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Primary Health Care for Resilient Health Systems in Latin America



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Foreword

Seven Latin American countries, Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico and Peru (LAC-7) have made great efforts to strengthen their primary health care systems over the past decades. This contributed to some important health outcomes. Life expectancy at birth has increased in LAC-7 countries, reaching 78.5 years on average in 2019 (a gain of 3 years since 2000 compared to 3.6 years across other OECD countries). Infant mortality has been halved over the past two decades, going from 21 deaths per 1 000 live births in 2000 to 10.8 in 2020.

However, the COVID-19 pandemic inflected a large blow as shown by high rates of excess mortality in LAC-7 countries, that is, many more people died in the 2020 and 2021 in comparison with the average number of deaths in the five years before the pandemic. In Peru and Mexico, excess mortality were higher than in any other country in the world, twice to three times higher than the OECD average. The pandemic brought additional stress to health systems that already experienced important structural challenges, including a growing burden of chronic diseases, population ageing, high levels of social health inequality, under-investment and strong budgetary restrictions, and systemic inefficiencies.

Primary health care for resilient health systems in Latin America discusses how doubling down on primary health care is a cost-effective strategy to strengthening health systems, both to increase preparedness to future pandemics and to address the structural challenges in the region. A conceptual framework is used to analyse the performance of primary health care across LAC-7 and identify weaknesses along three core functions: health promotion and immunisation; providing regular exams and screening to identify diseases; and delivering routine care for underlying health conditions. For each of the three core functions, the report examines policies and actions that were implemented to absorb the impact of the COVID-19 pandemic, and to recover from it.

The COVID-19 pandemic revealed challenges in these LAC-7 health systems in maintaining routine care. Disruptions in routine vaccination, cancer screening and treatment show how primary health care systems were not resilient enough during the COVID-19 pandemic. Across LAC-7, for example, coverage of three doses of childhood vaccination for diphtheria, tetanus toxoid and pertussis (DTP3) at age one fell by 8% in 2020 compared to 2015-19. In Peru, a 50% drop in registered cancer cases was observed in 2020 when compared with the previous 4-year average, while in Chile treatment for cervical cancer was reduced by more than half between 2019 and 2020. These care disruptions are likely to impose high human and financial costs, including possible exacerbation of health complications and a worsening of the population health conditions which could reverse much of the gains in well-being and health achieved during the last two decades. To get ready for the future, LAC-7 countries will need to continue to expand primary health care and invest in the health workforce and the health information infrastructure. This is key for primary health care to be a strong first point of contact with the health system for everyone, and capable of delivering a wide range of critical health services.

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Acronyms and abbreviations

ACSC	Ambulatory care sensitive conditions
APS	Atención primaria de salud (Primary Health Care)
APS-I	Atención primaria de salude integral (Integrated Primary Health Care)
ART	Antiretroviral treatment
AUGE	Acceso universal de garantías explícitas (Universal access for explicit guaranties)
ATAPS	Asistente técnico de atención primaria (Primary care technical assistant)
BMI	Body Mass Index
CATS	Community Centres for Temporary Isolation
CAPS	Centro de Atención Primaria
CCSS	Caja Costarricense del Seguro Social (Costa Rican Social Insurance)
CENARE	National Rehabilitation Centre
CENATE	National Telemedicine Centre
CHF	Congestive heart failure
CHW	Community health worker
CIFRHS	Interinstitutional Commission on Training of Human Resources for Health (Mexico)
CIHI	Canadian Institute for Health Information (Canada)
COLOVE	Local Epidemiological Surveillance Commission
COPD	Chronic obstructive pulmonary disease
DIRESA	Dirección Regional de Salud (Regional Health Directorate)
DGIS	Dirección General de Información en Salud (Mexico)
DTP3	Diphtheria, tetanus toxoid and pertussis
EBAIS	Equipos Básicos de Atención Integral en Salud (Integral Primary Health Teams)
ECLAC	Economic Commission for Latin America and the Caribbean
EDUS	Expediente Digital Único en Salud (Single National Health Record in Costa Rica)
EHR	Electronic health record
EII	Integrated Intervention Teams
EOC	Emergency Operations Committee (Argentina)
EPS	Empresas Promotoras de Salud
EsSI	Smart Health Service in Peru
FHT	Family health team
FFS	Fee for service
FONASA	Fondo Nacional de Salud (National Health Fund)
FTE	Full time equivalent
GDB	Global Dietary Database
GDP	Gross Domestic Product
GHO	Global Health Observatory
GHE	Global Health Estimators
GP	General practitioner
HRH	Human resources for health
ICU	Intensive care unit
ICT	Information and Communication Technology
IHME	Institute of Health Metrics and Evaluation

IMSS	Instituto Mexicano del Seguro Social (Mexican Institute of Social Security)
INEI	National Statistics and Computing Institute
INS	National Institute of Health (Colombia)
INSABI	Instituto de Salud Para el Bienestar (Institute for Health and Well-being)
IPRESS	Instituciones prestadoras de servicios de salud (Health Provider Institutions)
IPS	Instituciones Prestadoras de Salud (Health Providing Companies)
ISAPRE	Instituciones de Salud Previsional (Institutions of Prospective Health)
ISSSTE	Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado (Institute for Social Security and Services for State Workers)
IIT	Integrated Intervention Teams
INFORHUS	Registro Nacional de Personal de la Salud (Peru)
LAC	Latin American and the Caribbean
LTCF	Long-term care facilities
MAITE	Territorial Model of Integrated Action
MARSS	Módulos de Atención Respiratoria des Seguro Social (Respiratory Care Modules)
MIAS	Modelo Integral de Atención en Salud (Integral Health Care Model)
MoE	Ministry of Education
MoH	Ministry of Health
MoHSP	Ministry of Health and Social Protection
NACI	National Advisory Committee on Immunisation (Canada)
NCDs	Non-communicable diseases
NCHT	National Council for Human Talent in Health (Colombia)
OECD	Organisation for Economic Co-operation and Development
OFERHUS	Federal Observatory of Human Resources in Health (Argentina)
OOP	Out-of-pocket
PAHO	Pan American Health Organization
PaRIS	OECD Patient-Reported Indicators Survey
P4P	Pay for Performance
PCP	Primary Care Practitioner
PEAS	Plan Esencial de Aseguramiento en Salud (Essential Health Coverage Scheme)
PHC	Primary health care
PMO	Programa Médico Obligatorio (Mandatory Medical Program)
PPE	Personal protective equipment
PPHC	Paediatric primary health care
PPP	Purchasing power parity
PREM	Patient-reported experience measure
REDES	Registros de Salud
REFEPS	La Red Federal de Registros de Profesionales de la Salud (Argentina)
ReTHUS	Registro Único Nacional del Talento Humano en Salud (Colombia)
SEREMIs	Secretaria Regional Ministerial (Regional Ministerial Secretary)
SHI	Social Health Insurance
SIARHE	Sistema de Información Administrativa de los Recursos Humanos de Enfermería (Mexico)
SINARHUS	Sistema Nacional de Recursos Humanos en Salud (Costa Rica)
SIS	Seguro Integral de Salud (Integral Health Insurance)
SNSS	Sistema Nacional de Servicios de Salud (National Health Surveillance System)
SNVS:	Argentina National Health Surveillance System
SPPS	Under-secretariat for Prevention and Health Promotion (Mexico)
SUS	Sistema Único de Saúde (Unique Health System)
SUGESE	Superintendencia General de Seguros (General Superintendence for Insurances)
SSS	Superintendencia de Servicios de Salud (Superintendence of Health Services)
TTT	Testing, tracking and contact tracing strategy
VDP	Vaccine-preventable diseases
WHO	World Health Organization
WISN	Workload Indicators of Staffing Need

Executive summary

Latin American countries were hard-hit by COVID-19, as shown by rates of excess mortality well above the OECD average. The pandemic has revealed weaknesses in health systems and brought additional stress to health systems in countries that already experienced important structural challenges. Doubling down on primary health care will help strengthen health systems, both to increase preparedness to future pandemics and to address the structural challenges in the region.

A framework for understanding the performance of primary health care system

High performing primary health care systems have a strong focus on prevention. When primary health care services are the main source of care, have appropriate information to assess patients' medical history, and are able to co-ordinate care effectively with other health services, they are well positioned to carry-out three core functions related to prevention:

1. primary prevention, especially providing health promotion and routine vaccination;
2. secondary prevention, including providing regular exams and screening to identify diseases; and
3. tertiary prevention, delivering routine care for underlying health conditions.

These three core functions are critical to preparedness and resilience during health crises. Many key linkages have been observed between core primary health care functions and the ability of countries to respond effectively to the COVID-19 pandemic, through for example the COVID-19 vaccination rollouts, the early detection of COVID-19 and the use of outreach services to manage mild COVID-19 in community and primary care settings.

Despite strong policy efforts, primary health care is not strong enough across LAC-7 countries

During the last decades, some LAC-7 countries have implemented policies to strengthen primary health care and place it at the centre of their health care strategy (such as Brazil, Chile and Costa Rica), but there is significant variation in their effective implementation.

Unlike most other OECD countries, patient registration and referral systems are not fully operationalised in LAC-7 countries. Opportunities to provide proactive care are often being lost because primary health care does not act as the first point of care in most LAC-7 countries and many patients directly seek care in outpatient specialised clinics and hospitals. Chile is the only country where registration with primary health care is mandatory, while in Argentina and Costa Rica patients have financial or quality incentives to do so.

In all LAC-7 countries, significant gaps in performance remain across each of the three core functions:

- On **primary prevention**, there is scope to strengthen health promotion and vaccination. Brazil, Mexico, Argentina and Peru have lower vaccination coverage rates for diphtheria, tetanus toxoid

and pertussis (DTP3) and for measles than other OECD countries, and there are marked socio-economic inequalities. In Brazil for example, vaccination coverage rates for measles and DTP3 is respectively 16% and 25% higher amongst high-income groups than low-income groups.

- When it comes to **secondary prevention**, more could be done to improve the depth and scope of cancer screening strategies. Breast cancer screening in most LAC-7 countries has not reached the targets set out in the countries' screening programmes. In Peru and Brazil, the breast cancer screening coverage rate is less than half the OECD average.
- Inappropriate management of chronic diseases suggests ineffective **tertiary prevention**. Hospitalisations for diabetes, avoidable through strong primary health care, are relatively higher in Mexico and Costa Rica than in other OECD countries. LAC-7 countries also underperform compared to other OECD countries with lower cancer survival rates and higher volume of antibiotics consumption.

Primary health care helped to mitigate the impact of COVID-19 on health in LAC-7, but access to care worsened

Although there are significant primary health care performance gaps in LAC-7 countries, several policies and actions have been implemented to absorb the impact of the COVID-19 pandemic and recover from it:

- Primary health care has contributed to the COVID-19 emergency response. Examples include primary prevention activities, efforts to create awareness on COVID-19 risks and tailor messages and information campaign on non-pharmaceutical interventions in Peru and Argentina. Successful COVID-19 vaccination programmes were implemented at primary health care level in Chile, Argentina, Peru, Costa Rica and Brazil.
- COVID-19 testing has been systematically carried out in primary health care in some LAC-7 countries. In Costa Rica, all EBAIS were responsible for the detection, notification and investigation of cases, and primary health care also implemented sampling campaigns in places with an epidemiological outbreak.
- Despite initial delays to adapt to the health emergency, all LAC-7 countries implemented comprehensive adaptations to primary health care to advise suspected or confirmed patients in home isolation or at primary health care units when more treatment was necessary. The Respiratory Care Modules (*Módulos de Atención Respiratoria del Seguro Social, MARSS*) in Mexico was responsible for treating suspected and confirmed cases of COVID-19.

However, many LAC-7 health systems faced challenges in maintaining routine care, showing how primary care systems were not resilient enough during the COVID-19 pandemic. Coverage for DTP3 vaccines amongst children aged one fell by 8% in 2020 compared to the 2015-19 average. For cancer screening, recent evidence shows worrying disruption of screening and early detection services. In Chile for example, cervical cancer screening coverage decreased by 20% in 2020 compared to 2015-19. These care disruptions will come at persistently elevated human and financial costs in the years to come, as they risk exacerbating health conditions.

Increasing preparedness and resilience of LAC-7 health systems to face future high impact shocks through stronger primary health care will be critical, if the well-being and health gains achieved during the last two decades are to be maintained. LAC-7 countries should make primary health care the front door of the health system for everyone to deliver crucial health services. A stronger gatekeeping function for primary health care, with systematic patient registration and referral system, will help making individuals more resilient against COVID-19 and potential future outbreaks of infectious diseases. But primary health care will need the right equipment, accountability mechanisms, guidelines and trainings to perform its core functions.

LAC-7 countries will also need to invest in health workforce planning given the existing workforce shortage. This requires strengthening efforts to examine needs for human resources with greater cross-sectoral collaboration, and expanding the role of some health professionals including nurses and community health workers. Lastly, investing in stronger health information infrastructure, through a consolidated system of electronic health records, is most needed to provide a good understanding of the health status and health needs of the population.

1 Key findings and recommendations

This chapter provides an overview of the publication *Primary health care for Resilient Health Systems in Latin America,* as well as summarising the main findings. The chapter starts by recalling the socio-economic context of LAC-7 countries which amplified the challenge of the COVID-19 pandemic. The second section shows that the performance of primary health care is still insufficient across LAC-7 countries with regards to primary, secondary, and tertiary prevention. The third section focuses on the role played by primary health care to blunt the impact of COVID-19 on health in LAC-7 countries, while showing that access to routine care was fundamentally impacted. The last section identifies policy levers to improve preparedness and resilience during health crises through stronger primary health care, notably by enhancing comprehensiveness of care, workforce investment and planning, and stronger health information infrastructure.

Key findings and recommendations for improving primary health care in LAC-7 countries

- The two regions with the highest death toll caused by the COVID-19 pandemic were Europe and Latin America and the Caribbean. Europe accounted for 37% of all confirmed cases and 30% of COVID-19 deaths worldwide, while LAC had 12% of confirmed cases, but 26% of confirmed deaths by the end of October 2022. Figures of excess mortality for some LAC countries suggest that the actual impact of the pandemic in the region was even larger and more deaths can be attributed to COVID-19. For example, excess mortality in Peru and Mexico in 2020-21 compared to the average of 2015-19 were 3.8 and 2.3 times higher than the OECD average, respectively.
- In LAC, the pandemic brought additional stress to health systems that already experienced important structural challenges, including a growing burden of chronic diseases, population ageing, high levels of social health inequalities, under-investment and strong budgetary restrictions, and systemic inefficiencies. Within this context, doubling down on primary health care will be a cost-effective strategy to strengthening health systems, both to increase preparedness to future pandemics and to address the structural challenges in the region.
- Primary health care (PHC) is the backbone of high-performing health systems. Seven Latin American countries, Argentina, Brazil, Chile, Colombia, Costa Rica, Peru and Mexico (LAC-7) have made great efforts strengthening their primary health care systems to improve the health and health care of their people over the past decades. Some important progresses can be attributed to the expansion of PHC in the region. Life expectancy at birth continues to rise in LAC-7 countries, reaching 78.5 years on average in 2019 (a gain of 3 years since 2000 compared to 3.6 years across other OECD countries). Infant mortality has also been halved over the past two decades, going from 21 deaths per 1 000 live births in 2000 to 10.8 deaths per 1 000 live births in 2020.
- Despite these efforts, health system performance still lags behind other OECD countries, and beyond the aftermath of COVID-19, severe structural gaps in development levels face LAC-7 countries. Population ageing is happening in all LAC-7 countries: in 2020, the population older than 65 years represented 10% on average. By 2080, this figure is expected to increase three-fold to reach 30%. The ageing of the population has already important impact on the health of the population. Chronic non-communicable diseases are now the most common causes of death, being responsible for over 80% of all deaths across LAC-7 countries. Cardiovascular diseases and cancers are the most prevalent non-communicable diseases in LAC-7 countries, accounting for 46% of all deaths in 2019. In addition, several risk factors for health raise some concerns in LAC-7 countries as they will go hand in hand with an increased prevalence of chronic non-communicable diseases. The share of the population being obese or overweight in all LAC-7 countries has increased by almost 20% between 2000 and 2020. The prevalence of overweight and obesity is now larger than across other OECD countries.
- In many aspects, PHC has contributed to the COVID-19 emergency response in LAC-7 countries by carrying out some public health activities (such as creating awareness on COVID-19 risks and prevention of infection in Costa Rica, Peru and Argentina; or to proactively identify and engage with high-risk individuals in Argentina, Costa Rica and Mexico), performing some form of COVID-19 testing (Costa Rica), using existing primary health care facilities to meet COVID-19 health needs (Costa Rica, Chile and Brazil), making quick and effective referral to hospital (Mexico) or using telehealth services (Colombia and Brazil).

- However, the COVID-19 pandemic has revealed that many LAC-7 health systems faced challenges in maintaining routine care. Disruptions in primary, secondary and tertiary prevention in LAC-7 countries show how primary health care systems were not resilient enough during the COVID-19 pandemic. Coverage for DTP3 vaccines amongst children aged one have for example fallen by 8% in 2020 compared to the average between 2015 and 2019 (89%). Largest reductions are found in Argentina, Mexico and Brazil.
- Increasing preparedness and resilience of LAC-7 health systems to face future high impact shocks will be critical not to reverse many of the well-being and health gains achieved during the last two decades.

Improving population health and reducing health inequalities through stronger primary health care will help increase preparedness and resilience

- Making primary health care the front door of the health system to deliver a range of crucial health services, including vaccination, screening, early detection of disease and patient-centred management will improve population health, and reduce social health inequalities. It will help making individuals more resilient against COVID-19 and potential future outbreaks of infectious diseases, reducing both the inequities in outcomes and the demand for acute services during a crisis.
- This will be vital given current gaps in primary health care performance and the marked social health gradients. Vaccination coverage, for example, varies across socio-economic status and residence status: measles and DTP3 vaccination is 16% and 25% higher amongst high income groups than low-income groups in Brazil. In addition, coverage of breast cancer screening in LAC-7 countries is well below the average across other OECD countries: in Peru and Brazil, the coverage rates is more than half the OECD average. Another marker of lower primary health care quality is antibiotics consumption, which is above the OECD average in Brazil, Costa Rica or Chile.
- PHC systems in LAC-7 countries lack the capacity to carry-out its core functions. The lack of availability of medical technology is for example a major problem limiting early detection of diseases and contributing to late diagnosis in some LAC-7 countries. Colombia and Chile have respectively 12 and 32 units per million females aged 50-69, well below the LAC-7 average of 76 units and the OECD average of 181 units. In addition, limited training in guidelines and care standards, and a lack of accountability system, also adversely impact the effective implementation of early detection programmes.
- Investing in the right equipment, accountability mechanisms, guidelines and trainings will be key tools to improve the capacity of primary health care systems to deliver its key functions prior a pandemic occurs, but also during a health emergency.

Greater workforce investment and planning is needed in primary health care to face existing shortages

- There are also workforce shortages in LAC-7 countries. The average density of physicians improved from around 1.3 to 2.7 per 1 000 inhabitants between 2000 and 2020 across the LAC-7 countries, though it remained below the OECD average of 3.6 per 1 000 inhabitants in 2020. The density of general medical practitioners averaged at around 0.8 per 1 000 inhabitants in 2020 across the LAC-7 countries, suggesting a modest improvement from 0.5 per 1 000 inhabitants in 2010. However, the average density of general medical practitioners across the LAC-7 countries in 2020 also lagged the OECD average of 1.2 per 1 000 inhabitants in the same year. In this period, Colombia and Chile experienced the greatest increases in the number of general medical practitioners among the LAC-7 countries. Further, the average density of nurses and midwives across the LAC-7 countries consistently lagged the OECD average over the last two decades.

- The OECD analysis suggests that, in 2020, the shortages of physicians, nurses, and midwives are estimated to average at around 1.11 per 1 000 inhabitants across LAC-7 countries. Without robust policy action, the gaps between the demand for and supply of physicians, nurses and midwives are projected to persist in all LAC-7 countries by 2030, with the estimated shortages for these health workers averaging at around 1.03 per 1 000 inhabitants across all LAC-7 countries by 2030.
- LAC-7 countries need to strengthen efforts to examine human resources health needs by supporting local communities which may lack the technical capacity and financial resources to assess their own needs. Greater collaboration and co-ordination between various stakeholders across multiple sectors is needed, for example between the Ministries of Education and Health. There is also a need to improve methodologies that examine factors determining the demand for health workers, by considering epidemiological or economic factors.
- Expanding the role of existing health professionals, including nurses and community health workers, is a key option to cope with health workforce shortage in LAC-7 countries. This will require implementing education and training programmes to support the development of new tasks for new roles.

Investing in stronger health information infrastructures is a must to carry-out health monitoring and disease surveillance, and to assess health workforce needs

- Investing in a consolidated EHR at national level will help better engage in health monitoring and disease surveillance. This is critical to provide a good understanding of the health status and health needs of the population, and to perform epidemiological surveillance during a public health crisis.
- In Costa Rica, the registration of COVID-19 cases was carried out through the unique Digital Health Record (EDUS), which links the health centres network of the Caja Costarricense del Seguro Social (CCSS). All COVID-19 laboratory results, regardless of the place or technique with which they are processed, are available in real time. By contrast, in Mexico, the fragmented public health sector had 65 different electronic health record (EHR) systems which varies in content, information sources, and human resource capacity to manage them, limiting health monitoring and management of health crisis.
- Strengthening health workforce data infrastructure and information systems will also be key to improve the coverage and quality of available data. This will help to benchmark needs for human resources for health over time, geographic areas, and type of providers, to guide decision making. In many LAC-7 countries, administrative data on health workers suffer from inconsistencies in the definition of key indicators, prolonged delays in data entry and updates, lack of comparable data over time and across geographic locations. Further, data on the availability of primary health care teams over time is not publicly accessible in most LAC-7 countries except in Brazil, Peru and Costa Rica.

Under-resourced and fragmented health care systems amplified the challenge of COVID-19 in LAC-7 countries

LAC-7 countries received the COVID-19 pandemic with a pending agenda of socio-economic and health system challenges

Six out of seven LAC-7 countries are ranked as upper-middle income countries in the UNDP's Human Development Index, except Chile, which is classified as a high-income country. Gross domestic product in all LAC-7 countries grew between 2000 and 2020, allowing to make steady social and economic progress. However, GDP per capita was estimated to be USD PPP 18 575 in 2020 (using current prices) on average across LAC-7 countries, more than half the average across OECD countries (at USD PPP 44 416). There are large disparities across the LAC-7 region, with Peru having the lowest GDP per capita at USD PPP 12 577 and Chile having the highest at USD PPP 24 588. Economic growth has allowed the LAC-7 region to significantly reduce the poverty rates from 42.8% of the population in 2000 to 26.3% in 2020, a much higher reduction than among all LAC countries. This important decrease in poverty rates was led by Chile (from 42.8% to 14.2%), Brazil (from 38.4% to 18.4%), and Costa Rica (27.7% to 19.4%).

Despite significant reduction in poverty rates over the past two decades, large socio-economic inequalities persist in LAC-7 countries. Despite significant reduction from 2000 to 2020, the GINI index of income inequality is consistently higher than 40 points (the threshold of high-income inequality), and above the OECD average of 34 points and the LAC-26 average. The COVID-19 pandemic has deepened the deprivation level of already disadvantaged population, with income inequality projected to have increased by 3% in Argentina, Brazil and Mexico between 2019 and 2020 (OECD, 2021[1]),.

In addition to socio-economic challenges, the more limited resources in LAC-7 countries amplified the challenge of fighting the COVID-19 pandemic. Before the pandemic, LAC-7 countries spent almost three times less on health than other OECD countries: in 2019, average per capital health spending in LAC-7 countries (when adjusted for differences in purchasing power) was estimated to be at USD 1 514, while in the OECD it was estimated to be at USD 4 237. There are 2.2 hospital beds per 1 000 habitants, 50% lower the average of 4.3 hospital beds per 1 000 population across OECD countries. In terms of intensive care bed units, which are crucial for the management of patients with severe respiratory disease, the average of intensive care units (ICU) beds in LAC-7 countries was 9.1 per 100 000 population, lower than the average of 22 OECD countries of 12 ICU beds per 100 000 population.

Despite notable improvements over the last two decades, many LAC-7 countries continue to lag the OECD average in terms of the availability of health workers

Over the last two decades, the density of physicians, general medical practitioners, nurses, and midwives improved significantly in many LAC-7 countries. Between 2000 and 2020, the average density of physicians increased from around 1.3 to 2.7 per 1 000 inhabitants, with Colombia and Chile experiencing the largest expansion in the number of physicians. In this period, all LAC-7 countries saw improvements in the density of general medical practitioners, with Chile and Brazil experiencing the most rapid advancements. Across the LAC-7 countries, Colombia had the highest density of general medical practitioners (1.8 per 1 000 inhabitants) in 2020, and Brazil recorded the lowest density of general medical practitioners (0.1 per 1 000 inhabitants). In most LAC-7 countries, the density of nurses and midwives remained relatively stable from 2000 to 2020, though Peru and Brazil experienced a notable increase in the density of nurses and midwives in this period. Publicly accessible data on the availability of PHC teams remains relatively limited across LAC-7 countries but available data suggests an increase in the number of PHC teams. For instance, the number of PHC teams grew nearly 55 percentage points in Brazil between 2008 and 2019. Despite these improvements, the density of physicians, general practitioners, nurses, and midwives remained below the OECD average in 2020 in most LAC-7 countries. Specifically, all

LAC-7 countries except Argentina lagged the OECD average in terms of the density of physicians, and only in Colombia and Chile, the density of general practitioners was above the OECD average in 2020. Similarly, in 2020, all LAC-7 countries except Chile lagged the OECD average in terms of the density of nurses and midwives.

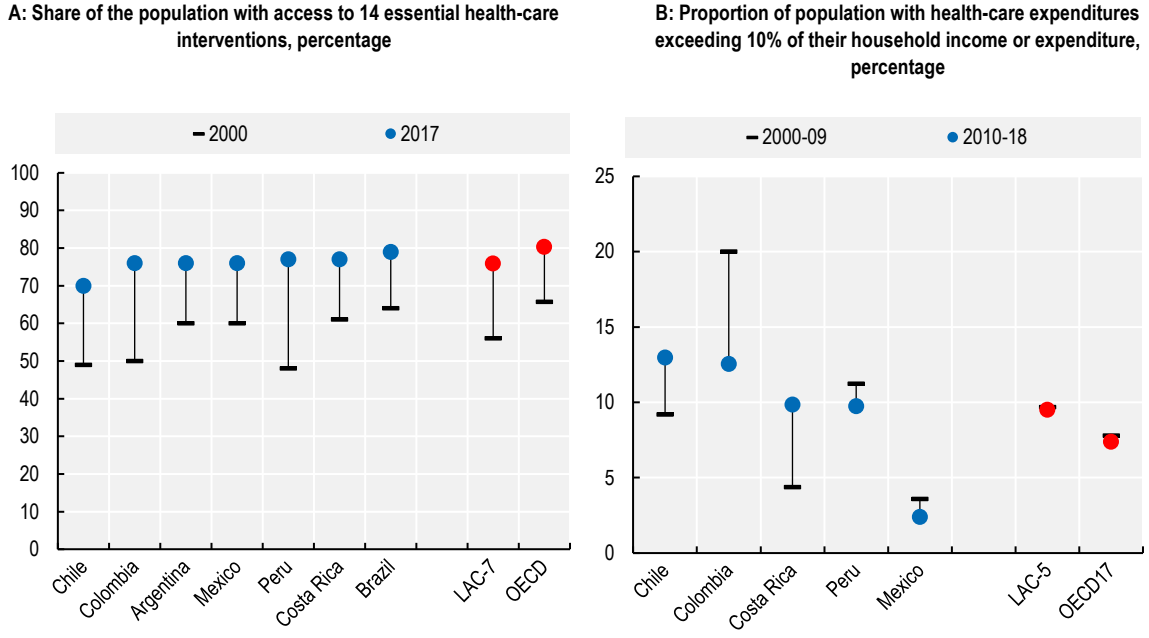
Fragmented health systems lead to coverage gaps and service inequalities in LAC-7 countries

Among LAC-7 countries, Brazil is the only country having a National Health System, with a universal health insurance scheme that covers all health conditions and population groups. Chile, Colombia and Costa Rica follow a Social Health Insurance model, managed by both public and private entities and with differentiated insurance schemes according to contributory status, income, geographic location or other factors. Argentina, Mexico and Peru have a hybrid model, with elements of both National Health Systems and Social Health Insurance systems. The different insurance packages present in LAC-7 countries (except Brazil) are typically based on a national universal minimum package that insurance entities must provide to all the population.

While insurance is managed at the national or subnational level depending on the scope of the insurance entities in place, care delivery systems have, for most countries, decentralised governance into regions or municipalities. Costa Rica and recently Mexico are the exception with a centralised governance structure, where the Ministry of Health is directly accountable for local delivery networks. Delivery networks are composed of both private and public providers. Private health insurance has a strong presence in the region, reaching up to 20% of the population in some LAC-7 countries.

In health systems with various vertically integrated sub-systems, there are no incentives to share information, guidelines or to co-ordinate care horizontally. Fragmentation leads to coverage gaps and service inequalities, as insurers and providers replicate functions in parallel subsystems according to the population contributory status, thus introducing structural inequalities. Moreover, these systems are associated with higher proportions of the population without insurance coverage. International figures measuring people's access to 14 essential health care services suggest important gaps in health care coverage in all LAC-7 countries. While health care coverage has grown between 2000 and 2017, only 76% of the population have access to essential health care services on average across LAC-7 countries (Figure 1.1).

Figure 1.1. There are gaps in health care coverage in LAC-7 countries



Note: Data taken from UN DESA Global SDG Indicator Database. In Panel A, data refer to the service coverage index as measured by the UHC (composite of 14 essential interventions). In Panel B, OECD 17 comprises Canada, Chile, Colombia, Hungary, Ireland, Israel, Italy, Japan, Korea, Lithuania, Mexico, Poland, the Slovak Republic, Slovenia, Türkiye, the United Kingdom, and the United States. In both panels, the LAC averages are unweighted averages.
Source: Adapted from OECD (2021[1]), *How's Life in Latin America?: Measuring Well-being for Policy Making*, https://doi.org/10.1787/2965f4fe-en.

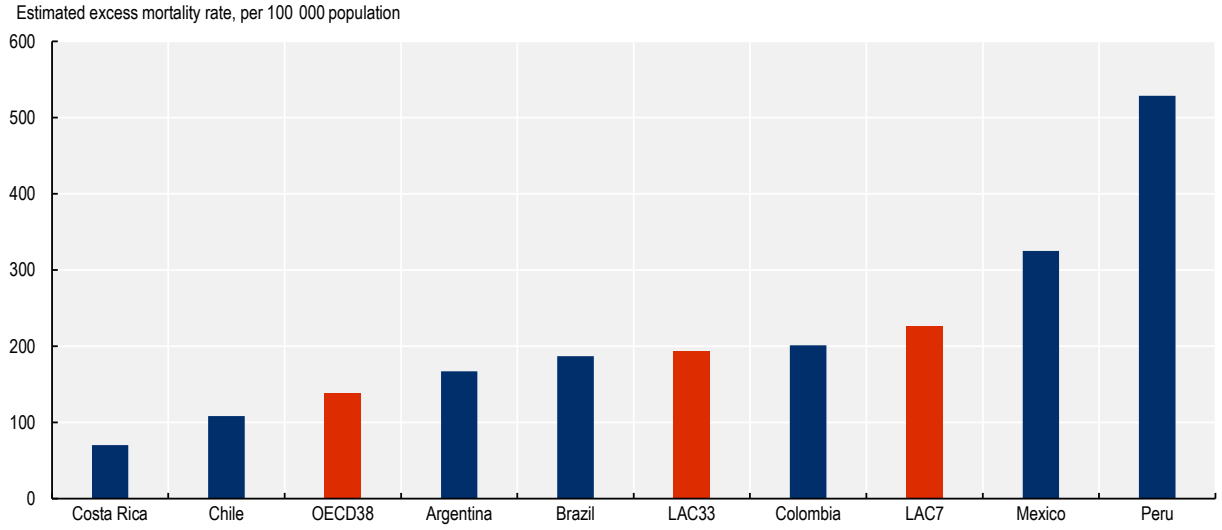
The share of health spending paid out-of-pocket is high in LAC-7 countries

Financial barriers for accessing health services are high in LAC-7 countries. Amongst LAC-7 countries, out-of-pocket spending represents on average 28.1% of total health expenditure, a much higher average than on average across other OECD countries (at 18.1% in 2020). Mexico stands out, with a 42.1% of out-of-pocket expenditure, meaning that patients must finance a significant part of health care good and services themselves. As a result, financial hardship due to health care costs is an issue amongst most LAC-7 countries with available data. On average, 9% of households incurred out-of-pocket health care expenditures exceeding 10% of their income over the 2010-18 period, a share that has remained broadly stable relative to the previous decade. That share has been falling in Colombia but rose by around 3 percentage points or more in Chile and Costa Rica over the same period. In Brazil, 25% of Brazilian households reported that health care costs represented more than a tenth of total household consumption/income and 3.5% reported that it represented a quarter of total consumption/income in 2008. These suggest failure of current arrangements to provide effective coverage in LAC-7 countries.

LAC-7 countries were some of the hit hardest by the COVID-19 pandemic

Latin America and the Caribbean has been one of the most affected regions of the world in terms of COVID-19 mortality (OECD, 2021[2]). When observing estimated rates of excess mortality as an indicator of the direct health impact of the pandemic in the LAC-7 countries, Peru and Mexico stand above the LAC-7, LAC-33[1] and OECD-38 averages, highlighting the high death toll that COVID-19 has had in the region. In Peru, excess mortality were higher than in any other country in the world (at more than 500 additional deaths per 100 000 population). On the other hand, Costa Rica and Chile have been less severely impacted by the pandemic than other OECD countries on average (see Figure 1.2).

Figure 1.2. Estimated excess mortality rates, LAC-7 countries and OECD averages, 2020-21



Source: Wang et al. (2022[3]), "Estimating excess mortality due to the COVID-19 pandemic: a systematic analysis of COVID-19-related mortality", https://doi.org/10.1016/S0140-6736(21)02796-3.

As in other OECD countries, vulnerable population – poorer and more disadvantaged people – have borne a disproportionate burden from the COVID-19 pandemic. In Brazil, Mexico and Colombia, people living in the most deprived areas have for example between 20% and 70% higher risks of dying from COVID-19. In Chile (Santiago), municipalities with low socio-economic status were also hit the hardest in term COVID-19 deaths (Mena et al., 2021[4]). There are many interrelated causes for this social gradient: increased exposure through working and living conditions, inequities in health conditions and risk factors, such as diabetes or obesity, and barriers to access and use of health care. Indeed, as depicted by Figure 1.1 between 30% and 20% of the population did not have access to essential health care interventions in LAC-7 countries (OECD, 2021[1]), *How's*, exacerbating the pandemic's risks.

Despite strong policy efforts in recent decades, performance of primary health care is still insufficient across LAC-7 countries

In the OECD, high performing primary health care systems focus on primary, secondary and tertiary prevention, which increase preparedness and resilience to health crisis

When primary health care services are the primary source of care to addresses the majority of patient needs, have appropriate information to assess a patient's medical history, and are able to co-ordinate care effectively with other health services, they are well positioned to carry-out three core functions. These functions are:

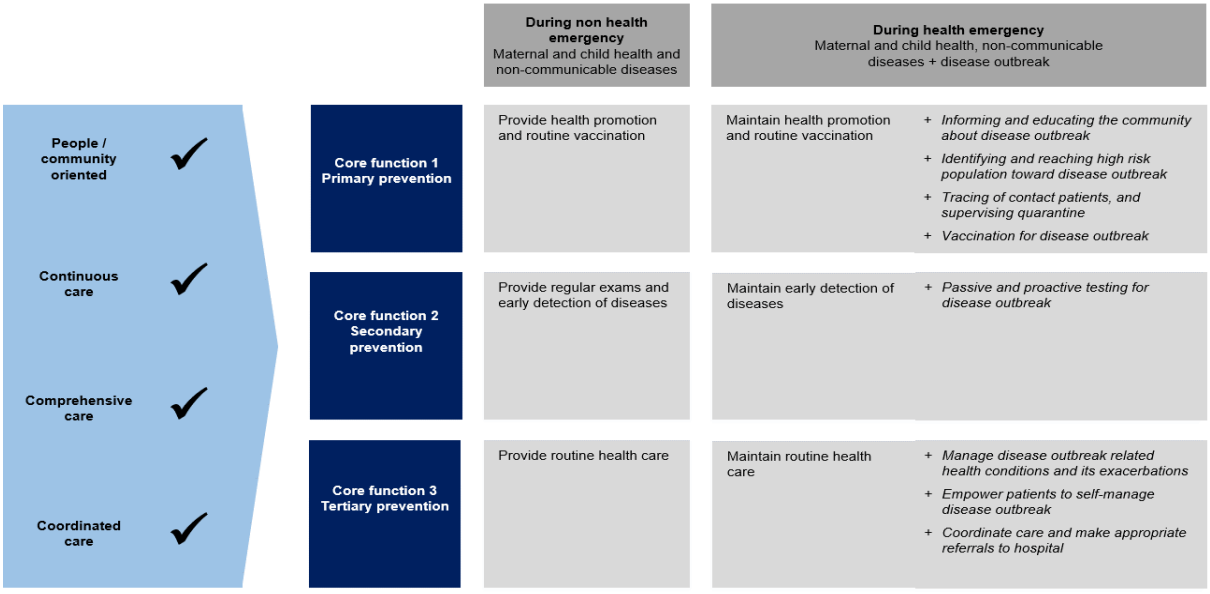
1. primary prevention, especially providing health promotion and vaccination;
2. secondary prevention, including providing regular exams and screening to identify diseases; and
3. tertiary prevention, delivering routine care for underlying health conditions.

These three core functions are critical to primary health care preparedness and resilience during crises, including health emergencies. Evidence confirms that most burdens related to health emergencies fall within the mandate of primary health care roles and functions (Burn et al., 2020[5]; Matenge et al., 2021[6]). This was the case in Australia and New Zealand, where general practices undertook a range of critical

roles in providing responsive health care during several disasters that took place between 2009 and 2016. These roles included providing primary health care in alternative health care facilities, adapting existing health facilities for the purposes of providing disaster health care, and maintaining care continuity for management of chronic diseases.

As such, strong primary health care is key to health systems absorbing and recovering from shocks. Indeed, there are many key linkages between core primary health care functions and the ability of countries to respond effectively to the COVID-19 pandemic or any other health emergencies (Figure 1.3). For example, primary health care has played an important part in COVID-19 vaccination roll outs, informing patients and the community about COVID-19, contributing to early detection of COVID-19 and using outreach services to manage mild COVID-19 in community and primary care settings. Primary health care systems have also helped manage the burden of COVID-19, in co-operation with hospitals, to bring efficiency gains in containing viral spread and managing patients, while helping to avoid overcrowded hospitals.

Figure 1.3. Framework linking key primary health care functions ordinarily and during a health emergency



Strong PHC which focuses on these three core functions improves the overall health of the population prior to health emergency, which enhances preparedness to deal with emerging pathogens or health shocks such as the COVID-19 pandemic. Embedding these three core functions into PHC also increases the resilience of health systems, by responding to both diseases outbreak and non-disease outbreak needs during a crises.

The importance of strengthening primary health care is highlighted in the Action plan on health and resilience in the Americas, adopted by the heads of State and Government on 9 June 2022 (Six Summit of the Americas, 2022[7]). One key objective of the Action Plan includes, among others, strengthening the resilience of health systems by expanding access to comprehensive people and community centred health services and access to primary health care.

Before the COVID-19 pandemic, primary health care systems in LAC-7 countries struggled to deliver its three core functions

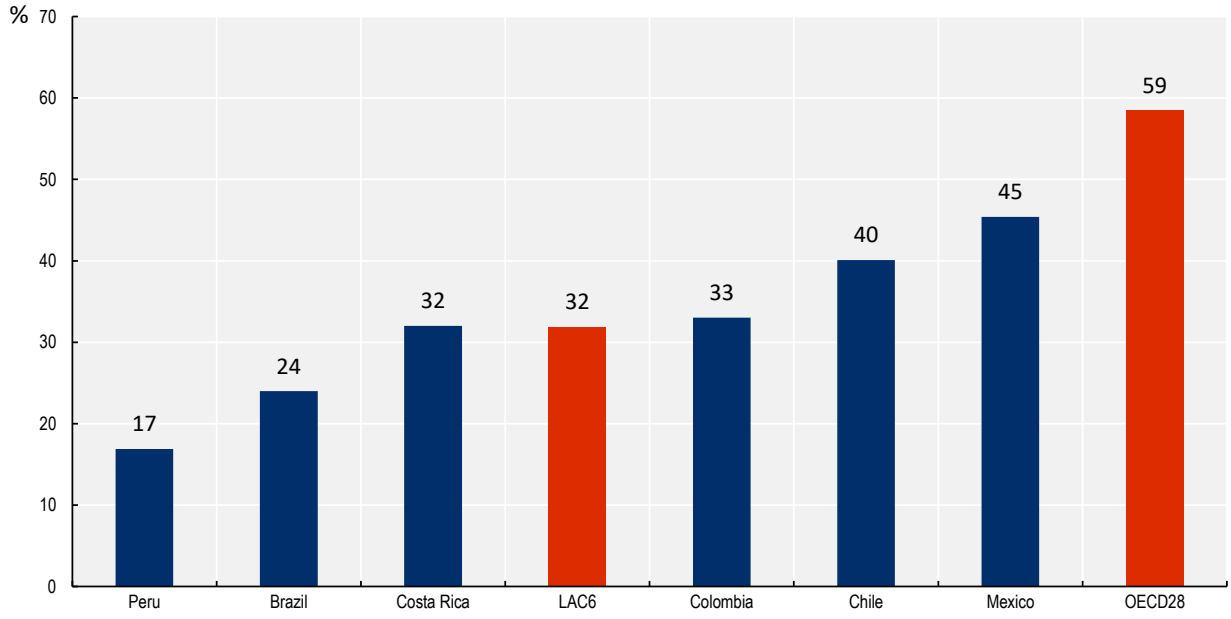
A number of worrying indicators suggest an urgent need to strengthen key functions of primary health care in LAC-7 countries, as measured by primary, secondary, and tertiary prevention.

On primary prevention, and despite increasing risk factors to health, there is scope to strengthen health promotion and prevention into primary health care. Available evidence suggests low levels of engagement from primary care physicians with patients' lifestyles in some LAC-7 countries (Guanais et al., 2018[8]). Counselling on healthy lifestyle is rarely implemented in the delivery of PHC services in Brazil, Colombia and Mexico. Only 24.3% of respondents in Brazil, 23.6% in Colombia, and 40.9% in Mexico indicated that the primary care physician discussed issues related to healthy lifestyles, such as diet, physical activity, and stress factors. On immunisation programme, while LAC-7 countries have well established and effective vaccination programmes which allow to achieve higher coverage rates than across other OECD countries, there are marked socio-economic inequalities. International figures show that Costa Rica and Chile reached higher vaccination rates than the OECD average for DTP3 and measles for children aged one (around 95%). Similarly, Colombia has been able to achieve a high coverage of immunisation against measles and a DTP3 vaccination rate that is close to the OECD average. However, Mexico is yet to achieve a high vaccination rate against measles (at 73% in 2019), while the same is true for Brazil on DTP3 immunisation coverage (at 70% in 2019). In Brazil, Colombia and Peru, vaccination coverage for measles and DTP3 is consistently higher amongst people with higher income. In Brazil, vaccination coverage rates for Measles and DTP3, respectively, is 16% and 25% higher amongst high income groups than low-income groups.

On secondary prevention, more could be done to improve depth and scope of screening strategies. The range of diseases included in early detection programmes varies across LAC-7 countries, but cancers (breast, cervical, colorectal), diabetes, hypertension, and antenatal and childcare are common. Even though programmes for early detection are comprehensive and aligned with WHO recommendations, implementation challenges result in suboptimal coverage rates in the region. Breast cancer screening in most LAC-7 countries has not reached the levels set out in the countries' screening programmes. However, important improvements have been made in the last decade (OECD, 2021[9]; PAHO/WHO, 2015[10]). In 2019, coverage rates for breast cancer range from 24% of all females aged 50 to 69 years old in Brazil to 45% in Mexico, well below the average across other OECD countries at 59% (Figure 1.4). The same is true for cervical cancer screening coverage rates which reach on average 42% of females aged 20-69 years in the LAC-7 countries, below the 58% average seen for OECD countries. There are also clear shortcomings when it comes to screening for diabetes and hypertension in some of the LAC-7 countries. Reported coverage rates for hypertension and diabetes screening range between 13% in Mexico to 84.3% and 71.1% in Argentina, respectively. This is relatively low given the increasing risk factors to health and the rising burden of chronic conditions in these countries.

Figure 1.4. Breast cancer screening coverage, 2019

Percentage females aged 50-69, screened on previous 2 years



Note: Data for Colombia is from 2017. Peru is calculated over females aged 40 to 59-year-old.
Source: Costa Rica and Brazil from OECD (2021[9]), *Primary Health Care in Brazil,* https://doi.org/10.1787/120e170e-en; Mexico, Chile, OECD from OECD.stat; Colombia from INC (2019[11]), Boletin de Servicios Oncologicos; Peru from Hernández-Vásquez and Chacón-Torrico (2019[12]), "Use of mammography in Peruvian women: An analysis of the 2018 Demographic and Health Survey", https://doi.org/10.5867/medwave.2019.09.7701.

With regards to tertiary prevention, inappropriate management of chronic diseases is highlighted by available data on hospitalisation for chronic conditions, a key performance indicator to measure quality of chronic disease management at primary health care level. PHC treatment for diabetes patients appears to be particularly underperforming in Mexico and Costa Rica. High hospitalisation rates for chronic conditions show that recommended care is not always provided for people with these conditions. Cancer care is another field in which LAC-7 countries are underperforming compared to other OECD countries. Colon cancer survival rates are systematically lower in LAC-7 countries (regional average of 50%) than across other OECD countries (average of 61%). On a more positive note, LAC-7 countries have already proven their ability to leverage PHC potential to improve care for conditions such as HIV/AIDS. Although still far from UNAIDS targets, Brazil, Chile and Peru have high antiretroviral treatment coverage rates, with PHC playing a key role in ensuring patients attend follow-up sessions, are well advised to self-manage the disease and are given timely referrals to specialised care when needed. Such positive experience could guide LAC-7 countries to make sure PHC is equipped with the right tools, training and incentives to appropriately manage chronic non-communicable diseases in primary and community care settings.

Opportunities to provide proactive care are often being lost because primary health care do not act as the first point of care in most LAC-7 countries

Aiming at universal health, policies have been implemented to improve access to care, coverage, fair financing and quality. Some LAC-7 countries have implemented policies to strengthen primary health care and place it at the centre of their health care strategy (such as Brazil, Chile and Costa Rica), but there is significant variation in the effective implementation of these policies between and within countries. While in most other OECD health systems primary health care covers the entire population, the quality, range of services, and coverage of PHC in LAC-7 countries still has room for improvement.

Primary health care is governed by Municipalities in all decentralised countries, except for Colombia where it is managed at national level by the Ministry of Health. In countries with centralised governance (Costa Rica, and Mexico), primary health care networks respond directly to the Ministry of Health. Primary health care delivery is typically organised in multidisciplinary teams working in primary care centres, walk-in, low complexity and rural clinics and are generally public. LAC-7 countries uses a variety of payment systems to finance PHC. Most systems combine either capitation or global budget with fee-for-service. Additionally, Argentina, Brazil, Chile and Peru use pay-for-performance schemes to improve care quality and the performance of PHC methods. Because of health system fragmentation, PHC might be paid differently in the same country, leading to different incentives to provide effective and patient-centred primary health care.

Unlike other OECD countries, patient registration and referral systems are not fully operationalised in LAC-7 countries to favour care continuity and achieve greater care co-ordination. Chile is the only country where registration with primary health care is mandatory, while in Argentina and Costa Rica patients have financial or quality incentives to do so. Some forms of gatekeeping system exists in Brazil, Chile, Colombia, Costa Rica and Mexico, but the referral system is not compulsory and many patients bypass primary health to directly seek care in outpatient specialised clinics and hospitals. Overall, Brazil, Chile and Costa Rica have a relatively less hospital-centric health care system with more developed PHC system among the LAC-7 countries.

Analysing the composition of overall health spending in an international context indicates that LAC-7 countries spent less on PHC than other OECD countries. Brazil, Colombia and Costa Rica are clearly below the average of OECD countries on PHC spending as a percentage of current health expenditure. Only Mexico is over the OECD-28 average of 17% with 19% of its total health expenditure directed to PHC.

Table 1.1. Organisation and provision of primary health care in LAC-7 countries

	Governance of primary health care	Primary health care providers	Population per PHC unit according to national guidelines	Predominant form of organisation	Is there post-training requirement to become PCP?	Payment mechanisms	Is referral required to access to secondary care	Are patients required or encouraged to register with PHC?
Argentina	Municipalities	Centro de Atención Primaria"	3 200 ([13])	Team practice	No	Fee-for-services/P4P, global budget	Not compulsory	No
Brazil	Municipalities	Family Health Teams	2 000-3 500	Team practice	No	Global budget/fee-for-services/P4P	Not compulsory	No
Chile	Municipalities (92.6% of centres)	Centros de Atención Primaria de Salud	Urban*: 20 000-40 000 Rural: 500-4 500 ([14])	Team practice	No	Capitation/fee-for-service/P4P	Yes **	Yes (87% registered)
Colombia	MoH (MIAS)	Health posts, Health centres, Health centres with beds, local hospitals	Not available	Team practice	No	Capitation/FFS/Global budget	Yes	No
Costa Rica	MoH	CCSS through EBAIS	3 500-4 000 ([15])	Team practice	No	Global budget	Yes	Yes
Mexico	MoH (No different gov. body for PHC) Undersecy. Public Heath (MoH)	Multiple primary health care providers	Not available	Solo practice and team practice	No	NR	Yes	No
Peru	MoH EsSalud Private insurance	Multiple primary health care providers	2 000-3 200	Team practice	Yes	Capitation/FFS/P4P/Global budget	No	No

Note: * Not including emergency primary health care centres. ** Or incentivised depending on care plan. NR: No Response.
Source: Authors based on Lorenzoni et al. (2019[16]), "Health systems characteristics: A survey of 21 Latin American and Caribbean countries", https://doi.org/10.1787/0e8da4bd, and based on consultations with experts.

Primary health care helped to mitigate the impact of COVID-19 on health in LAC-7, but access to routine care was fundamentally impacted

Public health activities carried out by primary health care systems in LAC-7 countries helped to create awareness on COVID-19 and to proactively identify vulnerable people

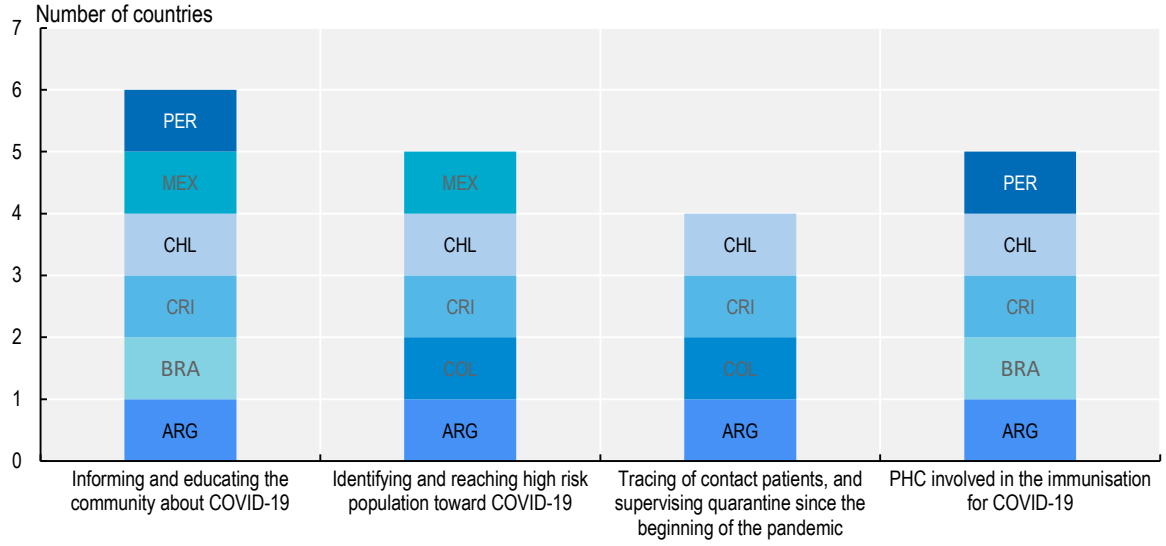
In many aspects, PHC has contributed to the COVID-19 emergency response by carrying out some public health activities (Figure 1.5). Some LAC-7 countries have used primary health care to create awareness on COVID-19 risks and tailor messages and information campaign on non-pharmaceutical intervention (such as mask wearing or social distancing). This was the case of Peru and Argentina for example, where

community health workers (CHW) provided information to patients and communities on COVID-19 diseases and on prevention of infection. By contrast in Colombia, the role of primary health care to provide information and health education to patients and communities on prevention of infection was reported to be limited. Some developments and innovations were also introduced to proactively identify and engage with high-risk individuals including elderly population, those suffering from chronic diseases, and disadvantaged population. In Argentina for example, the Sumar programme incentivised PHC physicians to actively identify people aged 64 and older without formal health coverage. Costa Rica and Mexico also focussed on reaching-out to underserved communities.

As in many OECD countries, effective tracking and tracing strategies require a well-trained and sufficient health professionals and also adequate surveillance system. Argentina (with the Detectar programme) and Colombia (with the Prass programme) are good examples of initiative to implement tracking and tracing strategies in countries with limited resources. In Peru, Chile, Brazil and Mexico, the surveillance system was not appropriate to implement effective tracing mechanism. By contrast in Costa Rica, the Local Epidemiological Surveillance Commission (COLOVE) of Health Area provided the necessary support to consolidate data of all the EBAIS to carry-out epidemiological surveillance, case studies and implement specific health actions. The registration of COVID-19 cases was carried out through the Digital Health Record (EDUS), which then linked the entire national system of the country. Surveillance systems should be highly improved and broadened in LAC-7, as well as to rely more on the involvement of PHC teams to enhance surveillance capacity at community level. This would help increase preparedness and resilience in case of future health emergencies.

While most of LAC-7 countries faced procurement issue (except Chile), LAC-7 countries have a strong tradition of carrying-out mass vaccination campaigns, embedded into the community and primary care setting and health workers' daily activity. Chile, Argentina, Peru, Costa Rica and Brazil are good examples of COVID-19 vaccination programme implemented at primary health care level. According to survey data, some people are more willing to receive a COVID-19 vaccine if the process is facilitated, such as not having to attend vaccination centres far away from their residences, while other people may just require information from community health workers in order to overcome vaccine hesitancy.

Figure 1.5. Public health activities carried-out by PHC during the COVID-19 pandemic in LAC-7 countries



Source: OECD (2021[17]), Policy Survey on the role of primary health care during the COVID-19 pandemic.

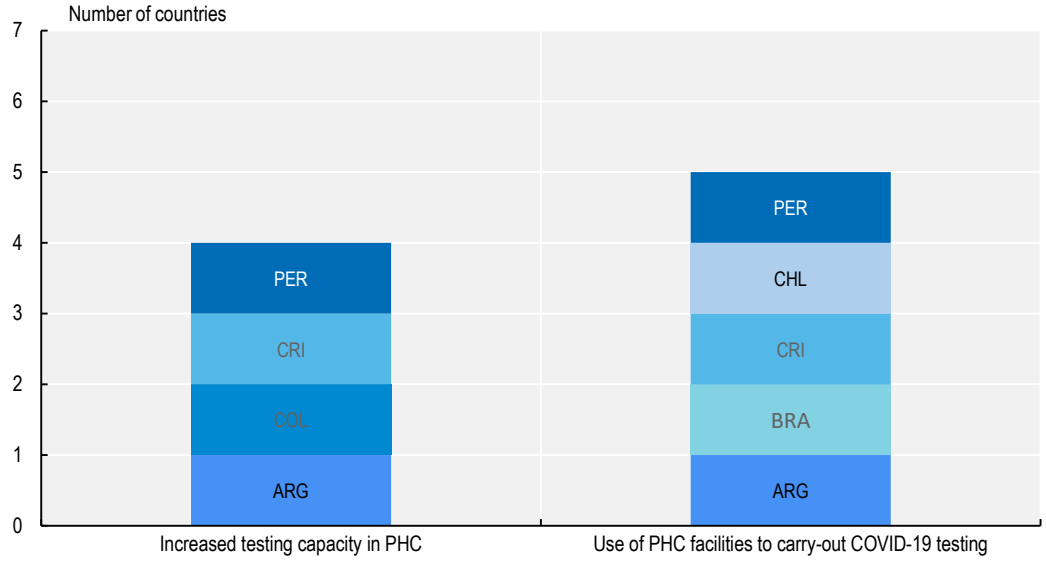
COVID-19 testing in primary and community care settings in LAC-7 countries was limited at the start of the pandemic due to low capacity

While during health emergencies, primary health care teams can play a pivotal role to carry-out early case detection in the community they operate to minimise virus circulation, LAC-7 countries had low capacity in terms of testing capacity at the start of the pandemic (Figure 1.6). To expand capacity, countries relied on foreign supply chain to acquire testing kits. As other OECD countries, Brazil and Mexico relied on 135 000 testing kits received from China (OECD, 2020[18]). Argentina, Costa Rica, Colombia and Peru expanded progressively national or local capacities. In Argentina for example, some provinces and municipalities built their testing strategies by increasing the availability of Antigen testing to be performed by primary health care workers. The country also developed its own testing kits with government-financed research from top national universities along with technology companied producing up to 100 000 testing kits per month (OECD, 2020[18]). Costa Rica and Peru created new laboratories to carry-out RT-PCR at regional level which expanded access to testing and reduced diagnosis delays.

Another limiting factors for primary health care system to carry-out COVID-19 detection was a lack of guidelines and protocols on diagnostic testing for primary health care workers. While guidelines help primary health care professionals to carry-out accurate and safe diagnosis to control the spread of the pandemic, Ministries of Health made general recommendations for COVID-19 diagnosis but rather at a late stage. In Brazil, while training videos were available in 2020 through YouTube, guidelines for primary health care workers on COVID-19 diagnosis was published in March 2021, almost one year after the start of the pandemic (Ministério da Saúde, 2021[19]). In Chile, guidelines from the Ministry of Health were established in June 2020 (Ministry of Health, 2020[20]), three months after the first case in the country. The primary health care network in each municipalities had to implement their own testing strategy before the national recommendations, leading to a great variability of the response across municipalities. By contrast, other OECD countries such as Germany and New Zealand published guidelines specifically targeted at primary health care workers.

It is also important to note that COVID-19 testing has been carried-out to some extent in primary health care settings but with high heterogeneity within and across countries. In Argentina, the DETECTAR Programme, launched by the Ministry of Health and implemented in co-ordination with the provinces in disadvantaged neighbourhoods, relied on the network of primary health care. The DETECTAR programme is based on door to door visits to carry-out COVID-19 testing. The primary health care team is composed of between 15 and 45 people, including social workers, nurses, health promoters and doctors. The programme has been progressively extended to several areas and provinces, including the greater Buenos Aires area, in urban areas of Buenos Aires, in the Provinces of Chaco, Entre Rios, La Rioja, Santa Cruz and Santa Fe (PAHO, 2020[21]). The programme is now available to all jurisdictions. The DETECTAR programme is a best practice example of good co-ordination between national government and community level. All positive cases were reported daily through the MOH's National Epidemiological Surveillance System (SNVS). Another good practice example is from Costa Rica, where all EBAIS were responsible for the detection, notification and investigation of cases. Primary health care also implemented sampling campaigns in places with an epidemiological outbreak, and screened for COVID-19 at vulnerable places or disadvantaged populations. In Mexico and Peru, primary health care workers did not have the responsibility to carry-out COVID-19 testing.

Figure 1.6. LAC-7 countries leveraged PHC to carry-out COVID-19 detection in the community



Source: OECD (2021[17]), Policy Survey on the role of primary health care during the COVID-19 pandemic.

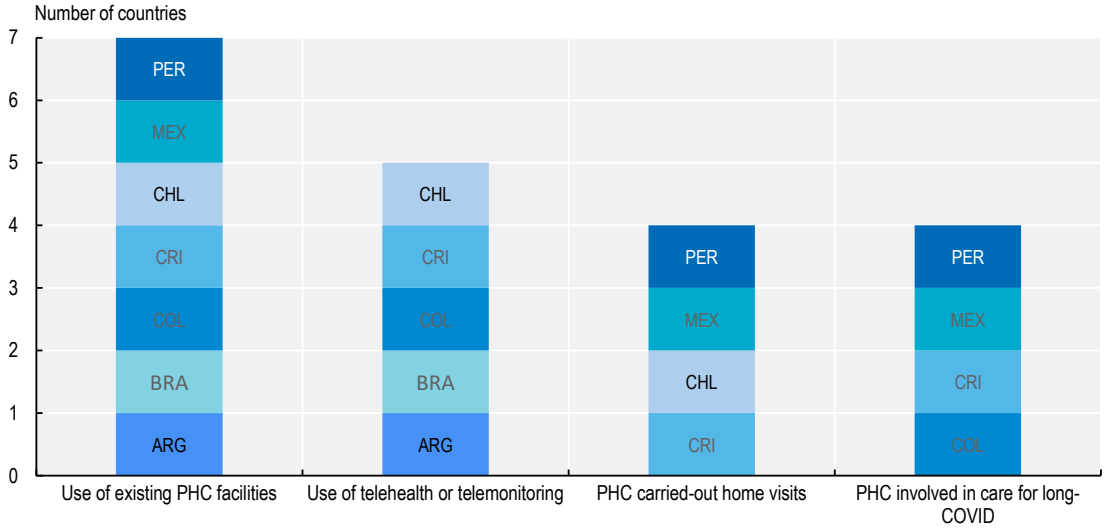
Most LAC-7 countries have developed new models of care at primary and community care settings to manage mild and moderate COVID-19

During a health emergency, PHC can absorb and respond to new health needs such as providing care for mild COVID-19 cases in the community and making appropriate referrals to hospitals. Across LAC-7 countries, there are good local experiences where primary health care has been effective to absorb the surge in demand, through for example the use of existing primary health care facilities, making quick and effective referral to hospitals and the development of new model of organisation such as home visits and telehealth (Figure 1.7).

Despite initial delays to adapt to the health emergency and increased influx of patients, all LAC-7 countries implemented comprehensive adaptations to PHC to advise suspected or confirmed patients in home isolation or at the PHC unit when more treatment was necessary. Mexico, where emergency rooms have traditionally been considered as the main point of entrance to the health care system, have remarkably developed new Respiratory Care Modules (*Módulos de Atención Respiratoria des Seguro Social, MARSS*) to managing suspected or confirmed cases of COVID-19 in PHC settings. Costa Rica also introduced comprehensive adaptations to PHC services to treat for mild COVID-19 cases. From the start of the pandemic, the PHC system was placed at the centre of the health system to manage the unexpected surge of demand and avoid overcrowding in hospitals. The country separated care pathways for COVID-19 patients and non-COVID-19 patients at the primary health care units to respect social distancing protocols and ensure patient safety. Rapid response teams in PHC, which comprises doctors and nurses, were responsible for the follow-up of cases and clinical care for COVID-19. In Chile, during the first months of the pandemic, PHC played a relevant role in caring for mild COVID-19 cases through home visits with medical, nursing and physiotherapist professionals. In case patients had more severe symptoms, transfers to PHC units were organised in order to provide hydration, low-oxygen therapy and clinical surveillance.

The quick and effective response from the Costa Rican and Chile PHC system to manage mild COVID-19 cases in the community is undoubtedly related to its pre-pandemic central role in providing comprehensive, continuous and co-ordinated care. By contrast, in Peru and Argentina, a lack of resources and an unclear mission and vision for primary health care severely limited PHC's scope in this core function.

Figure 1.7. Primary health care in LAC-7 countries has managed mild COVID-19 care needs in the community



Source: OECD (2021[17]), Policy Survey on the role of primary health care during the COVID-19 pandemic.

Follow-up of COVID-19 cases were conducted through teleconsultations or home visits by PHC teams

Faced with significant disruptions to in-person care, governments and health care providers moved quickly to promote the use of remote care in LAC-7 countries. Although teleconsultations predate COVID-19, the pandemic has been a watershed moment in its uptake by both health professionals and patients.

As in other OECD countries, the use of teleconsultations facilitated patients' access to care, while reducing pressure on hospital care. Teleconsultation services were mainly used for home monitoring and follow-up of COVID-19 (for example in Argentina, Colombia, Costa Rica) and for maintaining access to care for non-COVID-19 needs (for example in Argentina, Brazil or Peru). In Costa Rica for example, a Health Supervision Program integrated by 50 primary care physicians gave continuous medical information to patients with doubts or concerns via phone. In Colombia, teleconsultations were used by people in confinement or preventive isolation, population groups with a higher risk of complications from COVID-19 and to maintain some forms of preventive and routine health services. From December 2019 to April 2021 there was a 184% increase in providers authorised to perform telemedicine (5 302 providers) and a 264% increase in types of services provided (21 094 telemedicine modality).

Argentina's TeleCOVID programme provided remote care for people with a suspected or confirmed diagnosis of COVID-19 and for other vulnerable patients such as elderly people. Available evidence show good patient and physician experience with the use of TeleCOVID system: 77% of patients positively evaluated their experience with the teleconsultation and up to 82% of health professionals reported they are familiar with the teleconsultation modality. Chile capitalised on its existing Digital Hospital tool to support both patients and medical staff during the pandemic, as it offered COVID-19 disease management seminars and instructional videos for self-care. From July to December 2020, 580 609 teleconsultations in PHC were carried out, and a further 472 751 in the next semester.

There are however multiple underlying challenges that must be overcome to remove barriers and make sure they become part of mainstream care delivery. For instance, low levels of internet connectivity and low digital literacy in some countries has considerably limited the use of telehealth solutions by PHC (Carrillo-Larco et al., 2022[22]). In Peru for example, precarious ICT infrastructure in PHC units has limited the potential to use teleconsultation as over 80% of health centres lack internet connection (Carrillo-Larco et al., 2022[22]).

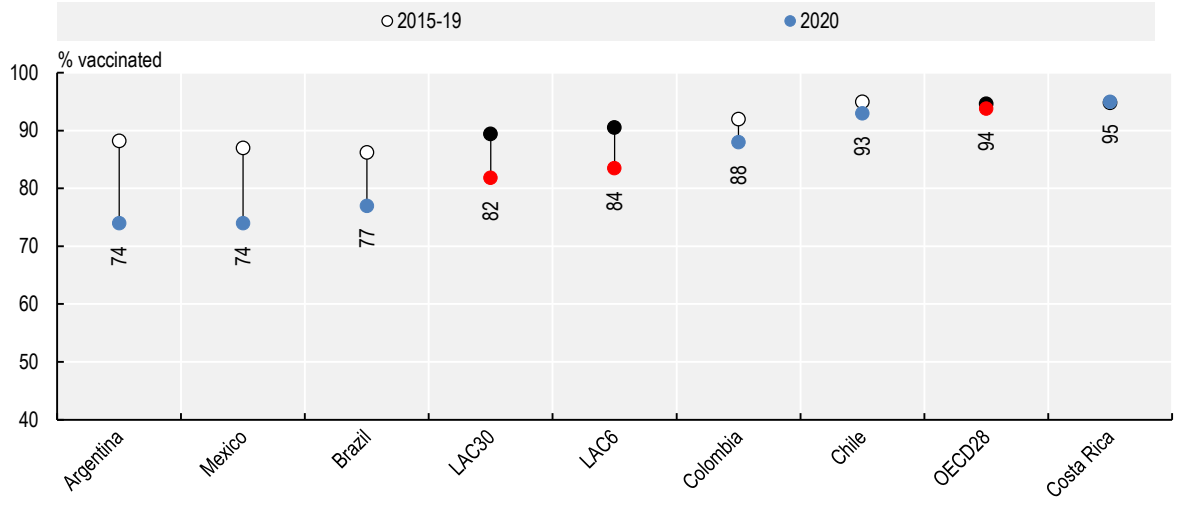
In addition to telehealth solutions, several LAC-7 countries provided home-based care visits by PHC teams. These strategies vary from simple follow-up sessions with isolated patients, as is the case of Peru, to more complex and organised policies, such as in Mexico. In Peru, follow-up care for isolated patients is conducted by Integrated Intervention Teams (EIIs) through regular telephone and home visits by CHWs. In Mexico, the Brigadas Especializadas (specialised brigades) imply a high level of co-ordination with the local PHC clinic and the health promotion brigades. This type of co-ordinated work, grounded in the local community, is particularly well suited to reach more isolated communities.

Primary health care was not able to maintain continuity of access to care during the pandemic in LAC-7 countries

Social distancing measures and fear of catching the virus are leading factors that have caused considerable disruptions in the provision of care worldwide. In all LAC-7 countries, the three core functions of primary health care have been dramatically impacted with significant reduction in health promotion and vaccination, in screening programme and in treatment for some types of cancer, hypertension and diabetes. Across high income countries, evidence shows how delay or missing regular care can exacerbate complications and lead to severe health consequences – putting additional, and potentially avoidable, pressure on health systems (OECD, 2023[23]).

Disruption of primary prevention is demonstrated by declines in vaccination services. Coverage for DTP3 vaccines amongst children aged 1 have fallen by 8% in 2020 across the LAC-7 countries in 2020 (at 82%) compared to the average between 2015 and 2019 (at 89%) (Figure 1.8). Largest reductions are found in Argentina, Mexico and Brazil. Such changes in vaccination coverage is alarming, with large implications on vaccine-preventable disease eradication. Catch-up vaccination plans, included enhanced outreach services or intensification of routine immunisation services, must be strengthened across LAC-7 countries to ensure that those who missed vaccinations (often the most vulnerable children) catch up and return to pre-pandemic level. This will be crucial for full recovery. There are successful experience across other OECD countries such as the Netherlands or Canada, which implemented catch-up programmes with tailored communication campaigns.

Figure 1.8. Diphtheria, tetanus toxoid and pertussis (DTP3) immunisation coverage amongst children aged 1 (%), 2015-19 average and 2020



Source: WHO (2022[24]), Global Health Observatory, available at https://www.who.int/data/gho.

Similar reduction have been observed when it comes to secondary prevention. Early detection services in LAC-7 countries have been severely affected, with some countries showing large reductions in cancer screening coverage. In Chile, cervical and breast cancer screening dropped by 10% in 2020 compared to 2019, while early detection of diabetes and hypertension dropped by more than 20% over the same period. In Mexico, from April to December 2020, breast and cervical cancer screening dropped by 79% and 68% respectively. In Peru, both screening programmes reduced by 50%. Disruption are also confirmed by the WHO Pulse survey (WHO, 2022[25]), which shows that 50% of cancer screening services were disrupted in Argentina and Brazil in 2021, compared to 5% in Costa Rica.

People with chronic conditions were particularly impacted by care disruption, which can lead to severe consequences and long-term complications. Patients suffering from cancer have seen their treatments and surgeries being postponed or even cancelled. A survey of 704 oncology doctors from 19 LAC countries found that 65% of the respondents reported delays in referrals to surgery and 20% affirmed having to cancel life-saving procedures (Bernabe-Ramirez et al., 2022[26]). The number of treatments for cancer saw steep declines in countries like Peru, Brazil and Chile. The number of consultations for hypertension and diabetes – two conditions commonly treated at the PHC level and considered as high-risk factors for COVID-19 – decreased by 80% and 81%, respectively, in 2020 in Chile when compared with pre-pandemic values. Mexico and Costa Rica also reported worrying decreases in consultations for these conditions (Arsenault et al., 2022[27]).

Overall, disruptions in primary, secondary and tertiary prevention in LAC-7 countries show how primary care systems in these countries were not resilient enough during the COVID-19 pandemic. It calls for actions to strengthen primary health care system to improve health system resilience to future health crises notably to maintain care for patients with other health care needs.

Making primary health care central to improve preparedness and resilience during health crises

Improving population health and reducing health inequalities through stronger primary health care

Encourage greater comprehensiveness of PHC toward prevention and management of health conditions

Primary health care services which act as the primary source of care to address the majority of patient needs enable the efficient delivery of crucial health services, including vaccination, screening, early detection of disease and patient-centred management. In addition, primary health care systems can contribute to proactive primary prevention to address major risk factors to health and influence patient's lifestyles which contribute to both infectious and non-communicable disease burden. An extensive body of literature demonstrate the effectiveness of interventions implemented in primary health care settings to address risk factors to health such as heavy drinking, unhealthy eating, or physical inactivity (Jané-Llopis et al., 2020[28]; OECD, 2022[29]). Such strong primary health care systems delay the onset of chronic disease, decreases the need for hospitalisation and reduces avoidable mortality (OECD, 2020[30]; Sandvik et al., 2022[31]).

The beneficial impact of strong primary health care on population health is particularly relevant in the context of COVID-19 or any other pandemic. Research from several countries shows that COVID-19 symptoms and outcomes are more severe in people having chronic diseases, underlying health conditions, or the most disadvantaged population (Centers for Disease Control and Prevention, 2022[32]; Honardoost et al., 2021[33]).

Overall, improving population health through prevention, treatment and effective management of health conditions in primary or community settings, and addressing inequities in risk factors for health will make population more resilient against COVID-19 and potential future outbreaks of infectious diseases. This will reduce both the inequities in outcomes and the demand for acute services during a crisis, improving the performance of health system in LAC-7 countries.

This is even more important given the increasing prevalence of risk factors to health and the rising burden of chronic conditions in LAC-7 countries. Already in Chile, primary care practices are key actors in health promotion activities, for instance through the Vida Sana counselling and physical activity programme. This is a best practice example across the OECD from which other LAC-7 countries could learn. Across other OECD countries, Sweden and the Netherlands are also good example of countries encouraging healthy eating and active lifestyles through primary health care. In the Netherlands for example, Combined Lifestyle Intervention (CLI) are offered to patients with overweight of other risk factors. The CLI provides dietary advice, physical activity training, and counselling on behavioural change over a period of two years. Participants are referred by their general practitioner to a local CLI provider which can include physiotherapists, lifestyle coaches, and dieticians – either working individually or in a group.

Moving forward, LAC-7 countries need to renew PHC foundation to make it the front-door of their health system to provide comprehensive services ranging from primary prevention to tertiary prevention, and without distinction of any economic and social conditions. A stronger gatekeeping function for primary health care, with systematic patient registration and referral system, will help to deliver a range of crucial health services, including vaccination, screening, early detection of disease and patient-centred management to improve population health, and reduce social health inequalities.

Capacity building is necessary to ensure that primary health care can deliver its core functions

In order to increase key primary health care functions, it is critical to ensure that providers have the right equipment, incentives and training. The success of screening and early detection programmes for example has several determining factors, including the structural capacities of a country to support PHC efforts. All countries in LAC-7 countries have created national plans placing early detection of diseases as one of the health system central pillars. While such national plans describe the target population, screening intervals, and screening tests, others minimal requirements are also needed including for example the availability of equipment or a system to identify eligible populations.

One of the key enablers for conducting cancer screening is the availability of equipment. While all LAC-7 countries define mammography as the main method for breast cancer screening, mammography units per million women aged 50-69 are considerably lower than across other OECD countries. Costa Rica is close to the OECD average, having 150 mammography units per million women aged 50-69. However at the lower end of the scale, Colombia and Chile have respectively 12 and 32 units per million women aged 50-69, well below the LAC-7 average of 76 mammography units and the OECD average of 181 mammography units. Due to lack of equipment and capacities in LAC-7 countries, some screening programmes are still underperforming, as in Peru and Brazil for example.

Another key enabler is the assignment of stakeholder's responsibilities', together with a system to hold them accountable for such responsibilities. A pay for performance scheme can create an effective system of accountability to improve care quality. In Colombia and Mexico for example, there is no accountability frameworks to monitor outcomes and performance of primary health care providers towards cancer screening rates. By Contrast in Chile and Brazil, accountability for performance measures (such as screening coverage rates) based on a pay for performance scheme for PHC exist, providing good incentives to improve care quality. The experience from Costa Rica is also instructive. The country has a detailed protocol for PHC to actively engage patients into screening and early detection programmes. The questionnaire is registered in a centralised information system, and allows for the estimation of the risk of developing some types of cancer and, if deemed target population, there is a referral to more specialised

care. Such protocols are effective to help early diagnosis, and detecting cancer signs and symptoms to improve diagnostic accuracy, and establish reliable referral mechanism.

It is also important to have a centralised information system to help identify the target population. The Cancer Information System called SISCAN, together with the national health information platform "e-SUS" used at primary health care level in Brazil, and the screening information system called SITAM in Argentina are examples of centralised information systems that support the implementation of screening and early detection programmes. Such centralised information system can help implement a more personalised approach to identify and invite people with a high risk of cancer, but also to monitor and evaluate the effectiveness of early detection and screening programmes.

Lastly, to perform effective early detection of disease and patient-centred disease management, primary health care workers in LAC-7 countries should have appropriate training and guidelines to help them deliver quality actions and services. As earlier mentioned, during the COVID-19 pandemic, Ministry of Health in some LAC-7 countries made general recommendations for COVID-19 diagnosis, but sometimes at a late stage, requiring some local or subnational actions that were timidly co-ordinated. In Chile, guidelines from the Ministry of Health were established in June 2020 (Ministry of Health, 2020[20]), three months after the first case in the country. The primary health care network in each municipalities had to implement their own testing strategy before the national recommendations, leading to a great variability of responses across municipalities.

Overall investing in the right equipment, accountability mechanisms, guidelines and trainings are key tools to improve the capacity of primary health care systems to deliver its key functions prior a pandemic occurs, but also during a health emergency. These are essential to absorb and recover from a shock by meeting both COVID-19 and non COVID-19 needs.

Greater workforce investment and planning is needed

Without effective policy action, the existing health worker shortages are projected to persist by 2030

A novel OECD analysis suggested that, in 2020, the demand for physicians, nurses and midwives exceeded their supply in all LAC-7 countries, with the estimate shortage of these health workers averaging at around 1.11 per 1 000. In this year, the shortages in the density of physicians, nurses and midwives were estimated to be the greatest in Argentina (2.42 per 1 000 inhabitants) and the lowest in Brazil (0.26 per 1 000 inhabitants). These shortages in the availability of health workers hinder the ability of the health systems in LAC-7 countries to address the health needs of the population and can stymie efforts to respond to health emergencies.

Without robust policy action, the existing shortages between the demand and supply of physicians, nurses and midwives are expected to remain a non-negligible challenge in all LAC-7 countries by 2030. The OECD analysis suggests that, by 2030, the shortages in physicians, nurses and midwives are projected to average at around 1.03 per 1 000 inhabitants across all LAC-7 countries. Importantly, LAC-7 countries are expected to diverge in terms of their projected health worker shortages. For instance, the estimated health worker shortages in Brazil, Chile, Colombia and Costa Rica are expected to grow over by 2030. In contrast, Argentina, Mexico, and Peru are expected to make modest gains in the availability of health workers though the gap between the demand for and supply of physicians, nurses and midwives in these countries are projected to persist.

In most LAC-7 countries, national and subnational authorities are tasked with assessing human resources for health (HRH) needs but national-level HRH assessments are not always available

Most LAC-7 countries assess their HRH needs in decentralised settings where national and subnational governments share roles and responsibilities around understanding HRH needs. All LAC-7 countries except Mexico and Costa Rica have units within the Ministries of Health that are dedicated to understanding HRH needs in the short and long term. Typically, these departments play a vital stewardship role in examining health workforce trends, developing, and implementing HRH policies. In lieu of stewardship at the national level, each network of health care providers in Mexico evaluates their own HRH needs. Whereas in Costa Rica, the Social Security Fund carries out periodic assessments of HRH needs for its own network of providers. In most LAC-7 countries, subnational authorities also have the discretion to examine local HRH needs.

Efforts to examine HRH needs can be strengthened by supporting local communities which may lack the technical capacity and financial resources to assess their own needs. Available evidence points to important discrepancies between local communities within LAC-7 countries in terms of their technical capacity and the availability of financial resources, which may hinder the ability of these communities to assess their own HRH needs. In recognition, it is vital to provide support to local communities that lack the sufficient scale, technical and financial capacity to assess their own HRH needs. For instance, Peru developed a set of technical guidance notes in 2014 targeting sub-national authorities that detailed methodological approaches to assessing HRH gaps at the primary, secondary and tertiary care.

In addition, addressing HRH needs will require close collaboration and co-ordination between various stakeholders across multiple sectors. For instance, HRH policies that aim to expand professional training opportunities and education capacity will necessarily involve collaboration and co-operation between the Ministries of Education and Health. Moving forward, it will be crucial for LAC-7 countries to build forums (e.g. advisory boards, inter-institutional commissions) that can help facilitate cross-sectoral collaboration and co-ordination.

There is a pressing need for systematically assessing short- and long-term HRH needs

Despite recent improvements in data availability, most LAC-7 countries do not assess their health workforce needs on a regular basis using standardised approaches. The existing administrative data sources offer a good starting point to facilitate HRH assessments, but LAC-7 countries do not consistently use the readily available data sources to assess their HRH needs. The OECD analysis revealed that, to date, assessments of HRH needs have been made public in Argentina, Brazil, Chile, Colombia and Peru, but there is further scope for building on these works. For instance, most HRH assessments from these countries focus on medical specialists and physicians, though some countries like Chile made efforts in the past to expand the scope to other health workers like general practitioners. Further, previous HRH assessments looked at needs for single professions in isolation from one another. However, the centrality of multi-disciplinary PHC teams in health care service provision necessitates adopting more integrated approaches that also focus on multi-disciplinary teams.

LAC-7 countries can benefit from examining factors that influence the supply of workers in their health labour markets. The OECD analysis revealed all LAC-7 countries primarily collect information on the inflow of medical graduates. While these countries have been increasingly relying on foreign-trained health workers, the inflow of foreign-trained health workers are routinely monitored only by Colombia, Chile, and Brazil. Importantly, there is very little evidence on the impact of increased reliance of foreign-trained health workers on health system performance over time. There are similar gaps in understanding factors that influence the outflow of health workers in LAC-7 countries. For instance, only Colombia and Argentina have information systems that track trends in retirement among health workers, and only Chile appears to have information systems in place to examine trends in the out-migration of health workers. Further, while

all LAC-7 countries track head counts in order to assess the stock of health workers, only Peru and Argentina collate data on the workload of health workers.

LAC-7 countries primarily consider population size in their HRH assessments, suggesting that there is substantial room for improving methodologies that examine factors that determine the demand for health workers. For example, epidemiological factors and changing patterns in health service utilisation are only considered in assessments from Costa Rica, Colombia and Chile. Similarly, only two LAC-7 countries – Mexico and Colombia – consider economic factors like growth in health worker salaries in their methodologies.

Expanding the role of existing health professionals, including nurses and community health workers, can help coping with health workforce shortage

There is growing attention toward the important role played by CHWs and advanced nurses to deliver some health services traditionally provided by physicians. Many OECD countries have begun implementing measures to increase the supply of health care workers on a more sustainable basis. These include, beyond increasing the training and recruitment of new staff, re-evaluating the scope of practice attributed to health care staff such as nurses and community health workers. As of May 2022, 60% of OECD countries are planning to introduce expanding roles to relieve pressure on medical practitioners (OECD, 2023[23]).

Unlike other OECD countries, LAC-7 countries have not yet experimented with changing the scope of practice and rearranging tasks from physicians to non-physician health workers. Available evidence has suggested a positive impact of changing scope of practice to provide quality preventive health services (Brennan, Charest and Turpin, 2022[34]), to perform chronic disease management, and with improved patient satisfaction, reduced hospital admission, and mortality rates (Maier, Aiken and Busse, 2017[35]; AHA, 2018[36]). The most recent systematic review also suggests that CHW programmes are effective, (notably for improving immunisation uptake, breastfeeding, and improving child health) and cost effective (for example on HIV) (WHO, 2020[37]).

LAC-7 countries could thus make the most of their existing network of community health workers and nurses to help alleviate persistent workforce shortage. Already during the pandemic, CHWs carried out essential public health services in the primary health care sector including public health surveillance and patient education in Argentina, Brazil, Costa Rica, Chile, Mexico and Peru. LAC-7 countries should go beyond with extended roles and responsibility for CHWs and nurses in advanced practices. This calls for education and training programmes to professionalise CHWs and nurse. Key examples for learning are available internationally, such as in the United States, where States have developed CHWs' training and curriculums at academic institutions.

Investing in stronger health information infrastructures is a must

There are many benefits of strong and consolidated health information infrastructures. First, interoperable health information infrastructure, based on Electronic Health Record, is key to engage in health monitoring and disease surveillance, and to implement relevant public health action to improve population health. Second, during health emergencies like COVID-19, timely data on hospitalisations, medical resources and mortality is key for decision making. Third, moving beyond the demand side, it is also critical to have reliable and complete administrative data on health workers to face a health emergency and to benchmark workforce needs over time.

Most LAC-7 countries could benefit from a single interoperable Electronic Health Records

A greater use of EHR, consolidated at national level, is an important step to better engage in health monitoring and disease surveillance. It is a key tool to provide a good understanding of the health status

of the population. It allows to collect and analyse data for public health purposes and to disseminate public health information to assess and respond to emerging public health problems.

During a pandemic, quick access to patient information and risk factors to health allows to identify and monitor those in high-risk groups and aggregate data at community level to support decision making about prevention and control of infection. In Costa Rica and Chile more than 80% of PHC physicians have implemented EHR, which has proven to be effective during the COVID-19 pandemic. In Costa Rica for example, the CCSS has developed the Unified Digital Health Record (*Expediente Digital Único en Salud* – EDUS) which is used by all primary health care teams. EDUS make patient charts to function as clinical guides and to create reminders for primary health care providers. This helps to keep track of individual patient history (for example on vaccination records) and risk factors for health, and conduct epidemiological surveillance. All the data is funnelled up to the health area and to the national level, but it is also used at the local level by EBAIS teams to make improvement plans or to carry out targeted actions.

By contrast, the use of EHR is still fragmented in Argentina, Mexico, Peru, and Colombia. In Mexico for example, the first electronic health records in PHC facilities were introduced in 2003 by IMSS as a part of the family medicine improvement initiative. Currently, the fragmented public health sector has 65 different EHR systems that vary in content, information sources, and human resource capacity to manage them. This situation negatively affects reliability and information sharing for disease surveillance.

Due to poor health information infrastructure, contact tracing and quarantine supervision was lacking across most LAC-7 countries. In Brazil, Peru, Chile and Mexico, the surveillance system was not appropriate to implement effective tracing and tracking mechanism. In Chile for example, the public health surveillance system, EPIVIGILA, was supposed to work in real-time regarding infectious diseases notification either confirmed or probable cases. However, the high demand on health care overloaded the system during the beginning of the pandemic, effectively delaying data registration in EPIVIGILA. At first, the surveillance system only allowed the registration of a limited number of contacts, and it lacked the necessary data fields for tracing COVID-19 cases efficiently. Furthermore, EPIVIGILA is not interoperable with Electronic Medical Records in primary care or with the National Registry of Immunisations, making difficult disease outbreak response.

Having real-time data on outbreaks, collected for example by PHC centres or teams, could help prevent clusters and save lives by acting before community spread starts or goes exponential. In addition, establishing regional bodies to allow for the sharing of these data between countries could also help control outbreaks that may occur in areas close to national borders. A broader and more accurate surveillance strategy with proper databases on confirmed and suspected cases -as well as their close contacts- would facilitate the tracing of patients and the subsequent supervision of their quarantines when needed. Some good examples of initiatives to strengthen surveillance system and to implement tracing strategies can be found across other OECD countries. In Luxembourg, an effective contact tracing system was set up to identify contacts, administer quarantine and isolation, and manage clusters of infection (OECD, 2022[38]). The contact tracing team comprised 200 people, and the system provided positive results. The time between identification of laboratory confirmed cases and notification was generally 24-48 hours, and it provided personalised support. The contact tracing strategy was supported by the newly established “Qlick” health information infrastructure and the Care+ platform.

There is scope for improving the existing health workforce data infrastructure and information systems

LAC-7 countries made important strides in recent years to improve health workforce data infrastructure and information systems. Today, all LAC-7 countries except Costa Rica have national registries that collate basic information on the characteristics of health workers.

Moving forward, there is a pressing need to build on the strengths of these registries and data infrastructure by improving the coverage and quality of available data. In many LAC-7 countries, administrative data on health workers suffer from inconsistencies in the definition of key indicators, prolonged delays in data entry and updates, lack of comparable data over time and across geographic locations.

Further, data on the availability of primary health care teams over time is not publicly accessible in most LAC-7 countries except in Brazil, Peru and Costa Rica. Additionally, in many LAC-7 countries, private sector providers play a crucial role in service provision but key information for health workers that work in the private sector is often unavailable. Improvements in these areas can help enable benchmarking of HRH needs over time, geographic areas, and type of providers.

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Note

[1] *LAC-33* is used to refer to the average for the 33 LAC countries.

2 Conceptual framework for analysing the performance of primary health care

Primary health care (PHC) is well positioned to carry-out three core functions to improve population health and minimise premature mortality. These include providing h*ealth promotion and vaccination, providing screening and early detection of disease, and delivering routine care for underlying health conditions.* There are many key linkages between these core primary health care functions and the ability of countries to respond effectively to the COVID-19 pandemic. Strengthening these core functions will bring benefits during and beyond crises by improving preparedness and resilience of health systems. This chapter presents the conceptual framework used in the report to analyse the performance of PHC in Latin American countries, and it reviews the set of key indicators related to each core PHC function that informs the organisation of the report.

What is primary health care?

Primary health care is expected to be the first and main point of contact for most people with the health care system, focused on the people and their communities. It takes into account the whole person and is patient-focused, as opposed to disease or organ system-focused, and thus recognises not only physical, but also psychological and social dimensions of health and well-being (OECD, 2020[1]). Key attributes of such a primary health care system include: 1) People and community oriented, 2) Continuous care, 3) Comprehensive care and 4) Co-ordinated care:

- **People and community-oriented**: primary health care operates in close proximity with where people live or work, and provides care that is focused on the needs of local people and their families.
- **Continuous care**: primary health care is the first point of contact with the health system, and the people who use it identify it as their main source of care over time. This implies relational, information and long-term continuity.
- **Comprehensive care**: primary health care addresses the majority of health problems of the people it serves, providing preventive, curative and rehabilitative services.
- **Co-ordinated care**: primary health care helps patients navigate the health system, communicating effectively with the other levels of care. It goes beyond services provided solely by primary health care physicians and encompasses other health professionals such as nurses, pharmacists, auxiliaries and community health workers.

Strong primary health care – that is primary health care system with such key attributes – has been found to improve efficiency, effectiveness and equity across OECD countries (OECD, 2020[1]). It enables the efficient delivery of crucial health services, including vaccination, screening, early detection of disease and patient-centred management to save lives and money. There is a convincing body of evidence showing that strong primary health care is associated with better health outcomes across OECD countries (OECD, 2020[1]). A systematic review of 22 studies also shows that care continuity of primary health care practice is associated with lower mortality rates (Pereira Gray et al., 2018[2]). More recently, a nationwide study of the Norwegian population shows that care continuity in primary health care practice is significantly associated with decreased mortality and reduced acute hospital admissions (Sandvik et al., 2022[3]). In addition, the cost of providing primary health care is relatively low compared to hospital care, and high performing primary health care reduces the need for more costly interventions, while increasing patient satisfaction. Primary health care is also associated with lower health inequalities as it ensures access to vulnerable population that otherwise can struggle to access medical services due to administrative, financial or geographical barriers (OECD, 2020[1]).

In low and middle-income countries, strengthening primary health care has also been shown to improve population health outcomes and reduce all-cause mortality, being a cost-effective strategy for achieving universal health coverage. However, available evidence shows that primary health care systems are relatively weaker in low and middle income countries and fail to provide people centred, continuous, comprehensive and co-ordinated care mainly due to under-resourcing, lack of capacity, fragmentation and poor governance (Langlois, 2020[4]; Bitton, Fifield and Ratcliffe, 2019[5]).

LAC-7 countries have made great efforts strengthening their primary health care systems to improve the health and health care of their people. Some important progresses can be attributed to the expansion of PHC in the region. Life expectancy at birth continues to rise in LAC-7 countries, reaching 77.9 years on average in 2020 (a gain of almost 3 years since 2000 compared to 3.6 years across other OECD countries). Infant mortality has also been halved over the past two decades, going from 21 deaths per 1 000 live births in 2000 to 10.8 deaths per 1 000 live births in 2020. Despite these efforts, health system performance still lags behind other OECD countries, and beyond the aftermath of COVID-19, severe structural gaps in development levels face LAC-7 countries (see Chapter 3).

The 2018 Astana declaration renewed the commitment to comprehensive primary health care for all. To realise this aspiration, there is a need for strong political commitment and leadership to make primary health care the front door of the health system for everyone (Box 2.1). As emphasised in the next chapters of the report, strengthening primary health care will help increase preparedness and resilience of health system during health emergencies.

Box 2.1. Principles of Astana declaration

The global conference on Primary Health Care organised in October 2018 reaffirms the commitment to the Alma-Ata core principles towards the importance of building primary health care systems.

The Astana declaration defined primary health care services as "*high quality, safe, comprehensive, integrated, accessible, available and affordable for everyone and everywhere, provided with compassion, respect and dignity by health professionals who are well-trained, skilled, motivated and committed".* An important component highlighted in the Astana declaration is the key role that primary health care can play in carrying-out public health functions, such as health promotion and surveillance, emergency preparedness, and response for health emergencies. During the COVID-19 pandemic, these strategies have all their relevance.

Source: Rasanathan and Evans (2020[6]), Primary health care, the Declaration of Astana and COVID-19, https://doi.org10.2471/BLT.20.252932, and Declaration of Astana. Geneva: World Health Organization; 2018. Available from: https://www.who.int/docs/default-source/primary-health/declaration/gcphc-declaration.pdf.

OECD framework of high performing primary health care

A strong primary health care system, built on key attributes (people and community oriented, and providing comprehensive, continuous and co-ordinated care), increases preparedness and resilience during crises, including health emergencies. When primary health care services are the primary source of care to address the majority of patient needs, have appropriate information to assess a patient's medical history, and are able to co-ordinate care effectively with other health services, they are well positioned to carry-out three core functions. These functions are:

- Primary prevention, especially providing health promotion and vaccination;
- Secondary prevention, including providing regular exams and screening to identify diseases; and
- Tertiary prevention, including delivering routine care for underlying health conditions.

Through its three core functions, primary health care provides a wide range of services ranging from health promotion, preventive, curative, rehabilitative and palliative health care services with the overarching objective of keeping population healthy and reducing disability or premature mortality.

These three core functions are critical to primary health care preparedness and resilience during crises (Box 2.2 for definition). Evidence confirms that most burdens related to health emergencies fall within the mandate of primary health care roles and functions (Burn et al., 2020[7]; Matenge et al., 2021[8]). This was the case in Australia and New Zealand, where general practices undertook a range of critical roles in providing responsive health care during several disasters that took place between 2009 and 2016. These roles included providing primary health care in alternative health care facilities, adapting existing health facilities for the purposes of providing disaster health care, and maintaining care continuity for management of chronic diseases. This was also evident during the COVID-19 pandemic in some OECD countries (OECD, forthcoming[9]). In Belgium, Italy and Luxembourg, for example, primary health care teams played

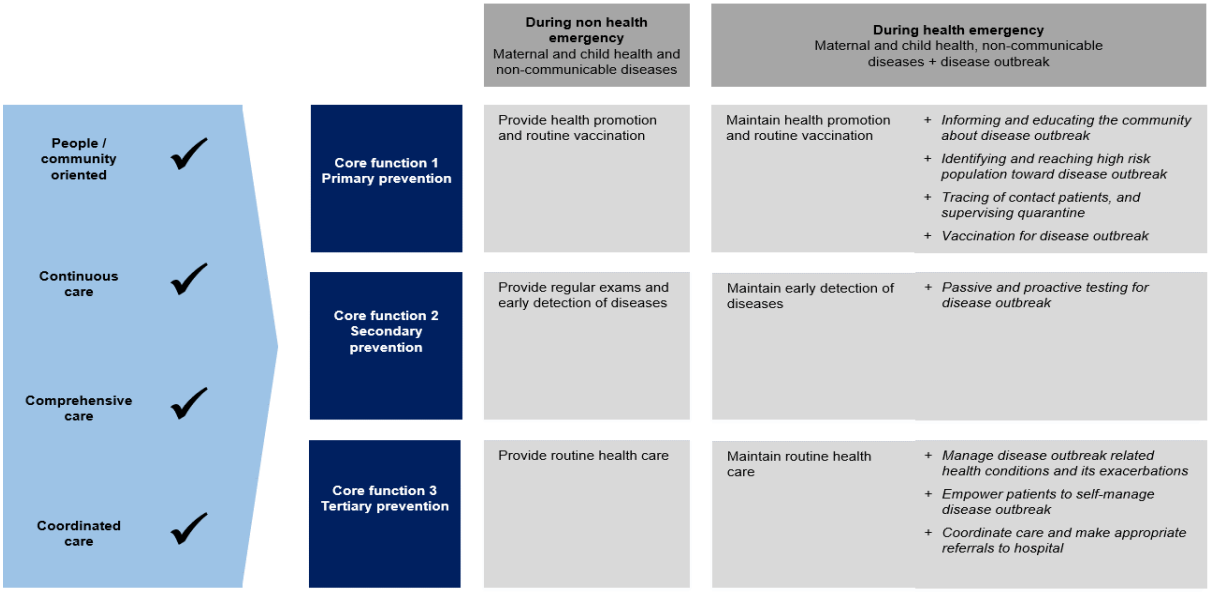
a pivotal role in carrying out early and precise COVID-19 case detection in the community they operate and managing non-acute COVID-19 needs.

As such, strong primary health care is key to health systems absorbing and recovering from shocks. Indeed, there are many key linkages between core primary health care functions and the ability of countries to respond effectively to the COVID-19 pandemic or any other health emergencies (Figure 2.1). For example, primary health care has played an important part in COVID-19 vaccination rollout, informing patients and the community about COVID-19, contributing to early detection of COVID-19 and using outreach services to manage mild COVID-19 in community and primary care settings. Primary health care systems have also helped manage the burden of COVID-19, in co-operation with hospitals, to bring efficiency gains in containing viral spread and managing patients, while helping to avoid overcrowded hospitals. Primary health care had also a key role to play by ensuring that socially vulnerable populations have appropriate access to care during health emergencies. The community-based approach of primary health care, which implies deep knowledge of local context and local population, is crucial in this regards.

These core primary health care functions and linkages between non-health emergency and health emergency, with roles or responsibilities, are described in Figure 2.1.

Figure 2.1. Primary health care emergency preparedness and resilience framework: absorbing and recovering from a disease outbreak

Linkages between core PHC functions during non-health emergency and during health emergency



Overall, strong PHC, which focuses on these three core functions, improves the overall health of the population prior to health emergency, which increase the capacity for individuals to protect their own health during a pandemic or any other future crisis. This enhances preparedness to deal with emerging pathogens or health shocks such as the COVID-19 pandemic. Embedding these three core functions into PHC also increases the resilience of health systems, by responding to both to diseases outbreak and non-disease outbreak needs during a health emergency. It helps reduce pressure on the entire health system.

Box 2.2. The NAEC resilience framework: System performance and resilience

Health systems need to build resilience and the ability to recover from and adapt to health shocks such as COVID-19. The New Approaches to Economic Challenges (NAEC) resilience framework considers four stages in a cycle of disruption:

- *Plan and prepare:* includes the steps taken by health organisations and related institutions to prepare critical functions and features of their operation for a universe of potential threats to avoid and mitigate disruptive events. This occurs prior to the disruption. For primary health care sector, in the case of a health shock, this involves upfront investments in public health, primary health care information systems, and primary care workforce.
- *Absorb:* comprises the capability of a system or organisation to absorb the consequences of an acute shock or extended stress without breaking and maintaining a certain degree of function. This involves limiting the extent of disruption and minimising the morbidity and mortality impact. During a pandemic, primary health can help absorb the shock by Informing and educating the community about COVID-19 to encourage compliance to infection control measures.
- *Recover:* during this phase, a system attempts to regain lost functions as quickly and efficiently as possible. Recovery also refers to the time and resources needed for the system to recover its functionality post-shock. Primary health care can for example contribute to recovery by carrying-out COVID-19 vaccination to minimise morbidity and mortality, and through early identification of cases and surveillance for deterioration of chronic conditions.
- *Adapt:* the capacity of an organisation or system to "learn" and improve its capacity to absorb and recover from shocks based upon past experience, reducing the impact of similar threats in the future. This informs the plan and preparation for the next cycle.

Source: OECD (forthcoming[9]), *Ready for the Next Crisis? Investing in Resilient Health Systems*.

Core function 1: Ensuring primary prevention through health promotion and routine vaccination

People and community oriented primary health care is well suited to carry-out primary prevention through health promotion activities and routine vaccination to prevent the transmission of infectious-diseases and reduce the impact of a shock such as the COVID-19 pandemic.

During non-health emergency, primary health care works in concert with public health authorities to prevent diseases before it occurs. The overarching objective is to prevent exposure to risk factors that cause disease and to increase individual capacity to protect their own health. These includes a range of household and community measures, including health counselling on heathy behaviours (eating well, exercising regularly, not smoking, limiting alcohol consumption for example), health education on the prevention of infection, and also vaccination against infectious diseases.

During the COVID-19 pandemic, these translate into four key responses where primary health care has great potential for preventing transmission and reducing the impact of the pandemic:

a) Informing and educating the community about COVID-19
b) Identifying and reaching high risk population, the most vulnerable people
c) Tracing contact patients to interrupt the chain of virus transmission and supervising quarantine
d) Implementing COVID-19 vaccination
e) Maintaining essential prevention activities

Primary health care can lead the efforts on informing and educating the community about COVID-19. Based on a community approach, primary care team can create awareness on COVID-19 risks, and tailor messages and information campaign on non-pharmaceutical intervention implemented in response to COVID-19 (such as mask wearing or social distancing). Depending on the local context in which primary care team operate, they can disseminate and reinforce public health messages on how to contain the spread of the virus including on infection prevention and control measures. In particular, primary health care team is best placed to identify and reach out their most vulnerable patients, who are at greater risk of being infected by COVID-19 such as patients with chronic conditions and multi-morbidity, elderly patients, or those with difficult living conditions.

In addition, contact tracing and quarantine are important tools to interrupt the chain of virus transmission. Once COVID-19 cases are identified (see core function 2), primary health care teams can facilitate contact tracing which enhances epidemiological surveillance. They can work with patients to trace contact before symptom onset to engage in backwards tracing. They can also help providing social and health assistance during quarantine as they have a good knowledge of local, health and living conditions in order to best meet patient's specific social and health needs.

Beyond this, primary health care teams have traditionally played a critical role in vaccine delivery including childhood and adult vaccination programmes (for example to prevent the spread of measles, diphtheria, tetanus toxoid and pertussis). Having a long history of delivering vaccination programme, primary care teams are uniquely placed to facilitate uptake and delivery of COVID-19 vaccines in the community, including for people living in deprived, rural and remote areas. Knowledge about medical and personal information of the local population, and long-time relationship with patients are key elements for successful and personalised vaccination rollout. As a trusted source of information, primary health care team can also provide immunisation counselling, counter vaccine hesitancy and misinformation. Recent evidence from high-income countries confirmed that the most important person in an individual's decision to get vaccinated is the primary care provider because he has the longitudinal relationship, understands their hesitation and can address them in a personal way (ACP Internist, 2021[10]).

During health emergency, such as the COVID-19 pandemic, most health systems were overwhelmed. This resulted in essential health services being disrupted due to the high demand for intensive care, which can increase indirect mortality from other preventable and treatable conditions. Available evidence reveals that deaths due to malaria, HIV/AIDs and tuberculosis attributable to Ebola outbreak in 2014-15 was significant in low- and middle-income countries (Parpia et al., 2016[11]). Maintaining essential health prevention activities, such as health promotion and immunisation for non-COVID-19, is critical to minimise excess indirect mortality due to health system failures.

Core Function 2: Providing secondary prevention, including providing regular exams and screening to identify diseases

As the first and main point of contact with the health care system, primary health care is best placed to detect disease at the early stage to halt its progress. Primary health care has an important impact on the stage at which a disease is diagnosed by performing clinical examinations and by recommending screening programmes to their patients (OECD, 2020[1]). Beyond performing recommended and evidence-based clinical examinations, the role of the primary health care team can be significant in having a supportive and informative role to enable the early detection of disease. During non-health emergencies, these include regular exams and screening tests to detect disease in its earliest stage (mammograms to detect breast cancer for example). During public health emergencies, and when diagnostic capacity is insufficient, primary health care teams have a role to play by carrying-out COVID-19 detection.

Early detection of COVID-19 is key to minimise community circulation and maximise protection of vulnerable populations, including at risk populations such as the elderly, chronic patients, health care workers, or lower socio-economic groups. Primary health care teams have all the potential to participate

to early and precise case detection in the community they operate, through passive or proactive testing strategy. Passive testing strategy consists of symptomatic individuals self-present to a primary care facility for testing, while proactive testing strategy consists of programmes tailored to the unique needs of a population to offer a clear epidemiological picture. In both cases, when link to public health system, COVID-19 testing in primary and community care setting allow to collect information on COVID-19 cases to feed the surveillance system.

At the same time, it is important to recognise that early detection of non-COVID-19 diseases during the first phase of the pandemic was suspended or highly impacted to increase capacity for COVID-19 patients. Patients themselves have expressed concern about visiting health care facilities to do routine care or screening for fear of COVID-19 exposure. The result is that diagnosing of non-COVID-19 illness has been postponed while considered as essential health services under normal circumstances. Such delayed diagnoses will come at high costs for health systems, both human and financial. Less cancer screening for example will translate into worse outcomes when patients are diagnosed later in the course of the disease, making treatment more complex and more expensive, and reducing patient's survival. In the United Kingdom (England), diagnostic delays have been projected to increase five-year mortality for four types of cancer by about 5% (lung cancer) to 16% (colorectal cancers) (Maringe et al., 2020[12]). Overall, between 3 291 to 3 621 lives could be lost due to four main cancers over the next 5 years due to delays in diagnosis caused by COVID-19 response. Accordingly, total years of life lost compared to pre-pandemic data for these cancers is estimated to range between 59 204 and 63 229. In Canada, cancer care disruptions during COVID-19 pandemic is estimated to lead to 21 247 more cancer deaths in Canada between 2020 to 2030, representing an increase of 2% in cancer deaths (Malagón et al., 2021[13]). To minimise such indirect consequences, the capacity of primary health care needs to be maintained to make sure people have access to routine exams and other early detection services.

Core function 3: Providing tertiary prevention by delivering routine care for underlying health conditions

Continuous primary health care has a role to play to manage disease in the community to maintain people's health, avoiding complication or health deterioration. These include for example controlling the development of disease to reduce the morbidity and mortality attributable to disease, helping people manage long-term health problems and maintaining continuity of care for people post diagnosis. Care continuity and disease management in primary health care have been associated with greater patient satisfaction, improved medication adherence, lower hospitalisation rates and lower mortality (OECD, 2020[1]; Pereira Gray et al., 2018[2]).

During health emergencies, and given that COVID-19 has challenged health system capacity to respond, patients with mild or moderate COVID-19 can have access to primary health care to receive COVID-19 medical attention, performed some basic health checks, and receive patient education to manage their own health. For health systems, these entail the several priorities:

- Developing patient care pathways for both COVID-19 and for regular primary health care.
- Developing new primary health care facilities or transformed established facilities for mild and moderate COVID-19 patients.
- Empowering patients and family by educating them on disease control and the need for further medical attention.
- Monitoring the health situation of people isolated at home (home visit to check blood oxidation and other symptoms – giving particular attention to vulnerable people).
- Maintaining care continuity for those who need it to keep population healthy and reduce disability and premature mortality.
- Developing new protocol for long-COVID-19.

Maintaining routine care is essential for managing chronic conditions during health emergencies. Any care disruption for those patients will translate in rapid health deterioration and some health complications, leading to hospitalisation or deaths. The same is true for pregnant women who need essential prenatal care visits to ensure safe delivery. Maintaining continuity of care is also particularly important to vulnerable and marginalised populations, which are often disconnected from the health care system. Across OECD countries, more severe health outcomes due to delayed or missed care were found for people with chronic conditions, including Alzheimer's disease, dementia, diabetes, chronic obstructive pulmonary disease and anxiety. Among a panel of US Medicaid patients with chronic health conditions, mortality increased by 19 patients per 1 000 annually among those who have had high rates of delayed and missed care from 1 April 2020 to 31 December 2020 compared to the same period in 2019 (Smith et al., 2022[14]). Maintaining routine health care delivery for non-outbreak diseases during health emergencies will help mitigating health deterioration, and minimise the long-term consequences of the COVID-19 pandemic.

Methodology

Countries covered in the report

This report compares seven Latin American countries (LAC). Four LAC countries are OECD member states (Chile, Colombia, Costa Rica and Mexico), and three LAC countries are partner countries to the OECD (Argentina, Brazil and Peru). In 2022, the OECD invited Argentina, Brazil and Peru to become OECD Members.

These seven LAC countries are referred as *LAC-7* countries throughout the publication. Some averages may refer to all 33 countries of the LAC region and accordingly, the classification *LAC-33* is used to refer to the average for the 33 LAC countries. Depending on the country coverage, the classification of the average is adapted to reflect the total amount of countries for which data is available. This same methodology applies for OECD averages when data are not available for all 38 member countries.

Selection and presentation of indicators to measure primary health care performance

The indicators have been selected on the basis of being relevant to monitoring primary health care performance, taking into account the availability and comparability of existing data in the LAC Region. The indicators are presented in the form of easy-to-read figures, backed by available evidence from the literature and qualitative information taken from a policy survey conducted by the OECD. The objective of the policy survey was to identify the most relevant actions and policies that primary health care in LAC-7 countries have developed to control the COVID-19 pandemic. The areas covered in the policy survey included for example the use of personal protective equipment (PPE), testing for COVID-19, co-ordination between primary health care and public health for disease surveillance, managing COVID-19 cases and ensuring care continuity, supporting PHC workers, and implementing vaccination against COVID-19.

Due to the exceptionality of 2020 and 2021 following the COVID-19 pandemic and its impact on the health system as a whole, most of the analyses presented in the following chapters focus on 2019 figures. In addition, 2019 data is also preferred as not all LAC-7 countries have 2020 data available, hindering inter-country comparability when contrasting some countries at a pre-COVID-19 level with others in a post-shock setting. Table 1 present the list of quantitative indicators used, sources, and years of data throughout Chapters 4, 5, and 6 of the publication, covering the three core functions presented in Figure 2.1.

Table 2.1. List of indicators to assess the performance of primary health care

Core function	Indicators	Source	Year
Core function 1 Ensuring primary prevention through health promotion and routine vaccination	Infants exclusively breastfed – first 6 months of life	UNICEF 2021	2020, or latest year available
	Feeding practices after six months of age	DHS and MICS surveys, various years; UNICEF Infant and young child feeding	Latest year available
	Contraceptive prevalence by socio-economic characteristics, any method, selected countries, latest available estimate	DHS and MICS surveys, various years	Latest year available
	Demand for family planning satisfied by socio-economic characteristics, any method, selected countries, latest available estimate	DHS and MICS surveys, various years	Latest year available
	Vaccination rates for diphtheria, tetanus toxoid, and pertussis (DTP3) and measles, children aged around one	OECD Health Statistics 2022, WHO GHO 2021	2019
	Vaccination coverage by socio-economic characteristics, selected countries, latest available estimate	DHS and MICS surveys, various years	Latest year available
	Proportion on primary health care team using EHR	OECD Survey of Electronic Health Record System Development and Use, 2016 and 2021, and available evidence	2021, or latest year)
	Public health activities carried-out by PHC during the COVID-19 pandemic in LAC-7 countries	OECD Policy Survey on the role of primary health care during the COVID-19 pandemic	2021
	COVID-19 immunisation in the region	Our World in Data 2022	2021-22
Core function 2 Ensuring secondary prevention, including providing regular exams and screening to identify diseases	Main causes of mortality in LAC-7 and the OECD	The global health observatory, WHO	2019
	Mortality burden of cancer in LAC-7 and the OECD	The global health observatory, WHO	2019
	Breast Cancer screening coverage	Costa Rica & Brazil from Brazil Primary Health Care Review, OECD 2021. Mexico, Chile, OECD from OECD.stat. Colombia from INC 2019. Peru from Hernández-Vásquez and Chacón-Torrico, 2019.	2019
	Cervical Cancer screening coverage	Costa Rica & Brazil from Brazil Primary Health Care Review, OECD 2021. Mexico, Chile, OECD from OECD.stat. Colombia from INC 2019	2019
	Antenatal consultations	UNICEF global databases, 2021, of antenatal care, based on MICS, DHS, and other nationally representative household survey data.	2015-20
	Mammography Units	Several sources, please refer to Figure 5.6	Latest available year
	Computed tomography scanners	OECD 2019 for MEX, BRA, CHL, COL and OECD34, others from GHO, WHO 2019. CRI from HaG LAC 2020.	Latest available year
	Magnetic resonance imaging (MRI)	OECD 2022 for MEX, BRA, CHL and COL, others from GHO, WHO. CRI data from HaG LAC 2020.	Latest available year

Core function	Indicators	Source	Year
	LAC-7 countries leveraged PHC to carry-out COVID-19 detection in the community	OECD Policy Survey on the role of primary health care during the COVID-19 pandemic	2021
	% Reduction in coverage rates of screening and early detection services in 2020 compared to 2019	For Mexico, Doubova et al., 2021, For Chile DEIS – Ministerio de Salud Chile, 2022; OECD, 2022; for Peru BPT, GOPBM – MINSA, 2021; Maternal Health – Roundtable for Concertation and Fight against Poverty, 2021.	2019-20
	Proportion of disrupted services. LAC-7 country responses. Services related to screening and early detection.	WHO 2022	2021
	Disruption of cervical cancer screening during the COVID-19 pandemic	OECD 2022	2020
Core function 3 Providing tertiary prevention by delivering routine care for underlying health conditions	Avoidable hospital admissions	OECD Health Statistics 2022	2019, or latest available year
	Breast cancer 5-year net survival (%), adults (15-99 years)	BRA, CHI, COL and CRI from OECD Health Statistics 2022, others from CONCORDE-3	Latest available year
	Colon cancer 5-year survival rate (%), adults (15-99 years)	BRA, CHI, COL and CRI from OECD Health Statistics 2022, others from CONCORDE-3	Latest available year
	Antibiotics consumption	2022 OECD Health Statistics for OECD average, Chile, and Costa Rica. WHO antibiotics report for the other countries.	2019, or latest available year
	Average proportion of infections caused by bacteria resistant to antimicrobial treatment for eight antibiotic-bacterium combinations	Stemming the Superbug Tide: Just A Few Dollars More, OECD 2018	2005, 2010 and 2030 projections
	Antiretroviral therapy coverage for people living with HIV (%)	WHO 2020	Latest available year
	Patient experience measures such as communication with the PHC provider	*Desde el paciente: Experiencias de la atención primaria de salud en América Latina y el Caribe*, Guanais et al., 2019	Latest available year
	Primary health care in LAC-7 countries has managed mild-COVID-19 care needs in the community	OECD Policy Survey on the role of primary health care during the COVID-19 pandemic, OECD 2021	2021
	Changes in patient admissions between 2015-19 average and 2020 by health care provider in Chile	Chile Health Superintendence 2022	2020
	Reduction in consultations for hypertension and diabetes from 2019 to 2020 in LAC-4 countries (%)	Arsenault, 2022 for CHL and MEX; INEI, 2021 for PER; CRI from CCSS, 2020	2019-20
	Expansion of the role of non-physician primary health care workers to manage COVID-19 and maintain care continuity	OECD Project on the Resilience of Health Systems Questionnaire, 2022	2022

Structure of the report

The report is divided into seven chapters. Chapters 1 and 2 presents the key findings and the conceptual framework used for Chapters 3 to 5 of the report. The key findings provide a high-level overview of the performance of primary health care in LAC-7 countries, as compared to the OECD average, and summarise the main findings of the publication to improve preparedness and resilience during health emergencies through stronger primary health care.

Chapter 3 on ***Main features and challenges of LAC countries health systems*** provides an overview of the organisation of health systems and primary health care systems in LAC-7 countries. It gives an overview of LAC-7 socio-economic characteristics, explores the organisational structure and the main stakeholders of each country's health system, and presents the main health challenges faced by each country's population.

Chapter 4 on ***Health promotion and vaccination*** explores primary health care performance before COVID-19 on health promotion and routine vaccination in LAC-7 countries, looking at the promotion of child and maternal health, counselling for risk factors for health, and routine vaccination programmes. The chapter also analyses the public health activities that have been scaled up into primary health care in LAC-7 countries during the COVID-19 pandemic.

Chapter 5 on ***Screening and early detection of diseases*** explores the performance of PHC in LAC-7 countries concerning screening and early detection of disease before and during the COVID-19 pandemic. The chapter also reviews the impact of the COVID-19 pandemic on screening and early detection of other diseases.

Chapter 6 on ***Routine care for underlying health conditions*** examines the third core function of primary health care, which is about managing disease in the community to help reduce morbidity and mortality, while maintaining continuity of care for all during a health emergency.

Chapter 7 on ***Investments in health workforce*** provides a review of the ways in which LAC-7 countries assess their current and future health workforce needs to help inform investment decisions to strengthen health workforce capacity. The chapter also assesses the human resources for health needs in LAC-7 countries.

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3 Primary health care for resilient health systems in Latin America

Over the past two decades, LAC-7 countries have had important improvements in terms of population health. These health improvements are linked both to Latin America's socio-economic progress and people's increasing access to better preventive and curative care. Currently, LAC-7 countries face new health challenges related to an ageing population and an increasing prevalence of risk factors for health and non-communicable diseases. In addition, LAC-7 countries have been one of the most affected regions of the world in terms of COVID-19 mortality, revealing health system bottlenecks that prevented a more effective response to the pandemic. These include highly fragmented health systems, lack of financial and human resources and an unfinished agenda towards strengthening primary health care. Increasing preparedness and resilience of LAC-7 health systems to face future high impact shocks will be critical not to reverse many of the well-being and health gains achieved during the last two decades.

Introduction

Health care systems in Latin America have had important improvements in the last two decades (OECD/The World Bank, 2020[1]). Aiming at universal health, policies have been implemented to improve access to care, coverage and care quality. Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico and Peru (LAC-7) have implemented policies to strengthen primary health care (PHC) and place it at the centre of their health care strategy. However, there is significant variation in the effective implementation of these policies across countries. While in most other OECD health systems primary health care covers the entire population, the quality, range of services, and coverage of PHC in LAC-7 countries still has room for improvement. System fragmentation, and bottlenecks of human and physical resources are common denominators to most LAC-7 health systems, preventing an effective response to evolving health care needs. In addition, the LAC-7 region is confronted, as many other OECD countries, to an ageing population and increasing prevalence of long-term, chronic non-communicable diseases. This epidemiological transition calls for strong PHC to improve population health by carrying out health promotion and immunisation activities, providing regular exams and screening to identify diseases, and providing routine care for underlying health conditions.

This chapter provides an overview of the organisation of health systems and primary health care systems in LAC-7 countries. It starts by giving an overview of LAC-7 socio-economic characteristics, highlighting several gains achieved over the past two decades. Then, the chapter explores the organisational structure and the main stakeholders of each country's health system, with a special focus on the primary health care system. Finally, the chapter concludes with an overview of the main health challenges faced by each country's population, focusing on the evolution of health outcomes, causes of death and health risks in the region.

Socio-economic characteristics of LAC-7 countries: A brief snapshot

The section gives a brief snapshot of LAC-7 gross domestic product (GDP), ageing projections, income distribution and the prevalence of poverty to understand the social context in the region when the COVID-19 pandemic hit. The indicators presented in the section are related to the social determinants of health, and as such, they have significant impact on population's health but also in country's response capacity to health shocks.

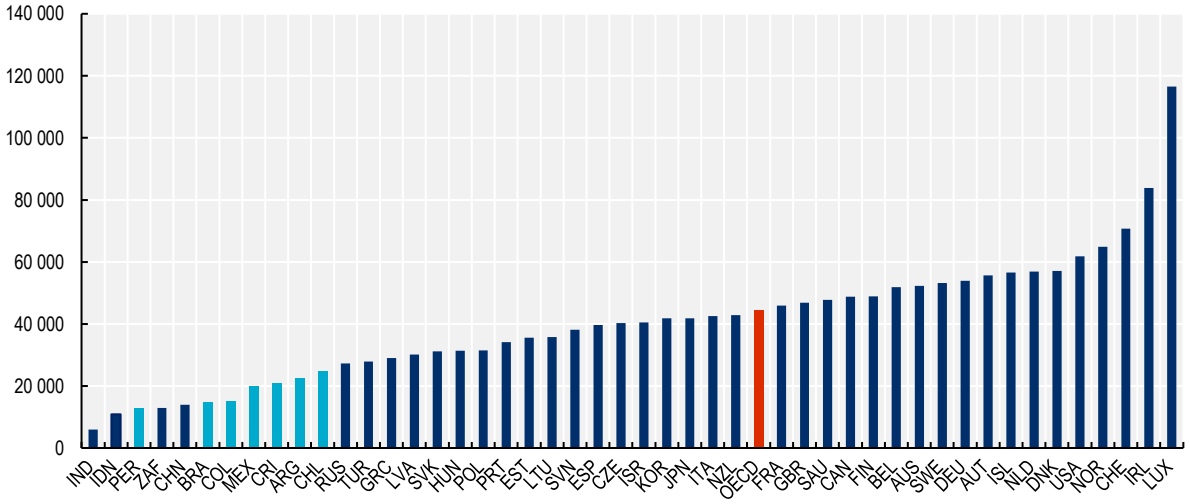
The Gross Domestic Product of LAC-7 countries indicates important differences in available resources

The GDP per capita in LAC-7 countries (at USD 18 576 on average across LAC-7) is lower than the OECD average (at USD 44 416 per capita). Among LAC-7 countries, there are important disparities. Peru has the lowest GDP per capita at USD 12 577, while Chile has the highest at USD 24 588 (Figure 3.1). Except for Peru (third lowest GDP per capita after India and Indonesia among OECD, LAC-7 and G20), other LAC-7 countries have higher GDP per capita than G20 countries including India, Indonesia, China and South Africa.

Considering that in 2019 the world per capita GDP was USD 17 630 (World Bank, 2021[2]), we can place the cluster of LAC-7 countries at the lower and higher end of countries around the world's average. This goes in line with the World Bank classification of countries by income, where all but Chile (lower end of high income countries) are classified as upper middle income. Countries in the series have had important GDP growth in the past two decades, increasing substantially the available resources in the health and social sectors, with direct impact on people's health. However, the more limited resources in LAC-7 when compared to other OECD countries amplify the challenge of fighting the COVID-19 pandemic.

Figure 3.1. GDP per capita in OECD, LAC-7 and G20 countries

GDP per capita, PPP (USD), 2015-20 average



Source: OECD (2021[3]) Gross Domestic Product (GDP) (indicator), https://doi.org/10.1787/dc2f7aec-en. For Peru, World Bank Database (2021[2])

The LAC-7 region is characterised by high income inequality

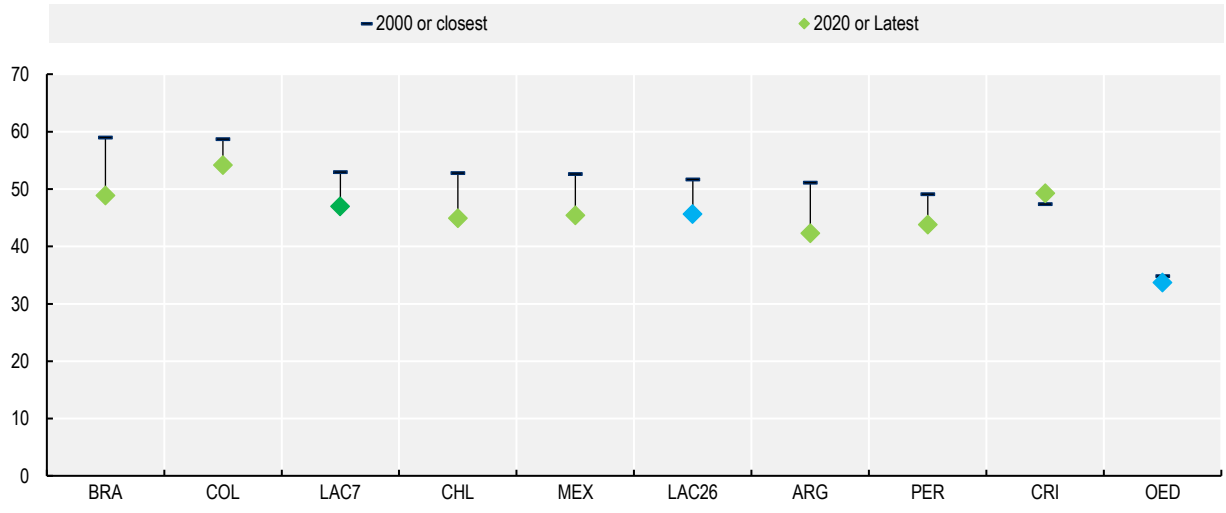
The changes in GINI index (The Concise Encyclopedia of Statistics, 2008[4]) from 2000 to 2020 in LAC-7 countries shows some progress towards reducing income inequality (Figure 3.2). However, progress in income inequality has slowed down and even reverted in the past years, having small net changes when analysing the past two decades. The biggest reductions are shown in Brazil (with a reduction of 17% between 1999 and 2020), and Argentina (with a reduction of 18% between 2000 and 2020). Colombia saw the smallest reduction in income inequality over the past 20 years (at 9%), and Chile and Mexico saw similar level of reduction of 15% in the past two decades. Costa Rica is the only country in LAC-7 where income inequality increased, which took the country from being the least unequal in 2000 among the LAC-7, to the second most unequal country (after Colombia) in 2020.

The GINI index in the LAC-7 countries is consistently higher than 40 points (the threshold of high income inequality), above the OECD average of 34 points and the LAC-26 average. The high GINI index in LAC-7 countries means a high concentration of income at the very top of the population distribution. Moreover, the COVID-19 pandemic has deepened the deprivation level of already disadvantaged population, with income inequality projected to have increased by 3% in Argentina, Brazil and Mexico between 2019 and 2020 (OECD, 2021[5]).

In addition, high-income inequality resonates with health system fragmentation. The connection is embedded in the fact that high income population can afford and will seek for better quality than the standard of care. This generates incentives to create several sub-systems: some of high quality for a small part of the population, while the rest is treated with much fewer resources.

Figure 3.2. Evolution of the GINI Index between 2000 and 2020

0 to 100 scale



Note: Brazil uses data from 1999 for baseline year. A GINI of 0 represents perfect income distribution, while 100 says that 1% of the population has 100% of the resources.
Source: World Bank (2021[2]), World Development Indicators.

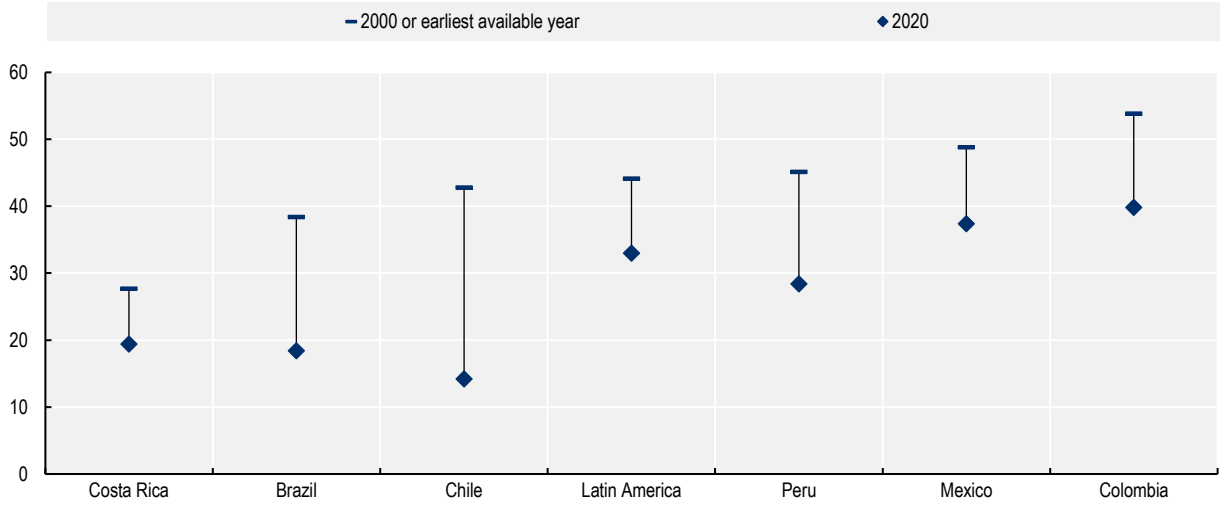
In addition to high levels of income inequality, corruption is an important problem in Latin American health systems, and experts say it has been enhanced during the COVID-19 crisis (Gedan et al., 2020[6]). In 2013 transparency international exposed that in LAC, 42% of the population on average considers the health sector to be corrupt or very corrupt (8 percentage points higher than in OECD countries). In LAC-7, the country with highest perceived corruption in the health system was Colombia, with 63% of the population considering the Colombian system corrupt or very corrupt. Argentina was the lowest with only 26% of the population reporting perceived corruption. Corruption is a determinant of wasteful spending, and has an important impact on the performance and efficiency of health systems (OECD/The World Bank, 2020[1]). Because of the emergency generated by the pandemic, countries activated fast-track protocols for procurement and distribution deals, consequently with less controls, time to investigate and public awareness, which may have exacerbated the problem (Gedan et al., 2020[6]).

From 2000 to 2020, LAC-7 countries made progress towards eradicating poverty

Defined as people without sufficient income to buy a basic food basket and other necessary goods and services, poverty in LAC-7 was reduced from 42.8% of the population in the year 2000 to 26.3% 20 years later. Over the same time period, poverty in the whole Latin American region decreased from 44% to 33% of the population. This important decrease is led by Chile (from 42.8% to 14.2%) and Brazil (from 38.4% to 18.4%), followed closely by Costa Rica (27.7% to 19.4%). Comparing the cases of Colombia and Brazil is interesting, as these two countries have similar GDP per capita and GINI index. However, Brazil was very successful in reducing poverty since the implementation of the Bolsa Familia programme (currently known as the Auxílio Brasil programme) (Ferreira de Souza, Osorio and Paiva e Sergei Soares, 2019[7]), while Colombia in 2020 is still the country in the series with the higher percentage of the population living in poverty (Figure 3.3). It is important to highlight that Colombia was reducing poverty at a positive pace until 2019 only reverting the trend in 2020, as other countries in the LAC region. The relation between the increase in poverty and the COVID-19 pandemic is hard to miss, and has been further explored in the OECD report “How’s Life in Latin America?” (OECD, 2021[5]).

Figure 3.3. Share of people without sufficient income to buy a basic food basket and other necessary goods and services

Percentage of the population



Note: Brazil, Peru use data from 2001 and Colombia from 2002 for earliest available year.
Source: ECLAC (2022[8]), CEPALSTAT database, based on data from Household Surveys Database.

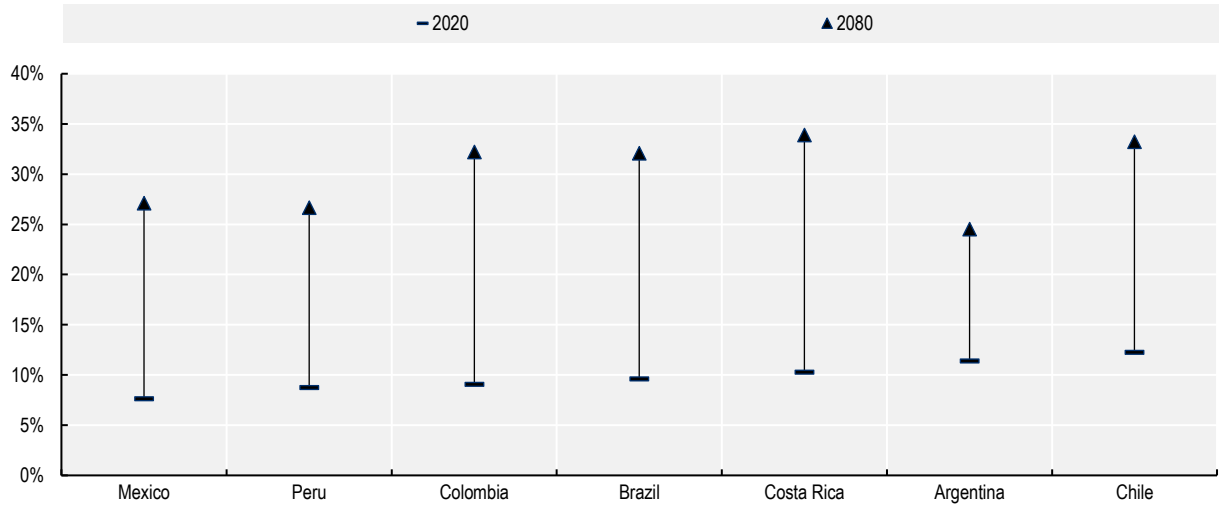
LAC-7 countries are projected to experience a rapid population ageing

The proportion of the population aged 65 years and older is expected to increase substantially in all LAC-7 countries. As countries improve its socio-economic conditions and life expectancy increases, the composition of the population changes with a rising share of older people, increasing the burden on the health system due to growing burden of chronic non-communicable conditions among this population.

According to UN's projections, by 2080, the share of population aged 65 years or more will increase on average by 20 percentage points, reaching 25% in Argentina, 27% in Mexico and Peru, and more than 30% in Colombia, Brazil, Costa Rica, and Chile (Figure 3.4). The shift in the population demographic will have important implications for health needs, putting pressure on both the health care systems and the economy. Countries will have to invest in long-term care and strong primary health care system to manage chronic non communicable conditions. The demographic changes will add pressure to existing health systems unless appropriate measures are put in place for the systems to cope with increased demand linked to the ageing phenomenon.

Figure 3.4. Ageing projections in LAC-7 countries

Share of the population aged 65 years or more, 2020-80



Source: United Nations, Department of Economic and Social Affairs, Population Division (2019) (2019[9]), World Population Prospects 2019, Online Edition. Rev. 1.

The health care systems in selected LAC countries

This section summarises the main characteristics of health care systems in LAC-7 countries. This includes the health system governance, insurance schemes and key institutions for health care delivery. A special section present the organisation of primary health care system in each LAC-7 country, highlighting common and different features between systems.

Health insurance models

Most health care systems fall under one of two broad categories, either National Health Systems (NHS) or Social Health Insurance models (SHI). In other cases, countries combine elements of the two into a hybrid model. There is no one ideal model for the organisation of health services, and no model category has evidenced better performance than the other consistently in all health system objectives. The classification of LAC-7 countries health systems into these categories can be found in Table 3.1.

The National Health System model and the Social Health Insurance model

In a National Health System model, health care is primarily financed through governmental schemes. As such, funding comes from general and specific taxation such as tobacco and alcohol excise taxes. In Brazil, the National Health System (called the Sistema Único de Saúde) has universal health coverage, where people is automatically entitled to care based on their residency (Massuda et al., 2020[10]).

In social health insurance models, the purchasing and providing functions of the system are responsibility of separate entities. Health care is organised through compulsory health insurance schemes, through either public or private insurance entities. Usually, there is a universal coverage scheme that insurance entities need to follow, over which they can provide additional services (e.g. "*Plan de Acceso Universal a Garantías Explícitas*" (AUGE) in Chile, "*Plan Esencial de Aseguramiento en Salud*" (PEAS) in Peru or "*Programa Médico Obligatorio* (PMO)" in Argentina). Health provision is purchased by insurance entities

to comply with their coverage schemes. Funding comes from the payment of social contributions or health insurance premiums. People that are unable to pay social contributions or insurance premiums is covered by the state. Chile, Colombia and Costa Rica follow this model.

Some countries have a hybrid model, financed with a mix of compulsory social contributions and governmental schemes. Coverage is then provided by several fragmented insurers. Argentina, Mexico and Peru follow this model.

Table 3.1. Health insurance models in LAC-7

LAC-7 countries by type of health insurance model

National Health System	Hybrid insurance system	Social Health Insurance
Brazil	Argentina	Costa Rica
	Mexico	Chile
	Peru	Colombia

Three insurance schemes

The insurance scheme depends on the affiliate contributory status and can be related to the insurance coverage plan and the range of available insurance institutions for affiliation. We can distinguish three types of affiliates:

- **Non-contributory scheme**, including people not employed in the formal sector and not able to pay insurance premiums, usually poor and/or vulnerable groups e.g. children, disabled population or pregnant women. The state subsidises health coverage for this group of population in the existing insurance institutions.
- **Contributory scheme**, including people employed in the formal sector that pay health care as percentage of their salary. In some cases e.g. Chile, they can affiliate to a public or private insurer depending on the annual income of the employee.
- **Private voluntary scheme**. These are people that seek private insurance as either an alternative or a complement to the National Health System or Social Health Insurance plans. They provide payment through insurance premiums.

Health care system governance and model of care

The ministries of health (MoH) are the highest responsible authorities within the health care systems of all LAC-7 countries. The role of the MoH varies between countries, resulting in different levels of centralisation. The common standard capacities of the MoH are to act as the regulating body, having quality surveillance responsibilities and guiding health policy, research and technological development. In more centralised systems, the MoH adds to these capacities the responsibility of providing and delivering health care services. At the same time, the health insurance model shapes the landscape of the model of care. National Health System models are predominantly public in terms of governance, funding and provision, while in countries that follow a social health insurance model, social security institutions are responsible for administrating resources and organising care provision contracting public or private providers. The main institutions composing LAC-7 health systems are summarised in Table 3.2.

In Brazil, the MoH, puts special focus on co-ordinating the health care system. Given the National Health System model, governance, funding and provision is organised through the unified health system ("*Sistema Único de Saúde*" (SUS) (OECD, 2021[11]). Private health insurance qualifies for tax reductions, and provide complementary coverage to about 25% of the population that purchases this alternative to deal with deficiencies in care quality and access (Tikkanen et al., 2020[12]). Private health care provision

can be purchased by both private insurers and the SUS. Health care service delivery is decentralised to municipalities. Municipalities, through the municipal secretary of health, manage the financing, co-ordination of health programmes, and both direct delivery and contracting of health care services, including primary health care services.

Costa Rica's health care system is centralised. However, the MoH is only responsible for stewarding the system (standard capacities) and does not deliver health care services. The MoH organise its responsibilities through a network of regional and local offices, each of them is in charge of enforcing national health policies in their jurisdictions. The provision of universal health care services is the responsibility of an autonomous entity that also act as the system main public insurer, the "*Caja Costarricense del Seguro Social*" (Costa Rican Social Insurance Fund – CCSS). CCSS is an autonomous institution that independently organises the financing, purchasing and the provision of most health care services in Costa Rica through both their own and external providers (both public and private). The *Instituto Nacional de Seguros* (National Insurance Institute – INS), another public and autonomous institution, operates in both the private and public sector and covers labour and road accidents providing insurance, inpatient and rehabilitation care. The private sector is composed by insurance companies, co-operatives, self-management enterprises and private clinics and hospitals. Available estimates suggests that complementary private insurance is purchased by approximately 30% of the population (Columbia Public Health, 2019[13]). MoH oversee private health care services through a public entity called the Superintendencia General de Seguros (General Superintendence for Insurances – SUGESE).

In Chile the MoH, represented by two undersecretaries ("*Salud Pública*" and "*Redes Asistenciales*"), is responsible for ensuring care supply, providing public health guidelines and financing health services. Health care provision is decentralised, and overseen by local governments at a regional or municipal level. A network of hospitals, walking-in clinics and outpatient services ("*Sistema Nacional de Servicios de Salud*" – SNSS) provides public health services within a specific geographic area. The network is related to the "*Redes Asistenciales*" undersecretary with decentralised governance into the regional health services and is headed by a regional directorate ("*Dirección de Servicio*"). Private providers can also be part of the network if they have standing contracts with the public insurance scheme. Health care coverage is provided primarily either by the state-owned National Health Fund – "*Fondo Nacional de Salud*" (FONASA), or by privately owned social security institutions, "*Instituciones de Salud Previsional*" (ISAPREs). FONASA covers around 78% of the population, ISAPRES cover around 17-18% of the population, while a further 3-4% are covered under the armed forces insurance scheme (OECD, 2019[14]). Private health care providers can be contracted by both private and state owned social security. There is a market of complementary private insurance, which in 2007 was estimated to cover 24% of the population, mainly through collective insurance linked to co-operatives and labour unions (Departamento de Estudios y Desarrollo, 2008[15]).

The health system in Colombia is organised as a competition model. The MoH (and Social Protection) is responsible for overall stewardship and gives special attention to formulating, monitoring and enforcing regulations aimed at minimising market failures and guaranteeing equitable access to health services. Long-term objectives and responsibilities to deal with health challenges are defined in ten-year national public health plans (Second version 2022-31 in implementation phase). Purchase, provision of health care services and managing population health risk are the responsibility of the system's insurers, "*Empresas Promotoras de Salud*" (EPS). Health care provision happens through direct contracts between insurers and health care providers ("*Instituciones Prestadoras de Salud*-IPS"). EPS are public or private entities that act as intermediaries and managers of the resources provided by the state. They are responsible for implementing the objectives set by the MoH, developing the guidelines and their protocols, and supervising the performance of health care. IPS are constituted by both public and private outpatient and inpatients services with different service complexity levels. Complementary private insurances exists, known as "*Medicina Prepagada*" that act as both insurers and providers of some elements of health care (estimated to cover around 9% of the population (Fasecolda, 2020[16]). People are affiliated with the social security system through either the contributory or the subsidised regime (in 2021 48% vs 47% respectively)

(Ministerio de Salud y Protección Social Colombia, 2022[17]). The latter includes people outside of formal employment and a special benefit regime for armed forces, teachers and other selected services.

Argentina's health system is one of the most fragmented and segmented in the LAC-7 region, where each of the provinces have independent responsibility for leadership, financing and delivery of health services. Provinces can transfer this responsibility to the municipalities depending on their capacities and resources. The role of the federal government is limited to oversight and funding of the health care system for people without coverage. The Argentinian health system has elements of a National Health System model, reflected in the public coverage and provision scheme available for everyone in the country. At the same time, as in the social health insurance model, contributory affiliates (and family) have the possibility of entering the compulsory social security scheme, managed by insurance institutions called "*Obras Sociales*". There are more than 200 of such entities at the national level, regulated by the Superintendence of Health Services (SSS). These institutions finance health care services of their affiliates in both the public network and private providers. Finally, there are private insurers that can complement or replace other insurance schemes. As in Colombia, they are known as "*Medicina Prepagada*" and cover 15.7% of the population (either by association with their *Obra Social* or by voluntary enrolment) (Instituto Nacional de Estadísticas y Censos. República Argentina, 2010[18]). Private insurance is reserved for private voluntary affiliates and typically covers for private providers.

In Mexico, the delivery of health care services and federal and local health programmes is responsibility of each autonomous state. The central government, through the MoH, provides public health programmes and has responsibility over national health information, data, and statistics. The health system is currently undergoing a major reform that started in December 2018, with the removal of "*Seguro Popular"* and the creation of a new system under the Health Institute for Wellbeing ("*Instituto de Salud Para el Bienestar"* – INSABI) as the universal health programme. Under INSABI, the federal government has now recentralised procurement, personnel (health workers have been hired as federal employees) and health service delivery (Reich, 2020[19]). Alongside the public universal health programme, health coverage in Mexico can be provided through a variety of sub-systems – multiple insurers with individual's affiliation usually determined by their employer. The largest of these is the "*Instituto Mexicano del Seguro Social*" (IMSS), which provides health coverage alongside other services to contributory affiliates. Likewise, the Institute for Social Security and Services for State Workers (ISSSTE) provides coverage for federal workers. Health service providers are different for the multiple insurers. The fragmentation of the health system can generate care continuity problems when the situation of an affiliate changes. The system relies heavily on private providers, where up to 67% hospitals and 54.5% registered outpatient clinics are private (DGIS, 2019[20])

In Peru, the health system is fragmented into public and private subsystems, each replicating fundamental health care system activities with separated governance structures. Each system has separated financing, service delivery mechanisms and works with their own health care providers. The MoH is responsible for electing the head of the regional health directorates ("*Direccion regional de Salud* – DIRESA") and local hospitals. Further, the "*Superintendencia de Salud*", a governing body part of the MoH, is responsible for authorising, controlling and supervising the good performance of the health system. The "*Seguro Social de Salud*", more commonly known as EsSalud, covers all salaried formal workers and their families as contributory affiliates (24.8% of the population). The "*Seguro Integral de Salud*" (SIS) provides coverage for Peruvians who do not have other health insurance (44.4% of the population). SIS manages two coverage regimes; the subsidised regime and the semi-contributory regime where households contribute with health premiums (Instituto Nacional de Estadística e Informática, 2018[21]). Private or public health provider entities ("*Entidades Prestadoras de Salud*" – EPS) exist as complementary insurance and purchasing entities. Private health insurance covers only a small proportion of the Peruvian population (5.1%) and complement or replace the other insurance schemes (Instituto Nacional de Estadística e Informática, 2018[21]). Similar to Mexico, independent public or private providers ("Instituciones prestadoras de servicios de salud- IPRESS") deliver health care, and either belong, or are directly linked, with the different insurance schemes.

Table 3.2. Summary of main institutions in health care system

Health care systems' main institutions by country and function

Country	Governance model	Health care provision	Public insurance	Private insurance
Argentina	Decentralised	Network of public providers Private providers	National and provincial health ministries Obras Sociales	Private insurance companies ("Medicina Prepagada")
Brazil	Decentralised	SUS	SUS	Complementary insurance companies
Chile	Decentralised	SNSS Private providers	FONASA Separate system for armed forces	ISAPREs Complementary insurance companies
Colombia	Decentralised	IPS	EPS	EPS Complementary insurance companies ("Medicina Prepagada")
Costa Rica	Centralised	MoH CCSS Hospitals & primary care teams Private providers	CCSS	Private insurance companies
Mexico	Re-centralised (before 2018, the health system was decentralised)	INSABI	IMSS, ISSSTE	Private insurance companies
Peru	Decentralised	IPRESS	SIS EsSalud EPS	EPS

Vertical integration versus horizontal integration

Vertical integration refers to a system where the purchasers of health care services (insurers) and the providers of health care services are the same institution or are directly linked (e.g. owned by the same economic group). Horizontal integration has, in general, a more flexible definition. When stakeholders at the same level (providers or purchasers) belong to the same institution or have agreements to co-ordinate care, incentives, information, accountability and/or responsibilities, we understand the system to be horizontally integrated.

Costa Rica, Mexico and Peru have vertically integrated health services, where insurers have their own care providers. Colombia is partially vertically integrated as their integration is limited by a legal ceiling to a 30% of the total activity. Argentina, Brazil and Chile are vertically fragmented. Even though there are public insurers and public providers working directly with each other in these three countries, the institutions are independent of each other. Horizontal integration is more common among public insurers and providers. The CCSS in Costa Rica has an horizontally integrated network of financial and administrative organisation of services, while in Brazil's SUS, Chile's public insurer (FONASA) and the subsidised regime in Mexico (INSABI) are horizontally integrated at purchasing level. Peru, Argentina (Novick, 2017[22]) and Colombia are horizontally fragmented at both purchasing (between institutions and/or geographical governance structures) and provider level.

Working towards integrated care, functions are increasingly horizontally organised in most OECD health systems. Vertical integration has advantages, like lower transaction costs, and disadvantages, including losing the market competition to incentivise the optimisation of quality and prices (OECD, 2015[23]). However, in vertically integrated systems each subsystem has little incentive to integrate horizontally. The problem is enhanced when there is a lack of sectoral leadership that co-ordinates and articulates the country's public and private providers. Important weaknesses can arise, for example, in the setup of centralised information systems for monitoring and evaluating care quality and other key strategic issues

(as in the case of Colombia). Having identified fragmentation issues, Colombia created Integrated Health Care Pathways or Routes (Rutas Integrales de Atención en Salud), designed to organise the necessary arrangements, actions and responsibilities to co-ordinate and provide integrated care.

In health systems with various vertically integrated sub-systems, there are no incentives to share information, guidelines or to co-ordinate care between parallel subsystems. This is the case of Peru and Mexico, where the different sub-systems have little co-ordination and no integration between them (OECD, 2017[24]).

Fragmented health insurance systems often lead to coverage gaps and service inequalities

Countries with a social health insurance model allow insurance companies to provide more comprehensive benefit packages in addition to the standard of care, usually financed by premiums and co-payments, thus creating care disparities according to the payment capacities of the population (Box 3.1 for definition of standard of care). In Argentina, a heavily fragmented system both horizontally and vertically, health inequalities are rooted both in the different coverage packages offered on top of the standard of care and in the inequalities between municipalities. Inequalities are enhanced in systems that are vertically integrated but heavily fragmented at care provision level, as in Mexico and Peru. In these systems, insurers and providers replicate functions in parallel subsystems according to the population contributory status, thus introducing structural inequalities. Moreover, 24.5% of the population in Peru in 2018 and 26.5% of the Mexican population in 2020 had no insurance coverage (Quispe Duran, 2019[25]; Durand Carrión, 2018[26]; Velázquez, 2021[27]).

Box 3.1. Standard of care

What do we mean by standard of care?

LAC-7 countries have defined a basic care coverage plan that is compulsory for all insurers and, hence, works as the standard of care for the health system. These care plans are usually called “universal”, but the term universal is used to signal that they are available for all the population, not necessarily covering all health care needs. In Brazil, that follows a National Health System model, the standard of care covers all diseases and health conditions of all the population (OECD, 2021[11]) effectively fitting the definition of WHO for a universal health insurance (WHO, 2022[28]). In the other countries in the region, the standard of care covers a set of diseases chosen because of the burden of disease they represent. In Chile, the plan for universal access for explicit guaranties (AUGE) ensures access, financial protection and quality for 80 health problems. In Argentina, the compulsory medical plan (PMO) defines the standard of care for all the system insurers, independently of their governance structure, and focuses on the coverage of a comprehensive set of health services. Peru has the essential plan of health coverage (PEAS) that aims at providing the minimal care plan for all the population and ensures access and coverage in terms of opportunity, service and quality.

Expanding the standard of care to reduce health care inequalities

Inequalities that are rooted in the coverage, access, range of services and some elements of care quality will be directly reduced by expanding the standard of care, so that a larger portion of the population and a larger portion of health issues is included. However, inequalities that are rooted in the differences between care providers caring for population according to their affiliation status will have limited improvement with the expansion of the standard of care. Prompt access to care (with limited waiting lists) for example, depends both in the standard of care and in the service capacity of the providers to care for patient’s needs. Other aspects of care quality, such as hotel service in inpatient care and access to the latest health technology and pharmacology, are other aspects that are commonly unaffected by the standard of care.

Even in Brazil, the only country in the region with a National Health System model, there are disparities in care services. The quality and/or coverage of the public system pushes people (>25%) to use complementary private health insurers and seek quicker and better quality care in private providers (Fontenelle et al., 2019[29]). This is accentuated by the fact that there is very little communication or data exchange between providers (or schemes) when patients move between treatment under SUS and private coverage (OECD, 2021[30]).

System fragmentation can also lead to differences in health spending. Cotlear et al. (Cotlear et al., 2015[31]) describes how per capita spending by the government on the non-contributory system was typically narrower (it covered less benefits, for example, no access to breast cancer treatment) than spending on the contributory system and voluntary private sector system.

Universal health insurance schemes are being pushed across LAC-7 countries to reduce health care inequalities. Challenges of these programmes can be partially linked to system fragmentation. SUS in Brazil covers all diseases and health conditions of all the population, making the standard of care part of the universal health insurance. SHI systems in Costa Rica, Chile and Colombia have universal insurance plans covering 91%, 78% and 50% of the population respectively (Cotlear et al., 2015[31]). Argentina's universal health coverage programme (The Health Benefits package of plan "*NACER"*) started caring only for maternal and child health, therefore covering only around 4% of their population, but has then been expanded to cover for the population with public coverage (around 44% of the population). The new range of covered services guarantees access to over 800 comprehensive health care services, and is financed by transferring funds to the provinces based on equity and performance criteria (the new programme is called SUMAR).

Primary health care in LAC-7 countries

Primary health care governance and model of care

Not only do the selected LAC-7 countries present different levels of centralisation at both governance structure and PHC core functions, but they also have a different level of PHC comprehensiveness. These characteristics determine the strength of primary health care and its importance in the health care system of LAC-7 countries. Overall, Brazil, Chile and Costa Rica have a relatively more developed PHC system, followed by Argentina, Colombia, Mexico and Peru.

PHC is governed by local and/or regional governments in all countries except Costa Rica, and more recently Mexico. Argentina, Brazil and Chile's primary health care system is decentralised to municipalities. There is a degree of co-ordination and shared accountability within the municipal primary care services in all countries, which avoids larger fragmentation of PHC services. However, in decentralised systems, municipalities provide supplementary funding to the primary health care sector which leads to disparities in health care quality across municipalities (OECD, 2021[11]).

PHC is also decentralised to regional governments in Colombia and Peru, with Peru being double decentralised because of several insurance scheme subsystems. System fragmentation is determined by little to no co-ordination between providers at the same level of care and no shared accountability or responsibilities, leading to overlapping functions between providers and target populations. It is important to mention that policies have been created to attend this issue, such as the Integral Health Service Policy (Política de Atención Integral en Salud) that Colombia launched in 2016.

All LAC-7 countries rely upon a network of primary health care composed of multi-disciplinary teams (except Mexico which also relies on solo-practices of primary care practitioners) to act as the first-point of care for non-emergency affections and routine care (Table 3.3). The reliance on multi-disciplinary PHC teams to be the first-point of care is an effort to encourage appropriate use of health services, as it enables the possibility to provide proactive, preventive and co-ordinated care. The 2004 Federal Health Plan in

Argentina, the Integral model for health delivery (Modelo de Atención Integral en Salud-MIAS) in Colombia the biopsychosocial model implemented by the Ministry of Health in Chile since 2013, and the introduction of mobile PHC units in Peru are examples of policies to improve access to high quality PHC in LAC-7.

However, there is a circular causality between the ability of PHC to comply with its core functions and being the first-point of care. On the one hand, the benefits of having quality and comprehensive PHC are only achievable with effective provision and use of PHC as the first-point of care. On the other hand, the effectiveness of PHC delivery as first-point of care is determined by the access, quality and comprehensiveness of PHC services. In Mexico for example, the establishment of PHC as an integral part of the health system is not optimal, with limited opening hours. Therefore, people commonly seek first-contact care in hospital emergency departments or pharmacies that provide physician consultations. In a similar vein, because of the small number of primary health care facilities in Peru; 40% of EsSalud users are ascribed to a hospital as their first point of care. In Brazil, as of August 2022, 27% of the population are not covered by family health teams (FHTs) and too many patients bypass primary health care and directly seek care in outpatient specialties and hospitals. This means that opportunities for proactive, preventive and co-ordinated care are lost.

Models of care with mandatory PHC registration and gate-keeping nudge first-point of care and increase the opportunity to deliver comprehensive health care services ranging from health promotion, diseases detection to managing chronic conditions. Unlike many other OECD countries (Box 3.2), there is no direct incentive and no obligation to register with a primary health care physician in Brazil, Colombia or Mexico. Only in Chile, patients with public insurance scheme are required to register with a primary health care physician while in Argentina and Costa Rica patients have financial or quality incentives to do so. For example, Costa Ricans are required to register to a local PHC centre in other to access all benefits provided by the social insurance of CCSS, including receiving sick leave payment when this is prescribed by a private doctor. PHC gatekeeping exists for most specialist care services either by compulsory referral or financial incentives in Chile, Colombia, Costa Rica and Mexico, while there is no formal referral system in Argentina, Peru or Brazil.

PHC facilities have both common and different functions across countries. Common functions relate to early detection and disease management, while responsibility for public health is shared between the PHC delivery network and several specific institutions. On the other hand, functions that are different between countries relate to the more comprehensive range of responsibilities found in well-developed PHC systems, such as co-ordinating care delivery, addressing health risk factors, and identifying at risk or target population.

In Argentina, PHC facilities (“Centro de Atención Primaria”- CAPS) are formed by inter-disciplinary teams made up of a wide range of primary care practitioners (PCP). These include: general practitioners, clinicians, paediatricians, gynaecologist, nurses, social workers, psychologists and obstetricians, nutritionists, speech therapists, sociologists and dentists. The PHC units are also responsible for health promotion and protection actions, delivered in the form of targeted programmes by population groups and health areas e.g. maternal and child health, nutrition or tuberculosis. Public health functions are shared with the Directorate for Health Research, but the Ministry of Health also has a National Directorate of Epidemiology and Health Situation Analysis, in charge of Epidemiological Surveillance.

In Brazil, primary health care is delivered through family health teams (FHTs) that follow a community-based approach. The teams are composed of a physician, nurse, nurse assistant and community health agents, and cover a defined population of between 2000 and 3 500 people. Community health agents provide an essential part of public health services by visiting families, identifying issues or risk factors, and supporting their access to preventive care or treatment (OECD, 2021[11]). The National Health Council is a permanent body of SUS with the mission to oversee, monitor and supervise public health policies. It is composed of health professionals, the scientific community, service providers and the private sector and in its membership includes representatives of users, workers, SUS managers and health service providers. Moreover, the constitution guarantees community participation in the public health system at all levels of

governance. This is done through health councils and health conferences, composed of 50% community members, 25% providers, and 25% health system managers.

A defined basic primary health care package is provided by a multi-disciplinary team in Chilean PHC. There are several types of primary health care centres with varied levels of services complexity, denominated "Centros de Atención Primaria de Salud" (APS). These include ambulatory care, family medicine, rural health posts, community care, rehab centres, primary emergency care, among others. There are also few specialty clinics providing primary health care, which are part of the hospital network and more directly dependent on the regional health administration. As in other countries, PHC in Chile provides all three core functions, as explicitly stated in the Integral Model for Family and Community Health (Ministry of Health, 2013[32]). Public health functions are shared with the National Institute of Public Health, responsible for health promotion and prevention through quality surveillance, accreditation, health research, and health technology assessment (Instituto de Salud Pública de Chile, 2022[33]). At a higher level, these responsibilities are shared with the undersecretary of public health. Infectious disease surveillance, including disease outbreaks, is undertaken by the Department of Epidemiology in co-ordination with the Departments of Public Health of Regional Ministerial Secretariats (SEREMIs).

In Colombia, the PHC network of service delivery is constituted by four types of primary health care units: health posts (in charge of promotion and prevention); health centres (for outpatient consultation); health centre with beds (which conduct deliveries without complications and minor emergencies) and; local hospitals (which provides hospital care of low complexity). At the same time, complementary private insurers can provide primary health care through contracted PCPs. Several elements of public health are external to the PHC network of service delivery. The MoH has health promotion responsibilities and in exceptional cases, as for the COVID-19 pandemic, can organise primary health care independently from the PHC network. In parallel, EPS has responsibilities over, and organises activities of health promotion and disease prevention. Epidemiologic surveillance is responsibility of the National Health Institute and Public Health Observatory, while the National Health Observatory (department in the National Health Institute) is responsible for the surveillance of public health information and provision of policy recommendations.

Primary health care units in Costa Rica are called "Equipos Básicos de Atención Integral en Salud" (Basic Teams for Comprehensive Health Care – EBAIS), and are formed by multi-disciplinary teams delivering PHC in all its core functions, health promotion, early detection and disease management. Further, referrals or direct transfers to secondary care are also co-ordinated by EBAIS. The MoH delegates care delivery responsibilities to the CCSS and, instead, focuses primarily on steward the health system and public health functions. The MoH is responsible and accountable for public health targets, creating an incentive to collaborate actively with other Ministries (e.g. Finance, Education, Sport and Recreation), national trade and industry bodies (e.g. in the pharmaceutical sector) and with civil society organisations. The CCSS public health involvement considers the participation in health promotion and prevention activities.

In Mexico, the undersecretary of Public Health manages national disease prevention and health promotion programmes, which are a mix of disease-focused public health initiatives (e.g. HIV, breast cancer, diabetes or mental health) and person-based preventive health care initiatives (related to ageing, cardiovascular risk or healthy schools). These programmes include vaccinations and control of vector-borne diseases. Further, PHC in Mexico is undergoing an important reform. In 2020 the Comprehensive and Integrated Primary Health Care Model (Atención Primaria de Salud Integral e Integrada) was created, however, the implementation of the new model has been inconsistent because of financial and organisational constraints. Historically, there were four subsystems, governed by the MoH, IMSS, ISSSTE and private providers. The subsystems were vertically integrated with their own PHC providers, composed of outpatient health centres, generalists and nurses, family medicine units and pharmacies. But also general hospitals, hospital clinics and physicians (included specialists) offices, bypassing the opportunity to optimise health care pathways. Each subsystem had departments for attending public health functions, such as epidemiological surveillance and health promotion (WHO, 2017[34]).

The Peruvian health system fragmentation extends to PHC, posing issues for health care quality and continuity (Cuba-Fuentes et al., 2018[35]). A wide variety of primary health care providers exists. The MoH has four types of primary health care providers and EsSalud another four categories. Private health schemes also have an array of providers that provide PHC, from physician offices to all-levels-of-care clinics. Importantly, the government has started to promote exchange and co-ordination between provider networks, which is a step towards better integration within the primary health care system. The largest network of public PHC centres belongs to the Regional Governments and to the Ministry of Health. Around 50% of these do not have a doctor, are located in very remote areas and there is a lack of incentives and human resources policies to attract physicians or other health care professionals. Moreover the "Diagnosis of gaps of infrastructure and equipment of the health sector" report by the MoH shows that 90% of health centres presents inadequate installed capacity. PHC sensitive conditions are regularly referred to hospitals because of the lack of adequate infrastructure or care network (GOPBM – MINSA, 2021[36]). Under these circumstances, PHC functions in Peru are de facto shared with other levels of care, while both the central and regional governments support the public health function in all its capacities. On a more positive note, the report monitoring gaps in infrastructure is a key tool to understand the determinants of PHC performance and implement policies for improvement.

Box 3.2. Primary health care in Denmark

The Danish primary health care governance and model of care

Denmark is a high-income country and has a National Health System with universal coverage funded largely through taxation. Since 2007, the primary care sector in Denmark is decentralised into three political and administrative levels, with the purpose of responding more closely to the needs of the people. In the first level, the state formulates overall national health policy and legislation, co-ordinating and guiding policies implementation at a general level. In the second level, each of the five regions are responsible for the provision of hospital care, services of outpatient specialists, and parts of primary care, including services of General Practitioners, physiotherapy, and dental services for adults. Finally, there are 98 municipalities to act as local administrative bodies responsible for home nursing, care homes for elderly, rehabilitation, general disease prevention, and child dental care.

General practitioners (GPs) play a central role in the Danish health care system. Nearly all Danish GPs are self-employed professionals working on a contractual basis with the regional authorities. Danish GPs are represented by the Organisation of General Practitioners, whose main function is to conduct collective negotiations of the conditions for provision of GP services. GPs practices are subject to far-reaching regulation stating the permitted number of practices, their geographical distribution, remuneration, number of patients listed with a given practice, and conditions under which patients are accepted by the practice. The system of patient lists is a central characteristic of the system. The regulation sets a limit of 1 600 patients per GP.

Danish GPs are the first point of contact within the health care system and are responsible for providing continued care management including acute, chronic and preventive health care. GPs are also responsible for integrating physical, psychological, social, cultural and existential dimensions relevant to the patient health. As of 2016, a special focus has been given to improving the quality of long-term care and reducing hospital admissions among elderly. These functions don't exclusively fall under the responsibilities of GPs. Hospital care costs (up to 20% of total health services) are financed by municipalities, creating a direct incentive for municipalities to invest in preventing hospitalisations. The other 80% of health care costs are financed through a block grant and an activity-related subsidy from the state. The effectiveness of primary care is demonstrated by the relatively infrequent need for hospitalisation for many chronic conditions such an asthma and heart failure and the good performance on management and prescribing for elderly patients with diabetes.

Source: OECD (2017[37]), *Primary Care in Denmark*, https://doi.org/10.1787/9789264269453-en.

Primary health care financing

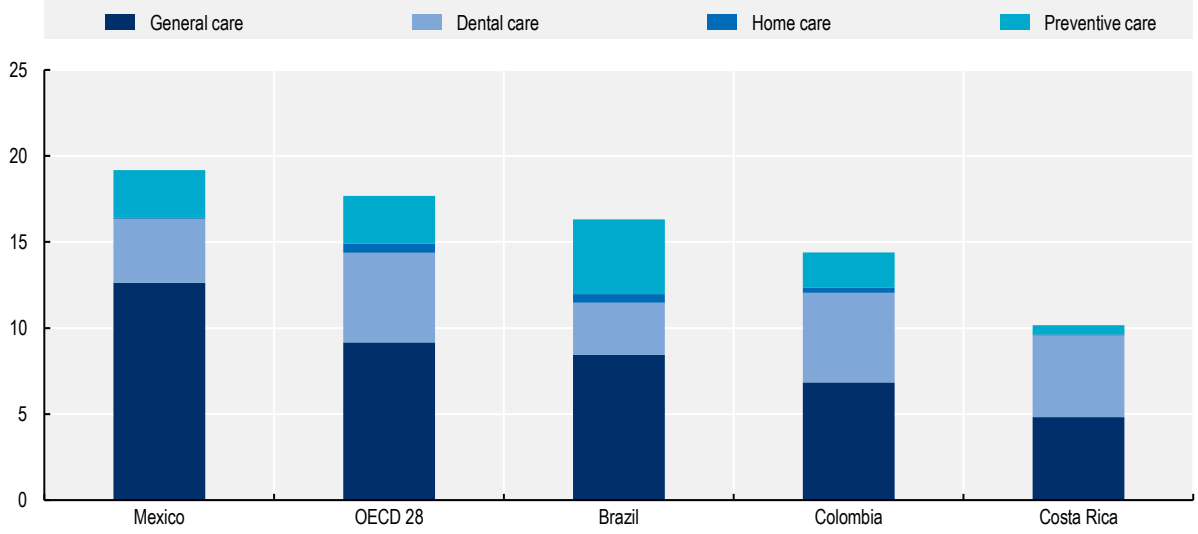
Primary health care expenditure

Throughout the report we define primary health care in terms of its core functions. This definition presents a challenge for calculating expenditure because the responsibility over core functions is usually disaggregated into different governing bodies within health systems. At the same time, categories of expenditure data are not feasibly convertible into PHC core functions. The OECD estimates PHC expenditure by classifying data by health service type and by service provider. However, given data limitations for the LAC-7 countries, PHC expenditure is estimated using the "expenditure on basic services" definition. This definition considers PHC by the type of health service, including outpatient care, outpatient dental care, home-based curative care and preventive services (OECD, 2021[38]).

Using the "expenditure on basic services" definition, Mexico, Brazil and Costa Rica spent respectively 19.2%, 16.3% and 10.2% of their health expenditure to primary health care in 2019 (Figure 3.5). Using the same definition, Colombia spent 14.4% of current health expenditure in PHC in 2017. In Chile (using another methodology for calculation), PHC corresponded to 21% of the public health spending, that in time represented 50.4% of the total health expenditure (World Bank, 2021[2]). The share of PHC expenditure in Chile has been relatively stable from 2011 onwards (Moraga-Cortés, Bahia and Prada, 2021[39]). Even though the different calculation methods and years of analysis make regional assessments unfeasible, we can notice that besides Mexico, all other LAC-7 countries spent less on PHC than other OECD countries (for which the average is 17% of the total health spending). However, the larger percentage seen for Mexico may be explained by a suboptimal use of resources, which relates to its fragmented health system. Adding to the underfunding of PHC, there are differences between investments in private and public systems (Aiken et al., 2021[40]), resulting in quality differences between types of users.

Figure 3.5. Estimated expenditure on PHC

Spending on primary health care services as a share of current health expenditure, 2019 or latest available year



Note: Data from 2019 unless otherwise specified. 2018 data for Australia and Japan, 2017 data for Colombia. It includes 29 OECD countries. Countries with no representative data for general outpatient care have been excluded to avoid misinterpretation. Countries excluded are Chile France, Greece, Ireland, Israel, Italy, New Zealand, Portugal, Türkiye and the United States. Data is not available for Argentina and Peru. Data from Brazil was prepared in the context of the OECD health review.
Source: OECD (2022[41]), OECD Health Statistics.

While out-of-pocket spending is a source of inequalities and prevents universal access to health care, it constitutes an important part of LAC health financing strategies. Out-of-pocket payments put households at tangible risk of catastrophic expenditures and discourages accessing primary and other types of care (Laokri, Soelaeman and Hotchkiss, 2018[42]). Amongst LAC-7 countries, out-of-pocket spending represented on average 28.1% of total health expenditure, a much higher average than on average across other OECD countries in 2019 (at 19.8%).

Payment systems and incentives in LAC-7 countries

As other OECD countries, LAC-7 countries uses a variety of payment systems to finance PHC (Table 3.3). Most systems combine either capitation or global budget with fee for services, and some countries add pay for performance methods. Capitation and global budget schemes imply some degree of territorial organisation for the delivery of services. To optimise the use of resources, health authorities should avoid double financing of providers that overlap in target population and services. Countries with better organised PHC will be in a better position to optimise their funding strategy. An optimal global budget needs an accurate understanding of the health services needed by the population a priori, while the capitation system is more flexible as it can be accompanied by risk adjustment to make the payments according to the characteristics of the population, as is the case in Colombia, Peru, Chile and more recently in Brazil. As of 2018, Colombia, Costa Rica and Mexico were not using pay for performance methods in PHC, limiting incentives to increase health care quality.

Countries vary in the mechanisms to determine the amounts paid with each payment method. The fees payed for services in Chile are set unilaterally by the central government, while in Argentina and Colombia they are negotiated between individual purchasers and providers. A similar situation happens for capitations, while in Argentina and Colombia capitation levels are negotiated between purchaser and providers, in Peru and Chile it is unilaterally set by a central authority. Global Budgets on the other hand are set by allocation principles at the central level in all countries that use them. Similarly, salaries for employed PHC workers are negotiated between purchasers and providers in Argentina, while in Peru they are unilaterally defined by central government (Lorenzoni et al., 2019[43]).

Because of system fragmentation, PHC might be paid differently in the same country. This leads to different incentives within the system, making it harder for authorities to introduce interventions. For example, Peru and Colombia list both capitation and global budget to pay providers, methods that are usually mutually replaceable, giving the idea that some providers might have a global budget while others are paid by capitation. Similarly, in Chile, fee for service is used to pay private group practices only (Lorenzoni et al., 2019[43]). Less common payment methods also exist, like the prospective amount payed for a set of expected services in Chile (“Programas de pago prospectivo por prestación”) (Eduardo Goldstein, 2018[44]).

Policy innovations are also taking place to provide economic incentives for the primary health care providers to deliver good care quality. In 2018, 11 OECD countries, including Mexico, reported using specific add-on payments to incentivise care co-ordination, prevention activities or active management of chronic disease, and 15 countries reported using pay-for-performance (P4P) mechanisms in primary health care. The overarching objective is to improve care quality and the performance of PHC. Such incentive schemes have been introduced in Argentina, Brazil, Chile and Peru.

The Sumar programme in Argentina

Argentina started using P4P schemes in 2004 through the Sumar Programme (the expansion of Plan Nacer). The MOH allocates additional resources to the provinces through a financing mechanism based on results. The Sumar Programme intends to create in all provinces the function of “strategic purchase” transferring additional resources that complement the provincial budgets to progressively guarantee the provision of the Health Services Plan. The P4P is instrumented through a system of capitated transfers to

the provinces adjusted for performance. The 60% (monthly transfer) of the amount is linked to enrolment and provision of an essential health service in the last year. The remaining 40% (quarterly transfer) is linked to the level of performance achieved according to 14 indicators.

The Ministry of Provincial Health cannot use transferred resources directly but has to transfer them to health centres paying a fee for each health service provided to a beneficiary of the Programme in order to incentivise preventives services, home visits or co-ordination between establishments. Health centres have autonomy on spending respecting the investment rules and categories framework authorised by the Provinces and/or the Municipalities.

The Programme created a tool for production planning and investment of resources that allows to health centres to define coverage goals of the Health Service Plan, to estimate the funds to be received and prioritise investments. The Sumar Programme demonstrates that improvements in health outcomes can be achieved with modest additional resources. Important health outcomes have been achieved between its inceptions in 2004 with less than 1% of the average of the annual provincial budget. The fact that the Health Services Plan is part of the P4P provides incentives to stimulate the provision of covered services and monitoring its delivery (Sabignoso, 2018[45])

The Previne programme in Brazil

Brazil uses a combination of payment systems in primary health care. In 2019, the country introduced a P4P scheme called '*Previne*' programme. Before '*Previne*', there was a voluntary pay-for-performance bonus based on the *National Programme for Improving Primary Care Access and Quality* (PMAQ) with a fixed and variable capitation component to transfer funds to municipalities (OECD, 2021[11]).

'*Previne*' has modified the capitation payments to account better for differences in health care needs across municipalities, streamlined the pay-for-performance indicators and revisited the strategic actions to be financed by the federation. As part of the new Previne pay-for-performance programme, the country monitors several indicators on access to PHC, risk factors and quality covering maternal health, child immunisation, breast cancer screening, and management of hypertension and diabetes. While this programme has the potential to improve access to PHC, its introduction is very recent so it is still early to assess its effectiveness. Another important change is that capitation payments are only made for people registered with Family Health Teams (adjusting for socio-economic, demographic and geographical factors). This will most likely incentivise FHTs to further engage with households. So far, the programme has led to a large increase of people registered with Family Health Teams. From the 2020 federal budget for PHC (BRL 20.4 billion), 52% are allocated based on weighted capitation, 24% are salaries for community health workers (a subcomponent of the strategic actions), 15% incentive payments for strategic action and priority areas, and 9% are performance bonuses (OECD, 2021[11]).

The P4P programme in Chile combines two components

In Chile, public clinics controlled by the municipalities with financing from the central government (with complement from the municipalities) deliver PHC services. Transfers from the Ministry of Health are distributed as follows: 70% capitation, 25% payments for priority areas defined by the Ministry of Health (including mental health) and 15% performance bonuses and other payments. There are two different types of capitation. The first one is based on average cost per person to deliver 96 key services defined in the *Plan de Salud Familiar* (Family Health Plan). It is adjusted by the economic capacity of the municipalities, the rurality of the population, and the accessibility. The second one is based on age of patient. For each enrolled patient over 64 years old, municipalities receive an additional monthly payment, the same amount in all municipalities.

Moreover, Chile has a P4P scheme that combines two payment schemes:

- Health Goals: defines eight goals with ten indicators. It targets frontline workers in primary health care, who have the opportunity to receive bonus wages every three months, which can add up to two months of potential extra bonus salary per year. The goals were developed to target the main burdens of disease in the country and areas with low-compliance to set standards.
- Primary care activity Indicators, which determine the monthly payment from the Ministry of Health to municipalities. Three categories of activity are included: general activity (such as coverage of preventive medical examinations), continuity of care (such as around the clock availability) and compliance with care standards. Evaluations are conducted quarterly, and if the annually set goals for each of the indicators are not met, monthly rates are lowered accordingly.

Performance budgeting in Peru

Peru uses performance budgeting as a public management strategy to introduce incentives to public entities towards the achievement of results, improving the quality of public spending. It involves entities in the three levels of government (national, regional and local).

The Budgeting Programme is a programming unit that allows the operationalisation of the budget strategy by result in the Public Sector Budget. The Budgeting Programme can be Results Oriented Budgeting (PPoR), and Institutional Budgeting Programs (PPI). The PPoRs are intended to achieve results on the population and their environment, and are multisectoral and intergovernmental in nature, while the PPIs are intended to achieve sectoral results and institutional strategic objectives.

The Ministry of Health is responsible for conducting nine PPIs on topics such as nutrition, maternal-neonatal health, tuberculosis, HIV, prevention and control of cancer. It also participates in the management of products related to the health function through three PpoR: vulnerability reduction and emergency care due to disasters, early childhood development and reduction of violence against women.

Table 3.3. Organisation and provision of primary health care in LAC countries

	Governance of primary health care	Primary health care providers	Population per PHC unit according to national guidelines	Form of organisation	Payment mechanisms (capitation, fee-for-service, P4P)	Is referral required to access to secondary care	Are patients required or encouraged to register with PHC?
Argentina	Municipalities	Centro de Atención Primaria" (CAPS), composed of inter-disciplinary teams.	3 200 ([46])	Team practice	Fee-for-services/P4P, global budget	No need and no incentive to obtain referral	No obligation to register but incentives to do so
Brazil	Municipalities	Family Health Teams (FHTs), which are multidisciplinary	2 000-3 500	Team practice	Global budget/fee-for-services/P4P	No need and no incentive to obtain referral	No incentive and no obligation to register
Chile	Municipalities (92.6% of centres)	Centros de Atención Primaria de Salud" (APS)	Urban*: 20 000 – 40 000 Rural: 500 – 4 500 ([47])	Team practice	Capitation/fee-for-service/P4P	Referral is required for the population in public scheme for most services**	Patients in public scheme are required to register (87% registered)

	Governance of primary health care	Primary health care providers	Population per PHC unit according to national guidelines	Form of organisation	Payment mechanisms (capitation, fee-for-service, P4P)	Is referral required to access to secondary care	Are patients required or encouraged to register with PHC?
Colombia	MoH (MIAS)	Health posts, Health centres, Health centres with beds, local hospitals	Not available	Team practice	Capitation/FFS/Global budget	Referral is required to access most secondary services	No incentive and no obligation to register
Costa Rica	MoH	CCSS through EBAIS	3 500-4 000 ([48])	Team practice	Global budget	PCP referral is required	Incentive to register
Mexico	MoH (No different gov. body for PHC) Undersecretary. Public Heath (MoH)	Multiple primary health care providers	Not available	Solo practice and team practice	NR	Primary health care physician referral is required	No incentive and no obligation to register
Peru	MoH EsSalud Private insurance	Multiple primary health care providers	2 000-3 200	Team practice	Capitation/FFS/P4P/Global budget	No need and no incentive to obtain referral	No incentive and no obligation to register

Note: * Not including emergency primary health care centres. ** Or incentivised depending on care plan. NR: No Response.
Source: Authors based on Lorenzoni et al. (2019[43]), "Health systems characteristics: A survey of 21 Latin American and Caribbean countries", https://doi.org/10.1787/0e8da4bd-en, and based on consultations with experts.

Main health challenges in the LAC-7 countries

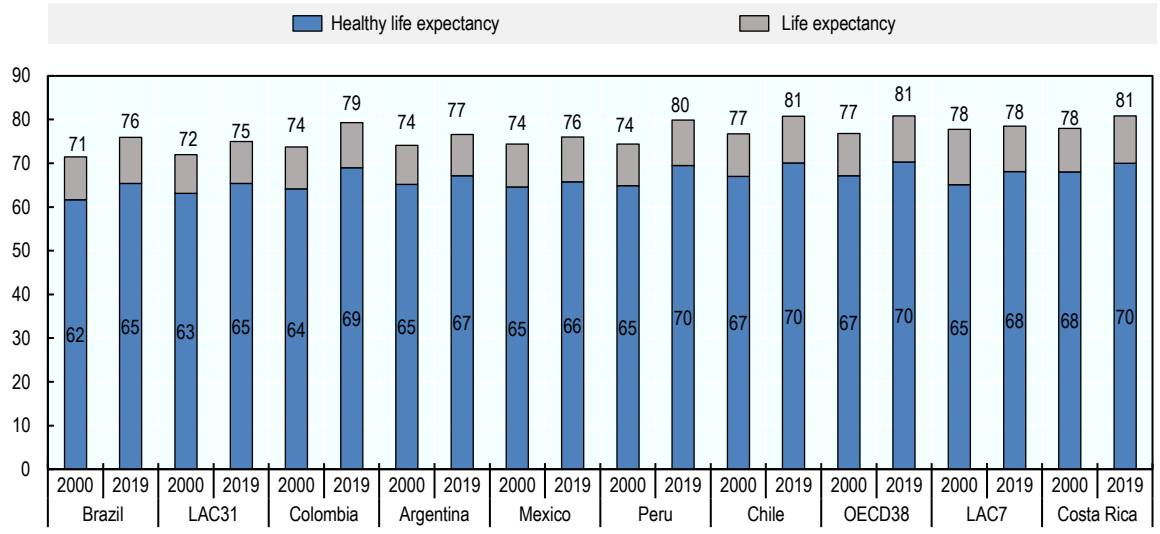
Evolution of health outcomes

Despite progress, life expectancy in LAC-7 is still falling behind other OECD countries

Life expectancy at birth continues to rise in LAC, reaching 75 years on average in 2019, a gain of 3 years since 2000. While LAC-7 countries saw smaller improvements in the period, from 77.8 years in 2000 to 78.5 in 2019, they are considerably above the regional average. In comparison, other OECD countries gained 3.6 years during the same period and reached 80.9 years on average in 2019. The countries with the longest life expectancy in LAC-7 countries in 2019 were Costa Rica and Chile with over 80 years old, closely followed by Peru.

Costa Rica, Chile, and Peru have also the highest healthy life expectancy among LAC-7 countries, around 70 years in 2019. In contrast, Mexico and Brazil have both low life expectancies at birth (around 75 years old) and low healthy life expectancy (at 66 years old) (Figure 3.6). LAC-7 countries on average lag behind other OECD countries with regards to the number of activity limitations due to health problems (OECD average of 70 years for healthy life expectancy).

Figure 3.6. Life expectancy at birth and healthy life expectancy at birth, 2000 and 2019



Source: The global health observatory WHO (2019[49]).

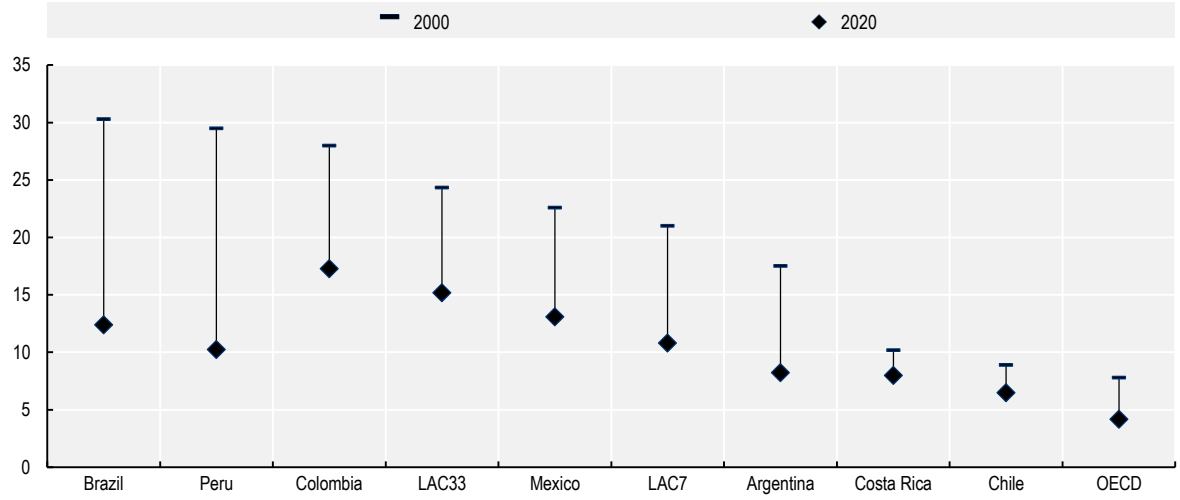
Infant mortality in LAC-7 region has been halved over the past two decades

Infant mortality average in LAC-7 countries has decreased from 21 deaths per 1 000 live births in 2000 to 10.8 deaths per 1 000 live births in 2020. Infant mortality is lower in Chile, Costa Rica and Argentina (under 8 deaths per 1 000 live births), while higher in Colombia, Mexico and Brazil (17.3, 13.1 and 12.4 per 1 000 live births respectively) in 2020. Peru and Brazil saw the highest declines of around 60% between 2000 and 2020, higher than among other OECD countries (Figure 3.7).

In LAC-7 countries, maternal mortality ratio (MMR) averaged 44.6 deaths per 100 000 live births in 2020, substantially higher than the 9.2 deaths per 100 000 live births in other OECD countries but lower than LAC-31 countries with an average of 83.5 deaths per 100 000 live births in 2020. Estimates show that Chile as the lowest MMR among LAC-7 countries with 10.9 deaths per 100 000 live births and followed by Costa Rica with 29.4 deaths per 100 000 live births. At the other end of the scale, Peru and Brazil have the highest MMR over 60 deaths per 100 000 live births (OECD/The World Bank, 2020[1]).

Figure 3.7. Infant mortality in LAC-7 countries

Mortality rates per 1 000 live births



Source: All review countries (except ARG and PER) from OECD.stat. ARG, PER and other LAC countries from WHO (2019[49]), The global health observatory.

LAC-7 countries experience an epidemiological transition towards increasing prevalence of chronic non-communicable diseases

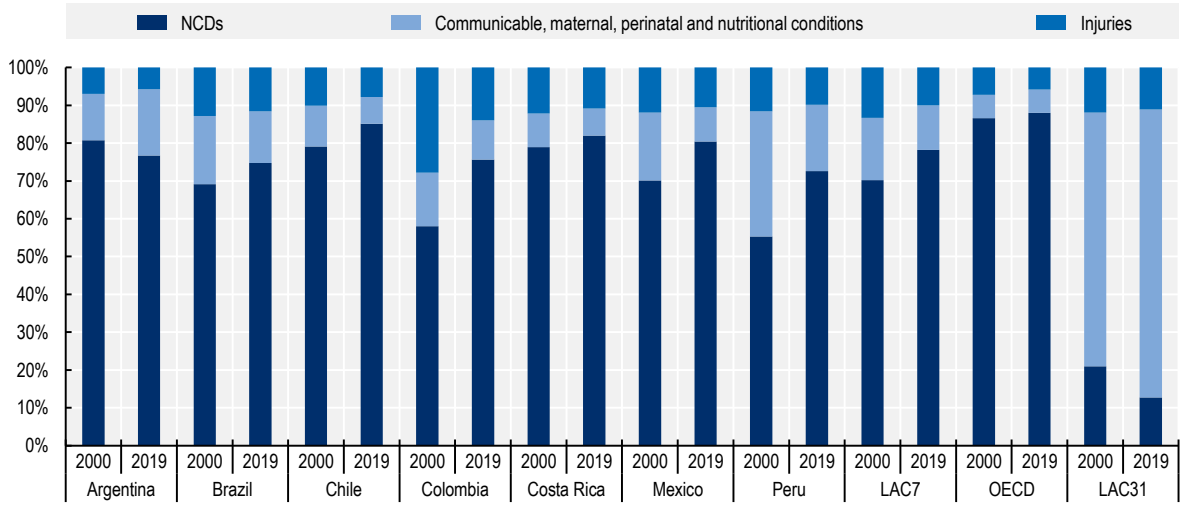
In LAC-7 countries, the burden from non-communicable diseases (NCDs) is increasing and substituting deaths caused by communicable diseases. NCDs are the most common causes of death, being responsible for almost 80% of all deaths across LAC-7 countries, close to the OECD average of 88% in 2019. Cardiovascular diseases and cancers are the most prevalent NCDs in LAC-7 countries, accounting for 46% of all deaths in 2019 (Figure 3.8).

However, communicable diseases, maternal, perinatal and nutritional conditions, still remained major causes of death among LAC-7 countries, accounting for 12% of deaths in 2019. Deaths attributed to injuries, violence have decreased from 13% in 2000 to 10% in 2019. In the case of HIV, the overall prevalence in adults between 15 and 49 years old in the region of LAC-7 is not very high, but it has increased from 0.26% in 2000 to 0.44% in 2020. In LAC-7 countries, it ranges from 0.30% in Peru to 0.60% in Brazil and Chile. The incidence of tuberculosis (per 100 000 population per year) has decreased in all LAC-7 countries, with an average incidence of 53.1 in 2000 to 39.7 cases per 100 000 population in 2020. The highest incidence rate was seen in Peru, Brazil and Colombia, with 116, 45 and 37 cases per 100 000 population in 2020 respectively. The lowest incidence rates were reported in Costa Rica and Chile (below 15 cases per 100 000 population.

In addition, the prevalence of diabetes in adults (20-79 years old) has slightly decreased in LAC-7 countries from 9.4% in 2011 to 9.1% in 2021 but it remains higher than across other OECD countries (7% on average in 2021) (Figure 3.9). This prevalence ranged from under 6% in Peru and Argentina to 16.9% in Mexico. In Chile and Mexico, the prevalence of diabetes is rising while it decreased in Brazil, Costa Rica, Colombia, Argentina and Peru.

Figure 3.8. Evolution of causes of death, 2000 and 2019

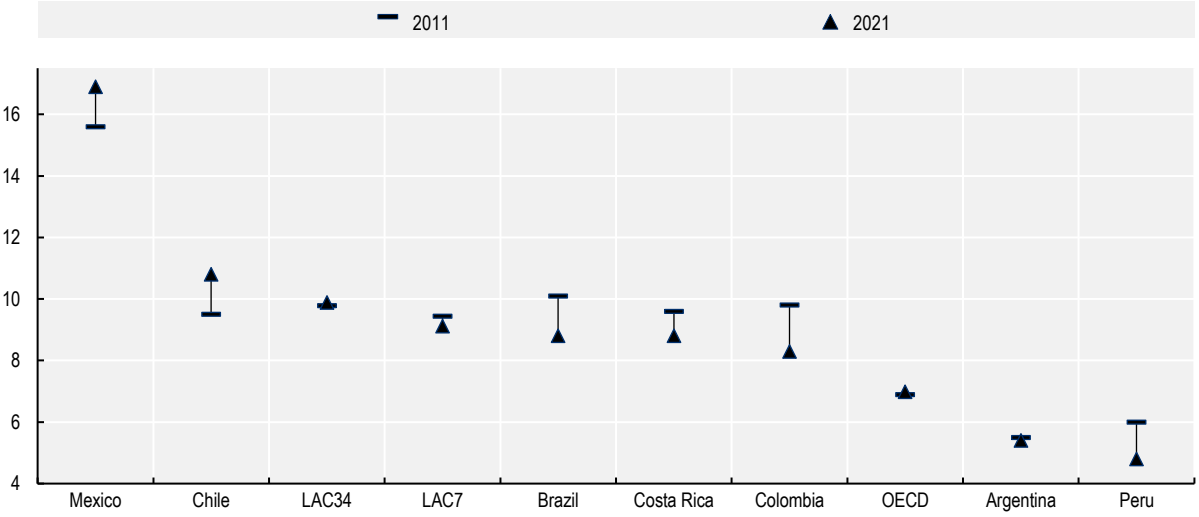
Percentage out of total deaths



Note: WHO methods and data sources for global causes of death 2000-19. Global Health Estimates Technical Paper WHO/DDI/DNA/GHE/2020.2. Geneva: World Health Organization; 2020.
Source: WHO (2019[49]), The global health observatory.

Figure 3.9. Prevalence of diabetes in LAC-7 countries

Age-adjusted diabetes prevalence, percentage of 20-79 years old



Source: International Diabetes Federation (2021), Diabetes Atlas 2021.

Increasing risk factors for health

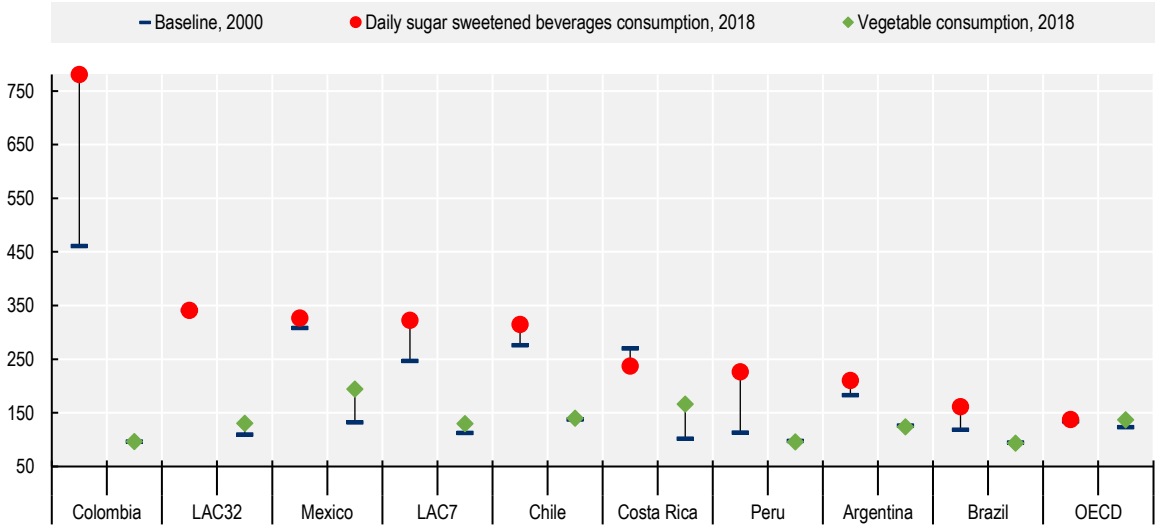
Several risk factors for health raise some concerns in LAC-7 countries as they go hand in hand with an increased prevalence of chronic non-communicable diseases. This calls for more effective health promotion and disease prevention at primary health care level.

Physical activity, along with adequate and healthy nutrition are some of the key determinants contributing to health and well-being. People having a diet rich in fruits and vegetables and low in fat, sugars and sodium, are at a lesser risk of developing one or more cardiovascular diseases and certain types of cancer (Graf and Cecchini, 2017[50]). Daily consumption of fruit and vegetables in the LAC region is estimated to be under the recommended 400 grammes per person per day (OECD/The World Bank, 2020[1]) and the latest data (Figure 3.10) shows that the consumption of vegetables has not improved substantially in LAC-7 between 2000 and 2018.

In addition, the estimations of the Global Dietary Database show that LAC-7 countries increased their intake of sweetened beverages between 2000 and 2018. Brazil is the only country in the series with levels comparable to OECD countries. Colombia is an outlier reaching 780 grammes of daily intake per person, more than twice the LAC-7 average (Figure 3.10). Calculations for Colombia are consistent with other countries and were based on the Survey of Nutritional Situation in Colombia 2005 and 2010, by the Colombian Family Welfare Institute (Colombian Family Welfare Institute, 2010[51]).

Figure 3.10. Healthy diet in LAC-7 countries between 2000 and 2018

Daily grammes of sugar beverages and vegetables per person



Note: Data is estimated by GDB with a consistent methodology based on Bayesian models.
Source: Global Dietary Database, extracted on 15 December 2021.

Unhealthy diet is a major risk factor for overweight and obesity reducing life expectancy, increasing health care costs and the burden on the economy (OECD, 2019[52]). Only recently countries in the region have introduced policies to improve healthy food intakes, such as labelling unhealthy foods and controlling products sold in and around schools.

The latest data show an important increase in LAC-7 countries in both male and female overweight and obesity between 2000 and 2020 (Figure 3.11). Moreover, the share of the population being obese or overweight in all LAC-7 countries is larger than across other OECD countries. While overweight rates are similar between women and men, obesity rates are systematically higher among women (Figure 3.11).

Children overweight rates are also worrying across LAC-7 countries: over 38% of both male and female adolescents were overweight or obese in 2016 on average. Argentina and Chile are the countries in the region with the highest share of adolescent being overweight or obese (above 50%) (OECD/The World

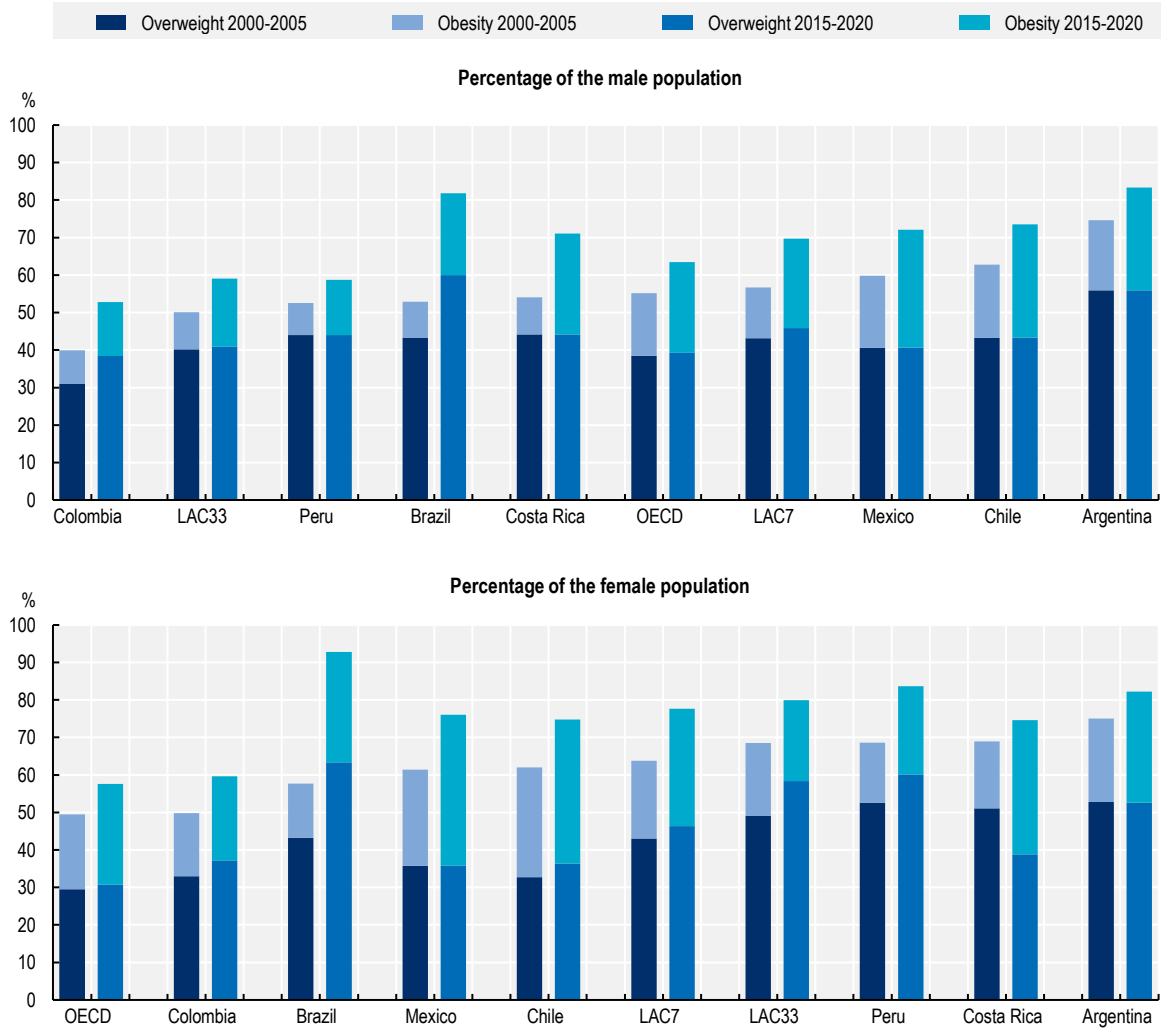
Bank, 2020[1]). High children overweight rates means higher risk of cardiovascular diseases or diabetes during adult age, putting pressure on the primary health care sector.

An important factor explaining high overweight and obesity rates in LAC-7 countries is the lack of physical activity. Available evidence suggests that in 2016 over 40% of adults in Argentina, Colombia, Brazil and Costa Rica had insufficient physical activity (OECD/The World Bank, 2020[1]). Among adolescents aged 11-17, this proportion reaches 84% in Latin America, higher than the world average of 81% of adolescents who reported insufficient physical activity (OECD/The World Bank, 2020[1]).

On a more positive note, smoking rates have been falling in all LAC-7 countries between 2000 and 2018 (Figure 3.12) signalling the effectiveness of tobacco control measures in the region. In 2018, only Chile (45%) had a higher percentage of their population smoking daily than the OECD average (24%), while Argentina smoking rates is close to the OECD average. Colombia reported the lowest share of daily smokers (at 8%).

Figure 3.11. Overweight and obesity rates in LAC countries give cause of concern

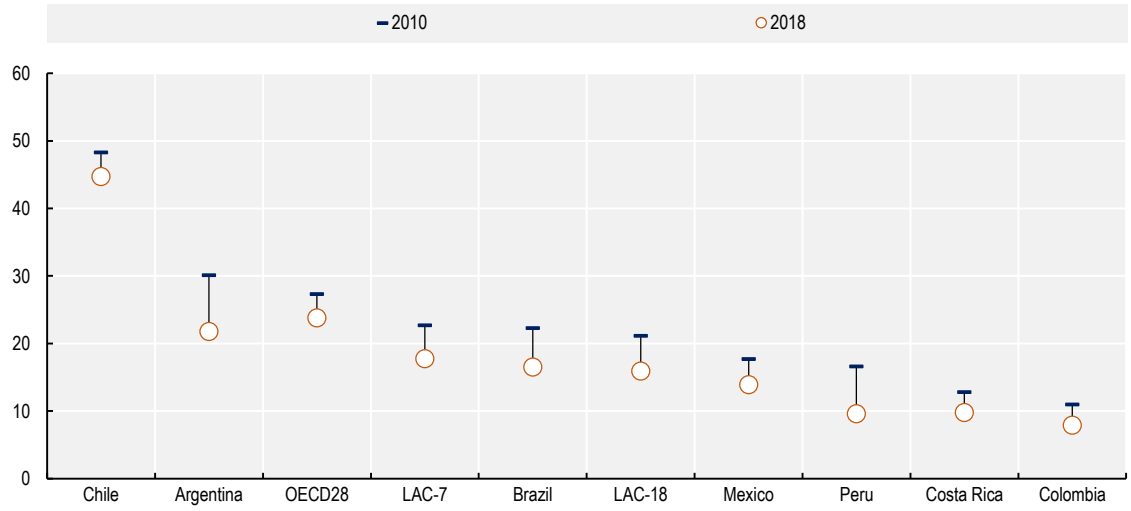
Earliest year between 2000-05 versus latest year between 2015-20



Note: Overweight (BMI >= 25 and < 30); Obesity (BMI >= 30) (Brazil presents differences in methodology). OECD data used is measured data. GHO data are crude estimates. OECD averages for 2000-05 comprises only 12 countries and for 2015-20, 19 countries.
Source: For BRA, CHL, COL, CRI(2015-20), ARG(Obese) and MEX OECD (2022[41]), OECD Health Statistics 2022. Others from WHO (2019[49]), The global health observatory.

Figure 3.12. Evolution of tobacco consumption in 2010 and 2018

Share of the population aged 15 years or older who smokes tobacco daily



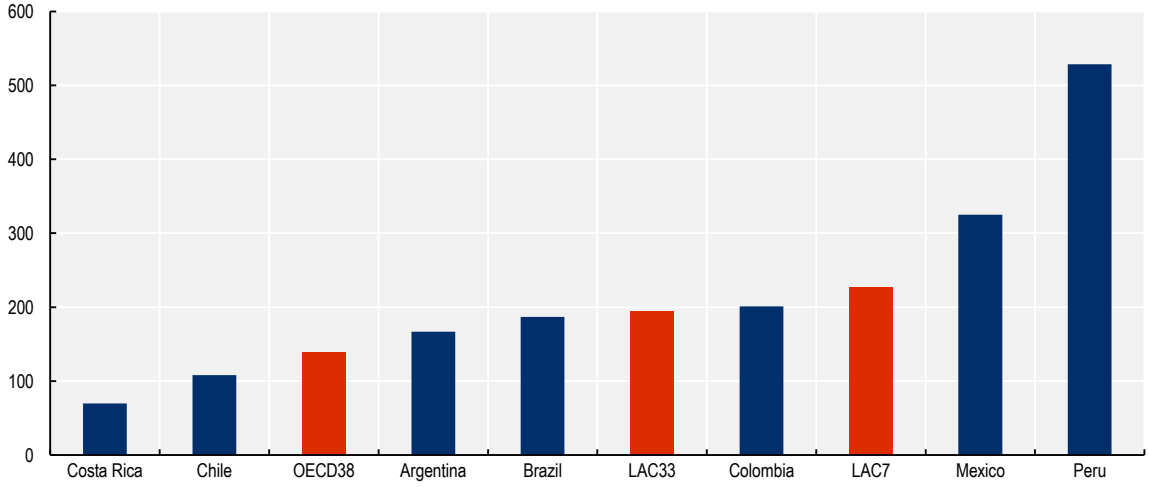
Source: World Bank, World Development Indicators, data updated on 28 October 2021.

The direct health impacts of COVID-19 have been dramatic in LAC-7 countries

LAC countries has been one of the most affected regions of the world in terms of COVID-19 mortality (OECD, 2021[38]). When observing estimated rates of excess mortality as an indicator of the direct health impact of the pandemic in the LAC-7 countries, Peru and Mexico stand above the LAC-7, LAC-33 and OECD-38 averages, highlighting the high death toll that COVID-19 has had in the region. On the other hand, this indicator also highlights how Costa Rica and Chile have been less severely impacted by the pandemic than other OECD countries on average (see Figure 3.13).

Figure 3.13. Estimated excess mortality rates among LAC-7 and OECD countries, 2020-21

Estimated excess mortality rate per 100 000 population



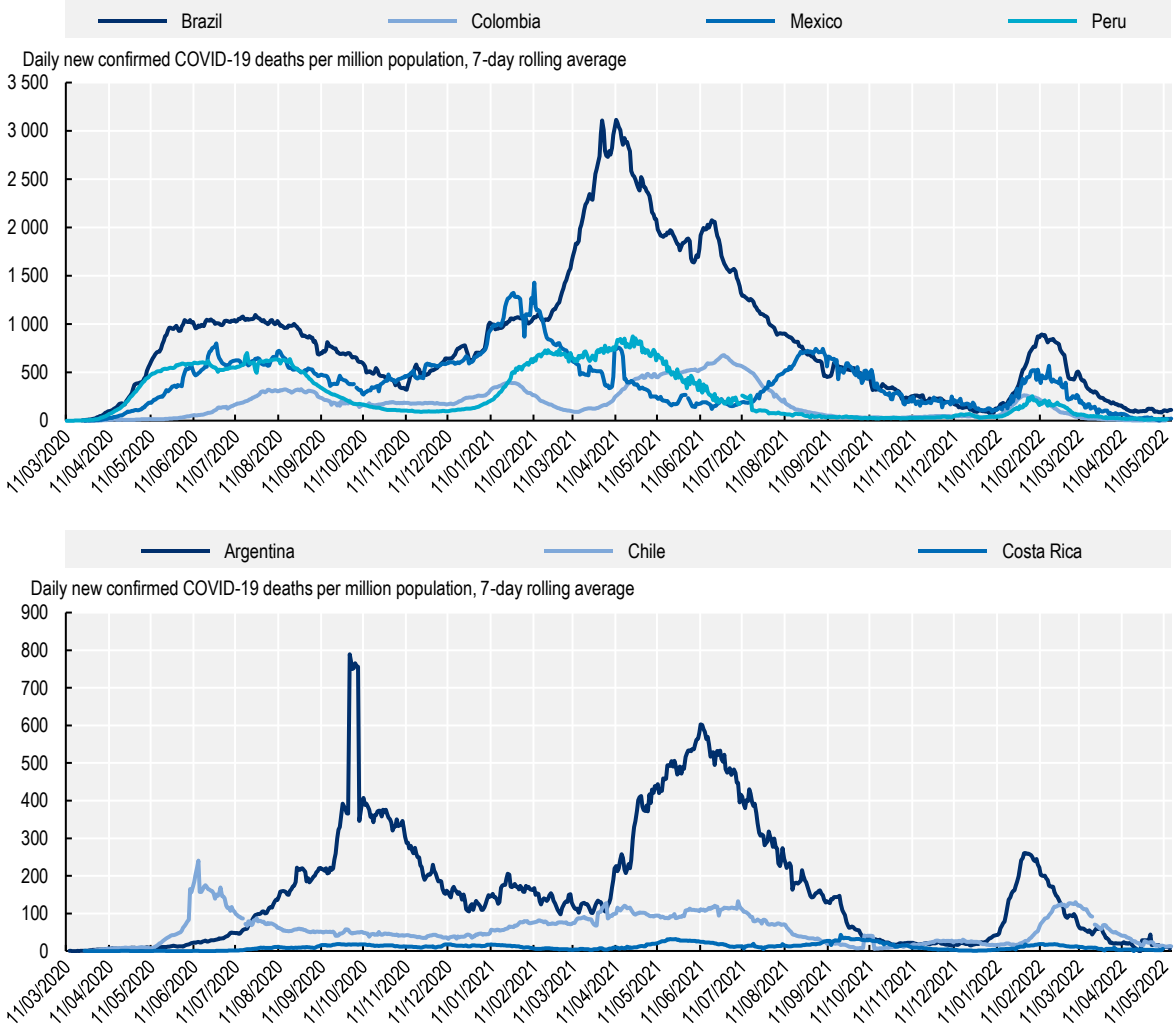
Source: Wang et al. (2022[53]), "Estimating excess mortality due to the COVID-19 pandemic: a systematic analysis of COVID-19-related mortality, 2020-21", https://doi.org/10.1016/s0140-6736(21)02796-3.

Excess mortality is deemed to be a more accurate indicator of the direct health impact of COVID-19 in LAC countries due to the underestimation of COVID-19 mortality that exists in certain countries of the region. The underestimation of crude mortality is clearly observed in the reported COVID-19 deaths per million people. Countries such as Peru and Mexico, which exhibited the highest estimated excess mortality amongst LAC-7 countries, report lower rates of COVID-19 deaths than Brazil all along the pandemic years (2020-21), and also lower rates than Argentina and Peru during some of the different waves (see Figure 3.14).

The COVID-19 pandemic also had an important indirect impact on health, particularly deteriorating mental health and disrupting access to care. This effect is derived from both the indirect effects of the disease (fear of catching the disease) and the direct impacts of measures countries took to absorb the crisis and meet COVID-19 needs. The topic is further addressed in Chapter 4, Chapter 5 and Chapter 6 of this report.

Figure 3.14. COVID-19 deaths per million population, LAC-7 countries

Grouped by levels of excess mortality rates



Source: COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University; Dong, Du and Gardner (2020[54]), available at Our World in Data 2022.

Conclusions

The LAC-7 region has been one of the most affected regions in the world in terms of COVID-19 mortality. Excess mortality rates in LAC-7 countries are considerably larger than in other OECD countries. The socio-economic context, the limited infrastructure and capacity of health systems and its organisation are all important determinants explaining the health and socio-economic consequences of the COVID-19 pandemic.

Over the past two decades, LAC-7 countries have made measurable improvements in economic and social conditions. Life expectancy in LAC-7 countries reached 77.9 years on average in 2020 (a gain of almost 3 years since 2000) and infant mortality in LAC-7 region has been halved over the past two decades. However, improvements have been unequal across and within countries, and too limited to close the gap with higher income countries. Despite significant reduction, income inequality is still an important issue in LAC-7 countries, well above the level in other OECD countries. At the same time, the fragmentation of health care in LAC-7 countries generates inequalities in health care coverage and inefficiency in the use of limited health care resources.

In a step towards the right direction, insurance coverage has improved substantially (reaching almost universal coverage in several countries) and primary health care systems have been strengthened. In most LAC-7 countries (for example Chile, Costa Rica and Brazil) primary health care has a community-based approach delivered by multidisciplinary teams. However, opportunities to provide proactive, preventive and co-ordinated care are too often being lost because primary health care do not act as the first point of care (as in Mexico, Peru, Brazil or Argentina). The growing burden of non-communicable chronic diseases associated with the expansion in exposure to risk factors and rapid population ageing in LAC-7 countries call for stronger primary health care systems, notably to encourage greater health promotion, early detection of diseases, and providing routine care for underlying health conditions in primary and community settings. As explored in Chapters 4, 5 and 6 of the report, this will help increasing preparedness and resilience of LAC-7 health systems to face future high impact shocks. Assigning clear responsibilities for primary health care and making stakeholders accountable for the health care of the population will help in this process. Such a push needs also to be accompanied by capacity building and payment schemes that incentivise quality improvements.

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4 Health promotion and vaccination

Improving population health prior to a health shock, through health promotion and vaccination in primary health care, is critical to improve health system preparedness and resilience. Not only primary health care (PHC) is key to maximise population health prior to a shock, but it also plays a central role during a health emergency to contain the spread of infection. New PHC developments have been implemented by LAC-7 countries to mitigate the COVID-19 pandemic, including informing the community on prevention measures, reaching-out to high-risk population, or facilitating the roll-out of COVID-19 vaccination. However, there is scope to strengthen public health activities into primary health care in LAC-7 countries, such as improving the collection of health information and increasing the level of professionalisation of community health workers. Further, the COVID-19 pandemic had dramatic impact on routine vaccination programme, which urgently calls for sustained catching-up programmes.

Introduction

Improving population health (both physical and mental health) prior to a health shock is critical to improve health system preparedness to deal with emerging pathogens or health shocks such as COVID-19. This was one major lesson from the COVID-19 pandemic, as obesity and chronic diseases were shown to be risk factors for severe COVID-19 cases and death. In addition to improving population health, primary health care with a strong community-based approach is best placed to carry-out several public health activities during health emergencies including for example disseminating public health information, risk factor monitoring, epidemiological surveillance, and implementing vaccination roll-out. These are all critical activities, that when integrated into primary health care, help health systems to improve their resilience to a health shock, by increasing their ability to absorb and recover from a shock.

Providing an effective response for COVID-19 has represented a major challenge for health systems across the OECD and LAC countries. However, LAC-7 countries particularly faced several vulnerabilities during the COVID-19 pandemic, mostly due to lack of resources, fragmented health systems, socio-economic inequalities, and sometimes poor governance of the public health crisis. In some instances, countries have been making efforts to improve the effectiveness of COVID-19 response through a greater emphasis on the role of primary health care. Countries with well-established networks of primary care centres and community health workers implemented primary health care policies and actions to contain the spread of the pandemic and absorb its impact.

This chapter starts analysing primary health care performance before COVID-19 on health promotion and routine vaccination in LAC-7 countries, highlighting wide differences across the region in the promotion of child and maternal health, counselling for risk factors, and routine vaccination programmes. The chapter then discusses the importance of integrated public health activities into primary health care to monitor population health and carrying-out public health surveillance in LAC-7 countries. Finally, the chapter analyses the public health activities that have been scaled up into the primary health care in LAC-7 countries during the COVID-19 pandemic, focussing for example on informing and educating the community, identifying, and reaching out to high-risk population, or implementing COVID-19 vaccination. Evidence on the dramatic impact of COVID-19 on routine vaccination is also presented.

Access to health promotion and routine vaccination in LAC-7 countries before the COVID-19 pandemic

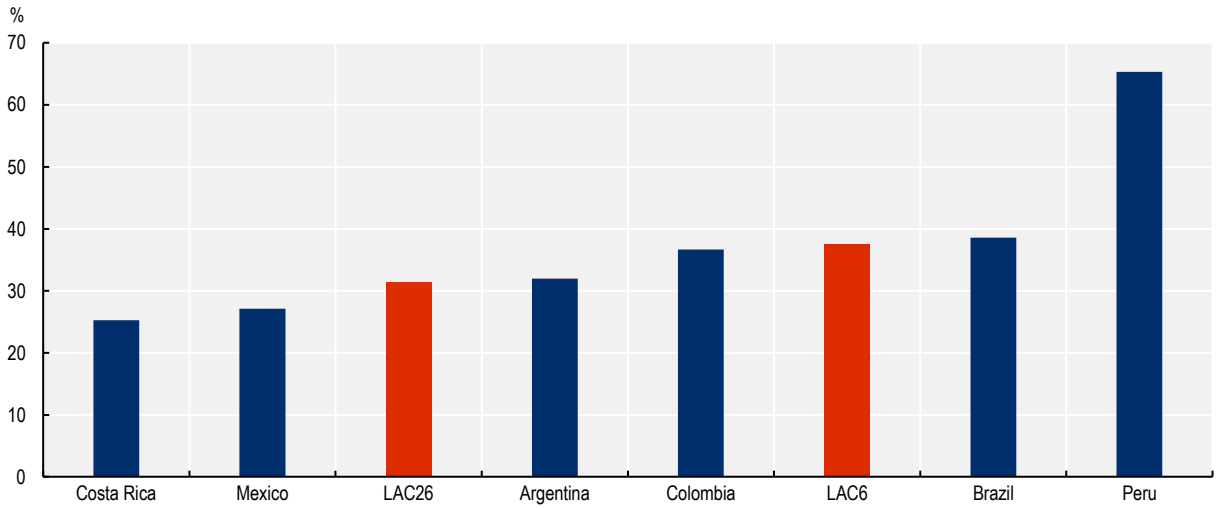
Inequalities in access to maternal health remain in LAC-7 countries

In LAC-7 countries, the promotion of child and maternal health is an important challenge. Around one-third of the deaths in the first year of life occur during the neonatal period, and conditions like pneumonia are amongst the leading infectious causes of childhood morbidity and mortality (PAHO, 2017[1]). 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, identifying conditions requiring additional care, and counselling on when to take an infant or young child to a health facility (Tomczyk, McCracken and Contreras, 2019[2]).

The paediatrician is a highly skilled and qualified supervisor of paediatric primary health care (PPHC) team which is responsible for providing additional care and counselling to families, while limiting care fragmentation thanks to its holistic medical approach (Boudreau et al., 2022[3]). The PPHC can for example promote infant care through breastfeeding counselling to contribute to a healthy growth and decrease rates of stunting and obesity (Victora et al., 2016[4]). Nutritional counselling in primary health care is also important to make sure infants receive nutritionally adequate and safe complementary foods, while continuing breastfeeding up to two years of age and even beyond (UNICEF, 2021[5]).

International figures show that Peru, with a rate of children exclusively breastfed during their first six months of life over 60%, is well above the averages of the region. In Brazil, Colombia and Argentina, around one in three infants under six months of age are being exclusively breastfed (close to the LAC-6 average), while both Mexico and Costa Rica exhibit rates below 30% (see Figure 4.1).

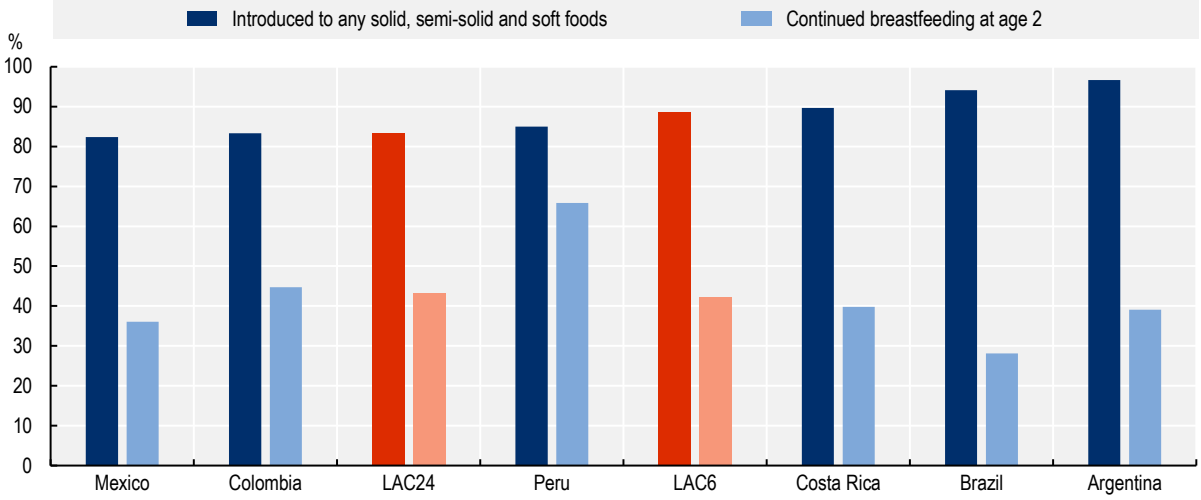
Figure 4.1. Infants exclusively breastfed – first six months of life, latest year available



Source: UNICEF (2021[6]), Infant and young child feeding, https://data.unicef.org/topic/nutrition/infant-and-young-child-feeding/.

For children aged six months and older, Argentina and Brazil have a rate of over 90% for diets including any solid, semi-solid, and soft foods, while in Mexico this figure is just above 80%. In addition, over six out of ten children in Peru had continued being breastfed at age two; however, this only applies for less than three out of ten children in Brazil (see Figure 4.2).

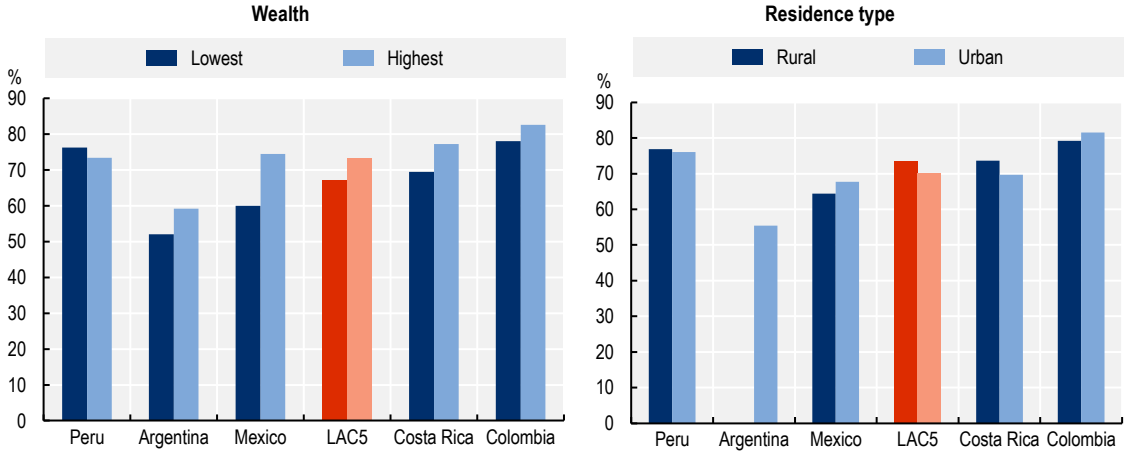
Figure 4.2. Feeding practices after six months of age, latest year available



Source: DHS Program (2022[7]), https://dhsprogram.com/, and UNICEF MICS Programme (2022[8]), https://mics.unicef.org/surveys, surveys, various years. UNICEF (2021[6]), Infant and young child feeding, https://data.unicef.org/topic/nutrition/infant-and-young-child-feeding/.

When it comes to birth control, more than 200 million women of reproductive age in developing countries are estimated to not be using a modern contraceptive method even if they want to avoid pregnancy (WHO, 2018[9]). Sexual and reproductive health and rights are closely linked to gender equality and women's well-being: it affects newborn, child, adolescent, and maternal health, in addition to their capacity to determine future economic development and environmental sustainability (Starrs et al., 2018[10]). Family planning significantly reduces child and maternal mortality and morbidity, making it one of the most cost-effective public health measures (UNFPA, 2018[11]). It should be a key dimension of reproductive and sexual health services in both high-income and low-income countries (UNFPA, 2018[11]). However, there are signs of large inequalities in access to contraceptive prevalence across socio-economic characteristics in most LAC-7 countries. While PHC is well involved in the reproductive health agenda in Mexico (Box 4.1), contraceptive prevalence is 20% lower amongst people in the lowest income groups when compared to those in the highest income levels (see Figure 4.3). Colombia and Costa Rica have attained contraceptive prevalence levels of over 70% in urban areas as well as amongst the highest income levels, while values are slightly lower for those living in rural areas or with the lowest income. By contrast, the contraceptive prevalence is relatively low in Argentina (below 60%) regardless of residence type or income level.

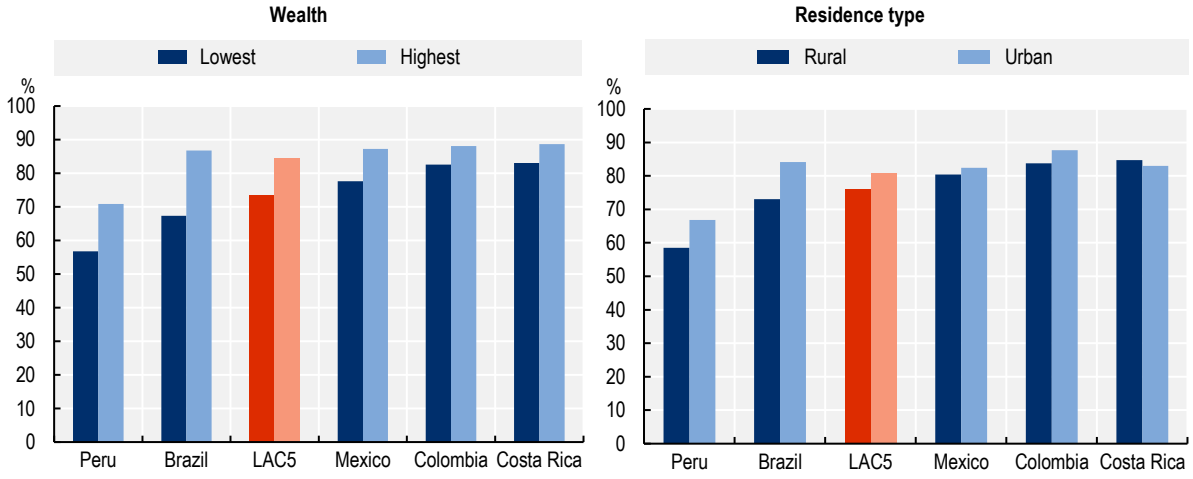
Figure 4.3. Contraceptive prevalence by socio-economic characteristics, any method, selected countries, latest available estimate



Source: DHS Program (2022[7]) https://dhsprogram.com/ and UNICEF MICS Programme (2022[8]), Surveys, various years, https://mics.unicef.org/surveys.

There are also wide disparities across socio-economic groups in access to family planning in favour to people living in urban areas or those with higher income (Figure 4.4). Countries with higher access to family planning (such as Costa Rica, Colombia and Mexico) show narrower gaps between residence type or income level than in countries with lower access to family planning (Peru and Brazil) (see Figure 4.4). Access to family planning is 29% and 25% higher amongst high income groups than lower income groups in Brazil and Peru, respectively.

Figure 4.4. Demand for family planning satisfied by socio-economic characteristics, any method, selected countries, latest available estimate



Source: DHS Program (2022[7]) https://dhsprogram.com/ and UNICEF MICS Programme (2022[8]), Surveys, various years, https://mics.unicef.org/surveys.

Box 4.1. The role of PHC in the reproductive health agenda in Mexico

The reproductive health agenda includes policies and reproductive PHC services on adolescent health. The National Strategy to Prevent Teen Pregnancy comprises six components: (1) inclusive, integrated, and flexible education; (2) comprehensive education in sexuality; (3) employment opportunities for adolescents; (4) enabling environment; (5) comprehensive health services; and (6) early detection and care for girls, boys, and adolescents affected by sexual violence.

As part of the reproductive health agenda, social workers, family medicine nurses and public health staff in PHC facilities inform and educate adolescents on contraceptives and sexually transmitted diseases, provide contraceptives, and follow up of contraceptive users.

Additionally, IMSS-Bienestar implements the Rural Adolescent Care Centres programme (Centros de Atención Rural al Adolescente, CARAS) in rural areas. This programme provides reproductive counselling, contraceptives, and health promotion. IMSS-Bienestar estimates that CARAS averted 37 000 unintended adolescent pregnancies in 2019 (IMSS, 2020[12]).

Source: Secretaría de Salud (2020[13]) IMSS (2020[12]), http://www.imss.gob.mx/prensa/archivo/202003/120, Consejo Nacional de Población (2019[14]), https://www.gob.mx/cms/uploads/attachment/file/559766/informe2019-enapea.pdf.

There is scope to increase counselling in primary health care for risk factors to health

Beyond child and maternal health, PHC teams play a key role in improving population health by influencing patients' lifestyles and providing appropriate guidance to avoid negative consequences of unhealthy lifestyle. An extensive body of literature demonstrate the effectiveness of interventions implemented in primary health care settings to address risk factors to health such as heavy drinking, unhealthy eating, or physical inactivity (Jané-Llopis et al., 2020[15]; OECD, 2022[16]).

However, available evidence suggests low levels of engagement from primary care physicians with patients' lifestyles in some LAC-7 countries (Guanais and et al., 2018[17]). Counselling on healthy lifestyle is rarely implemented in the delivery of PHC services in Brazil, Colombia and Mexico. Only 24.3% of respondents in Brazil, 23.6% in Colombia, and 40.9% in Mexico indicated that the primary care physician discussed issues related to healthy lifestyles, such as diet, physical activity, and stress factors. In all three countries, a clear difference between public, private, and uninsured PCP's willingness to discuss healthy lifestyles with patients was observed, with higher levels in the private sector. As public provider in LAC generally serve lower-income households, this further highlight how social inequality is also reflected on the access and quality of care being provided in the region.

Programmes based in primary health care that measure the alcohol consumption of adult patients and give brief advice to heavy drinkers have been found effective in reducing alcohol consumption. Results from meta-analyses of several studies suggest a reduction in alcohol consumption of almost 12%. However, most implementation has been undertaken in high-income countries. Only recently, a PHC-based measurement, advice, and treatment plan for heavy drinking and comorbid depression is being implemented at municipal level in Colombia, Mexico and Peru (SCALA Programme) (Jané-Llopis et al., 2020[15]). While there is no evidence on the impact of this programme yet, there are several success factors that will bring many beneficial impacts. These include training approaches for a range of health care professionals, and municipal-based adoption and support mechanisms for joined-up action to improve health literacy. Such brief alcohol interventions in primary health care are implemented in several OECD countries, including Canada, the Czech Republic and Germany (OECD, 2022[18]).

There are also interesting examples across other OECD countries where primary health care plays a key role to encourage healthy eating and active lifestyles (OECD, 2022[18]). In Sweden for example, primary health care physicians write individualised prescriptions for physical activity to patients, with follow-up meeting to adjust the prescription and foster motivation as part of the programme called "Physical Activity on Prescription" (PAP). OECD analyses show that the PAP programme is a cost-effective, evidence-based intervention which can help increase physical activity, prevent disease, and reduce the health care expenditure. In 2019, 45 000 prescriptions for physical activity were prescribed in primary health care in Sweden, equating to approximately 14.1 prescriptions per 1 000 eligible people. According to OECD analyses, the current implementation of PAP in Sweden is estimated to result in a cumulative total gain of 737 life years (LY) and 979 disability-adjusted life years (DALYs) by 2050. In the Netherlands, Combined Lifestyle Intervention (CLI) are offered to patients with overweight of other risk factors. The CLI provides dietary advice, physical activity training, and counselling on behavioural change over a period of two years. Participants are referred by their general practitioner (GP) to a local CLI provider. These include physiotherapists, lifestyle coaches, and dieticians – either working individually or in a group. Around 18 000 people have participated in CLI since its inception in 2019. According to OECD simulations, CLI would lead to 12 565 life years (LYs) and 16 704 disability-adjusted life years (DALYs) gained by 2050 in the Netherlands. By 2050, CLI will accumulate health expenditure savings equivalent to EUR 11.2 per person in the Netherlands.

Given the increasing prevalence of risk factors to health and the rising burden of chronic non-communicable conditions in LAC-7 countries (see Chapter 3), more efforts are needed to provide proactive and preventive care notably through health counselling and patient education. This would certainly require investments in training for primary care workers (see Chapter 7), as well as a better knowledge of local health needs. Already in Chile, primary care practices are key actors in health promotion activities, for instance through the Vida Sana counselling and physical activity programme. The programme is run from primary health care by physicians, dieticians, psychologists, and physical therapists (see Box 4.2). The Vida Sana counselling and physical activity programme in Chile is a best practice example across the OECD from which other LAC-7 countries could learn.

Box 4.2. The Vida Sana counselling and physical activity programme in Chile

The Vida Sana counselling and physical activity programme has been part of the national prevention package in Chile since 2014. To date, there are about 300 teams delivering this intervention throughout Chile. This one-year programme aims to improve physical activity and diet in patients with obesity or overweight patients with other risk factors. Participants receive individual and group counselling sessions with nutritionists and psychologists. To contain the delivery cost, medical doctors are only involved if the patient specifically requires medical attention in case of diseases. In addition, patients complete 144 hours of physical activity in classes guided by a physical education teacher, physical activity therapist, or kinesiologist. While the sessions take place in primary care centres, the programme is completely independent and run by dedicated counsellors.

Source: OECD (2019[19]), *OECD Reviews of Public Health: Chile: A Healthier Tomorrow*, https://doi.org/10.1787/9789264309593-en.

LAC-7 countries have effective vaccination programmes, with coverage rates close to other OECD countries

The World Health Organization (WHO) has estimated that vaccination can prevent between two and 3 million deaths per year worldwide from 20 life-threatening diseases, plus an additional 1.5 million deaths that could be spared thanks to global vaccination and the prevention of the spread of disease to unvaccinated individuals. Childhood vaccination programmes are one of the most effective health policy interventions, both in clinical efficiency and in cost-effectiveness, and frequently take up a significant share of national prevention strategies (Chan et al., 2017[20]).

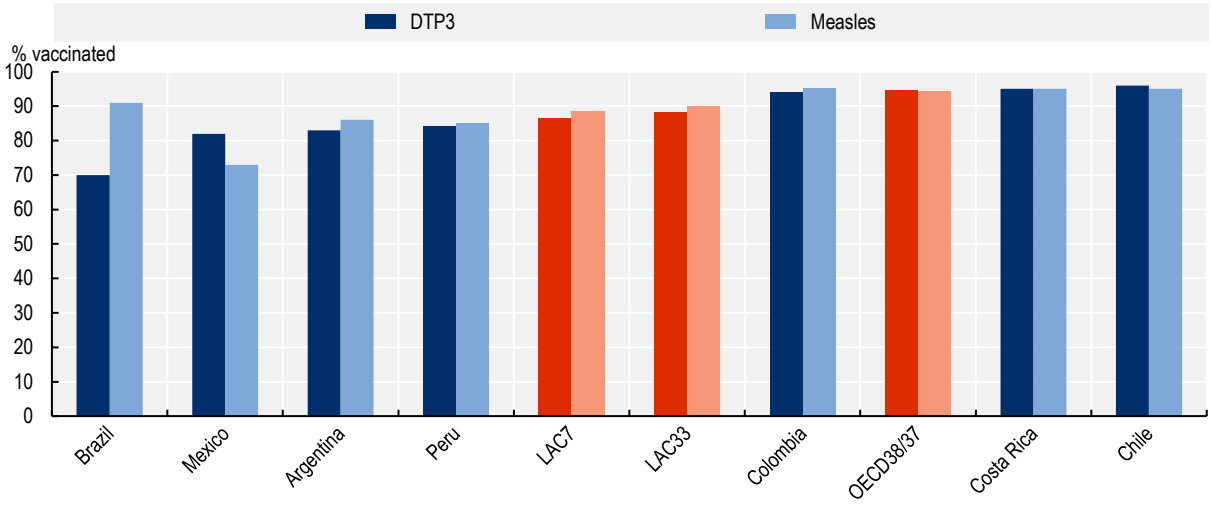
Vaccination programmes are well in place all over LAC countries, including routine vaccination (i.e. diphtheria, tetanus toxoid, and pertussis – DTP3 – and measles) as well as additional vaccines (i.e. pneumococcus, rotavirus, and human papilloma virus). They are included at national or subnational level based on local morbidity, mortality, and cost-effectiveness analysis (OECD/The World Bank, 2020[21]).

International figures show that Costa Rica and Chile reached higher vaccination rates than the OECD average for DTP3 and measles for children aged one (around 95%). Similarly, Colombia has been able to achieve a high coverage of immunisation against measles and a DTP3 vaccination rate that is close to the OECD average. At the other end of the scale, Mexico is yet to achieve a high vaccination rate against measles (at 73% in 2019), while the same is true for Brazil on DTP3 immunisation coverage (at 70% in 2019) (Figure 4.5).

Nevertheless, barriers to vaccination still exist in the region. Contextual influences -such as lower socio-economic status and residence type – were amongst the most relevant, as well as individual and group influences such as a general mistrust in the health system or personal beliefs and attitudes (Guzman-Holst et al., 2020[24]). Policies aimed at increasing public confidence in the safety and efficacy of vaccines, through scientific knowledge for example, are an evidence-based tool that LAC-7 countries should better use to enhance vaccination strategies.

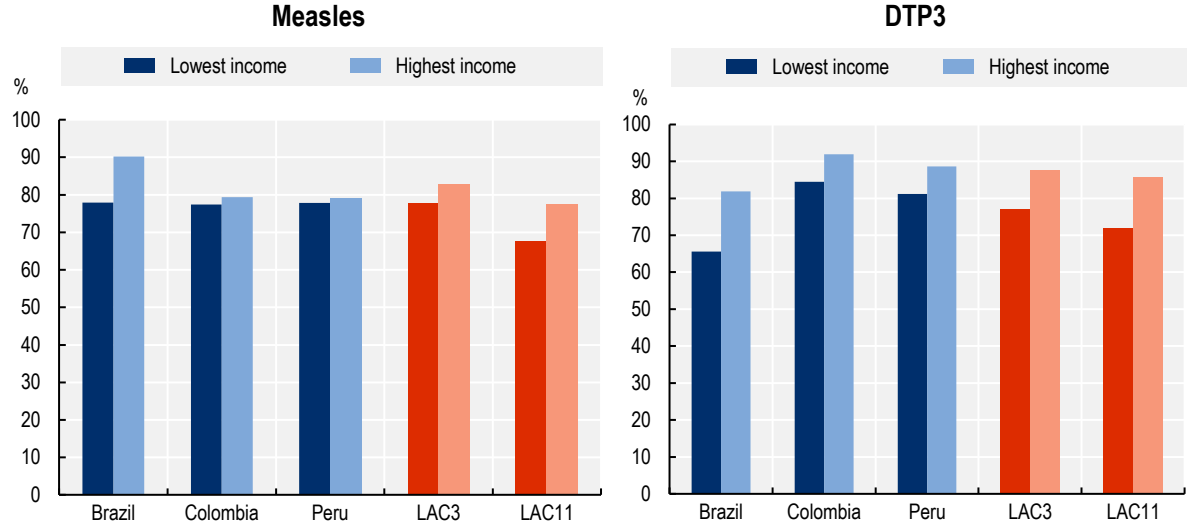
Vaccination coverage for measles and DTP3 is consistently higher amongst people with higher income in LAC-7 countries with available data. Brazil exhibits the largest gaps in vaccination coverage between high- and low-income groups (see Figure 4.6). Vaccination coverage for Measles and DTP3, respectively, is 16% and 25% higher amongst high income groups than low-income groups in Brazil.

Figure 4.5. Vaccination rates for diphtheria, tetanus toxoid, and pertussis (DTP3) and measles, children aged around one, 2019



Source: OECD (2022[22]), PECD Health Statistics, https://www.oecd.org/els/health-systems/health-data.htm; WHO (2022[23]), Global Health Observatory, https://www.who.int/data/gho.

Figure 4.6. Vaccination coverage by socio-economic characteristics, selected countries, latest available estimate



Source: DHS Program (2022[7]) https://dhsprogram.com/ and UNICEF MICS Programme (2022[8]), Surveys, various years, https://mics.unicef.org/surveys.

Another vaccine-preventable disease, Influenza, is annually responsible for 3 to 5 million severe cases worldwide, along with up to 650 000 deaths (WHO, 2019[25]). Adults aged 65 and over are at greater risk of developing serious complications from this infectious disease, including pneumonia and sepsis, which can result in serious illness or death. The WHO recommends that 75% of older people should be vaccinated against seasonal influenza. Remarkably, vaccination rates against influenza for adults aged 65 and over in some LAC-7 countries are higher than the OECD average. This is the case in Chile and Mexico, with vaccination rates of over 80%, well above the OECD average of 45% (OECD, 2022[22]).

Monitoring population health and public health surveillance in LAC

A high degree of integration between primary care and public health is needed to ensure delivery of health promotion activities

Integration of public health in primary health care promotes greater efficiency and effectiveness of health care services to improve population health. It yields substantial benefits to patients and wider population. There are several ways to promote greater integration, including for example bringing clinical and community-based professional into multi-disciplinary team, sharing population-based information on health risks and health problems, and using population-based programmes to strengthen health promotion and direct patients to medical care (Rechel, 2020[26]). Successful integration in part relates to systemic factors such as government strategies to bridges disciplines, appropriate programmes, and policies. In Costa Rica and Mexico, endorsement of integration by government has helped to improve integration between primary health care and public health.

Costa Rica has made public health central to the delivery of medical care. In fact, there is a high degree of integration between public health and primary health care since the 1994 reforms which transferred responsibility for the provision of all public health, preventive, and curative services from the Ministry of Health to the Social Security agency (Caja Costarricense de Seguro Social, CCSS). The overarching objective was to have one agency responsible for both organising preventive and curative services as well as making sure that neither preventive nor curative services overshadowed the other in the multidisciplinary primary health care team. In addition, shared value and long belief in the value of community-based approach for health promotion and disease prevention is an important factor driving to successful integration between public health and primary health care. It helps the team members to collaborate and provide a wide range of services such as education for individuals on how to maintain sanitation and hygiene to avoid disease spread, to conducting exams and tracking medical records (VanderZanden et al., 2021[27]).

Mexico also has a robust platform for ensuring such public health functions. The Undersecretariat of Prevention and Health Promotion (Subsecretaría de Prevención y Promoción de la Salud, SPPS) under the Mexican Government is responsible for developing, implementing, and evaluating public health policies through specific plans and programmes within the health sector. Ministry of Health clinics, health posts, and mobile services, as well as social security family medicine clinics and IMSS-Bienestar clinics deliver outpatient and community outreach public health services. For instance, PHC facilities with 10-19 doctor's offices are expected to have a public health area staffed with public health nurses, community health workers (CHWs), and one epidemiologist. Those with 20 or more doctor's offices should have two epidemiologists and a larger public health staff (IMSS, 2000[28]; Secretaría de Salud, 2010[29]).

Across the OECD, few countries have achieved high level of integration between primary health care and public health. Slovenia is a notable exception, where primary health care centres provide comprehensive care to its population, including health promotion, treatment, and response to emergency situations such as natural disasters and the COVID-19 pandemic. In fact, since 2004 each primary health care centre comprises a health promotion centre to enable a multi-disciplinary team to provide health promotion, counselling, group interventions to support heathier lifestyles for patients, and immunisation. Multi-disciplinary teams comprise nurses, physiotherapists, psychologists, and dieticians. Patients can attend individual and group classes on lifestyle changes regarding health nutrition, physical activity and mental health, smoking, and alcohol use (OECD/European Observatory on Health Systems and Policies, 2021[30]; WHO, 2018[31]). Health promotion action groups are also established to help identify and include hard-to-reach populations, such as those unemployed, Roma, and people with mental health problems.

Fostering linkages between public health and primary care is key to deliver a wide range of public health activities including community engagement, health promotion, health education, and immunisation. As the

next sections emphasises, public health workers (such as community health workers) and use of electronic health records in primary health care settings are successful factors towards delivery of these activities.

Community health workers play a crucial role to undertake public health surveillance, but higher level of professionalisation is warranted

There is growing attention towards the important role played by community health workers (CHWs) to deliver essential public health services in the primary health care sector including public health surveillance, patient education, and assistance with navigating the health system. This is even more relevant given the global health workforce shortage estimated to be 65 million by 2030 (WHO, 2022[32]), and the emphasis on strengthening primary health care system to deliver more and better services.

CHWs are frontline public health workers, often members of the communities in which they work. They have valuable knowledge of people needs, local health beliefs, and are a trustful source of information. They promote health, reduce inequality, and improve public health by carrying out several activities ranging from community education, health counselling, social support, monitoring health status and risk factors to health, linking with health care systems (WHO, 2020[33]). In most cases, they oversee home visits, and at the clinic or health posts, they can organise appointments for other health workers and offer education and counselling sessions. In some countries, CHWs have also a role in collecting and reporting information on the health status of people in the community.

Available evidence shows that CHWs have a positive impact on disease prevention, healthy behaviour, and access to care. CHWs have been found effective in reducing neonatal mortality and child mortality attributable to pneumonia (Pallas et al., 2013[34]). The most recent systematic review suggests that most articles found evidence of programme effectiveness (for example on improving immunisation uptake, breastfeeding, and improving child health) and on cost effectiveness (for example on HIV) (WHO, 2020[33]). Amongst the selected LAC-7 countries, Brazil, Costa Rica and Peru are countries with a strong focus on CHWs to provide health promotion, disease prevention, and health surveillance, while in Argentina, Chile, Colombia and Mexico their roles and functions are relatively less defined.

In Brazil, there are approximately 370 000 CHWs in 2020. They are responsible for education, health promotion, maintaining patient records, making regular house-calls, monitoring vaccination uptake, and providing referrals. CHWs have played a critical role to mitigate the impact of infectious diseases such as seasonal dengue in deprived communities (Neto et al., 2021[35]) and of Zika virus (Nunes, 2020[36]). During the Zika epidemic for example, CHWs promoted healthier living environment by informing people and community on how to prevent Zika virus circulation, disseminating important information on symptoms and vector control, and carrying-out incidence reporting. This was done through door-to-door household visits, identifying buildings, trashes where mosquitoes could reproduce, or other mosquito “hot-spots”. CHWs’ roles and responsibilities in collecting information were critical to identify population at risk, deploy response teams, and influence individual behaviour (Nunes, 2020[36]). Available evidence highlights that, in many remote and vulnerable municipalities, CHWs are not equipped with mobile phones and tablet computers to enable remote diagnoses and real time communication with the PHC facilities (Wadge et al., 2016[37]).

CHWs in Costa Rica have a high level of professionalisation with in-depth training and are well equipped with digital technologies. Multidisciplinary EBAIS teams (providing comprehensive and co-ordinated primary care) comprise an *Asistente técnico de atención primaria* or ATAP (a CHW named as a technical assistant) in addition to a physician, a nurse, and a medical clerk (named *registros y estadísticas de la salud*) (VanderZanden et al., 2021[27]; Pesec et al., 2017[38]). The technical assistant is responsible for health promotion activities, disease prevention, epidemiological data collection, basic sanitation activities, identification of disease risk factors, and referrals to EBAIS physicians or hospitals. During home visits, technical assistants collect data in the *Ficha Familiar*, including anthropometric measurements, vital signs, and home safety and sanitation, as well as conduct health education, and identify familial, behavioural,

and environmental risk factors (Pesec et al., 2017[38]). They also organise information and education programme in community settings such as churches, schools, or town centres.

Peru also has a long tradition of work with CWH, who carried out voluntary actions related to health promotion and disease prevention. In 2020, there were 4 449 community health agents which are called Promotores de Salud. They have traditionally played a crucial role in the promotion of health at the community level to reduce mortality amongst children under the age of five through the Integrated Management of Childhood Illnesses. This programme incorporated family and community practices to promote infant and child health through community education, home-based care, and referrals.

In Argentina, Chile, Colombia and Mexico, there is scope to better define the roles and functions of CHWs. This calls for education and training programmes to professionalise CHWs and support implementation of new health promotion programmes towards increasing risk factors to health and public health surveillance. Key examples for learning are available internationally, such as in the United States, where States have developed CHWs' training and curriculums at academic institutions (Box 4.3). Maintaining competences through continuing education to make sure CHWs acquire new skills throughout their carriers is also critical to ensure they can manage evolving and growing health needs (RHIhub, 2020[39]).

Box 4.3. CHWs training and curriculums in the United States

In the United States, many States offer CHWs training and curriculums at academic institutions. The content and organisation of the curriculum vary depending on local specificity and community health needs. Curriculums may address, amongst others, the following topics (RHIhub, 2020[39]):

- Basic concept of health promotion and disease prevention
- Barriers to access and use of health care
- Health disparities
- Practicing cultural competency
- Social determinant of health
- Working with clinicians,
- Healthy eating and weight control
- Tobacco control
- Measurement of blood pressure
- Diabetes
- Mental health

Source: RHIhub (2020[39]), Community health Worker Curriculums; https://www.ruralhealthinfo.org/toolkits/community-health-workers/4/training/curriculum.

Few LAC-7 countries use EHR to encourage primary health care teams to engage in health monitoring and disease surveillance

Electronic Health Records (EHRs) is a key tool to provide a good understanding of the health status of the population. It allows to collect and analyse data for public health purposes and to disseminate public health information to assess and respond to public health problems (Aliabadi, Sheikhtaheri and Ansari, 2020[40]). Both high- and low-income countries are moving away from traditional disease surveillance system – such as manual reporting – to use EHR to identify new risk factors, analyse targeted interventions and assess outcomes at the individual and population levels. Available evidence shows that the use of EHR allows

better surveillance of infectious and non-infectious diseases, enables to identify populations with high risk factors, and leads to improved management of patients with chronic diseases (see also Chapter 6) (Kruse et al., 2018[41]). During a pandemic, quick access to patient information and risk factors to health allows to identify and monitor those in high-risk groups and aggregate data at community level to make decisions about public health (CGI.br, 2020[42]).

Amongst the selected LAC-7 countries, few countries have implemented EHR in primary health care facilities. In Costa Rica and Chile more than 80% of primary health care practices use EHRs. It facilitates the delivery of comprehensive and continuous primary care, while contributing to monitor and improve population health by generating alerts or reminders to guide the primary health care workers in real time in their counselling and diagnosis.

- In Costa Rica, the CCSS has developed the Unified Digital Health Record (Expediente Digital Único en Salud – EDUS) which is used by all primary health care teams. EDUS make patient charts to function as clinical guides and to create reminders for primary health care providers. This helps to keep track of individual patient history (for example on vaccination records) and risk factors for health, and to track community determinants of health. In addition, a medical data clerk (called Registros de Salud – REDES) completes patient intake and epidemiological surveillance. REDES help register patients and keep detailed records on a range of health quality metrics. All the data is funnelled up to the health area and to the national level, but it is also used at the local level by EBAIS teams to make improvement plans or to carry out targeted actions. EDUS is used across all CCSS network of health care facilities (clinics, hospitals and EBAIS), patients' data can be consulted by any centre on real time, which helps to assure continuity of care.
- In Chile, PHC teams have relatively up-to-date information about the main health risks of the population living in the geographic area of their catchment territory (municipality). Access to individual data is heterogeneous since it is dependent on EHR use and its adherence by individual providers. Unpublished data from the MoH estimated that in 2018, 85% of all primary health care centres are using EHRs (Meza, Vargas and Barros Rubio, 2019[43]).

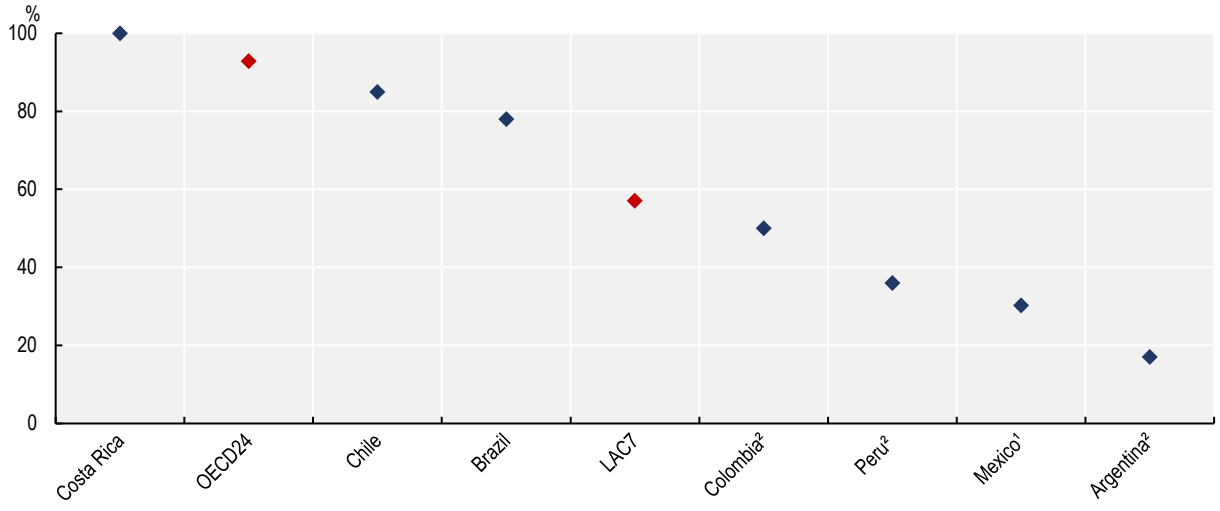
In Brazil, an estimated 78% of PHC units had EHR systems in 2019, and around one in four PHC units still maintained clinical records and patient data in paper format only (CGI.br, 2020[42]). There are also wide disparities across regions: in 2019 adoption of EHR systems was higher in the South and Southeast regions (at 90% and 83% of facilities in those regions, respectively) compared to the Northeast and North regions (77% and 74%, respectively).

At the lower end of the scale are Argentina, Mexico, Peru, and Colombia, where electronic health records are underused for disease surveillance, notably because of a relatively low penetration amongst primary health care physician – at 17%, 50%, and 36%, respectively (Figure 4.7) (Global Health Intelligence, 2017[44]). However, Colombia has introduced in 2020 a nationwide EHR. The Ministry of Health and Social Protection will regulate the data that will be interoperable in the early stages of project development.

In Mexico, the first electronic health records in PHC facilities were introduced in 2003 by IMSS as a part of the family medicine improvement initiative. Currently, the fragmented public health sector has 65 different EHR systems that vary in content, information sources, and human resource capacity to manage them. This situation negatively affects reliability and information sharing for disease surveillance. The homologation of EHR systems amongst health institutions and training health and IT staff are critical to overcome the existing barriers (The Competitive Intelligence Unit, 2020[45]).

Figure 4.7. Use of electronic medical records are still low across LAC-7 countries

Proportion on primary health care teams using EHR, 2021 (or nearest year)

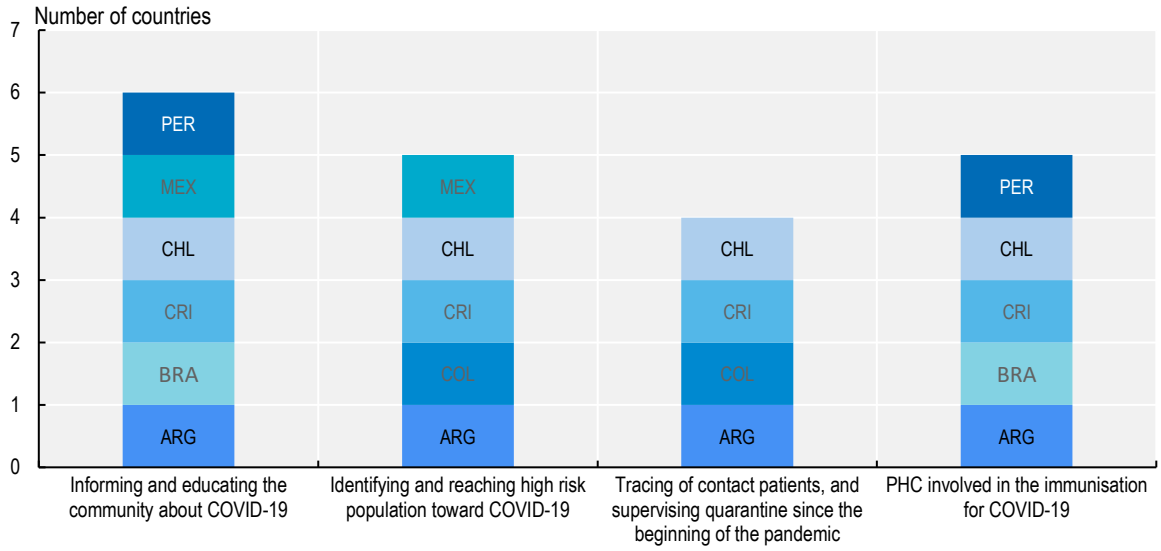


1. Most recent year is 2016 (data not included in the 2021 OECD average). 2. Data taken from the GlobalHealth Intelligence (2017).
Source: OECD (2021[46]), Survey of Electronic Health Record System Development and Use, 2016 and 2021.

Public health emergency management during COVID-19

International learning from OECD and LAC-7 countries during the pandemic indicates that countries with stronger primary health care system have shown greater preparedness and resilience. In Costa Rica, for example, ATAPS have performed a broad range of public health functions to meet the needs of people and communities. By contrast, in Colombia and Mexico primary health care had too often limited involvement in public health activities to respond to COVID-19 (see Figure 4.8). This section presents the role of PHC across the LAC-7 countries, and highlights innovative local practices, in the following five dimensions of the COVID-19 pandemic: 1. informing and educating the community about COVID-19; 2. identifying and reaching high-risk population; 3. tracing contact patients and supervising quarantine; 4. roll-out of COVID-19 immunisation. The last section provide evidence of disruption in health promotion activities and vaccination during the COVID-19 pandemic.

Figure 4.8. Public health activities carried-out by PHC during the COVID-19 pandemic in LAC-7 countries



Source: OECD (2021[47]), Policy survey on the role of primary health care during the COVID-19 pandemic.

PHC has created awareness on COVID-19 risks, and tailored messages and information campaigns

The lack of information on the pathogen, how the SARS-CoV-2 was more likely transmitted, and its effects on the health of the population (with the subsequent debates on vaccine safety and proper therapies to treat the infection) was one important challenge at the beginning of the pandemic in all countries. Risk communication from authorities in several OECD and LAC-7 countries has often been conflicting and confusing for the population. Effective communication to the public is essential to support the population to understand containment and mitigation measures, and act upon them effectively. In some instances, LAC-7 countries have used primary health care to create awareness on COVID-19 risks and tailor messages and information campaigns on non-pharmaceutical intervention (such as facemask use or social distancing).

In Peru, for example, the Health Promotion Direction of the Peruvian MoH organised over 6.4 000 anti-COVID-19 Community Committees with more than 40 000 community health agents, whose general objective is to contribute to the reduction of the transmission of COVID-19 via their mobilisation in the territory. These efforts were based on the long tradition in Peru of work with community health agents in co-ordination with health personnel even before the COVID-19 pandemic started (MinSa Peru, 2020[48]). Similarly, certain provinces of Argentina have prioritised the PHC approach to provide sufficient information to patients and communities on information and health education to patients on prevention of infection. For example, the province of Misiones has trained health promoters who carried out actions for facemask use, social distancing, and hygiene measures during the pandemic. In Chile, health teams delivered educational activities about COVID-19 at PHC centres. Brazil has provided training and guidelines for CHWs following the Ordinance GM/MSn°3.241/2020 to increase their capacity to provide education and information on COVID-19 to the community.

In Colombia, the role of primary health care to provide information and health education to patients and communities on prevention of infection was limited. Rather, community leaders received training on risk communication that allowed them to inform communities on the COVID-19 pandemic and how to prevent the spread of the virus. Key messages on COVID-19 were also disseminated to indigenous communities

in the *Wayúunaiki* language, as a joint effort by the local authorities in the department of La Guajira with the support from the Pan-American Health Organization (ReliefWeb/WHO, 2020[49]).

Some good examples of effective communication to populations and communities and dissemination of public health messages on infection prevention and control measures by primary health care can be found in other OECD countries. In Australia, primary health care workers have had a key role in reaching and supporting vulnerable community members throughout the COVID-19 pandemic. They have ongoing trusting relationships with many people in their local community and are well placed to provide information about COVID-19 in response to individual concerns and needs. Another initiative has involved members of an immigrant community working directly with health workers from that community and government staff to co-design approaches to education and vaccination that were appropriate to their culture. Younger members of the community have been engaged via social media, including Facebook, Zoom, Instagram, and WhatsApp. In the United States also, CHWs have provided accessible and culturally appropriate information and education on COVID-19 through programmes such as the New York State's Maternal and Infant Community Health Collaborative Initiative (MICHC). This approach, specifically targeted to vulnerable communities, has contributed to the reduction of racial, ethnic, economic, and geographic disparities (Rahman, Ross and Pinto, 2021[50]).

Several PHC actions have been implemented in LAC-7 countries to identify and reach out high-risk population

COVID-19 is known to affect more severely elderly population, those suffering from underlying health conditions (such as obesity, cancer, hypertension, diabetes, and chronic obstructive pulmonary disorder), people living in more deprived areas, as well as low-income groups or indigenous population (Katz, 2021[51]; OECD, 2021[52]). For example, at the beginning of the COVID-19 crisis, patients aged 60 and over represented over 93% of deaths – while this figure was of 58% amongst people aged 80 or older- across 21 OECD countries with comparable data one year after the onset of the pandemic (OECD, 2021[52]). While the LAC countries have a relatively younger population than OECD countries (see Chapter 3), it is critical to proactively identify and engage with these high-risk individuals. The examination of policies and practices across LAC-7 countries shows that some developments and innovations were introduced.

In Argentina, the Ministry of Health and the health authorities from provinces implemented actions to identify, locate, and classify more than 4 000 public and private long term care residences to quickly respond in case of a rapid rise of COVID-19 infections. In addition, the long-term care workers were trained in infection and prevention protocols, while contingency plans were prepared to tackle the COVID-19 crisis. In addition, the Sumar Programme incentivised the active identification of people aged 64 and older without formal health coverage; and even though various sources of information were integrated at the provincial level for the identification of this population, the role of PHC teams in their identification was important through field activities. In Chile, primary health care worked in close co-operation with the social sector to provide support to the elderly. During the COVID-19 pandemic, PHC workers delivered food and milk from the National Food Programme to the elderly.

Other LAC-7 countries, including for example Costa Rica and Mexico, focussed on reaching-out to underserved communities. Costa Rica adopted technical guidelines for COVID-19 prevention in indigenous territories. These included the promotion of community participation, the integration of indigenous health knowledge, as well as communication and prevention actions. In addition, a multidisciplinary team of women was formed that includes the presence of indigenous leaders to work closely with communities (FILAC, 2020[53]) (MinSa Costa Rica, 2020[54]). Similarly, Mexican health authorities focused on people living in remote and marginal urban areas by implementing and deploying community health promotion brigades, epidemiological brigades, and clinical care units with PHC providers. This programme was first applied in the states of Sonora, Coahuila, Yucatán and Tabasco by the Mexican MoH and with the support of the National Institute of Public Health. Health promotion brigades

are composed of at least two health promoters. The work programme is planned and co-ordinated with the directors from the PHC unit (Secretaría de Salud de México, 2020[55]; Secretaría de Salud de México, 2021[56]), including:

- Analyse the COVID-19 risk factors profile from the population (provided by the local health unit), update this information through home visits and phone surveys.
- Perform a general questionnaire and respiratory exam to refer them to the health unit, after being contacted by the specialised health brigade (which will also receive the information collected on household visit and phone survey).
- Educate patients and communities on measures to contain the risk of infection (e.g. hand washing techniques, social distancing, recommendations to follow on public spaces), and main symptoms and risk factors related to COVID-19.
- Ensure other health promotion activities beyond COVID-19 in accordance with the local population needs. Checks are made on national health cards to verify if children vaccination is up to date (emphasis on DTP3 and DT for adults – informs PHC unit on residents that require vaccination) and rehydration care for parents with children under the age of five (serums are distributed).
- Manage pregnant women attending antenatal care and conduct risk assessments in pregnant women. Collect phone numbers from an adult in the household as a focal point for PHC unit contact with that family.
- Perform and distribute gender-focused and culturally sensitive informative material on COVID-19 and other health issues elaborated by state-level health authorities.

There are other good examples across OECD countries, for example in Türkiye, where family physicians gave telephone counselling to older patients with chronic diseases (Kumpunen et al., 2021[57]). Similarly, in Finland and the United Kingdom all people using long-term care services were identified as vulnerable during the pandemic and were proactively offered PHC services (Kumpunen et al., 2021[57]). Such proactive policies help to quickly deploy extra support for those most in need.

COVID-19 surveillance, contact tracing, and quarantine supervision were lacking in several LAC-7 countries

An effective strategy that tests, tracks people infected, and traces their contacts (TTT) is needed to limit the number of COVID-19 cases and, subsequently, deaths. This strategy encompasses the ability of public health authorities to effectively trace contact patients and supervise quarantines. It is especially applicable in the initial phases when the transmission is yet on a scale that is containable. A systematic review assessed the effectiveness of contact tracing, quarantine, and isolation strategies in the prevention and control of COVID-19. From the 22 selected studies consisting of observational and modelling studies, results show that these strategies were independently effective. However, the effectiveness and efficiency were shown to be further increased if implemented in a timely manner during the health emergency and when coverage is large (Tadele Girum, 2020[58]).

In Argentina, CHWs played a leading role in follow-up COVID-19 and tracing of close contacts, through the DETECTAR programme. This programme is based on door-to-door visits to people with symptoms and those that have been in close contacts with confirmed COVID-19 cases, with results integrated to the National Health Surveillance System (SNVS) which reported all COVID-19 cases. Vulnerable communities and areas with outbreaks are the focus of DETECTAR with a team of between 15 and 45 people. Personnel from this programme not only takes people body temperature and check for other symptoms of the disease, but they also give guidance on COVID-19 prevention. When a potential case is signalled, the person is referred to a triage centre, in which a team composed of different health workers interview and collect their personal data before performing a test in a mobile health facility close to the triage centre (see also Chapter 5) (PAHO, 2020[59])

Colombia established a programme for testing, tracing, and isolation of contacts of probable or suspected cases of COVID-19. The programme, called PRASS (Pruebas, Rastreo y Aislamiento Selectivo Sostenible), has been quickly implemented during the first phase of the pandemic, guiding teams responsible for this activity. Implementation of tracing and tracking teams and procedures is the responsibility of local health secretariats, health promotion entities (EPS), the National Tracking Contact Centre, National Institute of Health (INS), and health provider institutes (IPS). PRASS teams are interdisciplinary groups, for example, an IPS team may include administrative personnel that co-ordinates activities, and nurses or clinical support personnel trained in telephone and face-to-face tracking, evaluation, and follow-up of confirmed or suspected COVID-19 cases and their contacts (MinSalud Colombia, 2020[60]).

In Brazil, Peru, Chile and Mexico, the surveillance system was not appropriate to implement effective tracing mechanism. In Peru, the strengthening of COVID-19 surveillance and diagnosis activities in the onset of the pandemic were carried out through temporary intervention teams (called emergency response teams) for diagnosis and clinical follow-up that responded to local health authorities and that were not linked to PHC. The Integral Intervention Teams (IIT), and the primary health care teams that work in COVID-19 facilities, started to use SICOVID (integrated system for COVID-19) for reports after the initial phase of the pandemic (MINSA, 2020[61]). In Chile, the public health surveillance system, EPIVIGILA, was supposed to work in real-time regarding infectious diseases notification -either confirmed or probable cases. However, the high demand on health care overloaded the system during the beginning of the pandemic, effectively delaying data registration in EPIVIGILA. At first, the surveillance system only allowed the registration of a limited number of contacts, and it lacked the necessary data fields for tracing COVID-19 cases efficiently. Furthermore, EPIVIGILA is not interoperable with EHR in primary care or with the National Registry of Immunisations, making difficult the disease outbreak response. At local level, the Centinela strategy implemented in the Renca municipality in Chile was successful by improving epidemiological surveillance and conduct testing and tracing activities (see Chapter 5).

Similarly, at the beginning of the COVID-19 pandemic in Mexico, health authorities adhered to a sample-based sentinel surveillance model to monitor the pandemic, analysing and reporting laboratory samples of only 10% of suspected COVID-19 cases with mild symptoms, 100% of suspected patients with severe symptoms, and 100% of cases meeting the definition for severe acute respiratory infection (Secretaría de Salud de México, 2021[62]; Sánchez-Talanquer, González-Pier and Sepúlveda, 2021[63]). This limited testing hindered detection and tracing, affecting adequate quarantine measures, and contributing to the spread of SARS-CoV-2.

Adequate surveillance systems are key during infectious diseases outbreaks. However, for a region such as LAC that has experienced previous health emergencies, like the AH1N1 pandemic in 2009, and that is highly exposed to other infectious diseases such as Zika virus, malaria, or yellow fever, surveillance systems should be highly improved and broadened, as well as rely more on the involvement of PHC teams to enhance surveillance capacity (see Box 4.4).

Having real-time data on outbreaks, collected for example by PHC centres or teams, could help prevent clusters and save lives by acting before community spread starts or goes exponential. In addition, establishing regional bodies to allow for the sharing of these data between countries could also help control outbreaks that may occur in areas close to national borders. Some good examples of initiatives to strengthen surveillance system at primary health care level and to implement tracing strategies can be found across other OECD countries. France for example used a sentinel network implemented by PHC physicians. The network was supported by a specific application integrated into the information system of primary health care facilities. The purpose of this application was to allow for case reporting, surveillance protocols, and COVID-19 case descriptions (Prado et al., 2021[64]). In Luxembourg, an effective contact tracing system was set up to identify contacts, administer quarantine and isolation, and manage clusters of infection (OECD, 2022[65]). The contact tracing team comprised 200 people, and the system provided positive results. The time between identification of laboratory confirmed cases and notification was generally 24-48 hours, and it provided personalised support.

Box 4.4. Lessons from previous pandemics in LAC

2009 AH1N1 pandemic in Mexico and LAC

Latin America and the Caribbean has not been exempted from previous epidemics and outbreaks, whether they be human-to-human infectious diseases or vector-borne diseases. For example, the 2009 pandemic of the infectious respiratory disease produced by the influenza A virus subtype H1N1 greatly affected the LAC region.

On a country-specific case, Mexico began preparing a National Influenza Preparedness Plan (NIPP) shortly after the SARS 2003 epidemic emerged in Asia. Completed in 2005, this plan was already being tested at a national level by 2006. In the absence of LAC regional health mechanisms, Mexico's NIPP was complemented with the North American Plan for Avian and Pandemic Influenza developed by the governments of Canada, Mexico, and the United States. This national plan allowed Mexico to face the 2009 AH1N1 pandemic with stockpiles of strategic medicines and personal protective equipment (PPEs), pre-tested risk communication campaigns, and networks to distribute vaccines more efficiently. Nevertheless, the preparedness for intensive care units beds, ventilators, and the number of qualified personnel to use these tools were not sufficient, as has been the case during the COVID-19 pandemic.

Many lessons that ought to have been learned from the 2009 AH1N1 pandemic were not applied consistently not only in Mexico but also in most of LAC. We can cite for example the late involvement of the highest-level authorities, who generally convened after the arrival of SARS-CoV-2 to the region and therefore delayed inter-sectoral readiness. In addition, the slow reaction to acquire strategic medical resources such as PPEs, drugs, and laboratory supplies allowed regions affected before LAC to exponentially increase their demand for these goods, thus distorting global markets and making these medical supplies scarcer and more expensive, hindering the capacity of LAC countries to face the COVID-19 pandemic.

Epidemiological surveillance: the 2015-16 Zika virus outbreaks in the northeast of Brazil

The northeast of Brazil has experienced significant Zika virus outbreaks, which included cases associated with microcephaly and other birth defects. During certain peaks, more than 200 000 cases were reported in Brazil (by the end of 2016), having the highest number of cases worldwide as well as the most cases associated with birth defects (2 366). To track the evolution of this outbreak, a genomic and epidemiological surveillance effort was undertaken.

The ZiBRA mobile genomics laboratory screened 1 330 samples from patients in 82 municipalities across the federal states of Alagoas, Bahia, Paraiba, Pernambuco and Rio Grande do Norte, with the support of the MoH and other institutions. The samples that were provided by public health laboratories and the Fundação Oswaldo Cruz (FIOCRUZ) were screened for the presence of Zika virus using real-time quantitative PCR tests. The analyses undertaken with these samples allowed to estimate that Zika virus was present in northeast Brazil by early 2014 and was likely to have spread from there to other areas of Brazil and the rest of LAC.

Source: Di Paolantonio (2020[66]), https://www.oecd.org/about/civil-society/youth/Shaping-the-Covid-19-Recovery-Ideas-from-OECD-s-Generation-Y-and-Z.pdf; Córdova-Villalobos (2017[67]), http://www.anmm.org.mx/GMM/2017/n1/GMM_153_2017_1_102-110.pdf; Hernández-Ávila (2020[68]) https://doi.org/10.1177/0840470420921542; Faria et al. (2017[69]), https://doi.org/10.1038/nature22401; Giovanetti et al. (2020[70]), https://doi.org/10.1016/j.celrep.2020.01.085.

Procurement issues delayed the capacity of PHC to facilitate the roll-out of COVID-19 vaccination in LAC-7 countries

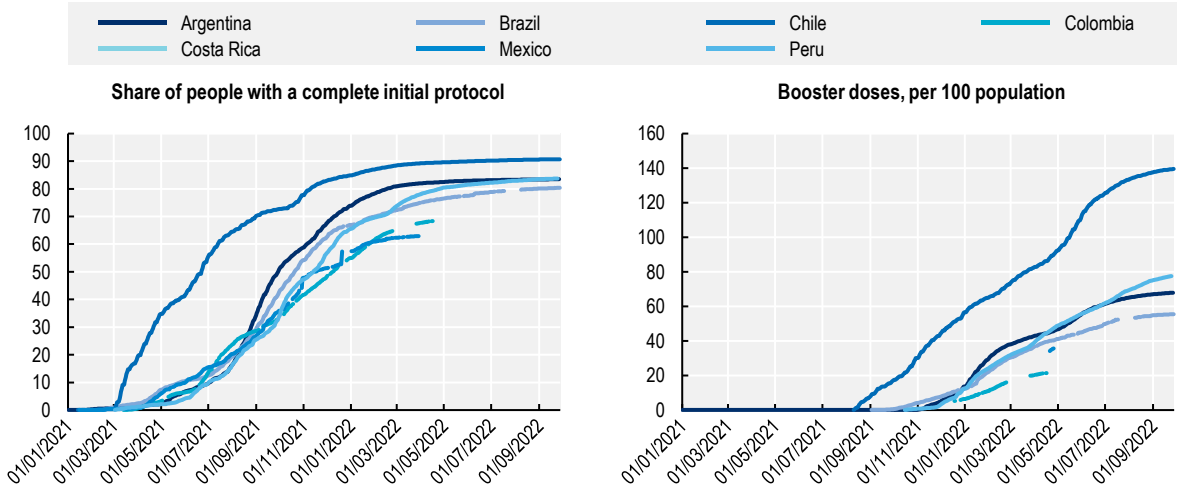
A watershed moment in the COVID-19 pandemic was the rollout of COVID-19 vaccines that started in late 2020 (OECD, 2021[71]). Nevertheless, LAC, as other developing regions in the world, suffered from a lack of access to vaccines and then had difficulties to administer vaccines to their population mainly due to logistics and misinformation.

As a response to procurement issues, LAC-7 countries heavily relied on the COVID-19 Vaccines Global Access (COVAX) mechanism to ensure access to COVID-19 vaccines. COVAX is a global initiative led by the World Health Organization (WHO) that aims to promote vaccine equity worldwide; all countries in the LAC region have joined this effort except for Cuba, which relies on domestically produced vaccines only. Participation in COVAX is done in two ways: self-funded countries (paying for their vaccines purchased through the mechanism at market price) and low-income countries (EU-LAC-Foundation, 2021[72])

PHC is key to undertake swift and maintained community health efforts that can address a sound COVID-19 recovery through the implementation of COVID-19 vaccine distribution (Wilkinson et al., 2021[73]). Having a long history of delivering vaccination programmes, primary care teams are uniquely placed to facilitate uptake and delivery of COVID-19 vaccines in the community, including for people living in deprived, rural, and remote areas. Knowledge about medical and personal information of the local population, and long-time relationship with patients are key elements for successful and personalised vaccination roll-out (Pinaka et al., 2021[74]; Lewis, Nuzum and Schneider, 2021[75]) (Chiolero, 2021[76]).

With these regards, Chile out-performs other countries in the LAC region (see Figure 4.9). The country's success in the administration of COVID-19 vaccines relates to a robust health care delivery system built long before COVID-19 hit, but also to an early strategic purchasing of vaccine doses (Aguilera et al., 2021[77]; Castillo, Villalobos Dintrans and Maddaleno, 2021[78]). In addition, the Chilean Ministry of Health set new regulations to prepare the COVID-19 immunisation programme, strengthened the infrastructure for safe storage and distribution of vaccines, and set up personnel training to guarantee the quality, safety, and access to vaccines. Nurses, doctors, or a trained health care technician can carry out vaccinations; however, other health professionals such as psychologists, medical technologists, dentists, midwives, and pharmacists could do so under the emergency state. In addition, the MoH and municipalities implemented mobile posts to facilitate geographical access to vaccines. During the COVID-19 campaign, the country added 1 800 new vaccination points over the regular vaccination sites for seasonal campaigns such as influenza (Aguilera et al., 2021[77]). New vaccination points were profusely publicised in national and local media outlets, and the MoH website published information about COVID-19 vaccines and practical details about the immunisation campaign *(#YoMeVacuno*). The *Salud Responde* hotline oversaw answering the population's questions and doubts about vaccines and the immunisation process.

Figure 4.9. COVID-19 immunisation in the LAC-7 region



Source: Our World in Data (2022[79]), Coronavirus Pandemic (COVID-19) data, https://ourworldindata.org/coronavirus.

As in Chile, primary health care facilitated the implementation of COVID-19 vaccine distribution in Argentina, Peru, Brazil and Costa Rica:

- In Argentina the COVID-19 vaccination strategy was initially based on the co-ordination, communication, and participation mechanisms of the Provincial Immunisation Programmes, with progressive involvement of PHC teams. In addition, some health centres raised awareness about the importance of the vaccine by offering virtual counselling and services and sending out communications to those who may be hesitant or lack access to health care services (promujer health centre). There are also good local initiatives, such as in the province of La Rioja, which carried-out actions to ensure the COVID-19 vaccination of the population. Influenza immunisation was also ensured for adults aged 65 and over either at home or at collection points. Strategic points were then established for the COVID-19 vaccination of adults, pregnant women, and patients at risk inside their cars, called *Operativo Vacunauto*. In addition, the health agents of the entire capital, together with the EOC (Emergency Operations Committee) teams, carried out the COVID-19 vaccination of those people with incomplete immunisation schedules, or who did not have access to the vaccine.
- In Peru, physicians and nurses made assessments to people before the administration of the vaccines; but only nurses were allowed to administrate COVID-19 vaccines. The population is vaccinated by districts considering epidemiological aspects such as the risk of excess mortality, population density, and accessibility for vaccination. However, vaccination for indigenous communities is delivered considering only the territorial scope and regardless of age (MinSa Peru, 2021[80]). COVID-19 vaccination is administered in vaccination centres located in open spaces but are delivered by health teams from PHC centres; assigned by the Health Networks or the local Health authority (MINSA, 2021[81]).
- In Costa Rica, PHC carried out COVID-19 vaccination through the Expanded Programmes of Local Immunisations, directed by the Departments of Nursing and Basic Health Care Teams (EBAIS), which oversaw training auxiliary nursing staff and ATAPS to administer the vaccines and subsequently register immunisations in the Integrated Vaccination System SIVA.
- Brazil capitalised of its National Immunisation Programme (Programa Nacional de Imunizaçoes) which entails recommended vaccination campaigns offered in communities, including in schools and people's houses, by the primary health care team. Vaccination is a routine and embedded practice at primary health care level since 1973, making it possible to scale-up COVID-19 vaccination programme quickly. As in many OECD countries, the Brazilian SUS was capable to implement vaccination drives with little vaccine hesitancy (Lotta et al., 2022[82]).

By contrast, PHC did not play a central role in COVID-19 vaccination in Colombia and Mexico. More specifically, in Colombia, responsibility to guarantee access to the vaccine lays to a great extent on health promotion entities (EPS) and Secretariats of Health of National territories. During the rollout of the vaccination plan, these entities allocated a vaccination point in the municipality of residence of affiliates, or the workplace of health workers. Primary health care facilities have not been the central mechanism to approach the population to be vaccinated. Similarly, in Mexico PHC services have not been directly involved in the vaccination strategy (Secretataría de Salud de México, 2020[83]; Secretaría de Salud de México, 2021[84]). Each of the 32 Mexican states has a co-ordinator for the COVID-19 vaccination strategy, and the government installed more than 1 000 vaccination centres in military and civil facilities and deployed vaccination brigades all over the country. Each vaccination brigade comprises thirteen members: public servants working for the Secretary of Wellness; two social programme promoters; four members of the Armed Forces belonging to the Navy, Army, or National Guard; two civil society volunteers; one physician overseeing the technical vaccination components and trained to detect and treat adverse reactions; and two nurses (Secretaría de Salud de México, 2021[84]).

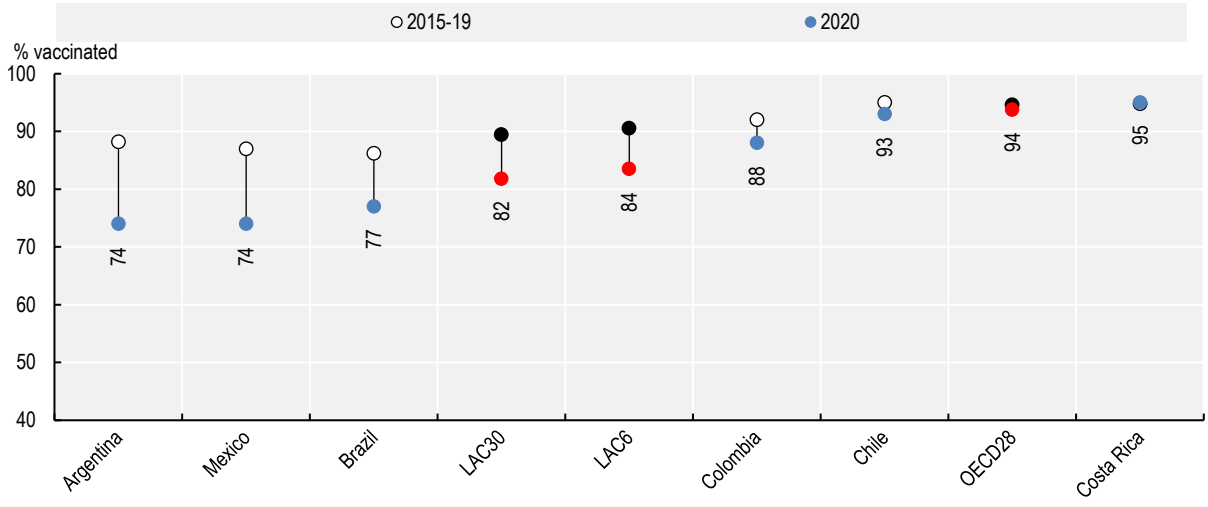
The community-based approach of primary health care gives strong argument to capitalise on primary health care team to facilitate the rapid implementation of vaccine distribution and roll-out in case of future health emergency. The PHC network is also extremely useful to reach population living in deprived, rural, and remote areas. International experiences show that several OECD countries have also deployed mobile primary health care units to increase vaccination coverage. In Australia for example, most vaccines have been provided by primary care providers, including family doctors, primary care nurses, and pharmacists working in local clinics, where these established relationships have been critical in educating members of the local community, allaying concerns, and optimising vaccine uptake. Vaccine initiatives that are taken directly to members of at-risk communities have been effective in reducing barriers to vaccination. A mobile vaccination clinic in Melbourne has been providing COVID-19 information and vaccines to up to 40 homeless people every day visiting a variety of locations, including homelessness services, drop-in centres, crisis accommodation facilities, and rooming houses. The vaccination team includes two nurse immunisers, a peer worker who has a lived experience of homelessness, a social worker, and a clerical support worker (Cohealth Care for All, 2021[85]). Similarly, in the United States, PHC has been a key ally on overcoming vaccination hesitancy, by allowing patients to receive COVID-19 vaccines in familiar settings such as community centres.

Large disruption of health promotion and vaccination during COVID-19 occurred in all LAC-7 countries during the pandemic

The COVID-19 pandemic has not only direct health effects on the population suffering from the disease, but also indirect health effects due to the disruption of preventive services such as ordinary health promotion and immunisation. In a WHO Pulse survey, almost one in every two of the 129 participating countries signalled disruptions to routine facility-based and outreach immunisation services, for example. Disruptions in routine immunisation, even after the increase of COVID-19 vaccination campaigns, were more generally signalled in outreach immunisation services and amongst school-aged children. While a recovery from disruption was observed in Q1 2021, countries signalling disruptions increased by 14% in facility-based immunisation and 7% in outreach immunisation in Q4 2021 when compared to Q1 2021 (WHO, 2022[86]).

Latin American and Caribbean countries have not equally been exempted from routine immunisation disruptions. Coverage for DTP3 vaccines amongst children aged 1 have fallen in 2020 across the region (82%) when compared to the average between 2015 and 2019 (89%). This has also been the case for OECD member countries – although to a lower extent- moving down from a 95% coverage in 2015-19 to 94% in 2020. Countries like Argentina, Mexico, and Brazil fell below an 80% DTP3 immunisation coverage in 2020, while Costa Rica was the only selected country to exhibit a slight increase in 2020 when compared with the 2015-19 average (see Figure 4.10).

Figure 4.10. Diphtheria, tetanus toxoid and pertussis (DTP3) immunisation coverage amongst children aged 1 (%), 2015-19 average and 2020



Source: WHO (2022[23]), Global Health Observatory, available at https://www.who.int/data/gho.

There are also growing available evidence showing disruption in health promotion and immunisation in Brazil, Mexico, Chile, Peru and Colombia.

In Brazil, immunisation coverage fell by 18% during the first year of the COVID-19 crisis according to estimates using databases from the Brazilian unified health system (DATASUS). In addition, PHC and home visits were reduced by 30% across the country when contrasting the period from March to December 2020 with previous years. The COVID-19 crisis has provoked a significant reduction of health promotion and vaccination in Brazil (de Oliveira et al., 2022[87]).

In Mexico, data from the Mexican Institute of Social Security (IMSS), suggests changes in service use and outcomes from April to December 2020 compared to the year before the pandemic. Decreases were observable on contraceptive services (-54%) and child vaccinations (-36%), for example (Doubova et al., 2021[88]).

While the Chilean Ministry of health ordered to maintain health care access for children under the age of five in PHC, the country saw a 66% reduction in children's consultations. In fact, the number of children aged 24-48 months receiving health care in 2019 was 293 331, while in 2020, this figure decreased by two-thirds down to 97 594. The lack of health workforce, with nurses being included in epidemiological surveillance teams, triage, and later in the vaccination strategy managed by PHC is an important factor explaining disruption in children's health care.

In Peru, total vaccine coverage for children aged under 12 months decreased from 76.7% in 2019 to 61.1% in 2020, with vaccines such as the pentavalent lowering their coverage in the same age group from 78.5% (2019) to 63.8% (2020). This low routine vaccination coverage during the COVID-19 pandemic has generated an increase in the number of susceptible population under the age of five, both for diseases in eradication and elimination -polio, measles, rubella, and neonatal tetanus-, as well as for diseases under control -diphtheria, whooping cough, chickenpox, and hepatitis B (MinSa Peru CDC, 2021[89]).

Colombia has also experienced a disruption of child and adult immunisation during the COVID-19 pandemic. While vaccination services did not close during the pandemic, vaccination coverage rates for 26 vaccine-preventable diseases included in Colombia's Amplified Immunisation Programme fell behind the 95% expected target for 2020 (Gestarsalud, 2020[90]). A modelling study carried out by the Institute of

Health Metrics and Evaluation (IHME) estimates a 5% and 3% disruption in 2020 for DTP3 and measles vaccination coverage, respectively. Reasons for vaccine disruptions include lockdowns that created barriers for children and parents to reach immunisation sessions, fear of contracting COVID-19, the reconversion of health workers to pandemic response duties, as well as lack of personal protective equipment (PPE) and disruptions in the vaccine supply chain (IHME, 2021[91]).

Consequences from the routine immunisation disruption are already visible. Measles cases reported around the world have increased by 79% in the first two months of 2022 when compared to the same period in 2021 (UNICEF/WHO, 2022[92]). Significant numbers of children are being left without protection against vaccine-preventable diseases due to vaccine-access inequalities, disruptions, and resource diversion that have been caused by the COVID-19 pandemic. This will likely result in alarming outbreaks of vaccine-preventable diseases in the years to come.

To overcome the disruption of routine immunisation and recover services over the long term, some other OECD countries have implemented policies to reach pre-pandemic coverage levels (see Box 4.5). These include focusing on catch-up immunisation strategies, strengthening health information systems, increasing resource mobilisation, and fostering resilience in health systems. However, in order for these to be more effective, it is crucial to identify vulnerable children who have been missed from immunisation campaigns during the pandemic, and provide targeted catch-up immunisation services to low coverage areas (Shet et al., 2022[93]). PHC could play a determinant role in this targeted approach.

Box 4.5. Missed routine vaccinations in Canada due to COVID-19

In Canada, due to the missed routine vaccination linked to the COVID-19 pandemic, three components have been defined for catching-up with pre-pandemic vaccination coverage levels:

1. Identification of non-vaccinated people across the life course.
2. Detection of vaccine delivery gaps, adaptation and adjustment of immunisation campaigns, and development of appropriate and tailored strategies for catching up.
3. Communication, documentation, evaluation, and readjustment of the immunisation programmes.

Ensuring that routine immunisation and catch-up programmes are properly undertaken during the pandemic is key to strengthen the immunisation coverage in Canada.

Source: MacDonald et al. (2020[94]), "COVID-19 and missed routine immunizations: designing for effective catch-up in Canada", https://doi.org/10.17269/s41997-020-00385-4.

Conclusions

The role and reach of PHC could be expanded across the LAC-7 countries to increase preparedness and resilience for future outbreaks. For a start, strong PHC which focuses on health promotion and vaccination improves the overall health of the population prior to health emergency, which enhances preparedness to deal with emerging pathogens or health shocks such as the COVID-19 pandemic. This was evident during the COVID-19 pandemic, as obesity and more generally chronic diseases were shown to be risk factors for serious cases and death from the disease (OECD, forthcoming[95]). Yet, given the increasing risk factors to health and rising burden conditions in all LAC-7 countries, there is scope to strengthen health promotion and vaccination into primary health care. In fact, significant variation in performance remains (for example

on unsatisfied demand for family planning, counselling for risk factors to health, and vaccination programmes), with marked socio-economic inequality (for example in Peru and Brazil).

In many aspects, PHC has contributed to the COVID-19 emergency response in LAC-7 countries by carrying out some public health activities. Some LAC-7 countries have used primary health care to create awareness on COVID-19 risks and tailor messages on non-pharmaceutical intervention. This was the case in Costa Rica, Peru and Argentina, where CHWs provided information to patients and communities on COVID-19 diseases and prevention of infection. Some developments and innovations were also introduced to proactively identify and engage with high-risk individuals (in Argentina, Costa Rica and Mexico) and to trace contact patients (such as Argentina and Colombia). However, in other LAC-7 countries (including Peru, Chile, Brazil and Mexico) the surveillance system was not appropriate to effectively identify and monitor high-risk populations and aggregate data at community level to make decision about public health. Improving the collection of real-time data on infection and clusters, collected by PHC teams, and integrated at a national and regional level, will help to respond proactively to future shocks. Strong PHC teams can also facilitate the uptake and delivery of outbreak disease vaccination, such as the COVID-19 vaccination campaign. While most of LAC-7 countries faced procurement issues to access COVID-19 vaccine (except Chile), they have capitalised on well-established vaccination campaigns, embedded into the community and primary care settings, health workers' daily activity, and people lives. Chile, Argentina, Peru, Costa Rica and Brazil are good examples of COVID-19 vaccination programmes implemented at primary health care level.

As in many OECD countries, most LAC-7 countries faced indirect health effects including for example the disruption of routine health promotion and immunisation. Coverage for DTP3 vaccines amongst children aged one have for example fallen in 2020 across the region (82%) when compared to the average between 2015 and 2019 (89%). Largest reductions are found in Argentina, Mexico and Brazil. These alarming trends put children at risk of preventable diseases, and urgently call for strengthening routine immunisation programmes and implementing plans to reach out those who have missed routine vaccination, being often the most disadvantaged who do not have access to health services.

Critically, LAC-7 countries should develop national and regional epidemic preparedness plans -building on influenza-specific plans, which give a central and well-defined role to PHC teams and CHWs. Programmes for epidemiological surveillance, pre-tested risk communication strategies, and vaccine distribution networks are some of the key aspects that would allow these epidemic preparedness plans to work efficiently and make the most of PHC during future outbreaks. Other episodes such as the 2015-16 Zika virus epidemic, and recurring outbreaks of Dengue, Chikungunya, Yellow Fever and Cholera in the region are also worth analysing to improve the effectiveness of the response through a wider use of PHC (Di Paolantonio, 2020[66]). A greater level of professionalisation for CHWs is also extremely relevant both to improve population health in LAC-7 countries and to carry out several public health functions during a health emergency.

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5 Screening and early detection of diseases

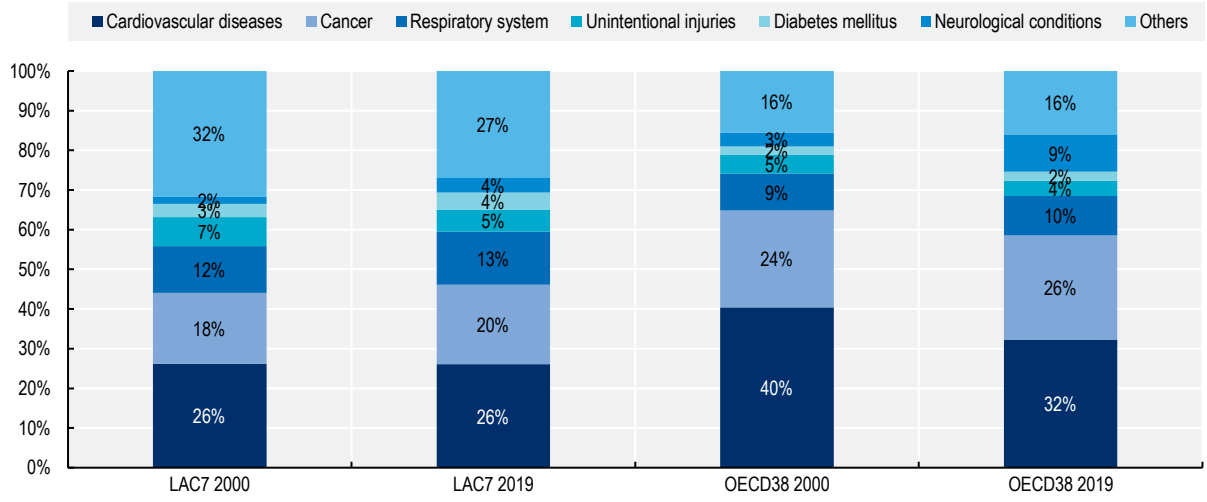
As the first and main point of contact with the health care system, primary health care is best placed to detect disease at the early stage to halt its progress. However in LAC-7 countries, despite the existence of comprehensive guidelines on screening services, coverage of screening for breast and cervical cancer, and for hypertension and diabetes is low. Moreover, during the health emergency, while innovative approaches made important contributions to the pandemic response, screening and early detection services for non-COVID-19 severely decreased between 2019 and 2020, with potential long lasting effect for patients. The chapter presents an overview of LAC-7 countries' performance in screening and early detection of disease before and during the health emergency, and provide evidence of disruption of disease detection during the COVID-19 pandemic.

Introduction

In both LAC-7 and other OECD countries, three chronic non-communicable diseases (NCDs) are the leading causes of death: cardiovascular diseases, cancer and diabetes. Cardiovascular diseases and cancer represented 46% of all deaths in LAC-7 countries and 58% in other OECD countries in 2019. Diabetes stands as the fifth cause of mortality in LAC-7, representing 4% of all deaths, higher than the 2% across other OECD countries (Figure 5.1). The LAC-7 region is confronted to an increasing prevalence of long-term, chronic non-communicable disease, due mainly to evolutions in their population structures and demographic profiles and rising prevalence of risk factors for health. The performance of the health system to provide timely diagnosis and treatment also play a key role to explain the leading causes of death.

Figure 5.1. Main causes of mortality in LAC-7 and the OECD in 2019

Percentage of total deaths

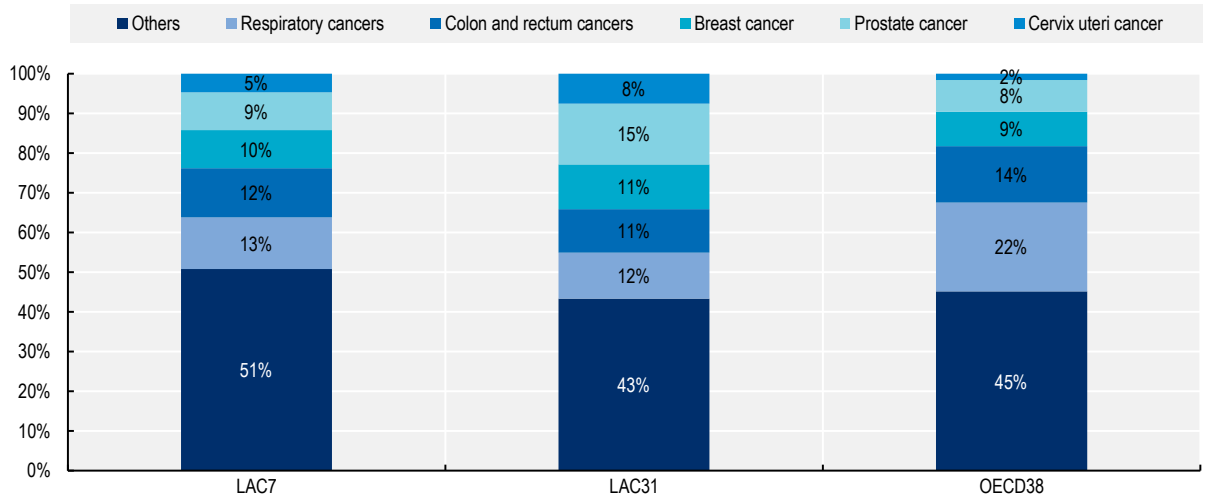


Note: Based on estimated deaths, 2019.
Source: WHO (2019[1]), The Global Health Observatory, https://www.who.int/data/gho.

Diagnosing disease at an early stage improves health outcomes (both morbidity and mortality) by providing care at the earliest possible stage (WHO, 2022[2]). Aiming at improving the performance and capacity of their PHC systems, LAC-7 countries have built mechanisms to screen for some of the most epidemiologically relevant diseases (OECD, 2021[3]). Cervical, breast and colon-rectum cancers represent 31% of all cancer related deaths in LAC-7 in 2019 and similar percentages are seen in other OECD countries (Figure 5.2). It is estimated that around 30% of cancer cases can be cured if they are detected and treated early (PAHO/WHO, 2022[4]). Similarly, screening of hypertension and diabetes leads to early diagnosis and treatment, and can have important positive effects in patients' health outcomes (US Preventive Services Task Force, 2021[5]; WHO, n.d.[6]; Jin, 2021[7]).

Figure 5.2. Mortality burden of cancer in LAC-7 and the OECD in 2019

Percentage of total cancer deaths



Note: Based on estimated deaths, 2019.
Source: WHO (2019[1]), The Global Health Observatory, https://www.who.int/data/gho.

Early detection of disease include both the screening of healthy patients at risk and providing diagnosis for symptomatic patients as early as possible. Early detection is a determinant not only on the expected health outcome of the patient, but also in the expected financial cost and future utilisation of health care resources (Sroczynski et al., 2020[8]; Ratushnyak, Hoogendoorn and van Baal, 2019[9]; Rubin, Vedsted and Emery, 2011[10]). Primary health care (PHC) is an important actor on early detection (OECD, 2020[11]), usually performing routine clinical examinations and recommending tests, and nudging towards and implementing screening programmes to the population.

The chapter explores the performance of LAC-7 countries in the second function of PHC, screening and early detection of diseases. The second section explores the range of diseases included in the countries' screening and early detection strategy, followed by an examination of the structural capacities in place, and the coverage of the screening efforts in LAC-7 countries. The third section explores the capacities built and the performance of the LAC-7 countries for early detection of COVID-19. The fourth section assesses the COVID-19 impact on screening and early detection of non-COVID-19.

Implementation challenges undermine comprehensive early detection and screening programmes

All LAC-7 National Health Plans describe high-level aims and goals regarding early detection and screening. Different stakeholders transform the high-level goals into practical guidelines, and create the plans for early detection of specific diseases. The range of diseases included in early detection programmes varies across countries, but cancers (breast, cervical, colorectal), diabetes and hypertension, and antenatal and childcare are common across LAC-7. A selected list of screening and early detection programmes in LAC-7 are presented in Table 5.1.

In Mexico, PHC services are well-positioned to deliver screening services and reduce delays in diagnosing NCDs; however, these services face critical challenges that reduce the effectiveness of screening programmes. While early detection programmes in the country describe care pathways and performance

indicators, there is no assignment for or accountability framework to the system stakeholder. Screening and early detection programmes in Mexico have changed towards population-based programmes in recent years, while before it was opportunistic (OECD, 2021[3]). However, several challenges have been highlighted by previous studies including limited access to treatment and follow-up after diagnosis due to scarce resources and poor-quality control (Chávarri-Guerra et al., 2012[12]). This has been associated with high rates of cancer mortality in Mexico (Chávarri-Guerra et al., 2012[12]). At the same time, the Mexican programme for antenatal care (Table 5.1) has been very successful due to a proactive engagement campaign (Serván-Mori et al., 2020[13]). The programme co-ordinates, and assigns responsibilities of outcomes to the health service providers. It also considers the active recruitment of target population (from a pregnant woman census) and fosters link with a social network to create additional support for the patients (Mexico Ministry of Health, 2013[14]).

Colombian screening and early detection programmes (Table 5.1) describe goals and outcome indicators, together with evaluation systems and pathways, protocols and responsibilities of stakeholders. However, the programmes are restricted to guidelines and there is no accountability framework to monitor outcomes and performance of providers. This results in a low adherence to guidelines (Colombian National Cancer Institute, 2019[15]), and as a result cancer care quality measures related with staging and early diagnosis suggest low performance at national level (CAC, 2021[16]). Early detection can happen through both opportunistic and population based initiatives, but there is no strategy to actively reaching out to target population.

Chile has a national programme for screening and early detection that includes several screening tests along the lifecycle of the population (Box 5.1). The specific programme in place for antenatal and childcare “Chile crece contigo” (“Growing together”) includes a comprehensive set of screening exams from the moment of the first antenatal check-up until the start of primary school. The programmes have a population-based approach for people enrolled in the public scheme, linked to the mandatory registration with PHC. Further, there is accountability for performance measures (such as coverage rates) based on a pay for performance incentive scheme for PHC: At least 25% of the adult population and 55% of the older adult population covered by the public health system should be included in screening and early detection life cycle programme. Patient level incentives, such as eligibility for subsides, are in place to actively involve families and target population into the early detection programme.

Table 5.1. Selected screening and early detections in LAC-7 countries

Country	Programme name	Covered diseases	Institution	Implementation
Brazil	"Programa Nacional de Prevenção e Detecção Precoce do Câncer do Colo do Útero, Programa Nacional de Detecção Precoce do Câncer de Mama e Programa Nacional de Detecção Precoce do Câncer Colorretal"	Breast, cervical and colorectal cancer	National Cancer Institute Ministry of Health	Municipalities Primary health care teams
	Rastreamento	Chronic non-communicable diseases	Ministry of Health	Primary health care centres
Mexico	Programa prevención y control del cáncer de la mujer	Breast and cervical cancer	National Centre for Gender Equity and Reproductive Health	Specialised centres All levels of care
	Programa de Acción Específico; Prevención y Control de la Diabetes Mellitus	Diabetes Mellitus and obesity	Ministry of Health	All levels of care
	Prevención y Control de la Obesidad y Riesgo Cardiovascular.	Obesity, cardiovascular risks, hypertension	Ministry of Health	All levels of care PHC through HEART
	Programa de Salud Materna y Perinatal	Maternal and antenatal health care	National Centre for Gender Equity and Reproductive Health	Coordinated by Municipalities, all levels of care
Argentina	Programa nacional de control de cáncer de mama	Breast cancer	Ministry of Health (via the National cancer institute) in co-ordination with provinces	Municipalities Primary health care units
	Programa nacional de prevención de cáncer cervicouterino	Cervical cancer		
	Programa Nacional de Prevención y Detección del Cáncer Colorrectal	Colorectal cancer		
Peru	Programa presupuestal prevención y control del cáncer	Breast, cervical, colorectal, and prostate cancer	Ministry of Health. General Directorate of Strategic Interventions in Public Health	National, regional and local governments
	Plan nacional para la prevención y control de cáncer de mama en el Perú	Breast cancer		Primary health care units
	Modelo de cuidado integral de salud por curso de vida para la persona, familia y comunidad	Active routine check-ups, hypertension, Tuberculosis, anaemia (under 3 years old)	General directorate for strategic interventions in health, MoH	Primary health care teams
Colombia	Plan Decenal Para el Control del Cáncer	Breast, cervical, colorectal, and prostate cancer	Ministry of Health	Territorial authorities, all levels of care
	Ruta Integral para la Promoción y Mantenimiento de la Salud	Cardiovascular and metabolic risks, anaemia & hearing (childcare), VIH	Ministry of Health	Specific Providers as designed in care pathway
Chile	Examen Medicina Preventiva	25 health problems including breast and cervical cancer, hypertension and diabetes.	Undersecretary of Public Health Ministry of Health	Primary health care
	Chile Crece Contigo	Antenatal and Childcare	Undersecretary of Public Health Ministry of Health	Primary health care
Costa Rica	Programa de tamizaje de cáncer colorectal	Colorectal Cancer	CCSS facilities such as the "Early Cancer Detection Center" attached to the Dr. Maximiliano Peralta Jiménez Hospital	Primary health care All levels of care
	Programa nacional para la atención y el cuidado del cáncer cervical y de mama	Breast and cervical cancer		
	Programa Llegar a Tiempo	Breast Cancer		

Note: The list is not comprehensive for all screening and early detection programs. Programs were selected following consultations with several experts in LAC-7 countries.
Source: Brazil: INCA (2020[17]) and Ministério da Saúde (2010[18]); Mexico: Centro Nacional de Equidad de Género y Salud Reproductiva (2015[19]), Secretaría de Salud (2013[20]; 2013[21]) and Ministry of Health (2013[14]); Argentina: National Cancer Institute (n.d.[22]); Peru: Ministerio de Salud (2012[23]; 2017[24]); Colombia: Ministry of Health (2020[25]) and (Instituto Nacional de Cancerología (2012[26]); Chile: Subsecretaria de Salud Pública (2013[27]) and Ministerio de Desarrollo y Familia (2022[28]); Costa Rica: CCSS (2021[29]) and Ministry of Health (2012[30]).

Box 5.1. Screening Preventive Health Exam throughout the lifecycle in Chile

In 2013, the Screening Preventive Health Exam throughout the lifecycle was incorporated as one of the 85 conditions with access, opportunity, financial protection, and quality guaranteed by law. The programme consists of several screening tests to be carried out on the general population. When some disorder or health problem is detected, a referral is activated to initiate treatment.

Table 5.2. Target population, health problem and screenings tests

Target population	Health problems	Screening tests
Pregnant women	Gestational diabetes mellitus	Fasting blood glucose
	HIV infection	ELISA test
	Syphilis	VDRL
	Urinary tract infection	Urine culture
	Overweight and obesity	Measurement of weight and height
	Arterial hypertension	Blood pressure measurement
	Drinking problem	Alcohol Use Risk Questionnaire (AUDIT)
	Smoking	Application of instrument 5 “Aes”.
New-borns	Phenylketonuria	Phenylalanine in blood
	Congenital hypothyroidism	Plasma TSH levels
	Developmental dysplasia of the hips	Ortolani or Barlow manoeuvre
Infants from 3 months	Developmental dysplasia of the hips	X-ray or ultrasonography of the hips
Children aged 2-5 years	Overweight and obesity	Measurement of weight and height
	Amblyopia, strabismus, and visual acuity defects	LEA primer application
	Bad oral habits	
Adults 15 years and older	Drinking problem	Alcohol use AUDIT
	Smoking	Questionnaire 5 “Ace
	Arterial hypertension	Weight, height, and waist circumference measurement
		Blood pressure measurement
	Diabetes mellitus	Fasting blood glucose
	Syphilis	VDRL
	Tuberculosis	Bacilloscopy
Women 25 to 64 years old	Cervical cancer	Papanicolaou smear
Adults aged 40 and over	Dyslipidaemia	Total cholesterol
Women aged 50 to 59	Breast cancer	Mammography
Adults aged 65 and over	Functional autonomy	Functional assessment of the elderly

Source: Ministry of Health - Chile (2012[31]) The National Congress Library, Law 19966.

In Brazil, prevention and screening of cancer, diabetes and hypertension are of high importance and included in PHC sector guidelines (OECD, 2021[3]). There are national programmes for breast and cervical cancer screening, adding recently a programme for colorectal screening. Cancer screening programmes in the country are carried-out at the discretion of health professionals during health visits and routine care, on an opportunistic basis. The Brazilian national screening and early detection programmes include a detailed action plan assigning responsibilities, accountability and a pay for performance incentive scheme to PHC (15% of total funding). With the implementation of the new payment system for primary health in 2019-20 (the “Previne Brazil” programme, see Chapter 3), primary health care teams have financial incentives toward screening. Health care teams (especially the community health agents) are responsible for the identification, search and invitation of the target population for screening. Brazil should keep moving

towards population-based screening programmes for breast and cervical cancer, where every person in the target population is systematically invited to participate, with a personalised approach and communication strategies (OECD, 2021[3]). At the same time, diabetes and hypertension screening are usually checked by blood pressure and blood glucose during PHC basic check-ups for chronic diseases, alongside other health measurements. However, there are significant challenges in care continuity for these diseases which call for the development of disease management pathways, stronger data infrastructure and better capacity at PHC level (OECD, 2021[3]).

Costa Rica has a detailed protocol to actively engage patients in the cancer detection, prenatal control, child growth programme and more generally into the development of screening and early detection programmes. At the first contact with PHC, the physician, nursing or dentistry staff apply a cancer prevention questionnaire to the people who consult the services. The questionnaire is registered in a centralised information system on-line. The questionnaire allows for the estimation of the risk of developing some types of cancer and, if deemed target population, there is a referral to more specialised care if necessary. Furthermore, early detection programmes describe the processes and mechanisms for the active invitation of target population.

By contrast, the Peruvian programme for cancer screening (Table 5.1) has been found limited in its ability to improve population coverage (Flores-Flores et al., 2018[32]). From 2014 to 2018, there have been little to no improvement in coverage of breast cancer screening, even though the country adopted a population-based approach (PAHO/WHO, 2015[33]). At the same time, the National programme for cervical cancer screening (Table 5.1), the HPV vaccination strategy and the prenatal early detection and control strategies have seen moderate success. The differences in effective implementation might have several causes, but success factors of functioning programmes are related to the new national health plan. Under the new model of care, primary care teams are in charge of providing care, not only focusing in diseases, but attending all the health needs in the community. This includes the responsibilities of PHC teams to send reminders for preventive visits, look for risks in individuals and families, and develop an integral health plan (Peru Ministry of Health, 2020[34]). However, due to a lack of equipment and capacities, some programmes are still unsuccessful. Further, early detection programmes don't describe a pay for performance incentive scheme or other methods for holding stakeholders accountable for health or care quality outcomes. Across other OECD countries, Finland and Lithuania are good examples of successful programmes to increase coverage of cancer screening (see Box 5.2, Box 5.3,and Box 5.4).

Box 5.2. Improving coverage of cervical cancer screening in Lithuania

Lithuania launched a nationwide cervical cancer screening programme in 2004. General guidelines followed WHO recommendations, offering a Pap smear test within a three year interval for all woman aged 25-60 years old. Primary health care centres were assigned the responsibility of inviting target population to the programme and a set of invitation methods was supported. A pilot intervention was created with the objective of measuring the improvements in cervical cancer screening coverage when actively inviting target population. One urban and one rural primary health care centre were selected, where coverage rates before the study where 9.6% and 14.7% respectively. After sending the first invitation letters, coverage increased to 31.8% in the urban and 40.9% in the rural centres, and after sending the second invitation participation increased to 41.8% and 50.5% respectively. The study concluded that active invitations were very effective for increasing cervical cancer screening coverage, where rural populations were benefitted more. In 2019, Lithuania had a cervical cancer screening coverage rate of 52.5% (10% increase since 2015).

Source: Authors based on Paulauskiene et al. (2019[35]); OECD (2022[36]) OECD Health Statistics 2022.

Box 5.3. Screening and early detection in Finland

In Finland, municipalities are responsible for organising screening and early detection programmes and are held accountable for the compliance of national screening targets.

Cancer screening in Finland

Cancer screening is organised at municipal primary health care level through organised population-based programmes, meaning that screening is offered to a specific at-risk target population. Municipalities are supported by the Finnish Cancer Register, which provides experience and know-how, together with data analytics based on the registry of nationwide screening programmes, quality control and evaluation of effectiveness.

The screening programmes are organised under the principle of a "screening action chain". The action chain is sensible to disturbances and "the failure of the weakest link can destroy the whole operation", hence, different stakeholders with various functions must work in co-ordination as if it was a single working entity (Institute of Health and Welfare, 2014[37]). This places special attention to the correct functioning of all elements of the programme, from the determination and identification of the target population, active invitations, testing and analysis, results, arranging the necessary follow-up studies, the treatment of cancer or cancer risk and further monitoring, as well as the recording of data relating to the screening. In 2019, Finland screened 81.3% and 71.3% of target females for breast and cervical cancer while 83.4% of target females and 74.7% males were screened for colorectal cancer (OECD, 2022[36]).

The Finnish FINDRISC questionnaire for diabetes screening

A national programme for the prevention of Type-2 diabetes exists (T2D). The programme comprises three concurrent strategies for prevention: the population strategy, the high-risk strategy and the strategy of early diagnosis and management. Early detection is found on the second and third strategies. In the high-risk strategy, subjects at high risk of developing diabetes are identified using the Finnish Diabetes Risk Score, FINDRISC. The eight questions tool provides a total test score linked to a measure of the probability of developing T2D. The risk score can be completed on the internet, in pharmacies and at various public campaign events. Primary and occupational health care use this test score for systematic opportunistic screening.

Prenatal screening at municipal level

Finland has a uniform, community-based prenatal care system run by municipal midwives. Municipalities are responsible for offering three antenatal tests to pregnant woman, as part of the national population-based screening programme, including general ultrasound and screenings for chromosomal abnormality and severe structural abnormalities (Chen et al., 2018[38]). If foetal abnormality is suspected, the pregnant woman is offered further testing (Ministry of Social Affairs and Health, 2022[39]). The objective is to provide women and families with a risk figure that estimates the chances of having a baby with abnormalities to allow them to make timely decisions and preparations (Chen et al., 2018[38]).

Source: Authors based on OECD (2022[36]), Saaristo et al. (2007[40]), Ministry of Social Affairs and Health (2022[39]), Institute of Health and Welfare (2014[37]), Chen et al. (2018[38]) and Santalahti and Hemminki (1998[41]).

Box 5.4. Approaches to early detection and the importance of action plans

Population-based screening versus opportunistic screening

There are two distinct approaches to screening programmes. Population-based screening programmes (also known as organised programmes) (Peisl et al., 2019[42]) are designed and monitored at a central level and consist in reaching out to the target population in an effort to cover as many people at risk as possible. These programmes are characterised by the active identification, search and invitation of the target population (Zhang et al., 2022[43]). On the other hand, opportunistic screening happens by the recommendation of a health professional during a routine medical consultation or by self-referral of individuals (WHO, 2021[44]).

Countries spend resources to reach the target population with different strategies, on both population-based programmes and during routine care. For example, a mandatory formulary during routine care identifies Costa Rican patients as target population and immediately activates the co-ordination with different stakeholders for scheduling a screening appointment. This is clearly an active and organised approach to screening that happens at routine visits. On the other hand, such an approach is not as active as the identification of target population using a national registry with a following post invitation for patients to get screened (strategy implemented in Lithuania to improve screening coverage (Paulauskiene et al., 2019[35]). In this sense, there is a spectrum of how active a country's approach to screening is. The position in the spectrum will be defined by the pathways, responsibilities and accountability described in the national guidelines.

Strategies to increase the effectiveness of early detection

A clearly defined national plan is the first step towards placing early detection of diseases as one of the health system central pillars. All countries in LAC-7 have created such plans for different diseases (Table 5.1), describing target population, screening intervals, and screening tests (Table 5.3, Table 5.4). However, others minimal requirements for having an organised screening plan (Zhang et al., 2022[43]) are less clear. In particular, referral pathways, management of positive cases and a system to identify eligible populations can be poorly defined in some LAC-7 countries. The inclusion and correct functioning of these items is directly related to the assignment of stakeholder's responsibilities', together with a system to hold them accountable for such responsibilities. A pay for performance incentive scheme can, for example, create an effective system of accountability. Further, to move forward on identification and notification, a centralised information system is an advantage. The Cancer Information System called SISCAN, together with the national health information platform "e-SUS" used at primary care in Brazil and the screening information system called SITAM in Argentina are examples of centralised information systems that support the implementation of screenings and early detection.

While LAC-7 countries have guidelines for early detection of diseases, coverage rates are relatively low in practice

Most LAC-7 countries follow WHO guidelines on screening for chronic diseases

Breast cancer screening recommendations by the WHO differ according to the strength and available resources of the health system. In well-resourced settings, organised population-based mammography screening programmes are recommended for women aged 50-69 years, every 2 years. Screening programmes for women 40-49 years of age and 70-75 years of age (without risk factors) is suggested only if it is conducted in the context of rigorous research, monitoring and evaluation. For limited resource settings with relatively strong health systems, organised population-based mammography screening programmes are suggested for women aged 50-69 years, every 2 years only if the conditions for implementing a screening programme are met. Further, recommendations are against screening for women outside of this age range as the method might not be the most cost-effective policy available with limited resources (WHO, 2015[45]). LAC-7 countries can be positioned in between these two recommendations, and this is noticeable in the main guidelines described by every country (Table 5.3). Most countries follow the target age recommended by WHO, though Chile has a slightly narrower age range and Mexico and Costa Rica have a slightly wider age range. The method (mammography) and periodicity (every two years) follow WHO recommendations. Most of LAC-7 countries have a population-based approach for their screening programmes. Mexico moved in this direction between 2015 and 2019, while Brazil is implementing several programmes towards incentivising population-based screenings (OECD, 2021[3]; PAHO/WHO, 2015[33]).

Table 5.3. Target age, periodicity and method for breast cancer screening

Guidelines for breast cancer screening in LAC-7

	Target population (females)	Periodicity	Method
Mexico	40+ with risk factors / 50 to 74 without risk factors	Every 2 years	Mammography
Colombia	50 to 69 years old	Every 2 years	Mammography Other tests included in mandatory coverage scheme
Chile	50 to 64 years old	Every 2 years	Mammography
Brazil	50 to 69 years old	Every 2 years	Mammography
Costa Rica	45 to 70 years old	Every 2 years	Mammography
Argentina	50 to 69 years old	Every 2 years	Mammography
Peru	50 to 69 years old	Every 2 years	Mammography

Source: Mexico: Secretaria de Salud (2017[46]); Colombia: Instituto Nacional de Cancerolo (2012[26]); Chile: Subsecretaria de Salud Pública (2013[27]); Brazil: OECD (2021[3]); Costa Rica: Ministry of Health (2014[47]); Argentina: Blanco et al. (2019[48]); Peru: Ministerio de Salud Peru (2012[23]).

Regarding cervical cancer, WHO has recently updated recommendations regarding type of screening test (World Health Organization, 2021[49]) and most LAC-7 countries still need to adapt. The method for cervical cancer screening in all but Argentina follow old recommendations, with countries mostly using cytology (commonly known as a “Pap smear”) exams every 3 years (Table 5.4). A shorter periodicity is observed in the guidelines of Mexico and Peru (yearly). The new guidelines recommend using a HPV DNA based test, rather than visual inspection with acetic acid or cytology, for women over 30 years old every 5 to 10 years. The reasons for the change in guidelines relate to HPV-DNA testing detecting the high-risk strains of HPV that cause most cervical cancers. Together with HPV-DNA testing being an objective test where there is no space for interpretation and the fact HPV DNA testing is simpler to apply and has higher prevention rate, it results in a better cost-effectiveness ratio (World Health Organization, 2021[49]).

Table 5.4. Target age and periodicity of cervical cancer screening in LAC-7

Guidelines for cervical cancer screening in LAC-7

	Target population (Females)	Periodicity	Method
Mexico	25 to 69 years old	Yearly	Cytology
Colombia	21 to 69 years old	Every 3 years 5 years intervals	Cytology HPV test
Chile	25 to 64 years old	Every 3 years	Cytology
Brazil	25 to 64 years old	Every 3 years	Cytology
Costa Rica	20 years old +	Every 2 years	Cytology
Argentina	30 to 64 years old	Every 3 years	HPV test
Peru	30 to 49 years old	Yearly	Cytology

Source: Mexico: Secretaria de Salud (2017[46]); Colombia: Instituto Nacional de Cancerología (2012[26]); Chile: Subsecretaria de Salud Pública (2013[27]); Brazil: OECD (2021[3]); Costa Rica: Santamaría-Ulloa et al. (2021[50]); Argentina: Instituto Nacional del Cáncer (2008[51]); Peru: Ministerio de Salud Peru (2012[23]).

Recommendations for diabetes mellitus screening differ considerable between countries and health authorities. The World Health Organization considers countries different capacities to provide ad-hoc recommendations. There are several considerations to take into account when creating a diabetes screening plan and alternatives for testing strategies are given accordingly. Considerations might be epidemiological, concerning health system capacities, economic, ethical, and political and of competing priorities. The alternatives include questionnaires, urine glucose, blood glucose, Glycated haemoglobin or a combination of tests (Pippitt, Li and Gurgle, 2016[52]). In the United States, the U.S. Preventive Services Task recommends screening for abnormal blood glucose and type two diabetes in adults 35 to 70 years who are overweight or obese every three years (US Preventive Services Task Force, 2021[5]), or anyone that has high risk factors. Peru takes the same approach, shortening the age range to 40 to 70 years old (Ministerio de Salud, 2016[53]). Costa Rica takes a similar approach: Adults (18 years old or older) with any of a specified set of risk factors, prediabetes or woman with dimethylglycine will be screened every year. In the absence of these criteria, screening in Costa Rica should be made every three years starting from 45 years old (Caja Costarricense de Seguro Social, 2020[54]).

Argentina (Instituto Nacional de Estadística y Censos - I.N.D.E.C, 2019[55]) and Colombia (Sistema General de Seguridad Social en Salud, 2016[56]) take a two steps approach. First a questionnaire is used to evaluate the risk of having diabetes, and if the risk is larger than the threshold they perform a fingertip prick test (plasma glucose level) or schedule a blood test. Their guidelines recommend the FINDRISC questionnaire (Rodríguez et al., 2019[57]) applied to adults (18 year or order), with a threshold of 12 points.

Chile applies the fasting blood glucose test to 15 years old and older as part of their comprehensive plan according to life cycle. In Brazil, diabetes screening is recommended for asymptomatic individuals aged 45 years or over. In individuals under 45 years of age, diabetes screening should occur in overweight individuals with additional risk factors. Similarly, screenings for cardiovascular disease are based on age, family history and risk factors such as body mass index (OECD, 2021[3]).

Diabetes screening in Mexico is not found to be very effective, situation that resonates with the high burden of diabetes in the country and with the first cause of death in the country (Comité Consultivo Nacional de Normalización de Prevención y Control de Enfermedades, 2009[58]). In 2021,almost 17% of the population aged 20 years and over has diabetes, well above the global prevalence of around 10% (World Bank, 2021[59]). In theory, diabetes and prediabetes in Mexico should be screened every three years starting at age 20 onwards, and earlier if the patient presents risk factors. The screening consists in capillary glucose testing with an automatised glucose test (Comité Consultivo Nacional de Normalización de Prevención y Control de Enfermedades, 2009[58]). It is recommended that the screening is done together with hypertension, as it represents an important risk factor for the disease.

WHO recommendations about hypertension screening are going through a reform due to the latest evidence from Europe, moving away from population-based screening (Christian Ulrich Eriksen et al., 2021[60]). It is highlighted that policy makers should not discount the potential value of case-finding – which involves assessing patients who may be at risk of cardio-vascular disease when they use the health care system. In this sense, having robust opportunistic screening guidelines and protocol are essentials. The early detection programme for diabetes and hypertension in Mexico follows the Global Hearts Initiative by WHO and the Centre for Disease Control of the United States (Secretaría de Salud, 2013[21]), which is based on questionnaires to asses risk factors and blood pressure testing in population over 20 years old. Peru uses a similar approach (Ministerio de Salud, 2011[61]). Hypertension control and screening in Argentina doesn't function in a national population-based campaign, and relies on locally driven campaigns with limited scope. The main campaign in the country is associated with the May Measurement Month, implemented yearly since 2017. The campaign consists of measuring blood pressure to all the population together with a questionnaire and recommendations for abnormal results. On 2019, it covered 94 523 individuals (Salazar et al., 2021[62]). Chile applies risk factor measures and blood pressure measurement to 15 years old and older (Box 5.1). Costa Rica guidelines indicate to measure blood pressure to any 20-year-old or older who consulted in any health centre, or received visit from a family health team at home or at work (Caja Costarricense de Seguro Social, 2002[63]). Colombia follows a similar approach for people aged 35 years or older, or people that present any risk factors (Sistema General de Seguridad Social en Salud, 2017[64]).

With regards to antenatal care, LAC-7 countries have a well developed approach, which is the result of sustained commitment to reduce infant and maternal mortality. Timely, skilled, and regular antenatal care is the primary mechanism for prevention and early detection of maternal and foetus complications during pregnancy, thus reducing the burden of maternal, neonatal, and infant mortality. (WHO, 2016[65]) LAC-7 countries approach to antenatal screening is population-based, as it is administered by protocol to all pregnant woman, and mostly occurs starting from the first visit of a health professional (Mexico Ministry of Health, 2013[14]; Ministerio de Desarrollo y Familia, 2022[28]; Ministry of Health, 2013[66]). A good example for the range of services provided during antenatal care is described for Chile in (Box 5.1)

LAC-7 countries need to increase coverage of breast and cervical cancer screening among target populations

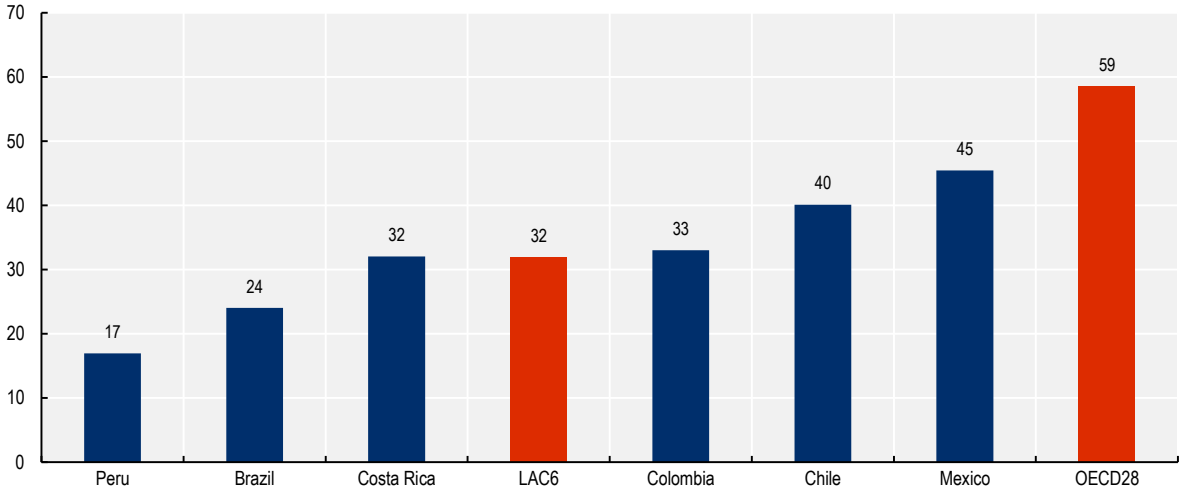
Breast cancer screening in most LAC-7 countries has not reached the levels set out in the countries screening programmes. However, important improvements have been made in the last decade (OECD, 2021[3]; PAHO/WHO, 2015[33]). In 2019, Brazil had the lower coverage rate for breast cancer screening among the LAC-5 countries with comparable administrative data, covering 24% of all females aged 50 to 69 years old (Figure 5.3). However, the national health survey of 2019, a self-reported survey of 108 525 households, shows that 58% of women self-reported participation to breast cancer screening in Brazil (IBGE, 2019[67]). Mexico and Chile present the highest breast screening coverage rates in the region, at 45.4% and 40.1% respectively (Figure 5.3). These coverage rates are still well below the average across other OECD countries (59%).

In Mexico, breast screening coverage increased by 20 percentage points since 2015, suggesting the success of moving from opportunistic screening programmes toward population-based screening programme between 2015 and 2019 (PAHO/WHO, 2015[33]; OECD, 2021[3]). Important challenges remain in Mexico, including a limited capacity to manage care pathway effectively and problem in access to treatment (Ángeles-Llerenas et al., 2016[68]; Ortega–Olvera et al., 2016[69]).

Data for Argentina is available from the national survey for risk factors (Instituto Nacional de Estadística y Censos - I.N.D.E.C, 2019[55]). Results show that among 30 000 self-reporting households, 66% of the surveyed females aged 50 to 70 in 2018 reported to have a mammography in the last two years. This is above the average among LAC-6 and other OECD countries, although cross country comparisons is limited due to different methodology.

Figure 5.3. Breast cancer screening coverage, 2019

Percentage females aged 50-69, screened in previous two years



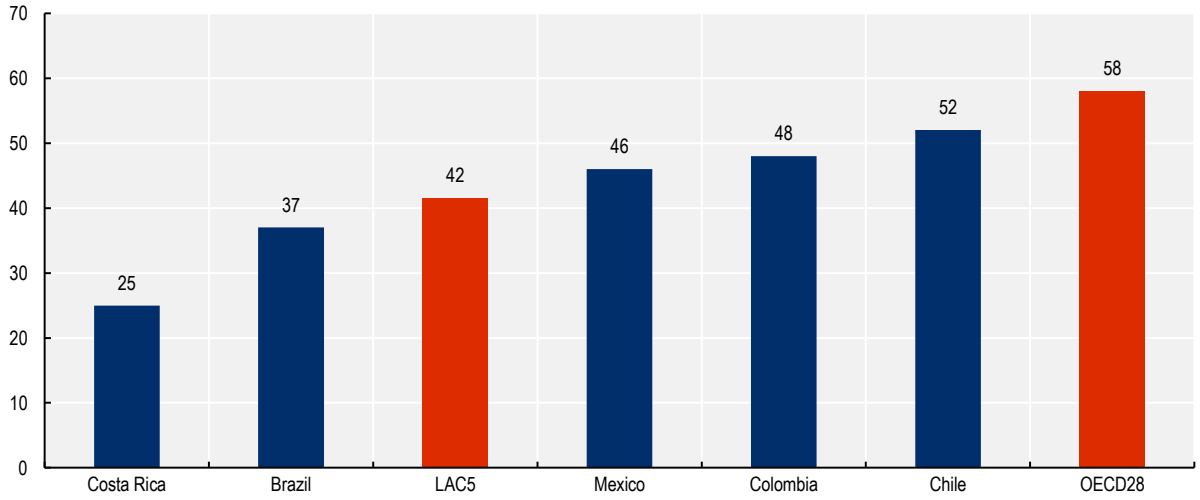
Note: Data for Colombia is from 2017. Peru is calculated over females aged 40 to 59-year-old.
Source: Costa Rica and Brazil from OECD (2021[3]), *Primary Health Care in Brazil*; Mexico, Chile and OECD from OECD.stat; Colombia from INC (2019[70]); Peru from Hernández-Vásquez and Chacón-Torrico (2019[71]), https://doi.org/10.5867/medwave.2019.09.7701.

Among the five countries present in Figure 5.4, cervical cancer screening has better coverage rates when compared to breast cancer screening coverage. The reasons can be multiple, but some evidence shows a positive association between cervical cancer screening rates and use of family planning and contraceptive methods (Martínez-Donate et al., 2013[72]). Higher coverage rate can also be explained by the simplicity to carry-out cervical cancer screening collection method that generally occurs at the primary health care level. Among females aged 20-69, 58% was screened in the previous three years on average across other OECD countries (Figure 5.4). The cervical cancer screening coverage rate among LAC-5 countries is 42%, well below the average across OECD countries. Among the countries with comparable data, Chile reports the highest coverage rate (at 52% of the target population), while Costa Rica has the lowest coverage rates in the graph (at 25% of the target population).

Peru uses a different definition, limiting cross country comparisons (coverage rates are calculated among females aged 30 to 49 screened in the previous five years). Using this definition, the cervical screening coverage rate of Peru was 70% in 2019 (WHO, 2020[73]). However, according to the WHO Global Health Observatory (WHO, 2019[1]), Peru's coverage rate (as defined by the country's national programme) ranged between 10% and 50% in 2019, while in Colombia the same coverage rate (as defined by the country's national programme) ranged between 50% and 70% the same year. As with breast cancer coverage rates, the national risk factor survey in Argentina (Instituto Nacional de Estadística y Censos - I.N.D.E.C, 2019[55]) indicates that 70.3% of surveyed women aged 20 to 65 self-reported to have participated to cervical cancer screening either with cytology or HPV test in the last three years. In the same line, the national health survey in Brazil indicated that 81.3% of women reported to have participated to cervical cancer screening (IBGE, 2019[67]). However, this information is not comparable with administrative data.

Figure 5.4. Cervical cancer screening coverage, 2019

Percentage females aged 20-69 screened in previous three years



Note: Data for Colombia is from 2017 and considers females 25-69 years old. Peru is not included because of important differences in the calculation method.
Source: Costa Rica and Brazil from OECD (2021[3]), *Primary Health Care in Brazil*; Mexico, Chile and OECD from OECD.stat; Colombia from INC (2019[70]);

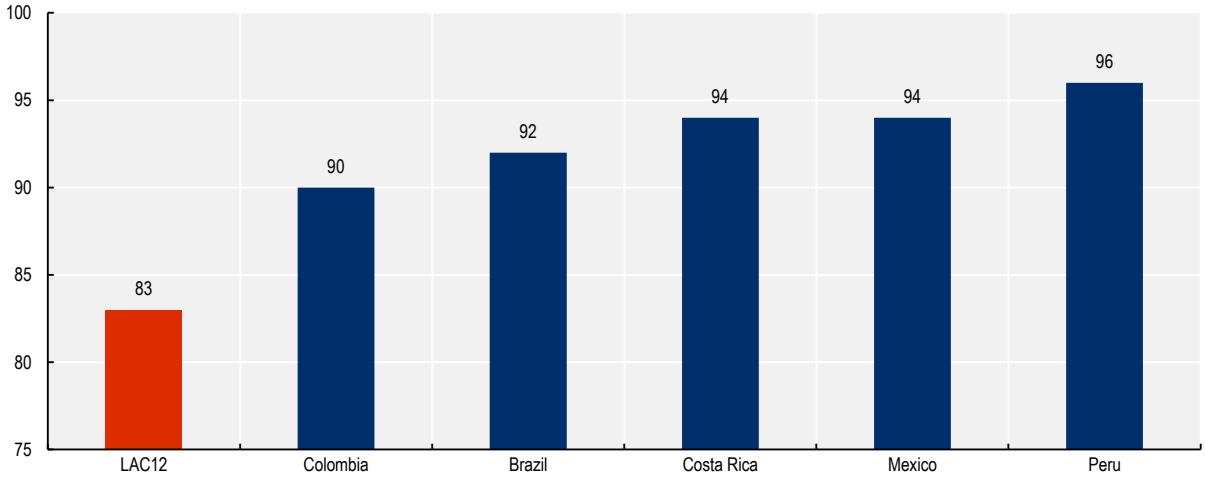
Screening and early diagnose of disease are key elements of effective antenatal and childcare (Tunçalp et al., 2017[74]). Having the minimal recommended doctor consultations during pregnancy is a good indicator for assessing the quality of antenatal care. Figure 5.5 shows that all 5 countries included in the graph have high coverage rates (over 90%) of at least four antenatal care consultations for pregnant women aged 15 to 49.

In Chile, the programme in place for antenatal and child screening and early detection ("Chile crece contigo") (Table 5.1) covers around 75 to 80% of all born children in the country (Damian Clarke, Gustavo Cortés Méndez and Diego Vergara Sepúlveda, 2018[75]). Available evidence shows a slight improvement in coverage of pregnant women receiving care from a qualified professional, from 97% in 2015 to 98% in 2020 (ENDES-ENEI, 2020[76]). This is most likely linked to an increased number of consultations performed by obstetricians and nurses (ENDES-ENEI, 2020[76]).

Looking at coverage rates disaggregated by socio-economic characteristics provide evidence of inequalities in antenatal care in most LAC countries. Coverage rates varied widely across income quintiles in Colombia, with a difference of 15 percentage points between the poorest people (coverage rates at 81%) and the richest people (with a coverage rate at 96%) in 2015. Similar disparities have been found in Peru, Costa Rica, Argentina and Brazil (ICF, 2018[77]).

Figure 5.5. Antenatal consultations (2015-20)

Percentage of women aged 15-49 attended by any provider at least four times during pregnancy



Note: The graph uses latest data available in 2015-20 range. Latest data from ARG in 2011 (excluded). No data was found for CHL. COL uses data from 205-2016, BRA from 2019, CRI from 2018, MEX from 2015, PER from 2019.
Source: UNICEF (2021[78]), Global databases of antenatal care, based on MICS, DHS and other nationally representative household survey data. Available at https://data.unicef.org/.

There is scope to improve diabetes and hypertension screening rates in LAC-7 countries

Diabetes and hypertension are routinely checked in LAC-7 countries, and embedded in PHC practice. However, while data for screening coverage rates is rather limited, available evidence shows that there is scope for improvement in all countries.

In Mexico, the low diabetes and hypertension screening rates is contrasted with the high prevalence of these diseases in the Mexican population. Based on survey data of 1 500 respondents over 18 years old in 2013, 72% of the respondents were screened for hypertension and serum cholesterol in the last year, and 61% answered that they had a preventive check-up in the last two years (Guanais and et al., 2018[79]). However, these levels of coverage differ from the population level statistics that the national health and nutrition survey shows, where in 2018 screening coverage for diabetes (12.9%), hypertension (12.9%) and serum cholesterol (10%) were far from the national goals (Shamah Levy, Rivera-Dommarco and Bertozzi, 2020[80]). Evidence suggest that women, people aged over 50, higher socio-economic status, having a health insurance, obesity and suffering from other comorbidities (like cardiovascular diseases) and family history of diabetes or hypertension are associated with higher use of diabetes and hypertension screening (Villalobos et al., 2020[81]). Further, the 2018 national health and nutrition survey found that 4.6% and 14.8% of the Mexican adult population had undiagnosed diabetes and hypertension, respectively (Shamah Levy, Rivera-Dommarco and Bertozzi, 2020[80]).

In Colombia, 60% of the respondents had a hypertension screening, 54% had serum cholesterol check in the previous year and 69% had a preventive health visit in the last two years (Guanais and et al., 2018[79]).

Brazil shows a lower performance with 58% of people reported they had been screened for hypertension, 80% for serum cholesterol and 42% reported they had a preventive check-up (Guanais and et al., 2018[79]).

In Argentina, a 2018 survey of around 30 000 households shows that 71.1% of the respondents over 18 years old had been tested for diabetes at least once in their lives. Similarly, 84.3% of respondents over 18 years old was checked for hypertension in the last two years and 82% of males over 35 and females over 45 had a serum cholesterol check. The same survey shows that 31.6% of the population

aged between 50 and 75 had at least one colon cancer test in their lives (Instituto Nacional de Estadística y Censos - I.N.D.E.C, 2019[55]). In Peru, a study shows that 34.1% of a sample of low income population never had had a blood pressure assessment; 65.2% never had a serum cholesterol assessment; and 75.6% never had a diabetes screening (Flores-Flores et al., 2018[32]). These data clearly suggest that screening for hypertension and diabetes can be further strengthened at the PHC level, with a greater focus on disadvantaged population.

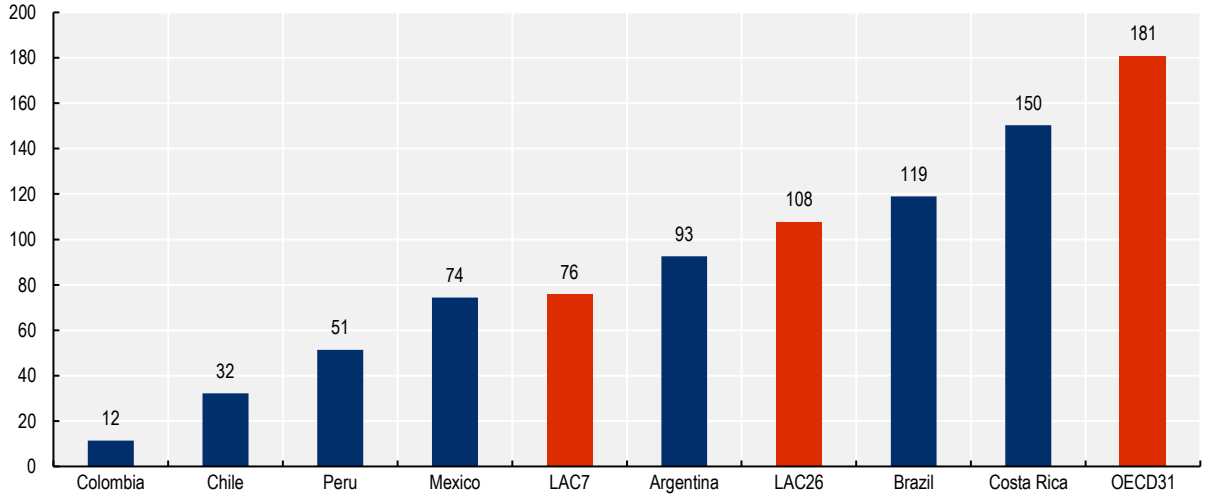
Important under-provision of structural capacities undermines the implementation of screening and early detection programmes

The success of screening and early detection programmes has several determining factors. As a start, the structural capacities of the country need to be sufficient to support the screening and early detection efforts of PHC. In fact, the lack of medical technology or human resources is an active restriction for the programme's successful implementation. In LAC-7 countries, the lack of availability of medical technologies is a major problem limiting early detection of diseases and contributing to late diagnosis.

All LAC-7 countries define mammography as the main method for breast cancer screening (Table 5.3). However, mammography units per million females aged 50-69 are considerably lower than across other OECD countries. Costa Rica is close to the OECD average, having 150 mammography units per million females aged 50-69. At the lower end of the scale, Colombia and Chile have respectively 12 and 32 units per million females aged 50-69, well below the LAC-7 average of 76 mammography units (Figure 5.6).

Figure 5.6. Mammography units, latest available year

Units per million females aged 50-69



1. Peru presents two sources with different numbers of mammogram units. The alternative is given by the general directorate for strategic intervention in public health, Peru Ministerio de Salud (2017[24]), presenting a rate of 44.14 units per million females (50-59).
Source: LAC26: WHO (2019[1]), The Global Health Observatory; Health at a Glance: Latin America and the Caribbean 2020 (via OECD Health Statistics 2019); Chile, Colombia, Costa Rica, Mexico and OECD: OECD (2022[36]). For Argentina and Peru, data for number of mammograms comes from Limardo et al. (2018[82]) (Data from 2010) and (Ramos Muñoz and Guerrero Ramírez (2021[83]) (Data from 2017). Target population extracted from United Nations and Department of Economic and Social Affairs - Population Division (2019[84]) World Population Prospects data. Brazil uses data from 2010 (Nogueira et al., 2019[85]).

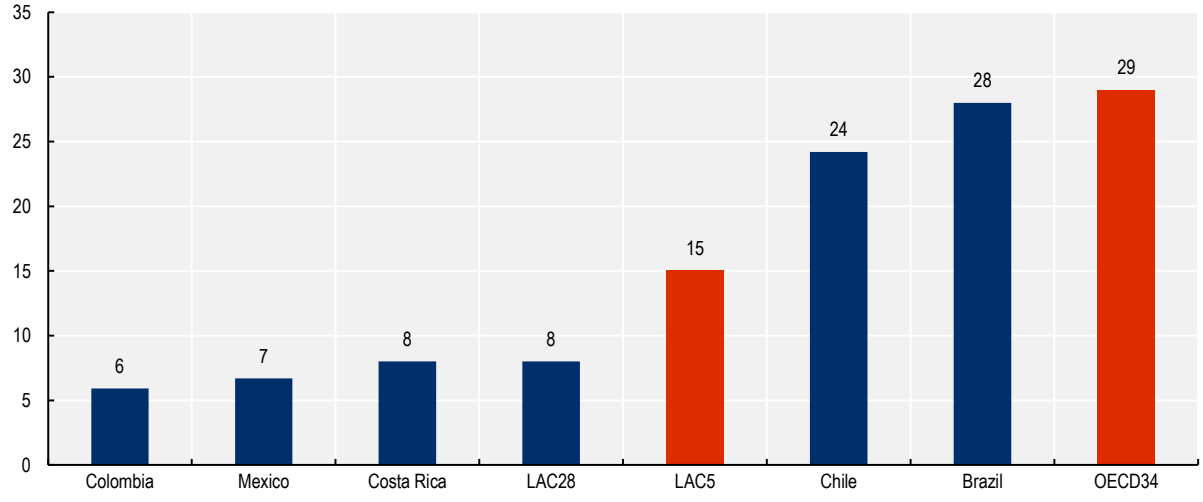
The under-provision of mammography units is not the only challenge for breast cancer screening in the LAC region. Quality check-ups and qualified personnel are two other key elements. Argentina has a national mammography quality plan for accreditation and quality assurance of mammography services that supervises the quality of mammograms and the competencies of the workforce to ensure the units are usable. While quality governance is warranted, studies have shown a lack of proper quality control and human resource to operate the equipment at full capacity (Viniegra M, Paolino M and Arrossi S, 2010[86]). Similarly, in Mexico the lack of consistency in national cancer control plans, fuelled by the system fragmentation, creates discrepancies regarding infrastructure and training of personnel (Lopez et al., 2017[87]).

Care continuity after positive screening is also an area of concern. Even though care pathways are described in national guidelines, deficiencies in effective capacity and the lack of systems for accountability results in important delays to start treatment. Previous evidence shows that treatment in Argentina can start up to 150 days after screening, eliminating the advantages of an early detection (Viniegra M, Paolino M and Arrossi S, 2010[86]). Similarly, overall waiting times between diagnosis and initiation of treatment for all cancers in Colombia have been decreasing, yet remain above the reference time used as a benchmark, which is four weeks. Paradoxically, breast, cervical and prostate cancers have the longest waiting times amongst all cancers (Fondo Colombiano de Enfermedades de Alto Costo, 2021[88]). In Mexico, suboptimal knowledge on screening guidelines among medical students or residents and low awareness of current cancer screening standards among Mexican PHC physicians adversely impact the effective implementation of screening programmes (Ortega–Olvera et al., 2016[69]). Limited training in guidelines and care standards partly explain why screening targets are not reached as expected in all LAC-7, causing delays in diagnosis and treatment and shortening survival rates (Ángeles-Llerenas et al., 2016[68]).

The availability of Computed Tomography scanners per million population in LAC-7 countries is also significantly lower than across other OECD countries. Brazil reports the highest availability among the LAC-7 countries with 28 units per million population, similar to the OECD average of 29 units per million population. At the lower end of the scale, Colombia and Mexico report both 6 and 7 units per million population, almost 80% lower than the OECD average (Figure 5.7).

Figure 5.7. Computed tomography scanners, latest available year

Units per million population

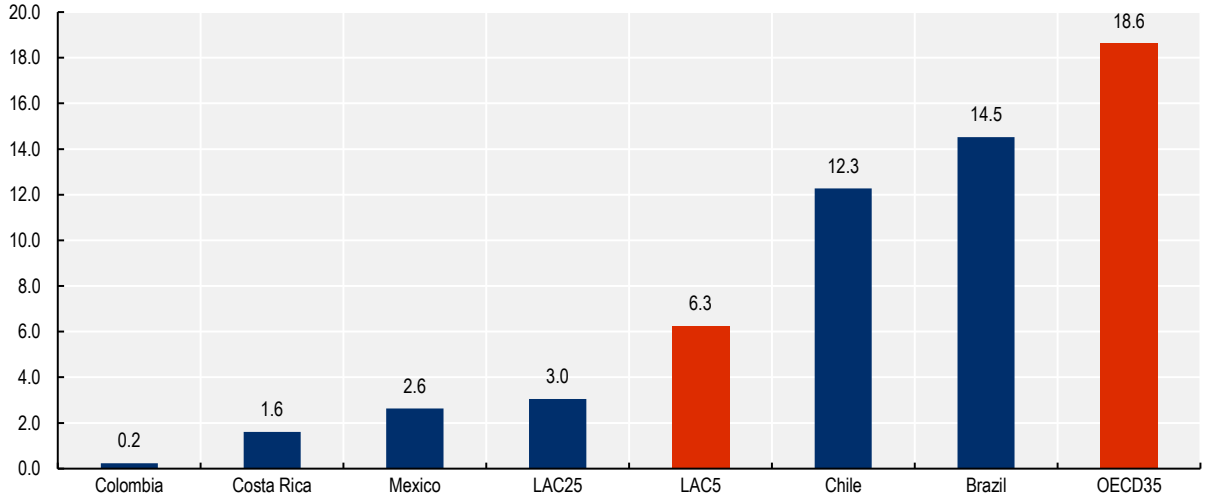


Note: Colombia and Mexico data from 2020, CHL data from 2017, CR data from 2013, BRA data from 2021. Due to the fragmentation of health system in Brazil, a sizeable fraction of these CTs are in private hospitals and unavailable for SUS users.
Source: OECD (2022[36]), OECD Health Statistics 2022 for Mexico, Brazil, Chile, Colombia and OECD34. Others from WHO (2019[1]), The Global Health Observatory. Costa Rrica from OECD/The World Bank (2020[89]), *Health at a Glance: Latin America and the Caribbean 2020*.

Magnetic resonance imaging (MRI) is a cost effective tool for supporting the early diagnosis of several diseases, including cancer (Giganti and Moore, 2019[90]) and others diseases such as Alzheimer (Teipel et al., 2013[91]) and rheumatoid arthritis (Tehranzadeh, Ashikyan and Dascalos, 2003[92]). Appropriate availability of MRI will secure early detection of disease, while under-provision will directly affect the country's ability to promptly detect several diseases. LAC-5 countries (at 6.3 units per million population) show significantly lower supply of MRI units than across other OECD countries (average of 19 per million population). Among LAC-7 countries, Brazil reports the highest number (at 14.5 units per million population) while Colombia reports the lowest number of MRI (at 0.2 units per million population).

Figure 5.8. Magnetic resonance imaging (MRI), latest available year

Units per million population



Note: Data for Colombia, 2018; Costa Rica, 2013; Mexico, 2020; Brazil, 2021; Chile, 2017.
Source: OECD (2022[36]), OECD Health Statistics 2022 for Mexico, Brazil, Chile and Colombia. Others from WHO (2019[1]), The Global Health Observatory. Costa Rica from OECD/The World Bank (2020[89]), *Health at a Glance: Latin America and the Caribbean 2020*.

Screening and early detection of COVID-19

The availability of COVID-19 testing in primary health care setting was limited at the start of the pandemic

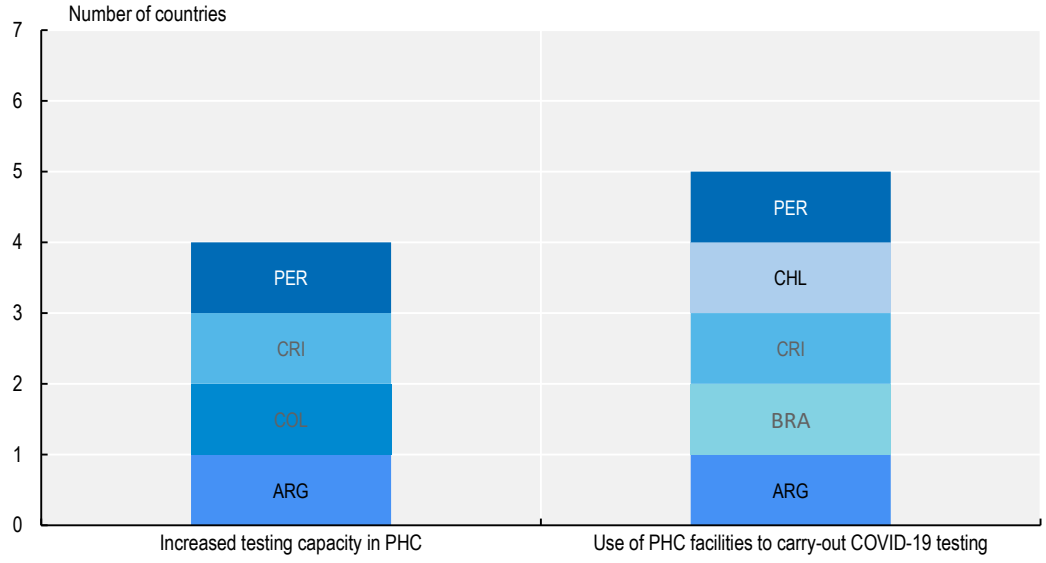
During health emergencies, primary health care teams can play a pivotal role to carry out early and precise case detection in the community they operate – through passive or proactive testing – which is key to minimise virus circulation. However, as earlier mentioned in Chapter 3, health care systems in LAC-7 countries not only have lower capacity than the OECD average in terms of health expenditures and number of health professionals but also in terms of testing capacity. The 2021 OECD policy survey suggests that the availability of COVID-19 testing was rather limited at the start of the pandemic. Some countries relied on foreign supply chain to achieve testing kits. Brazil and Mexico for example relied on 135 000 testing kits received from China (OECD, 2020[93]). Other LAC-7 countries (Argentina, Costa Rica, Colombia and Peru) also developed specific strategies to expand national capacity (Figure 5.9).

- In Argentina, some provinces and municipalities build their testing strategies by increasing the availability of Antigen testing to be performed by primary health care workers. Argentina also

developed its own testing kits with government-financed research from top national universities along with technology companied producing up to 100 000 testing kits per month (OECD, 2020[93]).

- In Costa Rica, as there were not enough tests and laboratories in the CCSS service network to cover the high demand for COVID-19 testing, several measures were introduced to increase testing capacity. These included the regionalisation of molecular testing, the creation of six new laboratories to carry-out RT-PCR testing, and acquisition of materials (such as swabs and reagents). From September 2020 Costa Rica also relied on antigen testing to increase the testing capacity in primary health care setting. Together, these strategies helped to triple the number of tests carried out in 2021 as compared to 2020.
- Colombia expanded its testing capacity in a period of five months after the start of the pandemic, reaching a total of 43 529 tests daily, out of which 13 248 were carried out by public laboratory, 28 281 by private laboratory and 2000 by the INS. To increase capacity there have been efforts to ensure different public and private laboratories allocate resources, acquire materials and carry out infrastructure investments (INS, 2020[94]). As of January 2021, the country had 162 authorised laboratories for the diagnosis of COVID-19 through the use of RT-PCR testing (Ministry of Health, 2021[95]).
- In Peru, only the INS laboratory was able to perform PCR testing, resulting in large diagnosis delays. Over the course of 2020 and 2021, more than 110 molecular biology laboratories processing PCR samples for COVID-19 diagnosis were developed in the public and private sectors. All regions have now molecular testing, allowing to expand access to testing and reduce diagnosis delays for a more timely and effective responses. More than half of these laboratories are managed by public institutions which perform the tests free of charge. This has been communicated on the INS website and through a massive media campaign.

Figure 5.9. LAC-7 countries leveraged PHC to carry-out COVID-19 detection in the community



Source: OECD (2021[96]), Policy Survey on the role of primary health care during the COVID-19 pandemic.

Guidelines and protocols on diagnostic testing for primary health care workers is also a key element to increase the effectiveness of primary health care response. Guidelines from National public authorities provides recommendations for the implementation of analytical tests for detecting COVID-19 and infection prevention measures, with evidence-based information on technical specification, procedures, materials

or safety protocols (see good practice in Germany and New Zealand in Box 5.5). Guidelines help primary health care professionals to carry-out accurate and safe diagnosis to control the spread of the pandemic. In some LAC-7 countries, Ministry of Health made general recommendations for COVID-19 diagnosis, but sometimes at a late stage, requiring some local or subnational actions. In Brazil, while training videos were available in 2020 through YouTube, guidelines for primary health care workers on COVID-19 diagnosis was published in March 2021, almost one year after the start of the pandemic (Ministério da Saúde, 2021[97]). In Chile, guidelines from the Ministry of Health were established in June 2020 (Ministry of Health, 2020[98]), three months after the first case in the country. The primary health care network in each municipalities had to implement their own testing strategy before the national recommendations, leading to a great variability of the response across municipalities. In Argentina, the Ministry of Health published general recommendations on performing diagnostic tests, which were then developed by each primary health care facilities. In Colombia, Costa Rica and Peru, national guidelines were also published by the Ministry of Health but they did not specifically target primary health care workers (unlike other OECD countries such as New Zealand, see Box 5.5).

To improve response during health emergencies, there is a need for stronger stewardship from the central level to take key decisions and issue evidence-based guidelines. Involving stakeholders such as health workers, public health experts and the civil society, is a core element in developing evidence-based guidelines.

Box 5.5. COVID-19 testing strategies and guidelines developed in some OECD countries

In Germany, robust public health networks including expert scientific institutions (e.g. Robert Koch Institute) formed a strong foundation for the early responses. Germany was one of the first countries to establish COVID-19 testing methods already on 16 January 2020 together with accompanying technical guidelines for testing. As a result, the country quickly scaled up to cover the escalating demand (1.1 Million tests per week at the end of 2020) with a high fraction of the capacity from decentralised private laboratories equipped with capacities of expertise and instruments to conduct RT-PCR diagnostics.

In Luxembourg, a proactive large-scale testing was launched in the primary and community settings from 18 May 2021 for the entire population and cross border workers. The overarching objective was to identify asymptomatic individuals in order to break the chain of transmission and reduce the spread of the virus. A modelling work shows that the total number of COVID-19 cases would have been 43% higher without the large-scale testing programme.

In **New Zealand**, the Ministry of Health publishes specific guidelines on COVID-19 for primary health care workers. The Primary Care Quick Reference Guide is a summary of information for community health care providers involved in assessing and managing undifferentiated respiratory illness and queries regarding COVID-19 risk and need for testing (including in general practice or community pharmacy). These guidelines are evidence-based, and regularly updated by the Ministry of Health.

Source: OECD Project on the Resilience of Health Systems Questionnaire, 2022, and Ministry of Health of New Zealand, https://www.health.govt.nz/covid-19-novel-coronavirus/covid-19-information-health-professionals/covid-19-primary-care.

Leveraging primary health care to carry-out COVID-19 testing

According to the 2021 OECD policy survey, COVID-19 testing has been carried-out to some extent in primary health care settings. All LAC-7 countries developed some forms of COVID-19 testing in primary health care settings, but with some level of heterogeneity within and across countries. In some provinces of Argentina, community health workers have played a leading role in detecting cases of COVID-19.

Itinerant testing operations were also carried out by health workers from the PHC network *("Centros de atención primaria"*). At national level, the DETECTAR Programme, launched by the MOH and implemented in co-ordination with the provinces in disadvantaged neighbourhoods or in defined areas, relied on the network of primary health care. As mentioned in Chapter 4, the DETECTAR programme is based on door to door visits to carry-out COVID-19 testing, but also health monitoring. The primary health care team is composed of between 15 and 45 people, including social workers, nurses, health promoters and doctors. The DETECTAR programme involved a mobile health facility, situated in the defined areas, to carry-out COVID-19 testing. The programme has been progressively extended to several areas and provinces, including the greater Buenos Aires area, in urban areas of Buenos Aires, in the Provinces of Chaco, Entre Rios, La Rioja, Santa Cruz and Santa Fe (PAHO, 2020[99]). The programme is now available to all jurisdiction. The DETECTAR programme is a best practice example of good co-ordination between national government and community level. All positive cases are reported daily through the MOH's National Epidemiological Surveillance System (SNVS). The core element of success for the SNVS was the training of health workers, the increase in IT equipment and the economic incentives defined as part of the Sumar Programme (Chapter 4).

In Chile, after confirmation of the first case of COVID-19, testing, tracking and tracing (TTT) was responsibility of the regional administration. However, with insufficient capabilities, traceability was lost rapidly and in June 2020 TTT was assigned to PHC. The primary health care network in each municipalities started to implement the testing strategy by July 2020. Nevertheless, the funding for testing activities was late and insufficient to support primary health care to carry out the strategy successfully. It is only from 2021 that primary health care had a bigger role in COVID-19 testing, with positive results (Facultad de Medicina Universidad de Chile, 2021[100]). An important success factor of the testing strategy was the use of mobile testing and mobile labs. The Centinela strategy, developed in the Renca municipality (Box 5.6. *The* Centinela strategy in the Renca municipality (Chile), has been a very good local initiative to start reporting and monitoring the COVID-19 pandemic.

In Costa Rica, all EBAIS were responsible for the detection, notification and investigation of cases, which in turn notify the Local Epidemiological Surveillance Commission (COLOVE) of its Health Area. Primary health care also implemented sampling campaigns in places with an epidemiological outbreak, and screened for COVID-19 at vulnerable sites or disadvantaged populations. COLOVE provides the necessary support to consolidate data of all the EBAIS to carry-out epidemiological surveillance, case studies and implement specific health actions. The registration of COVID-19 cases is carried out through the Digital Health Record (EDUS), which links the health centres network of the CCSS (see Chapter 4). All COVID-19 laboratory results, regardless of the place or technique with which they are processed, are available in real time. Results are also available in the digital file of patients.

In Mexico, the Ministry of Health prioritised hospital care to deal with COVID-19. Primary health care only had the responsibilities to identify patients suspected to have COVID-19 to direct them in respiratory triage areas for laboratory tests (see Chapter 5). In Peru, during the second semester of 2021, the National Institute of Health implemented 924 COVID-19 testing points, many of these being located in primary care facilities and undertaken by health care workers specifically hired for this purpose. In addition, mandatory notification of COVID-19 cases was established in all IPRESS (Health Service Provider Institutions), whether public or private. This contributed to the improvement in the registry of the follow-up and evaluation of suspected, confirmed patients and deaths from COVID-19. The Ministry of Health developed a national surveillance system of COVID-19, with the Integrated System for COVID-19 (SISCOVID). In Brazil, Community References Centres were responsible for screening suspected COVID-19 cases and testing high risk patient groups, and provided greater assistance resolution to people with mild symptoms related to COVID-19. These centres acted as the first point of contact in PHC regarding patients with mild symptoms, and made it possible to maintain care continuity for other health care services (Chapter 6). The focus group of Community References Centres were underprivileged communities, and favelas. Around 130 centres were established and BRL 8.2 million (~EUR 1.3 million) spent each month (OECD, 2021[3]).

Box 5.6. The *Centinela* strategy in the Renca municipality (Chile)

In April 2020, it became clear that the means available to follow up the cases and contacts of COVID-19 in Renca municipality (Chile's Metropolitan region) would be insufficient due to the exponential increase of infections. A municipal team created a centralised health information system called *Centinela* to optimise information management and co-ordination of health teams for COVID-19 TTT. The strategy allowed to 1) identify positive cases, 2) develop contact studies, 3) geo-reference cases, 4) manage food delivery to affected families, 5) plan an active screening strategy of COVID-19 cases in the community 6) manage patient care and refer them to the secondary level if needed, 7) interoperate with the national system Epivigila and the sample collection national website, and 8) elaborate and disseminate periodic reports of pandemic progress for timely decision making.

The efficient co-ordination of resources and staff allowed to anticipate the measures implemented two months after by the health authority to prevent the spread of infection. It allowed to be proactive to detect early COVID-19 in the community, carrying out field operations and maintaining permanent communication and dissemination of information on prevention of infection. The strategy also helps to address some medical and social needs such as the need for medicine and food home delivery for the elderly and helping to address delayed care for some chronic patients.

Source: OECD (2021[96]), Policy Survey on the role of primary health care during the COVID-19 pandemic.

Responsibilities for COVID-19 testing have also been carried-out by PHC across other OECD countries included in Italy's Veneto Region (Box 5.7). In Austria also, multi-disciplinary PHC teams were tasked with the triage and registration of suspected COVID-19 cases and to organise COVID-19 testing (Pichler, Frühwald and Burgmann, 2020[101]). Overall, new responsibilities and new form of co-ordination between national level and local level should be maintained to manage both short and long term challenge.

Box 5.7. Italy's Veneto region relied on team-based primary health care for COVID-19 testing

From the start of the pandemic, the Veneto Region in Italy adopted a territorial response to the COVID-19 pandemic. In the decentralised health care system, the organisation of health care services and the response to COVID-19 greatly varies across regions. Some regions had a very hospital centric response (as in Lombardy), while other had a much greater focus on community and primary health care settings (as in Emilia Romagna or Veneto). The Veneto Regions for example implemented an "out of hospital model" model of management, with swabs test performed in the community. The overarching objective was to perform tests to all patients, included those with mild symptoms, and to all contact patients. The strategy helped to diagnose early COVID-19, to guide quarantine and treat as much as possible in the community before health deterioration and reduce hospital admission. Overall, the Veneto regions was characterised by a lower hospitalisation rate and a higher incidence of testing in the community.

Source: Mugnai and Bilato (2020[102]) and Mauro and Giancotti (2021[103]).

Important disruptions of screening and early detection services occurred during the COVID-19 pandemic

The efforts made to deal with COVID-19 pandemic had a profound effect in the normal functioning of LAC health systems. On the one hand, health care system resources, infrastructure and workforce shifted their attention to provide care to COVID-19 patients, mainly in hospital settings. On the other hand, people minimised their routine visits to health care professionals fearing getting infected in the process (WHO, 2022[104]). The result has been a worldwide disruption of health care services, where countries have reported disruptions across services (WHO, 2022[104]). Early detection services in LAC-7 countries have been severely affected, with important reduction in the coverage of screenings and early detections occurring during routine care. Postponed screenings will have a direct effect on population health in the long term, as patients with diseases that normally would have been detected early will have considerably worst prognosis and poorer health conditions (Vrdoljak et al., 2021[105]). Maintaining essential health services during health crises, including routine screening, is a critical attribute of resilient health systems. Yet, many LAC-7 countries, as many other OECD countries, were not resilient enough to minimise delays and disruptions in early detection of diseases.

Disruption of screening and early detection services in LAC countries has been large

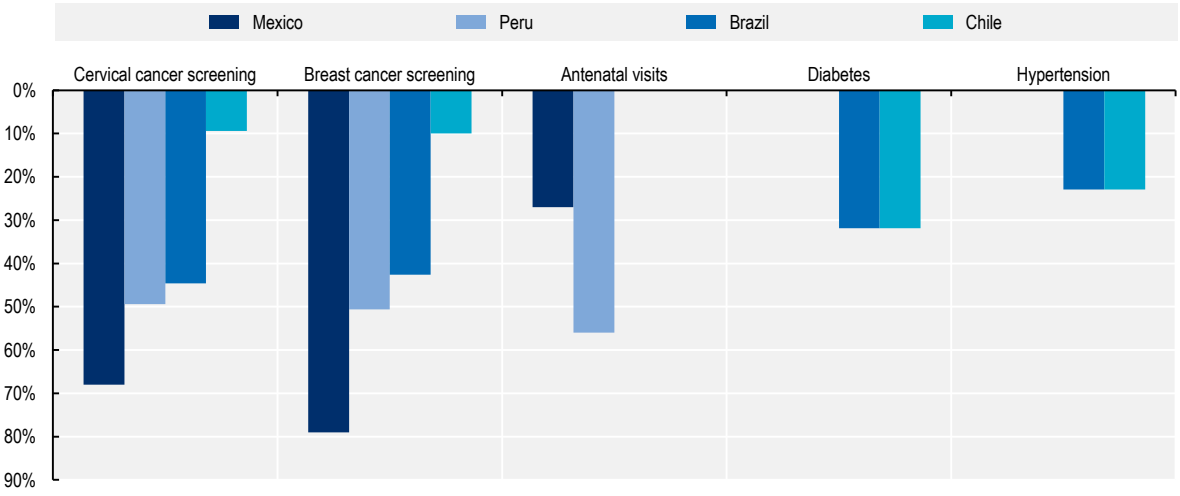
Among the LAC-7 countries, growing evidence suggests that COVID-19 has dramatically impacted cancer screening or early detection of diseases (Figure 5.10). In Mexico, from April to December 2020, breast cancer screening dropped by 79%, cervical cancer screening declined by 68%, and antenatal care visits decreased by 27% compared to the previous year (Doubova et al., 2021[106]). In addition, INSABI reported a drop of 68.5% in out-patient consultations to people without social security between 2019 and 2020, a reduction which continued in 2021 (Vitela, 2022[107]). At the same time, available evidence shows that antenatal care visits decreased by 37.2% in 2020 (Alejandra Llanos-Guerrero and Judith S. Méndez Méndez, 2021[108]).

In Chile, for the population aged 20 to 64 years old enrolled in the public insurance scheme, screening coverage rates dropped from 16.5% to 3.6% between 2019 and 2020 (which represents a 78% reduction) and reached 2.4% in 2021 (which represents a 85% reduction). A similar situation occurred for population aged 64 and over, where it decreased from 47.9% in 2019 to 10.8% in 2020 and 10.5% in 2021 (DEIS - Ministerio de Salud Chile, 2022[109]). Similarly, cervical cancer screening for females aged 20-69 screened in the past three years dropped from 52% in 2019 to 47.1% in 2020 (which represents a 9.4% decrease) (OECD, 2022[36]). Breast cancer screening saw a drop from 40.1% in 2019 to 36.3% in 2020, representing a 10% decrease in the coverage of females 50-69 screened in the past two years. Early detection for people with diabetes, measured with normal Hb tests, dropped from 29.5% in 2019 to 20.1% in 2020 and 12.2% in 2021. Early detection for people with hypertension, measured with tests of normal blood pressure levels decreased from 48.5% in 2019, to 37.4% in 2020 and 18.6% in 2021 (DEIS - Ministerio de Salud Chile, 2022[109]).

In addition, the problem of access to routine care during the pandemic in Chile has been captured by the national monitoring system created for managing COVID-19. In 2021, only 71.3% of respondents declared being able to access a medical check-up, compared to 93.7% before the pandemic, an issue more prevalent among publicly insured population (Ismael Puga R et al., 2021[110]). Further, access to general care was drastically affected in diseases such as cancer, heart attacks, or strokes (Pacheco et al., 2021[111]). Childcare was also affected, in part because the authority limited the age of children who could attend routine care in PHC due to the pandemic efforts. A drop of 67% in the number of children with PHC consultations was observed from 2019 to 2020 (Ministry of Health, 2020[112]).

Figure 5.10. Screening dropped in most LAC-7 countries

Estimated reduction in coverage rates of screening in 2020 compared to 2019



Note: For Brazil, information relates to decrease in the number of tests. Countries had differences in calculation of coverage rates, and are thus not directly comparable. Data was not available for the rest of LAC-7.
Source: Mexico: Doubova et al. (2021[106]); Chile: DEIS - Ministerio de Salud Chile (2022[109]) and OECD (2022[36]); Peru: BPT, GOPBM –MINSA (2021[113]) and Maternal Health - Roundtable for Concertation and Fight against Poverty (2021[114]), Brazil: Ribeiro, Correa and Migowski (2022[115]).

In Peru, the disruption of early detection services for cancer is of particular concern, as already before the pandemic evidence shows that the country had a large percentage of cancers diagnosed at advanced stages (Astigueta-Pérez et al., 2020[116]). The deficiencies are rooted in the fragmentation of the system and the dependence of the programme on the yearly budget assigned by different institutions. Because the pandemic absorbed most of the budget, the programmes reduced the target in terms of population coverage and diminished the proactive actions towards population screening. In 2021, 146 498 persons were screened for cervical cancer, against 256 967 in 2019. Because of the changes in target population, the coverage percentages are not comparable in time or against other countries. However, they do provide an approximation towards the disruption in the active search for patients. In 2019 the coverage was 81%, dropping to 41% in 2020 and partially recovering in 2021 (59%) (BPT, GOPBM –MINSA, 2021[113]). At the same time, according to the minister of health, pap smear tests decreased in 2020 (528 840) and 2021 (974 410) compared with 2019 (1 418 894) (62% and 31% reduction respectively). For breast cancer, screenings were made to 83% of the target population in 2019, dropping to 41% in 2020 and recovering to 66% in 2021. For colorectal cancer, in 2021 the first semester goal was 80 567 people screened, but only 10 565 (13.1%) were actually screened. In 2020 the coverage was 23.4% (66 653 screened people) (BPT, GOPBM –MINSA, 2021[113]).

Pregnant woman had difficulties to access routine care in Peru, where 35.5% of the pregnant woman who died in 2020 had no antenatal check-up, while 67.3% had between one and five check-up (Maternal Health - Roundtable for Concertation and Fight against Poverty, 2021[114]). There were 9 367 197 early childcare and development controls made in 2019, most of them by the primary care facilities; this number decreased by 56% in 2020 (4 122 275) and recovered to 60% of the initial level in 2021 (5 620 087) (MINSA, 2022[117]). In addition, the Ministry of Health reports a 62% decrease in hypertension screenings between 2019 and 2020, but with a positive recovery in 2021.

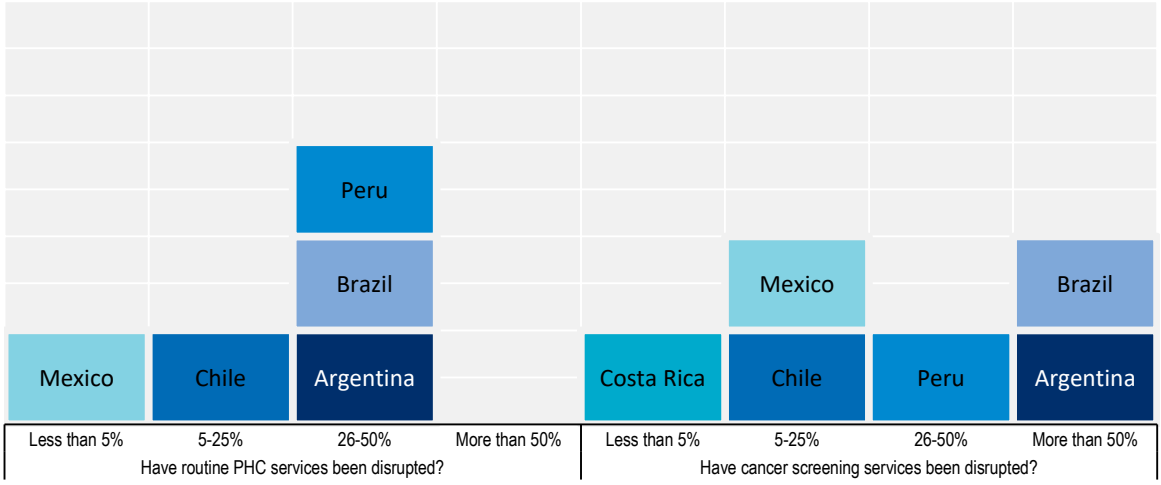
According to the WHO Pulse survey (WHO, 2022[118]), 50% of cancer screening services were disrupted in Argentina in 2021 and in Brazil in 2020 (until March 2021), while only 5% was disrupted in Costa Rica

(Figure 5.11). During 2021, ordinance GM/MS nº 3 712 in Brazil allocated BRL 150 million (~23, EUR 5 million) from the central government to the states and Federal District to secure the continuity of screening and early diagnosis actions for breast and cervical cancer during the COVID-19 pandemic (Ministro de Estado da Saúde, 2020[119]). In addition, the Brazilian National Cancer institute published a technical note in March 2020 explaining what early detection actions could be postponed, followed by a note in June of the same year with guidance on the conditions and requirement to resume screening services. By 2021, given the growing concern of the oncologic morbidity and mortality, priority was given to assist health care centres to resume early detection of cancer (Migowski and Corrêa, 2020[120]).

Other OECD countries have seen large drop in cervical, breast and colorectal cancer screenings between 2019 and 2020 (Box 5.8).

Figure 5.11. Disruption of services during 2021

Proportion of disrupted services. LAC-7 country responses. Services related to screening



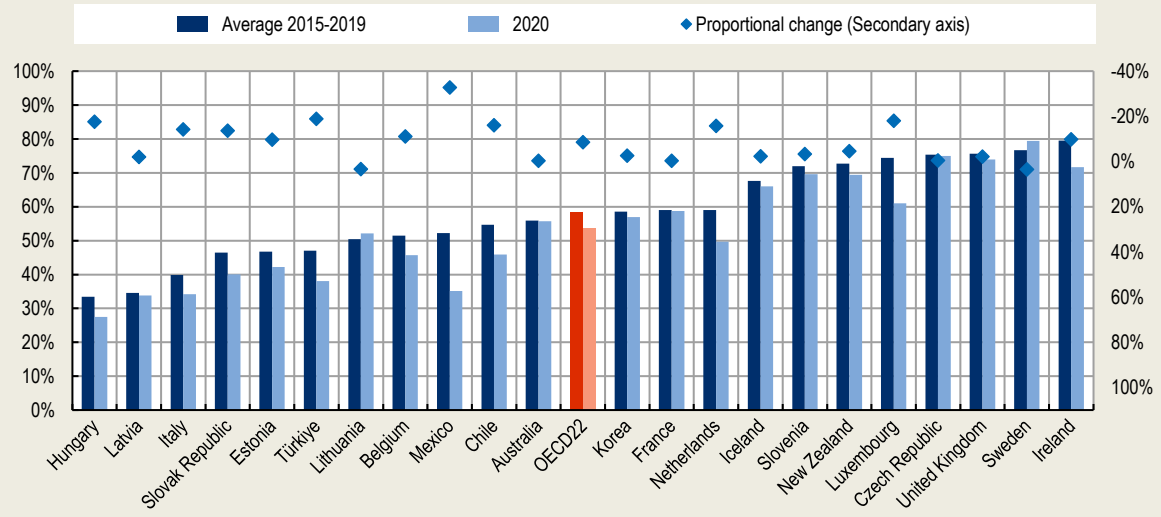
Note: Data for Argentina, Chile and Peru collected in December 2021. Data for Brazil and Costa Rica collected in March 2021. Cancer screening disruption for Mexico collected in March 2021, routine PHC disruption collected in December 2021.
Source: WHO (2022[118]), Pulse survey on continuity of essential health services during the COVID-19 pandemic, https://www.who.int/publications/i/item/WHO-2019-nCoV-EHS_continuity-survey-2022.1.

Box 5.8. COVID-19 impacted screening coverage across the globe

For OECD countries with available and comparable data, cervical cancer screening coverage in 2020 decreased on average by 4.1 percentage points (9% average decrease) when compared to the average situation of the previous five years (2015-19)(Figure 5.12). Further, between 2019 and 2020 rates for breast cancer screening dropped on average by 5.2 percentage points (or by 11%) across the countries with available data, with large disruption in Mexico, the Republic of Türkiye and Latvia. In the same period, colorectal cancer screening dropped by 3.5 percentage points (or by 9%) on average.

Figure 5.12. Disruption of cervical cancer screening during the COVID-19 pandemic

Percentage of females aged 50-69. OECD countries with available data



1. Proportional change uses secondary axis on the right. 2. Luxemburg, United Kingdom and Ireland present provisional values for 2020. Slovak Republic, Estonia, Republic of Türkiye, France, Iceland, Lithuania, Slovenia, Netherlands, Australia, Sweden and Ireland present differences in methodology.
Source: OECD (2022[36]), OECD Health Statistics 2022.

Conclusions

As the first and main point of contact with the health care system, primary health care is best placed to detect disease at the early stage. However, the technical capacities for this purpose in LAC-7 countries are lower than in other OECD countries, especially in terms of the availability of medical technologies including mammography units, CT scanners and MRI. National recommendations for screening follow the World Health Organization guidelines in terms of the population-based approach, the testing methods for screening, and periodicity. However, in all LAC-7 countries there is scope to expand the coverage of screening for breast and cervical cancer, and for hypertension and diabetes. Key elements of successful PHC programme include explicit implementation details, alongside clear responsibilities, appropriate trainings and accountability system. In Chile for example, PHC centres are responsible for implementing preventive tests according to life cycle, including mammography at the PHC centre or in co-ordination with another provider. One key success factor for the Chilean programme is to hold PHC centres accountable for the screening process. In Peru, antenatal consultations, which can occur entirely in PHC, fully benefit from the new community-based care plan that includes explicit roles and responsibilities of PHC workers for the active identification and invitation of target population. Centralised and integrated information systems will be critical to help assess the effectiveness of the programme and assess practices at provider level.

During the COVID-19 pandemic, the availability of COVID-19 testing was rather limited, and recommendations from the Ministry of Health for primary health care workers to carry-out COVID-19 testing were most often late (as in Brazil, Chile or Argentina). To improve preparedness and response during health emergencies, there is a need for stronger stewardship from the central level to take key decisions

and issue evidence-based guidelines. All LAC-7 countries developed some forms of COVID-19 testing in primary health care settings, but with high heterogeneity within and across LAC-7 countries. In Costa Rica for example, all EBAIS were responsible for COVID-19 testing, while in Mexico the role of primary health care in COVID-19 testing was rather limited. The variations that can be seen within the regions reflect differences in PHC systems across LAC countries. New responsibilities and new forms of co-ordination between national level and local level (as in Argentina with the Detectar programme) should be maintained to manage both short and long term health challenges.

As in other OECD countries, early detection of diseases was suspended during the first phase of the pandemic to increase capacity for patients with COVID-19 complications. The result is that early detection of non-COVID-19 disease was postponed, with large impact on cancer screening, detection of hypertension and of diabetes (as in Argentina, Brazil, Chile, Mexico and Peru). LAC-7 countries should urgently acknowledge the generated backlog of services and create plans accordingly, so that health and economic effects are minimised.

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6 Routine care for underlying health conditions

Ensuring appropriate care provision for mild COVID-19 cases and maintaining care continuity for all other patients are key elements of resilient health systems. During a pandemic, strong primary health care system is well placed both to manage acute care needs in co-operation with hospitals and keep people in better health condition through continuous care. While the response from LAC-7 countries has been very hospital-centric during the early phase of the pandemic, countries with stronger primary health care have put a greater emphasis on the role of primary health care and community services. Such initiatives have helped to reduce pressure on health systems and minimise complications and direct death from COVID-19. Evidence also demonstrates that maintaining care continuity for all has been one key challenge in LAC-7 countries, with high levels of care disruption and changes to treatment plans for chronic diseases such as cancer, hypertension or diabetes.

Introduction

As the first point of contact between patients and the health care system, primary health care plays a vital role in ensuring an efficient management of diseases. Its key attributes of being people and community oriented, offering comprehensive and co-ordinated services over time, enable the system to effectively provide personalised care tailored to the needs of the patients and to local context. The community-based approach of primary health care is fundamental to ensure that patient's treatment and routine care are carried-out close to where people live or work, driving greater efficiency in health spending by reducing avoidable use of hospital care.

LAC-7 countries are experiencing an epidemiological transition, where chronic conditions are becoming the leading causes of mortality (see Chapter 3). In 2019, 82% of all deaths across LAC countries were caused by NCDs, a slightly lower portion when compared with 85% across other OECD countries. Although this transition is accompanied by improvements in overall population health, it poses new challenges to disease management across health care systems. Treatment and routine care for chronic conditions generally requires more medical resources, generates longer-term demands for health care, and calls for appropriate care co-ordination between primary health care teams, specialised care, hospital care and social care.

During the COVID-19 pandemic, health care systems had to quickly respond to contain the spread of the emergent infectious disease while maintaining care continuity for non-COVID-19 patients. The role that primary health care systems play in managing health care needs became even more relevant when health systems as a whole face strong surges in demand due to outbreaks and other health emergencies. Apart from having the ability to absorb and respond to new health needs – such as providing care for mild COVID-19 cases in the community and making appropriate referrals to hospitals – primary health care critically needs to maintain care continuity for all other conditions. Any care disruption for patients with underlying health conditions will translate in rapid health deterioration and some health complications, leading to hospitalisation or deaths. The COVID-19 pandemic has therefore been a major test for PHC performance in managing both COVID-19 health needs and all other health care needs. LAC-7 countries had to reorganise the functioning of the primary health care system in order to respond at speed and scale.

This chapter describes the third core function of primary care, which is about delivering routine care in the community to help reduce morbidity and mortality, while maintaining continuity of care for all during a health emergency. The second section of the chapter presents the overall performance of PHC in delivering routine care before the onset of the COVID-19 pandemic, followed by an analyses of the role of PHC in managing COVID-19 health care needs in the community (Section 3). The fourth section lastly points out to the ability of PHC in LAC-7 countries to maintain care continuity for patients with underlying health conditions during the COVID-19 pandemic.

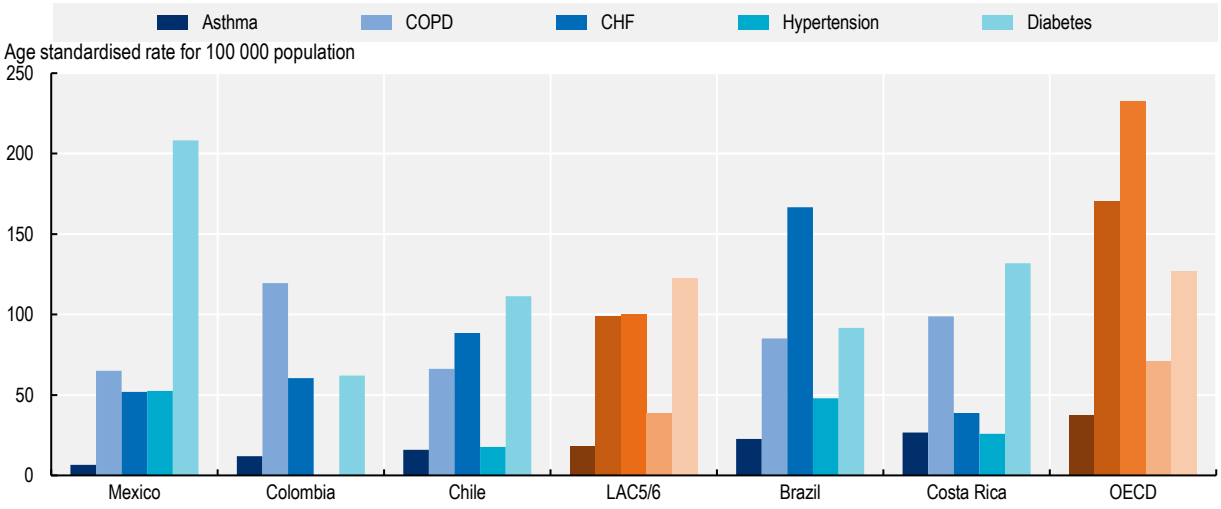
Before the pandemic, the performance of PHC in disease management varied across LAC-7 countries

High rates of avoidable hospitalisations for diabetes suggest poor care quality in LAC-7 countries

Avoidable hospital admissions is a key performance indicator of effective management of chronic disease at primary health care level for conditions that can, in most cases, be treated in community and primary care settings. This measurement has been widely used by the OECD in order to analyse how efficient primary care is at keeping patients from going to get treatment in hospitals. Ambulatory care sensitive conditions (ACSCs) is the category of diseases that are generally most characterised as treatable at the PHC level and in which early interventions can reduce the risk of complications, i.e. hospitalisation (Agency for Healthcare Research and Quality, 2018[1]). Diabetes, chronic obstructive pulmonary disease (COPD),

asthma, hypertension and congestive heart failure (CHF) are ACSCs with clear evidence that much of the required treatment can be conducted at the primary care level (OECD, 2020[2]). By lowering avoidable hospitalisations, a high performing primary health care system helps to reduce wasteful use of medical resources and the overburden of specialised care. Indeed, the cost of treatment for patients at PHC is only a fraction when compared with curative services for the same condition in hospitals (OECD, 2020[2]).

Figure 6.1. Avoidable hospital admissions, 2019 (or latest year)



Source: OECD Health Statistics 2022.

Across LAC-7 countries, avoidable hospitalisations for diabetes have reached similar values when compared with other OECD countries. In 2018, the LAC-5 average with available data amounted to 122.5 admissions per 100 000 population, while in the OECD this rate was of 127.1. The highest rate was observed in Mexico, with over 208 admissions per 100 000 population, whilst the best performing LAC country was Colombia, at a rate of 62.1 hospitalisations (see Figure 6.1). Avoidable hospitalisations rates for CHF were also considerably high in LAC-7 countries, with an average of 100.3 admissions per 100 000 population. This rate, however, was disproportionally higher in Brazil (166.7), and both were considerably lower than the OECD average (232.6).

The lower rate of avoidable hospitalisations for some chronic conditions in LAC-7 countries also relates to a lower prevalence of chronic conditions in these countries. Differences in data reporting practices between LAC and other OECD countries also limit cross-country comparisons.

PHC treatment for diabetes patients appears to be particularly underperforming in LAC-7 countries given the high levels of avoidable hospital admissions in Mexico and Costa Rica. Multiple studies have analysed the financial and health burden of such inefficient management of disease across the health care system. For instance, Lugo-Palacios and Cairns (2016[3]) have observed a 130% increase in patients being admitted to hospital due to diabetic complications in Mexico between 2001 and 2011, with an increase in financial costs attributed to these avoidable admissions of 125% over the same period. However, a more recent study has observed a significant decrease in avoidable admissions for a wide range of ACSCs in Mexico, going from almost 13% of all hospital admissions in 2010 to 10.7% in 2017 (Poblano Verástegui et al., 2022[4]). Such a reduction can be explained by a recent improvement in quality governance in Mexico APS-I. In fact, in an attempt to modernise PHC management and improve care quality, Mexico's APS-I has included avoidable hospitalisations as a key indicator to evaluate PHC performance, improving monitoring and performance over time. By contrast, Peru's 2008 policy programme to improve treatment for NCDs does not consider these indicators to measure PHC performance (See Box 6.1), while it has already been used by national evaluation (Arrieta, 2012[5]).

Box 6.1. Peru's programme to tackle NCDs morbidity and mortality

Launched in 2008, the Budget Programme 0018 of Non-communicable Diseases has been promoted as one of the main health policies to develop better routine care in the PHC level and aims at reducing morbidity, mortality and disability due to NCDs. Federal and regional authorities have allocated resources to focus on treatment for diseases such diabetes, hypertension, cataract, amongst other preventive services. The programme outlined a series of ambitious improvements related to selected indicators, with clear targets for controlling and treatment for visual deficiencies, restorative dentistry acts and diabetes, for instance.

During the years prior to the COVID-19 pandemic, some areas of work for the programme were slowly progressing. For instance, the number of hypertensive patients which had their condition under control went from 3 554 in January 2019 to over 6 250 patients in December 2019. Although notable progress was observed, the total number of hypertensive patients with controlled conditions in that year (57 310) was still far from the annual goal of 287 176, representing only 20% of the objective.

Additionally, budget allocation for hypertension treatment has constantly increased since 2016, but indicators of disease prevalence have remained relatively stable since then, going from 17.6% to 19.7% between 2016 and 2019. In 2020, the prevalence of hypertension reached 21.7% in the 15 and older population.

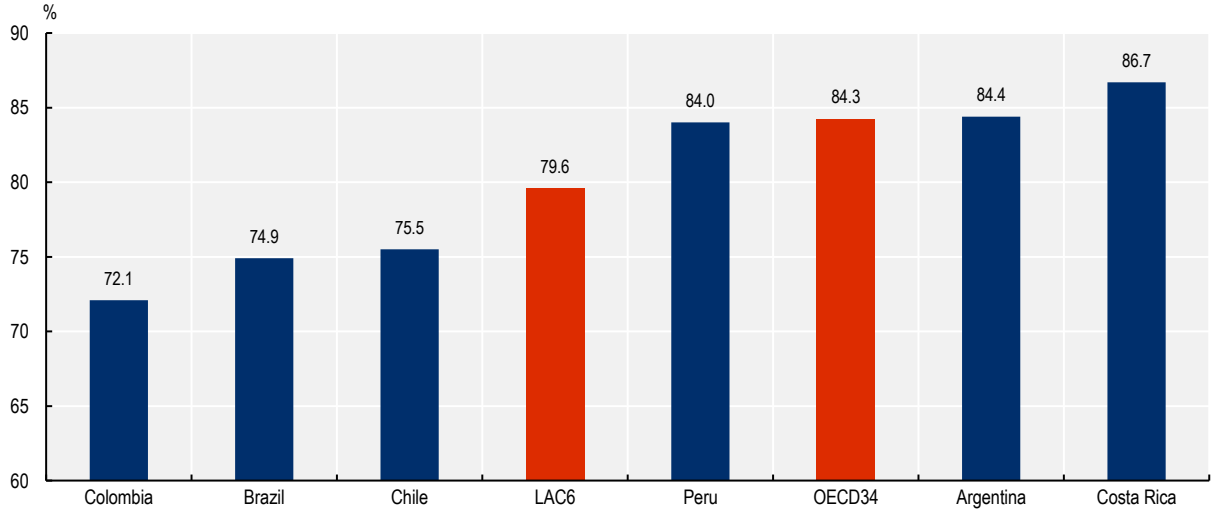
Source: MINSA (2020[6]), Evaluación de Desempeño Programas Presupuestales Año 2020.

There is room to improve cancer care in LAC-7 countries

On top of its preventive function through screening procedures (see Chapter 5), PHC has increasingly played a vital role in providing care for cancer, and its related comorbidities and palliative care. As cancer prevalence increases in developing countries due to the introduction of more advanced treatments and growth in the share of elderly population, primary health care has also become instrumental for the future sustainability of cancer treatment and management. Randomised controlled trial studies focused on breast cancer patients in remission have already shown that transferring specialised-based care practices to primary care settings, such as follow-up consultations, have presented better outcomes in terms of quality of care (length and frequency of visits) and lower costs to patients (Grunfeld et al., 1999[7]). Models of shared follow-up between GPs and hospital-based practitioners have also proven to be effective at generating a series of better process outcomes, especially when it comes to patient satisfaction, provider confidence and knowledge and patient perceptions of care (Emery et al., 2014[8]). Together with effective referral and gatekeeping systems, PHC care co-ordination has proven its potential as a key component in cancer treatment (OECD, 2013[9]). Therefore, measuring treatment outcomes for certain types of cancer can also provide countries with an additional indicator of PHC performance in disease management.

Cancer represented the second leading cause of death in LAC-7 countries in 2020, only after cardiovascular diseases, with a regional average mortality rate of 120 per 100 000 population (OECD/The World Bank, 2020[10]). Among LAC-7 countries, breast and colon cancer 5-year survival rates are clearly separated between two different groups of countries in terms of performance (Figure 6.2 and Figure 6.3). Whilst Peru, Argentina and Costa Rica have performed better in net survival indicators for these two types of cancer, with averages similar to other OECD countries, Colombia, Brazil and Chile ranked below the LAC-6 average. For both breast and colon cancer survival rate indicators, Colombia presented the lowest survival rates, with 72.1% of the population having survived breast cancer five years after diagnosis, and only 34.5% in colon cancer cases. This poor result is in contrast with Colombia's relatively lower mortality rate for all cancers when compared with other OECD countries (OECD/The World Bank, 2020[10]).

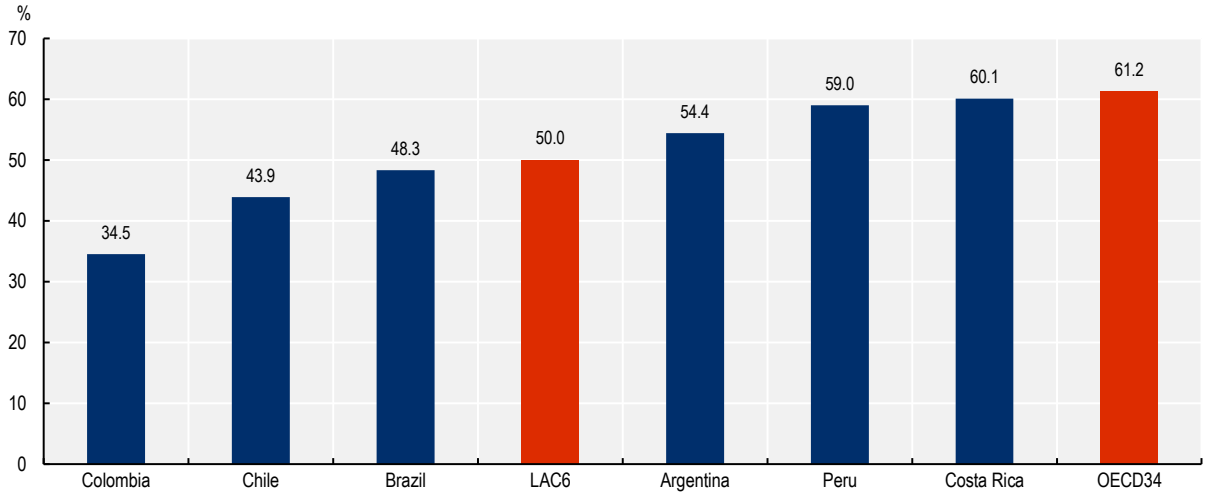
Figure 6.2. Breast cancer 5-year net survival (%), adults (15-99 years)



Source: BRA, CHI, COL and CRI from OECD Health Statistics 2022, others from CONCORDE-3.

Although for both indicators Brazil and Chile performed better than Colombia, their 5-year survival rates remained below the regional average (79.6% for breast and 50% for colon cancer). The higher rates were found in Costa Rica, which performed above the OECD average in breast and colon cancer survival rates (86.7% and 60.1%, respectively).

Figure 6.3. Colon cancer 5-year survival rate (%), adults (15-99 years)



Source: BRA, CHI, COL and CRI from OECD Health Statistics 2022, others from CONCORDE-3.

The overconsumption of antibiotics in LAC-7 countries gives cause for concern

Total volume of antibiotics and second-line antibiotics (as a proportion of total volume) has been validated as markers of quality in the primary care setting, given the increased mortality and morbidity, duration of hospital stays, infections from antibiotic-resistant pathogens, and overall increased health care costs (OECD/The World Bank, 2020[10]) (OECD, 2018[11]). Promoting a prudent use of antibiotics allows to reduce

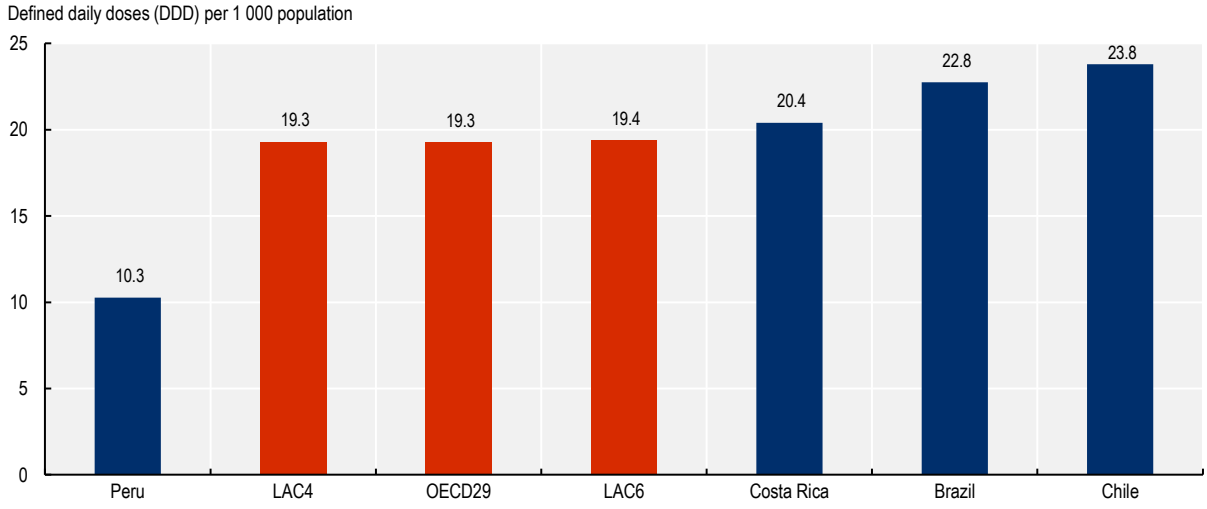
waste in the health sector and save the resources for other necessary treatments. This implies avoiding both overuse and misuse, which refers to their use in cases were antibiotics are not needed or the wrong antibiotic is prescribed.

Moreover, the rational use of antimicrobial medicines is important to contribute to preserve their clinical effectiveness. Despite this, PAHO estimates that around 50% of antibiotic use is not appropriate, affecting their sustainability and health outcomes (PAHO, WHO and FIU, 2018[12]). Most antibiotic prescription is made at the primary care sector, mostly for respiratory tract infections.

Figure 6.4 below shows antibiotic consumption in four reporting LAC countries. Highest consumption is in Chile and Brazil, with 23.8 and 22.8 daily doses per 1 000 inhabitants, respectively. The average of LAC countries is similar to the OECD average, although the number of countries is not representative of the region.

The country with lowest consumption is Peru, although this can be explained because the data does not include all institutions in the health sector but only shows the best approximation to antibiotic use (OECD/The World Bank, 2020[10]). Removing the data for Peru, the average of the three countries is 22.3 daily doses per 1 000 inhabitants, higher that the OECD average of 19.3 and much higher than some OECD countries such as the Netherlands (9.5) or Estonia (11.8) (OECD, 2021[13]).

Figure 6.4. Antibiotics consumption in LAC countries, 2019 or latest year available



Note: Data is from 2019 from OECD database, 2018 for WHO antibiotics report. Data only available for six countries in LAC: Bolivia, Brazil, Chile, Costa Rica, Paraguay and Peru.
Source: 2022 OECD Health Statistics for OECD average, Chile and Costa Rica. WHO antibiotics report for the other countries.

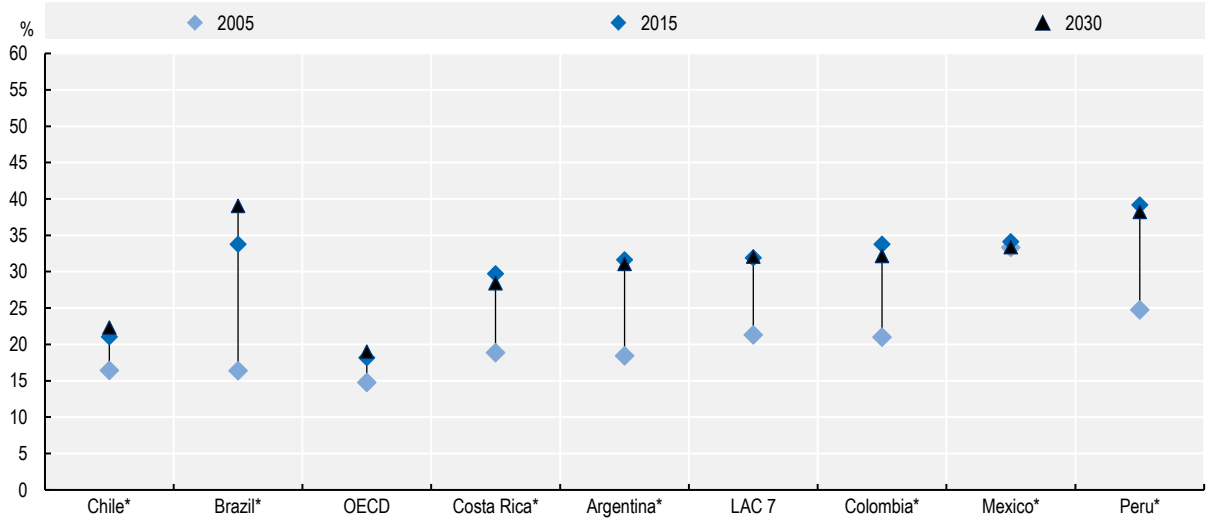
The OECD conducted in 2018 an extensive study looking at antimicrobial resistance at the global level, and reviewed actions to prevent its emergence and spread (OECD, 2018[11]). The result for LAC-7 countries, looking at the average proportion of infections caused by bacteria resistant to antimicrobial treatment for eight antibiotic-bacterium combinations in 2005, 2015 and 2030 is shown in the Figure 6.5. The estimated average proportion of infections caused by anti-microbial resistance has grown up in all countries between 2005 and 2015. Brazil has the highest increase of estimated anti-microbial resistance (with a 51% increase) while Mexico has the lowest increase (at 2%).

Moreover, the 2015 average proportions are much higher in all the LAC-7 countries than the OECD average. The country with the highest resistance was Peru (at 39.2%), which can indicate an underreported level of antibiotic consumption (Figure 6.4).

On a more positive note, five out of the seven LAC countries are projected to lower the average proportion of infections (all except for Brazil and Chile with a small projected increase), although all will continue to have higher levels than across other OECD average.

Figure 6.5. Average proportion of infections caused by bacteria resistant to antimicrobial treatment for eight antibiotic-bacterium combinations

2005, 2010 and 2030 projections



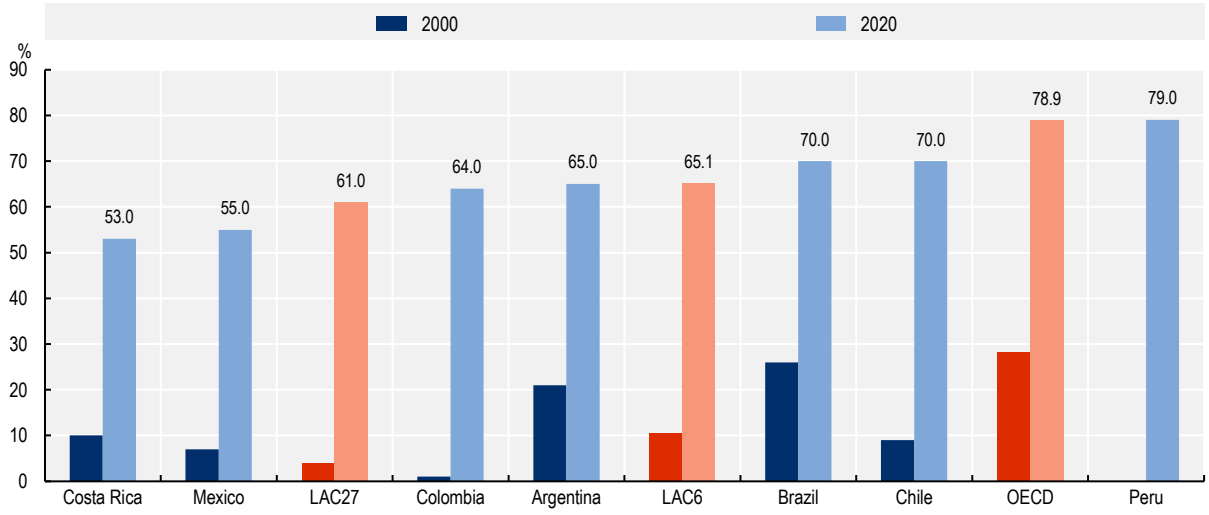
Note: For countries on the left of this graph Chile and Brazil, resistance proportions will be higher in 2030, compared to 2015. For countries on the right, rates will be lower in 2030. Otherwise, countries are sorted left to right based on ascending resistance proportions in 2015.
Source: OECD (2018[11]), *Stemming the Superbug Tide: Just A Few Dollars More*, https://doi.org/10.1787/9789264307599-en.

HIV treatment coverage has considerably increased in LAC-7 countries, but it is still far from the UNAIDS 2020 targets

For the estimated 2 million people in LAC countries living with HIV/AIDS (OECD/The World Bank, 2020[10]), routine antiretroviral treatment (ART) can be extremely effective, preventing transmission from mother to child during pregnancy and breastfeeding and between sexual partners (WHO, 2022[14]). WHO guidelines (2017[15]) have reinforced the necessity of implementing a people-oriented approach to HIV treatment which holds a minimum dataset for patient care, and well integrated at all levels of the health care system through unique patient identifiers. PHC and its community-based approach has been found effective to ensure care continuity for HIV patients, a critical care component to improve quality in HIV treatment (Sherer et al., 2002[16]). Indeed, primary health care teams are instrumental to make sure HIV patients attend regular follow-up sessions with medical doctors in order to manage treatment and the surveillance for other risks factors related to the disease (Box 6.2).

Amongst the UNAIDS 90-90-90 targets for HIV treatment, 90% of patients with a confirmed HIV diagnosis should receive ART by 2020 (UNAIDS, 2020[17]). LAC-7 countries are still far from reaching this goal, with an average treatment coverage of 65.1% in 2020, compared with 78.9% in OECD countries. However, considerable efforts by health authorities to increase the accessibility of pharmaceuticals and screening of risk groups have made noteworthy progress in the last decades, with a more than six-fold increase in ART coverage from 2000 to 2020 in LAC-7. Amongst those, Peru was the best performer, with a rate similar to the OECD average. This finding also corroborates the low number of new HIV infections in Peru when compared with other LAC countries (OECD/The World Bank, 2020[10]). Costa Rica and Mexico presented coverage rates below the LAC-27 average, at 53% and 55%, respectively.

Figure 6.6. Antiretroviral therapy coverage for people living with HIV (%)



Source: WHO 2020.

Box 6.2. Primary health care has a central role in treating for HIV in Brazil

Whilst Brazil has leveraged the potential of PHC in HIV treatment, some other countries have not followed the same path. In the beginning of the HIV pandemic, antiretroviral treatment for patients was mostly concentrated in specialised units and secondary care. However, in the last decades, treating and accompanying people living with HIV has become embedded and effectively managed in the PHC practice. Brazil is a very good example of a country where PHC has been integrated to the different functions of care for HIV. At first, testing and rapid screening procedures were made available at the Sistema Único de Saúde (SUS). From 2013, the Ministry of Health issued guidelines for monitoring low-risk and asymptomatic HIV patients at the PHC level. The possibility of transferring treatment from specialised centres to a shared system between family health units and specialists also benefited patients, as they could follow their care from health units closer to their home. Some challenges to disease management for HIV at the primary care level remain, such as the lack of patients privacy and confidentiality in health information (Melo, Maksud and Agostini, 2018[18]).

However, although this transferring of responsibilities to the PHC level has proven to be effective, other LAC-7 countries have maintained care pathways focused at specialised care, with very limited roles attributed to PHC. In Chile, where the increase in new HIV infections was the highest in the Americas between 2010 and 2016, antiretroviral drugs are delivered at secondary care and hospitals. The role of PHC is therefore limited to the phases of screening and early detection.

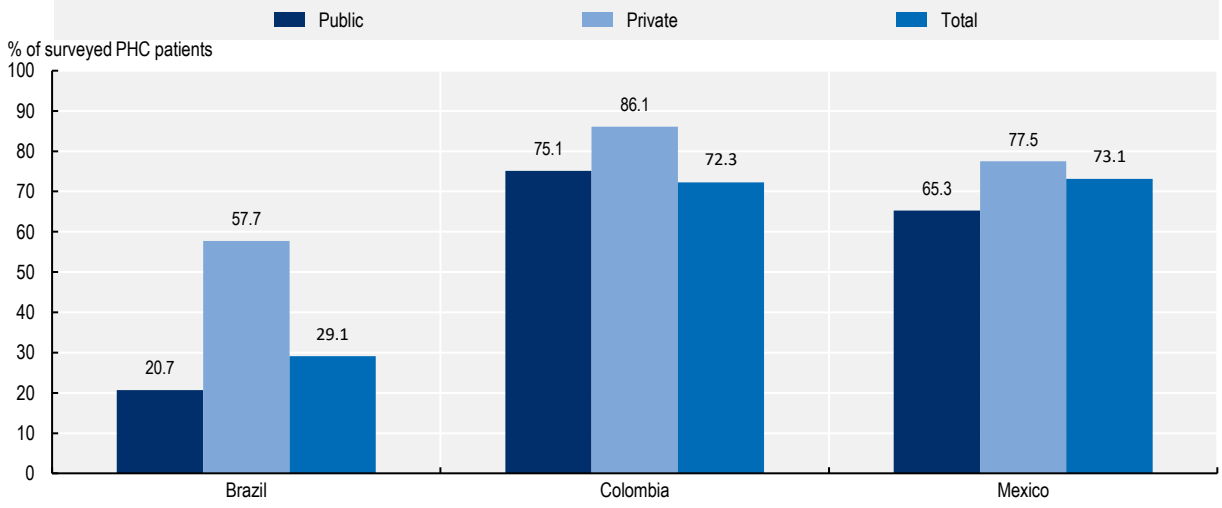
Source: BRASIL (2014[19]), 5 passos para a implementação do Manejo da Infecção pelo HIV na Atenção Básica.

More efforts are needed to regularly collect indicator around people-centredness

Designing people-centred health care systems has increasingly been set as an important policy objective. The perspective of service users – their needs, preferences and experiences – is recognised as a major factor to improve health care outcomes, quality and patient satisfaction (OECD, 2021[20]). People-centred health care also allows for patients to be better informed and empowered, making them more able to self-manage their treatment and shape health services in co-ordination with medical professionals. The community based approach of primary health care makes it a strategically well suited environment to improve patient experiences with the health care system, as the main point of contact between health system providers and patients.

Patient-reported experience measures (PREMs) are an important tool for policy makers to better understand how health care systems are performing from the perspective of users themselves. While cross country comparison of PREMs can give health authorities a clearer picture on the performance of their health systems, few international data exist. The OECD is conducting an extensive work on this matter through its PaRIS survey, of which LAC-7 countries should consider becoming part of (Box 6.3). Indeed, LAC countries lack a comprehensive set of data on people's experiences and overall satisfaction with health care. This data can shed light not only on relevant cross-national differences, but also care inequalities between providers. When asked if the PCP spent a sufficient amount of time with the patient during their appointments, PREMS from users of PHC in Brazil, Colombia and Mexico demonstrated clear disparities between private and public providers (Guanais et al., 2018[21]). Brazil performed particularly poorly both with regards to spending enough time with a doctor during consultation and with regards to the disparity between public and private providers. Whilst 57.7% of users of the private system responded positively, only 20.7% felt they had spent a sufficient amount of time with their PCP. Although Colombia and Mexico also reported highest rates for private users, in both countries disparities between providers were smaller and the share of positive experience were considerably higher than in Brazil, at 65.3% in Mexico and 75.1% in Colombia amongst public health care patients.

Figure 6.7. Brazil lags behind Colombia and Mexico with regards to patient experience measures such as communication with the PHC provider



Note : The indicator relates to doctor spending enough time with patient during consultation.
Source: Guanais et al. (2018[21]), *Desde el paciente: Experiencias de la atención primaria de salud en América Latina y el Caribe*, https://doi.org/10.18235/0001255.

Box 6.3. The OECD PaRIS Survey

In 2017, the OECD launched the Patient-Reported Indicators Survey (PaRIS) to address the need to understand the outcomes and experiences of people with chronic diseases. PaRIS offers an opportunity for gathering the evidence necessary to transform health care systems into patient-centred systems based on the needs of the people they serve. The initiative includes:

- The collection of validated, standardised, internationally comparable patient-reported indicators in three areas: hip and knee replacements, breast cancer care and mental health care;
- The collection of a new set of internationally comparable measures which focus on patients with one or more chronic conditions, who are living in the community, and who are largely treated in PHC or other ambulatory care settings.

Until today, 20 countries have joined the PaRIS survey.

Source: OECD (2022[22]), Patient-Reported Indicator Surveys (PaRIS), https://www.oecd.org/health/paris/.

Recent available researches in Mexico show a relatively high patient satisfaction with care delivered in public and private facilities (Flores-Hernández et al., 2019[23]; Holt et al., 2020[24]). For instance, 88% of public health service users reported receiving clear information about the diagnosis, 87.5% clear information about the pharmacological treatment, and 84.4% a clear answer to their questions. There were no differences in these indicators between indigenous and non-indigenous health service users (Flores-Hernández et al., 2019[23]). However, in 2021, the IMSS National Satisfaction Survey found that only 60% were satisfied with PHC services; the main reasons for dissatisfaction were long waiting times (69%), lack of health personnel (66%), unavailability of medicines (53%), and staff impoliteness (42%) (IMSS, 2021[25]). Nonetheless, these surveys did not cover multiple aspects of patient-centred care.

In Colombia, a 2020 study of public evaluation of the health care system conducted by the Ministry of Health found consistently high satisfaction rates for both in-person and remote care for different types of services. Almost 87% of respondents considered in-person GP consultations as “good” or “very good”, while remote care had a satisfaction rate of 80%. The same study has also shown positive experience when comparing both the subsidised and the contributive regimes in Colombia, with 89% and 80% satisfaction rates, respectively (MSPS, 2020[26]).

A powerful strategy to make health care more people-centred is allowing patients to have access to and knowledge of their health information. By using digital solutions such as Electronic Health Records (EHR), patients can better influence, self-manage and participate in decision making for some aspects of their treatment. However, international progress on implementing these instruments is still very low. In 2020, only 43% of OECD countries reported allowing patients to interact with their personal health information (OECD, 2021[20]). In LAC-7 countries, the ambition to adopt EHR technology has varied widely. Costa Rica sets an example to the region and other OECD countries on the implementation of its EHR system EDUS (*Expediente Digital Único en Salud*) across all health care public facilities (including PHC, clinics and hospitals). EDUS is widely used across the country to record patients’ contacts, medical appointments, diagnosis, treatments, family health information provided by the patient and other health data. EDUS was further developed to also include comprehensive data from secondary and tertiary levels of care, making it one of the most comprehensive electronic health record system in the world (OECD, 2017[27]). However, other countries in the region still lack comprehensive EHR policies. In Argentina, Mexico, Peru and Colombia, electronic health records are underused for disease surveillance, notably because of a relatively low penetration amongst primary health care physician – at 17%, 50%, and 36%, respectively (Global Health Intelligence, 2017[28]) (see Chapter 4). In Peru however, EsSalud recently launched the Smart

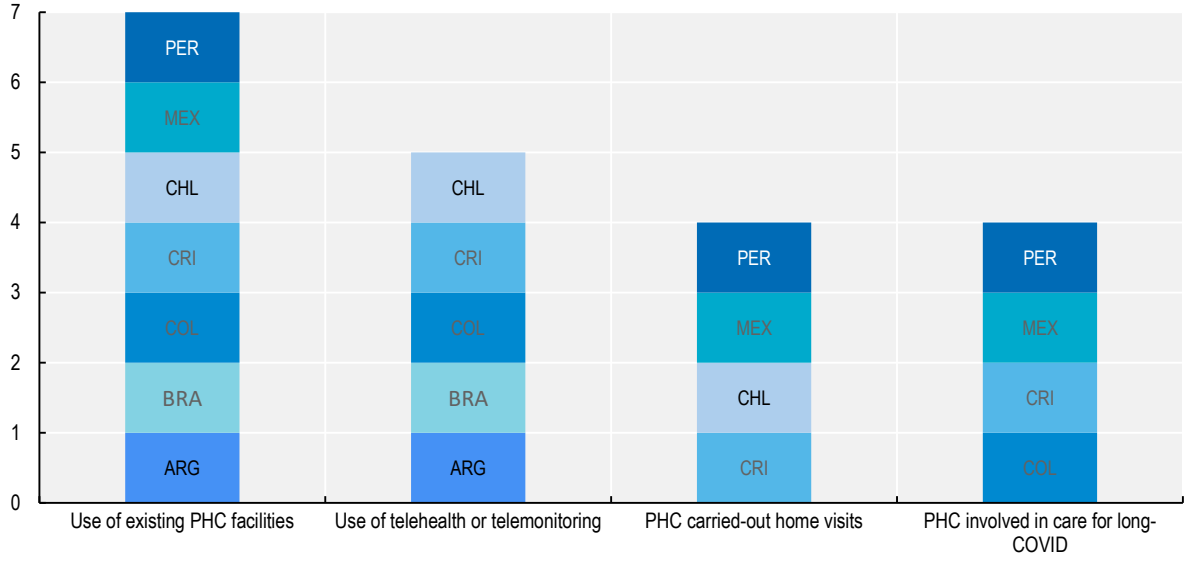
Health Service (EsSI), a new digital tool where patients can access their medical records and health providers are able to visualise information from users such as auxiliary tests, diagnoses, prescriptions and treatments. Scheduling for consultations and appointments across different levels of care can also become better co-ordinated and standardised through EsSI (EsSalud, 2019[29]).

Role of PHC in managing COVID-19

As in many other OECD countries, the overall response from LAC-7 countries to the pandemic has been very hospital-centric. In some cases, LAC-7 countries with stronger primary health care have made a greater use of primary health care and community services to reduce pressure on the health system and minimise complications and direct deaths from the COVID-19 crisis. There are good local experiences where primary health care has been effective to respond to the surge in demand, through for example the use of existing primary health care facilities, making quick and effective referral to hospitals and the development of new model of organisation such as home visit and telehealth. However, in all LAC-7 countries, available evidence shows that people with underlying health conditions have been strongly impacted by care disruptions.

Figure 6.8. Primary health care in LAC-7 countries has managed mild-COVID-19 care needs in the community

Number of LAC-7 countries



Source: OECD (2021), Policy Survey on the role of primary health care during the COVID-19 pandemic.

The deployment of PHC facilities with specific care pathways for COVID-19 has been an effective response to manage COVID-19 in the community

Gatekeeping and care-co-ordination strategies to better organise treatment and follow-up of COVID-19 patients depending on their symptoms and severity level has been pointed out as an effective measure to help sustain health systems during the COVID-19 pandemic (WHO, 2020[30]). In order to cope with surges in demand for care, PHC must be able to have the necessary resources and the proper organisation to rapidly increase capacity whilst implementing timely adaptations, such as the creation of specific care pathways for COVID-19 patients.

During the first year of the pandemic, very limited amount of resources and a lack of planning for emergency situations mainly resulted in hospital-centric response from LAC-7 countries, with a high focus given to treating patients with severe COVID-19 symptoms in hospitals. This was the case in Mexico, where emergency rooms have traditionally been considered as the main point of entrance to the health care system by the population. Health authorities were quick to repurpose hospitals and transfer medical staff to cope with the high demand of patients seeking treatment for COVID-19 in secondary or tertiary care. While the referral system in Mexico was not working effectively before the pandemic (Sánchez-Talanquer et al., 2021[31]), health authorities implemented a new policy approach for managing suspected or confirmed cases of COVID-19 which was centred around the Respiratory Care Modules (*Módulos de Atención Respiratoria des Seguro Social, MARSS*) in PHC units.

Box 6.4. The Respiratory Care Modules (MARSS) helped manage COVID-19 patients in primary health care settings in Mexico

Mexico implemented the Respiratory Care Modules (*Módulos de Atención Respiratoria des Seguro Social, MARSS*) in the primary health care setting. With a clear set of guidelines on care pathways for patients showing a series of COVID-19 symptoms, MARSS is run by a team of nurses and laboratory assistants. On arrival, patients would complete a form through a QR code indicating all the symptoms and individual risk factors. Patients showing difficulty to breath or chest pain were sent to specific COVID-19 areas and had their oxygen level evaluated. If a patient had a less than 90% oxygen saturation level, the patient received a referral to be treated at a hospital unit. In case oxygen levels were not alarming, the MARSS team would evaluate if the patient was part of any risk group, in which case he/she would remain under medical surveillance for any signs of additional symptoms. After signs of improvement, patients would be sent home and received recommendations to self-isolation for 10 days, together with a series of COVID-19 related information, masks, an oximeter and antipyretic medicines. This was also the case for patients that did not belong to any risk group. MARSS staff would then conduct follow-up consultations with isolated patients by phone.

In addition to MARSS units, the Mexican Government also implemented MacroMARSS, which are larger centres with the same responsibilities, and with guidelines to identify and care for mild COVID-19 patients. In late January 2022, there were 5 181 MARSS across the country and 57 MacroMARSS, which had carried out 12.2 million consultations, of which 1.3 million received a follow-up from medical teams. Even though a great number of COVID-19 patients were cared through the framework of the MARSS units, no evaluation of this policy has been carried out yet.

Source: IMSS (2022[32]), Los MARSS del IMSS han sido un pilar en la respuesta institucional ante la pandemia de COVID-19, https://www.gob.mx/imss/es/articulos/los-marss-del-imss-han-sido-un-pilar-en-la-respuesta-institucional-ante-la-pandemia-de-covid-19?idiom=es.

Colombia and Costa Rica were two other LAC-7 countries where PHC had a clearer referral framework plan for COVID-19 patients and which also mobilised their PHC systems to play a more central role in caring for confirmed cases. However, both countries put in place different strategies to adapt their PHC services to the challenges posed by the pandemic.

Costa Rica for example introduced comprehensive adaptations to PHC services to treat for mild cases of COVID-19. From the start of the pandemic, the PHC system was placed at the centre of the health system to manage the unexpected surge of demand and avoid overcrowding in hospitals. The country separated care pathways for COVID-19 patients and non-COVID-19 patients at the primary health care units to respect social distancing protocols and ensure patient safety. Rapid response teams in PHC, which comprises doctors and nurses, were responsible for the follow-up of cases and clinical care for COVID-19.

Costa Rica also converted non-medical institutions (such as hotels, public schools etc) into isolation centres for patients who could not afford to self-isolate at home. More than 10 000 confirmed or suspected cases were able to self-isolate in these facilities (PAHO, 2020[33]). The quick and effective response from the Costa Rican PHC system to manage mild-COVID-19 cases in the community is undoubtedly related to its pre-pandemic central role in providing comprehensive, continuous and co-ordinated care. By contrast, in Peru and Argentina, a lack of resources and an unclear mission and vision for primary health care severely limited PHC's scope in this care function during the pandemic.

In Chile, during the first months of the pandemic, PHC played a relevant role in caring for mild COVID-19 cases through home visits with medical, nursing and kinesitherapy professionals. In case patients had an increase in symptoms, transfers to PHC units were arranged in order to provide testing, hydration, low-oxygen therapy and clinical surveillance. The first level of care network in Chile was separated between units that would receive patients with a respiratory condition (i.e. suspected COVID-19 cases) and non-respiratory cases. This physical separation also provided for different pathways of care, and aimed at minimising contacts from positive COVID-19 individuals with uncontaminated patients and more efficiently allocate resources to protect medical staff and provide treatment (MINSA, 2020[34]).

The Brazilian Ministry of Health took important steps to reorganise its PHC system in order to implement an integrated response to COVID-19 management at the PHC level. Confirmed and suspected cases and those who presented respiratory symptoms were directed to separate care pathways. Larger PHC units implemented separate internal pathways, with triage occurring at an exterior area at the unit's entrance, whilst smaller units arranged exterior areas with tents to receive COVID-19 patients. As PHC in Brazil is mostly managed at the municipal level, the level of integration between different levels of care varies widely across the country. Cities like Belo Horizonte implemented effective referral and transport systems between PHC and higher levels of care in accordance with information on the availability of beds in hospitals (Giovanella et al., 2021[35]). At a late stage, in March 2021, the Brazilian Ministry of Health published a set of seven main steps to improve PHC effectiveness in the context of the pandemic. Amongst them, guidelines were proposed to increase working hours for PHC units, implement reference units for COVID-19 cases and train staff to diagnose and manage mild COVID-19. The guidelines also recommended that PHC units treat patients with moderate symptoms where there are appropriate human and material resources (Ministério da Saúde, 2021[36]).

At the same time, reference centres for treating COVID-19 patients at the PHC level were implemented in poor and dense communities (*favelas*) through financial incentives from the federal government. Beyond providing care for people in areas of increased risk of contamination, these centres also aimed at updating patient health information to subsidise remote care and community disease management by health authorities. On top of fixed financial transfers to municipalities that implement the reference centres, the federal Government of Brazil also provided a per capita financial incentive to selected municipalities for each person that had their health registry updated (Ministério da Saúde, 2020[37]).

In Argentina, PHC does not normally act as a co-ordinating axis of care for the population, as there is no referral system to access secondary care (see Chapter 3). Similarly to Mexico, the country also faces an artificial division between public and private providers in terms of co-ordination and compliance with national health care policies. Territorial differences in Argentina are also important obstacles, as PHC providers between administrative regions do not share common financing schemes and, as a consequence, do not share a common set of services that are covered by the first level of care. Guidelines provided by the Ministry of Health are only indicative of which types of services PHC should provide, and each province in the country establishes its own referral and triage systems. This created severe inequalities between regions on the level of care co-ordination and efficiency provided by the health care service during the COVID-19 pandemic. The pandemic has however stimulated innovative practices at local level. The Jujuy province for example introduced a Single Patient Management Centre to co-ordinate the transfer of patients between health care units and different levels of care. This centre evaluated three times per day the number of beds available in each unit and the spare capacity in terms of medical

resources and workforce. Transfer of patients was also organised by this centre, which integrated public and private health care providers.

A lack of basic infrastructure and human resources in Peru's PHC system posed challenges to the country's response to COVID-19. With a lack of policies to attract physicians to more remote areas, almost half of public PHC centres suffer from physician shortage (Comptroller general, 2016[38]). This shortage was further aggravated by the pandemic as these facilities drastically reduced their staff numbers due to age and comorbidities related to COVID-19. Temporary staff which had no previous work connection with PHC were hired by the Peruvian Government in order to conduct field interventions to provide diagnosis and clinical follow-up that would otherwise be provided by regular staff. Additionally, an increase in 2020 of medical staff in Peru through temporary contracts varied considerably between regions (Murillo-Peña et al., 2021[39]). Workforce shortage in primary health care have considerably limited the capacity to deliver routine care at the first level of care and clearly had an impact on the reduced responsibilities attributed to primary health care.

In 2021, emergency response teams mostly focused on contact tracing work were converted into Integrated Intervention Teams (IIT). Each team is composed of one health professional and one health technician, and both are trained in epidemiological surveillance, management of symptoms and clinical follow-up for COVID-19, and work in fixed, mobile and remote modalities. Working in close co-operation with PHC staff, EIIs provide care based on a dedicated COVID-19 care pathway. Mild COVID-19 cases that are unable to self-isolate at home can be allocated at Community Centres for Temporary Isolation (CATS), which functioned in originally non-medical structures, such as stadiums, schools, hotels etc. These centres were initially administered by local authorities with funding from the federal government, with an initial offer of ten centres across the country. Moderate and severe cases are referred to receive care in hospitals and intensive care units.

Use of digital health and home visits have been complementary solutions facilitating the management of mild-COVID-19 in the community

In order to minimise contact between medical staff and infected patients, PHC in LAC-7 countries extensively made use of digital health with variation in the scope and depth of utilisation. The strategy helped to reduce pressure on inpatient care while maintaining access to routine health care services. Although teleconsultations predate COVID-19, the pandemic has been a watershed moment in its uptake by both health professionals and patients. The expansion of telehealth enabled to maintain care continuity for patients who may have feared physically visiting health care facilities and it also protected health care professionals most at risk of serious COVID-19. There are however multiple underlying challenges that must be overcome to remove barriers and make sure they become part of mainstream care delivery. For instance, low levels of internet connectivity and digital literacy in some countries has considerably limited the use of telehealth solutions by PHC (Carrillo-Larco et al., 2022[40]). In some cases, national legislations also required a good level of modifications. However, as in many other OECD countries, LAC-7 countries have reported a clear uptake of telehealth and home-based care during the pandemic, a trend that can point to fundamental changes in the way PHC will deliver services in the aftermath of COVID-19.

In Chile, it has been a common practice for physicians in PHC to provide teleconsultations to refer patients to hospitals or specialised care. The Digital Hospital tool, a website with a set of digital solutions for health care implemented by the Chilean Government, has been a key component of the digital health strategy in the country before the COVID-19 pandemic. Digital Hospital offers teleconsultations both with physicians and a wide variety of secondary care doctors, and it also provides information to help patients to self-manage their conditions. The platform was an important tool to support both patients and medical staff during the pandemic, as it offered COVID-19 disease management seminars and instructional videos for self-care. PHC consultations were drastically moved from in-person to virtual settings due to the pandemic, but data on the number of appointments only started being collected from the second semester of 2020.

From July to December 2020, 580 609 teleconsultations in PHC were carried out, and a further 472 751 in the next semester (DEIS, 2021[41]). In addition to remote consultations, PHC teams with doctors, nurses and kinesitherapy professionals would go to mild COVID-19 patients' homes to provide in-person care.

The COVID-19 pandemic prompted the implementation of telehealth services and programme across Mexican states. According to the Telehealth Observatory of the National Centre for Technological Excellence in Health (Observatorio de Telesalud del Centro Nacional de Excelencia Tecnológica en Salud, CENETEC), from January to November 2020, 5 741 033 telehealth services were provided in 20 states (Centro Nacional de Excelencia Tecnológica en Salud, 2020[42]). These services included:

- 1 527 281 medical consultations of COVID-19 patients
- 1 096 175 COVID-19 triages
- 802 642 follow-ups
- 712 383 medical advice
- 647 037 monitoring
- 424 479 tele-education
- 162 753COVID-19 inter-consultations
- 115 473 non-COVID-19 triage
- 113 219 specialty teleconsultations
- 79 590 co-ordination of services
- 60 001 family visits to hospitalised patients

Follow-up teleconsultations for patients self-isolating at home has been widely expanded to ensure continuity of care in Colombia and Costa Rica. In Colombia, as a way to access high risk population, the use of telemedicine expanded by capitalising on previously existing regulatory guidelines and standards defining procedures and provision conditions. The scope of such services included remote care for people in confinement or preventive isolation, population groups with a higher risk of complications from COVID-19 and preventive and routine health services. From December 2019 to April 2021 there was a 184% increase in providers authorised to perform telemedicine (5 302 providers) and a 264% increase in types of services provided (21 094 telemedicine modality) (OECD, 2021[43]).

In Costa Rica, a Health Supervision Program integrated by 50 primary care physicians gave continuous medical information to patients with doubts or concerns via phone. The aim of this programme was to support the network of services in areas where health systems were already overwhelmed. Teams were composed by physicians specialised in family health (PAHO, 2021[44]). Between 2018 and 2019, 28 082 teleconsultations were made, compared to 2.85 million during 2020 and 2021. New regulation and monitoring guidelines were created to support this technological implementation. Between April and December of 2020, between 30 to 40% of all consultations were made by alternative means (OECD, 2021[43]).

In Brazil, PHC has adopted telemedicine services, including an online teleconsultation platform and the TeleSUS service. Around 2 300 professionals were certified to use the system. In addition, an online tool called "Consultório Virtual de Saúde da Família" has also been made available to PHC facilities and FHTs. PHC workers can receive the necessary equipment, training and technical support on a 24 hours basis. Particularly, PHC teams managing COVID-19 cases were provided assistance from specialised health staff to support decisions about diagnosis and procedures through digital platforms. To help PHC units access digital technologies, the Ministry of Health has also instituted an exceptional incentive to be paid to municipalities and states for each health team that has not yet been digitalised, with a budget of USD 83.8 million for 2020 alone (OECD, 2021[45]).

Argentina's TeleCOVID programme to provide remote care for people with a suspected or confirmed diagnosis for COVID-19 has increasingly expanded its coverage and quality throughout the pandemic. Beyond treating for mild cases and people in self-isolation, the remote care system also aimed at ensuring continuity of care for people in high risk groups, such as elderly patients. A total of 267 000 telehealth consultations were made in 2020. The Ministry of Health conducted a survey among physicians and patients to analyse their experiences with the TeleCOVID-19 system. Out of all teleconsultations, 57% were related to COVID-19 treatment. Seventy-seven percent of patients positively evaluated their experience with the teleconsultation and up to 82% of health professionals reported they are familiar with the teleconsultation modality. On top of this, both patients and medical staff pointed out the avoidance of unnecessary transfers, increased in safety in the context of the pandemic and obtaining diagnostics results more quickly as other positive effects of TeleCOVID (Fundación Carlos Slim, 2020[46]).

The legal framework changes in Peru completely restructured telehealth parameters to deal with the pandemic. Before these regulative changes, telehealth were only regulated between health professionals in health facilities and physicians were not allowed to prescribe remotely[1]. Telehealth activities targeted tele-expertise to improve capacity of small or remote health facilities by consulting with hospitals or specialised health institutes. After regulation changes, the two main public providers implemented a centralised offer of tele health services, including tele-orientation and tele-monitoring during 2020 ("Teleatiendo"). This network was not based on PHC, but in telehealth centres that made more than 14 million consultations during 2020.

Telehealth can only function properly with minimal technological requirements. PAHO (2020[47]) guidelines recommend health care teams to have at least a stable internet access (minimum 1 MB/300kb) and an audio/video-capable computer to be able to provide adequate remote consultations. Precarious availability of ICT infrastructure in PHC units can severely hampered the efforts made by some LAC-7 countries. In Peru, nine out of ten health centres have inadequate infrastructure and over 80% do not have internet connection (Carrillo-Larco et al., 2022[40]). In Brazil, although internet connectivity has been increasing in the past years, only 71% of households reported being connected in the last ICT Household Survey of 2019 (Cetic.br, 2020[48]). This lack of appropriate TIC infrastructure can severely limit the bold objectives set out in the country's new telehealth legislation (see Box 6.5). Although the legislation indicates EsSalud, the armed forces, regional and local governments as the main supporters of adequate ICT infrastructure for telehealth, it does not propose specific policies to better equip such health care units.

Box 6.5. The pandemic has considerably improved legislation on telehealth: examples from Brazil and Peru

Legislative frameworks regulating telehealth must be comprehensive enough to support a healthy digital environment for medical appointments, prescribing and remote care. Telehealth can affect different policy aspects which might require regulatory oversight, such as individual privacy assurances for both doctors and patients, regulating payment reimbursement schemes for remote care and defining which kinds of care services can be provided remotely (WHO, 2019[49]). Despite continuous bottlenecks, Pierce, Schroeder and Suchecki (2021[50]) have identified considerable improvements in the legislative framework of some countries in order to make better use of digital tools during the pandemic. The authors mention the example of Brazil, where law 13.989/2020 and ordinance nº 467 have allowed for temporary use of telemedicine in the public and private sectors and provided basic guidelines of practice for professionals, such as standards for authenticating prescriptions delivered remotely. The Brazilian legislation, however, clearly lacks in some critical aspects to make telehealth policy more sustainable. For example, it doesn't include any norms pertaining to medical liability or data and information protection and security, which could hamper the current Brazilian telehealth strategy (OECD, 2021[45]). Recent ministerial resolutions have introduced clearer requirements for which health professionals are

allowed to provide telehealth services and ethical principles to ensure confidentiality of information, non-maleficence and patients' informed consent and autonomy.

Peru has comprehensively improved its regulatory framework to develop a Telehealth Policy environment in the country, including a series of changes to previous legislation, which imposed a series of obstacles and limitations to eHealth initiatives. Supreme Decree nº 005-2021-SA has increased the types of exchanges between doctors and patients that can be conducted through remote tools and has given doctors the possibility of prescribing electronically. Through the improved legislation, Peru's Minister of Health and EsSalud, one of the country's main health insurer, have implemented centralised offers of telehealth. These systems, however, are not based in primary health care.

Source: WHO (2019[49]), *WHO guideline: recommendations on digital interventions for health system strengthening*, https://apps.who.int/iris/handle/10665/311941; Pierce, Schroeder and Suchecki (2021[50]), *Telehealth in Latin America: Progress, Challenges, and Opportunities in the Face of COVID-19*, https://doi.org/10.30953/tmt.v6.238; OECD (2021[45]), *Primary Health Care in Brazil*, https://doi.org/10.1787/120e170e-en.

Across other OECD countries, several policies have been implemented to expand and consolidate the use of telehealth. Estonia, Germany, Portugal and Australia, for example allowed medical staff other than doctors to perform teleconsultations after the start of the pandemic (OECD, 2023[51]). Funding and purchasing was also a key area where policy interventions were necessary to boost the use of telemedicine to maintain routine care. In Belgium, Hungary, Latvia and Korea, before the COVID-19 pandemic, there were no government payments for telemedicine service providers. All four countries introduced new mechanisms to pay for telemedicine services (OECD, 2023[51]). After the start of the COVID-19 pandemic, the United States, Belgium and New Zealand reduced or eliminated the out-of-pocket payments for tele-health services, making it cheaper for patients than the in-person alternative (OECD, 2023[51])..

In addition to remote care through telehealth solutions, strategies on home-based care visits by PHC teams were also adopted by some countries. Building on previous work carried out by CHWs, these strategies vary from simple follow-up sessions with isolated patients, as is the case of Peru, to more complex and nuanced policies, such as in Mexico with the *Brigadas Especializadas* (specialised brigades). In Mexico, the specialised brigades are composed of one doctor and a nurse and work in close co-operation with the local PHC clinic and the health promotion brigades (see Chapter 4). The latter will indicate to the specialised teams which households must be visited based on the identification of COVID-19 symptoms and risk group populations. Specialised brigades must conduct further exams, and follow-up on subsequent days if no alarming signs are identified. The teams can also refer patients to PHC or hospital units in case more severe symptoms are observed. The brigade's strategy is implemented by the Mexican Secretary of Health in partnership with PAHO, and is particularly well suited to reach more isolated communities. Follow-up for suspected cases could also be conducted remotely via telephone. Similarly, in Peru follow-up of isolated patients is conducted by IITs through regular telephone and home visits. If assistance at a PHC unit is needed, patients will receive a referral from a CHW. Home-based visits were also conducted in Costa Rica (Figure 6.9).

Despite good local initiatives, LAC-7 countries are unprepared to face the challenge of long COVID

From the first months of the pandemic, both patients and medical staff already started reporting numerous side effects and long lasting symptoms after being contaminated by COVID-19. Prevailing symptoms range from fatigue and persistent cough to loss of smell, taste and cognitive dysfunctions. The time frame of such symptoms also varies between a few weeks to several months. Although there is no consensus on its clinical definitions, some common characteristics are emerging in the literature. For instance, long COVID occurs generally three months from the onset of COVID-19 symptoms in a patient with a suspected or

confirmed contamination by SARS-CoV-2, and usually lasts at least two months, with the possibility of occurring following full recovery from COVID-19 or through the persistency of symptoms (WHO, 2021[52]).

WHO estimates indicate that around 10% to 20% of people who contracted COVID-19 experience a variety of mid- and long-term effects (WHO, 2021[53]). A flagship international study examining COVID-19 patients from 56 middle and high-income countries with symptoms lasting over 28 days has found that for more than nice out of ten respondents the recovery time exceeded 35 weeks. Fatigue, breathing issues and cognitive dysfunctions were the symptoms cited by patients as the most debilitating symptoms (Davis et al., 2021[54]). A similar study in the city of Belo Horizonte in the Southeast region of Brazil identified similar symptoms in patients with persistent disabling symptoms associated with previous COVID-19 infection. In this cohort of 646 patients, the most frequently reported symptoms were fatigue (35.6%), persistent cough (34%), shortness of breath (26.5%) and mental disorders (20.7%). The study followed patients for 14 months, and 1.2% of them were still experiencing symptoms such as fatigue, dyspnoea, joint pain and loss of smell or taste by the end of this period (de Miranda et al., 2022[55]). Both analysis showcase the wide range of conditions and duration of symptoms that can result from a COVID-19 infection, and how holistic and comprehensive care pathways at the PHC level may be the best setting to provide treatment for these patients. Medical institutions have already highlighted how there will be a shift in focus when it comes to treating for COVID-19, which will increasingly move from ICU to general practitioners in PHC caring for chronic conditions derived from the infection (Royal College of General Practitioners, 2020[56]).

Despite this urgent need for governments to place PHC at the centre of the health system to provide treatment for patients with long symptoms, LAC-7 countries have shown little progress in this matter. There are however some good initiatives in Mexico, Costa Rica and Colombia, where primary health care team could have an important role:

- Mexico has implemented a comprehensive network of rehabilitation centres to treat people who suffer from continuous COVID-19 symptoms. Rehabilitation specialists contact patients remotely to assess individual health needs and provide guidance on the appropriate recovery process. Videos and infographics for a wide set of rehabilitation activities (including respiratory, mental and child health) are provided, and follow-up sessions with specialists can be arranged at 21 centres across the country (Secretaria de Salud, n.d.[57]). Up until August 2021, 178 000 patients with post COVID-19 condition were cared for in the context of Mexico's rehabilitation programme (IMSS, 2021[58]).
- In Costa Rica, PHC also has a central role in providing rehabilitation care post COVID-19. The National Rehabilitation Centre (CENARE) concentrates the provision of these services, with co-ordination and referral of cases provided by PHC units. CENARE's approach is multi-disciplinary, including respiratory, speech, occupational and physical therapy. In order to be enrolled in the programme, the patient must fulfil certain criteria, such as moderate to severe inability in the execution of daily activities or trouble walking. While the comprehensive approach of the programme is a best-practice, it has been criticised due to its concentration in the large metropolitan area of the country, making access more difficult for people living in more remote areas.
- In Bogota (Colombia), a post-COVID recovery unit was inaugurated in a hospital in April 2021. Apart from providing care, this centre conducts studies in order to better understand the magnitude and main characteristics of patient's symptoms. A recent study with 100 adult patients found that most common symptoms were depression and musculoskeletal disorders (Associación Colombiana de Ingenieros de Sistemas, 2021[59]). The Government of Colombia has recently announced the implementation of a policy agenda centred on long-COVID. The strategy aims to improve the care management of long COVID, and includes a series of measures such as conducting national surveys, implementing specific care pathways, and reorganising financial and workforce resources in order to better meet health care demands, such as through training sessions for medical staff.

- Peru's EsSalud has introduced a post-COVID package to treat patients remotely, which includes physical therapy, psychology, nutrition, family health and rehabilitative care modules. The National Telemedicine Centre (CENATE) is comprised of 175 health professionals who are in charge of contacting patients by video call to provide follow-up consultations (Andina, 2021[60]). The telemedicine system for post-COVID condition care has an installed capacity to provide up to 800 teleconsultations per day. If required, co-ordinated care and exams can be conducted with PHC units and hospitals. After one year from its launch in October 2020, EsSalud's comprehensive package has provided more than 194 000 consultations (EsSalud, 2021[61]).

By contrast, Chile's rehabilitation programs for COVID-19 do not seem to be comprehensive enough to meet the growing increase in health care demand. Only patients discharged from hospital after a long stay in ICU (>15 days) are automatically referred to rehabilitation treatment in community rehabilitation rooms at PHC units. For these patients, multidisciplinary teams focused on physical and mental health therapies is provided. However, health authorities' bold strategy to offer treatment for all patients who suffer from long COVID symptoms is currently underperforming due to the already saturated demand for care from people who had long-standing disabilities before the pandemic. Therefore, the absence of specialised therapies, teams and care pathways focusing on long COVID patients can undermine Chile's ambitious plans to tackle this issue.

Across other OECD countries, the United Kingdom has allocated funds to financed research and specialised treatment pathways – so called long COVID clinics – for patients with long-term symptoms following COVID-19 (Box 6.6). Considered as a good practice, such long COVID clinics support a multi-disciplinary approach to clinical care, involving a holistic and comprehensive approach of the disease and its symptoms.

Box 6.6. UK pathways of care for long COVID

The National Institute for Health and Care Excellence (NICE) in the United Kingdom classifies COVID-19 and prolonged symptoms into four categories: acute COVID-19 when symptoms last up to four weeks; ongoing symptomatic COVID-19 when symptoms last from four weeks to 12 weeks; post-COVID-19 syndrome when signs and symptoms last longer than 12 weeks; and long COVID when symptoms persist more than four weeks and includes ongoing symptomatic COVID-19 and post-COVID-19 syndrome.

The United Kingdom has allocated funds to financed research and specialised treatment pathways – so called long COVID clinics – for patients with long-term symptoms following COVID-19. Long COVID-19 clinics support a multi-disciplinary approach to clinical care, involving a holistic and comprehensive approach of the disease and its symptoms. At present, there are around 80 long COVID Clinics in England, which involve referrals from primary health care for patients (both adults and children) experiencing a range of symptoms such as brain fog, anxiety, depression, breathlessness, and fatigue. The health care team comprises general practitioners, physiotherapists, occupational therapists, and psychologist.

Source: 2022 OECD Policy survey on Long COVID-19.

Greater integration between PHC and mental health is required during a pandemic to prevent worsening of mental health in LAC-7 countries

Mental health disorders dramatically increased across OECD and LAC countries during the pandemic. Meta analyses of 62 studies with a total of 196 950 participants found very high prevalence levels of anxiety (35%), depression (35%), distress (32%) and insomnia (35%), with concerning high levels observed amongst health care workers, women and the young population. (Zhang et al., 2022[62]) (WHO, 2022[63]).

Some LAC-7 countries reacted quickly to increase mental health support both for COVID-19 and non-COVID-19 patients with anxiety or depression symptoms. As in many other OECD countries, LAC-7 countries including for example Colombia, Mexico and Chile developed new mental health information and telephone support lines. These platforms and support lines gave tips on coping measures during the COVID-19 crisis and improve access to mental health support. Brazil has also made additional efforts to improve mental health during the pandemic through educational videos and training programs for health professionals and emergency response units aimed at preventing self-harm and suicide, particularly amongst teenagers.

In addition, some countries have made efforts to integrate mental health professionals into PHC team – such as psychologists, social workers and psychiatrists – in an attempt to provide an increasingly wider set of care services for both COVID-19 patients being treated at the PHC level and non-COVID patients. In Colombia and Chile for example, mental health policies and guidelines specifically issued for the pandemic crisis also included recommendations on how to deal with gender-based and domestic violence. In Colombia, when contacting the mental health support line, victims could access support services from psychologists and lawyers in order to denounce cases of violence and receive counselling. In Chile, whilst teleconsultations in mental health were overwhelmingly adopted, face to face sessions could be schedule for extreme cases, one of them being domestic violence episodes.

The level of integration of mental health in PHC during the pandemic was rather heterogeneous across LAC-7 countries. Chile has a long-standing tradition of integrating community-based mental health services in PHC, with pre-existing policy frameworks aimed at addressing mental health symptoms during emergency disaster situations, which was further developed during the pandemic. On the other hand, Mexico has limited human resources and programmes at PHC to deal with these types of conditions, with most care being delivered in specialised clinics, ultimately limiting access to mental health services in the country. During the first year of the COVID-19 pandemic, Mexican health authorities did not involve PHC in caring for people suffering from mental health, with a preference instead for telehealth care being provided by academic and non-governmental organisations.

Greater integration of mental health support into primary health care is required across LAC-7 countries to quickly react and better meet an increasing prevalence of mental ill health during and after a health emergency. This will help LAC-7 countries to absorb and recover from a massive health shock such as the COVID-19 pandemic. Learning from the experience of other OECD countries such as Norway, Lithuania and Slovenia (Box 6.7), LAC-7 countries could better integrate mental health into primary health care to promote well-being and prevent worsening for severe mental ill-health in case of future health emergencies.

Box 6.7. Mental health is being integrated into primary health care in 12 OECD countries

For people with mild to-moderate ill health, low-intensity, low threshold services such as psychological therapies or talking therapies provided in primary health care practice are a way to promote well-being and prevent worsening for severe mental ill-health. In 12 countries primary care practitioners are providing some form of talking therapy, for example brief psychological therapy. Best practice examples come from Norway, Lithuania and Slovenia:

- 62 Norwegian municipalities have established 'Rask psykisk helsehjelp – Prompt mental health care' to improve access to psychological therapy by offering low threshold services without referral, cost or long waiting times, supported by the government with a grant scheme since 2013.
- Lithuania now has more than 100 mental health centres that work alongside with general practitioners and are the first point of contact for people with mental health disorders. These centres consist out of a psychiatrist, psychologist and social workers.
- In Slovenia, community mental health centres are being established (currently there are 10 for adult populations and 11 for child and adolescent populations), at a primary care level, where interdisciplinary work with multiple professionals (psychiatrists, psychologists, social workers, speech therapists, occupational therapists, nurses) are working together.

Source: OECD (2021), *A New Benchmark for Mental Health Systems: Tackling the Social and Economic Costs of Mental Ill-Health*, https://doi.org/10.1787/4ed890f6-en.

Maintaining care continuity for non COVID-19 illness

On top of implementing new models of care to absorb the surge of demand related to COVID-19 needs, primary health care systems also had to face the challenge of ensuring continuity of care for services that were provided before the onset of the pandemic. These include for instance routine care for chronic conditions such as cancer, diabetes, hypertension, but also all procedures for diseases that can be treated at the PHC level. The section shows that in LAC-7 countries, as in many OECD countries, primary health care has been one of the most impacted categories of health services, with high level of disruptions for people having chronic conditions and other non-COVID-19 needs.

Cancer patients have faced high level of disruptions for their routine care in LAC-7 countries

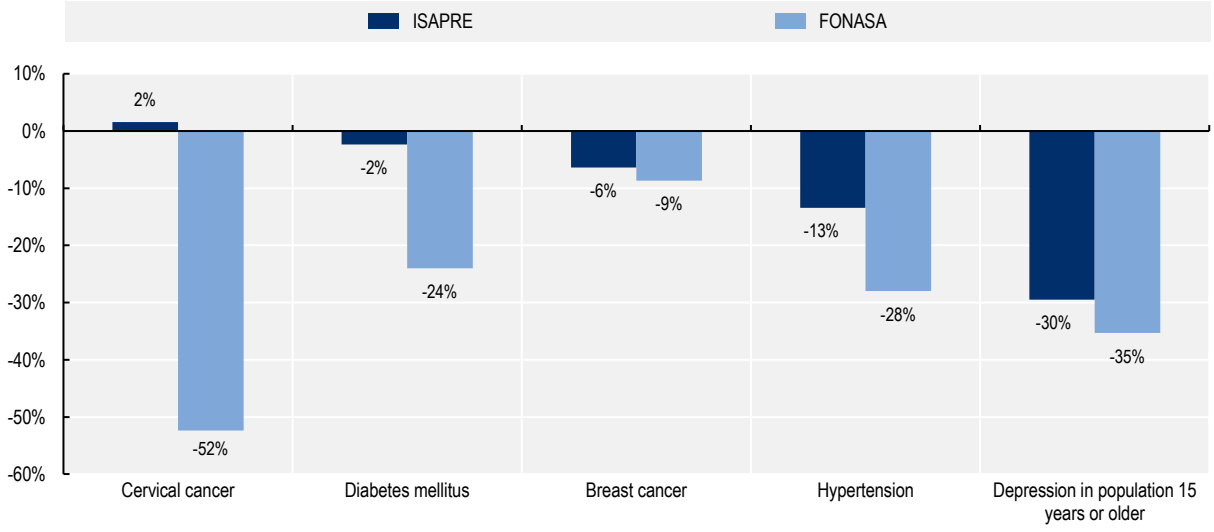
While cancer patients were at higher risk of severe COVID-19 symptoms, they also faced indirect impacts of the pandemic due to disruptions in routine health care related to lock-down and fears of COVID-19 infection in health care facilities. Patients with cancer have high health care needs and are at risk of severe health complications if their conditions are not well managed.

Recent surveys with oncology physicians in the LAC region during the pandemic reveal clear changes in care methods and a perceived decrease in the number of new patients being evaluated when compared with pre-pandemic levels. Out of a group of 704 oncology physicians from 19 LAC countries, 70% reported a reduction of new patients and 72% noticed a decrease in follow-up consultations, whilst 58% affirmed having changed the treatments offered to patients with cancer. Specialty care was also seriously disrupted, with 65% of doctors surveyed reporting delays in referrals to surgical oncology, with 20% saying that surgeries had to be cancelled (Bernabe-Ramirez et al., 2022[64]).

In several LAC-7 countries, available data confirms this worrying scenario:

- In Peru, for instance, a 50% drop in registered cancer cases was observed in 2020 when compared with the previous 4-year average. In the first semester of 2021, a further reduction of 34% was observed when compared with pre-pandemic levels. Out of the 49 cancer registries in health units operating regularly up to the outbreak of the pandemic, a considerable amount of them stopped functioning after COVID-19 hit (MINSA, 2021[65]). Through an analysis of data provided by the Ministry of Health, estimates show that more than 81 000 advanced-stage treatments and more than 21 000 diagnostic consultations for cancer in Peru were not performed – a decrease of 37% between March 2020 and March 2021 (Chávez Amaya, 2021[66]). As a consequence of this steep reduction in care, cancer mortality has increased in the country by 5.3% when comparing 2020 with 2018 values (WHO, 2020[67]).
- Chile is another country in which a steep decrease in cancer care has been reported. Treatment for cervical cancer was reduced on average by 55% between 2019 and 2020 and a further 8% in 2021. When broken down by health care providers, care disruption for cervical and breast cancer, diabetes, hypertension and depression is consistently higher for users of the National Health Fund (FONASA), which provides care for low- and middle-income populations (Figure 6.9). This suggests that the most disadvantaged population were disproportionately impacted by care disruption than high income population who can afford private insurance (Superintendencia de Salud, 2022[68]).
- In Brazil, evidence shows a significant reduction in patient referral for cancer treatment in the South region. There were more than 700 fewer newly referred patients attending a medical appointment from mid-March to late June 2020, a decrease of 42% when compared with the same period in 2019. The study observed a clear negative correlation between the number of appointments per week and the number of COVID-19 cases in Brazil (Borges et al., 2020[69]).

Figure 6.9. Changes in patient admissions between 2015-19 average and 2020 by health care provider in Chile



Note: Admissions refer to all admission in the health care sector, not restricted only to Primary Health Care.
Source: Chile Health Superintendence 2022.

Oncologists and general practitioners managing cancer patients may be able to adapt cancer treatment to limit in-person care when this is medically acceptable. For instance, follow-up and surveillance sessions with patients who have completed their treatments and don't show any acute symptoms might have their appointments done remotely through telehealth (Schrag et al., 2020[70]). However, for high-risk cancer patients, any disruption in care treatment and surgeries will come at high cost, exacerbating health complications and leading to severe health consequences. Recent evidence shows that delaying surgical treatment for cancer by four weeks for bladder, breast, colon, rectum, lung, cervix, and head and neck cancers has previously been estimated to increase the risk of death by about 7%, while a delay of systemic therapy (such as chemotherapy) or radiotherapy by four weeks may increase the risk of death by up to 13% (Hanna et al., 2020[71]).

Hypertension and diabetes care saw steep decrease in patient consultations during the pandemic

Hypertensive and diabetic patients also faced severe challenges to access routine care during the COVID-19 pandemic. Similarly to cancer patients, both conditions are considered as high risk factors for severe COVID-19, making in-person treatment at health facilities challenging in period of high level of COVID-19 incidence (WHO, 2022[72]; OECD, 2021[73]).

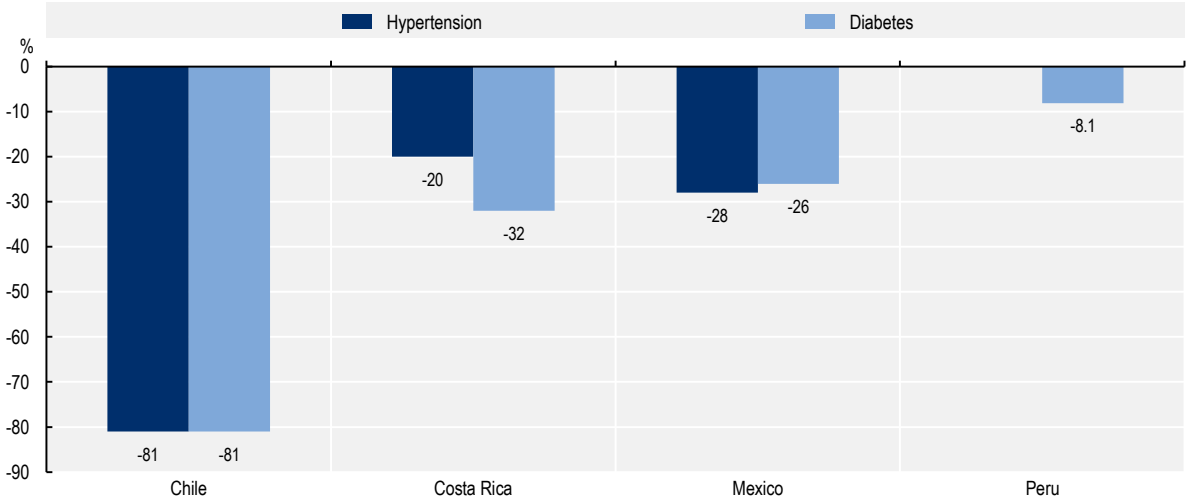
The last round of the WHO Pulse survey on continuity of health care services during the COVID-19 pandemic, which was conducted during the last quarter 2021, shows that 74% of countries reported some level of disruption to diabetes care and 71% to hypertension disease management. The share of countries which recorded over a quarter of disrupted services in diabetes and hypertension care was of 18% and 20%, respectively (WHO, 2022[74]).

Country specific data on patient consultations for hypertension and diabetes care in some LAC-7 countries also revealed worrying signs of care reduction. A recent study comparing 2020 visits from patients in 10 countries with pre-pandemic levels has found a drop of 80% and 26% in diabetes care consultations in Chile and Mexico respectively (Figure 6.10). For hypertension, the reduction was slightly higher, at 81% for Chile and 28% for Mexico (Arsenault et al., 2022[75]). Further studies on continuity of care in Mexico also confirm these findings, indicating a 32% drop for both hypertension and diabetes care consultations and a decline in diagnosed patients with controlled conditions by 17% and 22%, respectively (Doubova et al., 2021[76]).

In Peru, when comparing 2019 with 2020 data, a survey conducted by INEI (National Statistics and Computing Institute) shows a reduction of 8% of diabetes treatment, while no changes are observed for hypertension treatment. There are in addition large disparity in care disruption across socio-economic groups: the reduction in diabetes treatment for patients with primary education or less is twice as high the reduction in diabetes treatment among patients with higher levels of education (11.5% and 6.3%, respectively) (INEI, 2021[77]). Costa Rica also saw considerable variations in PHC consultations during the pandemic, with a decrease of 32% for diabetes patients and 20% for hypertensive patients (CCSS, 2020[78]).

In Argentina and Colombia, a lack of data on consultations or number of patients with controlled primary health care conditions limits the evaluations of the impact of COVID-19 on routine care. A more regular data collection is therefore urgently needed.

Figure 6.10. Reduction in consultations for hypertension and diabetes from 2019-20 in LAC-4 countries (%)



Note: Peru data refers to people with diagnosis treated for selected conditions in the last 12 months, others refer to overall consultations visits for selected conditions.
Source: Arsenault, 2022 for CHL and MEX; INEI, 2021 for PER; CRI from CCSS, 2020.

LAC-7 countries mobilised a set of policies in order to mitigate the sharp reduction in patients' consultations and disruption in routine care at PHC level. For instance, Mexico and Chile implemented strategies to maintain drug adherence from patients, such as the installation of online refills, external pick-up points and community drug delivery (Arsenault et al., 2022[75]). Whenever possible, teleconsultations modalities were also used by PHC providers in order to ensure care continuity. In Costa Rica, for instance, from January to May 2020, out of 680 644 consultations registered at the first level of care, 188 108 were conducted through alternative methods of care (phone or video calls) (CCSS, 2020[79]).

As done in other OECD countries, LAC-7 countries could also consider rearranging tasks and attributing new roles for health workers. Pre-existing workforce shortages in PHC has already motivated some other OECD countries to re-evaluate the scope of practice attributed to health care staff such as nurses and community health workers (see Chapter 7). International evaluations of task shifting for nurse practitioners with proper education and training have proven their capability of improving access to services, reduced waiting times and delivered the same quality of care as doctors for services such as routine follow-up of patients with chronic conditions (Maier, Aiken and Busse, 2017[80]). During the pandemic, several countries have made efforts to issue short-term, fast-track licenses and provide exceptional training to mobilise health care providers and address the surge in demand related to the COVID-19 pandemic. Australia, Austria, Finland, Latvia, Spain, Switzerland, United Kingdom, or the United States for example created new roles and rearranged tasks from both physician and non-physician health workers to maintain care continuity for non-acute COVID-19 cases in the community or at home.

In LAC-7 countries, the role of CHWs and nurses could be further expanded in care management for certain conditions, such as follow-up sessions with patients having chronic diseases, to build the require staff capacity during health emergencies and minimise any care disruption. CHWs in Brazil are already assigned with the task of ensuring and encouraging patients to take their medications (OECD, 2021[45]), one activity that could prove as very relevant to ensure care continuity for patients having chronic diseases. In the United States for example, community health workers provided educational sessions to patients with chronic conditions to help them manage their conditions, they made home-visits, and prepared patients for tele-health appointments. Given the already well developed role of community health workers in patient's

education and counselling in LAC-7 countries (see Chapter 4), their role could be further expanded. As shown in the Chapter 7, investing in PHC workforce will help build stronger health system preparedness and resilience for future pandemic.

Conclusions

Appropriate, flexible and sound disease management policies in primary health care is essential to quickly absorb and recover from a shock as the COVID-19 pandemic. Primary health care has a key role to play by managing COVID-19 care needs in the community in co-operation with hospitals and by keeping people in better health condition through maintaining routine and continuous care.

Even before the outbreak of COVID-19 pandemic, there was scope for improving the quality of primary health care in LAC-7 countries. High rates of avoidable hospitalisations for some primary health conditions (in particular for CHF and diabetes), low breast and colon cancer survival rates, and overconsumption of antibiotics signal poor management of diseases at primary health care level, with performance consistently falling behind other OECD countries. Systematic differences in patient's experiences between users of public and private sectors in countries such as Colombia, Mexico and Brazil, suggest also inappropriate people centred-care.

Bottlenecks in the strength of primary health care has led to a mixed response to place primary health care at the centre of the COVID-19 response. While in the early phase of the pandemic the majority of policy actions have focused on hospital care, some LAC-7 countries with stronger primary health care have activated primary health care and community services to reduce pressure on the health system and minimise complications and direct death from the COVID-19 crisis. In fact, there are good local experiences where primary health care has been effective to respond to the surge in demand, through for example the use of existing primary health care facilities to meet COVID-19 health needs (such as Costa Rica, Chile and Brazil), making quick and effective referral to hospitals and develop new model of organisation such as home visit (such as Costa Rica and Mexico) and telehealth (such as Colombia and Argentina). For example, Colombia capitalised on previous expansions of its remote care system to drastically expand the number of providers authorised to practice telemedicine. In Mexico, new models of home-based care were develop with the support of CHWs to provide follow-up consultations for COVID-19 patients. Mexico's *Brigadas Especializadas* is a good policy framework that combines CHWs and other medical professionals organised in co-ordinated teams with different set of responsibilities to reach out high risk patients, working in close collaboration with local PHC units. However, in Peru or Argentina, insufficient infrastructure, a lack of workforce and the fragmentation of PHC services between regions has led to a limited involvement of primary health care in COVID-19 management and poor co-ordination between PHC and hospital.

Growing evidence demonstrates the dramatic impact of COVID-19 on care continuity, especially those having high health care needs. While the level of care disruption widely varied across LAC-7 countries, routine care for chronic conditions such as cancer, hypertension and diabetes has been delayed. In Peru, for example, a 50% drop in registered cancer cases was observed in 2020 when compared with the previous 4-year average. In Chile, treatment for cervical cancer was reduced on average by 55% between 2019 and 2020 and a further 8% in 2021. There are also high level of disparities in care disruption between public and private providers in some countries. Amongst countries with available data for private and public health care providers, such as Chile and Brazil, more accentuated drops in consultations were observed among users of the public system, which are the most disadvantaged population. Going forward, the changes introduced during the COVID-19 to move care towards primary health care should be maintained and policies aim at reducing backlogs must be implemented urgently, prioritising medical outreach for the most disadvantaged population.

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Note

[1] See Supreme Decree No. 005-2021- SA (2021) that approves the Regulation of Law No. 30421, Telehealth Framework Law, and Legislative Decree No. 1490, Legislative Decree that strengthens the scope of Telehealth, https://www.gob.pe/institucion/presidencia/normas-legales/1599291-005-2021-sa.

7 Building resilient primary health care systems requires investments in health workforce

Strengthening health workforce capacity is vital to building resilient health systems that not only address the evolving health needs but also absorb shocks during health emergencies. Across LAC-7 countries, the availability of physicians, general medical practitioners, nurses, and midwives improved over the last two decades. But most LAC-7 countries continued to lag the OECD average in terms of health worker availability. In 2020, all LAC-7 countries experienced shortages in the density of physicians, nurses, and midwives. The gaps between the demand for and supply of health workers are projected to persist in all LAC-7 countries by 2030, with the projected gaps in health worker availability widening in the majority of LAC-7 countries. Considering these trends and projections, the chapter provides a review of the ways in which LAC-7 countries assess their current and future health workforce needs to help inform investment decisions to strengthen health workforce capacity.

Introduction

The COVID-19 pandemic underscored the centrality of investments in human resources for health (HRH) to ensure the evolving health needs of the population are met without interruptions even in the context of health emergencies.

An emerging body of evidence from OECD countries demonstrates that countries with a track record of investing in the HRH capacity of their PHC systems reaped benefits in the course of the COVID-19 pandemic. For instance, prior to the onset of the pandemic, Canada published a new pandemic preparedness plan, which tasked the PHC system with assessing and treating infected patients (Pan-Canadian Public Health Network, 2018[1]). In line with this pandemic plan, multi-disciplinary PHC teams played a key role in managing mild COVID-19 cases within community settings throughout the course of the pandemic. Another example comes from Austria, where multi-disciplinary PHC teams were tasked with the triage and registration of suspected COVID-19 cases, organised testing, and provided care for COVID-19 patients (Pichler, Frühwald and Burgmann, 2020[2]). Other innovative practices at national and sub-national level were also implemented across LAC-7 countries (see Chapters 4, 5, 6).

A key first step in informing efforts to scale up investments in strengthening HRH capacity is assessing current and future health workforce needs (Box 7.1). HRH assessments look at the interplay between demand for and supply of health workers. An oversupply of health workers can mean unemployment among qualified and trained stuff. It also means a waste of limited resources because training medical staff necessitates substantial investments. Conversely, an undersupply of health workers can result in unmet need for care, which is associated with adverse population health outcomes, declines in the quality of care and patient satisfaction. In recognition, efforts to assess HRH needs aim to understand actions needed to achieve a balance between the demand for and supply of health workers. These assessments can help inform policy decisions around the intake of students that will provide the basis for the future health workforce; examine the impact of retirement and immigration policies that influence the stock of available health workers; and assess the impact of HRH reforms.

The goal of this chapter is to review the landscape of health workforce in LAC-7 countries. The chapter starts by documenting the recent trends in the density of physicians, general medical practitioners, nurses, and midwives. This analysis is based on data gathered from OECD databases (OECD, 2022[3]), World Health Organization (WHO) National Health Workforce Accounts Database (WHO, 2021[4]) and official data sources. Next, the chapter turns its attention to assessing the future HRH needs in LAC-7 countries. Results are based on a novel OECD forecast of demand for and supply of health workers by 2030 using country-aggregated data extracted from publicly available datasets and government records. Motivated by the finding that most LAC-7 countries are projected to face widening gaps between the demand for and supply of health workers, the Chapter, then, switches its attention to a comparative assessment of the key features of HRH assessments in LAC-7 countries. Specifically, it looks at:

- the level of decentralisation of tasks and responsibilities associated with HRH assessments;
- data infrastructure and needs to facilitate economic assessment of labour market dynamics in the health sector; and
- methodologies deployed in LAC-7 countries to assess the demand for and supply of health workers.

Findings are generated based on semi-structured interviews with government officials and experts, as well as reviews of academic and grey literature including government reports and documents, and responses by experts to an OECD survey on HRH planning. While the reviews of the literature attempt to be as comprehensive as possible, there may be relevant studies or HRH assessments that may have been missed.

Box 7.1. Why assess current and future health workforce needs?

The COVID-19 pandemic renewed attention to the centrality of investing in health workforce as one of the vital strategies to strengthen the resilience of health systems

The COVID-19 outbreak took a staggering toll on the health workforce around the world. Globally, approximately 7%-11% of health professionals are estimated to have been infected with SARS-CoV-2 (Gómez-Ochoa et al., 2020[5]), with marked geographic differences in the burden of infections. Recently, the WHO estimated that, globally, 80 000 to 180 000 health and care workers lost their lives due to COVID-19 between January 2020 and May 2021, corresponding to about 2-5% of all attributable deaths in the same period (WHO, 2022[6]). Importantly, attributable mortality among health and care workers in the Americas region is estimated to account for more than half of the global death toll among health and care workers (WHO, 2022[6]). Investing in the health workforce is not only paramount to avoiding preventable loss of life, but also crucial to ensure the health needs of the population are met without risking interruptions even in the context of health emergencies.

Demographic, epidemiologic, socio-economic trends

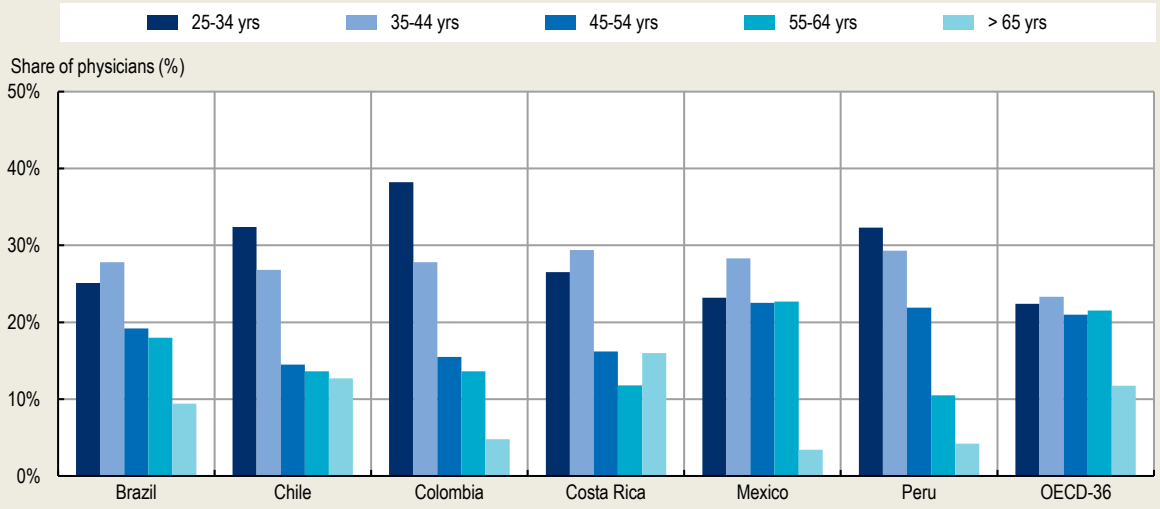
In recent years, all LAC-7 countries undergone profound evolutions in their population structures and demographic profiles (see Chapter 3). Thanks to substantial declines in mortality, driven particularly by declining mortality rates among young children, resulted in rapid population growth over the last two decades (World Bank, 2022[7]). All LAC-7 countries experienced declines in fertility rates, in conjunction with ageing populations (World Bank, 2022[7]). Over the last two decades, life expectancy and healthy life expectancy were rising in all LAC-7 countries until the advent of the COVID-19 pandemic (WHO, 2022[8]). Today, non-communicable diseases are the leading cause of death in all LAC-7 countries, with mortality attributable to cardiovascular disease, cancer, diabetes, and chronic respiratory disease make up 10%-16% of all-cause mortality (World Bank, 2022[7]).

Combined, changes in population structures and demographic profiles promise to have notable effects on health service provision, particularly the delivery of primary care services. In all LAC-7 countries, health needs are evolving in response to longer life expectancy and healthy life expectancy and the persistent burden of non-communicable diseases and chronic conditions. Without a robust emphasis on disease prevention, ageing populations will precipitate a rise in health expenditures. Together, these trends necessitate a significant shift in demand for health services, as well as the type and quality of care required to meet the population health needs. Deficits and shortages in health workforce will exacerbate the existing unmet needs and impact population health outcomes over time.

The profile of health workers is evolving

In all LAC-7 countries, health workforce is marked by a relatively young population compared to the general population (Figure 7.1). Today, the estimated proportion of physicians who are between 25 to 34 years of age ranges from 23% in Mexico to 38% in Colombia (WHO, 2021[4]).Similarly, in Brazil, more than one-third of physicians are estimated to be younger than 35 years of age (Scheffer, 2020[9]). Moreover, the COVID-19 pandemic further highlighted the importance of gender-sensitive approaches to inform the development of health workforce (OECD, 2021[10]; OECD, 2022[11]; OECD, 2020[12]). In addition to these changes, policies concerning the retirement and immigration of health workers influence the profile of health workers available in each country. Examining these changes in the profile of health workers is crucial to ascertain the challenges facing health workers and to help develop policies that influence their career choices and achieve a better match between job vacancies and individual preferences.

Figure 7.1. The share of physicians by age categories, the latest year



Notes: Data for Chile, Colombia and Costa Rica are for the year 2020. Data for Brazil are for the year 2018. Data for Mexico and Peru are for the year 2017. OECD-36 average is calculated based on data for the latest year available gathered for Australia, Austria, Belgium, Canada, Chile, Colombia, Costa Rica, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, Norway, Portugal, Korea, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Türkiye, United Kingdom, United States.
Source: WHO (2021[4]), WHO National Health Workforce Accounts Database, https://apps.who.int/nhwaportal/.

User expectations are shifting

There is substantial room for improvement in patient perceptions of PHC system performance in LAC-7 countries. One recent study found that in Mexico, only about 38% of patients who reported having a regular general practitioner (GP) or a place of care indicated that the GP quality was very good or excellent, whereas this figure stood at 32% in Brazil and 30% in Colombia (Macinko et al., 2016[13]). As LAC-7 countries are striving to improve the quality of care, they will need to respond to user expectations.

It takes time and resources to reap the benefits of interventions that aim to improve the availability and capacity of health workers

Broadly, the highly complex nature of many clinical functions means that health workers who are trained in one technical field cannot simply be redeployed in another technical area to fill the existing gaps. With this constraint in mind, effective HRH planning must ensure that the gaps between the need for and availability of skills are anticipated in time for corrective action to be taken.

Global and regional experiences demonstrate that countries have in their arsenal a large menu of policy options to invest in their health workforce, but it may take time to reap the benefits for these interventions. For instance, some countries may choose to focus on increasing the admissions in medical and nursing education; re-designing initial education and training programs to ensure that the future generation of health workers are armed with the right set of skills that are fit for practice; investing in continuous professional development to ensure the skillset of already practicing health workers reflect the latest developments in technological advancements and job requirements; and putting in place hiring and retention policies to ensure health worker availability across various communities (OECD, 2016[14]).

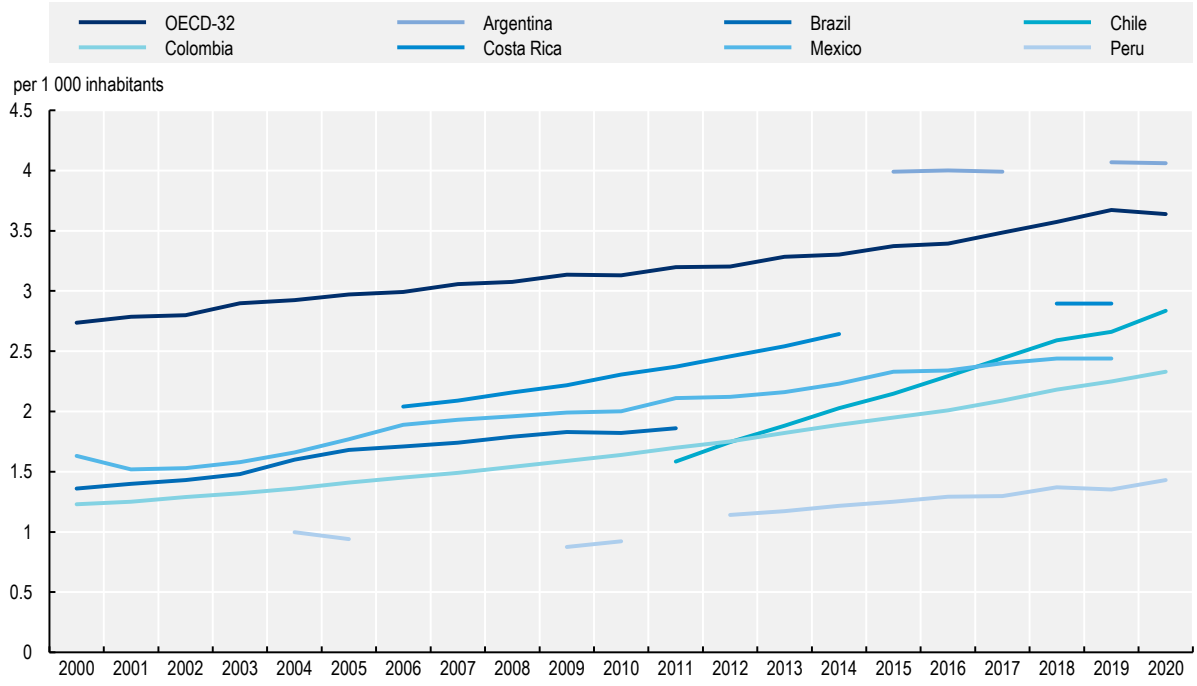
Alternatively, other strategies that can be deployed in a relatively short period either by expanding recruitment opportunities, introducing new categories in the health workforce (e.g. community health workers) or expanding the role of existing categories of health workers, offering flexible career opportunities and non-traditional programs that enable entry into the health workforce (e.g. recruitment programs for foreign trained health workers). While these types of strategies can offer a means to improve the availability of health workers in a relatively shorter period, they can also mean changes in the ways health services are provided and financed, and re-thinking regulations around professional education, quality standards and accreditation practices. Even when these policies are introduced in a relatively shorter period, available evidence demonstrates that it may take time for the beneficial effects of these policies to become observable on population health over time.

Notes: National experts from Mexico estimate that the proportion of practitioners is between 25 and 34 years of age corresponds to about 38%.

Recent trends in health worker availability in LAC-7 countries suggest an expansion of the health workforce

Over the last two decades, the density of physicians improved in all LAC-7 countries, though in most LAC-7 countries, the density of physicians remained below the OECD average (Figure 7.2). In Argentina, the density of physicians remained relatively stable, with a modest increase from 3.2 to 4.1 physicians per 1 000 inhabitants from 2001 to 2020. In this period, Brazil also experienced an expansion in the availability of physicians, though estimates vary depending on the data source (Scheffer, 2020[9]). In Brazil, the number of physicians per 1 000 inhabitants increased from 1.4 in 2000 to 2.3 in 2019. In Chile, physician density increased substantially between 2010 and 2020, rising from 1.6 to 2.8 per 1 000 inhabitants. Costa Rica also experienced an increase in physician density, with the number of physicians increasing from 2 to 2.9 per 1 000 inhabitants from 2006 to 2019. In Colombia, the density of doctors nearly doubled from 2000 to 2020, with the number of physicians increasing from 1.2 to 2.3 per 1 000 inhabitants. Physician density in Mexico also increased markedly and reached 2.4 per 1 000 inhabitants in 2019 from 1.6 in 2000. In Peru, according to the data reported by the Ministry of Health (MoH) and regional governments, the number of physicians per 1 000 inhabitants rose from about 1.1 in 2000 to 1.4 in 2020. Despite these improvements, in most LAC-7 countries, the density of physicians remained below the OECD average of 2.79 per 1 000 inhabitants in 2000 and 3.64 per 1 000 inhabitants in 2020.

Figure 7.2. The number of practicing physicians per 1 000 inhabitants, various years



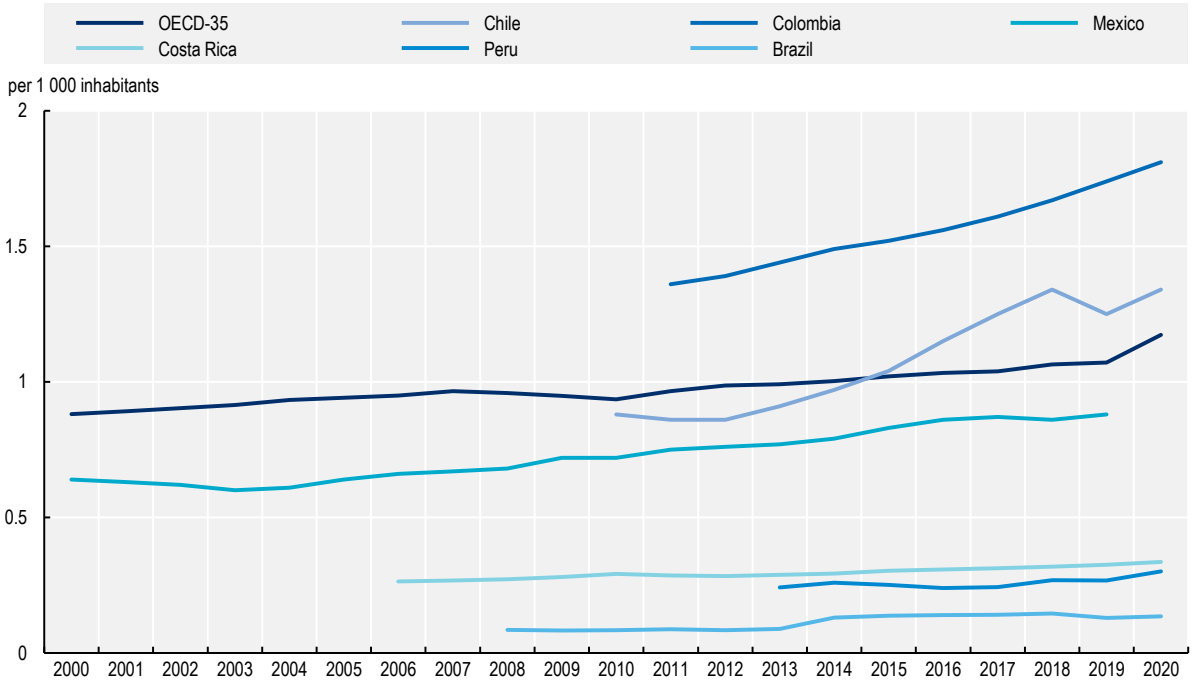
Notes: OECD-32 average is calculated based on data for the latest year available gathered for Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, United Kingdom, and the United States.

Source: Data on the number of practicing physicians per 1 000 inhabitants for all LAC-7 countries except Argentina, Chile, Costa Rica, and Peru were extracted from OECD (2022[3]), OECD Data. Data for Argentina, Chile and Costa Rica were taken from the WHO (2021[4]), National Health Workforce Accounts, https://apps.who.int/nhwaportal/. Data for Costa Rica correspond to information collected by the Social Security Funding and may not reflect all of the providers in the public and the private sector. Data for Peru were taken from the bibliographical series of human resources in health that were reported by regional governments and the Peruvian General Directorate of Health Personnel (2021[15]), http://digep.minsa.gob.pe/publicaciones/bibliografica.html.

There has also been an expansion in the density of general medical practitioners in many LAC-7 countries, though in many LAC-7 countries the density of general medical practitioners remains below the OECD average (Figure 7.3). Standardised information on the availability of general medical practitioners that can facilitate cross-country comparisons is sparse. Despite this, the extant data suggests improvements in the density of general medical practitioners in LAC-7 countries in the last two decades. From 2010 to 2020, Chile experienced an increase in the density of general medical practitioners from 0.9 to 1.3 per 1 000 inhabitants. Similarly, Colombia saw an expansion of its general medical practitioner capacity, with the number of practitioners increasing from 1.4 to 1.8 per 1 000 inhabitants from 2011 to 2020. While Mexico also experienced an increase in the density of general medical practitioners over the last two decades, this increase had a much smaller pace compared to Chile and Colombia. In Mexico, the density of general medical practitioners increased from 0.6 to 0.9 per 1 000 inhabitants from 2000 to 2019. Brazil also saw an increase in the number of practitioners that work at the PHC level, though these data are not directly comparable to those from Chile, Colombia and Mexico. According to data gathered from national data sources, in Brazil, the number of family and community doctors and physicians that work under the umbrella of Family Health Strategy programme and community physicians per 1 000 inhabitants increased from 0.08 in 2008 to 0.13 in 2020. For Costa Rica, data covers only primary health care physicians from 2007 to 2020. Costa Rica saw improvements in the density of PHC physicians. Between 2006 and 2020, the number of PHC physicians increased from 0.26 to 0.34 per 1 000 inhabitants. In Peru, the number of

PHC physicians per 1 000 inhabitants increased from 0.2 to 0.3 per 1 000 inhabitants from 2009 to 2020. Combined, these trends suggest that the density of general medical practitioners remained below the OECD average over the last two decades, where the number of general practitioners increased from 0.9 to 1.2 per 1 000 inhabitants from 2000 to 2020.

Figure 7.3. The number of general medical practitioners per 1 000 inhabitants, various years



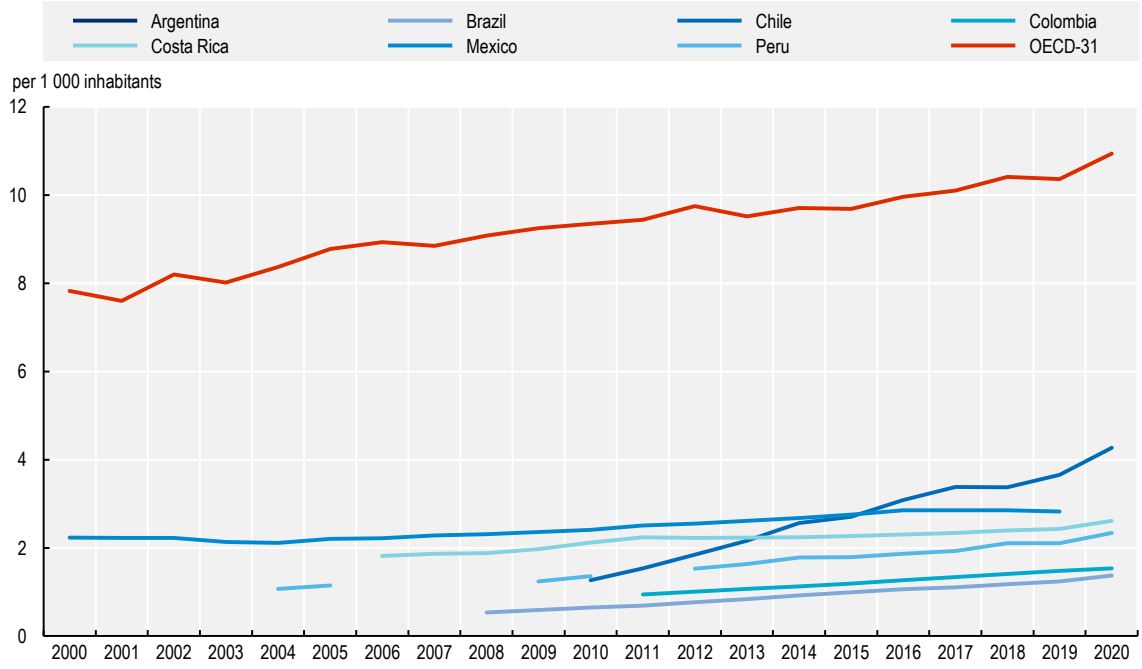
Notes: OECD-35 average is calculated based on data for the latest year available gathered for Australia, Austria, Belgium, Canada, Chile, Colombia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, Türkiye, United Kingdom, and the United States. For Chile, Colombia and Mexico, as well as other OECD countries, general medical practitioners include general practitioners, district medical doctors, therapists, family medical practitioners, primary health care physicians, medical doctors (general), medical officers (general), medical interns or residents specialising in general practice or without any area of specialisation yet. Data for Chile covers the years from 2010 to 2020 (inclusive). Data for Colombia covers the years from 2011 to 2020 (inclusive). Data for Mexico covers the years from 2000 to 2019 (inclusive). Data for Brazil covers family and community doctors registered in the Federal Council of Medicine and doctors working in the Family Health Strategy for the years 2008 to 2020. For Costa Rica, data covers only primary health care physicians from 2007 to 2020. For the years prior to 2006, information on the number of primary health care physicians in Costa Rica were gathered using a different methodology, which prevents comparative assessment of historical trends. Data for Peru covers only primary health care physicians that were reported by regional governments and the MoH from the year 2014 to 2020.

Source: For Colombia, Chile and Mexico, data are extracted from OECD (2022[3]), OECD Data. For Brazil, data were extracted from (National Registry of Health Establishments in Brazil (2022[16]), http://tabnet.datasus.gov.br/cgi/tabcgi.exe?cnes/cnv/prid02br.def. For Costa Rica, data were obtained through national experts based on information from the Health Services Projection Directorate, Analysis and Projection Area of Historical Health Services (2006-21). Data for Costa Rica correspond to information collected by the Social Security Funding and may not reflect all of the providers in the public and the private sector. For Peru, data were taken from the bibliographical series of human resources in health, Peruvian General Directorate of Health Personnel (2021[15]), http://digep.minsa.gob.pe/publicaciones/bibliografica.html.

In LAC-7 countries, the density of nurses and midwives remained relatively stable over the last two decades though the density of nurses and midwives remained below the OECD average. (Figure 7.4). Information on the availability of nurses and midwives is sparser compared to data on physicians. Data gathered largely from national data sources in LAC-7 countries suggest that the density of nurses and midwives improved modestly in most countries. Specifically, in Argentina, historical data that tracks the number of nurses and midwives over time is largely unavailable. The existing datasets suggests that in

2004, the density of nurses and midwives stood at 0.5 per 1 000 inhabitants compared to 0.4 in 2001. In Brazil, the density of nurses and midwives has been on the rise, with an increase from 0.5 to 1.4 per 1 000 inhabitants from 2008 to 2020. Chile also experienced improvements in the density of nurses and midwives who are licensed to practice from 1.3 to 4.3 per 1 000 inhabitants from 2010 to 2020. Colombia also saw enhancements in the availability of nurses and midwives, but these improvements occurred at a much slower pace compared to Brazil and Chile. In Colombia, the density of nurses and midwives increased from 0.9 in 2011 to 1.5 in 2020 per 1 000 inhabitants. Costa Rica is another LAC-7 country that experienced steady improvements in the availability of nurses and midwives over time. From 2006 to 2020, the density of nurses and midwives increased from 1.8 to 2.6 per 1 000 inhabitants. Over the last two decades, Mexico achieved modest improvements, with the number of nurses and midwives increasing from 2.2 to 2.8 per 1 000 inhabitants from 2000 to 2019. Finally, in Peru, the density of nurses and midwives more than doubled in the last two decades, increasing from 0.9 to 2.3 from 2000 to 2020. While these trends generally point to improvements in the availability of nurses and midwives, it is important to note that the density of nurses and midwives remained below the OECD average in most LAC countries except Chile, where the OECD average increased from 7.8 to 10.9 per 1 000 inhabitants from 2000 to 2020.

Figure 7.4. The number of nurses and midwives per 1 000 inhabitants, various years

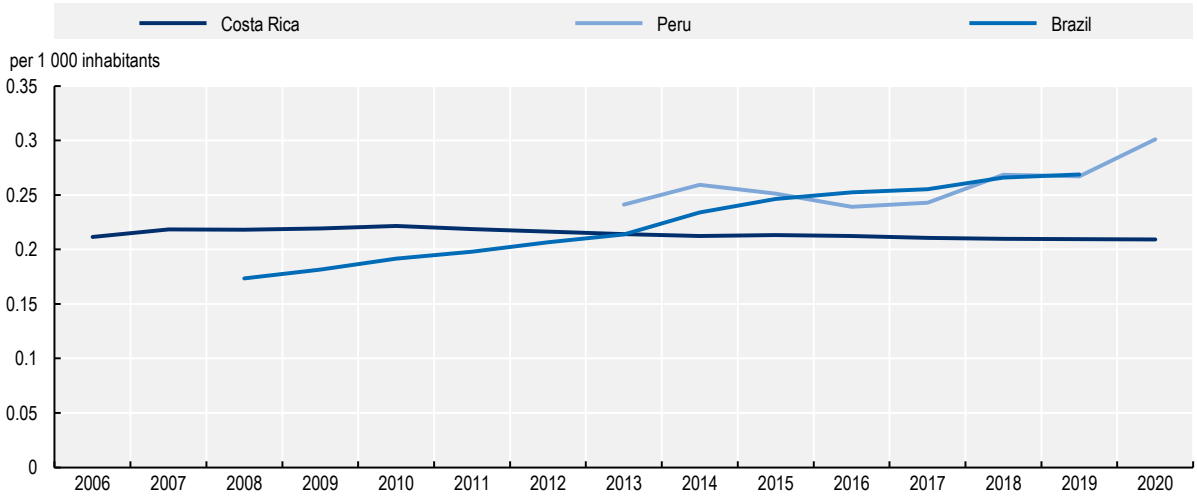


Notes: Data for Colombia and Mexico represents only nurses. OECD-31 includes Austria, Australia, Belgium, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Slovenia, Spain, Sweden, Switzerland, United Kingdom. Data extracted from OECD (2022[3]) OECD Data reports the number of practicing nurses and midwives for each country expect Chile. For Chile, data reported in the graph above reports the number of nurses and midwives who are licensed to practice because this country currently does not report the number of practicing nurses and midwives to the OECD (2022[3]) OECD Data.

Source: For Colombia, Chile and Mexico, data are extracted from OECD (2022[3]) OECD Data. Data for Brazil were extracted from National Registry of Health Establishments in Brazil (2022[16]), http://tabnet.datasus.gov.br/cgi/tabcgi.exe?cnes/cnv/prid02br.def. Data for Brazil covers the following nursing categories: nurse, Stomach Therapist Nurse, auditor Nurse, community agent strategy nurse, family health strategy nurse, flight nurse, surgical centre nurse, intensive care nurse, occupational nurse, nephrologist nurse, neonatologist nurse, obstetric nurse, psychiatric nurse, childcare and paediatrics nurse, sanitary nurse, family health nurse, and other nurses. For Costa Rica, data were obtained through national experts based on information from the Health Services Projection Directorate, Analysis and Projection Area of Historical Health Services (2006-21). Data for Costa Rica correspond to information collected by the Social Security Funding and may not reflect all of the providers in the public and the private sector For Peru, data were taken from the bibliographical series of human resources in health, Peruvian General Directorate of Health Personnel (2021[15]), http://digep.minsa.gob.pe/publicaciones/bibliografica.html.

Over the last two decades, the number of PHC teams expanded rapidly in Brazil and Peru whereas the number of PHC teams remained relatively stable in Costa Rica (Figure 7.5). Brazil experienced a rapid expansion of PHC teams over the last decade, with the number of PHC teams per 1 000 inhabitants rising from 0.17 in 2008 to 0.27 in 2019. Similarly, in Peru, the number of PHC teams grew by 38% over the past decade, reaching 0.30 PHC teams per 1 000 inhabitants in 2020. In comparison, the number of PHC teams remained relatively stable in Costa Rica, standing at around 0.21 per 1 000 inhabitants between 2006 and 2020.

Figure 7.5. The number of PHC teams per 1 000 inhabitants, various years



Source: Data for Brazil is extracted for all types of PHC teams, National Registry of Health Establishments in Brazil (2022[16]), http://tabnet.datasus.gov.br/cgi/tabcgi.exe?cnes/cnv/prid02br.def. For Costa Rica, data were obtained through national experts based on information from the Health Services Projection Directorate, Analysis and Projection Area of Historical Health Services (2006-21). Data for Costa Rica correspond to information collected by the Social Security Funding and may not reflect all of the providers in the public and the private sector. For Peru, data were taken from the bibliographical series of human resources in health, Peruvian General Directorate of Health Personnel (2021[15]), Information on Human Resources in the Health Sector, http://digep.minsa.gob.pe/publicaciones/bibliografica.html.

Assessing the current and future HRH needs in LAC-7 countries is a complex process

General framework used by the OECD to assess current and future HRH needs in LAC-7 countries

Understanding the factors that influence the current and future HRH needs is a complex process. In recognition, as shown in Figure 7.6, the remainder of the chapter makes use of a general framework for a systematic assessment of the current approaches used by LAC-7 countries to understand the current and future HRH needs (Ono, Lafortune and Schoenstein, 2013[17]). This framework is also used to inform the development of the OECD forecasting model on health workforce needs in LAC-7 countries up to the year 2030 (Box 7.2).

This framework recognises that the current and future HRH needs are tightly linked with the organisation of the health system, and that policies to strengthen the resilience of the health workforce should not be made in isolation from the broader goals and objectives. In accordance with this framework, the supply of health workers refers to the total number of health workers with appropriate qualifications and skills who are willing to accept employment in the health sector and able to match with available vacancies. The

current and future supply is expressed a function of inflow and outflow of health workers, as well as the activities of the current stock of health workers (e.g. working hours) (Ono, Lafortune and Schoenstein, 2013[17]). In comparison, demand for health workers is considered as a combination of willingness and ability of all of the health care purchasers or funders in the health system to have health workers in place to deliver health care services. The current and future demand for health services, and health workers, is expressed as a function of a wide host of factors including demography, epidemiology, health service utilisation and care delivery models, and gross domestic product (GDP) and growth in health spending, as well as other health financing arrangements (e.g. health insurance coverage) and technological advancements (Ono, Lafortune and Schoenstein, 2013[17]).

Figure 7.6. General framework used by OECD analysis to examine current approaches used by LAC-7 countries to assess HRH needs



Source: Adapted from Ono, Lafortune and Schoenstein (2013[17]), "Health Workforce Planning in OECD Countries: A Review of 26 Projection Models from 18 Countries", https://doi.org/10.1787/5k44t787zcwb-en.

A number of challenges may hinder the application of this framework at the country level. In particular, the dearth of information on various drivers of demand for and supply of health workers makes it difficult to assess HRH needs accurately. On the supply side, data on inflow and outflow of health workers are not always readily available. Similarly, information on the current stock of health workers is often not collected. On the demand side, basic approaches that examine health worker to population ratios (e.g. physician-to-population ratios) do not typically impose heavy data requirements. Moreover, information on demographic variables like the age structure of the population is often available. However, other types of information such as health service utilisation by disease categories, as well as age and sex, is often not available in a systematic manner. Even when this information is available, it is not always straightforward to assess how current health care utilisation patterns will influence the current and future HRH needs.

Box 7.2. Methodology used by the OECD to forecast health workforce needs in LAC-7 countries

The OECD analysis provide estimates for the demand for and supply of health workers in LAC-7 countries from 2020 to 2030

The OECD analysis rests on a longitudinal dataset that was built by merging information from multiple publicly available datasets covering the years from 2000 to 2019. Health worker types included in the analysis are physicians, nurses, and midwives. This approach was taken with the recognition that the skill-mix across health professionals vary across LAC-7 countries, as well as the level of task shifting across different professionals. These considerations are particularly important in the context of the delivery of primary care services. The main outcome of interest is health worker density per 1 000 inhabitants. Country-aggregated data on health worker density was extracted from the OECD Data whenever possible. For countries where data were not available, information was gathered from the WHO National Health Workforce Accounts Database and national data sources.

Countries can deploy several approaches to assess their future health workforce needs, with each method offering a varying set of strengths and weaknesses. One approach to forecast health workforce needs is *needs-based forecasting of health workers.* Broadly, needs-based approaches attempt to ascertain the number of health workers that would be needed to achieve a pre-defined, desired level of health coverage goal identified by the researcher (e.g. skilled birth attendant benchmark, Sustainable Development Goal Composite Index etc.) (Scheffler, Herbst and Lem, 2016[18]). While needs-based approaches consider demographic factors in their framework, results generated by these approaches strongly depend on the ways in which the desired public health goal is defined. Moreover, these approaches rest on the assumption that meeting the desired level of health coverage does not come at the expense of the delivery of other health care services, and that health workers would be able to provide care not only for the desired services but across all other health domains (Scheffler, Herbst and Lem, 2016[18]).

Alternatively, countries can rely on *demand-based* approaches to quantify future health workforce needs. Demand-based approaches allow for incorporating demographic factors and dynamics around access to health care services. Importantly, demand-based approaches also shed light on the extent to which the broader economy can support expansion of the health workforce. These approaches assume that, even if the level of health care provision is below desirable levels, countries may be willing to exceed their existing ability to pay for the production of new health workers (Scheffler, Herbst and Lem, 2016[18]).

The OECD analysis presented in this chapter is based on a demand-based approach. In line with the general framework described earlier (Ono, Lafortune and Schoenstein, 2013[17]), the demand for health workers was expressed as a function of each country's demographic characteristics, the level of socio-economic development, and health care coverage. Findings from previous studies suggest that the demand for health care services rises with population ageing, which results an increased demand for health workers (Liu et al., 2017[19]; Scheffler, Herbst and Lem, 2016[18]; Scheffler et al., 2016[20]). Similar to earlier studies, in the OECD analysis, the demographic characteristics of the population was captured by using a variable that tracked the proportion of population 65 years and older (Scheffler and Arnold, 2018[21]). Data on this variable was extracted from the United Nations Population Department for the years covering 2000 to 2019, as well as projections up to 2030.

Earlier studies both from OECD countries and from low- and middle-income countries demonstrated that the level of economic development is another important predictor of demand for health workers (Scheffler and Arnold, 2018[21]; Liu et al., 2017[19]). Further, in many countries, health worker salaries and additional benefits account for a significant proportion of total health spending (ibid). In the OECD

analysis, the level of socio-economic development is captured by the level of national income up to the year 2030, expressed as real GDP per capita estimated generated by the United States Department of Agriculture Economic Research Service from 2000 to 2030 (USDA Economic Research Service, 2022[22]). Another important predictor of demand for health workers is the level of health care coverage (Ono, Lafortune and Schoenstein, 2013[17]). In OECD projections, the level of health care coverage is assessed by out-of-pocket (OOP) spending as share of total health expenditure. Previous studies suggested an inverse association between the level of OOP spending and demand for health service utilisation, which can result in lower demand for health workers (Liu et al., 2017[19]). Data on OOP spending as share of total health expenditure were extracted from the projections developed by the Institute of Health Metrics and Evaluation up to the year 2030.

On the supply side, several methodological approaches exist in the literature to forecast the future supply of health workers (Scheffler, Herbst and Lem, 2016[18]). In the OECD analysis, the supply of health workers is forecasted up to 2030 based on the historical growth rate for each health worker type in each country from 2000 to 2020. Compared to other analytical methods to forecast the supply of health workers such as ARIMA and moving average/distributed lag, quantifying supply through historical growth rates offer a relatively straightforward strategy with the least amount of data requirements (Liu et al., 2017[19]). This approach assumes that, without policy action, the supply of health workers in each country will continue to grow at pace equivalent the growth rate that was observed over the last 20 years.

The modelling framework used in the OECD analysis makes use of multiple imputation techniques to address missing historical values based on priors. The OECD forecasts of health worker density are based on generalised linear modelling techniques that consider time-invariant differences in the characteristics of countries. The model specifications include lags, because health workforce planning is typically carried out based on the budgets and resources available in previous years. The models incorporate uncertainty around estimates stemming from addressing missing values through multiple imputation, model selection and specification. Several sensitivity analyses were conducted to ascertain the highest performing models, including functional forms and model specifications.

The OECD forecasts have several limitations. First, the precision of the OECD projections relies on the validity of information extracted from publicly available data sources and administrative datasets. The OECD estimates do not consider the changes in health worker productivity over time, nor do they consider potential changes in the scope of practice for each type of health worker. Further, the OECD forecasts do not consider the potential impact of policies focusing on improving recruitment and retention rates among health workers, nor do they consider trends in migrations of health workers over time. However, differences in these factors may result in significant changes in the stock and distribution of health workers over time, which may increase or offset the need for health workers. The supply of health workers was projected based on historical growth rates, but this approach relies on assumptions around functional form, which may result in less accurate estimates compared to those generated using other methods. Additionally, the OECD projections do not account for the changes in the disparities in the distribution of health workers within each country over time. This means that even in countries where no deficit is estimated in the number of health workers by the OECD analysis, there may be challenges concerning the distribution of health workers within the country that are not observed in the analysis.

Assessing current and future HRH needs in LAC-7 countries

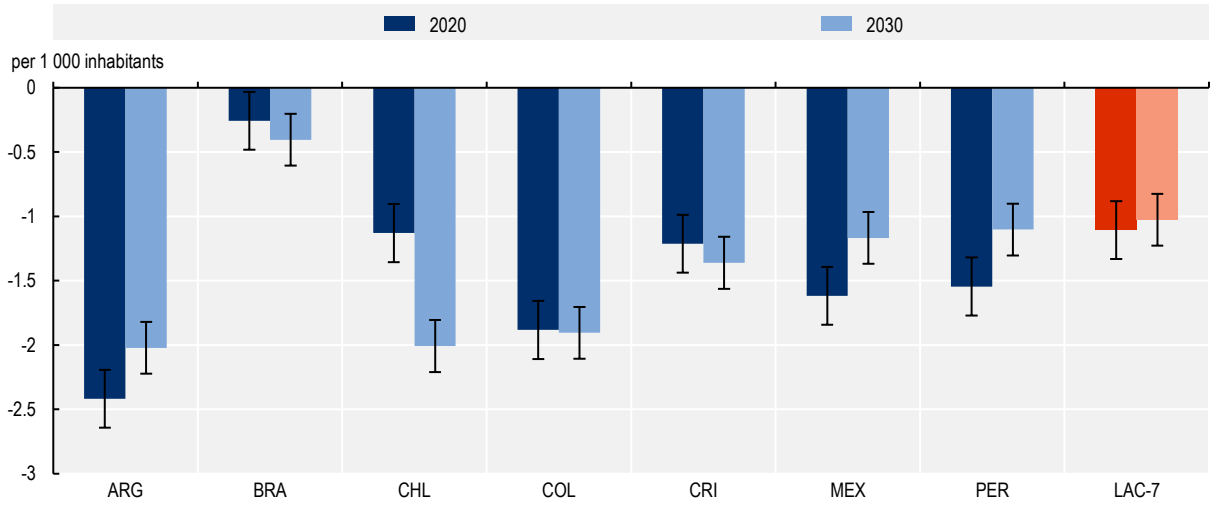
The OECD analysis suggests that, in 2020, in all LAC-7 countries, the demand for physicians, nurses and midwives was greater than their supply, resulting in a shortage for these health workers (Figure 7.7). The OECD analysis suggests that, in 2020, the shortage of physicians, nurses and midwives averaged at around 1.11 per 1 000 inhabitants across LAC-7 countries. Specifically, in 2020, the deficit of health worker density is the highest in Argentina (2.42 per 1 000 inhabitants), and the lowest in Brazil (0.26 per 1 000 inhabitants). After Argentina, Colombia has the highest estimated shortage in health workers, as measured by density of physicians, nurses and midwives. In 2020, in Colombia, the estimated shortage is 1.88 per 1 000 inhabitants. Further, the OECD analysis suggests that, in 2020, other LAC-7 countries also faced shortages in physicians, nurses and midwives. In Mexico, the estimated shortage in physician, nurse and midwife density is around 1.62 physicians, nurses, and midwives per 1 000 inhabitants, followed by Peru, Costa Rica and Chile where the estimated shortages in physicians, nurses and midwives averaged at 1.55, 1.21 and 1.13 per 1 000 inhabitants, respectively.

Figure 7.7 also suggests that, without effective policy action, the gaps between the demand for and supply of physicians, nurses and midwives is projected to persist in all LAC-7 countries by 2030. The OECD analysis suggests that the shortage of physicians, nurses and midwives will average at around 1.03 per 1 000 inhabitants across LAC-7 countries by 2030, a modest reduction compared to the estimated shortage in 2020.

Importantly, most LAC-7 countries are projected to experience widening shortages in the density of physicians, nurses, and midwives. As shown in Figure 7.7, Brazil is estimated to remain the LAC-7 country where the magnitude of the shortages in the density of physicians, nurses and midwives is the smallest. However, it is important to note that, without effective policy action, the estimated shortages in the density of health workers in Brazil is projected to grow by 2030, reaching to 0.40 per 1 000 inhabitants. Similarly, Chile is projected to have greater gaps in the demand for and supply of health workers compared to 2020, with the estimated shortage standing at 2.01 per 1 000 inhabitants. In Colombia and Costa Rica, the estimated shortages in the density of physicians, nurses and midwives are projected to reach 1.91 and 1.36 per 1 000 inhabitants, respectively.

In comparison, Argentina, Mexico and Peru are projected to narrow the gaps in the demand for and supply of physicians, nurses, and midwives by 2030, even though the estimated gaps will persist (Figure 7.7). Argentina is estimated to remain the LAC-7 country with the greatest shortages in physicians, nurses, and midwives in 2030. In 2030, the shortage of health workers in Argentina estimated to stand at around 2.02 per 1 000 inhabitants. This finding suggests that, while the magnitude of the shortage in health worker density is estimated to be smaller in 2030 compared to 2020, the gaps between the demand for and supply of physicians, nurses and midwives will persist. Similarly, in Mexico, the projected shortage in the density of physicians, nurses, and midwives in 2030 is projected to stand around 1.17 per 1 000 inhabitants, whereas this figure is estimated to reach 1.10 per 1 000 inhabitants in Peru.

Figure 7.7. Estimated shortage in physician, nurse, and midwife density in LAC-7 countries in 2020 and 2030



Notes: Shortage is defined as the difference between the supply of and the demand for physicians in the same year. Whiskers represent the standard deviation.

How do LAC-7 countries assess their current and future HRH needs?

Motivated by the earlier findings that the gaps between the demand for and supply of health workers will widen in most LAC-7 countries, the remainder of the chapter looks at the ways these countries assess their current and future HRH needs. Specifically, it looks at (1) level of decentralisation of tasks and responsibilities associated with HRH assessments; (2) data infrastructure and needs to facilitate economic assessment of labour market dynamics in the health sector; and (3) methodologies deployed in LAC-7 countries to assess the demand for and supply of health workers.

LAC-7 countries examine their HRH needs and formulate relevant policies in the context of varying degrees of decentralisation

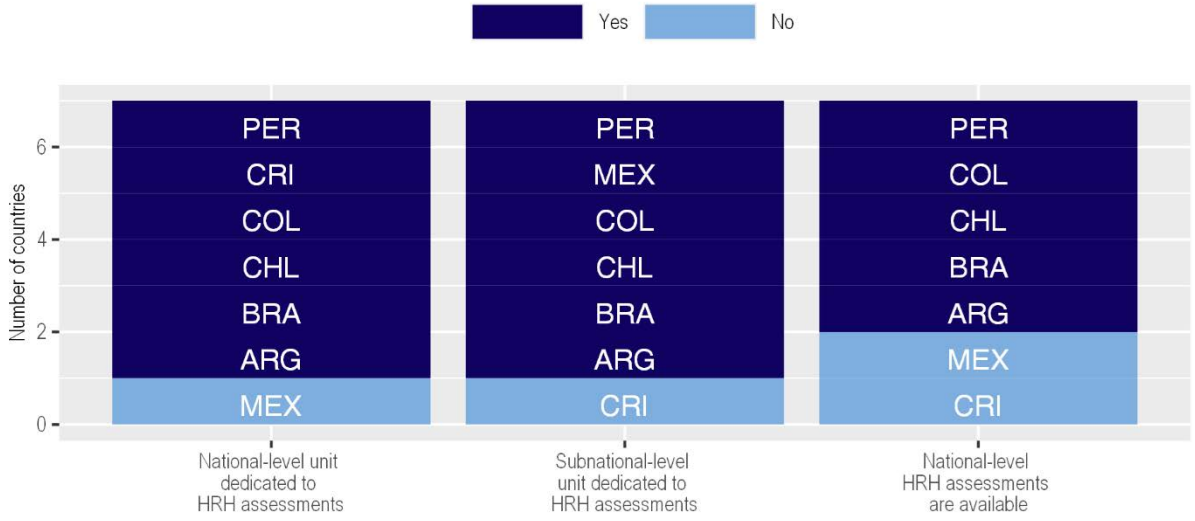
Assessments of the current and future HRH needs do not occur in a vacuum. The degree to which the roles and responsibilities shared between the national and subnational authorities may have important implications for the evaluation of HRH needs, and development and implementation of policies to strengthen HRH capacity. Decentralisation of the roles and responsibilities for assessing HRH needs to subnational authorities can improve accountability to local populations; improve the efficiency of tracking HRH needs at the community level; strengthen the effectiveness of supervision in service provision; and incentivise local governments to design and implement HRH policies that can promote greater retention of health workers in their communities. Yet, decentralisation does not guarantee improvements in the assessment of HRH needs and formulating policy responses. Decentralisation may require stronger co-ordination and co-operation across different levels of the government with a clear delineation of roles and responsibilities associated with HRH assessments. Alternatively, communities that lack technical capacity may not be able to carry out robust assessments of their own HRH needs. The remainder of this section explores these issues in the context of LAC-7 countries.

In most LAC-7 countries, national and subnational authorities are responsible for assessing current and future HRH needs

Most LAC-7 countries have in place national and subnational authorities tasked with understanding HRH needs, but national-level HRH assessments are not always available (Figure 7.8). In Argentina, the Directorate of Human Resources and Knowledge (*Dirección Nacional de Talento Humano y Conocimiento*) within the national MoH plays a stewardship role in the development and implementation of HRH policies, including promoting knowledge to inform the development of HRH and strengthen quality of care. In Brazil, the Secretariat of Labour and Education Management in Health was created in 2003 as part of the MoH in order to develop policies and strategies planning for HRH, including training and education programs. To date, HRH assessments have been developed with specific agreements with research institutions across Brazil, though many of these assessments are not publicly available. In Chile, the Planning Department within the Division of People Management in the MoH is responsible for collecting HRH-relevant data on a regular basis and for assessing HRH needs in the public sector. In Colombia, the Directorate for the Development of Human Talent in Health of the Ministry of Health and Social Protection (MOHSP) is tasked with developing and implementing HRH policies in accordance with Law 1 438 and Article 97 dated 2011. In Costa Rica, a unit within the MoH was created in 2019 to assess HRH needs. Currently, the country is in the process of building a blueprint for national HRH policy. In addition, the Social Security Fund (*Caja Costarricense de Seguro Social*, CCSS) carries out periodic assessments of HRH needs for its own network of providers based on data collected from 105 health areas and 29 hospitals. In Peru, the General Directorate of Health Personnel develops HRH policies and carries out monitoring and evaluation of existing HRH measures based on the 2017 Supreme Decree 008-2017-SA.

In comparison, Mexico is the only LAC-7 countries where the national MoH does not have a dedicated unit for assessing HRH needs. In lieu of a national department dedicated examining HRH needs, in Mexico, each network of health providers evaluate their own HRH needs through their own human resource departments including the Mexican Institute of Social Security (IMSS), Institute for Social Security and Services for State Workers, Medical services for oil industry workers, the Navy and the Army. The MoH also carries out HRH assessments, but these evaluations only include health facilities that service populations who are not affiliated with the IMSS.

Figure 7.8. Most LAC-7 countries have in place national and subnational authorities tasked with understanding HRH needs but national-level HRH assessments are not always available



Source: Results generated based on OECD review.

In most LAC-7 countries, subnational authorities also have the discretion to examine local HRH needs. In Argentina, the City of Buenos Aires and all 23 provincial-level MoHs except Salta, San Juan, Santa Cruz and Tucumán provinces carry out their own HRH planning and management within the local MoH departments. However, it is important to note that each province has their wage policies and contracting frameworks, which makes it more difficult to assess HRH needs using standardised approaches. Further, municipalities with large populations have human resource departments that are responsible for HRH planning. Similarly, in Brazil, 5 570 municipalities are tasked with examining their own HRH needs, along with the discretion to hire and fire health workers that work in their communities. Much like in Argentina, Brazilian municipalities offer different wage policies and service contracts, which complicates efforts to assess HRH needs using standardised methodologies. In Chile, municipalities are required to generate annual communal health plans that involve HRH assessments in accordance with Law 19.378 (Ministerio de Salud, 1995[23]). Upon completion, municipalities share their communal health plans with the directorates (*Dirección de Servicio)* within 29 geographic Health Services that combined comprise the National System of Health Services through a network of hospitals and primary health care centres. These directorates then communicate local HRH needs identified by municipalities to the MoH at the national level. In Peru, regional health directorates have departments dedicated to managing human resources at the local level, though these departments are not explicitly tasked with assessing HRH needs.

Several LAC-7 countries publish their recent works focusing on HRH assessments (Table 7.1). In Argentina, one 2015 analysis carried out jointly by the MoH, WHO and Andalusian School of Public Health provided projections focusing on specialist physicians up to the year 2025, with the aim of assessing current HRH needs and informing the formulation of policies to train new specialists in accordance with the needs of different provinces (MoH, WHO, Andulusian School of Public Health, 2015[24]). Subsequently, several reports were published in 2019 to look at the state of health workforce in the county, as well as training and practice in obstetrics care and nursing though these publications did not attempt to examine future HRH needs (Government of Argentina, 2019[25]). In Brazil, one example of a publicly available HRH assessment is a 2018 study conducted by the Osvaldo Cruz Foundation and the Faculty of Medicine in the Federal University of Minas Gerais as part of the Brasil Saúde Amanhã Initiative that aims to support the MoH in national long-term health policy development for the Unified Health System (Girardi et al., 2018[26]). In this study, the authors provided projections for the supply of specialities for services considered as high complexity (Girardi et al., 2018[26]). In Chile, the MoH produces annual reports that look at existing deficits in health workers, which are subsequently used to inform the Parliament's Budget Committee (Chilian Ministry of Health, 2018[27]). In addition, since 2010, three studies were commissioned to evaluate the deficit for several categories of health workers including medical specialists, GPs, and dentists. However, it is worth noting that these assessments did not involve private sector providers even though private providers play a crucial role in health service provision in the country. In Colombia, the Directorate for the Development of Human Talent in Health of the Ministry of Health and Social Protection and the Directorate of Epidemiology and Demography collaborated in a 2018 publication that provided a set of estimates on the supply of specialist physicians by different categories up to 2030, but this publication did no attempt to generate demand estimates (Government of Colombia, 2018[28]). In Peru, the MoH evaluated the supply of and demand for specialists in 2011 (Peruvian Ministry of Health, 2011[29]). Subsequently, in 2013, the MoH published an assessment of HRH regional goals from 2007 to 2015 (Peruvian Ministry of Health, 2013[30]). In Costa Rica, the MoH carried out a health workforce study jointly with the Pan American Health Organisation. In Mexico, one recent study published by the MoH examined the status of nursing in the country.

Table 7.1. Examples of publicly available HRH assessments from LAC-7 countries

Country	HRH assessment
Argentina	Analysis of geographic distribution of specialist physicians in Argentina (2015-25) (MoH, WHO, Andulusian School of Public Health, 2015[24])
Brazil	Assessing the supply and demand for priority medical specialties for services considered as high complexity for the Unified Health System (2018) (Girardi et al., 2018[26])
Chile	Study of Supply and Demand Gaps of Medical Specialists in Chile: Technical Collaboration World Bank – Government of Chile (2010). Determining gap in general practitioners and specialists according to the methodology of rates of use of medical and specialised benefits in Chile (2017). Determining gaps in general doctors, dentists, and specialists in the public health sector from 2020 to 2030 (2020)
Colombia	Estimating the supply of medical specialists from 1950 to 2030 (2018) (Government of Colombia, 2018[28])
Mexico	The Status of Nursing in Mexico (2018)
Peru	Need for medical specialists in health establishments in the Health Sector (2010) (Peruvian Ministry of Health, 2011[29]) Second Measurement of the Regional Goals of Human Resources for Health from 2007 to 2015 (2013) (Peruvian Ministry of Health, 2013[30])

Better understanding of current and future HRH needs requires further clarification of roles and responsibilities between different levels of government, supporting local communities in their efforts to assess their own HRH needs, and fostering closer co-ordination and co-operation across various stakeholders

Clarifying the roles and responsibilities across different levels of government with a clear structure of accountability can help support efforts to assess HRH needs. For instance, in 2020, Colombia took steps to clarify the roles and responsibilities around HRH planning across different levels of government. To do that, the MoHSP indicated in its latest technical report that HRH planning responsibilities are to be transferred to the 37 health secretariats as part of their four-year territorial plans in the health sector (MSPS, 2020[31]). Further, the MoH guidance indicated that the HRH planning should rest on data gathered through information management systems that track data on health worker availability and local health needs. Importantly, health secretariats were urged to examine their needs not only in the short term, but also make projections of needs within five- and ten-year horizons (MSPS, 2020[31]).

Addressing the existing gaps in the co-ordination and communication between different levels of government is also paramount to better understanding current and future HRH needs. One good practice example comes from Argentina. In Argentina, the Federal Observatory of Human Resources in Health (OFERHUS) was launched in 2016 in accordance with Resolution 1775/16 in order to foster co-ordination and collaboration between the national government and provinces to co-ordinate HRH policies (Government of Argentina, nd[32]). OFERHUS is meant to consolidate the network of provincial observatories that are responsible for evaluating and monitoring local trends in the health workforce (Government of Argentina, nd[32]). Importantly, one of the leading objectives of OFERHUS is to strengthen the local capacity to monitor and evaluate trends in health workforce in local communities, develop a baseline of information to assess HRH needs through assessments of the characteristics of health workers and their mobility (e.g. migratory trends).

Discrepancies in technical capacity can influence the ability of local communities to examine their own HRH needs and adopt relevant HRH policies. Previous studies point to notable differences across local communities within LAC-7 countries in terms of technical capacity and financial resources. For example, in Argentina, an estimated six-fold difference exists between the provinces with the highest and lowest per capita spending (Rubinstein et al., 2018[33]). To date, geographic areas with greater level of poverty experienced difficulties in attracting health workers. Similarly, in Brazil, previous studies documented substantial differences that persisted over time across geographic regions and municipalities in terms of their socio-economic development, the extent of poverty, level of health supplies, and availability of health personnel (Andrade et al., 2018[34]). Importantly, these factors have been shown to correlate with the pace with which local communities were able to adopt the implementation of large-scale PHC programs (Andrade et al., 2018[35]).

In recognition of these discrepancies, it is vital to provide support to local communities that lack the sufficient scale, technical and financial capacity to assess their own HRH needs and formulate policy options. For instance, in Colombia, the recent MoH guidance noted that certain health secretariats may have limited technical capacity to carry out their own HRH assessments. Further, the MoH suggested that health secretariats utilise HRH management tools like the WHO Workload Indicators of Staffing Need (WISN) application as a way to examine the changing dynamics in the local health workforce, even though the MoH guidance did not lay out a consistent methodology to investigate HRH needs in local settings (MSPS, 2020[31]). Importantly, these guidelines suggested that results generated by WISN application can help determine the optimal strategies addressing HRH needs; examining priorities in terms of allocating new staff, transferring existing staff; identifying health facilities with the greatest needs, and therefore, narrowing inequities in the distribution of health workers across health facilities and geographic regions. However, it is important to note that the extent to which these guidelines are implemented by local authorities remains unknown. Another good practice example comes from Peru. Following the 2013 assessment of regional HRH goals up to 2015, the MoH published in 2014 a set of technical guidance notes were published to lay out methodological approaches that can be used to calculate HRH gaps at primary, secondary and tertiary care.

Addressing HRH needs is one area that requires collaboration and co-ordination between different stakeholders at the national level. Typically, the number of trainees that are planned to be admitted to higher education institutions is under the purview of Ministries of Health (MoEs). HRH policies that entail an expansion of professional training and education capacity in the health sector necessitates close collaboration and co-operation across several stakeholders. To date, several LAC-7 countries put in place mechanisms to foster cross-sectoral collaboration. For instance, in Colombia, in accordance with Law 1 164 Article 4 dated 2007, HRH policies have ben guided by recommendations formulated through the National Council for Human Talent in Health (NCHT). As an advisory body, the NCHT is comprised of the MoE, MoH, public and private training institutions, representatives from providers and insurer associations, as well as student representatives in health training programs. Similarly, in Mexico, the Inter-institutional Commission on Training of Human Resources for Health (CIFRHS) for health workforce planning and supervision of the National Medical Residences Program. Currently, CIFRHS is a consulting, advising and technical support body that links the MoH and MoE to co-ordinate on medical education.

In recent years, LAC-7 countries made notable improvements in the availability of information that can facilitate assessments of HRH needs but further advancements are needed in terms of enhancing the scope and quality of data

Designing effective HRH policies requires high-quality and comprehensive data that can be used for monitoring the health labour market dynamics and evaluating the impact of HRH policies. Global experiences underscore the centrality of investments in information systems that provide reliable and up-to-date information on HRH that can help monitor the trends in the health workforce and the evolution of labour market dynamics. Through descriptive analyses of HRH trends over time and space in the variation of the characteristics of the health workforce, countries can identify the areas of concern like demand, compensation, market structure, interactions between demand and supply and distribution of health workforce and can help inform further investigations and policy development. Complementing descriptive analyses, data can also be used to examine the impact of specific HRH policies on outcomes.

A wide range of resources can be used to facilitate assessments of current and future HRH needs (Box 7.3). Typically, administrative datasets offer a range of useful information, including personnel records of employers, accreditation, age, gender, speciality, and geographic location. The main advantages of administrative data sources are that they typically include clear definitions for health worker types and capture the vast majority of health workers. They can also provide information on the type of health care level in which the health worker is working (e.g. hospitals, PHC clinics). However, administrative sources come with certain caveats. Administrative datasets may offer varying levels of data quality, reflecting the

methodological used to collect and process data. Moreover, they typically provide information on a limited number of areas, because they are typically collected for administrative purposes rather than data analysis. Data collected through surveys are another crucial source of information. One of the biggest advantages of surveys is that they typically offer a richer range of variables (e.g. their jobs, their families, and the characteristics of where they live), which help enable controlling for other factors when assessing the impact of policies. Administrative and survey data are not complete on their own, however, it is useful to explore avenues that can help link information gathered through both administrative and survey data.

Box 7.3. Data needs for HRH planning

Strengthening data availability and technical capacity can facilitate diagnoses of HRH challenges and identify policy options that are best fit to address the underlying drivers of challenges in each context

Building HRH datasets that report information on the number of health workers and their basic characteristics is a good starting point. Policy makers who are considering strengthening efforts to assess HRH needs will benefit from understanding potential sources of data that can be used (Lopes, Almeida and Almada-Lobo, 2015[36]). It may not be possible to collect all of the information listed below, however, improvements in the availability of data on health workforce facilitates more comprehensive assessments of current and future HRH needs.

- Inflow of PHC workers: number of new graduates from training programs, attrition rates, immigration of foreign-trained health worker, re-entry rates, retirement, career changes, emigration
- Outflow of PHC workers: retirement, resignation, emigration, leave (e.g. maternity, paternity, study, sabbatical, sickness leave), career reorientation, attrition rates, mortality
- PHC workforce characteristics: age, gender, working hours, skill mix
- Deficits in PHC workforce: vacancy rates, socio-economic and geographic imbalances in the distribution of PHC workers
- Demographic characteristics: age, gender, residence, migration, disability
- Epidemiology and morbidity: trends in the burden of diseases
- Health and care utilisation and unmet needs: ambulatory, hospital, primary and long-term care utilisation by age and gender, number of occupied beds, number of surgeries, screenings, consultations
- Inequities: inequalities in access to health care services between different subgroups of the population
- Economics: GDP, GDP growth, health expenditure, health expenditure growth
- Skill mix: capacity-building policies, alternative service delivery modes, licensing regulations, professional roles/deployment, recruitment/retention strategies, immigration policies, remuneration types/rates, capacity building
- Productivity: occupational participation rates, occupational employment rates, employment projections, vacancy rates, turn-over rates, wages, productivity growth, alternative career options
- Employment status: full-time, part-time, full-time equivalent (FTE), average hours worked, direct patient hours, no longer practicing, not licensed to practice in jurisdictions
- Novel models of care: empirical evaluations of the effect of novel models of care (e.g. the use of telemedicine in PHC care)
- Technological advancements: empirical evaluations of the effect of substitution between PHC workers and emerging and technologies (e.g. artificial intelligence and robotics)

Strengthening the existing information systems is vital to ensure that HRH assessments are based on timely and accurate information

In recent years, all LAC-7 countries made strides to strengthen their information infrastructure, which resulted in a notable expansion data that can facilitate HRH assessments (Table 7.2). In Argentina, the *Sistema Integrado de Información en Salud Argentino* is the main online platform that provides access to the main registry of health workers called the Federal Network of Health Professional (*La Red Federal de Registros de Profesionales de la Salud – REFEPS*). REFEPS collates information on health worker characteristics across professional registries in all provinces (MoH, 2022[37]). In accordance with Resolution 604/2005 of Mercosur, the Single Record of the Health Professionals (Ficha Única del Profesional), information on health worker characteristics is harmonised, including personal identification, training and registration records, specialisations and residency (MoH, 2022[37]). Experiences from OECD countries demonstrates how strengthening the existing data infrastructure on HRH can help improve assessments of current and future health workforce needs (Box 7.4).

In Brazil, municipalities report the number of health workers working in their communities in the National Registry of Health Establishments (CNES), which is processed by Informações de Saúde (TABNET) and other data sources each month. In Chile, the Superintendence of Health was established in 2004, which is responsible for maintaining a regularly updated registry of accredited institutional and individual health workers in accordance with their professions and specialisations. In Colombia, the *Registro Único Nacional del Talento Humano en Salud* (ReTHUS) database is a key source of information for calculation of workforce indicators (e.g. numbers, density, etc). In Costa Rica, the *Sistema Nacional de Recursos Humanos en Salud* (SINARHUS) was established in 2012 through the Health Services Directorate to collect information on health workers both in the public and the private sectors. This database is operated by the HRH unit within the MoH and serves a data platform to facilitate analyses of HRH needs and planning. Since 2019, the HRH unit within the MoH is making efforts to strengthen SINARHUS. In Mexico, the General Directorate of Health Information (*Dirección General de Información en Salud*, DGIS) within the MoH operates an HRH registry with the information of the number of health workers by category (e.g. doctors, nurses etc.) in the public sector. In addition, an HRH platform called the *Sistema de Información Administrativa de los Recursos Humanos de Enfermería* (SIARHE) was created in 2006. This digital platform focuses specifically on the nursing personnel through more than 30 variables collected across the different providers in the Mexican health system. This platform is estimated to include data for more than 90% of the nursing workforce. In Peru, the National Registry of Health Personnel (INFORHUS) was created in 2013 accordance with Legislative Decree 1 153, with the aim of gathering up-to-date information on HRH. In its first year, INFORUS reported data annually, and since 2015 data are available on a monthly basis.

Table 7.2. Example databases and professional registries that may be used to facilitate HRH assessments in LAC-7 countries

Country	Database and professional registries
Argentina	La Red Federal de Registros de Profesionales de la Salud (REFEPS)
Brazil	National Registry of Health Establishments (CNES)
Chile	Registro Nacional de Prestadores Individuales de Salud
Colombia	Registro Único Nacional del Talento Humano en Salud (ReTHUS)
Costa Rica	Sistema Nacional de Recursos Humanos en Salud (SINARHUS)
Mexico	HRH registry operated by the General Directorate of Health Information (*Dirección General de Información en Salud*, DGIS) in the MoH Sistema de Información Administrativa de los Recursos Humanos de Enfermería (SIARHE)
Peru	Registro Nacional de Personal de la Salud (INFORHUS)

Box 7.4. Forecasting physician supply in Denmark using time-series and regression analyses

The main objective of Danish efforts to assess HRH needs is to monitor the trends in the health workforce and determine training quotas needed to meet future needs. Workforce needs for physicians, dentists, clinical dental technicians, and dental hygienists are regularly assessed by the Danish Health Authority using a time-series and regression-based analysis framework covering both short term (i.e. 3-5 years) and long term (i.e. 25 years) (SEPEN, 2021[38]). The results from these analyses are disseminated to the relevant stakeholders in order to provide opportunities for dialogue that can help share admissions, training process and facilitate a more equitable distribution of specialisations and residencies (SEPEN, 2021[38]).

Denmark relies on a wide range of data suppliers to asses needs in the health workforce including the Authorisation Register managed by the Danish Patient Safety Authority that collates information on licensed to practice health workers; Occupation Register managed by the Danish Statistical Office, which generates information through the tax information and social security services; reports on human resources provided by hospitals, Danish Statistical Office, and five Danish regions, which are responsible for health care delivery in local communities (SEPEN, 2021[38]).

In addition to collecting data on demographic characteristics, Danish authorities also rely on information about the consumption of health care services gathered through both health workers and organisations from the regions to assess demand for health workers (SEPEN, 2021[38]). On the supply side, the Danish authorities collect data on head count, qualifications, medical specialists, and age and retirement status. At the aggregate level, data on the level of unemployment and the geographic distribution of the health workforce are also collected. In addition, data on foreign-born health workers are available for all registered professions. To track outflow of physicians and nurses, Denmark relies on the OECD database, as well as qualitative data gathered from various stakeholders (SEPEN, 2021[38]).

Yet, LAC-7 countries do not consistently use readily available data sources to assess their HRH needs. In Argentina, the databases that provide information on health workforce are mainly used for diagnostic purposes and policy design, but they are not used for systematic assessments of HRH needs. In Brazil, CNES data on health worker availability was utilised by the MoH to inform the development and implementation of several PHC national initiatives that aimed to improve the availability of health workers in geographic areas that are considered as underserved (Özçelik et al., 2021[39]).In Chile, the national registry of health workers is an essential source of information used in the HRH assessments. In Peru, INFORHUS is used both by the national MoH and regional authorities to assess HRH needs.

Data on health workers that are employed in the private sector are often unavailable due to the lack of reporting requirements for private providers. The dearth of data on the availability of health workers in the private sector undermines efforts to assess HRH needs particularly in countries where private providers play a crucial role in service provision. For instance, in Argentina, approximately 57% of health workers are employed in the private sector or in the National or Provincial Social Insurances. Despite this, there is limited capacity to gather information about health workers beyond the public system, coupled with the reluctance from the private providers in terms of sharing information. In Brazil, the current legislation requires that all health facilities are registered such that CNES database can provide data on all providers in the public and private sector. The accuracy of information provided in the CNES database is also validated. In Peru, HRH-relevant information systems have not yet fully integrated data on private providers.

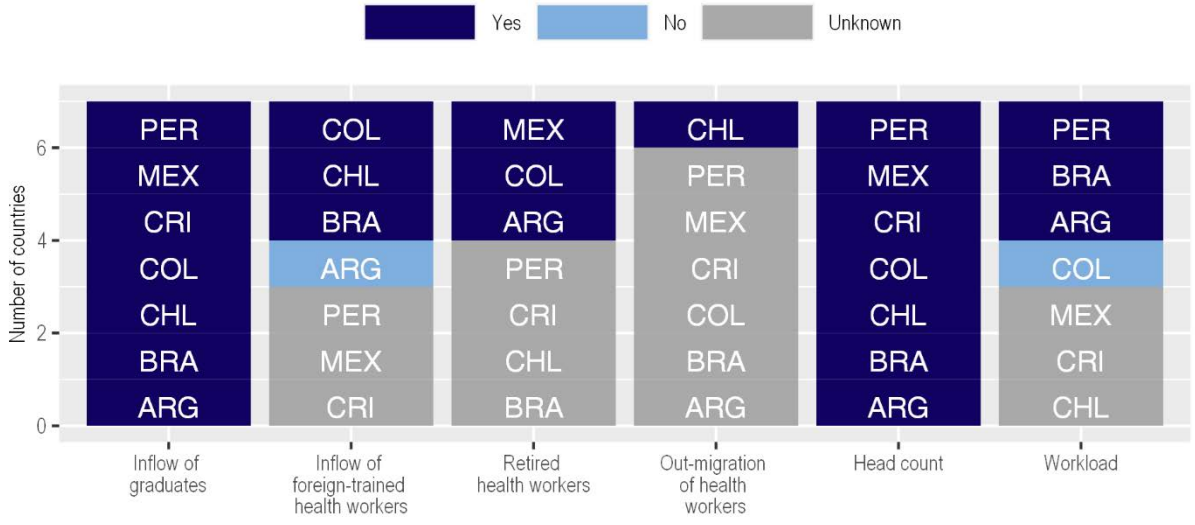
These information systems can be further strengthened by minimising delays in data entry. For instance, in Argentina, provincial MoHs regularly upload information on health workers into their regional registries, which are, then, collated in the REFEPS. However, this process is undermined by delays in updating the

databases by provinces and municipalities (MoH, 2022[37]). In Colombia, all health workers are obligated to register in ReTHUS in order to work in the health sector. However, given the diversity of employment modalities of the health workforce there are difficulties standardizing and collecting data on mobility, location by geographic area and type of facility, and income. Similar delays are reported in Mexico and Peru in terms of timely update of HRH relevant databases.

Assessing supply of health workers in LAC-7 countries will require investments in mechanisms that track the inflow and outflow of health workers in health labour markets and assessing the stock of health workers

Figure 7.9 depicts the selected supply side factors included in the HRH assessments in LAC-7 countries in accordance with the general framework used in this Chapter. This figure point to gaps in current attempts at evaluating supply side factors. In terms of inflow of health workers in the health labour market, all LAC-7 countries incorporate data in their HRH assessments in terms of the inflow of graduates, though only Colombia, Chile and Brazil systematically monitor the inflow of foreign-trained health workers. With regards to outflow of health workers from the health labour market, information systems are available in Colombia and Argentina to track retired health workers but only Chile appears to track the out-migration of health workers. With respect to the understanding the stock of health workers, all LAC-7 countries track head counts, but only Brazil, Peru and Argentina collect information on health workers' workload. In OECD countries, data that tracks the supply of health worker were incorporated into models that aimed to predict the expected resource requirements to manage the COVID-19 pandemic (Box 7.5).

Figure 7.9. Selected supply side factors included in the HRH assessments in LAC-7 countries



Source: Results generated based on OECD review.

Box 7.5. Canada's Health System Capacity Planning Tool incorporates up-to-date data on health workers to support measurement of health systems needs to manage COVID-19 pandemic

The Health Systems Capacity Planning Tool uses up-to-date information on health workers to support health system planning in response to the COVID-19 pandemic

The Canadian Institute for Health Information (CIHI) is an independent, non-profit organisation that is tasked with providing comparable and actionable information that can help inform the development and implementation of policies relevant to health workforce and facilitate the monitoring and evaluation of ongoing activities (CIHI, 2021[40]). Specifically, the Health Workforce Database includes up-to-date information on the supply and distribution of 30 groups of health care professionals. For these providers the Health Workforce Database collects information on health workers demographic characteristics, educational background, and employment and migration status.

In response to the COVID-19 pandemic, the CIHI also developed an interactive excel-based called Health System Capacity Planning Tool, with the aim of informing decision-makers in terms of the expected demand on health care resources and supply shortfalls related to the COVID-19 pandemic (CIHI, 2021[40]). It was developed with input from modelling experts and various stakeholders in the health system, as well as potential users to forecast surge in demand for health care services due to the COVID-19 pandemic. To date, more than 75 organisations used the tool to help inform their decisions around pandemic response, including Ministries of Health, federal agencies, and public health units (CIHI, 2021[40]).

To model the spread of SARS-CoV-2, this tool was designed as compartmental model that groups the population into various categories that is in line with the progression of SARS-COV-2 infections, including susceptible, exposed, infected, and recovered categories (CIHI, 2021[40]). Importantly, available information on the supply of health workers is a critical input to the model. Based on the input data, the model yields predictions on the number of new daily COVID-19 cases, the number of individuals requiring treatment in critical care and non-critical care beds with or without a ventilator, while estimating the demand for health care resources and personal protective equipment required to protect health workers (CIHI, 2021[40]).

Inflow of health workers in health labour markets

In most LAC-7 countries, the inflow of health workers into the health labour markets is monitored primarily through the inflow of new graduates. In Argentina, the MoH monitors the number of graduates but there is currently no mechanism to monitor the inflow of health professionals who were trained abroad. In Chile, the Planning Department in the MoH utilises data collated from the National Registry of the Superintendence of Health to monitor the number of health workers, which includes information gathered from universities on the number of annual admissions and graduates for each type of health worker. In Colombia, the MoHSP guidelines indicate that the inflow of health workers is accounted for by monitoring the number of graduates from training programs and workforce migration (MSPS, 2020[31]). In Peru, current efforts to assess supply of health workers do not consider the inflow of health workers.

Keeping up-to-date information on the number of foreign-trained health workers also helps improve the accuracy assessments to understand current and future HRH needs. The size of the foreign-trained health workforce is estimated to vary across LAC-7 countries, though studies suggest that these countries increasingly rely on health workers who were trained abroad. One recent study estimated that foreign-trained health workers represent about 6% of the health workforce in Chile and around 5% in Argentina (de Vries, Steinmetz and Tijdens, 2016[41]). Similarly, Colombia is receiving a growing number of health workers from other countries (Carpio and Santiago Bench, 2015[42]). Costa Rica is another LAC-7 country

that is increasingly relying on foreign-trained health workers over the last three decades, particularly in provinces outside of the Great Metropolitan Area (Carpio and Santiago Bench, 2015[42]). Much like in many other countries, foreign-trained health workers are required to validate their degree through the University of Costa Rica – the main state university. One recent study showed that approximately 88% of all those who apply to practice medicine in Costa Rica are trained in Cuba, Venezuela, Nicaragua, and Mexico (Salazar Sánchez, Cordero Solis and López Dávila, 2021[43]).

It is crucial to assess the impact of reliance on foreign-trained health workers on health system performance over time. In most LAC-7 countries, the impact of increased reliance on foreign-trained health workers on health system performance remains largely unknown. One exception comes from Brazil. In recent years, Brazil explicitly increased its reliance on foreign-trained doctors to narrow the short-term gaps in the availability of doctors that work in typically underserved communities. Specifically, Brazil rolled-out a large-scale PHC programme in 2013, called the More Doctors Program, which relied heavily on the recruitment of foreign-trained doctors. At its height in 2015, Brazil recruited more than 15 000 physicians through this Program, primarily from Cuba (Silva et al., 2018[44]). A growing body of studies has evaluated the impact of this Program on health system performance. These studies suggested that this Program was associated with improvements in the number of PHC consultations and declines in hospitalisations due to health conditions considered sensitive to the availability of health care personnel (Hone et al., 2020[45]; Özçelik et al., 2020[46]), though results in terms of its impact on mortality remains mixed (Bexson et al., 2021[47]).

Better understanding the inflow of health workers in health labour markets can also help improve surge capacity in the context of health emergencies. For example, during the COVID-19 pandemic, in Chile, students who were at the final stages of obtaining their medical qualifications were hired to help cope with the additional pressure on the health system (WHO, 2021[48]). In Colombia, more than 1 500 medical students were allowed to graduate ahead of their graduation schedule (WHO, 2021[48]). Similarly, in Peru, medical residency requirements in selected specialities were eliminated and degree procedures were temporarily halted for medical graduates (WHO, 2021[48]).

Outflow of health workers in health labour markets

The OECD review suggests that LAC-7 countries have in place mechanisms to monitor the flow of health workers outside of their health labour markets but more evidence is needed to better understand the main drivers of exit from the health workforce. Broadly, outflow of health workers occurs due to retirement, attrition from the workforce before reaching the retirement age (e.g. career shift) and emigration. In Argentina, the MoH routinely crosschecks information available in REFEPS with other information systems to identify the health workers who retired, left the health job market earlier than the retirement age, as well as deceased health workers. In Colombia, the most recent MoH technical guidance for national territories indicates that HRH assessments in the next five and ten years should consider the patterns in the outflow of health workers, including retirement, mortality, and migratory flows. In Mexico, HRH assessments carried out by local health secretariats consider retirement patterns and deaths, but not other types of outflows of health workers in the health labour markets. In Chile, in 2014, the MoH started to collect information on the migration of physicians and nurses.

The current efforts to monitor the outflow of health workers in health labour markets will be further strengthened by gathering new evidence that investigates the main drivers of attrition across different types of health workers in order to develop policies that can stem attrition rates. For instance, in Peru, where accurate and timely information on the outflow of health workers is not available, two recent studies pointed to considerable desire for out-migration among early career health workers. One 2008 study found that about 38% of medical interns at the San Marcos National University had intentions to migrate (Jimenez, Michelle et al., 2015[49]). In a subsequent study, in 2010, one University Census of students attending private and public universities in the country found that about 78% of medical students expressed their intention to migrate after completing their studies (Jimenez, Michelle et al., 2015[49]). Further evidence is needed to better assess the main drivers of attrition from the workforce across all LAC-7 countries.

Better understanding the trends in the outflow of health workers can also facilitate the rapid development of HRH policies that can help scale up the availability of health workforce during health emergencies. During the COVID-19 pandemic, many LAC-7 countries relied on retired health workers to limit the disruption in service provision. For instance, in Colombia, retired health workers under the age of 60 were allowed to return to service as part of a broader strategy to address the deficits in health worker availability in the public sector during the COVID-19 outbreak (WHO, 2021[48]). In Chile, approximately 1 500 additional health workers who had been previously released from duty were re-deployed in the health workforce during the COVID-19 outbreak (WHO, 2021[48]). Similar to Colombia, in Chile, re-deployment of health workers who previously exited the health workforce was an explicit component of the broader strategy to address the health emergency. Further, in Chile, the assessment of HRH needs associated with the COVID-19 pandemic relied on the periodic estimates of the HRH needs in the country and included both the public and private sectors (WHO, 2021[48]).

Stock of health workers

Broadly, HRH assessment aim to estimate the current stock of health workers either by tracking head counts, quantifying FTEs, or measuring both. FTEs refer to standardised measure of the workload of health workers with respect to the workload of full-time health workers. While calculating FTEs is considered a more accurate measure of the current and future supply of health workers compared to head count measures, the former requires more time and resources to collect the required data. Recently, in some OECD countries, FTEs were used in the assessment of HRH needs in the context of the COVID-19 pandemic (Box 7.6).

Box 7.6. Mullan Institute State Hospital Workforce Deficit Estimator

In the United States, the Health Workforce Deficit Estimator was developed as an online tool for policy makers at the State and Federal levels to consider different strategic options to ensure sufficient levels of health workers hospitals are available to meet the surge in demand for health care services due to the COVID-19 pandemic (George Washington University, 2021[50]). The Health Workforce Deficit Estimator was developed with support by the Health Resources and Services Administration of the United States Department of Health and Human Services.

Specifically, the Health Workforce Deficit Estimator generates estimates for a 30-day period concerning physicians and nurses trained and experienced in providing care in intensive care units (ICU), physicians focusing on hospital care for patients in non-ICU, health workers who are trained to assess and treat patients with pulmonary disease, including the management of ventilators, and pharmacists (George Washington University, 2021[50]). Importantly, users of the Health Workforce Deficit Estimator can use this tool to plan for two types of scenarios: non-surge and surge. In this way, the users can consider the additional resources needed to transition to surge capacity staffing levels.

To estimate deficits in different health worker categories as a measure of demand for health care services, the tool relies on a methodology that quantifies the case load to derive the number of FTEs required. Subsequently, the number of FTEs are compared against data on supply of health workers in, including attrition rate (George Washington University, 2021[50]). Next, the tool categories States in accordance with the level of estimated deficit, measured as having sufficient number of health workers for every profession under three types of demand scenarios (e.g. low, mean, high). Finally, the number of health workers that can provide care for non-COVID19 patients are calculated, as well as the average number of patients each provider is expected to provide care (George Washington University, 2021[50]).

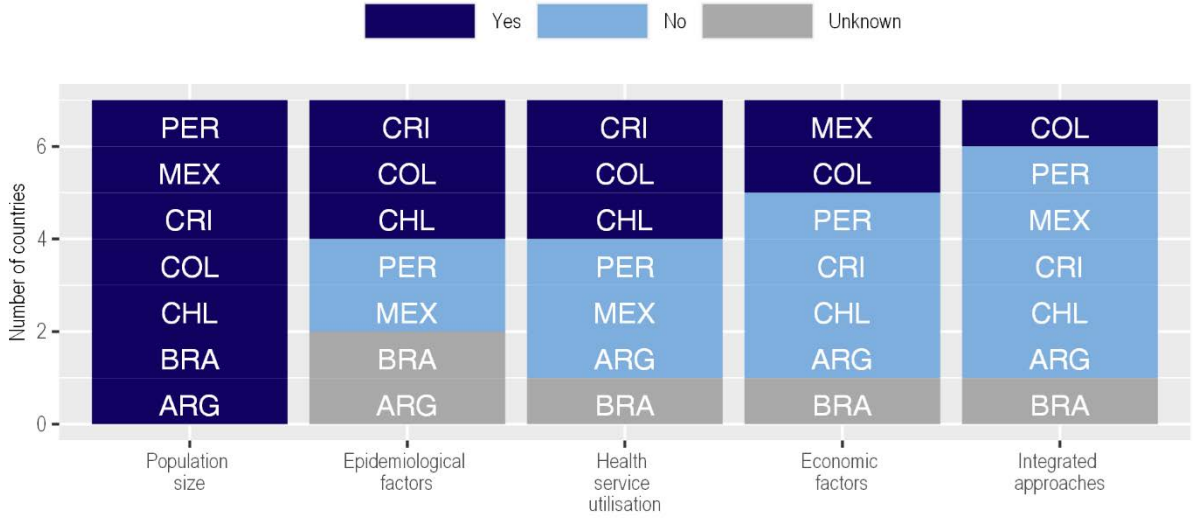
LAC-7 countries primarily collect information on the head count of different types of health workers with limited data that can help quantify FTEs. For instance, in Brazil and Colombia, the stock of health workers is tracked solely through head counts, whereas data on workload are not collected. In Argentina, REFEPS collates information on workload or hours worked, though provinces do not always update this information on a regular basis, and data do not always meet minimum quality standards. Further, considerable fragmentation across various information systems makes it difficult to estimate the current stock of health workers who are actively providing health care services. This is particularly worrisome in Argentina, because a considerable proportion of health workers engage in dual practice.

Compared to other LAC-7 countries, Peru collects data on a wider range of variables that can help better understand time spent on various tasks and procedures by each occupational category in PHC and hospital settings. For instance, information is collected to track the number of hours spent on provision of services covered by the Essential Health Coverage Scheme (PEAS) (Peruvian Ministry of Health, 2014[51]). The MoH technical guidance for calculating human resource gaps at the PHC level indicates that information is gathered to calculate the number of hours each occupational category should allocate across medical assistance, administrative and training activities. For instance, this guidance indicates that at the first level of care, about 82% of the workload of surgeons should be allocated to PEAS-relevant care, compared to 74% for nurses, while the remainder of the time can be allocated to administrative and training activities (Peruvian Ministry of Health, 2014[51]).

Assessments of demand for health workers in LAC-7 countries can benefit from looking at trends in population size and structure, health service utilisation, economic growth, and health spending, as well as adopting integrated approaches that consider multi-disciplinary teams

Figure 7.10 depicts the demand supply side factors included in the HRH assessments in LAC-7 countries in accordance with the general framework used in this Chapter. This figure suggests that there is substantial room for improving assessing demand-side factors. The good news is that all LAC-7 countries incorporate some measure of population size into their assessments. However, epidemiological factors are only considered in assessments from Costa Rica, Colombia and Chile. Only three LAC-7 countries consider health service utilisation patterns in their assessments of demand side factors. Moreover, only Mexico and Colombia consider economic factors. Finally, none of the LAC-7 countries applies integrated approaches that go beyond HRH assessments focusing on single professions. The remainder of this section provides a more in-depth assessment of the selected demand side factors.

Figure 7.10. Selected demand side factors included in the HRH assessments in LAC-7 countries



Source: Results generated based on OECD review.

Population size, epidemiological factors, health service utilisation

Understanding the demand for health workers can be a daunting task in comparison to assessing the supply of health workers (Ono, Lafortune and Schoenstein, 2013[17]). Approaches to estimating the demand for health workers vary. Relatively straightforward approaches include considering expected growth in population size. Whereas, more complicated methods may involve incorporating factors beyond demographic characteristics, such as morbidity and epidemiological characteristics, health care service utilisation patterns, organisation of care, economic growth, trends in health expenditures and salaries. The choices around estimating the demand for health workers come with important caveats. On one hand, straightforward methodologies can be applied with relative ease, because they do not impose substantial data requirements. On the other hand, these methods fall short of alluding to the optimal health worker density in a given area that can meet the needs of the population, nor do they consider factors other than population growth in determining the current and future demand.

The LAC-7 countries primarily rely on estimated trends in the size of their populations to calculate the demand for health workers, while only a few countries consider epidemiological factors and health service utilisation in their assessments. For instance, in Argentina, the 2015 study noted that demand for health workers is a function of demographic, epidemiological factors, as well as health service utilisation, service delivery models and economic growth and growth in health spending (MoH, WHO, Andulusian School of Public Health, 2015[24]). However, this publication relied only on projections for population growth to assess demand in comparison to the base year 2014 (MoH, WHO, Andulusian School of Public Health, 2015[24]). The study, then, considered three scenarios for estimating demand based on different assumptions around population growth for 100 000 inhabitants. For each speciality, the first scenario considered a 1% decline in demand; the second scenario looked at unchanged demand, and the third scenario considered a 1% increase.

In Chile, demand for health workers is assessed regularly based on the density of health workers over time, measured as the ratio of different health worker types to the population. Health worker densities are also compared against international benchmarks set by the WHO, as well as cross-country comparisons against other OECD countries to assess the existing deficits in health worker availability. In Chile, one study focused on GPs and medical specialists in the public sector. This study analysed the supply of and demand for GPs and specialist physicians based on a model that relied on the utilisation rates of selected health care services. Supply was determined using the stock and flow method at the time of the study and

future projections covering the next five and 15 years. The third study focusing on GPs and specialist physicians and dentists in the public system was recently commissioned to quantify the gap between demand and supply for health care providers in a period of 10 years.

In Brazil, the 2018 study notes that demand for and supply of health workers are influenced by a number of factors including changes in fertility and mortality, patterns of morbidity and disability, technological advancements and advent of new treatments, cultural and social changes, as well as HRH policy interventions (Girardi et al., 2018[26]). In Colombia, the MoHSP guidelines indicate that efforts to estimate demand for health workers should include department-level information on demographic factors (e.g. age and sex distribution of the service area), trends in morbidity, health service utilisation and delivery models (MSPS, 2020[31]). In Costa Rica, demand projections are carried out by the CCSS using data from the National Institute of Statistics and Censuses and the Actuarial Directorate. These projections consider the age distribution of the population and health service utilisation such as the use of hospital beds and operating rooms. In Mexico, the need for creating a new vacancy is decided separately by each health provider network based on the construction of new health facilities and budget availability.

Economic factors

Economic growth and spending allocated to health are important determinants of investments in the health workforce. As shown in Chapter 7, there are marked differences in financial resources allocated to health across LAC-7 countries. Despite the importance of these factors, HRH assessments in most LAC-7 countries do not always take into account prospects for economic growth and health expenditure. Whereas in some OECD countries, HRH assessments are conducted as part of economy-wide workforce planning efforts, which includes considerations around future economic growth (Box 7.7).

Box 7.7. Workforce planning in Finland as an economy-wide assessment of workforce needs

In Finland, HRH planning is part of an economy-wide effort to assess workforce needs

In Finland, the government Institute for Economic Research and the National Board of Education are tasked with producing long-term demand forecasts for 28 industries and occupational groups for a projection horizon of 15 years, including health workforce, using a general equilibrium macroeconomic model (SEPEN, 2021[38]). This work is supported by a coalition of four ministries including the Ministry of Employment and the Economy, Ministry of Finance, Ministry of Education and Culture, and Ministry of Social Affairs and Health (Ono, Lafortune and Schoenstein, 2013[17]). In addition to this effort, Health Regional councils make efforts to generate forecasts relevant to future health workforce and educational needs.

Efforts to estimate the supply of and demand for health workers are carried out using a wide range of data sources. At the individual-level, data on the supply of health workers include headcounts, age, gender, place of residence, place of practice, active workforce, retirement age and medical specialisation (SEPEN, 2021[38]). At the aggregate level, Finland also tracks the geographic flow of professionals. To assess the demand for health workers, forecasts take into account not only the demographic data and trends, and integrates estimates on the expected changes in GDP and health expenditures in the future (Ono, Lafortune and Schoenstein, 2013[17]).

Finland relies on several strategies to address shortages in the health workforce. For instance, in remote areas with GP shortages, tasks are shifted from physicians to nurses (SEPEN, 2021[38]). Additionally, training quotas are fine-tuned based on results produced by forecasting studies, and admissions for training opportunities are adjusted in accordance with local needs to cover underserved locations. Other strategies to attract health workers to be deployed in underserved areas include salary benefits and freedom of working time (SEPEN, 2021[38]).

Remuneration is another crucial factor in understanding the dynamics in the health workforce. In the health sector, remuneration refers to the price of labour offered through formal payments (e.g. salary, capitation payment, pay-for-performance) in the public or private sector for services rendered (McPake, Anthony and Ijeoma, 2014[52]). For employers, the level of remuneration can influence decisions around how many and what mix of health professionals to hire. For health workers, the level of remuneration not only provides an incentive for the decision to become a health worker, retention and migration, but also further influences the type of speciality (e.g. physician, nurses and midwives), the location of medical practice, job satisfaction and choices around dual practices. Broadly, the literature points to a positive association between the level of remuneration and the availability of health workers. In addition, other forms of payment (e.g. housing allowance) have been shown to influence health worker decisions over their career path (McPake, Anthony and Ijeoma, 2014[52]).

Integrated approaches to assessing HRH needs

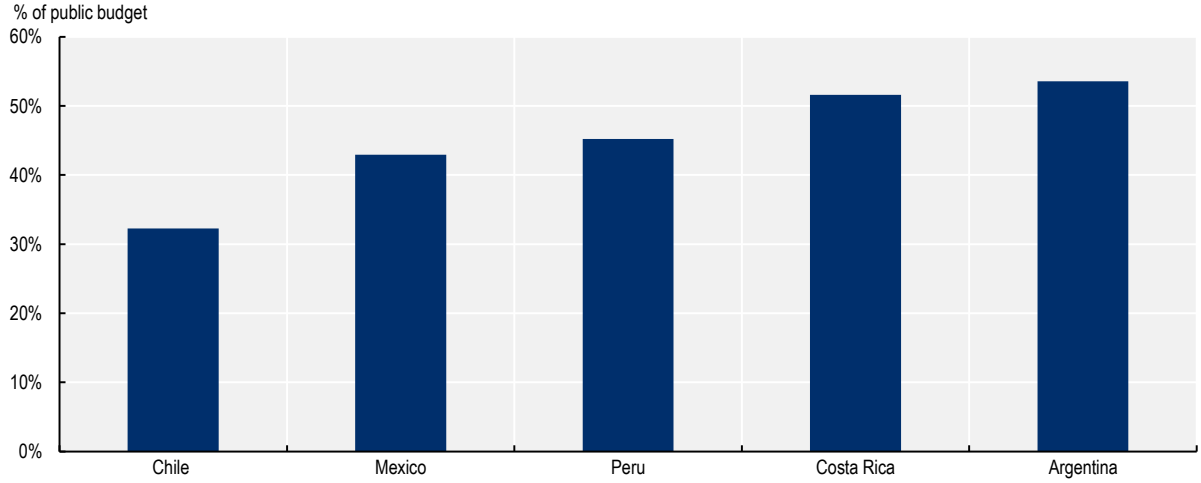
The OECD analysis suggests that HRH assessments in LAC-7 countries focus on single professions. Yet, integrated approaches that focus on examining the current and future needs for multi-disciplinary teams can help understand the influence of interactions across different health worker types on health system performance. Earlier chapters demonstrated that, in most LAC-7 countries, PHC teams that are comprised of health workers across multiple disciplines provide primary care services (see Chapter 3). To date, a growing body of evidence demonstrated that the expansion of PHC teams in many LAC-7 countries have been associated with enhanced health system performance, as measured by declines in mortality rates (Pesec et al., 2017[53]). Given the centrality of multi-disciplinary PHC teams in service provision, it is crucial to deploy more integrated approaches to assessing HRH needs that go beyond single professions. For instance, in Brazil, one recent micro-simulation study quantified that a decline in the coverage of Family Health Strategy teams due to several policies would yield, on average, a 13.2% increase in under-5 mortality rates, and nearly 100 000 premature deaths by 2030 (Francesconi et al., 2020[54]).

One crucial barrier to adopting integrated approaches is the lack of reliable and real-time information on the availability of multi-disciplinary teams at the local level. As shown earlier in this Chapter, in many LAC-7 countries, longitudinal information on the number of multi-disciplinary teams remains unavailable. One good practice example comes from Brazil. In Brazil, municipalities are provided financial incentives to report the number of PHC teams in their communities on a monthly basis. Information provided by municipalities are then used by the MoH to inform the design of large-scale programs with HRH components. For example, recently, the More Doctors Programs made use of data on the number of PHC teams in order to identify the communities that were considered *underserved* for its programmatic purposes (Özçelik et al., 2021[39]).

Sufficient and predictable financial resources must be made available to scale up investments in HRH in LAC-7 countries

Expenditure on human resources for health represent a considerable proportion of spending in the public sector, though there is substantial cross-country variation (Figure 7.11). In Peru, the share of health budget in the public sector allocated to the workforce grew steadily in recent years, increasing from 39.3% in 2015 to 45.2% in 2021. Similarly, in Mexico, the financial resources allocated to the health workforce averaged at 43% from 2015 in 2021. In comparison, in Chile, the public resources allocated to health workforce remained relatively stable between 2015 and 2020, averaging at around 32.8% of the total health budget in the public sector. Information on the level of subnational resources dedicated to the health workforce is more sparse but available evidence suggests that regional and socio-economic disparities exist across local communities in terms of their ability to allocate resources to the local health workforce. For instance, in Brazil where 5 570 municipalities have the discretion to directly hire and fire health workers, the share of expenditure from municipal governments increased from 25.5% in 2003 to 32.2% in 2016, whereas the federal government's share in total public health expenditure declined from about 50% to 40.8% (Massuda et al., 2018[55]).

Figure 7.11. Share of health budget in the public sector allocated to health workforce, various years



Notes: This figure represents the share of health budget in the public sector allocated to health workforce for countries that data were made available to the OECD. For Costa Rica, data point is for the year 2019. Data points for Argentina and Chile is from the year 2020. Data for Mexico and Peru are from the year 2021. In Argentina, data reported in the graph represent information gathered from 12 provinces.
Source: For Costa Rica, data extracted from Ministerio de Salud Costa Rica (2019[56]), Health Accounts Report Period 2017-2019, https://www.ministeriodesalud.go.cr/index.php/noticias/noticias-2019/186-costa-rica-presenta-primer-informe-de-cuentas-de-salud. For Peru, data taken from Ministry of Economy and Finance (2022[57]), Budget, Public Sector, Health Function and Health Personnel 2015-2021, https://apps5.mineco.gob.pe/transparencia/Navegador/Default.aspx. Data for Mexico are extracted from Méndez Méndez and Guerrero (2020[58]), Presupuesto para salud 2021: Prioridad en la creación de plazas médicas, https://ciep.mx/presupuesto-para-salud-2021-prioridad-en-la-creacion-de-plazas-medicas. For Argentina, and Chile, relevant information was provided by national experts.

Conclusions

This chapter presented an overview of the current landscape of health workforce in LAC-7 countries. First, it showed that the density of physicians, nurses and midwives in most LAC-7 countries improved over the last two decades, though they continued to lag average health worker densities across OECD countries in the same period. Next, the chapter found that all LAC-7 countries faced shortages in the density of physicians, nurses, and midwives at the outset of the COVID-19 pandemic, measured as the difference in the supply of and demand for health workers. Results from a novel OECD forecast demonstrated that, without effective policy action, the estimated deficits in health worker availability in 2020 are expected to worsen in most LAC-7 countries by 2030. Motivated by these findings, the chapter next examined the ways in which LAC-7 countries assess their current and future health workforce needs. It found that most LAC-7 countries do not assess their HRH needs systematically in regular intervals even though data sources that can facilitate these assessments are broadly available.

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OECD Health Policy Studies

Primary Health Care for Resilient Health Systems in Latin America

Latin American countries were hard hit by COVID-19 with rates of excess mortality above the OECD average. The pandemic brought additional stress to health systems already overstretched by a growing burden of chronic diseases, unequal access to health care services, overall under-investment in health and strong budgetary restrictions, and systemic inefficiencies. Doubling down on primary health care will be a cost-effective strategy to increase preparedness for future pandemics and address the structural challenges in the region. The report examines the experience of seven countries in Latin America – Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico and Peru – considering primary health care policies and actions taken to absorb the impact of the COVID-19 pandemic and recover from it. The findings and recommendations of this report provide guidance to public authorities in the region in their efforts to better prepare and increase the resilience of health systems through stronger primary health care.

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