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REVIEW

Medicines policy, access and use in Mexico: a systematic literature review 2000–2022

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Abstract

Background: Research on medicines access and use is heterogeneous and can be challenging for decision-makers to interpret. Pharmaceutical policy is an additional component for study and is the foundation for the promotion of access and use of medicines. This systematic review summarizes findings from the literature on medicines policy, access and use over the past two decades in Mexico and identifies research gaps that should be addressed.

Methods: A systematic review of the literature published between 2000 and 2022 was conducted to identify publications on medicines policy, access and use in Mexico. The study followed PRISMA Statement guidelines 2020. A narrative review including content analysis was conducted.

Results: A total of 5057 articles were reviewed, of which 77 fit the inclusion criteria. Studies described the lack of an explicit national policy, a misalignment between the legal framework and reinforcement incentives, deficient policy documentation at the national level, and the absence of necessary medicines regulation and transparency. In terms of access to medicines, challenges related to supply, selection, acquisition, distribution and expenditure were noted. Regarding medicine use, key study findings included a lack of adherence to standard treatment guidelines, dispensing, lack of reliable information on medicines, lack of treatment adherence and harmful self-medication.

Conclusion: The appropriate use of medicines and adequate access to them are priority topics for the formulation of Mexican pharmaceutical policy. It is critical that further research includes longitudinal studies of medicine access and use, and the consideration of studying the private sector as well as new methodological approaches. Many reported challenges related to access to and use of medicines have persisted across decades, suggesting a lack of effective research-to-practice knowledge transfer and policy implementation.

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Keywords: health service, health system research, medicines, medicines access, Mexico, pharmacy policy.

Citation

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Introduction

Medicines, including vaccines, are health technologies recognized as essential to a functioning health system.[1] To the extent that every society implements a diverse set of policies to promote the health of their population, medicines (or medications) are a primary therapeutic tool for human health and a common denominator across stages of prevention, treatment and recovery.

Mexico's health system is made up of two large sectors: public and private. The first has a wide range of institutions whose access is restricted to the employment status of the population and an option for the population without social security, which is managed by the Ministry

of Health (Federal and State Health Secretaries, Seguro Popular (2004–2019), INSABI (2019–2023)). The private sector provides health services on a fee-for-service basis to the population with the ability to pay.

Out-of-pocket payment, that is, the direct payment that people make during their care, is a dimension of access to medicines frequently reported as problematic in Mexico. In Mexico, medicines are the largest component of out-of-pocket health expenditure, representing more than two-thirds of the total out-of-pocket health expenditure for the overall population.[2,3] According to data from the Mexican National Health and Nutrition Survey (in Spanish, ENSANUT) 2021, Mexicans spend an average of $US21.5 on medicines.[4] For the year 2023, the Federal Health Expenditure Budget forecasted 3.3% of Mexico's GDP would be spent on health. Of the total allocated, only 1.7% of the public health expenditure budget was allocated to the purchase of medications and 9.3% to free health services and medications for the population without access to social services.[5]

Medicines access is understood as the lack of barriers – physical, economic or informational – for the potential user.[6] Achieving medicines access is a goal for most countries worldwide, including upper-middle-income countries like Mexico. The fifth objective of the Sustainable Health Agenda for the Americas, of which Mexico forms part, is to "*Ensure access to essential medicines and vaccines, and to other priority health technologies, according to available scientific evidence and the national context*".[7]

Beyond medicines access, the use of medicines impacts a society's related health outcomes. Inappropriate use can cause harm to the health of individuals, the community and the environment (e.g. overuse of antibiotics, denying the use of vaccines to prevent infectious diseases). It is important to generate evidence on medicine utilization in order to allow medicines selection committees to function effectively, understand which medicines are relevant in clinical care, how much these cost, and how much of them are needed, define areas for further research on efficacy and safety, and identify inappropriate use, amongst other factors.[8]

Previous studies have identified multiple dimensions for consideration when researching medicines use. Wettermark notes that research on the process of medicines utilization is focused on analysing factors that influence prescription, dispensing, administration and consumption, including non-medical factors such as socio-anthropological, behavioural and economic factors.[9]

The World Health Organization proposes four elements of medicines necessary to achieve universal health coverage by 2030: (1) evidence-informed selection and use of essential medicines; (2) affordability and availability; (3) sustainable financing; and (4) reliable supply of quality products.[10] Promoting access and use of pharmaceuticals requires adequate regulations and policies, including in relation to financing.[11] Therefore, the World Health Organization encourages all countries to formulate and implement pharmaceutical policies in order to have a consolidated plan and strategies to improve medicines access and proper use.

Although Mexico does not currently have a consolidated and well-articulated pharmaceutical policy,[12] the past decades have seen a series of reforms on medicines that attempted to increase availability, improve quality and monitor efficacy. For example, the health reform of the year 2000 introduced a new type of insurance with the aim of guaranteeing equitable access to healthcare services,[13] including a new funding mechanism known as *Seguro Popular* (SP). This new funding mechanism sought to cover citizens that were excluded from conventional social security and, amongst other objectives, aimed to protect against catastrophic healthcare costs linked to pharmaceuticals.[13] In 2005, the Mexican Ministry of Health emitted a series of documents that laid the foundations for pharmaceutical policy.[14–16] Later, in 2019, SP was replaced with the Health Institute for Wellbeing (in Spanish, INSABI) in order to provide access to all medicines for free.

Previous research on access to and use of medicines is available, though scarce. One systematic review on the access and use of Medicines in Mexico was published by Wirtz et al.,[17] covering the literature published from 1990 to 2004. The study found that the percentage of studies addressing medicines access was significantly less than that of studies addressing medicine use. Furthermore, studies on medicine use tend to focus on infectious diseases, particularly the use of medicines for acute diarrhoea in children. The present study seeks to update the review by Wirtz et al.[17] and, in addition, considers pharmaceutical policy as an emerging topic of interest. Research related to medicines policy, access and use is imperative to generating evidence to support decision-making.

Objectives

Our objective was to summarize the evidence on medicines policy, access and use during the period 2000 to 2022 and to identify research gaps that should be addressed.

Methods

We conducted a literature review of articles published from 2000 to 2022 that addressed medicines policy, access and

use in Mexico. Included articles were peer-reviewed and in journals published in the English or Spanish. No restrictions were set by article type. The following search engines were employed: PubMed, Scielo, Redalyc, DOAJ and Google Scholar. Additionally, we conducted a review of the following journals: *Salud Pública de Mexico*, *Ibero Latin American Journal of Health System Pharmacy*, *Revista Mexicana de Ciencias Farmacéuticas* and *Gaceta Médica de México*. These four journals were selected due to their relevance, seeking to cover the largest number of publications possible that are not fully captured by the search engines used. The review was conducted according to the PRISMA Statement guidelines, using the 2020 PRISMA expanded verification list[18] to assess the study quality.

Inclusion and exclusion criteria

Included articles were all those published in the English or Spanish language from January 1, 2000, to December 31, 2022, and which involved research or interventions related to any component of the Mexican healthcare system. Excluded articles were those which (1) described interventions unrelated to pharmaceutical medicines policy, access and use; (2) did not present original data (e.g. letters, editorials and commentaries) and (3) described data collected before the year 2000. Articles of sufficient quality were considered to be those that were peer-reviewed and where the methods used were appropriate to answer the study objectives and sufficiently described to be replicable.

Data search and extraction strategy

A search algorithm was created using the following MESH terms: "health services accessibility", "health care quality", "access", "evaluation", "medicine utilization", "health policy", "pharmaceutical preparations" and "Mexico". The complete algorithms for each search engine can be found in Supplementary File 1 (available at: https://www.drugsincontext.com/wp-content/uploads/2024/01/dic.2023-7-3-SupplFile1.pdf).

Double-blind data extraction was used where authors LCVL and DCG performed an independent selection of articles beginning with title and abstract, followed by the full text of the selected articles. In case of discrepancies on the selection of an article, LCVL and DCG reached agreement through discussion. A final decision was made by DMBB.

Once selected, the content of included articles was processed in standardized Microsoft Excel spreadsheets including the following variables: first author, first author affiliation, article title, study area, study population, institution studied, medicine studied, illness, study design, technique utilized, and topic. Pharmaceutical policy was categorized by the 6-year term of the presidential administration in Mexico during which data were collected. Medicines access was considered through two dimensions: the mandate of the State to guarantee sufficient medicines and the removal of physical, economic, and informational barriers to medicines. The concept of medicines use included the following variables: prescription, dispensing, distribution, consumption and adherence. We classified publications into these categories.

Data analysis

Given the types of data analysed, we used a qualitative content analysis method known as the Framework method.[19] This method involves placing information in a matrix to be classified by codes and categories, allowing the information to be systematically visualized and synthesized. The article categorization was divided into seven domains: medicines policy; medicines access; medicines use; medicines access and use; medicines access and policy; medicines use and policy; and medicine access, use and policy. The information for the results was disaggregated by topic for each of the articles.

Results

General characteristics

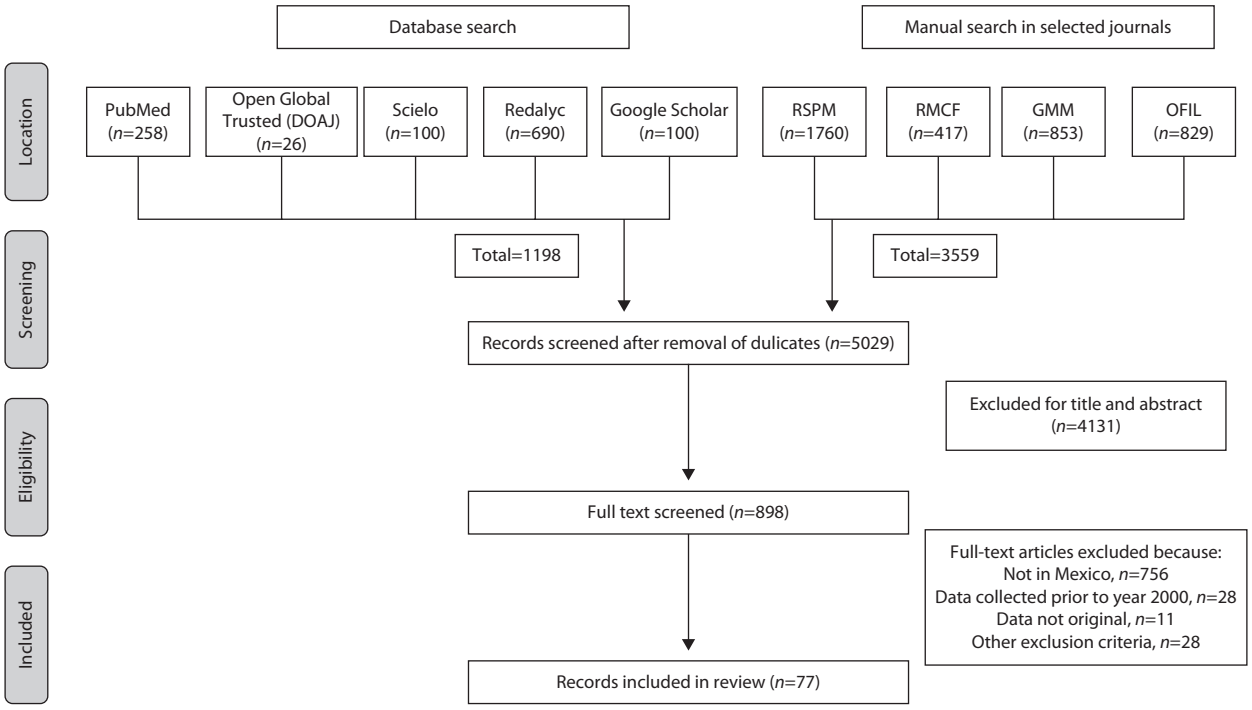
A total of 5057 articles were reviewed, of which 1198 (23.7%) were obtained through the databases of interest and 3859 (76.3%) through manual review of the four selected journals. After the screening process, just 77 (1.5%) articles met the inclusion criteria and were considered for analysis (65 from databases and 12 from journals). Figure 1 shows the flowchart of the literature review source eligibility process.

Of the included articles, 2008 (n=17, 22.4%) was the year in which most articles were published, followed by 2011 (n=7, 9.2%), 2014 and 2016 (n=6, 7.9% in each year). On the other hand, in the years 2004 and 2006, no articles were found that fit the inclusion criteria. Despite this, a positive linear trend in publishing is evident throughout the period of interest (Figure 2).

Researchers who appeared as first author on the greatest number of included articles were the following: Wirtz,[12,20–26] Moye-Holz,[27–31] Dreser,[32,33] Gómez-Dantés,[34,35] Molina Salazar[36,37] and Rico-Alba.[38,39] Of these six first authors, four are affiliated or were so at the time of publication of the documents to the National Public Health Institute of Mexico. Molina Salazar is affiliated with the Metropolitan Autonomous University and Moye Holz to the University of Groningen in the Netherlands.

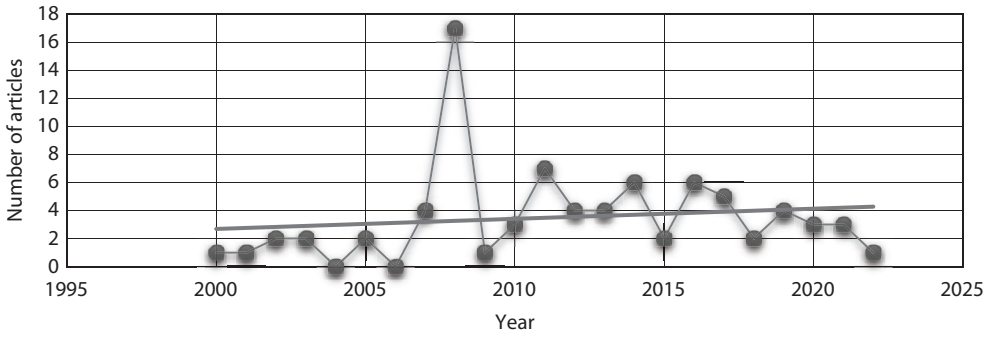
Most included articles analysed national-level datasets (n=54, 65%), and the sub-systems from which analysed data were derived included the Mexican Ministry

Figure 1. Flowchart of the literature review source eligibility process.



GMM, *Gaceta Medica de México*; OFIL, *Ibero Latin American Journal of Health System Pharmacy*; RMCF, *Revista Mexicana de Ciencias Farmacéuticas*; RSPM, *Revista de Salud Pública de México*.

Figure 2. Frequency of publication of articles related with pharmaceutical medicines access, use and policy in Mexico.



of Health (*n*=44, 57%), Mexican Institute of Social Security (in Spanish, IMSS; *n*=17, 22%) and the Mexican Institute of Social Security and Services of State Workers (in Spanish, ISSSTE; *n*=8, 16%).

The majority of included studies did not differentiate between medicine types or their design did not mention differences amongst them (*n*=44, 57.9%). For example, the article "*Factores asociados con la utilización y el gasto en medicamentos en México*" (Factors associated with pharmaceutical drug utilization and spending in Mexico)[26] analysed a sample of ENSANUT (a national survey on health and nutrition topics)[26] whose variables explored did not present a differentiation between medicines by type. Of the articles that did differentiate by medicine type, most publications mentioned antibiotics, studies on patterns of bacterial resistance, clinical use of antibiotics and antibiotic policy (*n*=8, 10.5%), antivirals, economic studies and antiretroviral prescribing practice (*n*=4, 5.3%), and studies on pharmaceutical services and clinical and commercial use of pain relievers (*n*=4, 5.3%). Antihypertensive and antiparasitic medicines were the types least mentioned, appearing in only one included article. Although most of the selected studies did not

differentiate by disease, those that did mainly addressed infectious processes (influenza, colds, parasitosis and others, *n*=8; HIV, *n*=3; and COVID-19, *n*=2), chronic diseases (diabetes and arterial hypertension, *n*=6), and studies on medicines and cancer (*n*=8).

The most commonly used designs or methodological (as reported by authors) approaches were quantitative (*n*=16, 21.1%), policy reports (*n*=10, 13.2%), transversal (*n*=8, 10.5%) and qualitative (*n*=6, 7.9%). On the other hand, we found just two literature reviews, both published in the year 2008, entitled "*Medicines in Mexico, 1990-2004: systematic review of research on access and use*"[17] and "*Uso de antibióticos en México: revision de problemas y políticas*" (Antibiotic use in Mexico: a review of problems and policies).[33] The results of these reviews were included without breaking down the articles included in them in detail. Analysis techniques most commonly used included document review, including review of medical records (*n*=39, 51.3%), followed by interview (*n*=12, 15.8%) and database analysis (*n*=6, 7.9%).

It was challenging to achieve a discrete categorization of articles by topic (policy, access, use) because many articles did not exclusively explore one topic but rather used them to complement each other. A descriptive table used for data analysis can be reviewed in Supplementary File 2 (available at: https://www.drugsincontext.com/wp-content/uploads/2024/01/dic.2023-7-3-SupplFile2.xlsx). Figure 3 shows the most studied topics, where medicine use stands out as the most studied topic. The topic of medicines access in the Mexican health system from the policy perspective was the second most common (*n*=23, 30.3%), and the latter was often complemented by discussions on the topics of medicine access (*n*=5, 6.6%) and use (*n*=4, 5.3%).

A figure was made with the key findings of the published literature on access, use and medication policies found in the present review (Figure 4).

Articles of pharmaceutical policy

The most frequently explored areas of medicines policy were related to SP and INSABI. Challenges reported in pharmaceutical policy were the following: the lack of an explicit national policy, prioritization in medicine procurement that did not align with national priorities, lack of alignment between the legal framework and reinforcement incentives, large gaps in policy documentation at the national level, and a lack of transparency. Tables 1–3 show more details of the findings.

Articles of medicines access

Articles exploring medicines access tended to focus as much on availability as on accessibility (*n*=13, 92.3%). Findings frequently reported on challenges related to supply, selection, acquisition, distribution and spending performance.

Articles of medicines use

Articles that discussed medicines use mainly focused on usage and consumption (*n*=12, 32.4%) followed by distribution (*n*=4, 10.8%). Consumption and adherence were more often addressed than prescription and dispensing. In terms of patients, problems were consistently reported around health information: harmful self-medication, preference for patent (name-brand) medications, delayed seeking of medical attention, and lack of adherence. Healthcare personnel reported problems related to questionable prescription practices, inadequate medical education, lack of independent data, and lack of compliance with clinical practice guidelines or official standards.

Discussion

Our systematic literature review found that effective policy implementation and ensuring access and use in Mexico remains challenging. Although studies on medicines policy, access and use have increased over the past two decades, the study findings point to persisting challenges, including in the translation of research findings into policies.

The studies included were authored by a small number of research teams in Mexico, most of which are affiliated with the Mexican National Institute of Public Health, which may explain why the majority of articles analysed national-level data and the Ministry of Health was the most frequently studied sub-system. It is important that other institutions (including private sector) also contribute to related research to include all population groups.

Most studies are observational and not experimental or quasi-experimental. Consequently, there is the need for process and impact evaluation of pharmaceutical policies or interventions to improve access and use. We found many studies that were based on the analysis of national databases extracted from national surveys, so we consider that it is necessary to include issues of medicines access and use topics in these surveys.

Our review reveals a significant gap in research on medicines used to combat the primary causes of morbidity and death (with the exceptions of HIV and cancer) in Mexico, mainly diabetes and cardiovascular disease. It is critical to generate greater evidence around these topics to inform policy. Additionally, it is important that research on access to and use of medicines begins to include the private sector.

Figure 3. Topics of interest included in the reviewed articles.

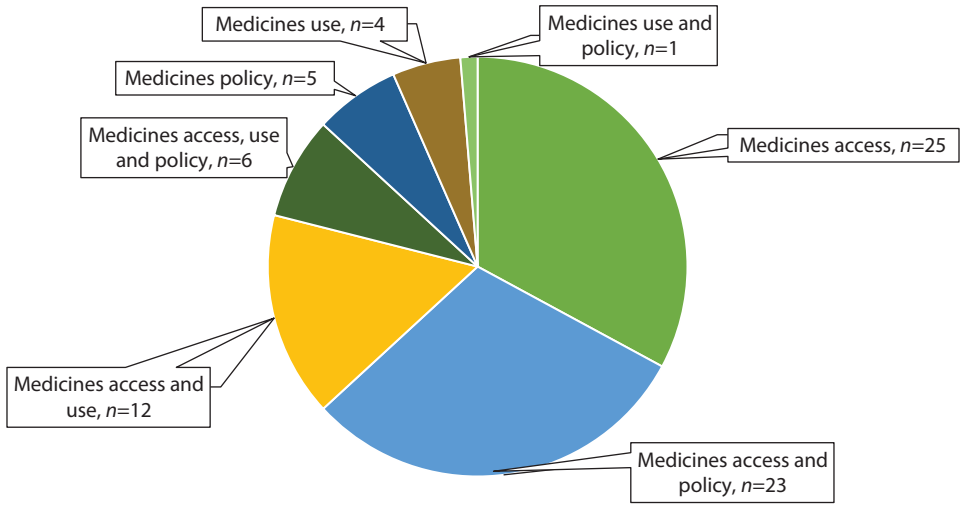


Figure 4. Key findings from published literature on medicine access, use and policy.

Although it is necessary to continue to generate evidence on topics such as national expenditure and medicines availability, it is equally important to consider socio-anthropological and behavioural approaches in further research, including topics like self-medication, changes in prescribing behaviour and patient satisfaction. Finally, studies using new methodological approaches could provide valuable information on topics that have been studied less often such as medicines use over time.

Pharmaceutical policy

Frequent topics related to pharmaceutical policy are medicines selection and purchasing (prioritization of essential medicines, which are frequently prescribed but

Table 1. Issues with pharmaceutical medicines access reported in the literature from 2000 to 2022.

ACCESS			
2000–2006 (refs.[17,40–42])	**2007–2012** (refs.[24,26,43–49])	**2013–2018** (refs.[27–31])	**2019–2022** (refs.[35,50,51])
The mandate of the State to guarantee sufficient medicines	**The mandate of the State to guarantee sufficient medicines**	**The mandate of the State to guarantee sufficient medicines**	**The mandate of the State to guarantee sufficient medicines**
Inequalities in medicines access and expenditure across federal entities	2009 – whilst 97% of prescriptions were filled under social security (SP), just 56% were filled in SESA	The list of essential medicines itself was found difficult to use as it was not fully aligned with clinical practice guidelines or official standards, resulting in doctors not using the document as a reference point; restructuring is key so that the document may be truly useful as a clinical guide	The inadequate preparation of the secretary of public actions to implement consolidated purchasing caused delays in acquisition and led to lack of supply
Issues with purchasing and distribution related to centralization	Medicine supply in the SESAs studied differs by modality; the contracting of third-party institutions (outsourcing) do not appear to have resolved the identified issues in the conventional structure	**Physical, economic and informational barriers to medicines**	UNOPS and Birmex displayed a lack of knowledge and experience around the specific needs of the country
Priority towards the inclusion of medicines that are frequently prescribed but of low cost, whilst expensive medicines in hospital care are those that most impact household expenditure	Performance of the SESA in promoting adequate medicines supply was considered mixed	Specialist doctors reported that oncological (cancer) medicines were deficient and restricted	INSABI did not have established procedures for medicines acquisition and distribution, and lacked a programme dedicated to supervision and transparency
	Restrictions in the stock of essential medicines forces hospitals to acquire medications through direct purchasing	When essential cancer medicines were unavailable (not listed or out of stock), hospitals reported various strategies such as prescribing alternative therapies, turning to direct purchases, or helping patients obtain the necessary medicines from other sources	**Physical, economic and informational barriers to medicines**
	Delays in releasing funds (federal and state) for acquisition	75% of out-of-pocket costs for hospitalized patients were for medicines	Migrant individuals do not have adequate information about their rights to health access and SP services
	Bidding and contracting processes are lengthy and complex	Public-sector prices are more affordable than the private sector; however, patients still described less than ten of the 49 medicines studied as affordable for them	
	The shift towards outsourcing in the medicines supply chain was developed without incorporating evaluation mechanisms	Long distance to healthcare centres, deficient insurance coverage and financial restrictions	
	Problems with outsourcing, especially in hospitals		
	Improvements in medicines access are unequal and depend on the type of institution where medical attention is received		
	Physical, economic and informational barriers to medicines		
	More expensive medicines are most often those unavailable and are therefore those which patients most often have to purchase directly		
	Impact revealed in addressing illnesses but low performance in addressing medicine expenditure		
	Due to outsourcing, there are no established procedures to account for missing items, and unneeded essential medicines are dispensed without a system for returns		
	Resistance by hospital personnel to receive personnel from third-party organizations in pharmacies and storage units run to implement new services and distribute the medication at the expense of the former		

(*Continued*)

Table 1. (Continued)

ACCESS			
Physical, economic, and informational barriers to medicines	**Problems in specific medicines access**	**Problems in specific medicines access**	
Over half of acquired medicines cost 20% of the established reference price	Effective coverage of treatments for arterial hypertension is low and heterogeneous	Distribution of oncological medicines is centralized in Mexico City and best coverage was under ISSSTE, which left SSA hospitals with less coverage	
The list and catalogue of essential medicines are out of date and restrictive; the patient or hospital is instead forced to purchase directly	During the pandemic of the H1N1 flu, oseltamivir was concentrated in Mexico City whilst cities in the north of Mexico did not get timely access, which provoked a lack of supply	Distribution and purchaser unit price for cancer medicines is unequal between institutions	
		Availability of cancer medicines in both the public (61.2%) and private sector (67.5%) is far below the recommended WHO target of 80% availability	
		The Mexican market for antiretroviral is concentrated in a few first-line series and prices are higher as compared to other similar countries	

INSABI, *Instituto Nacional de Salud para el Bienestar* (Mexican National Health Institute for Wellbeing); LGS, *Ley General de Salud* (General Health Law); SESA: *Secretarías de Salud Estatales* (State Ministries of Health); SP, *Seguro Popular*; SSA, *Secretaría de Salud* (Ministry of Health); UNOPS, United Nations Office for Project Services.

Table 2. Issues with pharmaceutical medicines use as reported in the literature from 2000 to 2022.

USE			
2000–2006 (refs.[33,41,42,52–61])	**2007–2012** (refs.[23,26,32,45,46,62–69])	**2013–2018** (refs.[25,70–76])	**2019–2022** (ref.[77])
Prescription Both patients and doctors perceive quality issues in generic medicines Private practices prioritize patent medicines Concerns by healthcare professionals on finding reliable and accessible information sources Over-prescription of certain medicines, self-medication and use of traditional medicine led to delays in seeking public public-sector healthcare Prescription of non-recommended combinations and excessive changes to antiretroviral treatments Prescription of antibiotics to pregnant women only complied with international recommendations 29.2% of the time Deficiencies in medical education, lack of independent information about medicines and influence of the pharmaceutical industry on the information available **Dispensation** It is necessary to create quality indicators for hospital medicines dispensing services **Consumption** Low use of contraception in adolescents and the population without a stable partner, particularly women Patients lack knowledge and receive little information on the correct use of and risks associated with NSAIDs	**Prescription** Uninformed self-medication and lack of professional pharmacy dispensing units **Dispensation** Little information on patient and consumer satisfaction, thereby creating a poor perception of the quality of healthcare services, which dispense generic medicines **Consumption** Public hospitals acquired essential medicines through direct purchasing or requesting that the patient pay out of pocket, and private sector services established their own list, which was not aligned with that of the SSAs	**Prescription** Private sector doctors do not prescribe generic medicines as they believe that their patients prefer name-brand medicines **Dispensation** To prevent errors in the administration of medicines, it is critical to analyse methods of medicine dispensing to hospitalized patients **Consumption** Patients affiliated with IMSS showed a greater probability of using medicines, and affiliation with IMMS, ISSSTE or SP reduced the probability of pharmaceutical medicines expenditure The prevalence of delayed start of antiretroviral treatment was 49% An increase was reported in consumption of NSAIDs – over-the-counter medicines that combat cough and cold symptoms – after the restriction of antibiotic use The introduction of generic medicines created a greater overall consumption of medicines in 2010 Medicines groups showing the greatest reduction in use were antibiotics, NSAIDS, anti-hypertensives, steroid anti-inflammatories and analgesics	**Adherence** Lack of adherence in patients with chronic non-communicable diseases

(*Continued*)

Table 2. (Continued)

USE			
Use	**Adherence**	**Adherence**	
The design of over-the-counter medicines labels must be reviewed so that the general public has information adequate to support self-medication	Lack of compliance with antiparasitic medicine courses and considerable adverse reactions to treatment	High cost of diabetes medicines is amongst the main causes of lack of treatment adherence	
It is critical to implement professional pharmaceutical services in public-sector hospitals to reduce medicine-related issues			
Adherence			
Low adherence to retroviral treatment and high costs may not translate to equivalent health benefits			

INSABI, *Instituto Nacional de Salud para el Bienestar* (Mexican National Health Institute for Wellbeing); LGS, *Ley General de Salud* (General Health Law); NSAIDs, non-steroidal anti-inflammatory medicines; SP, *Seguro Popular*; SSA, *Secretaría de Salud* (Ministry of Health).

Table 3. Issues with medicines policy as reported in the literature from 2000 to 2022.

POLICY			
2000–2006 (refs.[20,22,33,53,54,78–82])	**2007–2012** (refs.[21,34,36–38,43,62])	**2013–2018** (refs.[12,39,83–86])	**2019–2022** (refs.[51,78,87,88])
The pharmaceutical policies of SP prioritized the inclusion of essential medicines of frequent prescription but very low unit cost in outpatient services, at the detriment of high-cost medicines with greater therapeutic efficacy in hospital settings, although the latter is that which has greater impact on household expenditure	The LGS does not mention regulation of antibiotics, only classifies them in group IV; nonetheless, no mechanisms exist to ensure compliance with the requirement for pharmacies to dispense them by prescription	Mexico lacks a consolidated and explicit pharmaceutical policy	Lack of procedural transparency to create a National Compendium of Healthcare Inputs
Political campaigns at the change of presidential administrations are a barrier to the inclusion of contraception in new official manuals	Almost no impartial debate was held around a strategy for promoting the appropriate use of antibiotics	High out-of-pocket expenditure for medicines; high medicine prices in the private sector and lack of a clear strategy to improve safe and efficient use of medicines with interventions targeted to doctors, pharmacies and consumers	Procedures for acquisition and distribution have not been established, and INSABI lacks a programme to ensure supervision and transparency
Medicines price capping is deficient in the private sector	National-level documentation is out-of-date and considered restrictive	The list of essential medicines does not align with clinical practice guidelines, which encourages duplicity in pharmaceuticals without greater therapeutic benefits as well as higher costs	Lack of clarity around bidding and contracting procedures, and significant entry by purchase through direct awards
Horizontal inequities were reported in medicines access for older adults prior to the implementation of SP	Mechanisms to name generic medicines exchangeable for patent medicines are controversial	Negotiation policies have largely failed to reduce the price of antiretrovirals	
Medicines prices are elevated in the private sector market, with limitations to competition and significant power of commercial branding	The Coordinated Commission for Price Negotiation of Medicines and Other Goods has no established indicators to evaluate their performance, lack of salaried personnel with experience, and problems with coordination and coordination between diverse institutions and committees	Modest revenue from consumers affiliated with SP puts long-term allocation and acquisition of equitable resources at risk for that population	
There is a need to establish mechanisms for ensuring transparency and accountability	The implementation of SP has not significantly reduced medicines expenditure	Implementation of the National Hospital Pharmacy Model remains in development in both public and private hospitals, and cultural, financial, and operational barriers have already been identified	
Policies aimed towards improving healthcare service quality have focused on medicines prescription practices only in the public sector	The list of essential medicines covers just 70% of basic needs, meaning that there is duplicity amongst pharmaceuticals yet a persistent lack of essential medicines	Pharmaceutical services in hospitals are hampered by a lack of alignment between the legal framework and reinforcement of compliance, lack of the necessary management capacity in hospitals to ensure implementation, and lack of clarity around the legal framework itself	
The power of intellectual property rights has hampered research activities that could lead to the development of new medicines			
The inclusion of generic medicines exchangeable for patent medicines requires regulation and legislation to guarantee quality			

INSABI, *Instituto Nacional de Salud para el Bienestar* (Mexican National Health Institute for Wellbeing); LGS, *Ley General de Salud* (General Health Law); SP, *Seguro Popular*; SSA, *Secretaría de Salud* (Ministry of Health).

of low cost), lack of mechanisms for transparency and accountability, outdated national-level policy documentation around medicines, the allocation of expenditure on pharmaceuticals, and federal and state performance in medicines acquisition and distribution. Other topics were investigated during certain time points but did not demonstrate continuity over time, for example, consequences of price capping, regulation of the sale of antibiotics by prescription only in private pharmacies, and impacts of interventions targeted at pharmacy dispensing units on the safe and efficient use of medicines. A likely reason for the discontinuity of some topics is the change of federal government every 6 years; every government change could mean new priorities in research. There are very few comparative studies with other countries or comparing different states of Mexico. The lack of comparative studies limits the opportunity to identify effective policies and programmes.

Medicines access

Studies on medicines access often assessed SP, reporting issues with purchasing, distribution and performance in ensuring adequate supply. The focus on the evaluation of SP is understandable as it was the largest health reform in the past 20 years until its abolishment in 2019. In terms of INSABI, there is an urgency to generate evidence on its effect on medicine access because the government promised that it would improve medicines access, especially for the poor. The reason for the absence of studies on medicines access for patient users of INSABI may be related to the lack of official data available and the reduction in research funding in the area of health system research in Mexico. This will have to be explored in the future.

In previous Mexican presidential administrations, a significant proportion of studies on access investigated the outsourcing of acquisition services.[43–47] The studies reported a series of problems in outsourcing such as lack of procedures, dispensing of non-essential medications, resistance by hospital personnel when receiving personnel from third parties and lack of evaluation mechanisms in hospitals. Despite limited evidence that support outsourcing, the impact of removing this system entirely as performed with SP is a critical area for further study.

As previously mentioned, our review includes articles published until 2022. However, it is necessary to mention that, in May 2023, the decree by which INSABI ceased to exist and its functions were integrated into the IMSS – Bienestar was published.

From the year 2000 to 2018, analysis of the list of essential medicines consistently revealed problems around restriction and outdated processes that in turn limited medicines access. It is necessary to evaluate the impact of the latest update to the list as of 2018, preferably through the lens of policy analysis.

Equity in the access to and use of medicines is addressed in few studies; however, they are not directly comparable due to the use of different methods. For example, the study by Murayama-Rendón[47] manages equity from the financing that is granted to each state, whilst that of Molina Salazar et al.[36] focuses on out-of-pocket spending by social strata. To generate greater evidence of equity in medicines access and use, longitudinal and comparative studies should be conducted, international standards for writing research reports should be established, and different population groups (e.g. women, older people and indigenous people) and inequities (apart from economic inequities) should be explored.

Medicines use

One emerging topic around dispensing of medicines was research on the inclusion of pharmaceutical professionals in the health system, and the relationship between the implementation of pharmaceutical services with rational medicines use.[88,89] The inclusion of pharmaceutical professionals in health decision-making can contribute to greater quality of healthcare services and, in turn, to greater performance of the healthcare system. Previous studies have reported that in 76% of Ministry of Health hospitals, heads of pharmacy departments generally have a background in pharmaceutical sciences (for example, a bachelor's degree as a chemical-pharmaceutical biologist); therefore, the role of the hospital pharmacist is still being developed in the Mexican health system.[90]

Conclusions

Inappropriate use and inadequate access to medicines as well as issues with healthcare system performance are priority issues for Mexican pharmaceutical policy. It is critical that further studies are performed to assess the private sector and different institutions (like Mexican Social Security Institute) using new methodological perspectives. Many reported challenges related to access to and use of medicines have persisted across decades, suggesting a lack of effective research-to-practice knowledge transfer and policy implementation..

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