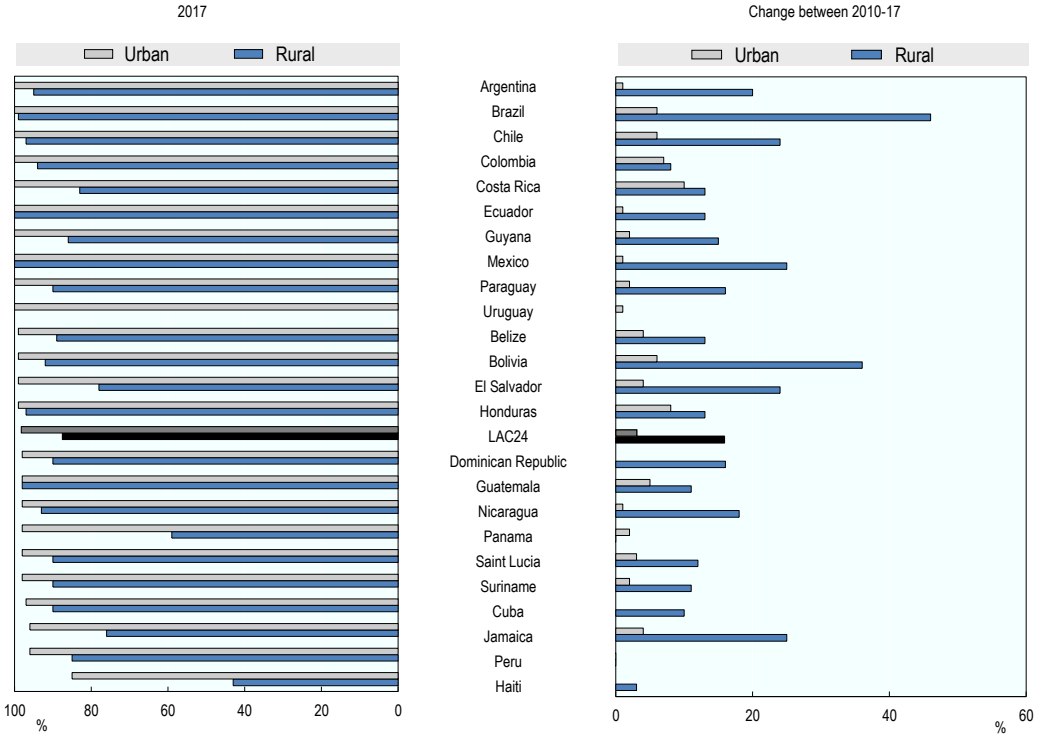
Figure 4.18. **Access to basic sanitation, 2017 and change between 2010-17**



Source: WHO GHO 2019.

StatLink https://stat.link/1twid9

Figure 4.19. **Access to basic drinking water, 2017 and change between 2010-17**



Source: WHO GHO 2019.

StatLink https://stat.link/n90xz4

Tobacco use is the second leading risk factor for early death and disability worldwide, claiming more than 5 million lives every year since 1990. The negative effects of smoking spread out beyond individual and population health affecting the economy as well. Worldwide in 2015, the age-standardised prevalence of daily smoking was 25% for men and 5.4% for women, representing 28.4% and 34.4% reductions, respectively, since 1990. It is estimated that in 2015 there were between 5.7 to 7 million deaths due to smoking, equivalent to 11.5% of all global deaths (Reitsma et al., 2017[23]). Currently, 1.1 billion people are estimated to be active smokers, 84% of which were males and 80% of which live in low- and middle-income countries. Moreover, second-hand smoke causes more than 1.2 million premature deaths per year, of which 65 000 are children (WHO, 2019[24]). The UN SDGs call for strengthening the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate.

The proportion of daily tobacco smokers varies greatly across countries but close to one in four men aged 15 and above in the LAC18 smokes daily, a very similar rate to the OECD (Figure 4.20). Rates are particularly high in Cuba, where over half of all men smoke, followed by Surinam where 43% men smoke. The lowest rates among men are observed in Costa Rica, Panama and Mexico, all below 10%. Rates are lower among women with 7% smoking daily, lower than the OECD average. Chile is at the top with over one women of every five smoking, followed closely by Cuba and Argentina. Cuban women smoke three times less than men do. The lowest rates for women are found in Barbados and Ecuador with 2% or less, followed by El Salvador, Costa Rica, Haiti and Panama, all below 2%.

Among adolescents aged between 13 and 15 years old in 29 LAC countries, tobacco use prevalence for men was 15% and almost 12% for women. Chile shows the highest tobacco use among women (26%) followed by Argentina (25%) and Mexico (18%), while the lowest rates are found in Dominican Republic (6%) and Honduras (6%). Among men, Saint Vincent and the Grenadines has the highest tobacco use (24%) followed by Argentina (23%) and Mexico (22%). Paraguay has the lowest rate among men of 7% (Figure 4.21).

Increasing tobacco prices through higher taxes is one of the most effective interventions to reduce tobacco use, by discouraging youth from beginning cigarette smoking and encouraging smokers to quit. A recent review of studies conducted in LAC countries found that tax increases effectively reduce cigarette use and can also be expected to increase cigarette tax revenue (Guindon, Paraje and Chaloupka, 2018[25]), which can be used in complementary interventions. The average taxation in LAC is 48% for a pack of 20 cigarettes (Figure 4.22). The countries with the highest taxation on tobacco are Chile and Argentina with over 80%, but these are not the countries with the highest prices. The most expensive tobacco can be found in Jamaica with a price of USD 14.3, while the cheapest one is observed in Paraguay, Colombia, Cuba, Dominica and Guyana, all below USD 3 dollars.

LAC countries can strengthen its regulations to reduce tobacco use by fully implementing the WHO Framework Convention on Tobacco Control. For this, WHO's strategy MPOWER can be followed to Monitor tobacco use and prevention policies; Protect people from tobacco use; Offer help to quit tobacco use; Warn about the dangers of tobacco; Enforce bans on tobacco advertising, promotion and sponsorship; and Raise taxes on tobacco (WHO, 2019[24]).

Definition and comparability

Adults smoking daily is defined as the percentage of the population aged 15 years and over who reported smoking every day. Estimates for 2015 were based on data obtained from a broad range of health and household surveys, including the Global Adult Tobacco Survey (GATS). Results were age-standardised OECD standard population for OECD countries and to the WHO Standard Population for non-OECD countries.

Current tobacco use among youth is derived from the Global Youth Tobacco Survey 2010-17. It is defined as the percentage of young people aged 13-15 years who consumed any tobacco product at least once during the last 30 days prior to the survey.

References

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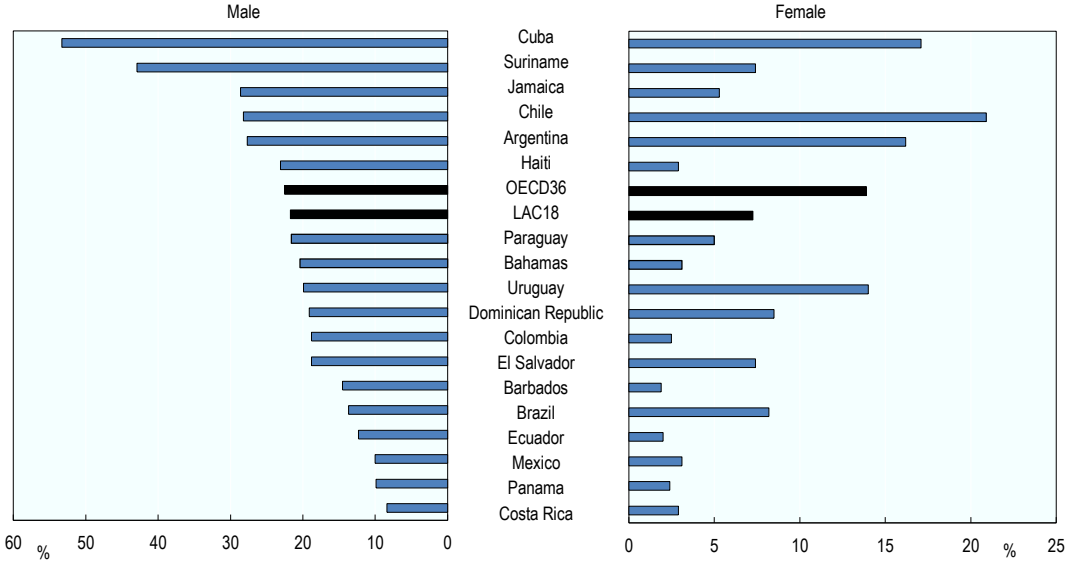
[24] WHO (2019), *Tobacco*, World Health Organization, *https://www.who.int/news-room/fact-sheets/detail/tobacco*.

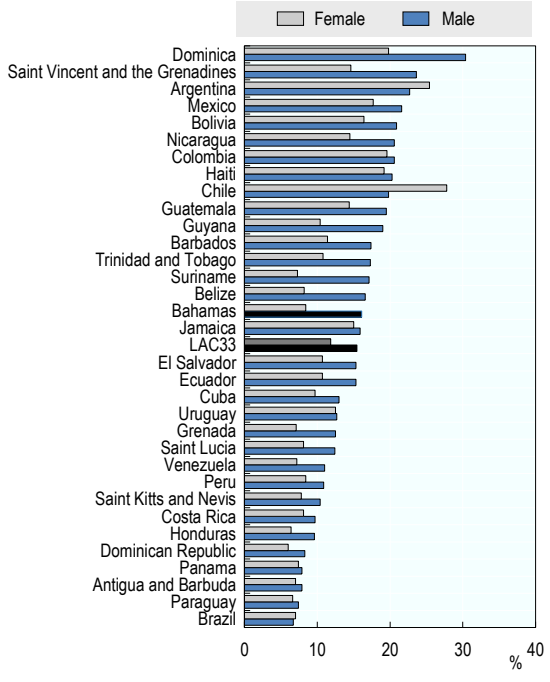
Figure 4.20. **Age standardised prevalence estimates for daily tobacco smoking among persons aged 15 and above, 2016**



Source: WHO GHO 2018. OECD Health Statistics 2019 for Mexico, Chile, Colombia, Costa Rica and Brazil.

StatLink https://stat.link/bsx47w

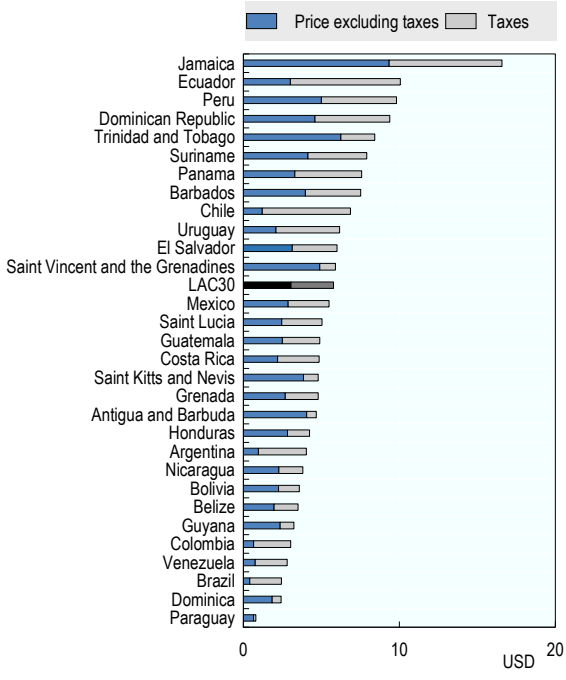
Figure 4.21. **Prevalence of current tobacco use among youth aged 13 and 15, latest estimate available**



Source: Global Youth Tobacco Surveys 2010-17.

StatLink https://stat.link/31hqo0

Figure 4.22. **National taxes and retail price for a pack of 20 cigarettes of the most sold brand, 2016**



Source: WHO report on the global tobacco epidemic 2017.

StatLink https://stat.link/ayoqbh

Alcohol use is a leading risk factor for disease burden, both in terms of mortality and morbidity, and has been linked to numerous negative health and social outcomes, including more than 200 disease and injury conditions such as cancer, stroke, liver cirrhosis, among others. Foetal exposure to alcohol increases the risk of birth defects and intellectual impairment. Alcohol misuse is also associated with a range of mental health problems, including depression and anxiety disorders, obesity and unintentional injury (WHO, 2018[26]). In 2016, 2.8 million deaths were attributed to alcohol use globally, corresponding to 2.2% of total age-standardised deaths among females and 6.8% among males. In terms of overall disease burden, alcohol use led to 1.6% of total DALYs globally among females and 6% among males, ranking alcohol use as the seventh leading risk factor for premature death and disability in 2016, compared with other risk factors in the Global Burden of Disease studies (Griswold et al., 2018[27]).

Average alcohol consumption in the LAC region was more than 6 litres per capita in 2016, lower than the 9.3 litres per capita in the OECD. The lowest consumption is observed in Guatemala, Costa Rica and El Salvador, while the highest intake is in Uruguay, Saint Lucia, Argentina and Barbados (Figure 4.23, left panel). Consumption is in general higher among more developed countries, consistent with trends in other world regions. The evolution of alcohol consumption in the period 2010-16 has been very heterogeneous across countries, but the regional average has increased by almost 3%. Countries like Guatemala and Venezuela experienced decreases of over 25%, while Dominica and Trinidad and Tobago increased their per capita intake by the same percentage (Figure 4.23, right panel).

Heavy and binge drinking are drinking patterns with more associated health risks. In average in the LAC region, 43% of the drinking population in 2016 had a heavy episodic drinking in the past 30 days (Figure 4.24). In Peru, Saint Lucia, Grenada, Saint Kitts and Nevis, and Trinidad and Tobago, around half of all drinkers report heavy drinking behaviour. Rates of heavy drinking are below 35% in countries such as Chile, Guatemala, El Salvador, Argentina and Uruguay, suggesting a different drinking culture in some of the countries with higher population intakes. Regarding gender patterns, in average men have more than 2.5 times heavy episodic drinking than women, with Peru, Saint Lucia, Grenada, Saint Kitts and Nevis, and Trinidad and Tobago leading for both genders.

Regarding road accidents in the LAC region, between one out of three for men and more than one out of every five for woman can be attributed to alcohol consumption (Figure 4.25). The rates are over 40% for male drivers in Argentina, Uruguay, Barbados, Grenada, Saint Lucia, Trinidad and Tobago, while among women rates are over 40% in Saint Lucia and over 30% in Barbados and Trinidad and Tobago.

Reduction of health, safety and socio-economic problems attributable to alcohol requires broad-based strategies (e.g. addressing the wider social determinants of health) and ones that target alcohol drinkers. Policies raising awareness of public health problems caused by harmful use of alcohol and ensuring support for effective alcohol policies, regulating the marketing of alcoholic beverages and restricting the availability of alcohol, in particular to younger people, can be further developed in the region. Drink-driving policies have proven to be effective; for instance in Chile a “zero tolerance” policy was enacted in 2012 with positive results. Demand can be reduced through taxation and pricing mechanisms, which in LAC countries has been less utilised as a policy tool. Finally, in relation to alcohol-use disorders, implementing screening and brief interventions programmes along with providing accessible and affordable treatment is an effective strategy (WHO, 2018[26]; Sassi, 2015[28]).

Definition and comparability

Alcohol intake is measured in terms of annual consumption of litres of pure alcohol per person aged 15 years and over. Sources are based mostly on FAO (Food and Agriculture Organization of the United Nations) data, which consist of annual estimates of beverage production and trade supplied by national Ministries of Agriculture and Trade. The methodology to convert alcoholic drinks to pure alcohol may differ across countries. Data are for recorded alcohol, and exclude homemade sources, cross-border shopping and other unrecorded sources. Information on drinking patterns is derived from surveys and academic studies.

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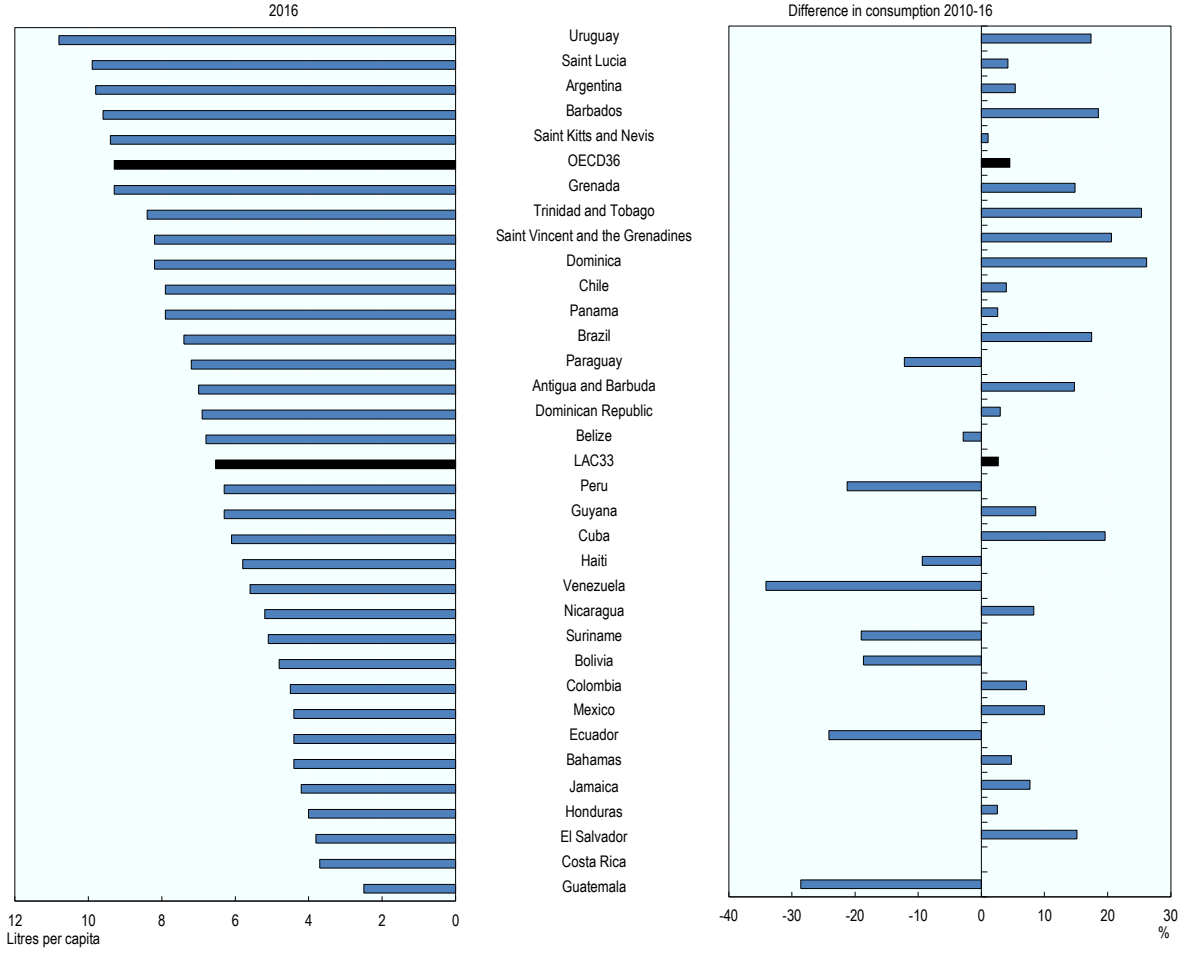
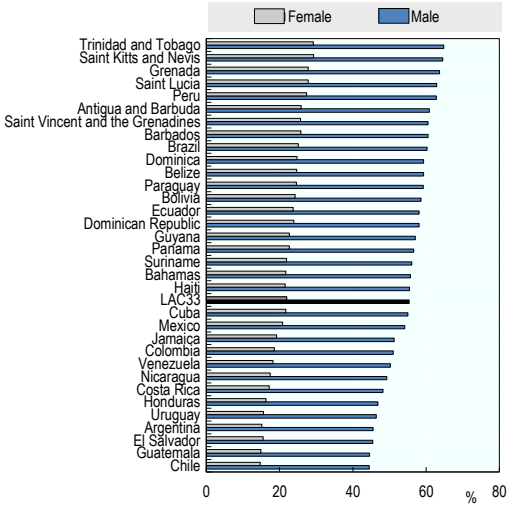
Figure 4.23. **Recorded alcohol consumption, population aged 15 years and older, 2016**



Source: WHO GHO 2018. OECD Health Statistics 2019 for Mexico, Chile, Colombia, Costa Rica and Brazil.

StatLink https://stat.link/kr2nxp

Figure 4.24. **Heavy episodic drinking (drinkers only), past 30 days (%), 2016**



Source: WHO GHO 2018.

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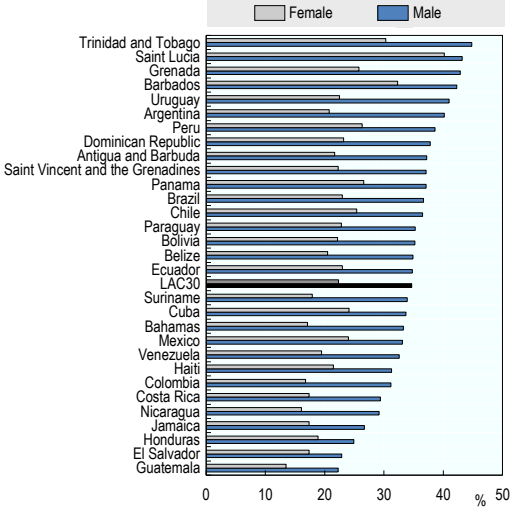
Figure 4.25. **Proportion of road traffic deaths that are attributable to alcohol, 2016**



Source: WHO GHO 2018.

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Approximately 1.35 million people die each year as a result of road traffic crashes. While the global rate for road traffic deaths is 17.4 per 100 000, there is great disparity by income, with rates higher in low- and middle-income countries than in the world's high-income countries (WHO, 2018[29]). The burden of road traffic injuries falls disproportionately on vulnerable road users – pedestrians, cyclists and motorcyclists. Road injuries will cost the world economy USD 1·8 trillion (constant 2010 USD) in 2015-30, which is equivalent to an annual tax of 0.12% on global gross domestic product (Chen et al., 2019[30]). The SDG 3 target aims to halve the number of global deaths and injuries from road traffic crashes by 2020, while SDG 11 relates to providing access to sustainable transport systems for all, improving road safety, and expanding public transport.

In 2016, LAC countries reported 17 deaths per 100 000 population due to road traffic accidents (Figure 4.26). In Saint Lucia, Dominican Republic and Venezuela, there were over 30 deaths per 100 000 population because of road traffic injuries in 2016, followed by Ecuador, El Salvador, Paraguay, Guyana and Belize with over 20 deaths. On the other end, Barbados, Antigua and Barbuda and Cuba have the lowest road traffic death rates.

The five key risk factors in road traffic deaths and injuries are drinking and driving, speeding, and failing to use motorcycle helmets, seat belts and child restraints (Table 4.1). In addition, distracted driving is a growing threat to road safety considering the use of mobile phone and other in-vehicle technologies. Texting causes cognitive distraction and both of manual and visual distraction as well. Even talking on mobile phones without holding or browsing a phone can reduce driving performance (WHO, 2018[29]). Since hands-free phone and hand-held phone are equally at risk of cognitive distraction, some national laws regulate both of the ways of using mobile phones (Table 4.1). Drinking and driving, especially with a blood alcohol concentration level of over 0.05g/dl (grammes per decilitre), greatly increases the risk of a crash and the possibility that it will result in death or serious injury. Furthermore, lower limit BAC limits (0.02 g/dl) for young people and novice drivers can reduce the risk of road crashes. Enforcement through random breath testing checkpoints is highly cost effective and can reduce alcohol-related crashes by approximately 20%.

Wearing a seat belt can reduce fatalities among front-seat passengers by up to 50% and among rear seat car passengers by up to 75%. A national law does not exist in Antigua and Barbuda, while several other countries do not require that all the occupants of a car wear a seat belt. Child restraint systems, such as child seats for infants and booster seats for older children, decrease the risk of death in a crash by about 70% for infants and up to 80% for small children. However, mandatory child restraint national laws exist only in 16 LAC countries.

In high-income countries, speed contributes to about 30% of road deaths, while in some low and middle-income countries speed is the main factor in about half of road deaths. Speed limits are enforced by a national law in all LAC countries except in Venezuela. However, in several countries speed limits are not adapted at the local level (Table 4.1).

Wearing a motorcycle helmet correctly can reduce the risk of death by almost 40% and the risk of severe injury by over 70%. When motorcycle helmet laws are enforced, helmet-wearing rates can increase to over 90%. However, four countries does not have a regulation mandating helmet use. Motorcycle helmet wearing rate is very low in Dominican Republic, Guatemala and Jamaica, and in rural areas of most countries. Only Brazil, Chile, Colombia, Costa Rica, Cuba and Surinam report motorcycle helmet use over 80% in rural areas.

Definition and comparability

To calculate road injury mortality data, countries were classified into four groups: (1) Countries with death registration data completeness of at least 80%. For these countries' death registration, projection of the most recent death registration, reported death or projected reported deaths were used. (2) Countries with other sources of information on cause of death. For these countries a regression method was used to project forward the most recent year for which an estimate of total road traffic deaths was available. (3) Countries with population less than 150 000 and which did not have eligible death registration data. For these countries the death reported in the survey were used directly, without adjustment. (4) Countries without eligible death registration data. For these countries a negative binomial regression model was used. For more information about this process, see the report Global Status Report on Road Safety (WHO, 2018[31]).

References

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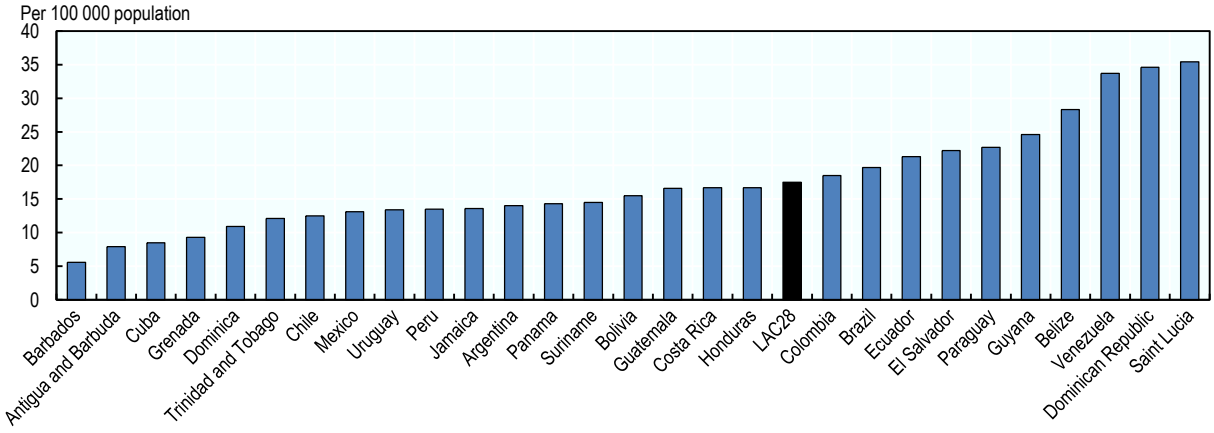
Figure 4.26. **Road traffic death rates, 2016**



Source: WHO GHO 2018.

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Table 4.1. **Existence of a national legislation on five main risk factors of road traffic deaths, 2016 or latest year available**

Country	Drink Diving		Seat-belt		Child restraint	Speed limit			Motorcycle helmet		Mobile phone use
	National law	Road traffic deaths to alcohol (%)	National law	Applicability to all occupants	National law	National or local law	Rural (km/h)	Urban (km/h)	National law	Motorcycle helmet wearing rate (% drivers / % passengers)	National law on hand-held/hand-free mobile phone use
Antigua and Barbuda	Yes	17.95	No		No	National	64	32	No		No
Argentina	Yes	18.13	Yes	Yes	Yes	Both	110	60	Yes	65/44	Yes
Barbados	Yes	17.06	Yes	Yes	Yes	National	80	80	Yes		Yes
Belize	Yes	20.70	Yes	No	No	National	88	40	Yes		No
Bolivia	Yes	20.84	Yes	No	No	Both	80	40	Yes	52/3	No
Brazil	Yes	19.52	Yes	Yes	Yes	Both	80	60	Yes	83/80	Yes
Chile	Yes	16.68	Yes	Yes	Yes	Both	100	60	Yes	99/98	Yes
Colombia	Yes	20.34	Yes	Yes	No	Both	120	80	Yes	96/80	Yes
Costa Rica	Yes	19.69	Yes	Yes	Yes	National	60	50	Yes	98/92	Yes
Cuba	Yes	18.82	Yes	Yes	No	National	90	50	Yes	95/90	Yes
Dominica	Yes	18.97	Yes	Yes	No	None			No		No
Dominican Republic	Yes	20.75	Yes	Yes	Yes	National	60	60	Yes	27/2	Yes
Ecuador	Yes	20.34	Yes	Yes	Yes	Both	120	60	Yes	90/12-52	Yes
El Salvador	Yes	20.75	Yes	No	Yes	National	90	50	Yes		Yes
Grenada	Yes	20.26	Yes	No	No	National	64	32	Yes		No
Guatemala	Yes	21.68	Yes	No	No	Both	80	60	Yes	36/11	Yes
Guyana	Yes	20.84	Yes	No	Yes	National	64	64	No	50/20	Yes
Honduras	Yes	21.92	Yes	Yes	No	National			Yes		Yes
Jamaica	Yes	19.11	Yes	Yes	Yes	National	80	48	Yes	6/2	No
Mexico	Yes	20.39	Yes		No	Both	20-90	20-70	No	83/55	No
Panama	Yes	19.23	Yes	Yes	No	National	100	80	Yes		Yes
Paraguay	Yes	20.49	Yes	Yes	Yes	Both	110	50	Yes		Yes
Peru	Yes	20.34	Yes	Yes	Yes	Both	60	60	Yes	70/8	Yes
Saint Lucia	Yes	19.85	Yes	No	No	National	24	24	Yes		Yes
Suriname	Yes	20.26	Yes	Yes	Yes	National	80	40	Yes	95/92	Yes
Trinidad and Tobago	Yes	18.49	Yes	No	Yes	National	80	50	Yes		Yes
Uruguay	Yes	18.32	Yes	Yes	Yes	Both	90	45	Yes	80/71	Yes
Venezuela	Yes	19.85	Yes	Yes	Yes	None			Yes		Yes
LAC28		19.70					82.25	53.125			

Note: Speed limit regulation in 2015 (Global status report on road safety, 2015).
Source: WHO Global Status Report on Road Safety 2018, CONAPRA 2015 for Mexico.

Physical activity (or the lack thereof) is a key determinant of health and risk factors. For instance, the higher the level of physical activity, the lower the chance of coronary heart disease. The relationship between energy expenditure and incidence of stroke forms a U-shaped pattern, with levels of physical activity at both extremes increasing the incidence of stroke. Studies also show a negative relation between physical activity and the risk of type 2 diabetes mellitus, although level of obesity and physical fitness also influence the relationship. High levels of physical activity have been found to have a protective effect on many types of cancers, including neoplasms of the breast, colon, endometrial and prostate. Finally, there exists a J-shaped curve where physical inactivity and extreme physical inactivity increase the risk of upper respiratory tract infections (Graf and Cecchini, 2017[32]). Therefore, engaging in physical activity has many health benefits and it greatly contributes to preventing disease in the short and long run, improving muscular and cardiorespiratory fitness along with bone and functional health, and reducing the risk of several NCDs, depression, and the risk of falls and consequently of hip or vertebral fractures.

WHO defines physical activity as "any bodily movement produced by skeletal muscles that requires energy expenditure – including activities undertaken while working, playing, carrying out household chores, travelling, and engaging in recreational pursuits" (WHO, 2018[33]). WHO recommends that children and adolescents carry out moderate to vigorous physical activity for at least 60 minutes a week and adults of all ages should do at least 150 minutes of moderate intensity or 75 minutes of vigorous intensity. In order to be beneficial for cardiovascular health, activity should be performed for at least 10 minutes at a time (WHO, 2018[33]).

Globally, around 23% of adults aged 18 and over were not active enough in 2010 (men 20% and women 27%). In 22 LAC countries with data, in average, 35% of the adult population do not engage in enough physical activity. The rate is over 40% for several countries such as Argentina, Colombia, Suriname, Brazil, Barbados, Costa Rica and Bahamas. On the other hand, Dominica and Uruguay have the lowest rates, under 23%. Consistent with global trends, women tend to carry out less physical activity. More than 42% of all adult women do not engage in sufficient exercise in six countries of the region, with a regional average of 42%. Among men, this average reaches 30% of insufficient physical activity (Figure 4.27).

Globally, 81% of adolescents aged 11-17 years were insufficiently physically active in 2010. Adolescent girls were less active than adolescent boys, with 84% vs. 78% not meeting WHO recommendations. The LAC region's average rate is again higher than the global average (84%) (Figure 4.28). It is particularly high in Ecuador and Venezuela, where around nine out of every ten adolescents do not engage in enough physical activity. The only countries in the region under the global average are Antigua and Barbuda, Belize and Suriname.

Countries and communities must act to provide individuals with more opportunities to be active, in order to increase physical activity. Policies to increase physical activity aim to ensure that physical activity is promoted through activities of daily living. Walking, cycling and other forms of active transportation are accessible and safe for all. Labor and workplace policies encourage physical activity, and schools have safe spaces and facilities for students to spend their free time actively. Moreover, quality physical education can support children to develop behaviour patterns that will keep them physically active throughout their lives, and sports and recreation facilities provide opportunities for everyone to participate in sports (WHO, 2018[33]).

Definition and comparability

The estimates are based on self-reported physical activity captured using the GPAQ (Global Physical Activity Questionnaire), the IPAQ (International Physical Activity Questionnaire) or a similar questionnaire covering activity at work/in the household, for transport, and during leisure time. Where necessary, adjustments were made for the reported definition (in case it was different to the indicator definition), for known over-reporting of activity of the IPAQ, for survey coverage (in case a survey only covered urban areas), and for age coverage (in case the survey age range was narrower than 18+ years). No estimates were produced for countries with no data, which in this case included Cuba, Dominican Republic, Haiti, Jamaica, Mexico, Nicaragua, Panama and Paraguay.

References

[32] Graf, S. and M. Cecchini (2017), "Diet, physical activity and sedentary behaviours: Analysis of trends, inequalities and clustering in selected oecd countries", *OECD Health Working Papers*, No. 100, OECD Publishing, Paris, *https://dx.doi.org/10.1787/54464f80-en*.

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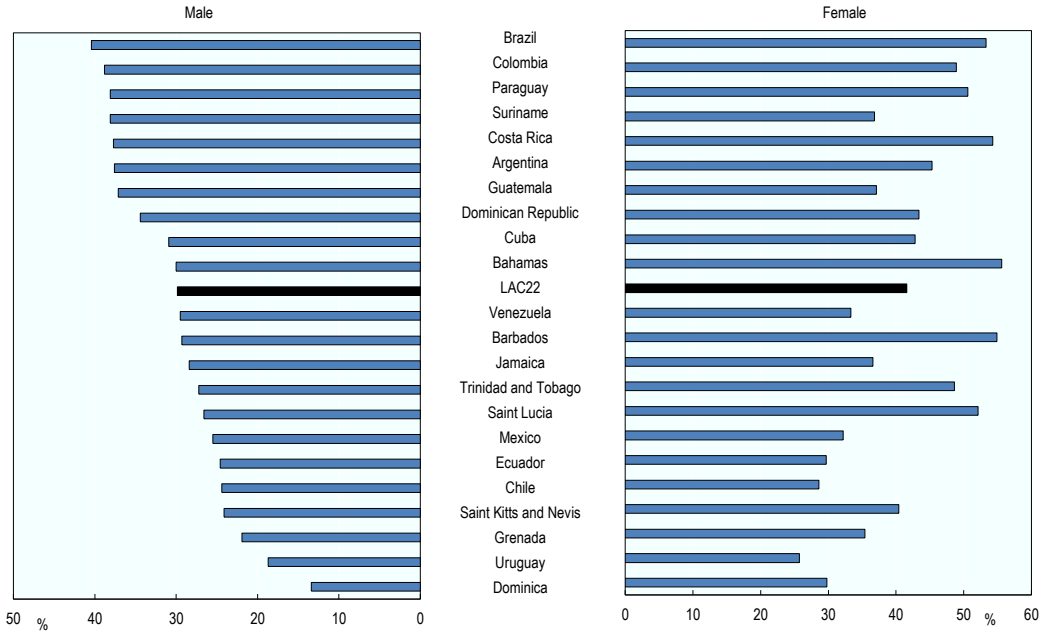
Figure 4.27. **Prevalence of insufficient physical activity among adults aged 18+ years, 2016**



Source: WHO GHO 2019.

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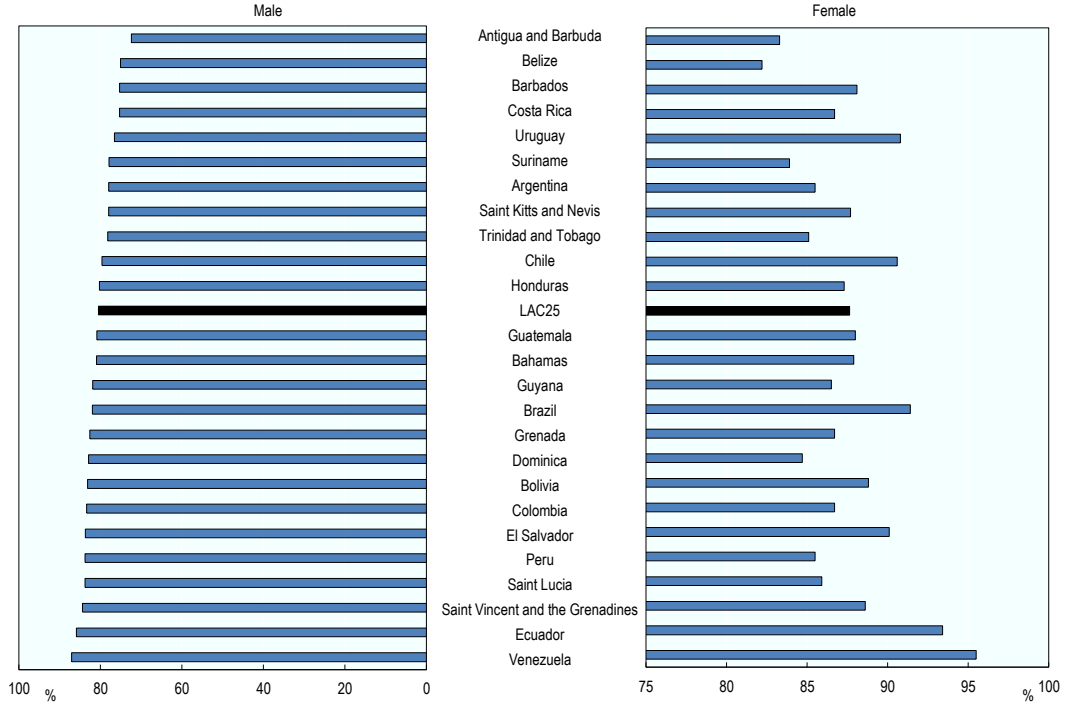
Figure 4.28. **Prevalence of insufficient physical activity among school going adolescents, 2016**



Source: WHO GHO 2019.

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Diet is another key determinant that contributes to the overall health and wellbeing of an individual. Adults who follow a diet rich in fruits and vegetables and low in fat, sugars and salt/sodium are at a lesser risk of developing one or more cardiovascular diseases and certain types of cancer (Graf and Cecchini, 2017[32]). In many countries, people are switching to diets more reliant on processed foods. This together with changes in the way we interact with the environment and each other is leading to a new food environment and culture. Combined with the increasing lack of physical activity (Chapter 4. Physical activity), this poses a significant challenge in the short and long-term (WHO, 2018[34]).

A healthy diet begins early in life. Breastfeeding and child nutrition (Chapter 4. Infant and Child Feeding) fosters healthy development and evidence suggests it reduces the risk of risk factors such as overweight and obesity, as well as of suffering from NCDs later in life. A healthy diet must be in balance with energy expenditure and must have variety of different food groups. It is key to include fruits and vegetables; 3.9 million deaths in 2017 were attributable to insufficient fruit and vegetable consumption (WHO, 2019[35]). The recommendation is five pieces of fruit or vegetables every day, or at least 400 grammes.

Daily consumption of fruit and vegetables in the LAC region is estimated to be under the recommended 400 grammes per person per day in all countries, although there is ample variation between countries. The highest consumer of fruit is Jamaica with over 220 grammes per person per day, followed by Saint Vincent and the Grenadines, Dominican Republic and Peru that are over 160 grammes. Trinidad and Tobago and Haiti consume an average of under 65 grammes per person per day, situating them in the lower end in the LAC region (Figure 4.29). In average, the LAC region reduced its fruit consumption by 8% between 2000 and 2015. Only in ten countries fruit consumption was increased led by a 47% augment in Dominican Republic. The largest decreases are observed in Argentina (-37%) and Haiti (-36%).

Consumption of vegetables is even lower with a regional average of 104 grammes per person per day. Suriname is the highest consumer of vegetables followed by Saint Lucia, Antigua and Barbuda and Belize, all over 140 grammes. On the other end, adults in Honduras consume just over 30 grammes, while Haiti reaches 60 grammes (Figure 4.30). The LAC region reduced vegetables consumption by an average of 7% between 2000 and 2015. Only Venezuela, Trinidad and Tobago, Guatemala and Antigua and Barbuda increased consumption, while the largest decreases happened in Argentina (-27%) and Honduras (-25%).

Healthy diets are also low in sugar. The recommended maximum amount of sugar is about 50 grammes. Sugar is naturally present in products such as honey, syrups, fruit juices, etc., but it is often added to foods for taste. In the LAC region, sugar consumption is estimated to be significantly higher on average than the 50-gramme maximum recommended amount. The data captured here refers to consumption of sugar sweetened beverages, which contain a large amount of sugar. Considering the average person in LAC consumes nearly 500 grammes of these beverages, it is likely that most people consume over 50 grammes of sugar per day. The country with the highest consumption is St Lucia (over 1 250 grammes per person per day) followed by Saint Vincent and the Grenadines (952 grammes). Per capita sugary beverages intake is lowest in Brazil and Ecuador with 154 grammes each. In average, sugar sweetened beverages consumption in LAC increased by almost 4% between 2000 and 2015. Fifteen countries reduced their consumption led by Colombia, Argentina and Guyana (-32%), while the highest increases occurred in Antigua and Barbuda (62%), Peru (45%) and Dominican Republic (44%) (Figure 4.31).

Definition and comparability

Data on dietary consumption is extracted from the Global Dietary Database, from Tufts University. Draft estimates are currently available for a set of dietary factors in GDD 2015. The data has been estimated by carrying out systematic searches of literature to identify public and private data sources, collecting individual-level dietary data, harmonising and standardising the data, incorporating covariate data, and modelling individual-level dietary intake.

References

[32] Graf, S. and M. Cecchini (2017), "Diet, physical activity and sedentary behaviours: Analysis of trends, inequalities and clustering in selected oecd countries", *OECD Health Working Papers*, No. 100, OECD Publishing, Paris, *https://dx.doi.org/10.1787/54464f80-en*.

[34] WHO (2018), *Healthy diet*, World Health Organization, *https://www.who.int/news-room/fact-sheets/detail/healthy-diet*.

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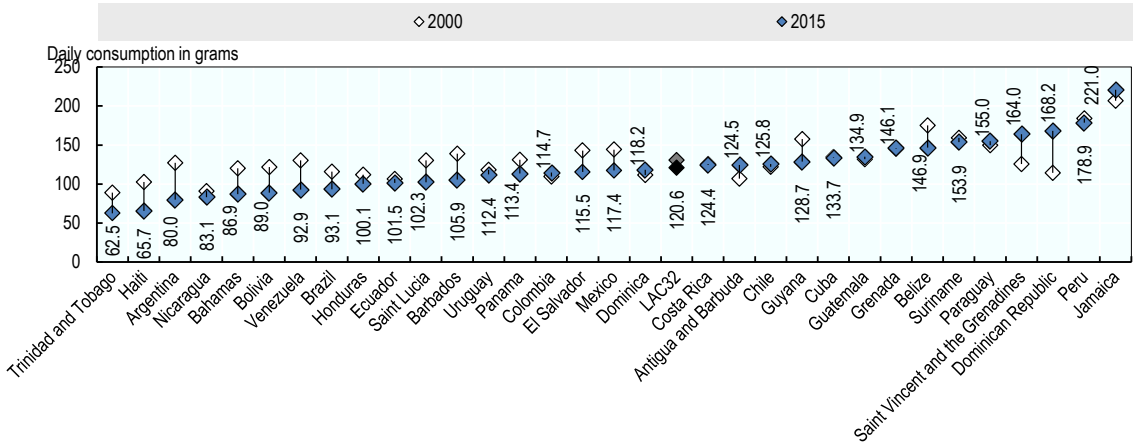
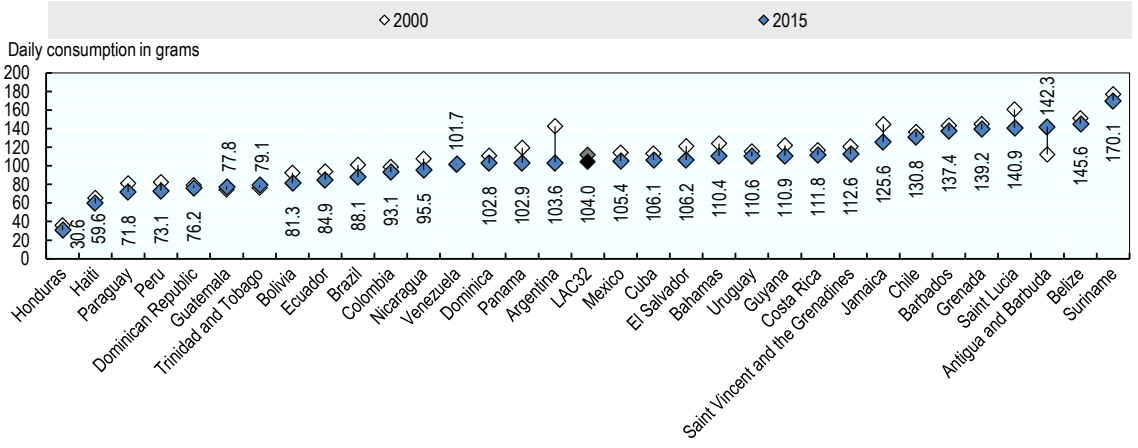
Figure 4.29. **Daily fruit consumption among adults, 2000-15**



Source: Global dietary database 2015.

StatLink https://stat.link/klot7y

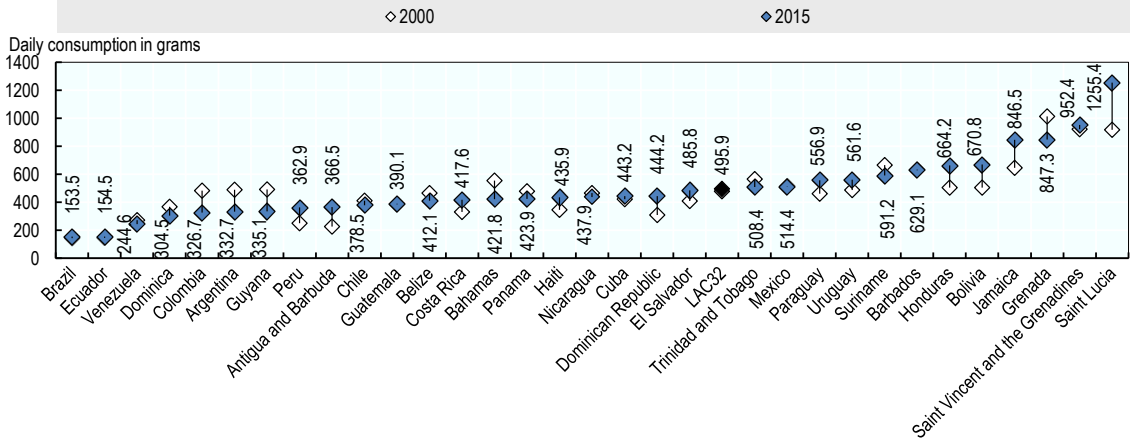
Figure 4.30. **Daily vegetables consumption among adults, 2000-15**



Source: Global dietary database 2015.

StatLink https://stat.link/ktv0am

Figure 4.31. **Daily sugar sweetened beverages consumption among adults, 2000-15**



Source: Global dietary database 2015.

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Drug use disorders are a growing cause of short- and long-term health problems, economic cost and social burden. In 2017, an estimated 271 million people, or 5.5% of the global population aged 15-64, had used drugs in the previous year, while 35 million people are estimated to be suffering from drug use disorders. In addition, there were 585 000 deaths and 42 million years of "healthy" life lost as a result of the use of drugs. Around half of the drug related deaths were attributed to untreated hepatitis C (UNODC, 2019[36]).

Substance abuse refers to the harmful or hazardous use of psychoactive substances, illicit drugs. Psychoactive substance use can lead to dependence syndrome – a cluster of behavioural, cognitive, and physiological phenomena that develop after repeated substance use and that typically include a strong desire to take the drug, difficulties in controlling its use, persisting in its use despite harmful consequences, a higher priority given to drug use than to other activities and obligations, increased tolerance, and sometimes a physical withdrawal state.

Cannabis is globally the most commonly used psychoactive substance under international control. Worldwide, there were an estimated 188 million past-year users of cannabis in 2017, corresponding to 3.8% of the global population aged 15-64 (UNODC, 2019[36]). There is an increasing demand of treatment for cannabis use disorders and associated health conditions in high- and middle-income countries, and there has been increased attention to the public health aspects of cannabis use and related disorders in international drug policy dialogues. Countries, such as Uruguay, have introduced partial legalisation of cannabis under clear regulation, for instance allowing pharmacies to sell cannabis, aiming to reduce the illegal market, raise revenue through taxation and establishing the capacity of the government to regulate the provision and consumption of the substance. In 15 LAC countries with data, in average 5% of the population uses cannabis regularly. Prevalence of cannabis use is significantly higher in Chile and Jamaica (15%), followed by Uruguay (9%) and Argentina (8%). The lowest consumption is found in Panama, Ecuador and Bolivia, all with 1% prevalence (Figure 4.32, left panel).

Traditionally coca leaves have been chewed by people in the Andean countries of South America for thousands of years. The main alkaloid of the coca leave, cocaine, was isolated relatively recently in about 1860. Cocaine was then used in patent medicines, beverages and 'tonics' in developed countries in Europe, North American and in Australia until the early 1900s. It is now widely available as an illicit recreational drug. Regarding cocaine, prevalence in 14 LAC countries with data is 0.65%. Argentina and Uruguay have the highest rate in the region in 1.6%, followed by Costa Rica (1.2%) and Chile (1.1%), while cocaine use in most LAC countries is under 1% of the population (Figure 4.32, right panel).

Regarding mortality, Guatemala and Argentina have the highest drug-related death rates, but still almost three times lower than the OECD countries average. Opioid problematic use are the leading specific cause of drug-related deaths in LAC with 0.7 deaths per 100 000 population, a number much lower than in OECD countries (4.4) where some countries are experiencing a so-called 'opioids crisis' (OECD, 2019[37]). Grenada and Dominica have the highest death rate due to cocaine consumption (0.3 deaths per 100 000 population), close to the average rate in OECD countries (0.4). The share of deaths attributed to amphetamines and other drugs is lower across the region (Figure 4.33).

Intersectoral policies that influence the levels and patterns of substance use and related harm can take a public health perspective to reduce the health, economic and social problems attributable to substance use, and interventions at the health care system level can work towards the restoration of health in affected individuals. Policies must also reflect changing attitudes towards drug abuse and contribute to the removal of the stigma associated with addiction, to enable the integration of current and former users as well as their successful treatment and recovery.

Definition and comparability

Quality of reporting is higher in more developed countries, which suggests a certain degree of under reporting of prevalence in low- and middle-income countries. Mortality figures are observed and not estimated, so they also do not take into account differences in reporting between countries. No information on the prevalence of opioids abuse was available at the regional level.

Data on the prevalence of cannabis and cocaine consumption was taken from household surveys and compiled by the Organization of American States (OAS). Data on mortality due to drug use was estimated by the Global Burden of Disease (GBD) programme based on national data. Consumption of cannabis and cocaine refers to at least one time use in the year previous to the survey.

Mortality included under "other drugs" covers deaths due the abuse of benzodiazepines, barbiturates and other substances. Alcohol or tobacco use are not included in this section.

References

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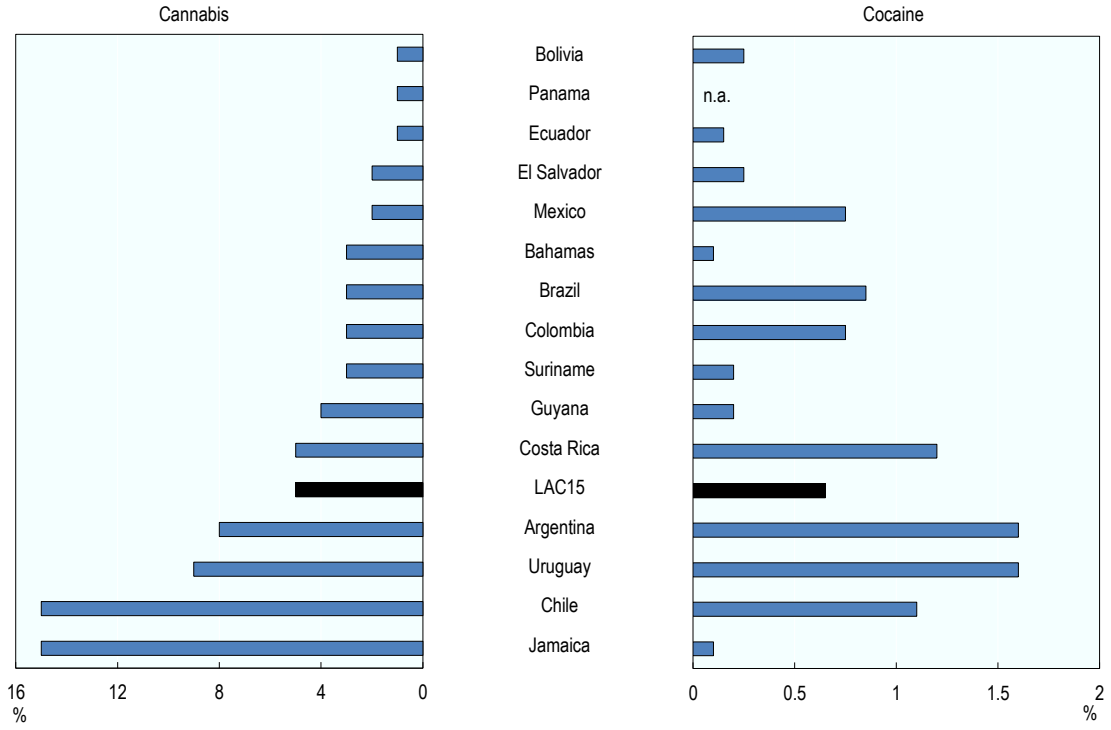
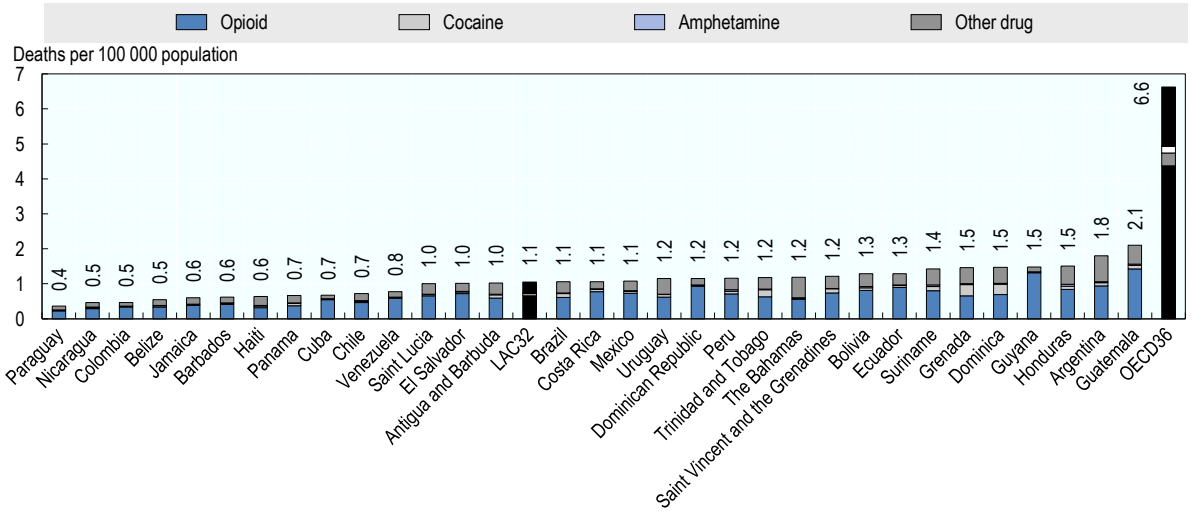
Figure 4.32. **Prevalence of cannabis and cocaine consumption, % of the population, 2017 (or nearest year available)**



Source: OAS 2019.

StatLink https://stat.link/ciakh5

Figure 4.33. **Death rates due to drug use disorders, 2017**



Source: GBD 2019.

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Chapter 5

Health care resources and activities

Health workers play a central role in providing health services to the population and improving health outcomes. Access to high-quality health services critically depends on the size, skill-mix, competency, geographic distribution and productivity of the health workforce. Health workers, and in particular doctors and nurses, are the cornerstone of health systems. In most countries, the demand and supply of health workers have increased over time, and for example, in OECD countries jobs in the health and social sector account for more than 10% of total employment (OECD, 2016[1]).

On average across LAC countries, there are 2 doctors per 1 000 population and most of LAC countries stand below the OECD average of 3.5 (Figure 5.1). Cuba has by far the highest number of doctors per capita, with over 8 doctors per 1 000 population, more than two times higher than the OECD average. Argentina, Trinidad and Tobago and Uruguay are the only additional countries above the OECD average, with a density of more than 4 doctors per 1 000 population. In contrast, Haiti, Honduras and Guatemala have the lowest number of physicians per 1 000 population at or below 0.5.

Regarding nurses, the number is highest in Cuba with nearly 8 nurses per 1 000 population, followed by Saint Vincent and the Grenadines with 7. The supply is much lower in Haiti, Jamaica, Venezuela, Honduras and Guatemala, where there is less than 1 nurse per 1 000 population. On average, less than three nurses per 1 000 population are available in LAC countries, three times lower than the OECD average of almost 9 (Figure 5.2).

In average, nurses outnumber doctors in both the LAC region and the OECD: there are 1.4 and 2.7 nurses per doctor, respectively (Figure 5.3). However, there are some exceptions. Doctors outnumber nurses in nine LAC countries, led by Guatemala, Uruguay and Venezuela with a ratio of nurses/doctors of 0.5 or less. On the other hand, due to very few numbers of doctors, St Lucia has more than 10 nurses per doctor.

Countries in LAC need to respond to the changing demand for health services and, hence, to the need for a health professional skill-mix in the context of rapidly ageing populations (see indicator "Ageing" in Chapter 1). The report of the (High-Level Commission on Health Employment and Economic Growth, 2016[2]) made the case for more and better investment in the health workforce. The Commission gave recommendations that LAC countries can follow in 10 areas: job creation; gender and women´s rights; education, training and skills; service delivery and organisation; technology; crises and humanitarian settings; financing and fiscal space; partnership and cooperation; data, information and accountability; and international migration. Regarding the latter, emigration of health professionals from LAC to OECD countries such as Spain has been extensive, a phenomenon that further decreases density of human resources in the region (PAHO, 2013[3]). In addition, due to large migration movements in recent years within the LAC region, countries can further cooperate to address the issues arising for both lending and receiving countries following the WHO Global Code of Practice on the International Recruitment of Health Personnel and committing continuing efforts on self-sufficiency policies to meet their human resources needs (Carpio and Santiago, 2015[4]).

The specialisation-mix and distribution of doctors, nurses and other health professionals may be improved in LAC countries. For instance, the expansion of task shifting can provide new to tools by reviewing scope-of-practice laws and/or regulations, recognising new professional roles by payers and the level of reimbursement of these services, and through organisational-level factors such as ongoing support and commitment by management (Maier, Aiken and Busse, 2017[5]).

Definition and comparability

Doctors include Generalist medical doctors (including family and primary care doctors) and Specialist medical doctors. For LAC non-OECD countries, "Nurses" refers to the number of nursing and midwifery personnel, including professional nurses, professional midwives, auxiliary nurses, auxiliary midwives, enrolled nurses, enrolled midwives and related occupations such as dental nurses and primary care nurses. Data are based on head counts and there is considerable variability in coverage, periodicity, quality and completeness for some countries.

References

[4] Carpio, C. and N. Santiago (2015), *The Health Workforce in Latin America and the Caribbean: An analysis of Colombia, Costa Rica, Jamaica, Panama, Peru and Uruguay*, World Bank Group, *http://documents.worldbank.org/curated/en/634931468000893575/The-health-workforce-in-Latin-America-and-the-Caribbean-an-analysis-of-Colombia-Costa-Rica-Jamaica-Panama-Peru-and-Uruguay*.

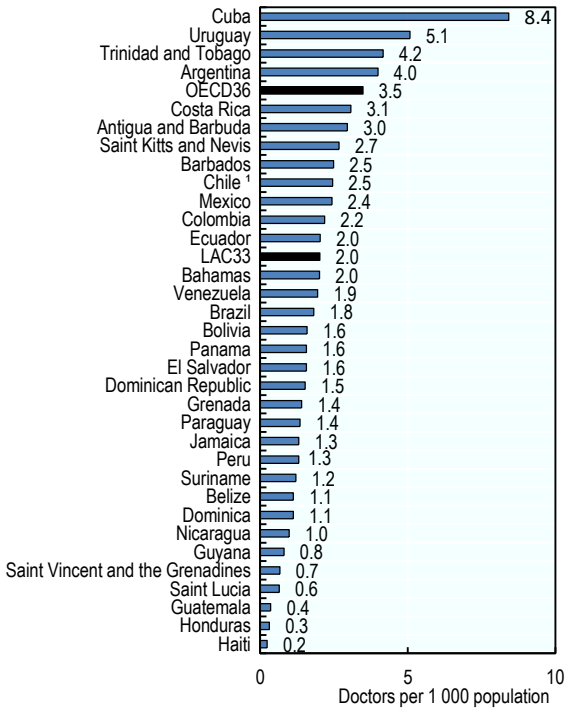
[2] High-Level Commission on Health Employment and Economic Growth (2016), *Working for health and growth: investing in the health workforce*, World Health Organization, Geneva, *http://www.who.int*.

[5] Maier, C., L. Aiken and R. Busse (2017), "Nurses in advanced roles in primary care: Policy levers for implementation", *OECD Health Working Papers*, No. 98, OECD Publishing, Paris, *https://dx.doi.org/10.1787/a8756593-en*.

[1] OECD (2016), *Health Workforce Policies in OECD Countries: Right Jobs, Right Skills, Right Places*, OECD Health Policy Studies, OECD Publishing, Paris, *https://dx.doi.org/10.1787/9789264239517-en*.

[3] PAHO (2013), *Migracion calificada en salud, Impacto financiero, reconocimiento de titulos*, Pan-American Health Organization.

Figure 5.1. **Doctors per 1 000 population, 2017 or latest year available**

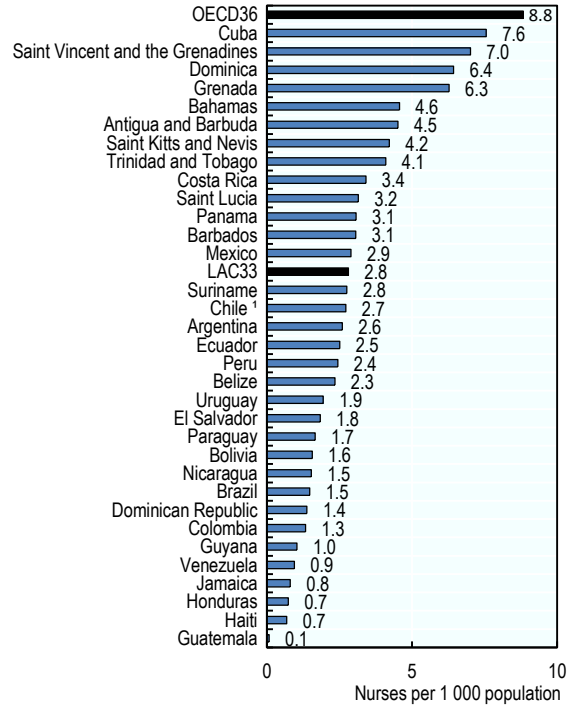


1. Data refer to all doctors licensed to practice.

Source: OECD Health Statistics 2019; WHO Global Health Observatory Data Repository 2019.

StatLink https://stat.link/ro1xn8

Figure 5.2. **Nurses per 1 000 population, latest year available**

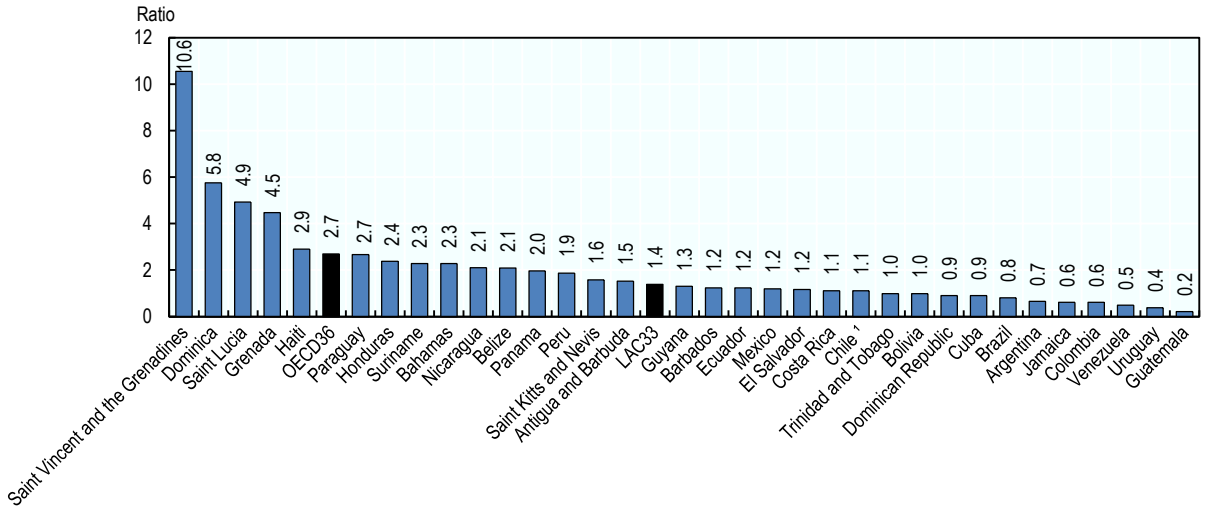


1. Data refer to all nurses that are licensed to practice.

Source: OECD Health Statistics 2019; WHO Global Health Observatory Data Repository 2019.

StatLink https://stat.link/4oncmi

Figure 5.3. **Ratio of nurses to doctors, latest year available**



1. Data refer to all doctors and nurses licensed to practice.

Source: OECD Health Statistics 2019; WHO Global Health Observatory Data Repository 2019.

StatLink https://stat.link/jqc0dm

Consultations with doctors are an important measure of overall access to health services, since most illnesses can be managed in primary care without hospitalisation and a doctor consultation often precedes a hospital admission. The ability of a country to keep track and promote effective consultations as an alternative to and to prevent hospitalisations is an important waste management measure (see Chapter 2).

Generally, the annual number of doctor consultations per person in nine LAC countries is 3.5, lower than the OECD average of 6.8 (Figure 5.4). The doctor consultation rate ranges from above the OECD average in Cuba to less than one in Venezuela. In general, consultation rates tend to be higher in the high-income countries in the region and significantly lower in low-income countries, suggesting that financial constrains play a role on populations' health care-seeking behaviours, as well as the overall capacity of the system to provide access to services. It is important to point out that there is limited data availability on consultations mainly due to system fragmentation in many countries, which limits the analysis.

The number of consultations per doctor should not be taken as a measure of productivity because consultations can vary in length and effectiveness, doctors also undertake work devoted to inpatients, administration and, in some cases, research, and different health system arrangements can have an impact on consultations characteristics. In addition, in many lower income countries, most primary contacts are with non-doctors (i.e. medical assistants, clinical officers or nurses); especially considering the fact that most countries do not require people to register with specific general practitioners. Keeping these considerations in mind, the number of consultations per doctor per year in nine LAC countries with data is 1381, lower than the OECD average of 2 181 (Figure 5.5). All countries had less than 2 000 consultations a year except in Ecuador.

There is a close relationship between doctor consultation rates – a proxy for access to services – and health care spending per capita, with consultation rates being highest in countries with highest health expenditure (Figure 5.6). This finding points to the fact that more resources available for the health system may result in higher levels of utilisation, for instance, because of a higher likelihood of having more doctors and consultation times available. This is linked to doctor consultation length that has been also found to have a positive association with health care spending per capita and primary care physician density (Irving et al., 2017[6]).

While cultural factors play a role in explaining some of the variations across countries, policies and incentive structures also matter. For instance, from compared analysis in OECD countries, provider payment methods such as fee-for-service create incentives for overprovision of services, while salaried doctors tend to have below average rates. In addition, higher patient co-payments can result in patients not consulting a doctor because of the cost of care (OECD, 2019[7]). Moreover, inequalities may exist, as wealthier individuals are more likely to see a doctor than individuals in the lowest income quintile, for a comparable level of need. Likewise, income inequalities in accessing doctors are much more marked for specialists than for general practitioner consultations (OECD, 2019[8]).

Definition and comparability

Consultations with doctors are defined as contacts with physicians (both generalists and specialists, for more details see indicator "Doctors and nurses" in Chapter 5). These may take place in doctors' offices or clinics, in hospital outpatient departments and in homes. Two main data sources are used to estimate consultation rates: administrative data and household health surveys. In general, administrative data sources in the non-OECD countries and economies of the LAC region only cover public sector physicians or publicly financed physicians, although physicians in the private sector provide a large share of overall consultations in most of these countries. Moreover, outpatient visits recorded in administrative data can be also with non-physicians. The alternative data source is household health surveys, but these tend to produce lower estimates owing to incorrect recall and non-response rates. Caution must be applied in interpreting the data as it has been extracted from different sources with varying levels of coverage and comparability. The annual number of consultations per doctor is estimated by dividing the number of total consultations in a year by the number of doctors.

References

[6] Irving, G. et al. (2017), *International variations in primary care physician consultation time: A systematic review of 67 countries*, BMJ Publishing Group, *http://dx.doi.org/10.1136/bmjopen-2017-017902*.

[7] OECD (2019), *Health at a Glance 2019: OECD Indicators*, OECD Publishing, Paris, *https://dx.doi.org/10.1787/4dd50c09-en*.

[8] OECD (2019), *Health for Everyone?: Social Inequalities in Health and Health Systems*, OECD Health Policy Studies, OECD Publishing, Paris, *https://dx.doi.org/10.1787/3c8385d0-en*.

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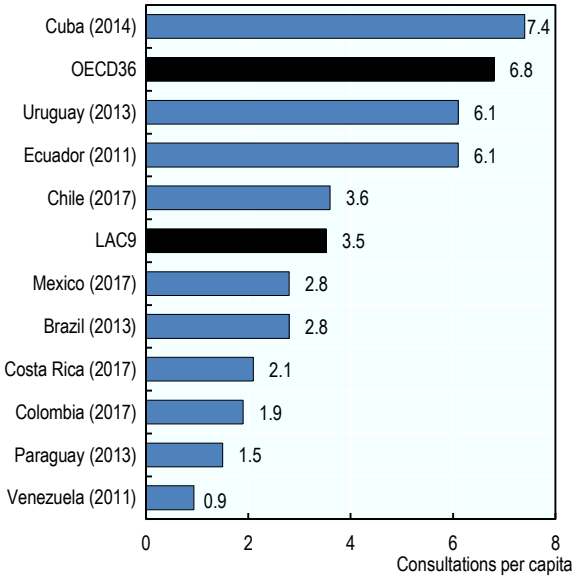
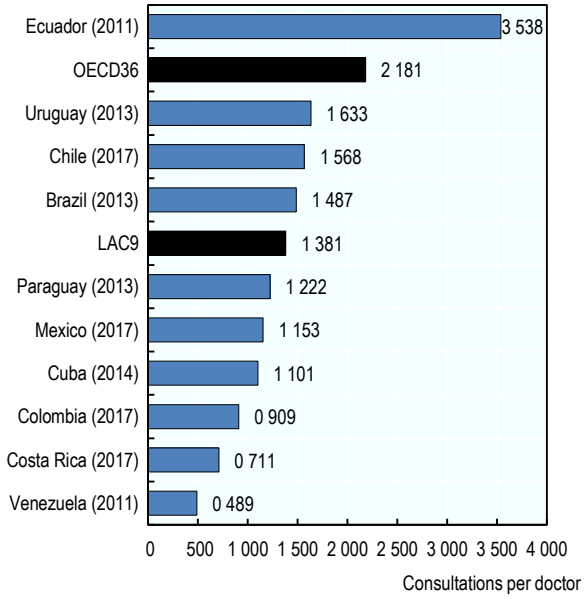
Figure 5.4. **Doctors consultations per capita, latest year available**



Source: National Sources; OECD Health Statistics 2019 for Chile, Colombia, Costa Rica and Mexico.

StatLink https://stat.link/js4mvi

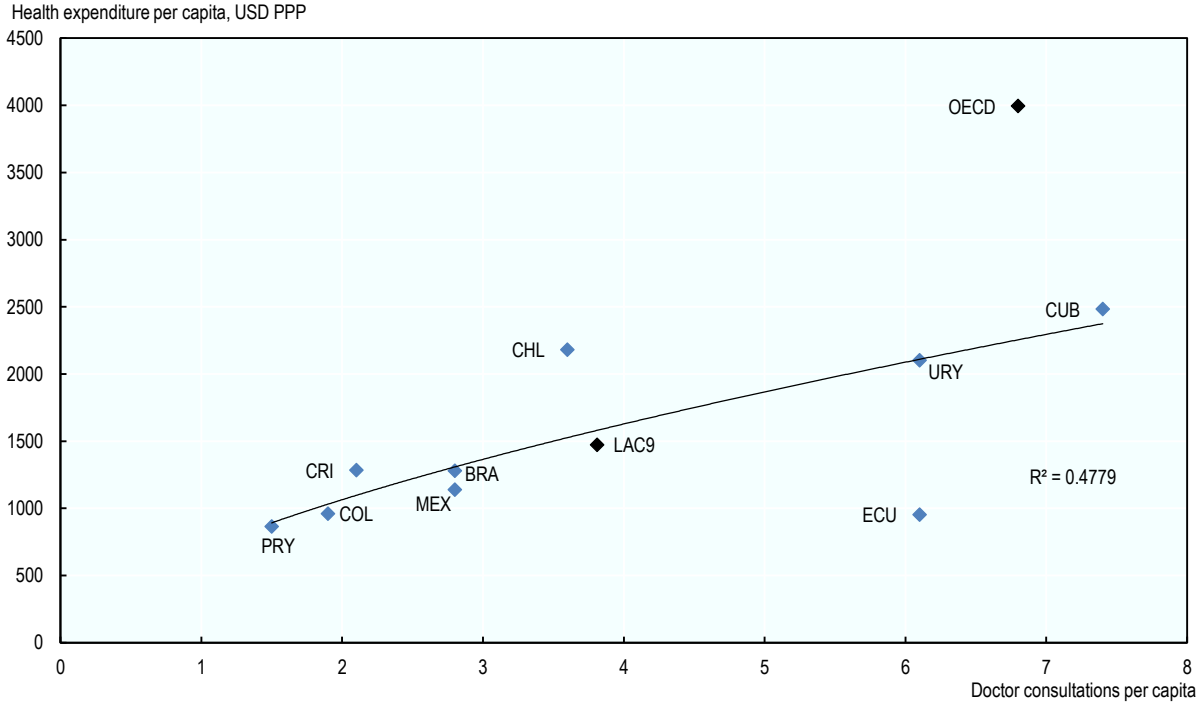
Figure 5.5. **Estimated number of consultations per physician, latest year available**



Source: National Sources; OECD Health Statistics 2019 for Chile, Colombia, Costa Rica and Mexico.

StatLink https://stat.link/kvwtax

Figure 5.6. **Doctor consultations and health expenditure per capita in USD PPP, latest year available**



Source: National Sources, Global Health Expenditure Database 2020; OECD Health Statistics 2019 for Chile, Colombia, Costa Rica and Mexico.

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The Sustainable Development Goal 5 calls for safe, effective, and appropriate medical technologies, which over the past century has profoundly influenced service delivery and health outcomes, and have been a dominant factor in the growth of health care expenditure (Lorenzoni et al., 2019[9]). Computed tomography (CT) scanners and magnetic resonance imaging (MRI) units help doctors diagnose a range of conditions by producing images of internal organs and structures of the body. MRI exams do not expose patients to ionizing radiation, unlike conventional radiography and CT scanning. Mammography is used to diagnose breast cancer, and radiation therapy units are used for cancer treatment and palliative care. This equipment is fundamental for an adequate response to diseases, but a balance must be stricken to ensure financial sustainability, as they are expensive technologies.

There are substantial differences in availability of technologies across LAC countries. Usually, the higher the country income level the higher the availability of medical equipment, but this does not seems to be the general pattern in the region. Other factors such as health spending and health care planning influence investment and availability.

Chile has the highest number of CT scanners with 24 per million population followed by Antigua and Barbuda with 22 (the latter is explained partially by the country's small population). However, they remain below the OECD average of 27. On the other hand, Saint Vincent and the Grenadines has less than one CT scanner per million people, the same as Haiti and Nicaragua (Figure 5.7).

For MRI units, Chile has the largest number with 12 units per million population, followed Antigua and Barbuda and Saint Lucia reporting 10 or more units per million population. Several countries such as Barbados, Dominica, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Ecuador, Nicaragua, Colombia, Paraguay and Cuba report less than one unit per million population (Figure 5.8).

Panama reports the highest number of mammographs with more than 278 units per million females aged 50-69, as opposed to Paraguay, Colombia, Cuba and Haiti with less than 20 mammographs available per million females aged 50-69 (Figure 5.9).

In the LAC region, no countries get close to the density of radiotherapy units reported in OECD countries of seven units per million population. Uruguay, Suriname and Barbados are the only three countries reporting over three units per million population, while seven countries report having none (Figure 5.11).

In general terms, LAC countries still have space to put more investment into medical technologies to improve equitable access for the population. At the same time, such expansion in access can be accompanied by the development of regulatory frameworks in the areas of registration, assessment and purchasing rules as well as in clearly orienting the clinical use of medical technologies based on the best available scientific evidence. For instance, some OECD countries promote rational use of diagnostic technologies by implementing clinical practice guidelines to reduce the use of unnecessary diagnostic tests and procedures. The guidelines include, for example, avoiding imaging studies such as MRI, CT or X-rays for acute low back pain without specific indications (OECD, 2017[10]).

Definition and comparability

The data cover equipment installed both in hospitals and the ambulatory sector and public and private sectors in most countries. However, there is only partial coverage for some countries. Data for Antigua and Barbuda refers only to equipment in the private sector. Data for Paraguay, Ecuador and Trinidad and Tobago refers to equipment in the public sector.

References

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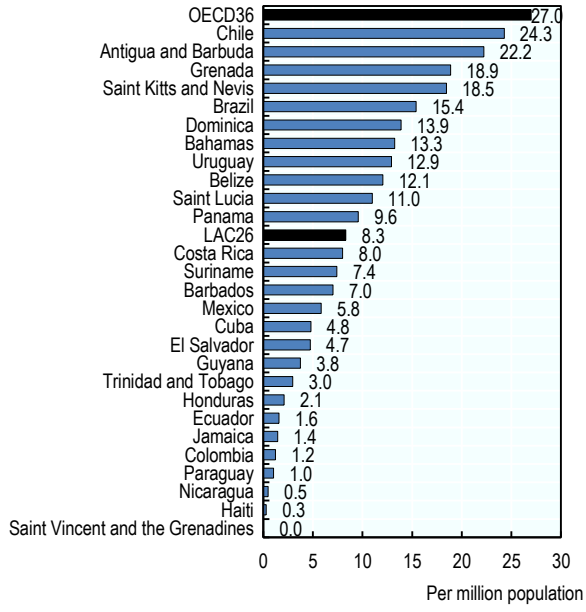
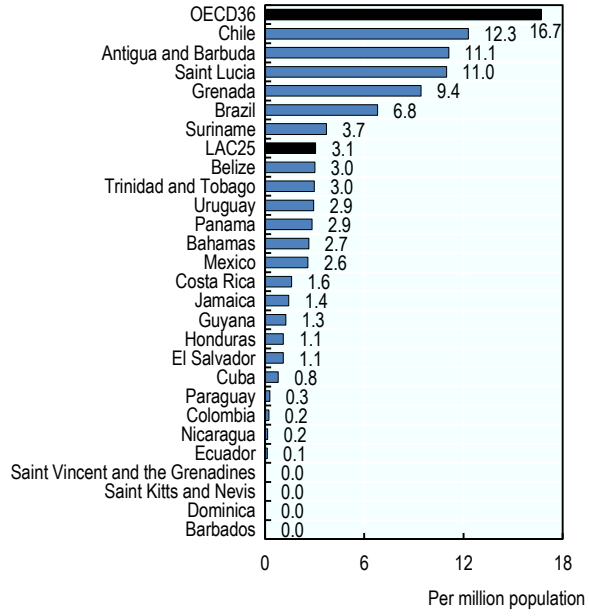
Figure 5.7. **Computed tomography scanners per million inhabitants, latest year available**



Source: WHO GHO 2016; OECD Health Statistics 2019 for Chile, Colombia, Costa Rica and Mexico.

StatLink https://stat.link/z5bx2q

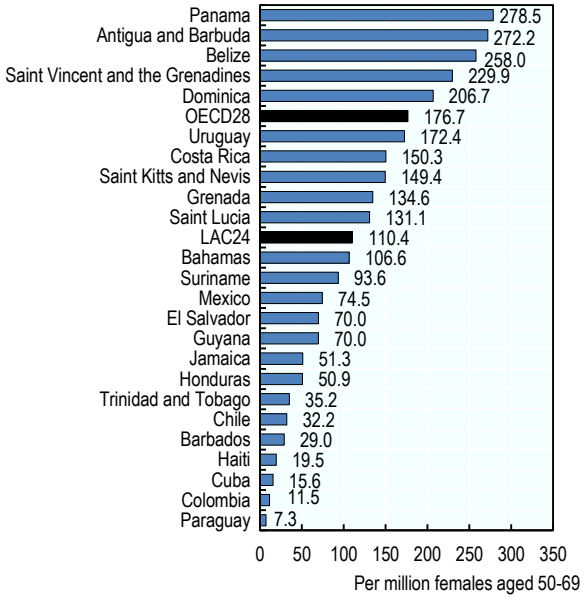
Figure 5.8. **MRI units per million inhabitants, latest year available**



Source: WHO GHO 2016; OECD Health Statistics 2019 for Chile, Colombia, Costa Rica and Mexico.

StatLink https://stat.link/ny7gsp

Figure 5.9. **Mammography units per million females aged 50-69, latest year available**



Source: WHO GHO 2016; OECD Health Statistics 2019 for Chile, Colombia, Costa Rica and Mexico.

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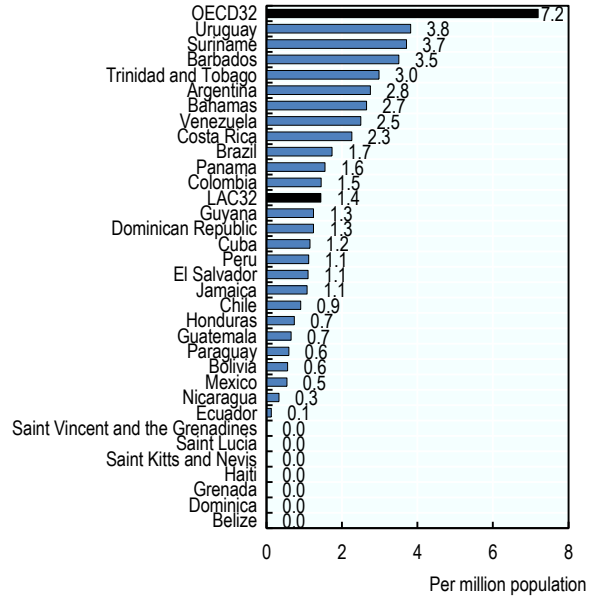
Figure 5.10. **Radiotherapy units, latest year available**



Source: WHO GHO 2016; OECD Health Statistics 2019 for Chile, Colombia, Costa Rica and Mexico.

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In most countries, hospitals account for the largest part of overall fixed investment and hospital beds provides an indication of the resources available for delivering services to inpatients. However, the influence of the supply of hospital beds on admission rates has been widely documented, confirming that a greater supply generally leads to higher admission numbers (Roemer's Law that a "built bed is a filled bed"). Therefore, beside quality of hospital care (see Chapter 7), it is important to use resources efficiently and assure a coordinated access to hospital care. Increasing the numbers of beds and overnight stays in hospitals does not always bring positive outcomes in population health nor reduce waste (see Chapter 2).

The number of hospital beds per capita in LAC is 2.1, lower than the OECD average of 4.7, but it varies considerably (Figure 5.11). More than five beds per 1 000 population are available in Barbados, Argentina and Cuba, whereas the stock is less than one per 1 000 population in Guatemala, Haiti, Honduras, Venezuela and Nicaragua. These large disparities reflect substantial differences in the resources invested in hospital infrastructure across countries.

Hospital discharge is at an average of 54.4 per 1 000 population in 11 LAC countries with data, compared with the OECD average of 154 (Figure 5.12). The highest rates are in Chile and Costa Rica, with over 89 and 73 discharges per 1 000 population in a year, respectively, while in Colombia, Panama and Peru there are less than 40 discharges per 1 000 population, suggesting delays in accessing services. In general, countries with more hospital beds tend to have higher discharge rates, and vice versa (Figure 5.13). However, there are some notable exceptions. El Salvador, Bolivia and Costa Rica have low number of beds but a relatively high discharge rate, while Argentina has as many beds as the OECD average but a relatively low discharge rate.

In nine LAC countries with data, the average length of stay (ALOS) is 5.36 days, lower than the OECD average of 7.70 (Figure 5.14). The longest ALOS is 6 days or more in Jamaica, Colombia and Chile, while the shortest length of stay is under 4 days in Mexico. The ALOS is used to assess appropriate access and use, but caution is needed in its interpretation (see Chapter 2 as well). Although all other things being equal, a shorter stay will reduce the cost per discharge and provide care more efficiently by shifting care from inpatient to less expensive post-acute settings. Longer stays can be a sign of poor care coordination, resulting in some patients waiting unnecessarily in hospital until rehabilitation or long-term care can be arranged. At the same time, some patients may be discharged too early, when staying in hospital longer could have improved their health outcomes or reduced chances of re-admission (Rojas-Garcia et al., 2018[11]).

In the light of OECD countries analysis, apart from disparities in the average length of stay due to case mix, other factors including payment structures can explain cross-country variations. In particular, the introduction of prospective payment systems that encourage providers to reduce the cost of episodes in care, such as diagnosis-related groups (DRG), has been credited for the reduction in the ALOS in hospitals. A recent OECD study analysed the significance of a number of hospital characteristics finding that hospitals with many beds (higher than 200) are associated with a longer length of stay, while a bed occupancy rate of 70% or more is associated with a shorter length of stay (Lorenzoni and Marino, 2017[12]).

Definition and comparability

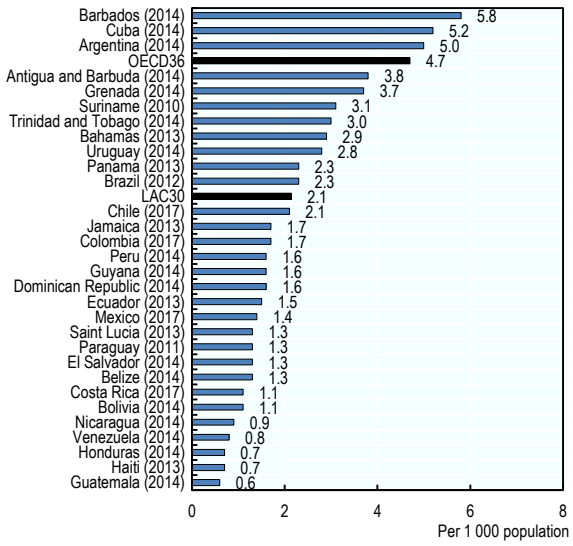
All hospital beds include those for acute care and chronic/long-term care, in both the public and private sectors. A discharge is defined as the release of a patient who has stayed at least one night in hospital. It includes deaths in hospital following inpatient care but usually excludes same-day separations. The discharge rates presented are not age-standardised, not considering differences in the age structure of the population across countries. The figures reported for ALOS refer to the number of days that patients spend overnight in an acute-care inpatient institution. ALOS is generally measured by dividing the total number of days stayed by all patients in acute-care inpatient institutions during a year by the number of admissions or discharges. There are considerable variations in how countries define acute care, and what they include or exclude in reported statistics. For the most part, discharges and ALOS data in the LAC region cover only public sector institutions.

References

[12] Lorenzoni, L. and A. Marino (2017), "Understanding variations in hospital length of stay and cost: Results of a pilot project", *OECD Health Working Papers*, No. 94, OECD Publishing, Paris, *https://dx.doi.org/10.1787/ae3a5ce9-en*.

[11] Rojas-Garcia, A. et al. (2018), "Impact and experiences of delayed discharge: A mixed-studies systematic review", *Health Expectactions*.

Figure 5.11. **Hospital beds per 1 000 population, latest year available**



Source: OECD Health Statistics 2019; World Bank World Development Indicators 2019.

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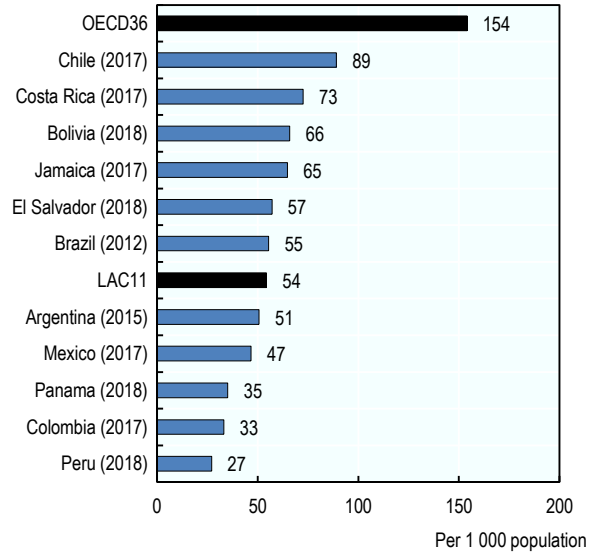
Figure 5.12. **Hospital discharges per 1 000 population, latest year available**



Source: OECD Health Statistics 2019; National sources.

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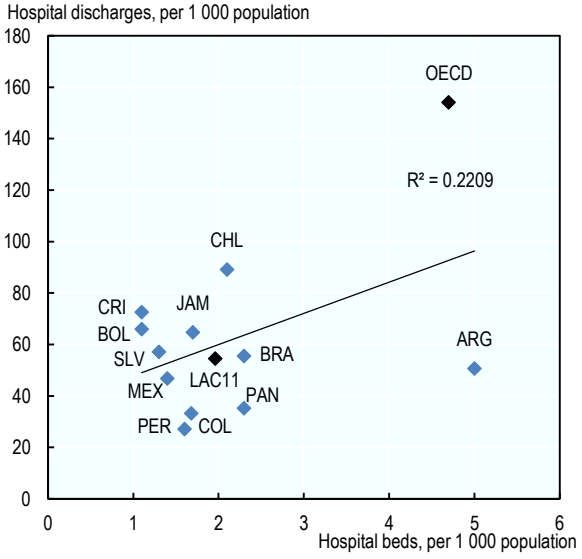
Figure 5.13. **Hospital beds per 1 000 population and hospital discharges per 1 000 population, latest year**



Source: OECD Health Statistics 2019; World Bank World Development Indicators 2019, National Sources.

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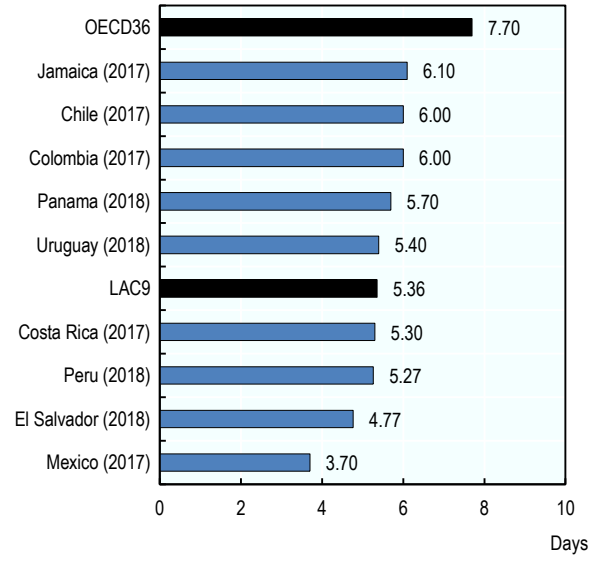
Figure 5.14. **Average length of stays for acute care in hospitals, latest year available**



Source: OECD Health Statistics 2019, National Sources.

StatLink https://stat.link/ha3yqw

The health of both mothers and their babies benefit from antenatal care, delivery attended by skilled health professionals and access to health facilities for delivery as they reduce the risk of birth complications and infections (see indicators "Reproductive health", "Preterm births and low birthweight" and "Infant and young child feeding" in Chapter 4) (Measure Evaluation, 2019[13]). The Sustainable Development Goal 3.7 aims to ensure universal access to sexual and reproductive health care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programs by 2030.

In 29 LAC countries, most pregnant women – on average, 87% – received the recommended four visits, but access to antenatal care varies across countries and across socio-economic groups (Figure 5.15). Countries such as Uruguay and Peru have nearly complete coverage in average for the population (over 95% of four antenatal visits), but inequalities exist: mothers in the lowest income quintile had around 4 and 8 percentage points of less coverage, respectively, compared to mothers in the highest income quintile. At the other end, in Haiti and Suriname, the average coverage of four antenatal care visits is less than 70%. Furthermore, Haiti has the largest inequality among countries with data with almost 36 percentage points of difference between the lowest and the highest income quintile mothers. Trinidad and Tobago shows a high coverage and the lowest income inequality.

Most women (93% in average) had births attended by a skilled health professional such as a doctor, nurse or midwife in 29 LAC countries (Figure 5.16). However, less than one birth in two in Haiti and one in four in Guatemala are attended by a skilled health professional, with most deliveries assisted by untrained birth attendants. Traditional birth attendants are important in several other countries especially in rural settings. Inequalities between mothers in the lowest and the highest income quintile are the largest in Haiti and Guatemala, showing a difference of 69 and 57 percentage points of higher coverage, respectively, in favor of the richest group. The lowest inequality is found in Barbados and Uruguay, both having a similar high coverage across all socio-economic groups.

Delivery in health facilities varies across countries (Figure 5.17). In 11 LAC countries with data, 86% of deliveries occurred in established health care facilities. In Cuba, Dominican Republic, El Salvador, Colombia, Belize and Mexico over 96% of deliveries take place at a health facility. In Haiti, most deliveries take place at home (60%) and the rate is also high in Guatemala (34%) and slightly less so in Honduras (17%) and Peru (15%).

The Integrated Management of Pregnancy and Childbirth (IMPAC) is a package of guidelines and tools designed by WHO, which responds to key areas of maternal and perinatal health programmes, advocating for universal coverage and ensuring skilled care at every birth within the context of a continuum of care (WHO, 2019[14]). Countries can follow this guide to effectively address issues such as pre-eclampsia and eclampsia; postpartum haemorrhage; postnatal care for the mother and baby; newborn resuscitation; prevention of mother-to-child transmission of HIV; HIV and infant feeding; malaria in pregnancy, tobacco use and second-hand exposure in pregnancy, post-partum depression, post-partum family planning and post abortion care (WHO, UNFPA, UNICEF, World Bank, 2015[15]).

Definition and comparability

The major source of information on care during pregnancy and birth are health interview surveys. Demographic and Health Surveys (DHS), for example, are nationally representative household surveys that provide data for a wide range of indicators in the areas of population, health, and nutrition. Standard DHS Surveys have large sample sizes (usually between 5 000 and 30 000 households) and typically are conducted every five years, to allow comparisons over time. Women who had a live birth in the five years preceding the survey are asked questions about the birth, including how many antenatal care visits they had, who provided assistance during delivery, and where the delivery took place.

The income inequality data on antenatal care and skilled birth attendance was obtained from the Health Equity and Financial Protection Indicators (HEFPI) dataset compiled and maintained by the World Bank.

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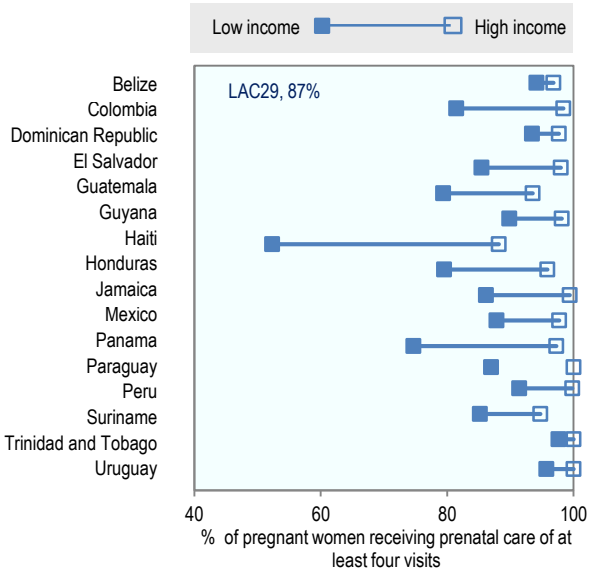
Figure 5.15. **Provision of care during pregnancy and birth, first and fifth income quintile, 2016 or latest year available**



Note: The LAC29 average includes more countries than those represented in the figure due to data availability.
Source: DHS and MICS 2019 for income inequalities on the 16 LAC countries available; WHO GHO 2019 for the LAC29 average.

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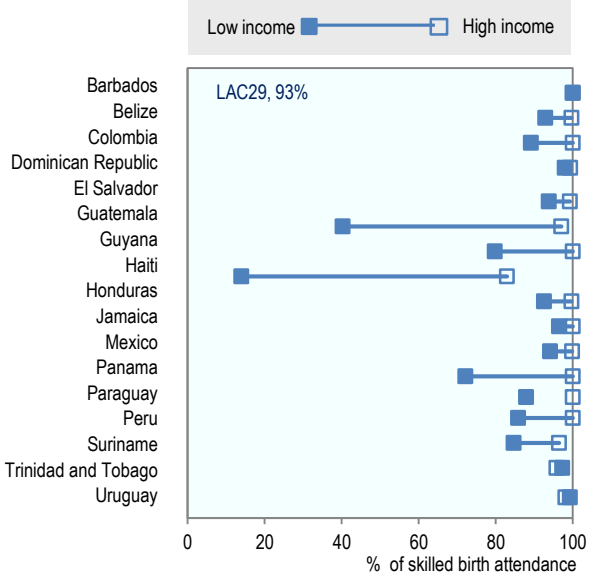
Figure 5.16. **Births attended by skilled health professionals, first and fifth income quintile, latest year available**



Note: The LAC29 average includes more countries than those represented in the figure due to data availability.
Source: DHS and MICS 2019 for income inequalities on the 16 LAC countries available. WHO GHO 2019 for the LAC29 average.

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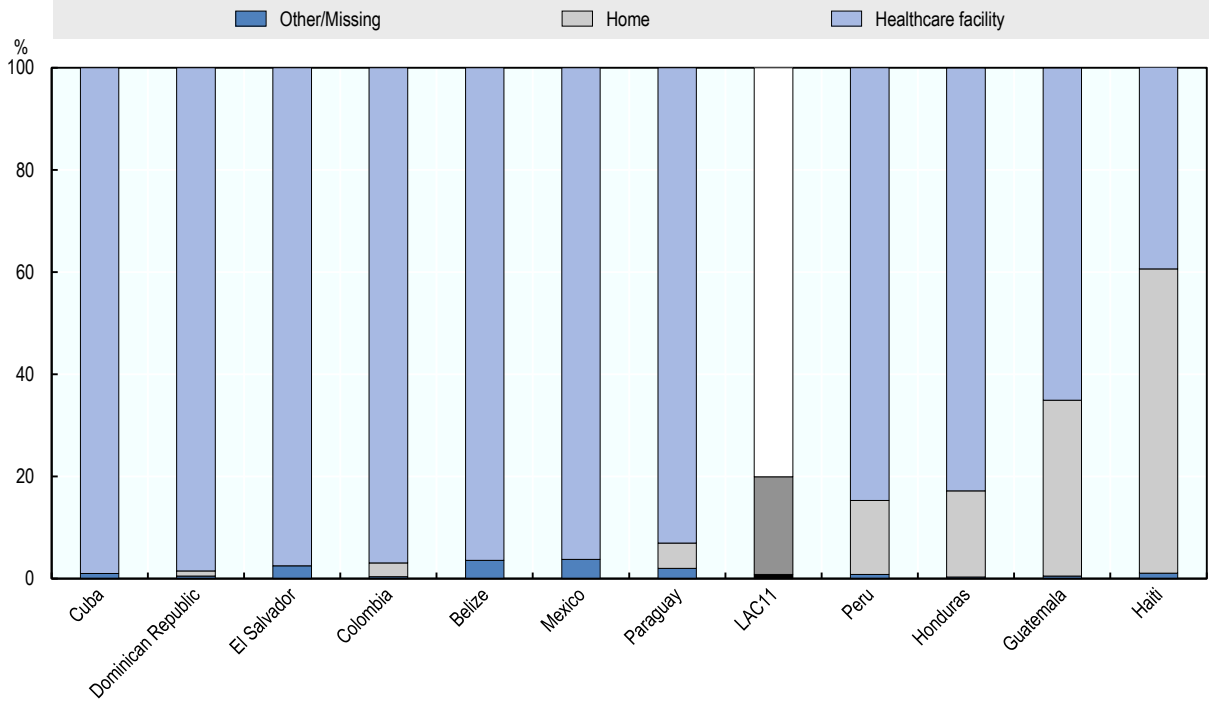
Figure 5.17. **Place of delivery, latest year available**



Source: DHS and MICS 2019.

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In the LAC region, around one third of the deaths in the first year of life occur during the neonatal period (i.e. during the first four weeks of life or days 0-27) and childhood diarrhoea and pneumonia are the leading infectious causes of childhood morbidity and mortality (PAHO, 2017[16]). Effective health systems can greatly limit the number of infant deaths, particularly by addressing life-threatening issues during the neonatal and childhood period. Basic care for infants and children includes promoting and supporting early and exclusive breastfeeding (see indicator "Infant and young child feeding" in Chapter 4), identifying conditions requiring additional care and counselling on when to take an infant and young child to a health facility (Tomczyk, McCracken and Contreras, 2019[17]). Several cost-effective preventive and curative exist, including vitamin A supplementation, vaccination, oral rehydration therapy (ORT) for diarrhea, and appropriate antibiotic treatment for acute respiratory infection (ARI). Access to these services leads to better infant and child health.

As part of prevention, supplementation with vitamin A is considered important for children because it reduces the risk of disease and death from severe infections. Access to preventive care varies across LAC as shown by the intake of vitamin A supplements (Figure 5.18) and vaccination coverage (see indicator "Childhood vaccination" in Chapter 7). According to data from eight LAC countries, access to vitamin A supplementation for children aged 6-59 months is markedly low in the El Salvador and Haiti (20% and 19%) and, especially in Peru with 4.5%, whereas Nicaragua has a coverage rate of near 90%. The LAC8 average stands in 42%.

Appropriate treatment could also prevent deaths from diarrhea and pneumonia. Dehydration caused by severe diarrhea can be easily treated with ORT. In average, less than 47% of children under 5 years with diarrhea receive ORT in 19 LAC countries with data, with Guatemala, Dominican Republic, Ecuador, Guyana, Suriname, Costa Rica, Peru, Paraguay, Bolivia and Argentina having less than 50%. The coverage is highest in El Salvador and Nicaragua over 65%. Income inequalities are high in Peru where 42% of children in the highest income quintile receive ORT when they need it, while only 22% of children in the lowest income quintile does (Figure 5.19). Notably, children in the lowest income group receive a higher coverage than in the highest income group in Paraguay, Honduras and El Salvador, which suggests that the health system can target the most vulnerable population and provide the most needed services.

Access to appropriate medical care for children with ARI can also be improved in many countries in the region. Although in average more than three quarters of children with symptoms are taken to a health facility, around half of them receive antibiotic treatment (Figure 5.20). It is important to stress the relevance of rational antibiotic use, both due to the health implications of antimicrobial resistance development and also as a source of waste in health systems (see Chapter 2).

There is a correlation between treatment coverage for diarrhea and ARI. Antibiotic treatment for ARI is particularly low in Guyana, Haiti and Dominican Republic, where the treatment for diarrhea is also low. This suggests an urgent need to further expand access to care to treat leading causes of child mortality in these countries.

Definition and comparability

Prevention and treatment coverage data are usually collected through household surveys. Accuracy of survey reporting varies and is likely to be subject to recall bias. Seasonal influences related to the prevalence of diarrheal disease and ARI may also affect cross-national data comparisons. The prevalence of ARI is estimated by asking mothers whether their children under five had been ill with a cough accompanied by short, rapid breathing in the two weeks preceding a survey, as these symptoms are compatible with ARI.

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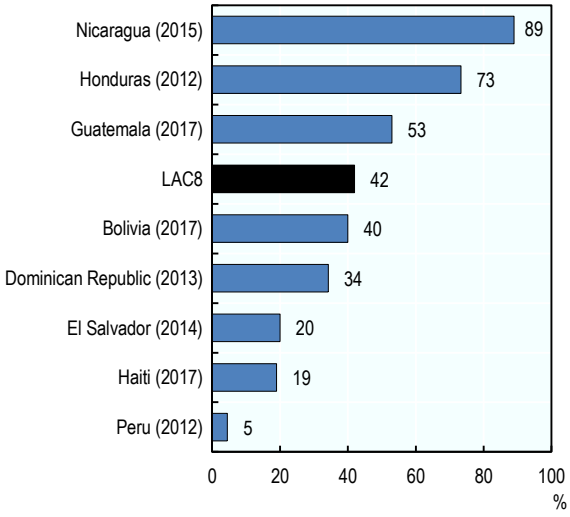
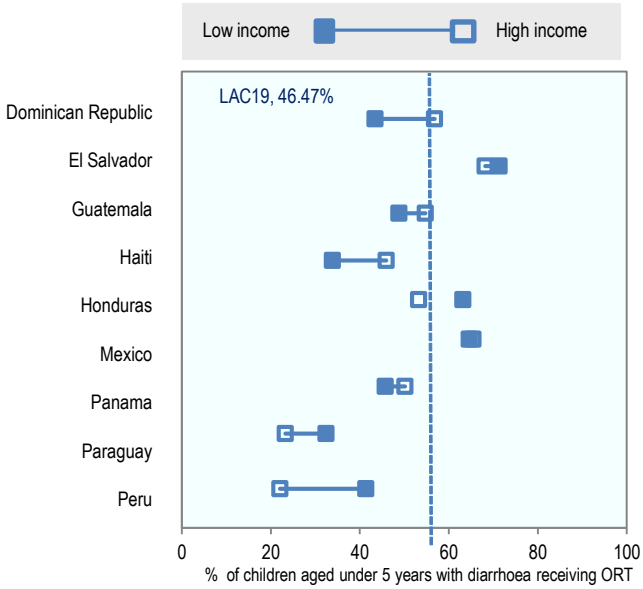
Figure 5.18. **Children aged 6-59 months who received vitamin A supplementation, latest year available**



Source: DHS/MICS 2019.

StatLink https://stat.link/aiv4mr

Figure 5.19. **Children aged under 5 years with diarrhoea receiving ORT (%), latest year available**



Note: The LAC19 average includes more countries than those represented in the figure due to data availability.
Source: DHS and MICS 2019 for income inequalities on the 9 LAC countries available. UNICEF 2019 for the LAC19 average.

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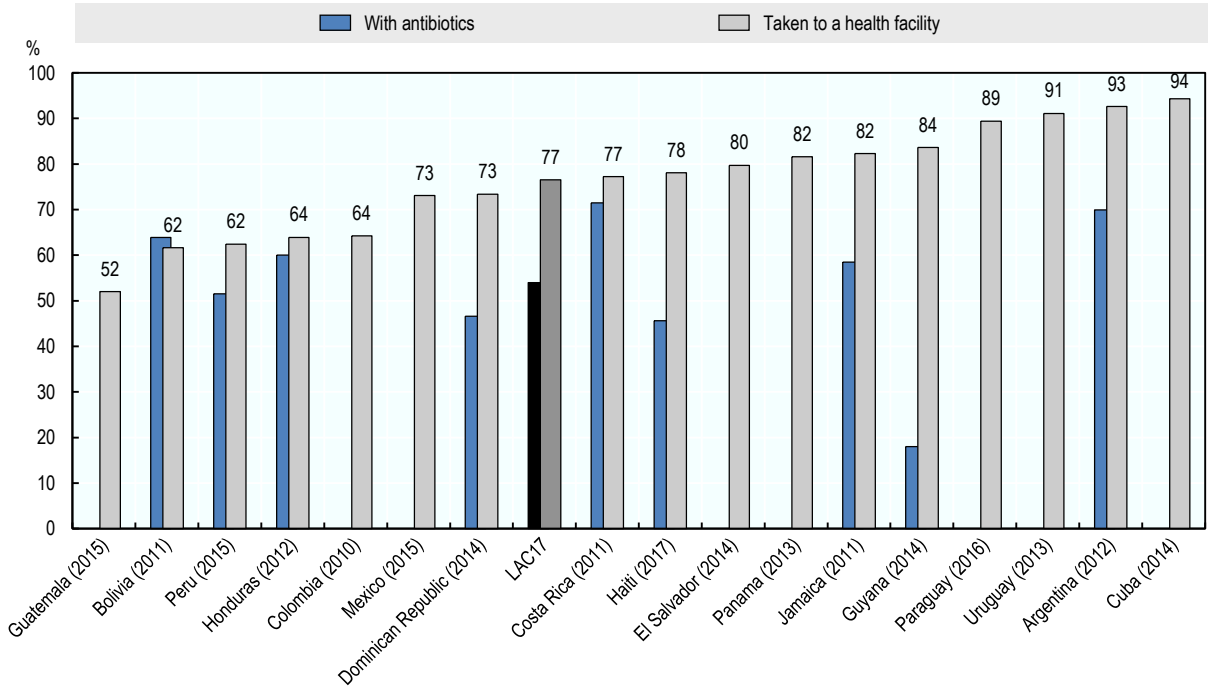
Figure 5.20. **Children aged under 5 years with ARI symptoms who took antibiotic treatment (%), latest year available**



Source: DHS/MICS 2019.

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Mental disorders such as depression and anxiety are highly prevalent – 15% of the working-age population is affected at any given time. They are also extensively undertreated; globally around 56% of people with depression do not receive appropriate treatment. These disorders contribute significantly to reduced productivity, sickness absences, disability and unemployment, and the total costs of mental ill-health are estimated at 3.5 – 4% of GDP in OECD countries. A particular prevention priority in the area of mental health concerns suicide, which accounted for an estimated 800 000 deaths in 2018 (WHO, 2019[18]). Despite the enormous burden that mental ill-health imposes on individuals, their families, society, health systems and the economy, mental health care remains a neglected area of health policy in too many countries (Hewlett and Moran, 2014[19]). The inclusion of mental health and substance abuse in the Sustainable Development Agenda is likely to have a positive impact on communities and countries, stressing the importance of the promotion of mental health and well-being, and the prevention and treatment of substance abuse.

In many parts of the LAC region, appropriate care may not be available and access to mental health care may not be assured for people with mental ill health. Access to mental health care can be assessed by the supply of professionals and the availability of psychiatric beds in different settings such as general hospitals, mental health hospitals and community facilities. Psychiatrists are generally responsible for the prevention, diagnosis and treatment of a variety of mental health problems, including schizophrenia, depression, learning disabilities, alcoholism and drug use disorders, eating disorders and personality disorders. The number of psychiatrists is lower in all countries in LAC (except in Argentina) than the OECD average of almost 17 per 100 000 population (Figure 5.21). Only Argentina and Uruguay have more than ten psychiatrists per 100 000 population, and nine out of 26 LAC countries with data have less than one per 100 000 population. This suggests that many countries in the region currently underinvest in mental health care. As it is the case for many other medical specialties (see indicator "Doctors and nurses" in Chapter 5), psychiatrists are not distributed evenly across regions within each country. For example, in Mexico, 60% of all psychiatrists are based in the three larger cities, leaving the rest of the country severely underserved (Heinze, del Carmen Chapa and Carmona-Huerta, 2016[20]).

Mental health nurses play an important and increasing role in the delivery of mental health services in hospital, primary care or other settings, but in many LAC countries, the number is still very low (Figure 5.22). Barbados has the highest rate with over 60 mental health nurses per 100 000 population, followed by Saint Lucia with more than 50. But there are around 12 mental health nurses per 100 000 population in 18 LAC countries on average, and less than one mental health nurse in Ecuador, Grenada and Haiti, suggesting again the need for an appropriate supply of professionals in mental health care to assure access.

Some countries, such as Jamaica, have introduced innovative schemes designed to provide additional training to mental health nurses. In the Jamaica programme, nurses can become "Mental health officers" after receiving training on both clinical and administrative skills. This scheme has been successful in reducing stay lengths, reducing the stigma linked to mental health and cutting hospitalisation costs by treating the patient primarily at the community level (McKenzie, 2008[21]).

On average, there are nearly five mental health beds in general hospitals per 100 000 population in LAC countries. Cuba is the only country with more mental health beds than the OECD average of almost 35, while 11 of the 25 countries with data have less than 1 mental health bed per 100 000 population (Figure 5.23).

Definition and comparability

Psychiatrists have post-graduate training in psychiatry and may also have additional training in a psychiatric specialty, such as neuropsychiatry or child psychiatry. Psychiatrists can prescribe medication, which psychologists cannot do in most countries. Data include psychiatrists, neuropsychiatrists and child psychiatrists, but psychologists are excluded. Mental health nurses usually have formal training in nursing at a university level. Data are based on head counts.

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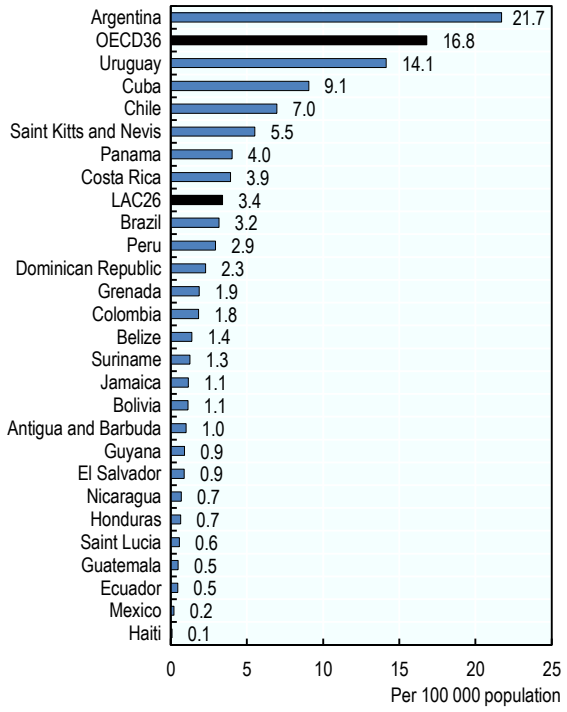
Figure 5.21. **Psychiatrists, per 100 000 population, 2016 or latest available year**



Source: WHO GHO 2019.

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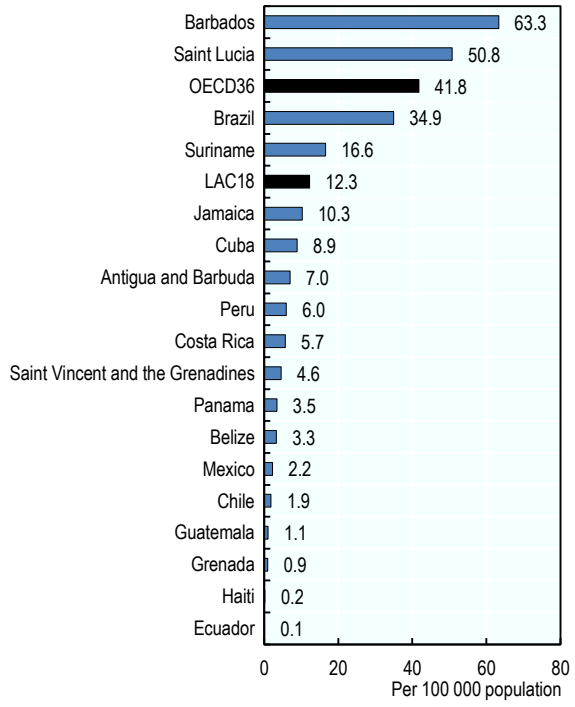
Figure 5.22. **Nurses working in mental health sector, per 100 000 population, 2016 or latest available year**



Source: WHO GHO 2019.

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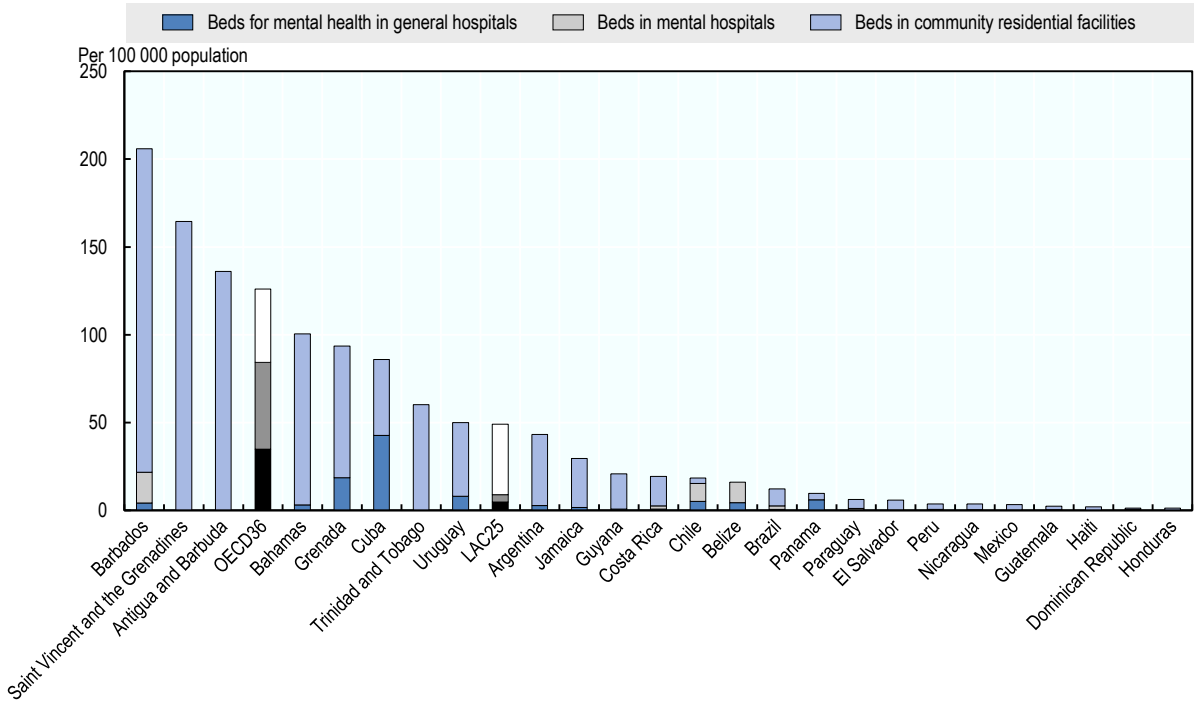
Figure 5.23. **Mental health beds, per 100 000 population, 2016 or latest available year**



Source: WHO GHO 2019.

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Raised levels of blood sugar can lead to the development of diabetes, which is a chronic condition that can have very seriously damaging effects. In 2014, an estimated 422 million people had diabetes worldwide, and in 2016, 1.6 million deaths were directly caused by the disease (WHO, 2018[22]). Maintaining an individual's blood glucose controlled is very important, particularly for people who has been diagnosed with diabetes. Fasting blood glucose (FBG) contributes to diagnose and monitor diabetes, and can be under control because of effective treatment with glucose-lowering medication and as a result of health promotion activities. Therefore, controlled fasting blood glucose is thus a proxy for both promotion of healthy diets and behaviours and medical treatment of diabetes, all of which is normally provided in primary care settings (WHO, 2019[23]).

High blood pressure or hypertension manifests by causing headaches, difficulty breathing or nosebleeds, and, if left untreated can lead to more serious cardiovascular problems such as stroke, myocardial infarction and kidney disease. Worldwide, 1.13 billion people have hypertension and fewer than 1 in 5 people with hypertension have the problem under control (WHO, 2019[24]). The absence of hypertension is a result of prevention efforts such as the promotion of physical activity and healthy diets. When hypertension develops, it can be controlled with medication as well as with life style adjustments. This indicator is thus a proxy for both health promotion and medical services, usually primary care (WHO, 2019[23]).

The prevalence of raised FBG is higher than the OECD average in all LAC countries (Figure 5.24). In 2014, Saint Lucia and Saint Kitts and Nevis had the highest prevalence with over 14% of the population having raised FBG, while Peru, Bolivia and Ecuador had the lowest with 8% or less. Moreover, between 2004 and 2014, all LAC countries increased the prevalence of raised FBG, with a regional average growth of 22%. Only Venezuela grew in a smaller rate than in OECD countries, and Saint Lucia was the only country with an increase of over 50%. The increases in FBG can be linked to the growing overweight epidemic in LAC countries (see section on Overweight and Obesity in Chapter 4).

In 2015, the average prevalence of raised blood pressure in LAC was 22%, close to the OECD average of 21% (Figure 5.25). Saint Kitts and Nevis, Suriname and Peru had the highest prevalence of over 25%, while the lowest prevalence was observed in Paraguay, the only country below 15%. Between 2005 and 2015, most of LAC countries reduced the prevalence of raised blood pressure with an average of -8%, lower than the OECD reduction of -16%. Four countries experienced an increase in the period: Suriname (8%), Saint Kitts and Nevis (4%), Antigua and Barbuda (3%) and Guatemala (2%). Changes in risk factors and improvements in detection and treatment of raised blood pressure have, at least partly, contributed to these general reductions, but other factors such as improvements in early childhood nutrition and year-round availability of fruits and vegetables, might explain it as well (Zhou et al., 2017[25]).

In ten LAC countries with data, we can observe a general positive association between people being diagnosed with hypertension and receiving either medical advice or anti-hypertensive medication (Figure 5.26). Costa Rica shows the highest levels of both population diagnosed and having access to treatment, while Belize and Mexico show the lowest levels. Chile presents a relatively high rate of hypertension diagnosis, but low levels of treatment. To achieve the goal of effective treatment coverage, the main challenge for countries' health systems is to increase detection and provide population-wide health promotion activities and medical treatment to the population in need (WHO, 2019[23]).

Definition and comparability

The prevalence of raised blood pressure is defined as the percentage of the population with systolic blood pressure equal or over 140, or diastolic blood pressure equal or over 90. It is based on measured blood pressure. If multiple blood pressure readings were taken, first reading per participant was dropped and average of remaining readings was used. The prevalence of raised FBG is defined as the percentage of the population with fasting glucose equal or over 126 mg/dl (7.0 mmol/l) or history of diagnosis with diabetes or use of insulin or oral hypoglycaemic drugs. It is based on measured blood glucose. The percentage of the population receiving advice or treatment (Figure 5.26, (Geldsetzer et al., 2019[26])) was defined as people who were diagnosed with hypertension and had received relevant lifestyle advice (i.e. losing weight, exercising, reducing salt intake, or quitting tobacco use) or anti-hypertensive medication.

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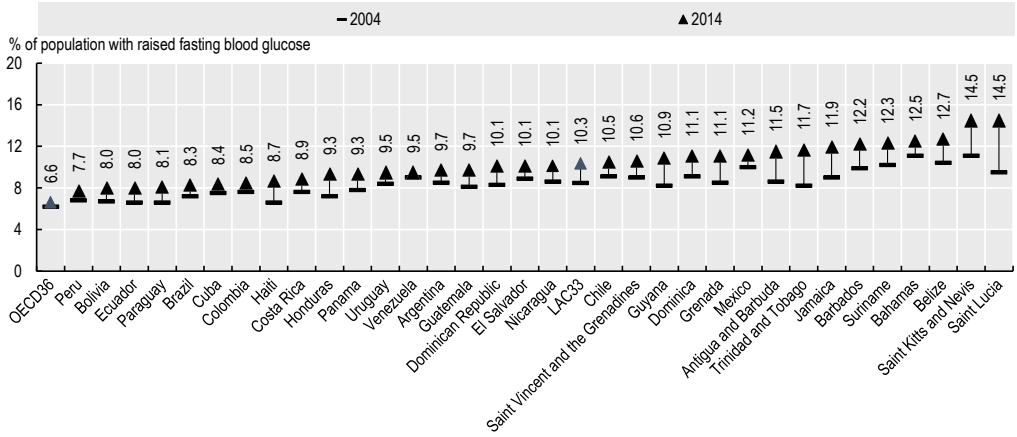
Figure 5.24. **Raised fasting blood glucose among adults, 2004 and 2014**



Source: WHO GHO 2017.

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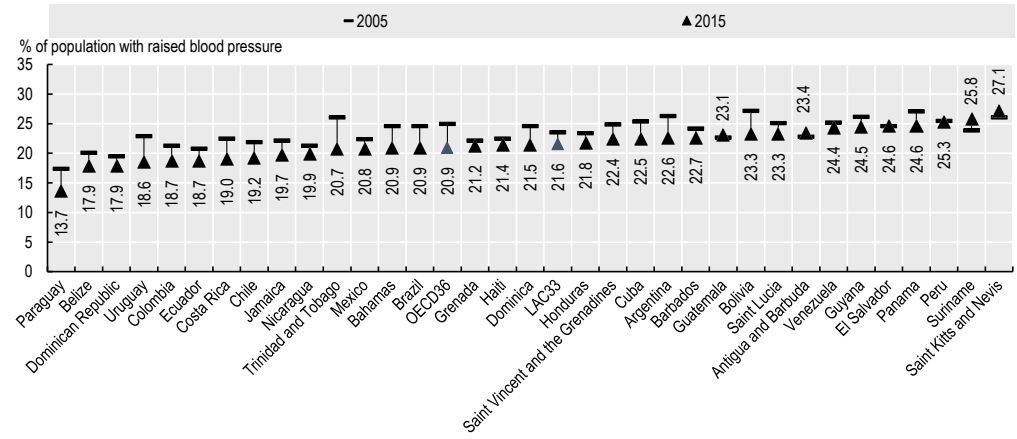
Figure 5.25. **Raised blood pressure among adults, 2005 and 2015**



Source: WHO GHO 2017.

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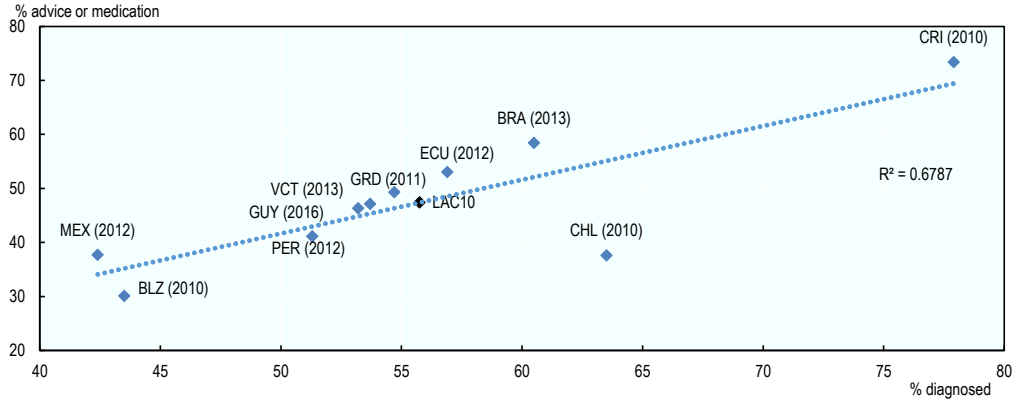
Figure 5.26. **Percentage of the population with hypertension aware of their diagnosis vs population that have received advice or medication**



Source: Data from Geldsetzer et al (2019[26]), "The state of hypertension care in 44 low-income and middle-income countries: a cross-sectional study of nationally representative individual-level data from 1·1 million adults", *http://dx.doi.org/10.1016/S0140-6736(19)30955-9*.

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Chapter 6

Health expenditure and financing

A wide range of demographic, social and economic factors, as well as the financing and organisational arrangements of the health system can explain the level and changes over time of health spending in a country, covering both individual needs and population health as a whole.

The average OECD current health spending per capita in 2017 was around four times that of the countries in LAC (USD PPP 3 994 versus 1 025). Much variation in per capita health care spending levels can be observed in LAC countries (Figure 6.1), ranging from Haiti health spending per capita of only 83 international dollars (current USD PPP) to Cuba's 2 484 international dollars (current USD PPP). In average, LAC countries devote 59% to government and compulsory insurance schemes, and the remaining 41% goes to out-of-pocket payments, voluntary payment schemes and external resources.

On average, between 2010 and 2017, the growth rate in per capita health spending was 3.6% per year in LAC, higher than the 3% observed for gross domestic product (GDP) (Figure 6.2). The growth in health spending was more rapid in Nicaragua, Bolivia and Paraguay – more than twice the average rate for the region. Venezuela reported decreasing rates in current health spending between 2010-17.

Health spending growth and GDP growth are positively associated, meaning that in general terms an increase or decrease in one of them follows the other. In many LAC countries, health spending has exceeded economic growth over the past five years, resulting in an increasing share of the economy devoted to health. All countries above the diagonal line in Figure 6.2 report that health expenditure has grown faster than income. This means that the share of health care expenditure in total expenditure has continued to increase. In all countries below the line, the increase in health spending – on average – was lower than the increase in GDP. Hence, the share of health spending in total spending declined in those countries.

Overall health spending growth and economic performance can explain how much countries spend on health care over time. Current health expenditure accounted for 6.6% of GDP in the LAC region in 2017, an increase of around 0.09 percentage points from 2010. The OECD countries averaged a current health expenditure of 8.8% of the GDP in 2018. This indicator varied from 1.1% in Venezuela to up to 11.7% in Cuba and 9.2% in Uruguay (Figure 6.3). Generally, the richer a country is, the more it spends on health. Between 2010 and 2017, the share of health in relation to GDP declined almost 6 percentage points in Venezuela, whereas it increased more than 2 percentage points in Paraguay and Chile.

Capital has been an increasingly important factor of production of health services over recent decades, as reflected for example by the growing importance of diagnostic and therapeutic equipment or the expansion of information and communications technology (ICT) in health care. Capital investments in health tends to fluctuate more with economic cycles than current spending on health care. However, slowing down investments in health infrastructure and equipment will affect service delivery. As a proportion of GDP, Panama and Saint Vincent and the Grenadines were the highest spenders on capital investment in 2017 with more than 0.7% of their GDP going on construction, equipment and technology in the health and social sector (Figure 6.4). However, capital spending can be significantly lower: in Venezuela, Argentina and Antigua and Barbuda accounted for less than 0.002% in 2017. On average, it represents 0.2% of GDP across LAC compared to 0.5% in OECD countries in 2015.

Definition and comparability

Health expenditure is given by the sum of expenditure on all the core health care functions – that is total health care services, medical goods dispensed to outpatient, prevention and public health services, and health administration and health insurance. Expenditure on these functions is included as long as it is borne by final use of resident units i.e. as long as it is final consumption by nationals in the country or abroad. For this reason, imports for final use are included and exports for final use are excluded.

Health care financing can be analysed from the point of view of financing schemes (financing arrangements through which health services are paid for and obtained by people, e.g. social health insurance), financing agents (organisations managing the financing schemes, e.g. social insurance agency), and types of revenues (e.g. social insurance contributions). Here "financing" is used in the sense of financing schemes as defined in the System of Health Accounts (OECD, Eurostat and WHO, 2011) and includes government schemes, compulsory health insurance as well as voluntary health insurance and private funds such as households' out-of-pocket payments, NGOs and private corporations. Out-of-pocket payments are expenditures borne directly by patients and include cost-sharing arrangements and any informal payments to health care providers.

The economy-wide (GDP) PPPs are used as the most available conversion rates. These are based on a broad basket of goods and services, chosen to be representative of all economic activity. The use of economy-wide PPPs means that the resulting variations in health expenditure across countries might reflect not only variations in the volume of health services, but also any variations in the prices of health services relative to prices in the rest of the economy.

To make useful comparisons of real growth rates over time, it is necessary to deflate (i.e. remove inflation from) nominal health expenditure through the use of a suitable price index, and also to divide by the population, to derive real spending per capita. Due to the limited availability of reliable health price indices, an economy-wide (GDP) price index is used in this publication.

To take into account the timing of the government budget allocation process, comparison over time look at the latest five years for which expenditure data are available.

Gross fixed capital formation in the health sector is measured by the total value of the fixed assets that health providers have acquired during the accounting period (less the value of the disposals of assets) and that are used repeatedly or continuously for more than one year in the production of health services. The breakdown by assets includes infrastructure (e.g. hospitals, clinics, etc.), machinery and equipment (including diagnostic and surgical machinery, ambulances, and ICT equipment), as well as software and databases. Gross fixed capital formation is reported by many countries under the System of Health Accounts.

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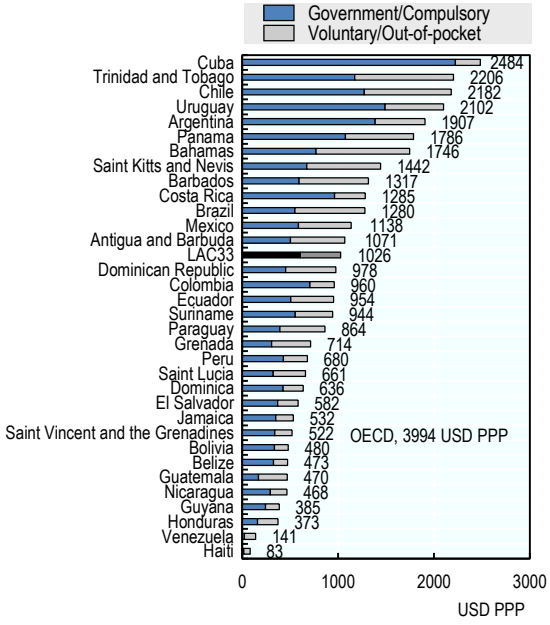
Figure 6.1. **Total health expenditure per capita (USD PPP), 2017**



Note: 2018 data for Brazil, Chile, Colombia, Costa Rica and Mexico.
Source: WHO Global Health Expenditure Database 2020; OECD Health Statistics 2019 for Brazil, Chile, Colombia, Costa Rica and Mexico.

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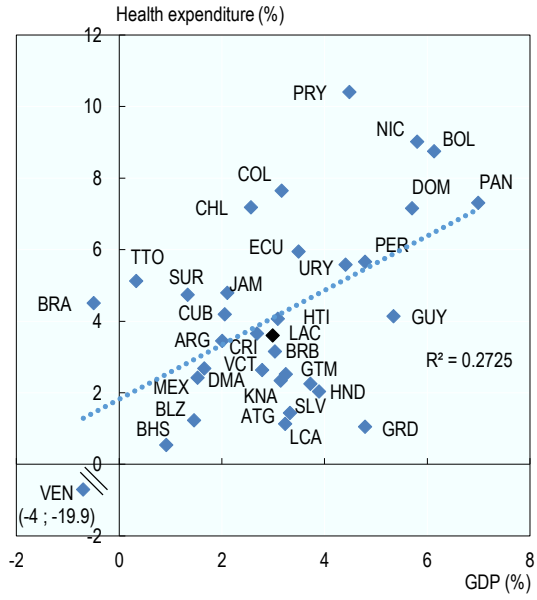
Figure 6.2. **Average annual growth rate in current health spending and GDP per capita, 2010-17**



Source: WHO GHED 2020; OECD Health Statistics 2019 for Brazil, Chile, Colombia, Costa Rica and Mexico.

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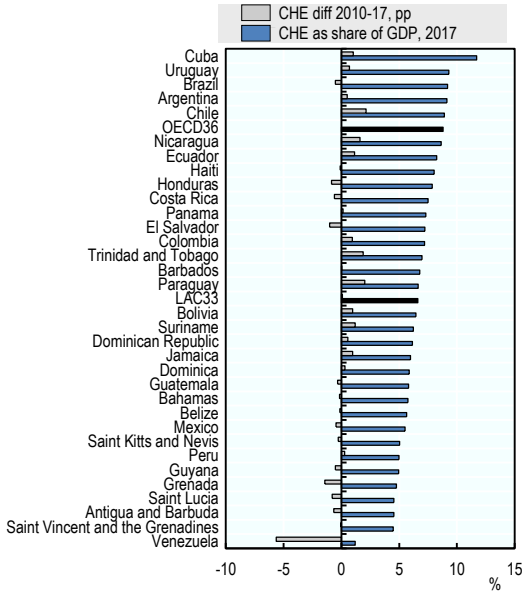
Figure 6.3. **Change in total expenditure on health as a share of GDP, 2010-17**



Note: 2018 data for Brazil, Chile, Colombia, Costa Rica and Mexico.
Source: WHO GHED 2020; OECD Health Statistics 2019 for Brazil, Chile, Colombia, Costa Rica and Mexico.

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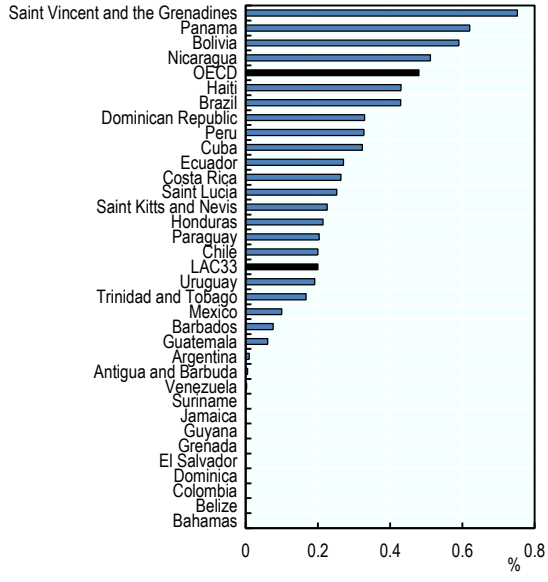
Figure 6.4. **Grossed fixed capital formation in the health care sector as a share of GDP, 2017**



Note: OECD average corresponds to 2015.
Source: WHO GHED 2020, OECD Health Statistics 2019 for Chile and Mexico.

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Health system financing arrangements can be broadly classified according to their compulsory or voluntary nature, providing coverage against the cost of health care by purchasing health care services. In some countries, health care might be predominantly financed through government schemes by which individuals are automatically entitled to care based on their residency. In other cases, compulsory health insurance schemes (either through public or private entities) linked to the payment of social contributions or health insurance premiums finance the bulk of health spending. In addition to these, a varying proportion of health care spending consists households' out-of-pocket payments – either as standalone payments or as part of co-payment arrangements – as well as various forms of voluntary payment schemes such as voluntary health insurance. In the LAC region, substantial fragmentation in health systems often leads to coexisting financing schemes and in some cases, overlap (see Chapter 2). Most standard models of public financing exist in the region (Lorenzoni et al., 2019[1]).

Figure 6.5 reports the expenditure financed by general government health expenditure (which includes government expenditure and funds linked to compulsory health insurance) as a share of GDP in 2017 and its trend in the 2010-17 period. The countries with the highest share are Cuba (10.5%), Argentina (6.6%), Uruguay (6.6%) and Costa Rica (5.7%). The countries with the lowest share are Venezuela and Haiti, with 0.2 and 1% the only two below a share of 2% in the region and well below the LAC average of 3.7%. On average, the LAC region increased its share of public expenditure as percentage of GDP by around 0.38 percentage points. Nicaragua was the only country reporting an increase of more than 2 percentage points in the period, whereas ten countries saw a decrease: Mexico (-0.1), Costa Rica (-0.2), Bahamas (-0.3), Panama (-0.39), Haiti (-0.50), Grenada (-0.51), Honduras (-0.55), Barbados (-0.62), Antigua and Barbuda (-0.82) and Venezuela (-2.40).

In the majority of LAC countries, general government health expenditure constituted the main source of funding in 2017 (regional average of 54.3%) (Figure 6.6). Cuba has the largest share with 89.4%, followed by Costa Rica with 75.1%, the only two countries over 75%. On the other side, the lowest share were observed in Honduras (11.9%), Haiti (15.9%) and Guatemala (35.8%). In average, general government health expenditure as share of current health expenditure grew by 2.1 percentage points in the LAC region between 2010 and 2017. The largest increase occurred in Venezuela (40.2 percentage points) and Suriname (25.9), while reductions happened in 13 countries, led by Antigua and Barbuda (-23) and Saint Vincent and the Grenadines (-23.1).

Healthcare is one of multiple governmental public services for which they devote their overall budgets. A number of factors including, among others, the type of system in place, the fiscal space and the policy and political priority of the health sector determines the size of public funds allocated to health. Relative budget priorities may also shift from year to year as a result of political decision-making and economic effects. In 2017, general government health expenditure as a share of total government expenditure stood at 12.75% in LAC, well below the 24.5% in OECD countries (Figure 6.7). In Costa Rica and Panama more than 20% of public spending was dedicated to health care. On the other hand, less than 6% of government expenditure was allocated to health care in Haiti and Venezuela. In the 2010-17 period, public health expenditure as a share of government expenditure increased the most in Panama, similar to the 8 percentage points increase in OECD countries, while it decreased the most in Antigua and Barbuda (-6 percentage points) and Venezuela (-4.8).

Definition and comparability

The financing classification used in the System of Health Accounts provides a complete breakdown of health expenditure into public and private units incurring expenditure on health. General government health expenditure includes government expenditure and social security funds. Relating spending from government and compulsory insurance schemes to total government expenditure can lead to an overestimation in countries where private insurers provide compulsory insurance.

References

[1] Lorenzoni, L. et al. (2019), "Health systems characteristics: A survey of 21 Latin American and Caribbean countries", *OECD Health Working Papers*, No. 111, OECD Publishing, Paris, *https://dx.doi.org/10.1787/0e8da4bd-en*.

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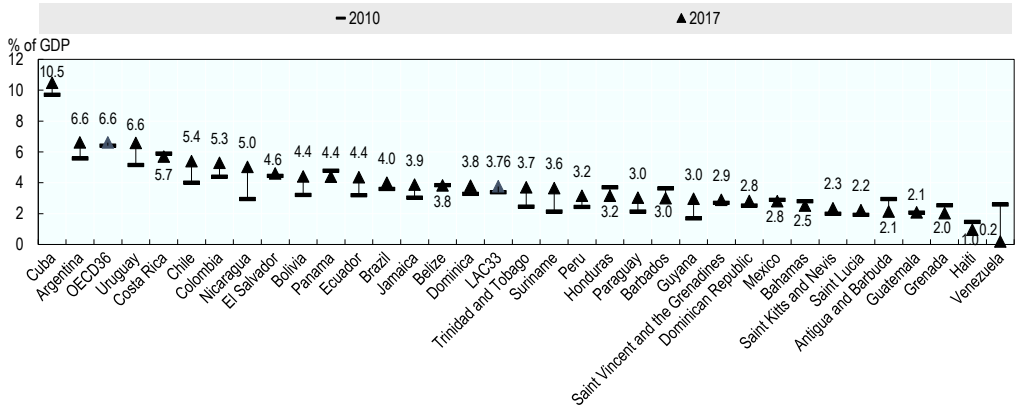
Figure 6.5. **Change in health expenditure by government scheme and compulsory insurance scheme as a share of GDP, 2010-17**



Source: WHO Global Health Expenditure Database (2020), OECD Health Statistics (2019).

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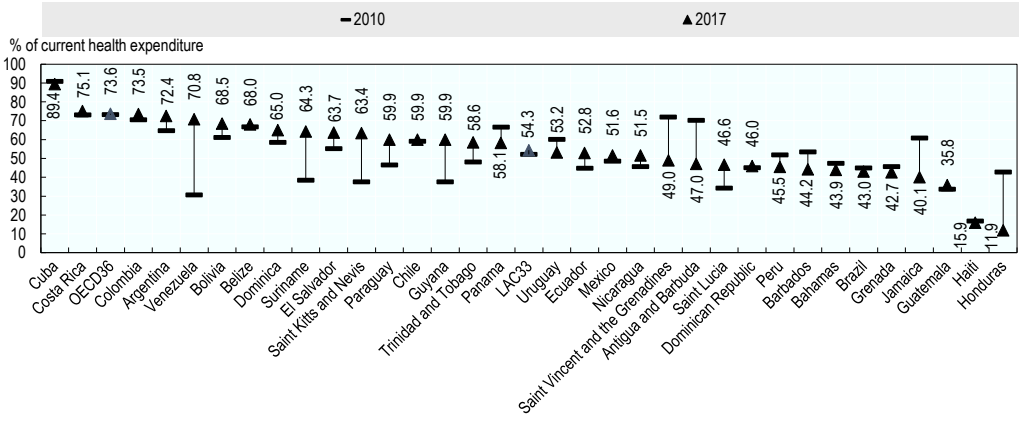
Figure 6.6. **Change in health expenditure by government scheme and compulsory insurance scheme share of current expenditure on health, 2010-17**



Source: WHO Global Health Expenditure Database (2020); OECD Health Statistics (2019).

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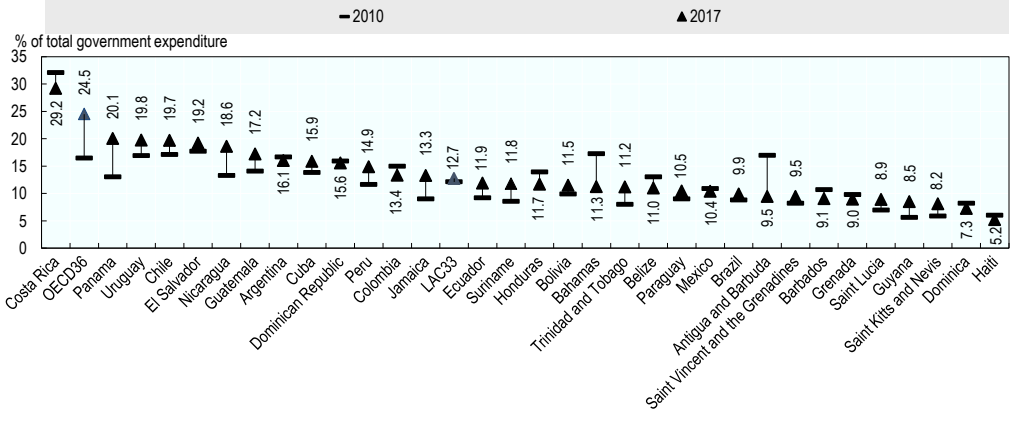
Figure 6.7. **Change in health expenditure by government and compulsory insurance scheme as a share of total government expenditure, 2010-17**



Source: WHO Global Health Expenditure Database (2020); OECD Health Statistics (2019).

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Private health expenditure refers to the health spending from non-public agents, and it is often divided between out-of-pocket expenditure (OOP), voluntary payment schemes and external sources. OOP expenditure refers to payments made to pay directly for health care, while voluntary payment schemes refers to payment of private insurance premiums, which grant coverage for services from private providers. External resources covers the funds for health received from different donors or similar sources.

On average, the share of health spending paid out of-pocket is 34% in the LAC region, well above the OECD average of almost 21% (Figure 6.8). The highest presence of OOP is observed in Venezuela (63%) followed by Guatemala (54%) and Grenada (52%), the three countries above 50% in the region. At the other end, only five countries stand below 20%: Cuba (10%), Argentina (15%), Colombia (16%), Jamaica (17%) and Uruguay (17%).

The OOP as a share of health expenditure has fallen by 1.5 percentage points from 2010 to 2017 in LAC (Figure 6.8). The decrease was greatest in Nicaragua (-11.8) and St Lucia (-12.1). However, 11 countries experienced increases in OOP, being led by Venezuela (+20.07) and Antigua and Barbuda (+10.71). OOP expenditure above 20% of current health expenditure is considered problematic as it indicates high vulnerability to catastrophic health expenditure in the event of a health emergency. The section about "Financial Protection" in the present chapter examines the extent to which people in LAC is at risk of falling into poverty due to catastrophic health expenditures.

Figure 6.9 shows that health expenditure by voluntary payment schemes represented – on average – 8% of current expenditure on health in LAC, above the OECD average of 5.5%. This share increased in most countries from 2010-17, particularly in Antigua and Barbuda where it increased by 12.5 percentage points. On the other hand, in Uruguay and Jamaica it decreased by more than 7 percentage points. Less than 1% of current health expenditure was from voluntary payment schemes in Dominica, while it was the highest in Brazil (30%), Bahamas (25%) and Venezuela (21%), the only three countries above 20%. Private health insurance is an important source of secondary coverage in most countries, either supplementing coverage of goods and services not included in the basic benefit package, complementing coverage by covering costs or duplicating coverage for those patients looking for private care.

The share of health expenditure coming from external sources is low across the region (under 1% in 19 out of 30 countries with data). However, it is a very significant source of financing in Haiti (over 43%), illustrating the reliance on external resources from a variety of donors in this country (Figure 6.10).

Definition and comparability

The financing classification used in the System of Health Accounts provides a complete breakdown of health expenditure into public and private units incurring expenditure on health. Private sector comprises pre-paid and risk pooling plans, household out-of-pocket expenditure and non-profit institutions serving households and corporations. Out-of-pocket payments are expenditures borne directly by the patient. They include cost-sharing and, in certain countries, estimations of informal payments to health care providers.

Voluntary health care payments schemes include voluntary health insurance, Non-profit institutions serving households (NPISH) and enterprises financing schemes. Data on voluntary insurance coverage was taken from the responses provided by countries to the 2018 Health System Characteristics Survey in Latin America and the Caribbean.

External funding for health is measured as Official Development Assistance disbursements for health from all donors. Disbursements represent the actual international transfer of financial resources. Disbursements for health are identified by using the classification of sector of destination codes 121 (health, general except 12181, medical education/ training and 12182, medical research), 122 (basic health) and 130 (population policies/programmes and reproductive health except 13010 Population policy and administrative management), and 510 (general budget support) (www.oecd.org/dac/stats/ aidtohealth.htm). General budget support to health is estimated by applying the share of government expenditure on health over total general government expenditures to the value reported in ODA. Given that disbursement money is spent over several years by countries, funds disbursed at year t are compared to total health expenditure in year t+1.

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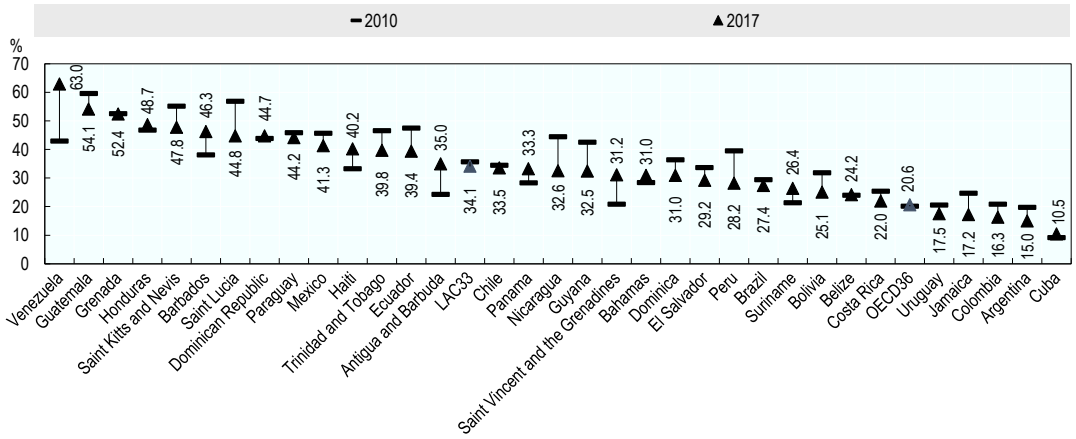
Figure 6.8. **Change in out-of-pocket spending as a share of current expenditure on health, 2010-17**



Source: WHO Global Health Expenditure Database (2020); OECD Health Statistics (2019).

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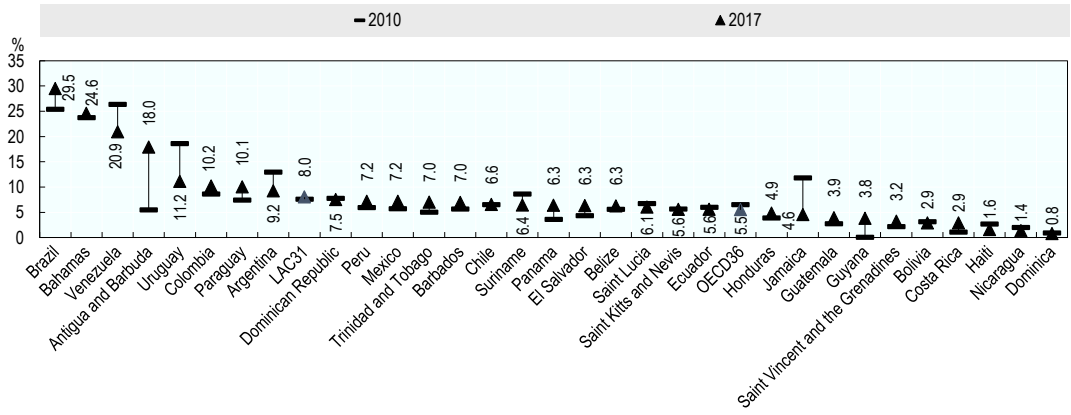
Figure 6.9. **Change in health expenditure by voluntary health care payment schemes as a share of health expenditure, 2010 to 2017**



Source: WHO Global Health Expenditure Database (2020); OECD Health Statistics (2019).

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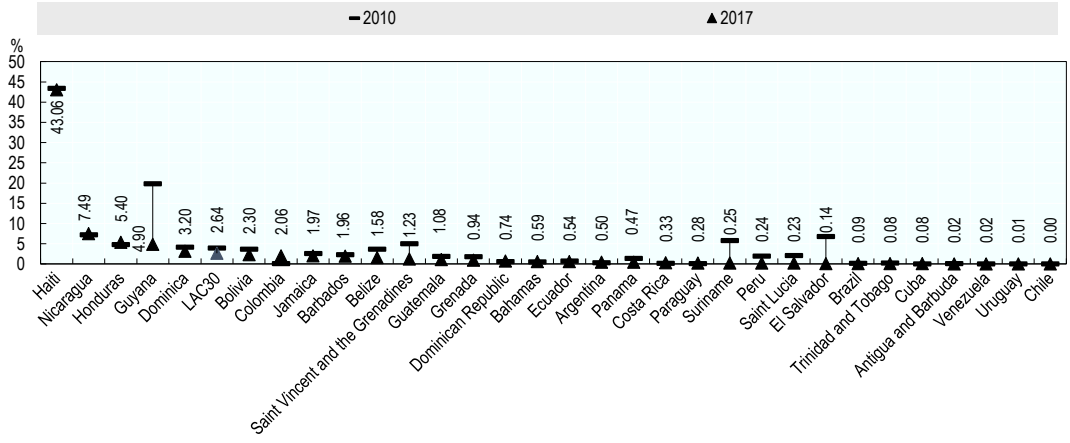
Figure 6.10. **Change in external resources as a share of current health expenditure, 2010-17**



Source: WHO Global Health Expenditure Database (2020).

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As reported in the previous section on private and external expenditure, high levels of out-of-pocket (OOP) spending in the region present a challenge not only for governments looking to improve access but also to individuals, household and communities. High OOP means that the population is directly financing a substantial part of care when they need it, which in turn can push them into poverty or financial hardship. The global incidence of catastrophic spending at 10% or more of OOP relative to household income or consumption has been estimated at 9.7% in 2000, 11.4% in 2005, and 11.7% in 2010. This means that globally 808 million people in 2010 incurred catastrophic health spending (Flores et al., 2018[2]). In addition, high OOP can have very negative consequences for the financial and social wellbeing of households, in some cases leading them into poverty. It has been estimated that at the USD 1.90 per day poverty line, the worldwide incidence of impoverishment decreased between 2000 and 2010, from 131 million people (2.1% of the world's population) to 97 million people (1.4%) (Wagstaff et al., 2018[3]).

Figure 6.11 shows the proportion of households spending over 10% of income or consumption (depending on the proxy chosen to estimate wealth) on OOP health care expenditures in 16 LAC countries. This excludes private pre-paid payments. On average, almost 8% of the population spends more than 10% of their household consumption or income. The proportion is low in a number of countries such as El Salvador, Mexico and Guatemala (under 2%), but it is almost 17% in Barbados followed by Nicaragua and Chile around 15%. In addition, most countries have a low proportion of households spending over 25% of their income or consumption on OOP, but Haiti is much higher than the rest with 4% of the population spending a quarter of their household income in OOP for health care.

As high OOP expenditure on health can take people into financial ruin, Figure 6.12 shows the proportion of households that have been pushed below the poverty line. In 15 LAC countries, 1.7% of the population was pushed by OOP health care expenditure below the societal poverty line compared with the 1.2% in OECD countries. Consistent with the high proportion of households making OOP payments over 10% and 25% of the income or consumption, over 5% of Nicaraguan households have been driven below the poverty line, followed by Haiti (3.3%), Chile (2.6%) and Ecuador (2.4%). On the other hand, the proportion is lower in several countries such as Bahamas, Honduras or El Salvador where less than 0.5% of the population falls into poverty because of OOP health care expenditures.

To ensure adequate access and coverage for all groups, governments must implement efforts to protect households against excessive OOP expenditures that can drive people into poverty. Some common aspects of successful reforms include pooled or coordinated use of different revenue sources; progressively increasing the size of compulsory prepaid funds; redistribution of money form prepaid funds; and new organisations and institutional arrangements to support and enable change (WHO, 2018[4]).

As discussed in Chapter 2, wasteful spending in LAC health systems is taking resources that could be spent in more and better health care. For instance, fragmentation of LAC health systems is not only a relevant source of waste but also contributes to create barriers for expanding access and financial protection, and therefore improving health outcomes. Fragmentation limits the pooling of funds and the existence of more effective insurance mechanisms, components that lead to better access to necessary care and improved population health, with the largest gains accruing to poorer people (Moreno-Serra and Smith, 2012[5]).

Definition and comparability

Data on financial protection indicators was taken from the World Bank Health Equity and Financial Protection dataset. The dataset has grown over time from the first dataset published in 2000 which pulled data from 42 surveys and one type of survey, covered just 42 countries, and included just 34 indicators, which all concerned maternal and child health. In 2013, for the first time, the database included household out-of-pocket health expenditures, noncommunicable disease indicators (NCD), and data from high-income countries. The 2018 database follows this trend by employing over 1 600 surveys, covering 183 countries, and encompassing multiple years of data, richer NCD data, and more extensive data on household out-of-pocket expenditures.

The poverty line is defined here as the higher of the USD 1.90 (USD 2011 PPP) poverty line and a 50% of median consumption poverty line (%).

References

[2] Flores, G. et al. (2018), "Progress on catastrophic health spending in 133 countries: a retrospective observational study", *Articles Lancet Glob Health*, Vol. 6, pp. 169-79, *http://dx.doi.org/10.1016/S2214-109X(17)30429-1*.

[5] Moreno-Serra, R. and P. Smith (2012), *Does progress towards universal health coverage improve population health?*, Lancet Publishing Group, *http://dx.doi.org/10.1016/S0140-6736(12)61039-3*.

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[4] WHO (2018), *Health financing*, World Health Organization, *https://www.who.int/health-topics/health-financing*.

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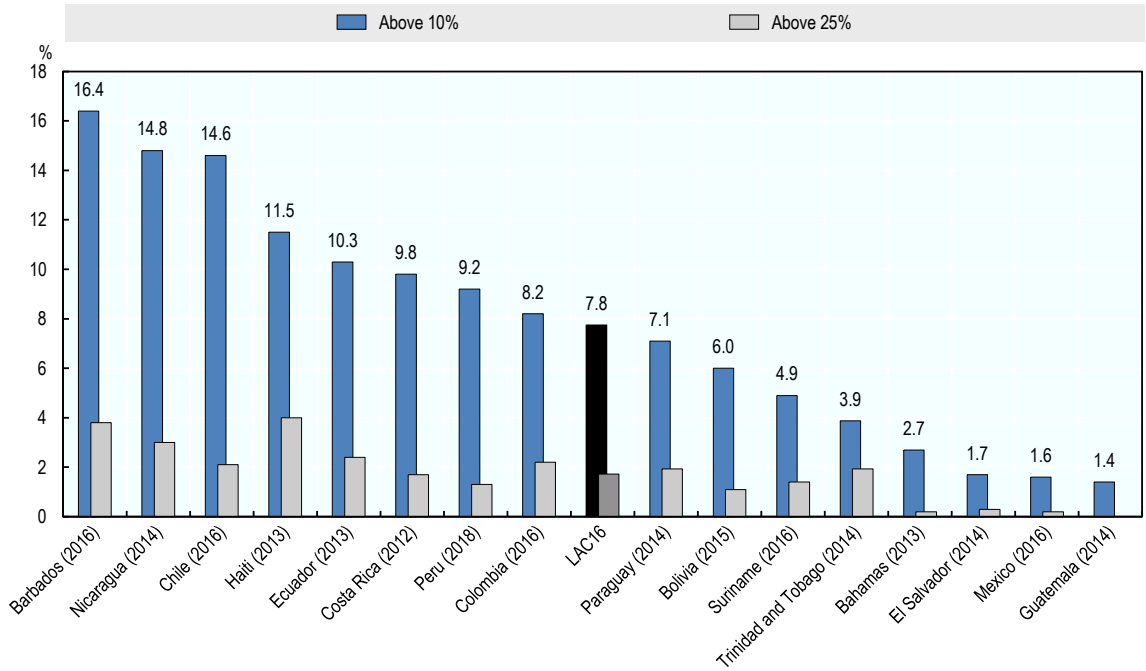
Figure 6.11. **Proportion of population spending more than 25% and 10% of household consumption or income through out-of-pocket health care expenditure**



Note: Countries with data older than 2010 were excluded.
Source: World Bank Health Equity and Financial Protection 2020.

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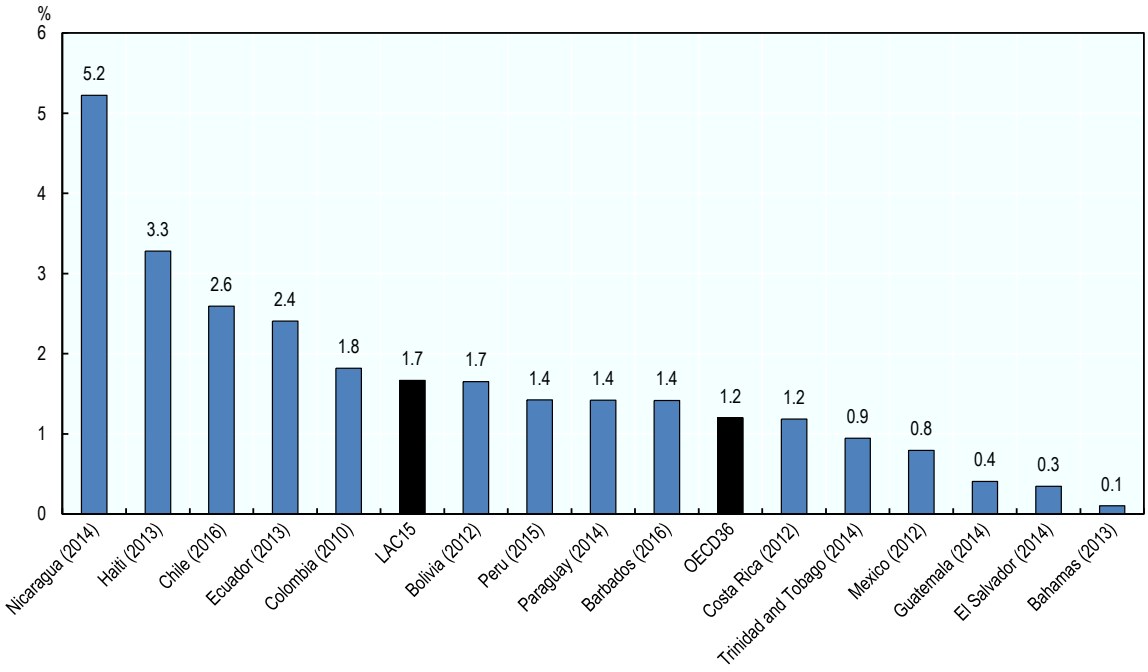
Figure 6.12. **Proportion of population pushed by out-of-pocket health care expenditure below the societal poverty line**



Note: Countries with data older than 2010 were excluded.
Source: World Bank Health Equity and Financial Protection 2019.

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Chapter 7

Quality of care

Childhood vaccination programmes often take up a large share of a country's prevention strategy as they are one of the most effective and cost-effective health policy interventions (Chan et al., 2017[1]). The WHO estimates that vaccines prevent between 2 million and 3 million deaths each year worldwide, and that an additional 1.5 million deaths could be avoided with global vaccination, through direct protection of those vaccinated and prevention of the spread of disease to those unvaccinated. Therefore, vaccination programmes exist in all LAC countries, which include several routine vaccines (i.e. against diseases such polio, diphtheria, tetanus, pertussis, measles) and additional vaccines (i.e. against pneumococcus, rotavirus and human papilloma virus) are included at national or subnational level based on local morbidity, mortality and cost-effectiveness analysis. Coverage of these programmes can be considered as a quality of health care indicators as they effectively reduce burden of vaccine preventable diseases subsequently. As examples, diphtheria, tetanus toxoid and pertussis (DTP), measles and hepatitis B are presented in this section as they represent, in timing and frequency of vaccination, the full spectrum of organisational challenges related to routine vaccination for children.

Despite generally high overall rates, 12 out of the 33 LAC countries fall short of attaining the minimum immunisation levels recommended by the WHO to prevent the spread of DTP (90%) (Figure 7.1) and 21 out of 33 fail to meet this target for measles (95%) in 2018 (Figure 7.2). Furthermore, high national coverage rates may not be sufficient to stop disease spread, as low coverage in local populations or certain geographical areas can lead to outbreaks. On average, only one out of every ten children in the region does not receive one of the two vaccines (90% coverage rate for both vaccines). The majority of countries have rates over 80%, which, although high, is insufficient to ensure interruption of disease transmission and protection of the whole population, as local outbreaks can occur. Two countries in particular had exceptionally low rates of around 60-65%, Haiti and Venezuela.

In 2007, more than 170 countries had adopted the WHO recommendation to incorporate hepatitis B vaccine including birth dose as an integral part of their national infant immunisation programme. Hepatitis B vaccination is recommended for all children worldwide and reaching all children with at least three doses of hepatitis B vaccine should be the standard for all national immunisation programmes (WHO, 2014[2]). Most countries in the LAC region started their hepatitis B vaccination programmes at the end of the 1990s. Data reveals that hepatitis B vaccination across the LAC region has greatly reduced the incidence of hepatitis B, even already having achieved the 2020 WHO goal for the region. The elimination of hepatitis B transmission among children and infants is within reach.

Figure 7.3 shows that the average percentage of children aged one who are vaccinated for hepatitis B is 89%, similar to the average coverage rate than for measles and DTP and just below the 90% target. Rates for most countries are above 80%, with significantly lower rates than average in Mexico, Haiti and Venezuela.

In LAC countries, several barriers to vaccination still exist. 'Individual/group influences' (e.g. beliefs and attitudes, mistrust in the health system, lack of physician recommendation, dearth of official information against misconceptions) were the most frequently reported barrier category. Then, 'contextual influences' (e.g. lower socio-economic and educational status, advanced age, religious and cultural beliefs, fear of adverse events and vaccine misinformation) was the second most relevant group (Guzman-Holst et al., 2019[3]). Eroding public confidence in the safety and efficacy of vaccination, despite the lack of scientific evidence to support this, seems to be an area that LAC countries could address to strengthen vaccination strategies.

Definition and comparability

Vaccination rates reflect the percentage of children at either age one or two that receives the last dose of primary immunisation series by the respective vaccination programme in the recommended timeframe. Childhood vaccination policies differ slightly across countries. Thus, these indicators are based on the actual policy in a given country. Some countries administer combination vaccines (e.g. MR for measles and rubella) while others administer the vaccinations separately. Some countries ascertain vaccinations based on surveys and others based on administrative data, which may influence the results.

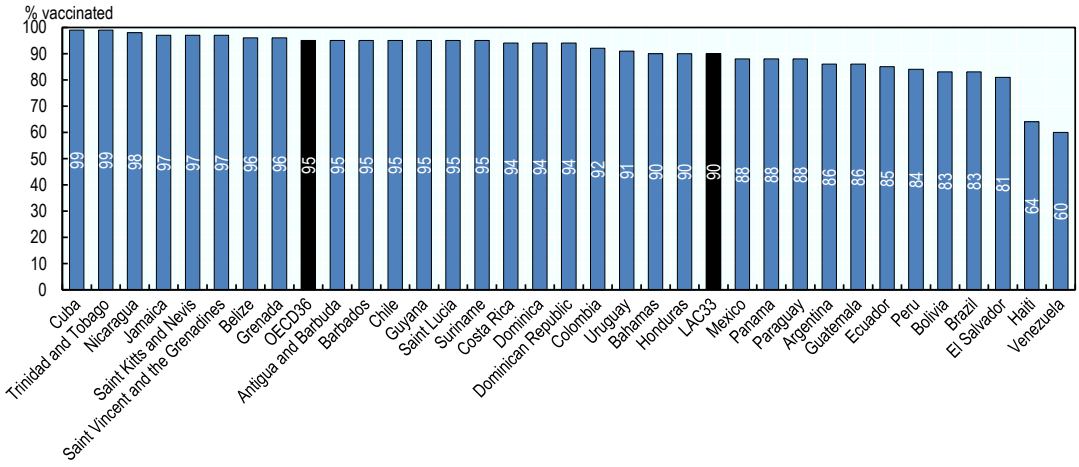
References

[1] Chan, M. et al. (2017), *Reaching everyone, everywhere with life-saving vaccines*, Lancet Publishing Group, *http://dx.doi.org/10.1016/S0140-6736(17)30554-8*.

[3] Guzman-Holst, A. et al. (2019), *Barriers to vaccination in Latin America: A systematic literature review*, Elsevier Ltd, *http://dx.doi.org/10.1016/j.vaccine.2019.10.088*.

[2] WHO (2014), *Resolution WHA67.6. Hepatitis. In: Sixty-seventh World Health Assembly, Geneva, 19-24 May 2014*, World Health Organization, Geneva, *http://apps.who.int/gb/ebwha/pdf_files/wha67/a67_r6-en.pdf?ua=1*.

Figure 7.1. **Vaccination rates for diphtheria, tetanus toxoid and pertussis (DTP3), children aged around 1, 2018**



Source: WHO, Global Health Observatory 2019.

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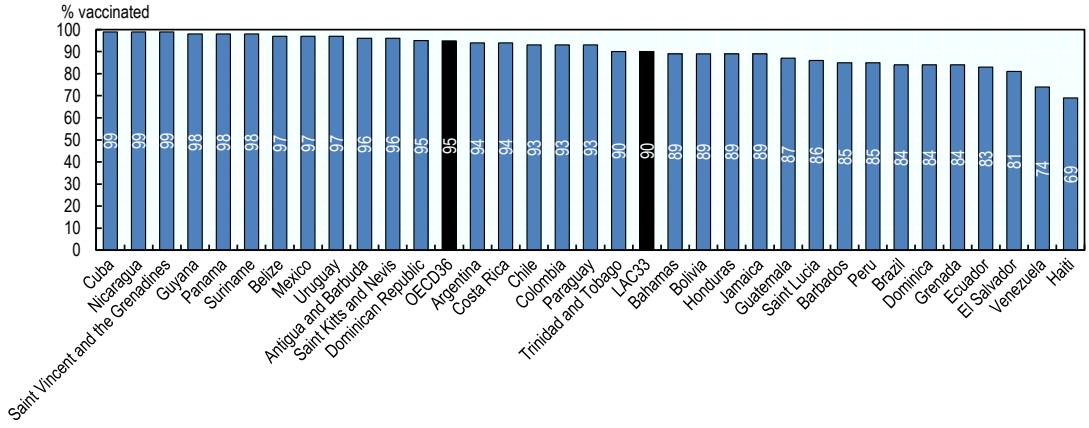
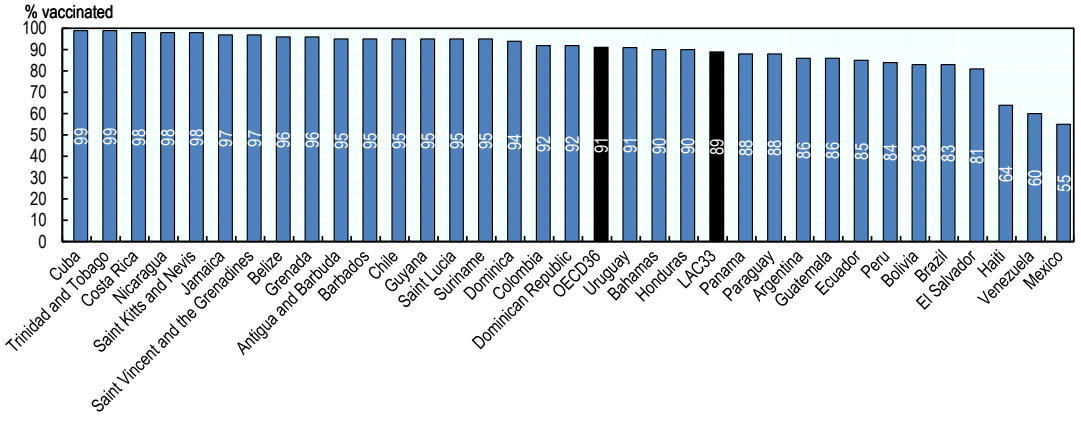
Figure 7.2. **Measles-containing-vaccine first-dose (MCV1) immunisation coverage among 1-year-olds (%), 2018**



Source: WHO, Global Health Observatory 2019.

StatLink https://stat.link/iha798

Figure 7.3. **Hepatitis B (HepB3) immunisation coverage among 1-year-olds (%), 2018**



Source: WHO, Global Health Observatory 2019.

StatLink https://stat.link/zew7jb

Ischaemic heart diseases and stroke were two major causes of death in Latin America in 2017, accounting for 78% of all cardiovascular diseases (CVD) deaths in LAC countries combined, very similar to the 77% in OECD countries (see Chapter 3, 'Mortality from cardiovascular diseases'). Additionally, both are associated with significant health, economic, social and non-financial costs, because of the persistent disabilities suffered by many survivors. Treatment following acute myocardial infarction (AMI) and stroke has advanced greatly over the past decade. The introduction and diffusion of new technologies such as cholesterol and blood pressure lowering medications, thrombolysis and angioplasty over recent decades have had a marked effect on the quality of cardiovascular care (OECD, 2015[4]).

Case-fatality rate is a useful measure of acute care quality for both AMI and stroke. It reflects the processes of care, such as effective medical interventions, including early thrombolysis, angioplasty or treatment with aspirin when appropriate and co-ordinated and timely transport of patients, but may be also influenced by individual characteristics such as the severity of AMI and stroke. For AMI, age-sex standardised in-hospital case fatality rates within 30 days of admission was reported as very low in Costa Rica (0.3%), while the highest rates are in Mexico (28.1%) (Figure 7.4), much higher than the OECD average (6.9%).

For ischaemic stroke, the lowest case-fatality rates was reported in Costa Rica (2.7%), the only country below the OECD average of 7.7%. Mexico reported the highest rate of 19.2%, while Uruguay and Chile were also over the OECD average (Figure 7.5).

Fatality rates for haemorrhagic stroke are significantly higher than for ischaemic stroke, and countries that achieve better survival for one type of stroke also tend to do well for the other. Again, the lowest case-fatality rates for haemorrhagic stroke were reported in Costa Rica (1.6%) with Mexico and Uruguay reporting the highest rate: 29.9% and 30.5%, respectively (Figure 7.6). Chile, with a fatality-rate of 21.3%, was below the average of 24% in OECD countries.

Since very few countries in the region can report this type of quality of care data, efforts can be put in place to develop their health system information infrastructure, along with capacity building to produce and use the information. In terms of policies, while the promotion of healthier lifestyles to reduce CVD burden is a priority, efforts can be also done to improve care for patients with CVD. For instance, ensuring primary care is financially accessible to everyone and the gap between recommended care and care provided in practice is closed, while improving accountability and transparency of primary care performance is key. In addition, establishing a national framework to improve quality of acute care of CVD and set national standards for the measurement and continuous quality improvement of emergency services and care provided in hospitals can help to address the complexity of treating CVD (OECD, 2015[4]).

Definition and comparability

The in-hospital case-fatality rate following AMI, ischemic and haemorrhagic stroke is defined as the number of people who die within 30 days of being admitted to hospital. This indicator is based on unique hospital admissions and restricted to mortality within the same hospital, differences in practices in discharging and transferring patients may influence the findings. Standardised rates adjust for differences in age (45+ years) and sex and facilitate more meaningful international comparisons.

Data presented here do not take account of patients that are transferred to other hospitals during their care or reflect patients who died out of hospitals within 30 days. Using a unique patient identifier patient data can be linked across hospitals and with death registers to generate more robust indicators for national monitoring and international comparison. Currently, very few countries in Latin America and the Caribbean can track patients in this way and hence this form of indicator is not shown here.

References

[4] OECD (2015), *Cardiovascular Disease and Diabetes: Policies for Better Health and Quality of Care*, OECD Health Policy Studies, OECD Publishing, Paris, *https://dx.doi.org/10.1787/9789264233010-en*.

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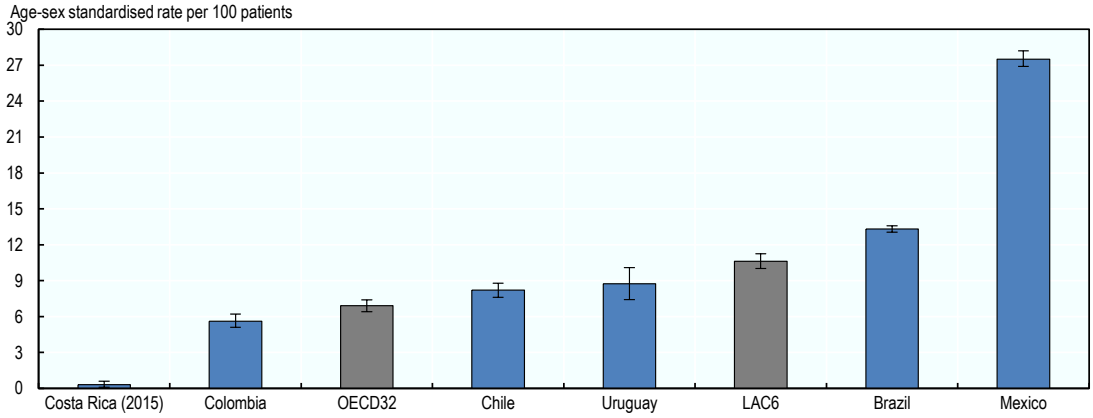
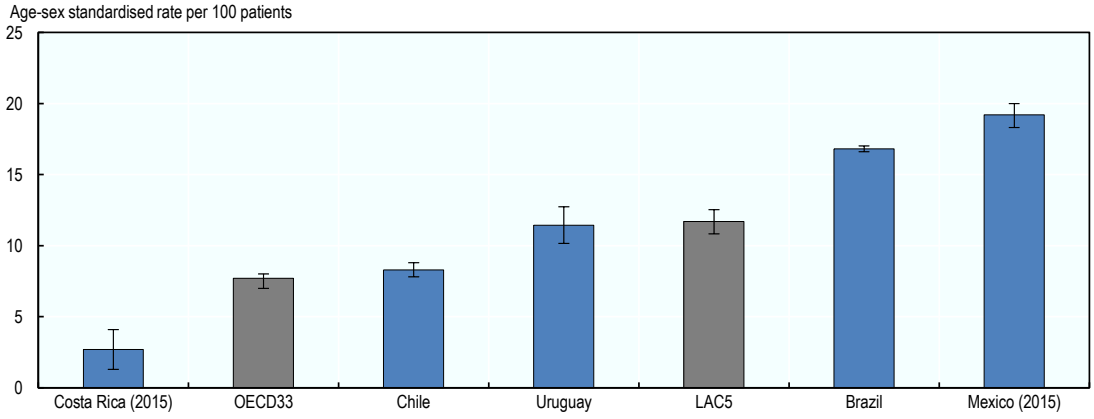
Figure 7.4. **In-hospital case-fatality rates within 30 days after admission for AMI, patients 45 years old and over, 2017**



Source: OECD Health Statistics 2019 and Ministries of Health of Brazil and Uruguay.

StatLink https://stat.link/myp8f4

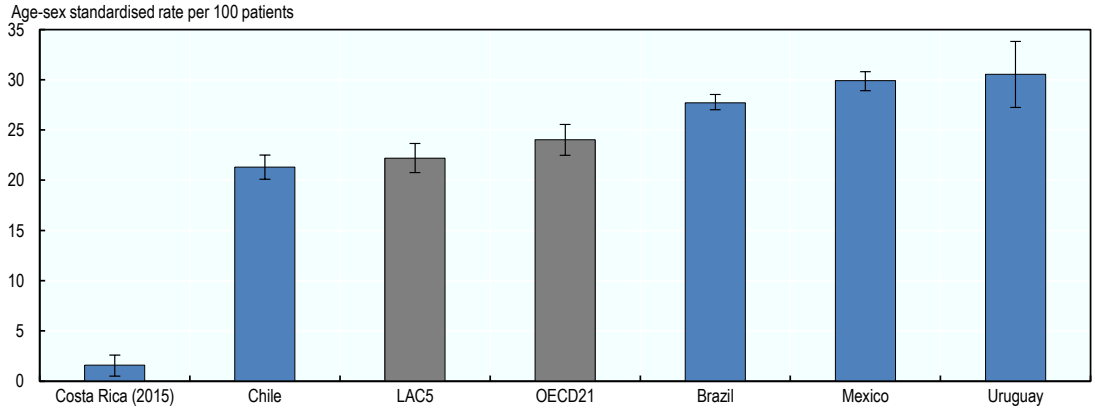
Figure 7.5. **In-hospital case-fatality rates within 30 days after admission for ischemic stroke, patients 45 years old and over, 2017 (or nearest year)**



Source: OECD Health Statistics 2019 and Ministries of Health of Brazil and Uruguay.

StatLink https://stat.link/y9m6zs

Figure 7.6. **In-hospital case-fatality rates within 30 days after admission for haemorrhagic stroke, patients 45 years old and over, 2017 (or nearest year)**



Source: Health Statistics 2019 and Ministries of Health of Brazil and Uruguay.

StatLink https://stat.link/mv91rj

The overall effectiveness of a country's health service in delivering cancer care can be assessed by international comparison of current levels and recent trends in population-based estimates of net survival for all patients diagnosed with each type of cancer. Global surveillance of cancer survival helps to identify and report avoidable inequalities, which can encourage policies and actions to reduce them (Coleman, 2014[5]).

Cancer is estimated to have been the cause of over 670 000 deaths in 2018 in the LAC region (Bray et al., 2018[6]), the second cause of death after cardiovascular diseases (see Chapter 3). Breast cancer in women accounts for over 50 000 deaths a year in LAC. Several factors increase the risk, such as age, the woman's reproductive history, post-menopausal oestrogen replacement therapy and alcohol use, while breastfeeding and physical activity have a protective effect.

Close to 30 000 deaths per year in LAC are caused by cervical cancer (Bray et al., 2018[6]). Approximately 95% of all cases are caused by sexual exposure to the human papilloma virus, HPV. Pap-smear and HPV DNA testing increases the probability of detecting premalignant lesions. Primary prevention through HPV vaccination programmes has been shown to reduce HPV infections and cervical intraepithelial neoplasia among girls and women, and ano-genital warts among girls, women, boys and men (Drolet et al., 2019[7]).

Colorectal cancer causes almost 65 000 deaths per year in LAC (Bray et al., 2018[6]). Risk factors include a diet high in fat, a sedentary lifestyle and family history. Colorectal cancer incidence and mortality rates vary with the national level of human development, and rapid increases have occurred in countries undergoing socio-economic transition, such as Brazil and Costa Rica. Secondary prevention of colorectal cancer by faecal occult blood test (e.g. guaiac test, faecal immunochemical test), sigmoidoscopy or colonoscopy is increasingly being recommended for adults in the age range 50-74 years, while new blood tests are still under research (Dekker et al., 2019[8]).

Among eight LAC countries with available data for breast cancer, age-standardised five-year net survival among women diagnosed during 2010-14 was the highest in Costa Rica (86.7%), the only LAC country over the OECD average of 84.8%. In Cuba, the corresponding probability that women with breast cancer survive for at least five years is 75.1% (Figure 7.7).

For cervical cancer, age-standardised five-year net survival in Cuba was among the highest in LAC (72.9%) and the lowest in Ecuador (52.0%) (Figure 7.8). The difference in survival is partially explained by differences in the effectiveness of population screening programmes and access to high-quality treatment.

For colon cancer, five-year net survival in Costa Rica was among the highest in LAC (60.1%), slightly below the OECD average of 62.1%. In Ecuador, five-year survival was among the lowest (47.8%) (Figure 7.9). For rectal cancer, age-standardised five-year net survival is below the OECD average of 60.6% in all eight LAC countries for which data are available (Figure 7.10). The highest five-year net survival was in Peru (54.8%), with the lowest in Chile (32.7%).

Definition and comparability

Five-year net survival refers to the cumulative probability of cancer patients surviving five years after diagnosis, after correction for the risk of death from other causes, which varies widely between countries, over time, by age and sex. Net survival is expressed as a percentage in the range 0-100%. The period approach is used to allow estimation of five-year survival where five years of follow-up are not available for all patients. Cancer survival estimates for all ages combined are age-standardised with the International Cancer Survival Standard weights. Data collection, quality control and analysis were performed centrally as part of the CONCORD programme for the global surveillance of cancer survival, led by the London School of Hygiene and Tropical Medicine (Allemani et al., 2018[9]). Where national data were not available, the CONCORD programme analysed the available data from regional registries, but in most countries the analyses were based on national coverage, facilitating international comparison.

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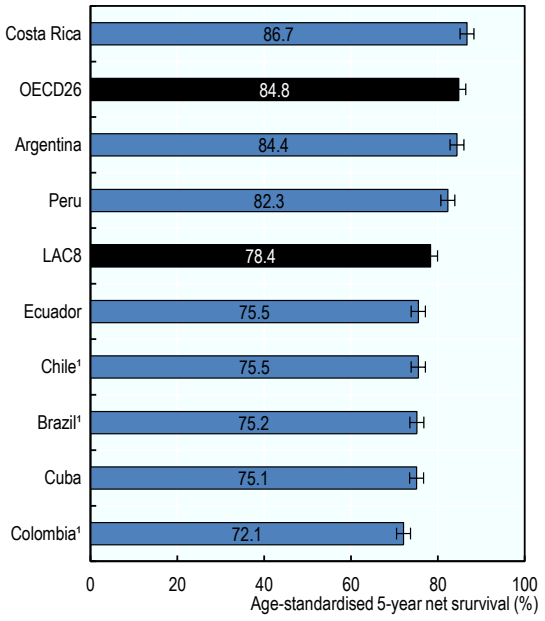
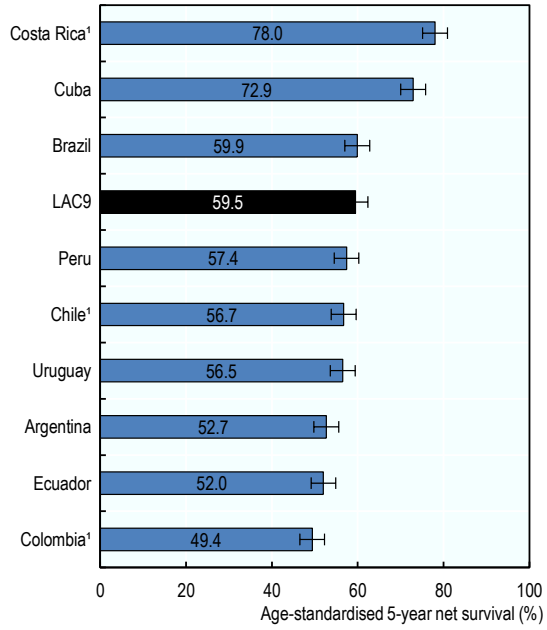
Figure 7.7. **Breast cancer 5-year net survival (%), adults (15-99 years), 2010-14**



Note: National coverage in Costa Rica and Cuba. 1. Survival estimates are considered less reliable: see Allemani et al. (2018[9]) for more information.
Source: CONCORD programme, London School of Hygiene and Tropical Medicine.

StatLink https://stat.link/u6wm4c

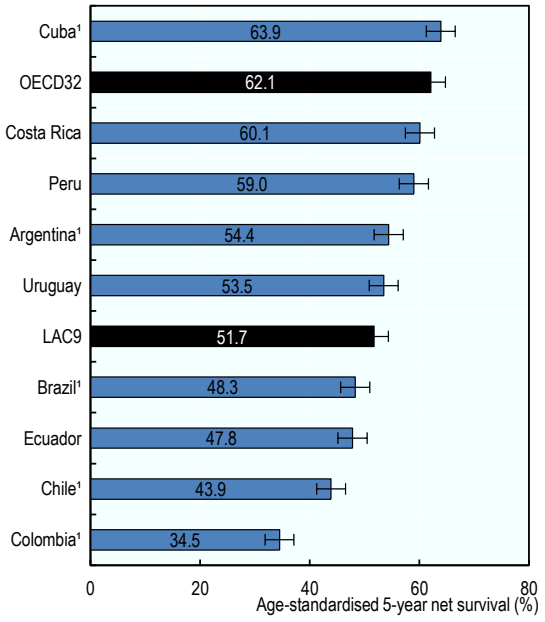
Figure 7.8. **Cervical cancer 5-year net survival (%), adults (15-99 years), 2010-14**



Note: National coverage in Costa Rica, Cuba and Uruguay. 1. Survival estimates are considered less reliable: see Allemani et al. (2018[9]) for more information.
Source: CONCORD programme, London School of Hygiene and Tropical Medicine.

StatLink https://stat.link/kwuxav

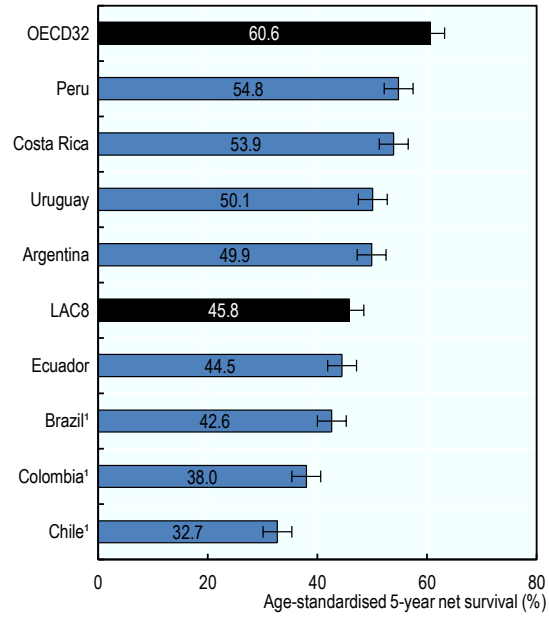
Figure 7.9. **Colon cancer 5-year net survival (%), adults (15-99 years), 2010-14**



Note: National coverage in Costa Rica, Cuba and Uruguay. 1. Survival estimates are considered less reliable: see Allemani et al. (2018[9]) for more information.
Source: CONCORD programme, London School of Hygiene and Tropical Medicine.

StatLink https://stat.link/jtekcf

Figure 7.10. **Rectum cancer 5-year net survival (%), adults (15-99 years), 2010-14**



Note: National coverage in Costa Rica, Cuba and Uruguay. 1. Survival estimates are considered less reliable: see Allemani et al. (2018[9]) for more information.
Source: CONCORD programme, London School of Hygiene and Tropical Medicine.

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Most health systems have developed a 'primary level' of care whose functions include health promotion and disease prevention, serve as the first point of contact for managing new health complaints and chronic conditions, and referring patients to secondary level and hospital-based services when appropriate. A key aim is to keep people well, by providing a consistent point of care over the longer-term, tailoring and coordinating care for those with multiple health care needs and supporting the patient in self-education and self-management. In this context, a high-performing primary care system, where accessible and high quality services are provided, can reduce acute deterioration in people living with asthma, chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), high blood pressure and diabetes, and reduce unnecessary admissions to hospital.

Asthma, COPD, (CHF), hypertension and diabetes are five widely prevalent long-term conditions in LAC. Both asthma and COPD limit the ability to breathe: asthma symptoms are usually intermittent and reversible with treatment, whilst COPD is a progressive disease that almost exclusively affects current or prior smokers. In 2016, asthma affected more than 339 million people worldwide and 420 000 people died from it (Global Asthma Network, 2018[10]). In 2015, around 174.5 million people had COPD and about 3.2 million people died of the disease (Soriano et al., 2017[11]). CHF is a serious medical condition in which the heart is unable to pump enough blood to meet the body's needs. CHF is often caused by other conditions, including hypertension and diabetes. Heart failure is estimated to affect over 26 million people worldwide resulting in more than 1 million hospitalisations annually in both the United States and Europe (Ponikowski et al., 2014[12]). High blood pressure or hypertension manifests by causing headaches, difficulty breathing or nosebleeds, and, if left untreated can lead to more serious cardiovascular problems. Worldwide, 1.13 billion people have hypertension and fewer than 1 in 5 people with hypertension have the problem under control (WHO, 2019[13]). Diabetes is another chronic condition that leads to raised levels of blood sugar that can have very seriously damaging effects. In 2014, an estimated 422 million people had diabetes, and in 2016, 1.6 million deaths were directly caused by the disease (WHO, 2018[14]).

The hospital admission rates for asthma and COPD are shown in Figure 7.11. Admission rates for asthma vary widely but all five LAC countries currently reporting this indicator are well below the OECD average. Mexico's rate is particularly low, at 8 admissions per 100 000 population. Hospital admission rates for COPD are also lower in LAC6 than the OECD average. Mexico again reports the lowest rate, with 77 admissions per 100 000 population.

Figure 7.12 shows admission rates for CHF and hypertension. It reveals that the reporting LAC countries have lower rates than OECD countries. Costa Rica reports the lowest rate of CHF related admissions (39) while Chile accounts for the lowest rate of hypertension admissions (18).

Figure 7.13 displays admission rates for diabetes. Contrary to the trend observed in the previous figures, Chile and Costa Rica both report admission rates closer to the OECD average, while Mexico's is significantly higher. Colombia stands well below the average of the six LAC countries.

As discussed in Chapter 2, while these figures suggest that these five LAC countries in general have been successful at minimising avoidable admissions, it is important to mention that access remains relatively unequal, and that a certain degree of underutilisation of hospital resources might be taking place. Finding an adequate balance to ensure the least wasteful level of hospital utilisation, while ensuring adequate access across the entire population should be the ultimate goal. Another factor to consider is that the non-communicable diseases burden is relatively lower in the LAC region than in the OECD due to its demographic and epidemiological profile. LAC countries must continue to invest in building primary care capacity in order to minimise waste and prepare for a heavier burden caused by these diseases as populations will likely continue ageing and growing in health-related complexity.

Definition and comparability

The indicators are defined as the number of hospital admissions with a primary diagnosis of asthma, COPD, CHF, hypertension and diabetes among people aged 15 years and over per 100 000 population. Rates are age-sex standardised to the 2010 OECD population aged 15 and over. Admissions resulting from a transfer from another hospital and where the patient dies during the admission are excluded from the calculation as these admissions are considered unlikely to be avoidable. Disease prevalence and availability of hospital care may explain some, not all, variations in cross-country rates. Differences in coding practices among countries may also affect the comparability of data. For example, the exclusion of "transfers" cannot be fully complied with by some countries. Differences in data coverage of the national hospital sector across countries may also influence indicator rates. Differences in coding practices across countries must be considered as a possible sources of bias, for instance, in the case of hypertension.

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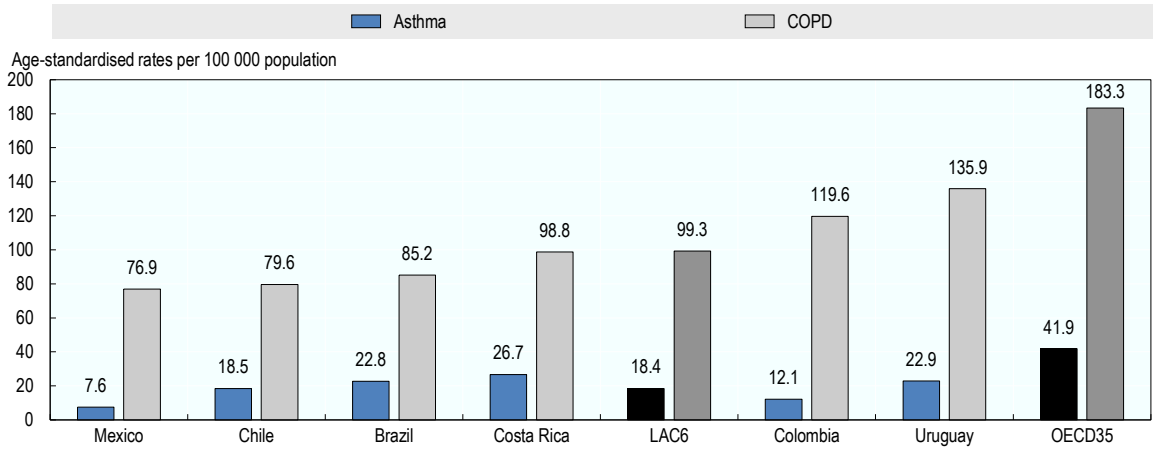
Figure 7.11. **Asthma and COPD hospital admissions in adults, 2017 (or nearest year)**



Source: OECD Health Statistics 2019 and Ministries of Health of Brazil and Uruguay.

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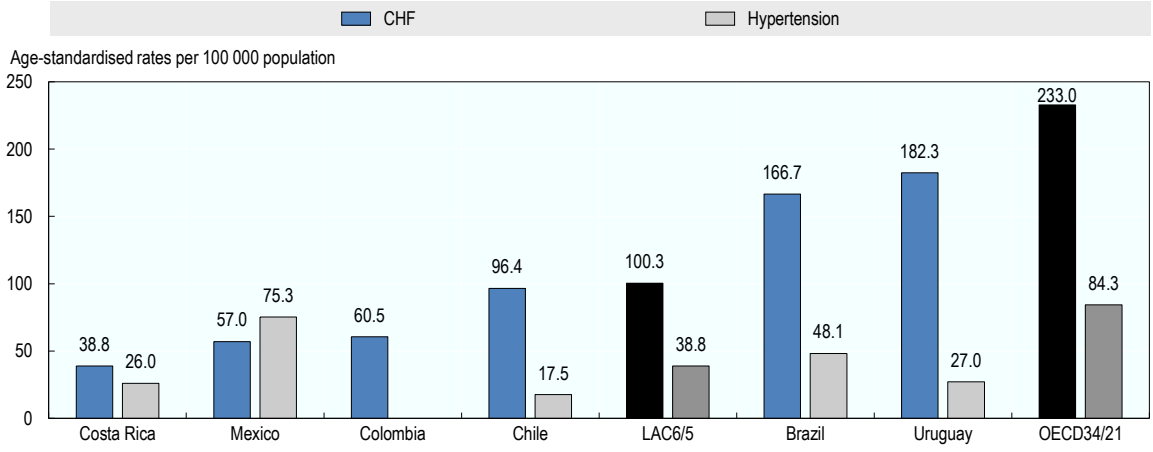
Figure 7.12. **Congestive heart failure (CHF) and hypertension hospital admissions in adults, 2017 (or nearest year)**



Source: OECD Health Statistics 2019 and Ministries of Health of Brazil and Uruguay.

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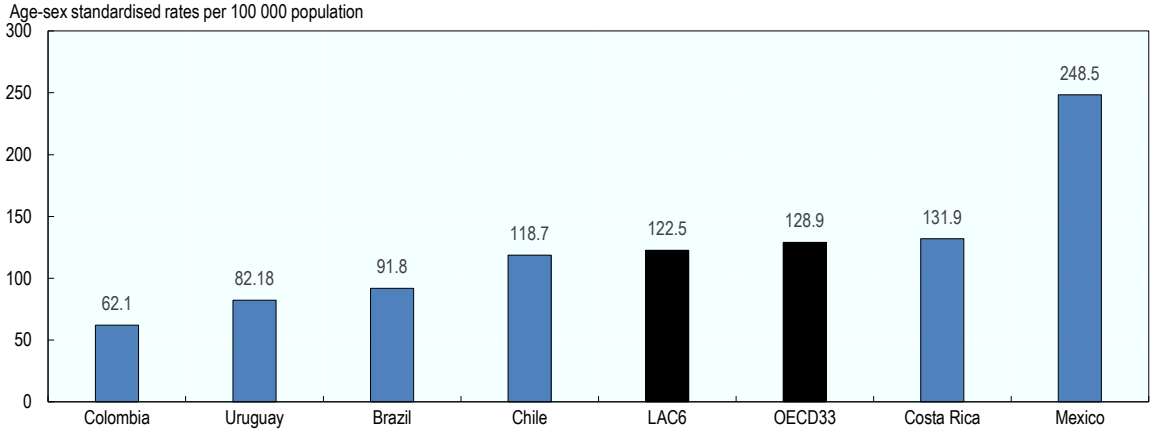
Figure 7.13. **Diabetes hospital admissions in adults, 2017 (or nearest year)**



Source: OECD Health Statistics 2019 and Ministries of Health of Brazil and Uruguay.

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Health at a Glance: Latin America and the Caribbean 2020

Health at a Glance: Latin America and the Caribbean 2020 presents key indicators on health and health systems in 33 Latin America and the Caribbean countries. This first Health at a Glance publication to cover the Latin America and the Caribbean region was prepared jointly by OECD and the World Bank. Analysis is based on the latest comparable data across almost 100 indicators including equity, health status, determinants of health, health care resources and utilisation, health expenditure and financing, and quality of care. The editorial discusses the main challenges for the region brought by the COVID-19 pandemic, such as managing the outbreak as well as mobilising adequate resources and using them efficiently to ensure an effective response to the epidemic. An initial chapter summarises the comparative performance of countries before the crisis, followed by a special chapter about addressing wasteful health spending that is either ineffective or does not lead to improvement in health outcomes so that to direct saved resources where they are urgently needed.

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