2024 Edition

Health Systems in Action

Mexico

NAO
North American Observatory
on Health Systems and Policies

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Observatory
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Keywords

HEALTH SYSTEM ORGANIZATION

FINANCING AND FINANCIAL PROTECTION

RESOURCES, SERVICES AND ACCESS

POPULATION HEALTH

COVID-19 AND HEALTH SYSTEM RESILIENCE

SUSTAINABLE HEALTH SYSTEMS

MEXICO

Health Systems in Action (HSiA) Insights

Mexico

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This edition of the Health Systems in Action Insight for Mexico was written by Miguel A González Block, Mariana Morales-Vazquez, Hortensia Reyes, Diego Hernández Galdámez and Otilio Reducindo Maldonado.

The Health Systems in Action series

The Health Systems in Action Insights series was developed to support Member States in the WHO European Region that are not in the European Union, and was extended to the North American Region with the support of the North American Observatory on Health Systems and Policies. The Insights for each country are intended to:

- provide core information and data on health systems succinctly and accessibly;
- outline the country health system context in which WHO Europe's Programme of Work is set;
- flag key concerns, progress and challenges; and
- build a baseline for comparisons, so that Member States can see how their health systems develop over time and in relation to other countries.

The series is co-produced by the WHO Regional Office for Europe and the European Observatory on Health Systems and Policies. It draws on the knowledge and understanding of the WHO Country Offices and of the Division of Country Health Policies and Systems (CPS), the WHO Barcelona Office for Health Systems Financing and other WHO/Europe technical programmes; as well as the Health Systems in Transition series and the work of the European Observatory on Health Systems and Policies.

The Insights follow a common template that provides detailed guidance and allows comparison across countries. The document is publicly available on the websites of the European Observatory on Health Systems and Policies (eurohealthobservatory.who.int) and the North American Observatory on Health Systems and Policies (https://naohealthobservatory.ca/).

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Suggested citation. González Block MA, Morales-Vazquez M, Reyes H, Hernández Galdámez D, Reducindo Maldonado O (2025). Health Systems in Action (HSiA) Insights – Mexico, 2024. Copenhagen: European Observatory on Health Systems and Policies, WHO Regional Office for Europe. Licence: CC BY-NC-SA 3.0 IGO.

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ISBN: 978-9-289-05990-9

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The North American Observatory on Health Systems and Policies (NAO) is a collaborative partnership of interested researchers, academic organizations, governments, and health organizations. Through its work, the NAO promotes evidence-informed health system policy decision-making in Canada, Mexico, and the United States of America at the national and the subnational levels of government. Academic partners include the Institute of Health Policy Management and Evaluation at the Dalla Lana School of Public Health, University of Toronto, Anahuac University, Mexico, and the UCLA Fielding School of Public Health.

Acknowledgements

This Health Systems in Action Insight was written with the support of the North American Observatory on Health Systems and Policies, and the European Observatory on Health Systems and Policies. It captures core information on health systems, flags key issues and allows comparison across countries and over time.

The authors and editorial team are grateful to Gregory Marchildon for his valuable comments on an earlier draft of this document, as well as to Thomas Rice and Sara Allin for their support and comments throughout the course of the project.

Margaret Jamieson helped prepare the data and graphs underlying this report and Bernd Rechel was central to the development of the approach used for the series.

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HEALTH SYSTEMS IN ACTION INSIGHTS: MEXICO

Key points

- Mexico's health system covers most of the population, yet it is segmented and inequitable, with diverse funding sources and provider agencies across federal, state and municipal levels, alongside private insurance and health care providers.
- Despite health insurance covering about half of the population, frequent job changes cause around 38% of those with insurance to lose access to care every year.
- Public spending on health became more equitable across the insured and the non-insured in the last two decades. However, the expenditure gap between these two groups is likely to increase in 2025 as part of government deficit reduction efforts.
- Private providers deliver about half of the outpatient care, but they are poorly regulated and excluded from public funding or provider networks.
- Health care providers struggle to improve care quality due to fragmented health services and coordination challenges.
- Mexico's health system has comparatively few hospital beds, physicians and nurses and there are substantial geographical disparities between urban and rural areas.
- Access barriers include long waiting times, financial barriers, geographical imbalances and shortages of health care professionals, particularly for marginalized populations.
- There are ongoing efforts to address these challenges, such as programmes to incentivize health care professionals to work in underserved areas and expand primary care services in rural areas.
- Mexico's life expectancy at birth was 75.2 years in 2021, lower than the OECD average (80.4 years). The primary causes of death are noncommunicable diseases (NCDs), mainly ischaemic heart disease, diabetes, stroke and renal disease.
- Premature mortality rates in Mexico are much higher than in other Latin American countries, the USA and Canada, with kidney disease rates up to 12 times higher

1 ORGANIZING THE HEALTH SYSTEM

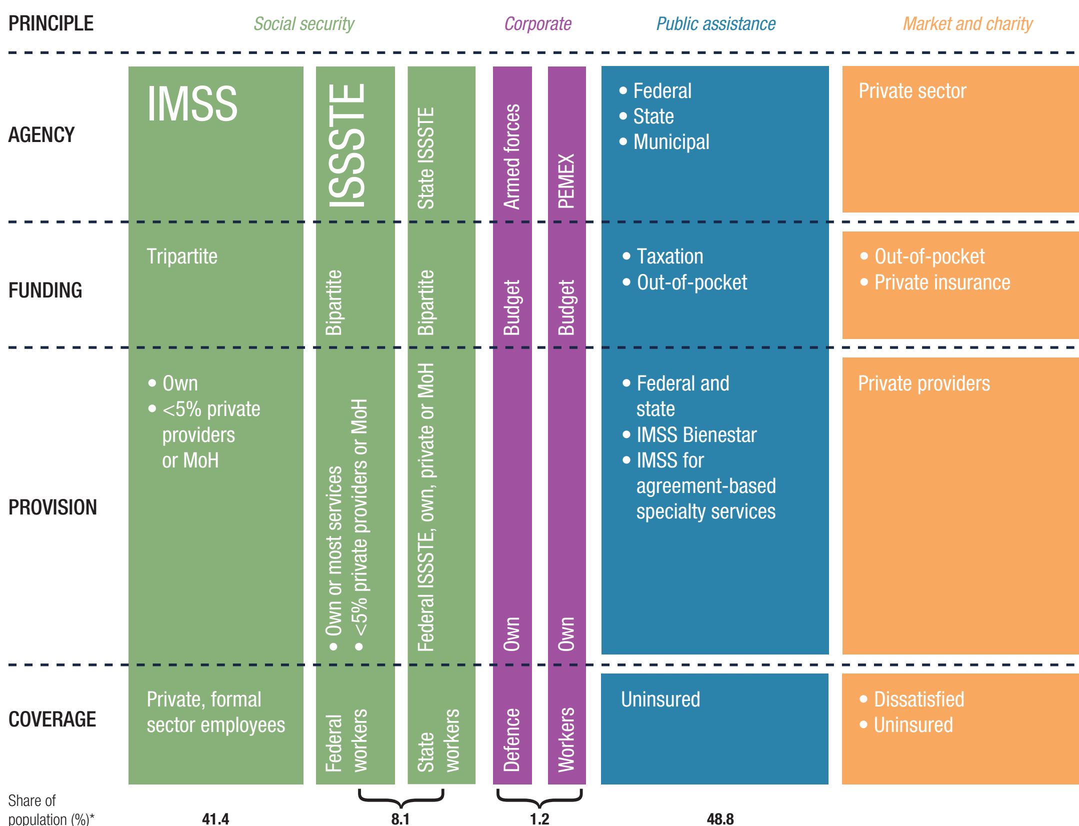
Mexico's health system is mixed, with segmented public institutions coexisting with private providers to deliver health services

The government provides health care services through three main institutions: the Ministry of Health (MoH), the Mexican Institute of Social Security (IMSS) and the Institute of Social Security and Services for State Workers (ISSSTE) **(Fig. 1)**. IMSS and ISSSTE are social security institutions responsible for providing health services to the formal private working sector, and federal and state government employees and their families, respectively. The MoH delivers services to the low-income population and those without social security affiliation, whom we will refer to as "uninsured", and provides non-personal public health services to all population and coordinates the health sector. IMSS-Bienestar, a programme operated by IMSS under contract from the federal government, complements the MoH by targeting rural and urban populations in extreme poverty with a limited package of services operated through infrastructure separate from IMSS. The private sector provides services to most of the population based on convenience and capacity to pay. Additionally, several corporate health providers cater for the parastatal oil company (PEMEX) and the armed forces. State-level ISSSTE institutions are fully autonomous, while the federal ISSSTE provides services by agreement to some state-level employees.

The MoH functions are decentralized to state governments, responsible for managing their respective health services, undertaking epidemiological surveillance and coordinating with local providers. Moreover, state governments can sign agreements with the MoH at the federal level to delegate their responsibilities upwards. A federal programme called Seguro Popular (implemented from 2004 to 2019) centralized tertiary care and incentivized state governments to strengthen local health systems through affiliating the uninsured and providing state governments with capitated funding to deliver a specific list of services. Seguro Popular reduced the uninsured population from 49.6% of the total residents in 2000 to 14.6% by 2019. Subsequently, Seguro Popular was replaced by the Institute of Health for Wellbeing (INSABI), a new agency that aimed to centralize health care for the uninsured through a unified budget and to expand coverage to the entire population. State governments had the option to delegate their constitutional health

Fig. 1

Mexico's segmented health system



Source: Bautista-Arredondo et al., 2023.

Note: * Share of government service affiliates and beneficiaries, assuming public assistance provides limited services to all the non-insured.

service responsibilities to INSABI, and 20 states (out of 32) opted to proceed with this delegation. Nonetheless, INSABI failed to meet health care expectations and generated service shortfalls, resulting in its demise and substitution by IMSS-Bienestar in 2022.

Since its origin in the 1980s, the IMSS-Bienestar programme has been responsible for providing health services to the population without social security living in the most marginalized localities of Mexico, mainly in rural areas, as part of public policies against extreme poverty. This programme, which was running parallel to Seguro Popular, is grounded on the Comprehensive Health Care Model, which offers first-contact health services and hospital care for four basic specialties (paediatrics, internal medicine, obstetrics and gynaecology, and general surgery) and includes community participation for public health actions.

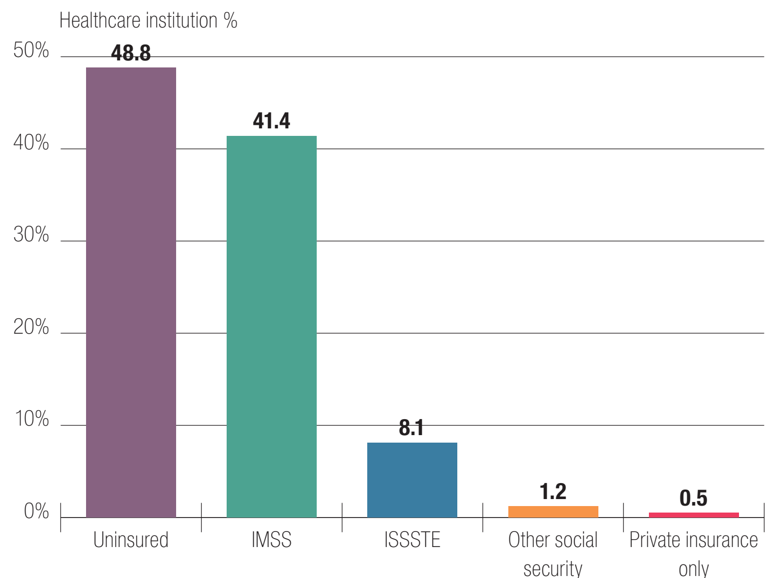
In 2022, within the framework of a new policy called the Strategic Health Programme for Wellbeing, IMSS-Bienestar was disincorporated from IMSS to replace INSABI as the provider of personal health services to the population without social security in the country. The objective of this new mandate, as was the case with INSABI, is to provide this population with free health services, medicines and other medical supplies under a scheme of service centralization under the stewardship of the federal MoH, but operational responsibility by state health authorities.

The administrative structure of IMSS-Bienestar was revamped in 2022 by establishing it as an autonomous subsidiary of IMSS. This reform gave IMSS-Bienestar the capacity to integrate the infrastructure and personnel of those state governments that chose to participate in the programme while incorporating the services it previously provided to the population in extreme poverty. However, most of the personnel are long-standing state government or IMSS employees, and it will be difficult for IMSS-Bienestar to absorb them. Additionally, all IMSS-Bienestar services remain operated separately from those offered to IMSS affiliates through its vertically integrated infrastructure. By 2023, the new IMSS-Bienestar policy has been initiated in some Mexican states as a pilot; in the rest of the country, service provision continues to be coordinated by the state ministries of health.

IMSS, ISSSTE and now IMSS-Bienestar are autonomous and highly centralized at the national level based on constitutional charters and specific laws that make them fully independent from the MoH. These institutions are governed by their boards composed of employer, employee and government representatives and operate primarily with salaried personnel and proprietary facilities. These public institutions are generally large pyramidal organizations with powerful trade unions protecting health worker rights. The directors of both IMSS and ISSSTE are political appointees. In the case of IMSS, operations are overseen by a board comprising employer and employee appointees, who represent only a minor fraction of the affiliated population. Patients have no choice of providers within these institutions and must rely on the private sector for alternative care at their own cost. Pilot projects have sought to enhance patient-

Fig. 2

Insurance and financial protection status of the Mexican population. Percentage coverage, 2022



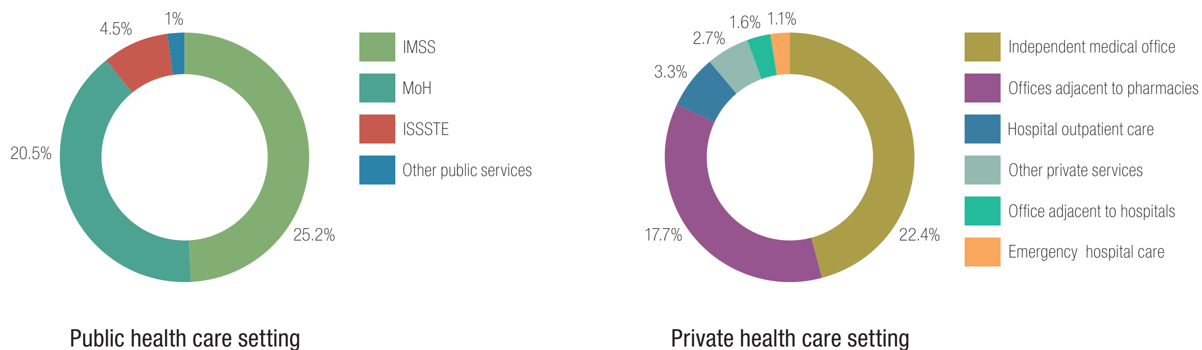
Source: Bautista-Arredondo et al., 2022.

centredness by promoting increased patient involvement and empowerment. These projects also promote the use of electronic health records to improve continuity of care. However, there are currently no published evaluations regarding the achievement of these goals.

The federal government runs diverse, uncoordinated health institutions

People receive health coverage through affiliation to public health care institutions, either social security or the MoH, and through acquiring private insurance (Fig. 2). Within the social security services, IMSS had 59.3 million beneficiaries in 2023, representing 41.4% of the population, and served workers and pensioners from the private sector and individuals under special agreements such as students in higher education (IMSS, 2023). ISSSTE affiliates 8.1% of the population or 3 million active and retired federal workers (Bautista-Arredondo et al., 2023). Only 1.2% of the population is a beneficiary of health services provided for institutions such as PEMEX. The remaining population, those without social security, are covered by the MoH and the federal programmes it supervises. This group constitutes 48.8% of the population, equivalent to about 63 million people. Furthermore, only 0.5% of the population have private health insurance.

Fig. 3
Distribution of health service demand by sector in Mexico, 2022



Source: Adapted from Bautista-Arredondo et al., 2023.

Individuals can access care across diverse public and private providers while public insurance coverage is unstable

Regarding the setting where people receive medical attention, irrespective of their insurance affiliation **(Fig. 3)**, from the 51.2% of the population that received care in the public sector in 2022, 49% received care in the IMSS, 40% in MoH health units, 9% in the ISSSTE and the rest in other public health services (Bautista-Arredondo et al., 2023). The private sector is segmented according to client purchasing power, where specialized outpatient care is utilized mainly by upper middle-income groups often as an entry door to the health system under arrangements with hospital chains. Lower-income groups tend to access general physician services primarily through pharmacy chains. From the 48.8% that received care in the private sector (since the Mexican population tends to use out-of-pocket (OOP) private services even when insured), 46% received care in independent consulting rooms, 36% in medical offices adjacent to pharmacies and the rest in other private services. Among those with a health need, only 82% in rural areas sought health services compared to 87% in urban areas (Bautista-Arredondo et al., 2023). Furthermore, changes in the formal labour sector due to unemployment, i.e., exiting the formal labour market or engaging in the informal sector, results in about 38% of IMSS affiliates losing access to medical services every year (Guerra et al., 2018).

The benefits package is implicit and access to care varies across institutions

The benefits package offered by social insurance institutions is not explicit; however, it includes a wide range of interventions, from health promotion and prevention at the primary level to highly specialized care and hospitalization. While public services for the uninsured have always been limited by budget restrictions, Seguro Popular aimed to establish a delimited package of services with guaranteed funding and exempt from user fees as a strategy to increase access and quality. The package covered most primary care and general hospital interventions, as well as 66 high-cost or "catastrophic" interventions, which were gradually added based on cost-effectiveness and funding availability within a trust fund (CNPSS, 2018). However, critical needs such as kidney transplants for adults and haemodialysis for terminal kidney disease remained uncovered, which was a rallying cry for the opposition and led to the demise of Seguro Popular. Nevertheless, INSABI and lately IMSS-Bienestar reduced funding availability to the catastrophic expenditure trust fund and excluded tertiary care from the set of priority interventions to focus on primary care and general hospitalization. High-cost treatments for complex conditions such as cancer have been covered, with limitations, by the National Institutes of Health and the federal high-specialty hospitals. Some of these treatments were not covered by IMSS-Bienestar or most state health services. Furthermore, despite the option for patients to pay out of pocket at public hospitals for services excluded from the Seguro Popular package, federal regulations in 2020 forbade user fees at MoH hospitals, limiting hospitals' capacity to furnish specialized, costly care. Additionally, some rural areas may have limited access to certain types of medical care, such as specialized surgery or diagnostic testing, due to a shortage of trained providers or equipment that has been exacerbated by insecurity.

Primary care is the main entry point for care in the public sector

Each social insurance agency, the MoH, the state or IMSS-Bienestar, provides primary care as the entry door to their respective institutions' diagnostic services, specialized care and hospitalization. Primary care offers a range of preventive and curative services, including maternal and child health, family planning, vaccinations, screening programmes for cancer, diabetes and cardiovascular risk, and basic laboratory and diagnostic tests. In the private sector, first-level care is often uncoordinated with other services, and patients seek care in a fragmented market. An exception is hospital outpatient specialized care, but it is mainly utilized by middle- to high-income

groups. A not-for-profit sector is also operated by religious or non-governmental groups, providing services to underserved communities in parallel to IMSS-Bienestar.

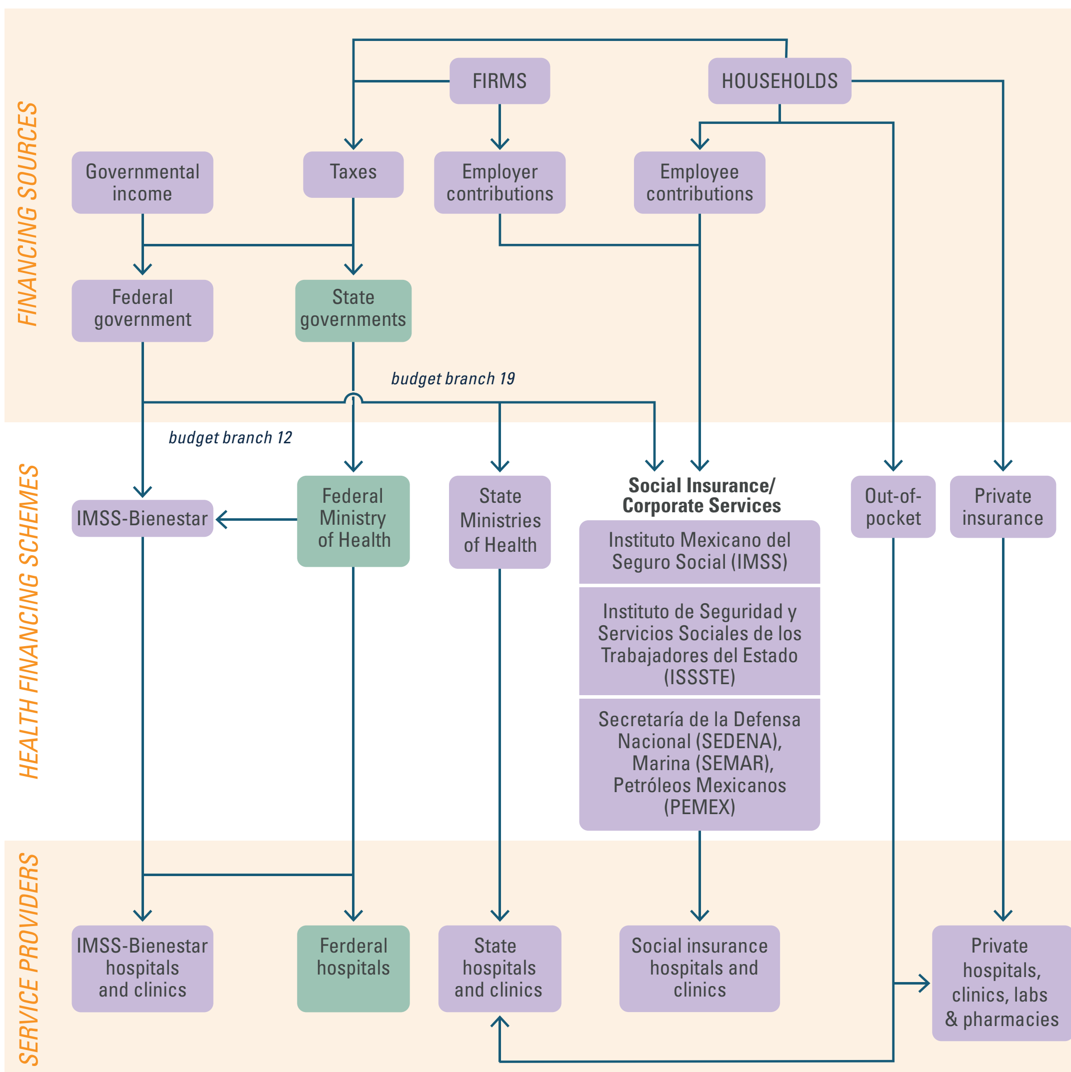
2 FINANCING AND ENSURING FINANCIAL PROTECTION

Funding and provision of services are mostly integrated in the public sector

The MoH and social insurance institutions are primarily responsible for funding proprietary services, relying on the private sector for procuring and outsourcing services only when necessary (**Fig. 4**). While private contracting is sparingly used to outsource some specialized high-cost services, the 2019–2024 National Health Sector Plan aims to replace this practice with public provision. The private hospital sector is dominated by a few large corporations, largely dependent on privately insured patients. Private health service providers rely predominantly on OOP payments, with limited private health insurance contracts, primarily with large private hospitals.

Mexico's health care spending as a share of gross domestic product (GDP) has increased, but public spending per capita remains one of the lowest among OECD members. Between 2010 and 2020, health care spending grew annually at 5.7%, reaching 6.2% of GDP in 2020. However, health care spending remains below the regional average, with countries such as Brazil and Chile allocating 9.6% and 9.8% of their GDP to health care, respectively (**Fig. 5**). In 2020, Mexico spent approximately US$ 1227 per person (PPP) on health, lowest among all OECD countries (average expenditure US$ 4278) (**Fig. 6**). Health spending flows through three main financing schemes: public health insurance (52.9% of total health expenditure), voluntary/private health insurance (8.3%) and OOP payments (38.8%). Mexico registered the highest OOP expenditure on health as a proportion of current health expenditure among countries

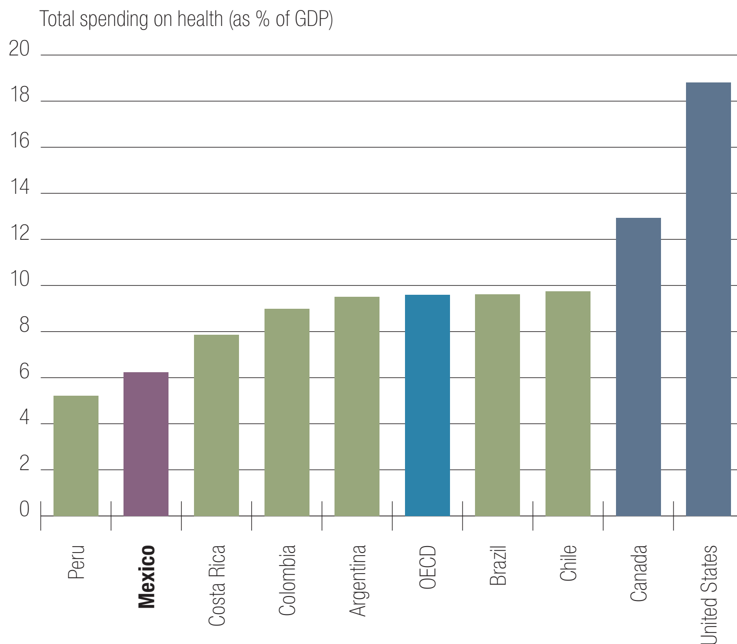
Fig. 4
Principal financial flows in the health system of Mexico, 2023



Source: WHO, 2024d.

Fig. 5

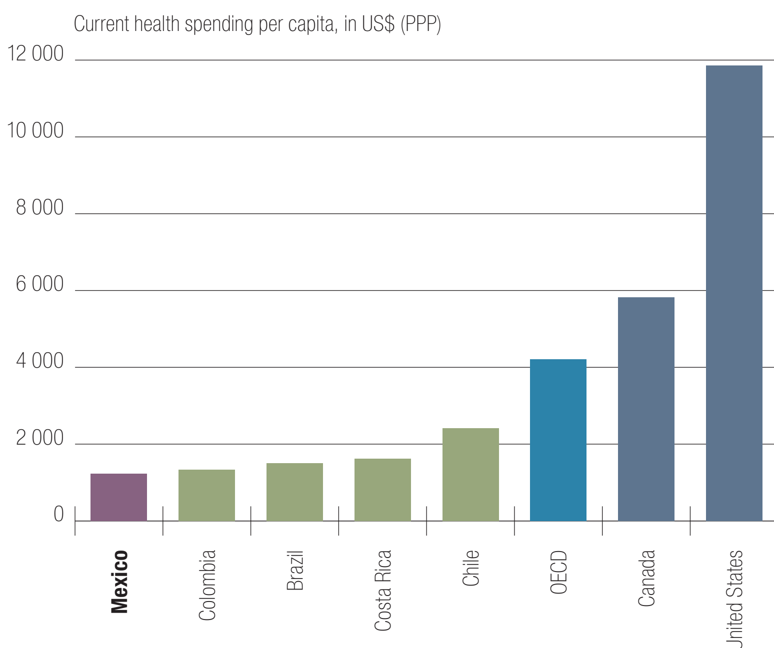
Current health expenditure as a share (%) of GDP in Mexico, the United States, Canada, selected countries of Latin America and the OECD average, 2020



Source: OECD Health Statistics, 2024.

Fig. 6

Current health expenditure in US$ PPP per capita in Mexico, the United States, Canada, selected countries of Latin America and the OECD average, 2020



Source: OECD Health Statistics, 2024.

in the region in 2021 **(Fig. 7)**. Health expenditure in the country increased with the COVID-19 pandemic, with public expenditure going from 2.47% of GDP in 2019 to 2.95% in 2020 and 2.93% in 2022 (CIEP, 2023).

The increase in the general government deficit incurred in 2024 will be met in part with a reduction of 11% in health expenditure in 2025, placing the share of GDP spent in health at 2.5% of the total. The budget cut will affect only institutions catering for the non-insured while the budget for the insured will increase. The reduction in per capita expenditure for the non-insured amounts to 24.9%, from MX$ 5,625 in 2024 to MX$ 4,225 in 2025, while that for the insured will increase by 12.4% in the case of IMSS and 16.8% for ISSSTE to reach MX$ 9,635 and MX$ 11,531, respectively. The 2025 budget also reduced the funding for public health programmes, with that for immunization seeing a decrease of 68.8% and that for mental health declining by 13.1% (Senyacen 2024).

The proportion of OOP spending was reduced partly through efforts by Seguro Popular, with a reduction from 43.5% to 38.8% of total spending between 2010 and 2020. Overall, while Mexico has been increasing its spending on health care, there is still room for improvement in terms of both the level of spending and the allocation of resources to ensure adequate financial protection and coverage for all citizens. Fig. 8 illustrates the mix of various health care financing sources in Mexico between 2000 and 2020.

While catastrophic health expenditure has decreased, financial protection is still limited

Catastrophic health expenditure (30% or more of households' capacity to pay) and impoverishing health expenditure (households forced below or further below a poverty line) in Mexico remain significant. However, prior to the implementation of INSABI, both catastrophic and impoverishing health spending decreased from 5.5% of households in 2000 to 2.6% in 2010. Specifically, catastrophic health spending decreased from 2.7% of households in 2000 to 2.0% in 2010, while the impoverishing health expenditure dropped from 3.1% in 2010 to 0.8% (Knaul et al., 2012). While this decrease has been attributed to Seguro Popular, the growth in low-cost medical care and generic drugs provided by private physicians and pharmacies might also have played a role, although this has not been examined (González Block, et al., 2020: 161). Despite these policies and trends, catastrophic health expenditure remains high in Mexico. Based on the National Survey of Household Income and Expenditures (ENIGH), 2.5% of households experienced catastrophic health expenditures in 2018, with the highest proportion observed in Chiapas with 2.08% and the lowest in Chihuahua with 0.36% (Vázquez, Agudelo & Dávila, 2022).

3 GENERATING RESOURCES, PROVIDING SERVICES AND ENSURING ACCESS

Mexico's health system has comparatively few hospital beds, physicians and nurses

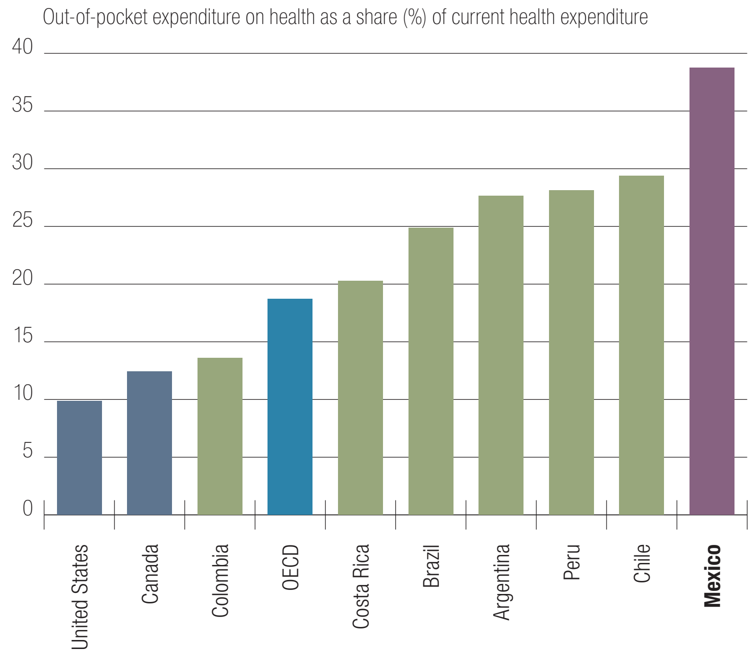
There are 34 759 public and private health facilities registered in Mexico, of which 29 752 (85.6%) are outpatient clinics that provide primary care. Of the total number of primary care clinics, 20 189 (67.9%) are publicly owned and operated; of these, 13 269 (65.7%) belong to MoH. IMSS-Bienestar also operates many clinics with 3980 (19.7%), followed by IMSS with 1171 (5.8%) and ISSSTE with 994 (4.9%). The remaining clinics are operated by federal, state, municipal and health sector institutions serving PEMEX and the armed forces.

Mexico has a total of 5007 hospitals, of which 29.3% (1468) correspond to the public sector, including MoH and social security institutions, and are generally larger than private hospitals, which total 3539 (70.7%). Out of all public sector hospitals, 62% serve the uninsured and 38% the insured. Hospitals are distributed mostly in urban areas, while only 110 hospitals (2.2%) are in rural areas (DGIS, 2023a). In 2020, there were 0.99 hospital beds per 1000 population in Mexico, which is slightly lower than the average for other countries in the region. For instance, Costa Rica and Colombia have 1.15 and 1.69 respectively **(Fig. 9)**. This number has not increased over the last decade and rather showed a slight decrease since in 2010 there were 1.05 hospital beds per 1000 population. Moreover, in 2020, 72% of hospital beds were in the public sector; specifically, 51% of beds in this sector were located at hospitals serving the insured (INEGI, 2021; DGIS, 2023b).

However, the country has made significant strides in expanding access to diagnostic imaging technologies, such as magnetic resonance imaging (MRI) and computed tomography (CT) scanners, which are essential for detecting and diagnosing many conditions. There has also been a focus on improving the quality and safety of medical equipment, such as through the implementation of standardized procurement processes and the establishment of regulations for the maintenance and repair of equipment.

Fig. 7

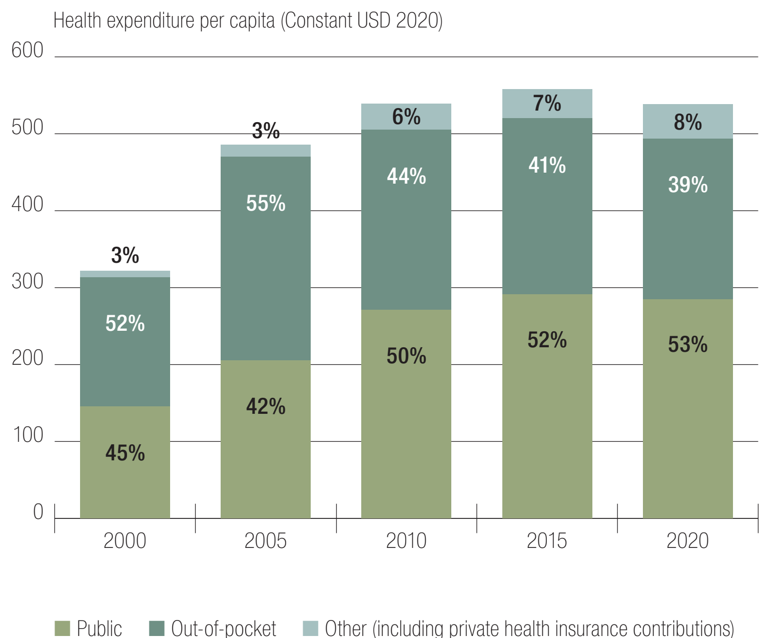
OOP expenditure on health as a share (%) of current health expenditure in Mexico, the United States, Canada, selected countries of Latin America and the OECD average.



Source: OECD Health Statistics, 2024. Data from 2021 or the most recent year.

Fig. 8

The mix of health financing sources in Mexico (2000–2020)



Source: WHO, 2023.

Fig. 9

Hospital beds per 1000 population in Mexico, the United States, Canada and selected countries of Latin America, 2010–2020

Source: OECD Health Statistics, 2024.

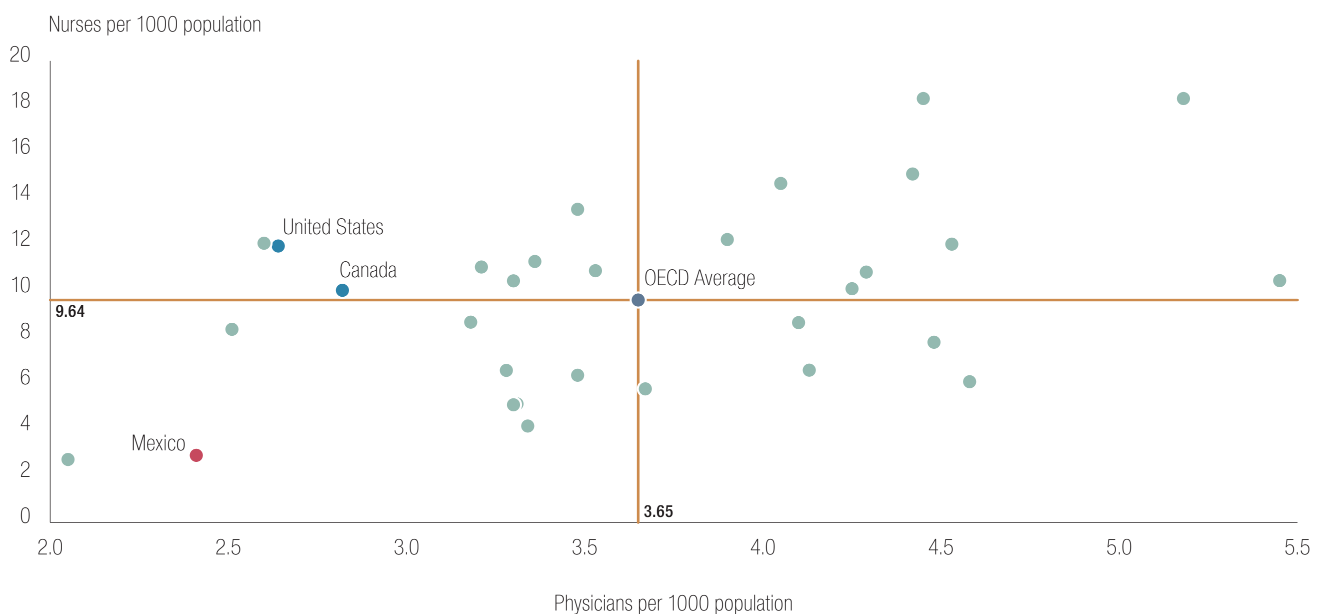
There are geographical imbalances in the distribution of physical resources in Mexico's health system. For example, there are significant disparities in the availability of hospital beds between urban and rural areas, with rural areas generally having fewer beds per capita. Additionally, there are shortages of certain types of medical equipment and supplies in some regions, which can limit the ability of providers to deliver high-quality care.

Overall, while there are still some challenges and geographical imbalances in the distribution of physical resources in Mexico's health system, there have been significant efforts to address these issues and improve the quality and accessibility of care for all patients. The country's focus on expanding access to hospital beds, medical equipment and information technology is a positive step towards building a more robust and effective health system that can meet the needs of all Mexicans.

In 2020, there were approximately 2.41 physicians and 2.91 nurses per 1000 population in Mexico **(Fig. 10)**. These numbers continue to be lower than the OECD average for both physicians and nurses (2.96 and 8.11, respectively). Moreover, there are significant differences between urban and rural areas, the latter generally having fewer health workers per capita. These disparities can limit the availability of certain types of health care services and make it difficult for patients to access care when they need it. Additionally, specialized services are often only available in urban areas, making it difficult for individuals living in rural areas to access the care they need. There are also challenges related to the distribution and coordination of health workers, particularly in large urban areas where there may be significant disparities in the availability of health care services.

Fig. 10

Practising physicians and nurses per 1000 population in Mexico, the United States and Canada, selected countries of Latin America and OECD average, in 2021 or latest available year



Source: OECD Health Statistics, 2024.

To address these imbalances, various initiatives and programmes have been introduced to enhance the availability and distribution of health workers in Mexico. For example, programmes aim to increase the number of medical schools, residency programmes, scholarships and other incentives for medical students to work in rural areas. Initiatives also support the recruitment and retention of health workers in underserved communities and improve the training of health workers with a particular focus on enhancing the skills of generalists and primary care providers. Other initiatives aim to expand the availability of primary care services in rural areas, including mobile clinics and telemedicine programmes. Despite these efforts, there are still significant challenges in ensuring that all patients have access to high-quality health care services, regardless of where they live.

The coverage achieved for selected health services is one way to measure accessibility. For example, routine childhood vaccinations in Mexico have generally high vaccination coverage. However, despite this coverage, some gaps still exist, particularly among marginalized populations.

Waiting times for elective surgery and specialist visits are also an issue in Mexico, particularly in the public sector. In some cases, patients may wait for months or even years for elective procedures or specialist consultations. This can result in patients delaying or forgoing necessary care, leading to poorer health outcomes.

The Health Access Quality Index is a high-level indicator of access to quality care. In Mexico, the most recent data (from 2019) indicate that the overall score for access to quality care is 52.5 out of 100, indicating significant room for improvement. This score considers factors such as availability of services, timeliness of care and financial barriers to access.

Long waiting times, financial barriers, geographical imbalances and shortages of health care professionals all contribute to reduced access to care, particularly for marginalized populations. Ongoing efforts to address these challenges, such as programmes to incentivize health care professionals to work in underserved areas and expand primary care services in rural areas, will be critical in improving access to care for all Mexicans.

4 IMPROVING THE HEALTH OF THE POPULATION

Despite significant progress in recent years, Mexico still lags behind other OECD and Latin American countries in terms of life expectancy and infant and maternal mortality rates. These challenges are not evenly distributed across the country, with some areas experiencing much higher rates of infant mortality than others.

Life expectancy at birth has improved dramatically, but remains lower than in comparison countries

Life expectancy increased from 34 years in 1930 to 75.2 in 2021. However, Mexico's life expectancy is the lowest among OECD countries, well below the United States and countries in Central Europe, which have life expectancies between 77 and 80 years, or Japan, Switzerland and Spain, which exceed 80 years of life expectancy (OECD, 2021).

Compared with countries in the Latin American and Caribbean region, although Mexico recorded an increase in 2021 (75.2 years), it still ranks 15th out of 31, below the average (76.9 years) and far behind Chile and Costa Rica, which have over 80 years of life expectancy. Women in Mexico live on average 78.1 years and men 72.4. The difference in life expectancy between the sexes had remained relatively constant in recent years, between 4.0 and 4.8 years from 1960 to 2016. However, in 2021, the difference increased to 5.7 years, a smaller gap than in Japan (6.2 years) (OECD, 2023) **(Table 1, Fig.11)**.

Between 2000 and 2020, the average infant mortality rate has fallen by 38% in the Latin America and the Caribbean region. In 2020, Mexico registered an infant mortality rate of 13.8 deaths per 1000 live births, representing 10 deaths lower than in 2000 and below the average in the Latin America and the Caribbean region of 15 deaths per 1000 live births. Infant mortality was lower in countries such as Cuba, Uruguay, Chile, Argentina and Cost Rica, which report under 10 deaths per 1000 live births (OECD, 2023)

Table 1

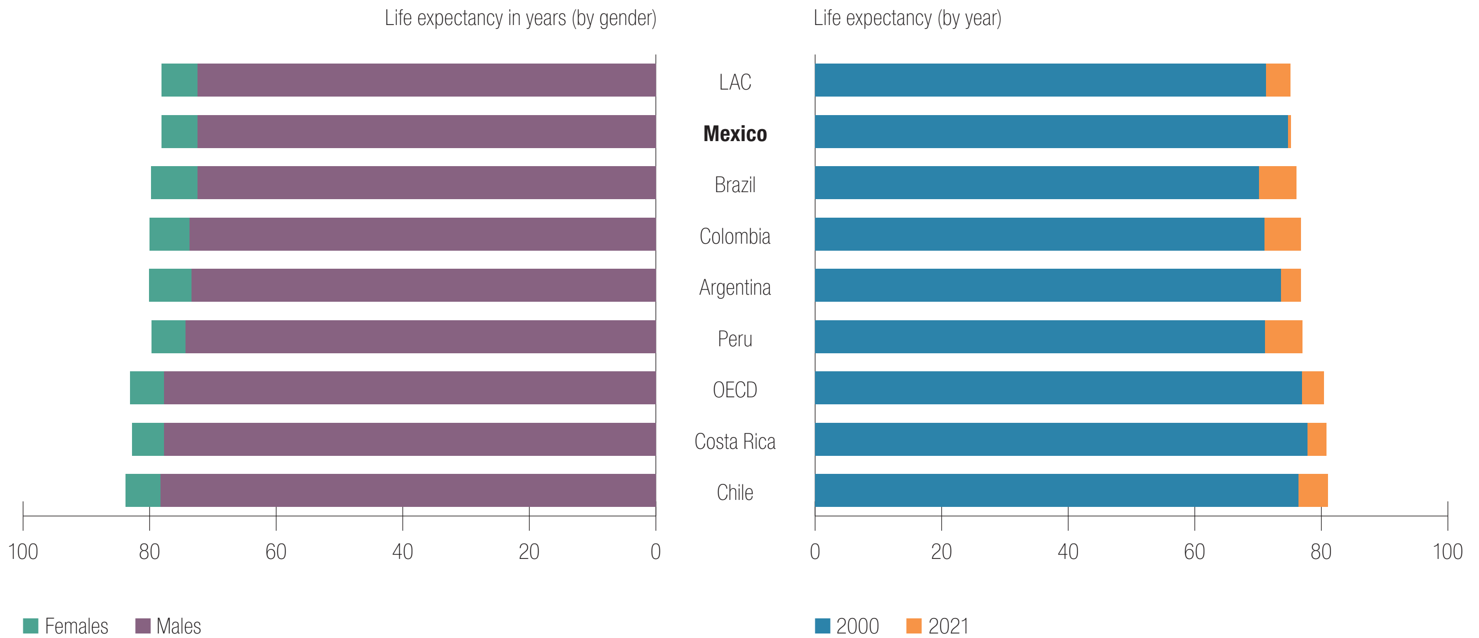
Life expectancy at birth, by sex, 2000 and 2021 in Mexico, the Latin American and Caribbean (LAC) region and OECD countries

	2000	2019	2021 all	2021 Females	2021 Males	Difference 2000/2021
Mexico	74.7	75.0	75.2	78.1	72.4	5.7
LAC	71.2	75.0	75.1	77.9	72.4	5.7
OECD	76.9	81.0	80.4	83.1	77.7	5.4

Source: World Bank, n.d.; OECD Health Statistics, 2024.

Fig. 11

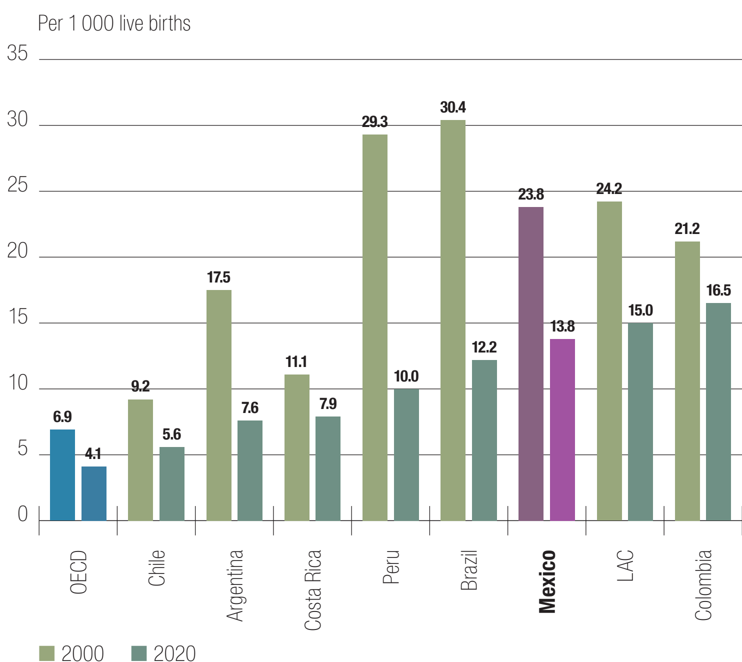
Life expectancy at birth in Mexico, selected countries of Latin America and the Caribbean (LAC) region and OECD averages, 2000 and 2021 and by sex



Sources: OECD Health Statistics, 2024; OECD, 2023.

Fig. 12

Infant mortality rates in Mexico, selected countries of Latin America and the Caribbean (LAC) region and OECD averages, 2000 and 2020



Source: OECD, 2023.

(Fig.12). In Mexico, differences in infant mortality rates persist across states and municipalities, mostly related to their contrasting socioeconomic status. Socioeconomic status largely determines the type of health subsystem that people can access, particularly in the case of formal workers with access to social insurance, which is a sign of persistent health inequity.

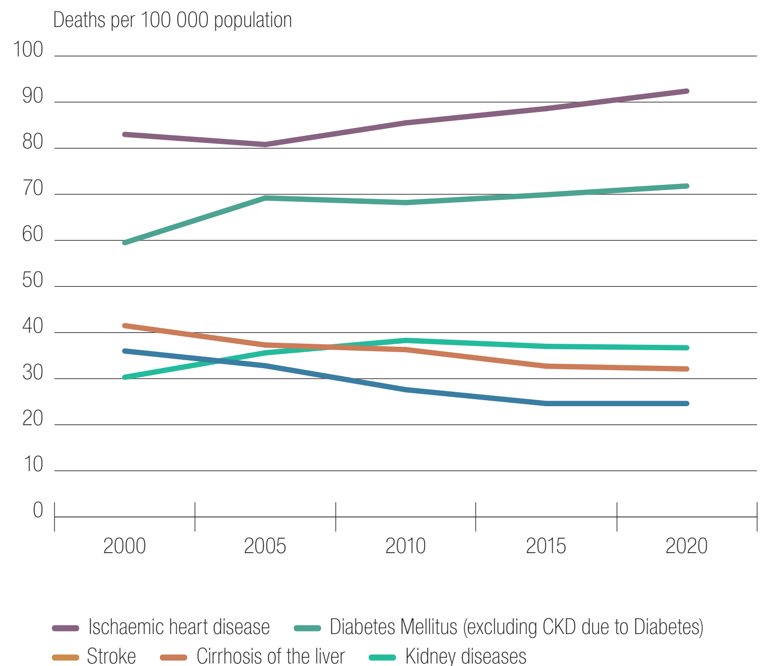
In Mexico, the maternal mortality rate (MMR) reported a slight decrease between 2000 and 2015 from 57 to 52 deaths per 100 000 live births; however, it rose again by 2020 due in part to the COVID-19 pandemic to 59 deaths per 100 000 live births. The average change in the period was an increase of 3.5%. MMR remains below the average for the Latin America and the Caribbean region, although it is still significantly above those in the North American and European regions.

NCDs are the leading causes of death

During the first two decades of the twenty-first century, the mortality profile in Mexico was dominated by NCDs, with ischaemic heart disease and diabetes mellitus being the two leading causes of death at 99.9 and 65 deaths per 100 000 population, respectively **(Fig.13)**. Renal diseases have remained constant from 2010 until the most recent mortality records (IHME, 2024).

Fig. 13

Leading causes of death in Mexico, 2000–2020



Source: IHME, 2024.

Premature mortality is high

Premature mortality (i.e., age group 15–49 years) within each of the top five causes of death is highest for cirrhosis of the liver, with 15.8 deaths per 100 000 persons, followed by ischaemic heart disease, kidney disease, diabetes mellitus and stroke **(Fig.14)**. Premature mortality for the top five causes of death is higher in Mexico than in selected Latin American countries, the United States and Canada, except for stroke. The gap in premature mortality is stark when compared to the countries with the lowest rates, with kidney disease 12 times higher than Canada, diabetes 11 times higher than Chile, cirrhosis 10 times higher than Colombia, and ischaemic heart disease 3 times higher than Canada.

The COVID-19 pandemic had an outsized impact in Mexico

The all-cause mortality observed during the COVID-19 pandemic in 2020 and 2021 compared to that of previous years exceeded expectations by 41%. Out of this excess mortality, 68% and 79%, respectively, corresponded to direct causes associated with COVID-19.

Among the Latin American countries, Mexico had one of the highest impacts on the average total deaths expected for both 2020 and 2021. It ranked second only to Peru in terms of average excess mortality compared to other countries in the region and the 38 OECD members (Karlinsky & Kobak, 2021). Mexico presented the highest annual excess mortality in the 45–64 age group **(see COVID-19 and Resilience section below)**, contrary to the rest of the region, where the highest mortality occurred in the age group over 70 years (Morgan et al., 2023).

NCDs have increased in recent decades

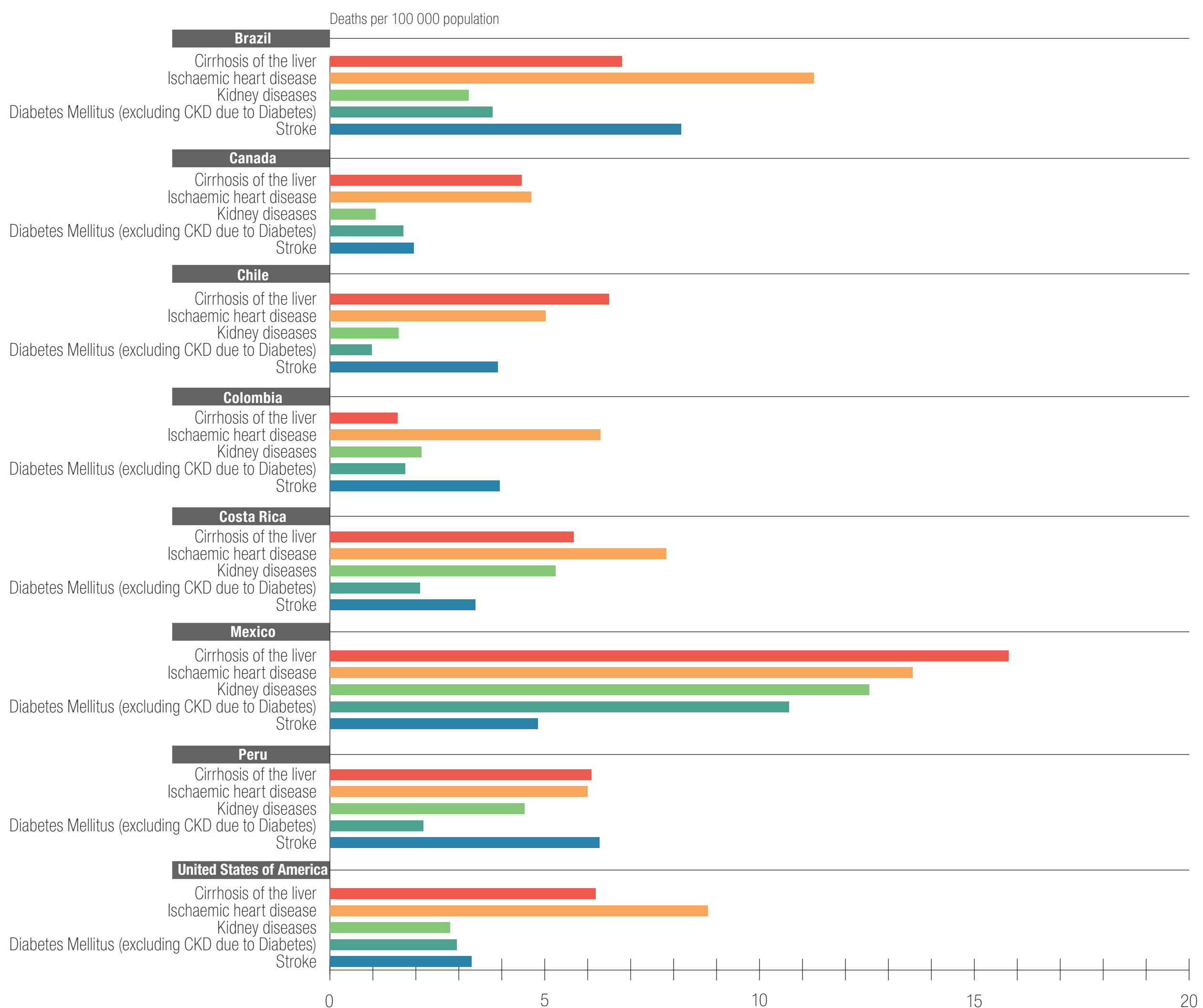
Obesity, diabetes and hypertension represent a growing syndemic. Among all OECD countries, Mexico had the highest prevalence of overweight and obesity in the population over 15 years of age with estimates of 75.2% in 2019. This figure was significantly higher than the average of 56.4% in these countries. The prevalence of obesity in Mexico represents a serious public health problem since it is a major risk factor for chronic diseases and mortality. Prevalence of diabetes by previous medical diagnosis in adults in 2022 was 12.6%, higher than that reported in 2018 (10.3%), 2012 (9.2%) and 2006 (7.0%), as well as higher than the average prevalence in the Latin American Region (7.9%) in 2021 and OECD countries (6.7%) in 2019 (Basto-Abreu et al., 2023). The prevalence of diabetes has increased with age across both men and women, with the group aged 60 years and older having the highest prevalence. The prevalence of arterial hypertension in the population aged 20 years and older in 2022 was 47.8%, lower than that observed in 2018 (52.8%), which represents a 5% reduction over that period (Campos-Nonato et al., 2023).

Mental health is a growing problem globally. In 2018, 10.8% of adolescents between 10 and 19 years old, and 17.9% of adults over 20 years old reported depressive symptomatology indicative of moderate or severe depression, more than 1.5 times higher in women. With the pandemic onset of COVID-19, the mental health of Mexico's population was severely affected. Estimates in 2020 reported a 28% prevalence of depressive symptoms in the population over 18 years of age, which coincides with a similar increase in 15 OECD countries, with an average prevalence of 22% (OECD, 2021). In 2022, approximately 7.1% of adolescents and 16.7% of adults in Mexico suffered moderate or severe depression (Vázquez-Salas et al., 2023).

According to Table 2, the prevalence of tobacco use among adolescents in Mexico has declined over the past two decades. In 2000, the prevalence was 14.5%, which dropped in 2012 to 9.2%, and further declined to 5.7% in 2018 (8.8% in men and 2.6% in women). As of 2022, 4.6% of adolescents reported tobacco use (6.7% in men and 2.5% in women). Among adults over 20 years of age, there were 19.5% smokers in 2022, almost three

Fig. 14

Premature mortality from the five main causes of death among 15–49-year-olds, Mexico, the United States, Canada and selected Latin American countries, 2021



Source: IHME, 2024.

Table 2

Prevalence of top five risk factors in Mexican population

	2000	2012	2018	2020	2022
% Obesity in adults over 20 years of age (BMI ≥ 30) (1)	23.7	32.4	36.1	–	36.9
% High blood pressure in adults over 20 years of age (1)	30.7	30.9	52.8	–	47.8
% Consumption of alcohol (heavy drinking) in adults over 20 years of age (1)	14.4	20.7	35.5	–	40.4
Alcohol-related traffic accidents (total) (2)	311 938	300 911	365 281	301 368	–
% Consumption of tobacco (current smokers) (1)	21.5	19.9	17.9	–	19.5

Sources: (1) ENSA, 2000; ENSANUT, 2006, 2012, 2019, 2022; (2) INEGI, 2020.

times higher in men (29.5%) than in women (10.4%). This figure is higher than in 2018 (17.9% smokers), but slightly lower compared to 2012 (19.9%) and 2000 (22.3%).

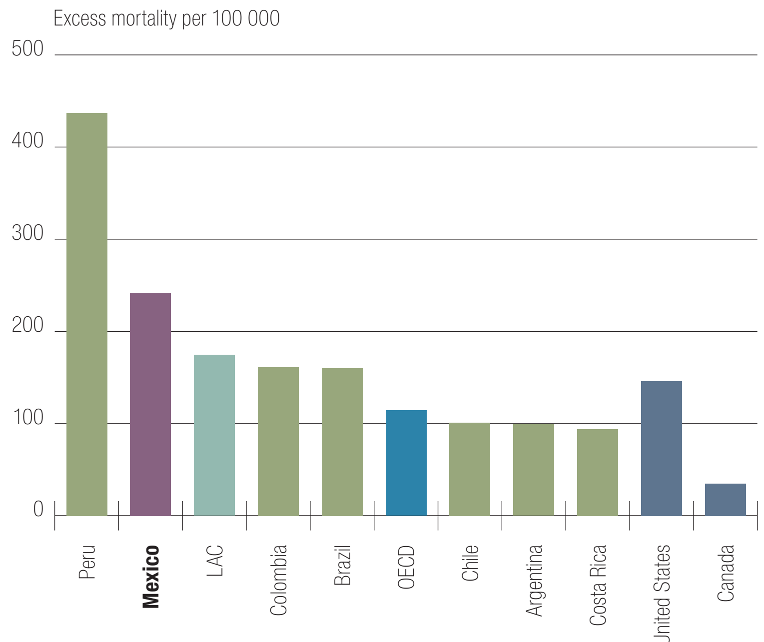
Regarding the consumption of alcoholic beverages among adolescents, the overall prevalence of heavy drinking (five drinks or more per occasion in the last year) in 2022 was 13.9%, higher in males (15.0%) than in females (12.7%), which was a lower proportion than in 2018, at 19.0%. In 2022, the prevalence of heavy drinking among adults was 40.4%. This prevalence was higher in men (53.5%) compared to women (28.4%) (Ramírez-Toscano et al., 2023). These figures represent a significant increase from 2012, when heavy drinking was reported at 20.7%, and 2018 when it was at 35.5%.

Poverty is the central social determinant of health in Mexico

Poverty in 2020 was reported in almost half of the population, with 10% in extreme poverty, i.e., with an inability to acquire at least food whose monetary value serves for the Minimum Welfare Level (covering their food needs). Furthermore, inequality increased in the last five-year period. In 2020, 52.8% of the population had an income below the income poverty threshold (without sufficient resources to acquire the goods and services required to meet their food and non-food needs), 2% more than in 2016. Poverty affects other types of social determinants of health; for example, by 2020, 19.2% of people over the age of 16 had only basic education. Because of the prevalent poverty, numerous environmental risk factors have emerged. These factors include the lack of safe drinking water or intra-domiciliary sewerage, as well as the use of firewood or charcoal for cooking without proper ventilation, such as chimneys. In 2020, 17.9% of households reported lack of access to intra-domiciliary basic services (CONEVAL, 2020). Air pollution in metropolitan areas of large cities, such as Mexico City, have been associated with increased mortality (Mamkhezri, Bohara & Islas Camargo, 2020). According to OECD Environmental Statistics, disability adjusted life years lost attributable to ambient particulate matter pollution in Mexico were 8.31 per 1000 population in 2018 while the OECD countries average was 6.35 for the same year (OECD Environment Statistics).

Fig. 15

Excess mortality per 100 000 population in Mexico compared to selected countries of Latin America and the Caribbean (LAC) region, OECD members, the United States and Canada, averages, 2020–2021



Source: WHO, 2022b.

Note: The excess mortality per 100 000 population in the United States and Canada was estimated using the WHO (2022b) dataset. We divided the mean excess deaths, associated with the COVID-19 pandemic from all-causes for the years 2020 and 2021, by the average population in that period and adjusted to reflect the rate per 100 000 population.

Box 1

Policies towards healthy lifestyles

Faced with the syndemic of NCDs, Mexico has implemented health policies with the purpose of reducing risk factors derived from unhealthy lifestyles. An excise tax was imposed on sugar-sweetened beverages in January 2014 leading to a 5.5% reduction in consumption in its first year of implementation and 9.7% in the second, with households at the lowest socioeconomic level showing the largest reductions (Colchero et al., 2017). The front labelling of packaged foods and bottled beverages, which began in 2015, informs consumers about excess calories, sugars, sodium, total and saturated fats; it also encourages companies to reformulate unhealthy products.

In 2021, the Mexican Congress approved the law that establishes 100% smoke-free environments and emissions in all enclosed public places and workplaces and totally prohibits the advertising, promotion and sponsorship of tobacco products.

As part of the policies aimed to reduce the risks of traffic accidents and injuries, Mexico has established strategies such as alcohol screening programmes for drivers of vehicles in major cities and has a fiscal policy to discourage alcohol consumption. An evaluation of the programme in Mexico City indicated a 23.2% reduction in traffic-related fatalities from the inception of the programme in 2003 to 2016 (Colchero et al., 2020).

Box 2

Health Inequities

Mexico is a country with pronounced inequities, which have not changed in recent decades. In 2022, the top 10% of households accounted for 34.4% of the country's total income, while the bottom 20% accounted for 14.1% (World Bank, World Development Indicators). Health inequities are also evidenced in the lack of access to social security, which in 2020 affected 52% of the population, and to health services (28.2%), a significant increase compared to 2016, when it was 15.6% (CONEVAL, 2020).

Although Mexico is not included in the OECD self-perceived health reports, previous research has reported a perception of poor health differentiated by education and occupation strata in Mexican adults between 17 and 75 years old, between 16% and 18% for the high stratum, between 23% and 39% for the middle stratum and between 46% and 52% for the low stratum (Valle, 2009)

5 SPOTLIGHT ON COVID-19 AND HEALTH SYSTEM RESILIENCE

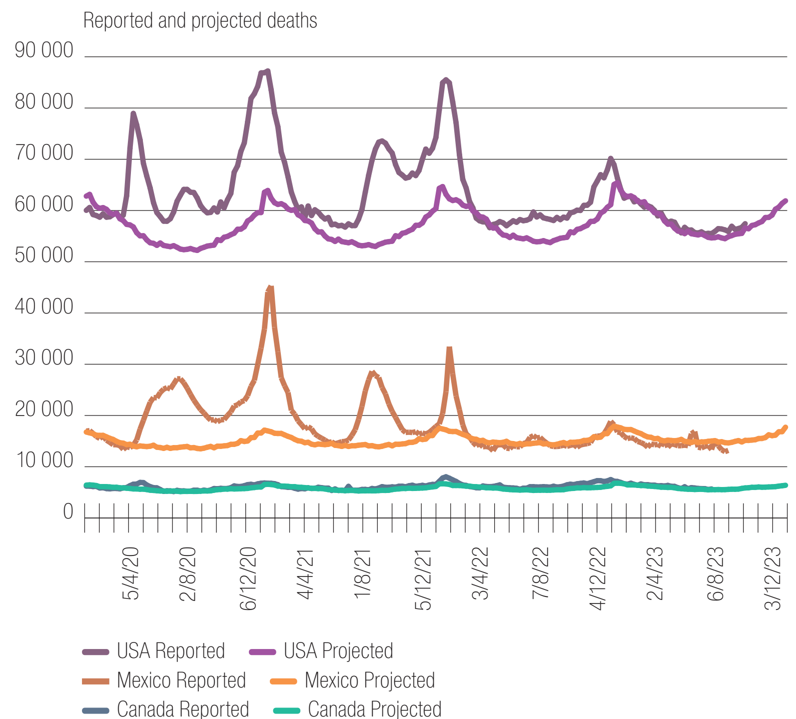
Mexico's excess deaths placed the country in the fourth spot globally, following India, the United States and Russia

In 2021, Mexico observed a high rate of COVID-19 mortality, at 170.2 deaths per 100 000 population compared to the global rate of 39.2 per 100 000 (Wang et al., 2022). High transmission levels in Mexico were mostly due to delays in the implementation of social distancing interventions, mixed reactions towards the stay-at-home order recommendations, and a phased reopening in the country (Tariq et al., 2021). Furthermore, Mexico had one of the lowest per-capita COVID-19 testing rates in the world with about 17 tests per 1000 people in total (Pérez Ortega, 2020).

COVID-19 imposed high excess mortality rates, evidencing the health system's low resistance as defined by its capacity to anticipate, adapt to and respond to shocks and stressors (Thomas, Sagan & Larkin, 2020). Cumulative excess mortality associated with COVID-19 was 325.1 deaths per 100 000 population at the end of 2021, compared to 120.3 globally (Wang et al., 2022). With an average of accumulated excess deaths estimated between 627 000 (WHO, 2022b) and 798 000 deaths (Wang et al., 2022) at the end of 2021 **(Fig.16)**, Mexico ranked fourth at the global level after India, the United States and Russia (COVID-19 Excess Mortality Collaborators, 2022). The largest increases in cause-specific excess mortality associated with COVID-19 occurred in diabetes, with a 36.8% increase in deaths, followed by respiratory infections (33.3%), ischaemic heart disease (32.5%) and hypertensive diseases (25.0%), the top killers in the country except for respiratory infections. Up to 47.4% of persons with a COVID-19 diagnosis were also reported with a co-morbidity, a factor that significantly increased the risk of death compared to patients without such diagnoses (Méndez Hernández et al., 2020). While child and maternal deaths associated with the pandemic remained low compared to other causes, estimates indicate that between 290 and 1660 child deaths and between 11 and 66 maternal deaths occurred across low- to high-service disruption scenarios in Mexico (Robertson et al., 2020). Excess mortality from COVID-19 can be attributed in large part to a failure of referrals from primary health care and the limited access to hospitals. This effect is evident from the fact that during the pandemic period the proportion of deaths related to diabetes and ischaemic heart disease occurring in a hospital was 46% and 47% lower, respectively, compared to the pre-pandemic period (Palacio Mejía et al., 2022).

Fig. 16

Excess mortality: reported deaths compared to projections in Mexico, and contrasted with the numbers in Canada and the United States



Source: Karlinsky & Kobak, 2021.

Primary care consultations in Mexico were reduced during the COVID-19 pandemic by 47% across the public sector in the first semester of 2020 (Fundar, Oxfam & CIEP, n.d.). Within IMSS, over two thirds of breast and cervical cancer screenings were not conducted, and over half of the consultations for sick childcare and for female contraception were missed. One third of diabetes, hypertension and antenatal care consultations were not provided and a similar proportion of childhood vaccinations were not given. Quality of care for chronic diseases was affected, with the total number of IMSS patients controlled for diabetes and hypertension declining by 22% and 17%, respectively (Doubova et al., 2021). By late 2022, the pre-pandemic primary care service utilization within IMSS had not yet been attained nor had measures been taken to catch up on missed screenings (Doubova et al., 2021).

COVID-19 outcomes in Mexico were highly inequitable across income groups. A study of IMSS-affiliated employees and their beneficiaries who tested positive for SARS-COV-2 showed that persons in the lowest income decile had four times the probability of being hospitalized and five times the probability of dying when compared to persons in the highest decile (Arceo-Gomez at al., 2022).

6 BUILDING SUSTAINABLE LOW CARBON HEALTH SYSTEMS

Mexico has taken the initiative to assess and mitigate the impact of climate change on health, but no actions have been proposed to build a sustainable health system

In 2020, Mexico joined the international commitment to reduce greenhouse gas emissions by 30% by 2030 without conditions, or up to 40%, conditioned to technology transfer and financing. The goal of mitigating black carbon emissions is maintained at 51% without conditions. To achieve this goal, 35 strategies have been established in all economic sectors, classified into three areas: 1) natural solutions, with programmes for planting fruit and forest trees; 2) low-carbon transportation, with strategies for electromobility, remote work and rail transportation; 3) industrial regulation and promotion, with energy efficiency actions and the National Circular Economy Strategy (Gobierno de México, 2022b). The National Health Program 2018–2024 proposed intersectoral actions to mitigate the impact of climate change on health and a diagnosis of the vulnerability of the health sector. However, no actions were proposed to address the sector's contribution to global warming (Gobierno de México, 2018).

COUNTRY SUMMARY DATA

	Mexico	Canada	United States	Latin America and the Caribbean countries average*	OECD median (including Mexico)
Life expectancy at birth, both sexes combined (2021) **	70	82.6	76.3	74.8	81.3
Estimated maternal mortality per 100 000 live births (2020) **	59.0	11.0	21.0	49.6	5.5
Estimated infant mortality per 1000 live births (2020) **	11.8	4.5	5.4	9.2	3.2
Population size in million (2021) **	126.7	38.2	332.0	61.6	10.4
GDP per capita, PPP$ (2021) **	$ 21 123.7	$ 55 634.8	$70 219	$ 20 726.7	$ 48 575
Poverty rate at national poverty lines (% of population) (2020)	43.9 **	7.4 ***	11.6 ∞	28.3 **	NA
Gini coefficient (2020) ++	0.446 **	0.292	0.39	0.504 **	0.320 (2016) +

Sources: ** World Bank, n.d.; World Bank, 2024; + OECD, 2019; ∞ U.S. Census, 2022; *** Statistics Canada, 2024.

Notes: NA: Not Available; * Comparator countries for Mexico are Argentina, Brazil, Chile, Colombia, Costa Rica and Peru; + OECD average.

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ISBN: 978-9-289-05990-9